FINAL

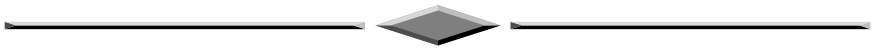
ENVIRONMENTAL IMPACT STATEMENT FOR PROPOSED ESTABLISHMENT AND MODIFICATION OF OREGON MILITARY TRAINING AIRSPACE

(VOLUME II – APPENDICES)

OREGON AIR NATIONAL GUARD

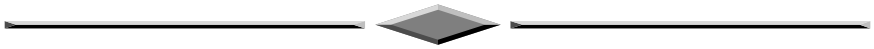
NATIONAL GUARD BUREAU
ASSET MANAGEMENT DIVISION

APRIL 2017



APPENDIX A

FEDERAL REGISTER



Appendix A
Public Notices and Federal Register Notices

Introduction

Appendix A contains affidavits and copies of public notices placed in local publications as well as the Federal Register as part of the scoping and intergovernmental review phase of Environmental Impact Analysis Process (EIAP). In accordance with the National Environmental Policy Act (NEPA) of 1969 (42 U.S. Code [USC] 4321-4347), Council on Environmental Quality (CEQ) Regulations for Implementing the Procedural Provisions of NEPA (40 Code of Federal Regulations [CFR] Parts 1500-1508), and 31 CFR Part 989 et seq., NGB/A4AM prepared a notice of public scoping meetings, a Notice of Intent (NOI) to prepare the Draft Environmental Impact Statement (EIS), and a Notice of Availability (NOA) and Public Hearings for the Draft EIS. Further, NGB/A4AM will prepare an additional notice to announce the availability of the Final EIS and Draft Record of Decision (ROD).

Table of Contents

The Oregonian
Hillsboro Argus
OregonLive.com
Forest Grove Leader
1320 S.W. Broadway, Portland, OR 97201-3499

Affidavit of Publication

AMEC Environment & Infrastructure Inc

104 W Anapamu St Suite 204A

Santa Barbara, CA 93101

The Oregonian

HILLSBORO ARGUS

OregonLive.com

FOREST GROVE LEADER

1320 S.W. Broadway, Portland, OR 97201-3499

Affidavit of Publication

I, G. Hatter, duly sworn depose and say that I am the Principal Clerk Of The Publisher of The Oregonian, a newspaper of general circulation, as defined by ORS 193.010 and 193.020, published in the city of Portland, in Multnomah County, Oregon; that the advertisement was published without interruption in the entire and regular issue of The Oregonian or the issue on the following date(s):

6/2/2013

G. Hatter

Principal Clerk of the Publisher:

6-3-13

Subscribed and sworn to before me this date:

Christine D Cassel

Notary:

Ad Order Number: 0003481002

OFFICIAL SEAL
CHRISTINE D CASSEL
NOTARY PUBLIC - OREGON
COMMISSION NO. 468251
MY COMMISSION EXPIRES MAY 27, 2016

NOTICE OF PUBLIC SCOPING MEETINGS

Environmental Impact Statement (EIS) for Proposed Establishment and Modification of Military Training Airspace, Oregon Air National Guard (ANG), OR

In accordance with the National Environmental Policy Act (NEPA) of 1969 (42 USC 4321-4347), Council on Environmental Quality Regulations for Implementing the Procedural Provisions of NEPA (40 CFR Parts 1500-1508), and 32 CFR Part 989 et seq., the National Guard Bureau (NGB) intends to prepare a Draft EIS that considers the potential consequences to the human and natural environment that may result from implementation of this action.

The purpose of the proposed Oregon Airspace Initiative is to provide adequately sized and configured airspace within close proximity to Oregon ANG flying units to support advanced 21st-century air-to-air tactical fighter technologies and training mission requirements.

The proposed action includes modification and addition to military training airspace located over northwestern, north-central and south-central Oregon and the Pacific Ocean. In addition, minor portions of the proposed action would be located above a small area of northwestern Nevada and the southwestern-most corner of Washington. It is important to note that this proposed action *would result in airspace changes only* and does not include any project components that would touch or otherwise directly affect the ground or water surface. For more details on the proposed action, please visit http://www.142fw.ang.af.mil/ or http://www.173fw.ang.af.mil/.

Public involvement is of primary importance in complying with NEPA and the Environmental Impact Analysis Process provides multiple opportunities for public involvement. The public has an important role in providing input during this process to help the NGB and Oregon ANG make more informed decisions about implementing this proposal. Scoping meetings will provide the opportunity for the public to engage with the NGB and Oregon ANG and provide comments on the proposed action prior to development of the Draft EIS. Scoping meetings will be open to the public at the following dates and locations, *with each meeting running from 6:00 PM to 9:00 PM:*

17 June 2013 – Tillamook Air Museum, 6030 Hangar Rd, Tillamook, OR 97141
18 June 2013 – Port of Astoria, 10 Pier One, Suite 209, Astoria, OR 97103
19 June 2013 – Condon High School, 210 East Bayard St, Condon, OR 97823
20 June 2013 – Harney County Center, 484 North Broadway Ave, Burns, OR 97720
21 June 2013 – City of Prineville Council Chambers, 387 NE Third St, Prineville, OR 97754

Written comments regarding the proposed action can be submitted to Mr. Robert Dogan, NGB/A7AM, Shepperd Hall, 3501 Fetchet Ave, Joint Base Andrews, MD 20762-5157, or by e-mail: ang.env.comments@ang.af.mil. Please include "Oregon Airspace Initiative" in the subject line. In order to be addressed in the Draft EIS, written comments must be received by 21 July 2013.

Please be advised that letters or other written comments provided may be published in the EIS. Any personal information provided to NGB will be used only to identify your intent to make a comment and only the names of the individuals making comments and their specific comments will be disclosed. Personal home addresses and phone numbers will *not* be published in the EIS.

3481002V01

Contracting Activity: Dept of the Army, W071 Endist Walla Walla, Walla Walla, WA.

Service Type/Location: Operations Support Service, Defense Health Headquarters, 7700 Arlington Blvd., Falls Church, VA.

NPA: Linden Resources, Inc., Arlington, VA.

Contracting Activity: Washington Headquarters Services (WHS), Acquisition Directorate, Washington, DC.

Deletion

On 4/5/2013 (78 FR 20622–20623), the Committee for Purchase From People Who Are Blind or Severely Disabled published notice of proposed deletions from the Procurement List.

After consideration of the relevant matter presented, the Committee has determined that the service listed below is no longer suitable for procurement by the Federal Government under 41 U.S.C. 8501–8506 and 41 CFR 51–2.4.

Regulatory Flexibility Act Certification

I certify that the following action will not have a significant impact on a substantial number of small entities. The major factors considered for this certification were:

1. The action will not result in additional reporting, recordkeeping or other compliance requirements for small entities.

2. The action may result in authorizing a small entity to provide the service to the Government.

3. There are no known regulatory alternatives which would accomplish the objectives of the Javits-Wagner-O'Day Act (41 U.S.C. 8501–8506) in connection with the service deleted from the Procurement List.

End of Certification

Accordingly, the following service is deleted from the Procurement List:

Service

Service Type/Location: Janitorial/Custodial Service, U.S. Army Reserve Center: Wilkes-Barre, 1001 Highway 315, Wilkes-Barre, PA.

NPA: United Rehabilitation Services, Inc., Wilkes-Barre, PA.

Contracting Activity: Dept of the Army, W6QM MICC-Ft Dix (RC–E), Fort Dix, NJ.

Barry S. Lineback,

Director, Business Operations.

[FR Doc. 2013–11766 Filed 5–16–13; 8:45 am]

BILLING CODE 6353–01–P

DEPARTMENT OF DEFENSE

Notice of Intent (NOI) To Prepare an Environmental Impact Statement (EIS) for Proposed Establishment and Expansion of Military Airspace in Support of the Oregon Air National Guard (ORANG), Portland International Airport, Portland, and Kingsley Field, Klamath Falls, OR

AGENCY: Department of the Air Force; DOD.

ACTION: Notice of Intent.

SUMMARY: Pursuant to the National Environmental Policy Act (NEPA) of 1969, as amended (42 U.S.C. 4321, et seq.), the Council on Environmental Quality (CEQ) Regulations for Implementing the Procedural Provisions of NEPA (40 CFR parts 1500–1508), and Air Force policy and procedures (32 CFR part 989), the Air Force is issuing this notice to advise the public of its intent to prepare an Environmental Impact Statement (EIS) for the proposed establishment and expansion of Special Use Airspace over portions of Oregon and a small area over northwestern Nevada and southwestern Washington. The proposal would provide adequately sized and configured airspace within close proximity to ORANG flying units to support advanced 21st-century air-to-air tactical fighter technologies and current and evolving training mission requirements and ensure efficient and realistic mission-oriented training. The training would take place Monday through Friday and during one weekend per month.

In support of the ORANG's 142d and 173d Fighter Wings, the Air Force and the National Guard Bureau (NGB) are proposing (Alternative A) to expand, modify, and establish air-to-air training airspace areas in four locations around the state: (1) Proposed expansion of Warning Area 570 (W–570) to the west over the Pacific Ocean; (2) proposed establishment of the Eel Military Operations Area (MOA) directly underneath the existing Eel Air Traffic Control Assigned Area which is aligned north/south along the Oregon coast from approximately Astoria to Lincoln City and adjacent to W–570; (3) proposed establishment of the Redhawk MOA in north central Oregon roughly bounded by Highway 97/197 on the west, the towns of Wasco and Lexington on the north, US Highway 395 on the east, and US Highway 26 on the south; and (4) proposed expansion of the existing Juniper/Hart MOA Complex to the east approximately 20 miles which would extend from approximately Burns to Frenchglen in Oregon and to Big Mountain in northwestern Nevada. Four alternatives and the No-Action Alternative will be analyzed. Alternative B includes the majority of airspace changes proposed for Alternative A; however, the Eel MOA would not be established. Alternative C includes the airspace changes proposed under Alternative A but the Redhawk MOA would not be established. Alternative D includes the airspace changes under Alternative A but would not include the eastward expansion of Juniper/Hart MOA Complex. Reasonable alternatives, which satisfy the underlying purpose and need for the proposed action, that are identified during the scoping process will also be assessed.

Information: NGB will conduct public scoping meetings to solicit input concerning the proposal. The scoping process assists in determining the scope of issues to be addressed and to help identify significant environmental issues to be analyzed in depth in the EIS. Comments will be accepted at any time during the environmental impact analysis process; however, to ensure that NGB has sufficient time to consider public feedback in the preparation of the Draft EIS, scoping comments should be submitted to the address below no later than 60 days from the date of this notice.

Scoping meetings will be held in the following Oregon communities: Tillamook (June 17), Astoria (June 18), Condon (June 19), Burns (June 20), and Prineville (June 21). Specific meeting times and locations will be provided in notices that will appear in *The Oregonian* and regional media outlets. Additional information will be made available at *www.142fw.ang.af.mil* and *www.173fw.ang.af.mil.*

ADDRESSES: Robert Dogan, National Guard Bureau/A7AM, 3501 Fetchet Avenue, Joint Base Andrews, MD 20762–5157. Email: *ang.env.comments@ang.af.mil.*

Henry Williams Jr.,

Acting Air Force Federal Register Liaison Officer.

[FR Doc. 2013–11800 Filed 5–16–13; 8:45 am]

BILLING CODE 5001–10–P

DEPARTMENT OF DEFENSE

Notice of Intent To Prepare an Environmental Impact Statement for the Main Operating Base 2 (MOB–2) for the Beddown of KC–46A Tanker Aircraft

AGENCY: Department of the Air Force, DOD.

OREGONIAN MEDIA GROUP

1515 SW 5th, Suite 1000, Portland, OR 97201-5615

Affidavit of Publication

I, **Cary Lee Dahlberg,** being first duly sworn depose and say that I am the Principal Clerk of The Publisher of **The Oregonian**, a newspaper of general circulation, published at **Portland, in Multnomah County**, Oregon; that I know from my personal knowledge that the advertisement, a printed copy of which is hereto annexed, was published in the **entire** issue of the said newspaper in the following issues:

July 26, 2015

Amec Foster Wheeler

 # 0003717290

Cary Lee Dahlberg

Principal Clerk of the Publisher

Subscribed and sworn to before me this date: **6th Day of August, 2015**

Kimberlee O'Neill

Notary Public for Oregon

My Commission expires __9-22-18____

OFFICIAL STAMP
KIMBERLEE W O'NEILL
NOTARY PUBLIC-OREGON
COMMISSION NO. 932441
MY COMMISSION EXPIRES SEPTEMBER 22, 2018

OREGONIAN MEDIA GROUP

1515 SW 5th Ave, Suite 1000 Portland, OR 97201-5615

Affidavit of Publication

I, Cheryl Childers, being first duly sworn depose and say that I am the Principal Clerk Of The Publisher of The Oregonian, a newspaper of general circulation, published at Portland, in Multnomah County, Oregon; that I know from my personal knowledge that the advertisement, a printed copy of which is hereto annexed, was published in the entire issue of said newspaper in the following issues:

8/9/2015

Principal Clerk of the Publisher

Subscribed and sworn to before me this date: 10th day of August ,2015 .

Notary Public for Oregon

OFFICIAL STAMP
CYNTHIA ANN BREUNIG
NOTARY PUBLIC-OREGON
COMMISSION NO. 936632
MY COMMISSION EXPIRES FEBRUARY 23, 2019

My commission expires 23rd day of February ,2019 .

Ad Order Number: 0003720798

NOTICE OF AVAILABILITY AND PUBLIC HEARINGS

Environmental Impact Statement (EIS) for Proposed Establishment and Modification of Military Training Airspace, Oregon Air National Guard (ANG), OR

In accordance with the National Environmental Policy Act (NEPA) of 1969 (42 USC 4321-4347), Council on Environmental Quality (CEQ) Regulations for Implementing the Procedural Provisions of NEPA (40 CFR Parts 1500-1508), and 32 CFR Part 989 et seq., the National Guard Bureau (NGB) announces the availability of the Draft EIS for the proposed Oregon Airspace Initiative. The purpose of the proposed Oregon Airspace Initiative is to provide appropriately sized and configured airspace within close proximity to Oregon ANG flying units to support advanced 21st-century air-to-air tactical fighter technologies and training mission requirements.

The proposed action includes modification and addition to military training airspace located over northwestern, north-central and south-central Oregon and the Pacific Ocean. In addition, minor portions of the proposed action would be located above a small area of northwestern Nevada and the southwestern-most corner of Washington. It is important to note that this proposed action would result in airspace changes only and does not include any project components that would touch or otherwise directly affect the ground or water surface. For more details on the proposed action, please visit

http://www.142fw.ang.af.mil/ or http://www.173fw.ang.af.mil/.

Public involvement is of primary importance in complying with NEPA and the Environmental Impact Analysis Process provides multiple opportunities for public involvement. The public has an important role in providing input during this process to help the NGB and Oregon ANG make more informed decisions about implementing this proposal. Public hearings will provide the continued opportunity for the public to engage with the NGB and Oregon ANG and to provide comments on the Draft EIS. Public hearings will be open to the public at the following dates, times, and locations:

Aug. 11, 2015 (6-9pm)
Tillamook Air Museum, 6030 Hangar Rd, Tillamook, OR 97141
Aug. 12, 2015 (6-9pm)
The Loft at the Red Building, 20 Basin St, Astoria, OR 97103
Aug. 14, 2015 (6-9pm)
Condon High School, 210 East Bayard St, Condon, OR 97823
Aug. 15, 2015 (2-5pm)
Harney County Center, 484 North Broadway Ave, Burns, OR 97720
Aug. 17, 2015 (6-9pm)
Crook County Library, 175 NW Meadow Lakes Dr, Prineville, OR 97754

Written comments on the Draft EIS can be submitted to Mr. Kevin Marek, NGB/A7AM, Shepperd Hall, 3501 Fetchet Ave, Joint Base Andrews, MD 20762-5157, or by e-mail: usaf.jbanafw.ngb-a7.mbx.A7A-NEPA-COMMENTS@mail.mil. Please include "Oregon Airspace Initiative" in the subject line. In order to be addressed in the Draft EIS, written comments must be received by 8 September 2015.

Please be advised that letters or other written comments provided may be published in the Final EIS. Any personal information provided to NGB will be used only to identify your intent to make a comment and only the names of the individuals making comments and their specific comments will be disclosed. Personal home addresses and phone numbers will not be published in the EIS.

July 26 & Aug. 9, 2015

C7-3720798V01

Dated: July 20, 2015.

James Jones,

Assistant Administrator, Office of Chemical Safety and Pollution Prevention.

[FR Doc. 2015–18232 Filed 7–23–15; 8:45 am]

BILLING CODE 6560–50–P

ENVIRONMENTAL PROTECTION AGENCY

[ER–FRL–9022–1]

Environmental Impact Statements; Notice of Availability

Responsible Agency: Office of Federal Activities, General Information (202) 564–7146 or *http://www2.epa.gov/nepa.*

Weekly receipt of Environmental Impact Statements

Filed 07/13/2015 Through 07/17/2015

Pursuant to 40 CFR 1506.9.

Notice: Section 309(a) of the Clean Air Act requires that EPA make public its comments on EISs issued by other Federal agencies. EPA's comment letters on EISs are available at: *https://cdxnodengn.epa.gov/cdx-enepa-public/action/eis/search.*

EIS No. 20150198, Draft, USAF, OR, Proposed Establishment and Modification of Oregon Military Training Airspace, comment period ends: 09/08/2015, Contact: Kevin Marek 240–612–8855.

EIS No. 20150199, Draft, OSM, Other, Stream Protection Rule, comment period ends: 09/15/2015, Contact: Robin Ferguson 202–208–2802.

EIS No. 20150200, Draft, USFWS, CA, South Bay Salt Pond Restoration Project Phase 2, comment period ends: 09/22/2015, Contact: Anne Morkill 510–792–0222.

EIS No. 20150201, Draft, FERC, LA, Magnolia Liquefied Natural Gas (LNG) and Lake Charles Expansion Projects, comment period ends: 09/08/2015, Contact: Janine Cefalu 202–502–8271.

EIS No. 20150202, Final, FHWA, LA, ADOPTION—I–12 to Bush, Louisiana Proposed Highway, review period ends: 08/24/2015, Contact: Carl Highsmith 225–757–7615.

The U.S. Department of Transportation's Federal Highway Administration (FHWA) and Louisiana Department of Transportation has adopted the U.S. Army Corps of Engineers' final EIS #20120055, filed 02/29/2012 with EPA. The FHWA was not a cooperating agency for the above EIS. Therefore recirculation of the EIS is necessary under the CEQ Regulations Section 1506.3.

Dated: July 21, 2015.

Dawn Roberts,

Management Analyst, NEPA Compliance Division, Office of Federal Activities.

[FR Doc. 2015–18204 Filed 7–23–15; 8:45 am]

BILLING CODE 6560–50–P

ENVIRONMENTAL PROTECTION AGENCY

[EPA–HQ–OPPT–2013–0677; FRL–9930–72]

Receipt of Test Data Under the Toxic Substances Control Act

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice.

SUMMARY: EPA is announcing its receipt of test data submitted pursuant to a test rule issued by EPA under the Toxic Substances Control Act (TSCA). As required by TSCA, this document identifies each chemical substance and/or mixture for which test data have been received; the uses or intended uses of such chemical substance and/or mixture; and describes the nature of the test data received. Each chemical substance and/or mixture related to this announcement is identified in Unit I. under **SUPPLEMENTARY INFORMATION.**

FOR FURTHER INFORMATION CONTACT:

For technical information contact: Kathy Calvo, Chemical Control Division (7405M), Office of Pollution Prevention and Toxics, Environmental Protection Agency, 1200 Pennsylvania Ave. NW., Washington, DC 20460–0001; telephone number: (202) 564–8089; email address: *calvo.kathy@epa.gov.*

For general information contact: The TSCA-Hotline, ABVI-Goodwill, 422 South Clinton Ave., Rochester, NY 14620; telephone number: (202) 554–1404; email address: *TSCA-Hotline@epa.gov.*

SUPPLEMENTARY INFORMATION:

I. Chemical Substances and/or Mixtures

Information about the following chemical substances and/or mixtures is provided in Unit IV.: *1-Propanesulfonic acid, 2-hydroxy-3-(2-propen-1-yloxy)-, sodium salt (1:1)* (*CAS RN 52556–42–0*).

II. Federal Register Publication Requirement

Section 4(d) of TSCA (15 U.S.C. 2603(d)) requires EPA to publish a notice in the **Federal Register** reporting the receipt of test data submitted pursuant to test rules promulgated under TSCA section 4 (15 U.S.C. 2603).

III. Docket Information

A docket, identified by the docket identification (ID) number EPA–HQ–OPPT–2013–0677, has been established for this **Federal Register** document that announces the receipt of data. Upon EPA's completion of its quality assurance review, the test data received will be added to the docket for the TSCA section 4 test rule that required the test data. Use the docket ID number provided in Unit IV. to access the test data in the docket for the related TSCA section 4 test rule.

The docket for this **Federal Register** document and the docket for each related TSCA section 4 test rule is available electronically at *http://www.regulations.gov* or in person at the Office of Pollution Prevention and Toxics Docket (OPPT Docket), Environmental Protection Agency Docket Center (EPA/DC), West William Jefferson Clinton Bldg., Rm. 3334, 1301 Constitution Ave. NW., Washington, DC. The Public Reading Room is open from 8:30 a.m. to 4:30 p.m., Monday through Friday, excluding legal holidays. The telephone number for the Public Reading Room is (202) 566–1744, and the telephone number for the OPPT Docket is (202) 566–0280. Please review the visitor instructions and additional information about the docket available at *http://www.epa.gov/dockets.*

IV. Test Data Received

This unit contains the information required by TSCA section 4(d) for the test data received by EPA. *1-Propanesulfonic acid, 2-hydroxy-3-(2-propen-1-yloxy)-, sodium salt (1:1)* (*CAS RN 52556–42–0*).

1. *Chemical Uses:* Polymerizable surfactant for vinylic systems; antistatic properties; promotes adhesion of pigments; emulsion polymerization in paper, textile, fiber, and adhesives industries.

2. *Applicable Test Rule:* Chemical testing requirements for third group of high production volume chemicals (HPV3), 40 CFR 799.5089.

3. *Test Data Received:* The following listing describes the nature of the test data received. The test data will be added to the docket for the applicable TSCA section 4 test rule and can be found by referencing the docket ID number provided. EPA reviews of test data will be added to the same docket upon completion.

Mammalian Toxicity Genotoxicity (E1) (E2). The docket ID number assigned to this data is EPA–HQ–OPPT–2009–0112.

Authority: 15 U.S.C. 2601 *et seq.*

APPENDIX B

PUBLIC INVOLVEMENT AND AGENCY COORDINATION

Appendix B
Public Involvement and Agency Coordination

Introduction

Appendix B contains agency and public coordination as part of intergovernmental review phase of Environmental Impact Analysis Process (EIAP) per Executive Order (EO) 12372, Intergovernmental Review of Federal Programs. This appendix contains the distribution list that was used to provide copies of the Draft Environmental Impact Statement (EIS) for review by appropriate agencies and Native American tribal governments. Additionally, this appendix includes correspondence between the National Guard Bureau (NGB) and the appropriate State Historic Preservation Offices (SHPOs) under Section 106 of the National Historic Preservation Act (NHPA) as well as the USFWS under Section 7 of the federal Endangered Species Act (ESA).

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APPENDIX B

INTERGOVERNMENTAL REVIEW

Mr. Dick Pederson, Director
Oregon Department of
Environmental Quality
DEQ Headquarters
811 SW 6th Avenue
Portland 97204-1390

Mr. Roy Elicker, Director
Oregon Department of Fish and
Wildlife
3406 Cherry Avenue N.E
Salem, OR 97303

Ms. Linda Anderson, Acting Director
U.S. EPA, Region 10
Office of Ecosystems, Tribal, and
Public Affairs
Mail Stop: ETPA-087
1200 Sixth Avenue, Suite 900
Seattle, WA 98101

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Oregon Parks and Recreation
Department
Planning
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Salem OR 97301

Mr. Dennis Griffin, State
Archaeologist
State Historic Preservation Office
725 Summer St NE, Suite C
Salem, OR 97301

Ms. Robyn Thorson
U.S. Fish and Wildlife Service
Pacific Region 1
911 NE 11th Ave
Portland, OR 97232

Mr. Randy Fisher, Director
Pacific States Marine Fisheries
Commission
05 SE Spokane Street, Suite 100
Portland, OR 97202

Mr. Lanny R. Quackenbush
Eastern Region Manager
Land Management Division
Oregon Department of State Lands
1645 Forbes Road, Suite 112
Bend, Oregon 97701

Ms. Nancy Pustis
Western Region Manager
Land Management Division
Oregon Department of State Lands
775 Summer St NE, Suite 100
Salem, OR 97301-1279

Mr. Mitch Swecker, Director
Oregon Department of Aviation
3040 25th St. SE
Salem, OR
97302-1125

Col John Eisenhauer, P.E.
Commander and District Engineer
U.S. Army Corps of Engineers
Portland District
P.O. Box 2946
Portland, OR 97208-2946

Mr. Ron Alvarado, State Conservationist
Natural Resources Conservation Services
US Department of Agriculture
1201 NE Lloyd Blvd, Suite 900
Portland, Oregon 97232

Mr. Max Etheridge, Regional Director
Northwest Area
U.S. Geological Survey
909 1st Avenue
Seattle, WA 98104

Ms. Christine Lehnertz, Regional Director
National Park Service
Pacific West Region
333 Bush Street, Suite 500
San Francisco, CA 94104-2828

Mr. Ben Meyer, Branch Chief
NOAA Fisheries (NMFS)
Habitat Conservation Division
1201 NE Lloyd Boulevard, Suite 1100
Portland, OR 97232

Mr. Jerome E. Perez, State Director
Bureau of Land Management
P.O. Box 2965
Portland, OR 97208

Ms. Jackie Andrew, Assistant Director of Resource, Planning, and Monitoring
US Forest Service
Pacific Northwest Region
P.O. Box 3623
Portland, OR 97208-3623

Ms. Rebecca L. Palmer, Acting State Historic Preservation Officer
Nevada SHPO
901 S. Stewart Street, Suite 5004
Carson City, NV 89701-4285

Mr. Matt Crall, Planning Services Division Manager
Oregon Department of Land Conservation and Development
635 Capitol Street NE
Suite 150
Salem, OR 97301

Ms. Coleen Cripps, Administrator
Department of Conservation & Natural Resources
Nevada Division of Environmental Protection
901 South Stewart Street, Suite 4001
Carson City, Nevada 89701–5249

Mr. Tony Wasley, Director
Nevada Department of Wildlife
1100 Valley Road
Reno, NV 89512

Ms. Allyson Brooks, Ph.D.
State Historic Preservation Officer, DAHP Director
Department of Archaeology and Historic Preservation
P.O. Box 48343
Olympia, WA 98504-8343

FEDERALLY RECOGNIZED TRIBES

Mr. Les Minthorn
Tribal Chair
Confederated Tribes of the Umatilla Indian Reservation
46411 Timíne Way
Pendleton, OR 97801

Ms. Randi DeSoto
Tribal Chairwoman
Summit Lake Paiute Tribe
1708 H Street
Sparks, NV 89431

Ms. Delores Pigsley
Tribal Chair
Confederated Tribes of Siletz Indians
P.O. Box 549
Siletz, OR 97380

Mr. Gary Frost
Tribal Chair
Klamath Tribes
P.O. Box 436
Chiloquin, OR 97624

Mr. Reynold Leno
Tribal Council Chair
Confederated Tribes of Grand Ronde
9615 Grand Ronde Rd
Grand Ronde, OR 97347

Mr. Dan Courtney
Tribal Chair
Cow Creek Band of Umpqua Tribe of Indians
2371 NE Stephens Street, Suite 100
Rosenburg, OR 97470

Ms. Brenda Meade
Tribal Chair
Coquille Indian Tribe
3050 Tremont Street
North Bend, OR 97459

Mr. Bob Garcia
Tribal Chair
Confederated Tribes of Coos, Lower Umpqua & Siuslaw
1245 Fulton Avenue
Coos Bay, OR 97420

Ms. Charisse Soucie
Tribal Chair
Burns Paiute Tribe
100 Pasigo St
Burns, OR 97720

Mr. Austin Greene
Tribal Chair
Confederated Tribes of Warm Springs
P.O. Box C
Warm Springs, OR 97761

Ms. Sally Bird, Cultural Resources Manager
Confederated Tribes of Warm Springs
P.O. Box C
Warm Springs, OR 97761

Mr. Michon Ebon
Reno-Sparks Indian Colony
Tribal Historic Preservation Office
1937 Prosperity Street
Reno, Nevada 89502

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NATIONAL GUARD BUREAU
3501 FETCHET AVENUE
JOINT BASE ANDREWS MD 20762-5157

SAMPLE AGENCY INTERGOVERNMENTAL REVIEW LETTER

NGB/A7AM

«Addressee»
«Address1»
«Address2»
«Address3»
«Address4»

Dear «Salutation»

The Oregon Air National Guard (ANG) is proposing modification and addition to military training airspace located over Oregon and the Pacific Ocean as well as small areas of northwestern Nevada and southwestern Washington. The purpose of the proposed Oregon Airspace Initiative is to provide adequately sized and appropriately configured airspace within close proximity to Oregon ANG flying units to support advanced 21st-century air-to-air tactical fighter technologies and training mission requirements.

The National Guard Bureau (NGB) has prepared a Draft Environmental Impact Statement (EIS) for the Proposed Action, which incorporates Federal, state, and local agency comments as well as public comments received during the scoping period for the Proposed Action, which closed on 21 July 2013. The Draft EIS, which was released on 24 July 2015, was prepared in accordance with Council on Environmental Quality regulations to comply with the National Environmental Policy Act of 1969 (NEPA).

In accordance with Executive Order 12372, *Intergovernmental Review of Federal Programs*, and the NEPA, we request your assistance in reviewing the Draft EIS and providing comments. We also request your assistance in advising appropriate agencies of this Proposed Action and soliciting their comments on the Draft EIS. Offices listed in Appendix B of the Draft EIS have already received this letter; if there are additional agencies you feel should review and comment on the proposal, please distribute this letter to them as well. The Draft EIS can be retrieved at http://www.142fw.ang.af.mil/ or http://www.173fw.ang.af.mil/. Upon written request, an electronic (CD) copy of the Draft EIS will be provided.

Please respond with comments before the close of the comment period on 8 September 2015. If you have questions concerning the proposal, please contact me at (240) 612-8855. Please forward any written comments to: Kevin Marek, NGB/A7AM, Shepperd Hall, 3501 Fetchet Avenue, Joint Base Andrews MD 20762-5157, or email to usaf.jbanafw.ngb-a7.mbx.A7A-NEPA-COMMENTS@mail.mil. Thank you for your assistance.

.

Sincerely

KEVIN MAREK
NGB/A7AM

NATIONAL GUARD BUREAU
3501 FETCHET AVENUE
JOINT BASE ANDREWS MD 20762-5157

NGB/A7AM

AUG 10 2015

Ms. Rebecca L. Palmer, Acting State Historic Preservation Officer
Nevada SHPO
901 S. Stewart Street, Suite 5004
Carson City, NV 89701-4285

Subject: National Historic Preservation Act, Section 106 Consultation
Proposed Airspace Establishment and Modification
Oregon Air National Guard

Dear Ms. Palmer:

The National Guard Bureau (NGB) is preparing an Environmental Impact Statement (EIS) in accordance with the National Environmental Policy Act (NEPA) to evaluate the potential impacts on the human environment for the proposed establishment and expansion of Special Use Airspace over portions of Oregon and small areas over northwestern Nevada and southwestern Washington. The NGB sent a letter to you on 7 June 2013 as part of the scoping phase of the Environmental Impact Analysis Process (EIAP), requesting assistance in identifying any potential cultural resources issues or reasonably foreseeable impacts associated with the Proposed Action. The Nevada State Historic Preservation Office (SHPO) replied on 5 July 2013 with a letter suggesting additional consultation parties, including the Reno-Sparks Indian Colony. Consultation with this tribe, among others, is ongoing as described in the Draft EIS, and to date no cultural resources, including Traditional Cultural Properties, have been identified.

Following our previous correspondence, the proposed airspace boundaries have been revised (i.e., truncated) to address airspace- and air traffic-related concerns presented by the Federal Aviation Administration (FAA). Enclosed Figures 1 through 3 depict the locations of the currently proposed military airspace establishment and modifications included under the Proposed Action. Together, these areas constitute the Area of Potential Effect (APE) for the undertaking. It is important to note that this proposed action *would involve airspace only* and does not include any project components that would touch or otherwise directly affect the ground or water surface.

The proposed action to be evaluated in the EIS constitutes an undertaking as defined in 36 CFR 800.16(y) and, therefore, in accordance with 36 Code of Federal Regulations (CFR) 800, Section 106 of the National Historic Preservation Act (NHPA), the National Guard Bureau (NGB) is requesting consultation with you regarding the Proposed Action. We request your concurrence with the determination of "No Historic Properties Affected" (36 CFR §800.4) regarding the proposed undertaking. The Proposed Action and potential cultural resources impacts identified in the enclosed Draft EIS are described in further detail below.

In support of the Oregon Air National Guard's (ANG's) 142d and 173d Fighter Wings, the Air Force and the NGB are proposing (Proposed Action) to expand, modify, and establish air-to-air training airspace areas in four locations around the state: 1) proposed expansion of Warning Area 570 (W-570) to the west over the Pacific Ocean; 2) proposed establishment of the Eel Military Operations Area (MOA) directly underneath the existing Eel Air Traffic Control Assigned Area which is aligned north/south along the Oregon coast from approximately Astoria to Lincoln City and adjacent to W-570; 3) proposed establishment of the Redhawk MOA in north central Oregon roughly bounded by Highway 97/197 on the west, the towns of Wasco and Lexington on the north, US Highway 395 on the east, and US Highway 26 on the south; and 4) proposed expansion of the existing Juniper/Hart MOA Complex to the east approximately 20 miles which would extend from approximately Burns to Frenchglen in Oregon and to Big Mountain in northwestern Nevada.

In addition to the Proposed Action, three alternatives and the No-Action Alternative have also been analyzed. Alternative B includes the majority of airspace changes proposed for the Proposed Action; however, the Eel MOA would not be established. Alternative C includes the airspace changes proposed under the Proposed Action but the Redhawk MOA would not be established. Alternative D includes the airspace changes under the Proposed but would not include the eastward expansion of Juniper/Hart MOA Complex.

Subsurface artifacts or other intact cultural deposits would not be disturbed since there would be no ground-disturbing activities (e.g., construction or demolition) associated with any project components included in the Proposed Action. Consequently, the only potential effects of the Proposed Action on cultural resources underlying the affected or proposed airspaces would result from noise and/or noise generated vibrations, or the visual impact of military overflights within the affected and proposed airspace.

Under the Proposed Action, the floor of the proposed Eel MOA/ATCAA Complex and Redhawk MOA Complex would be established at 11,000 feet above mean sea level (MSL) (approximately 9,000 feet above ground level [AGL]), which would correlate with maximum noise levels between than 87 decibels (dB) and 90 dB at the ground surface. Consequently, there would be no potential for structural damage to historical structures located beneath this airspace complex, which can occur at approximately 130 dB. Under the Proposed Action, the floor of the existing Juniper Low MOA would be raised from 300 feet AGL to 500 feet AGL and the proposed Juniper East Low MOA would be established at 500 feet AGL. Based on the calculations presented in the Draft EIS, aircraft operations within the existing Juniper Low MOA and proposed Juniper East Low MOA would have the greatest potential to generate noise at levels high enough to cause vibration-related structural damage to historic structures. A sensitive receptor beneath an aircraft would be exposed to maximum noise levels of 116 dB. However, as described in Section 4.5, *Cultural Resources*, this noise level would not be great enough to cause vibration-related structural damage to historic structures. Therefore, the Draft EIS found that noise or vibration-related impacts to historic structures located beneath the existing Juniper Low MOA or proposed Juniper East Low MOA would not be expected under the Proposed Action.

Further, as described Section 4.3, *Land Use and Visual Resources* due to the relatively infrequent presence of aircraft within the APE and the infrequent and short-term nature of chaff

and flare use, the Draft EIS found that impacts on aesthetic characteristics would not be considered significant.

As part of an effort to conduct early and continuous consultation, the Oregon Military Department and Oregon ANG, in collaboration with NGB, have conducted previous outreach via formal correspondence as well as telephone with ten potentially affected Native American tribes under Section 106 of the NHPA, as amended, and associated implementing regulations (36 CFR 800). The Native American tribes include the Burns Paiute Tribe, Confederated Tribes of Coos, Lower Umpqua and Siuslaw Indians, Coquille Indian Tribe, Cow Creek Band of Umpqua Tribe of Indians, Confederated Tribes of the Grand Ronde Community, Klamath Tribes, Confederated Tribes of the Siletz Indians, Summit Lake Paiute Tribe, Confederated Tribes of the Umatilla Indian Reservation, and the Confederated Tribes of the Warm Springs. A copy of correspondence with the Native American tribes is available upon request.

Based on noise level calculations for tribal lands beneath the affected and proposed airspaces as well as feedback received in response to outreach to Native American representatives, no adverse effect to cultural resources, historic structures, or Traditional Cultural Properties would be expected as a result of the implementation of the Proposed Action.

Please review this information and respond with comments within 30 days. If you have questions concerning the Proposed Action, please contact me at (240) 612-8855. Please forward any written comments to: Mr. Kevin Marek, NGB/A7AM, Shepperd Hall, 3501 Fetchet Avenue, Joint Base Andrews, MD 20762-5157, or by e-mail: kevin.marek@ang.af.mil. Upon written request, a copy of the Final EIS and/or Record of Decision (ROD) will be provided. Thank you for your assistance.

Sincerely

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KEVIN MAREK, REM
Environmental Planner NGB A7AM
Environmental Plans & Requirements Branch

Attachments:

1. Previous Correspondence
2. Figures 1-3
3. Notice of Availability for Draft EIS
4. Draft EIS on CD

NATIONAL GUARD BUREAU
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JOINT BASE ANDREWS MD 20762-5157

AUG 1 0 2015

NGB/A7AM

Allyson Brooks, Ph.D.
State Historic Preservation Officer, DAHP Director
Department of Archaeology and Historic Preservation
P.O. Box 48343
Olympia, WA 98504-8343

Subject: National Historic Preservation Act, Section 106 Consultation
Proposed Airspace Establishment and Modification
Oregon Air National Guard

Dear Dr. Brooks:

The National Guard Bureau (NGB) is preparing an Environmental Impact Statement (EIS) in accordance with the National Environmental Policy Act (NEPA) to evaluate the potential impacts on the human environment for the proposed establishment and expansion of Special Use Airspace over portions of Oregon and small areas over northwestern Nevada and southwestern Washington. The NGB sent a letter to you on 7 June 2013 as part of the scoping phase of the Environmental Impact Analysis Process (EIAP), requesting assistance in identifying any potential cultural resources issues or reasonably foreseeable impacts associated with the Proposed Action. The Oregon SHPO replied on 20 June 2013 with a letter stating that the project will have no effect on any known archaeological resources.

Following our previous correspondence, the proposed airspace boundaries have been revised (i.e., truncated) to address airspace- and air traffic-related concerns presented by the Federal Aviation Administration (FAA). Enclosed Figures 1 through 3 depict the locations of the currently proposed military airspace establishment and modifications included under the Proposed Action. Together, these areas constitute the Area of Potential Effect (APE) for the undertaking. It is important to note that this proposed action *would involve airspace only* and does not include any project components that would touch or otherwise directly affect the ground or water surface.

The proposed action to be evaluated in the EIS constitutes an undertaking as defined in 36 CFR 800.16(y) and, therefore, in accordance with 36 Code of Federal Regulations (CFR) 800, Section 106 of the National Historic Preservation Act (NHPA), the National Guard Bureau (NGB) is requesting consultation with you regarding the Proposed Action. We request your concurrence with the determination of "No Historic Properties Affected" (36 CFR §800.4) regarding the proposed undertaking. The Proposed Action and potential cultural resources impacts identified in the enclosed Draft EIS are described in further detail below.

In support of the Oregon Air National Guard's (ANG's) 142d and 173d Fighter Wings, the Air Force and the NGB are proposing (Proposed Action) to expand, modify, and establish

air-to-air training airspace areas in four locations around the state: 1) proposed expansion of Warning Area 570 (W-570) to the west over the Pacific Ocean; 2) proposed establishment of the Eel Military Operations Area (MOA) directly underneath the existing Eel Air Traffic Control Assigned Area which is aligned north/south along the Oregon coast from approximately Astoria to Lincoln City and adjacent to W-570; 3) proposed establishment of the Redhawk MOA in north central Oregon roughly bounded by Highway 97/197 on the west, the towns of Wasco and Lexington on the north, US Highway 395 on the east, and US Highway 26 on the south; and 4) proposed expansion of the existing Juniper/Hart MOA Complex to the east approximately 20 miles which would extend from approximately Burns to Frenchglen in Oregon and to Big Mountain in northwestern Nevada.

In addition to the Proposed Action, three alternatives and the No-Action Alternative have also been analyzed. Alternative B includes the majority of airspace changes proposed for the Proposed Action; however, the Eel MOA would not be established. Alternative C includes the airspace changes proposed under the Proposed Action but the Redhawk MOA would not be established. Alternative D includes the airspace changes under the Proposed but would not include the eastward expansion of Juniper/Hart MOA Complex.

Subsurface artifacts or other intact cultural deposits would not be disturbed since there would be no ground-disturbing activities (e.g., construction or demolition) associated with any project components included in the Proposed Action. Consequently, the only potential effects of the Proposed Action on cultural resources underlying the affected or proposed airspaces would result from noise and/or noise generated vibrations, or the visual impact of military overflights within the affected and proposed airspace.

Under the Proposed Action, the floor of the proposed Eel MOA/ATCAA Complex and Redhawk MOA Complex would be established at 11,000 feet above mean sea level (MSL) (approximately 9,000 feet above ground level [AGL]), which would correlate with maximum noise levels between than 87 decibels (dB) and 90 dB at the ground surface. Consequently, there would be no potential for structural damage to historical structures located beneath this airspace complex, which can occur at approximately 130 dB. Under the Proposed Action, the floor of the existing Juniper Low MOA would be raised from 300 feet AGL to 500 feet AGL and the proposed Juniper East Low MOA would be established at 500 feet AGL. Based on the calculations presented in the Draft EIS, aircraft operations within the existing Juniper Low MOA and proposed Juniper East Low MOA would have the greatest potential to generate noise at levels high enough to cause vibration-related structural damage to historic structures. A sensitive receptor beneath an aircraft would be exposed to maximum noise levels of 116 dB. However, as described in Section 4.5, *Cultural Resources*, this noise level would not be great enough to cause vibration-related structural damage to historic structures. Therefore, the Draft EIS found that noise or vibration-related impacts to historic structures located beneath the existing Juniper Low MOA or proposed Juniper East Low MOA would not be expected under the Proposed Action.

Further, as described Section 4.3, *Land Use and Visual Resources* due to the relatively infrequent presence of aircraft within the APE and the infrequent and short-term nature of chaff and flare use, the Draft EIS found that impacts on aesthetic characteristics would not be considered significant.

As part of an effort to conduct early and continuous consultation, the Oregon Military Department and Oregon ANG, in collaboration with NGB, have conducted previous outreach via formal correspondence as well as telephone with ten potentially affected Native American tribes under Section 106 of the NHPA, as amended, and associated implementing regulations (36 CFR 800). The Native American tribes include the Burns Paiute Tribe, Confederated Tribes of Coos, Lower Umpqua and Siuslaw Indians, Coquille Indian Tribe, Cow Creek Band of Umpqua Tribe of Indians, Confederated Tribes of the Grand Ronde Community, Klamath Tribes, Confederated Tribes of the Siletz Indians, Summit Lake Paiute Tribe, Confederated Tribes of the Umatilla Indian Reservation, and the Confederated Tribes of the Warm Springs. A copy of correspondence with the Native American tribes is available upon request.

Based on noise level calculations for tribal lands beneath the affected and proposed airspaces as well as feedback received in response to outreach to Native American representatives, no adverse effect to cultural resources, historic structures, or Traditional Cultural Properties would be expected as a result of the implementation of the Proposed Action.

Please review this information and respond with comments within 30 days. If you have questions concerning the Proposed Action, please contact me at (240) 612-8855. Please forward any written comments to: Mr. Kevin Marek, NGB/A7AM, Shepperd Hall, 3501 Fetchet Avenue, Joint Base Andrews, MD 20762-5157, or by e-mail: kevin.marek@ang.af.mil. Upon written request, a copy of the Final EIS and/or Record of Decision (ROD) will be provided. Thank you for your assistance.

Sincerely

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Date: 2015.08.07 17:56:02 -04'00'

KEVIN MAREK, REM
Environmental Planner NGB A7AM
Environmental Plans & Requirements Branch

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NATIONAL GUARD BUREAU
3501 FETCHET AVENUE
JOINT BASE ANDREWS MD 20762-5157

AUG 1 0 2015

NGB/A7AM

Mr. Dennis Griffin, State Archaeologist
State Historic Preservation Office
725 Summer St NE, Suite C
Salem, Oregon 97301

Subject: National Historic Preservation Act, Section 106 Consultation
Proposed Airspace Establishment and Modification
Oregon Air National Guard

Dear Mr. Griffin:

The National Guard Bureau (NGB) is preparing an Environmental Impact Statement (EIS) in accordance with the National Environmental Policy Act (NEPA) to evaluate the potential impacts on the human environment for the proposed establishment and expansion of Special Use Airspace over portions of Oregon and small areas over northwestern Nevada and southwestern Washington. The NGB sent a letter to you on 7 June 2013 as part of the scoping phase of the Environmental Impact Analysis Process (EIAP), requesting assistance in identifying any potential cultural resources issues or reasonably foreseeable impacts associated with the Proposed Action. The Oregon State Historic Preservation Office (SHPO) replied on 20 June 2013 with a letter stating that the project will have no effect on any known archaeological resources.

Following our previous correspondence, the proposed airspace boundaries have been revised (i.e., truncated) to address airspace- and air traffic-related concerns presented by the Federal Aviation Administration (FAA). Enclosed Figures 1 through 3 depict the locations of the currently proposed military airspace establishment and modifications included under the Proposed Action. Together, these areas constitute the Area of Potential Effect (APE) for the undertaking. It is important to note that this proposed action *would involve airspace only* and does not include any project components that would touch or otherwise directly affect the ground or water surface.

The proposed action to be evaluated in the EIS constitutes an undertaking as defined in 36 CFR 800.16(y) and, therefore, in accordance with 36 Code of Federal Regulations (CFR) 800, Section 106 of the National Historic Preservation Act (NHPA), the National Guard Bureau (NGB) is requesting consultation with you regarding the Proposed Action. We request your concurrence with the determination of "No Historic Properties Affected" (36 CFR §800.4) regarding the proposed undertaking. The Proposed Action and potential cultural resources impacts identified in the enclosed Draft EIS are described in further detail below.

In support of the Oregon Air National Guard's (ANG's) 142d and 173d Fighter Wings, the Air Force and the NGB are proposing (Proposed Action) to expand, modify, and establish

air-to-air training airspace areas in four locations around the state: 1) proposed expansion of Warning Area 570 (W-570) to the west over the Pacific Ocean; 2) proposed establishment of the Eel Military Operations Area (MOA) directly underneath the existing Eel Air Traffic Control Assigned Area which is aligned north/south along the Oregon coast from approximately Astoria to Lincoln City and adjacent to W-570; 3) proposed establishment of the Redhawk MOA in north central Oregon roughly bounded by Highway 97/197 on the west, the towns of Wasco and Lexington on the north, US Highway 395 on the east, and US Highway 26 on the south; and 4) proposed expansion of the existing Juniper/Hart MOA Complex to the east approximately 20 miles which would extend from approximately Burns to Frenchglen in Oregon and to Big Mountain in northwestern Nevada.

In addition to the Proposed Action, three alternatives and the No-Action Alternative have also been analyzed. Alternative B includes the majority of airspace changes proposed for the Proposed Action; however, the Eel MOA would not be established. Alternative C includes the airspace changes proposed under the Proposed Action but the Redhawk MOA would not be established. Alternative D includes the airspace changes under the Proposed but would not include the eastward expansion of Juniper/Hart MOA Complex.

Subsurface artifacts or other intact cultural deposits would not be disturbed since there would be no ground-disturbing activities (e.g., construction or demolition) associated with any project components included in the Proposed Action. Consequently, the only potential effects of the Proposed Action on cultural resources underlying the affected or proposed airspaces would result from noise and/or noise generated vibrations, or the visual impact of military overflights within the affected and proposed airspace.

Under the Proposed Action, the floor of the proposed Eel MOA/ATCAA Complex and Redhawk MOA Complex would be established at 11,000 feet above mean sea level (MSL) (approximately 9,000 feet above ground level [AGL]), which would correlate with maximum noise levels between than 87 decibels (dB) and 90 dB at the ground surface. Consequently, there would be no potential for structural damage to historical structures located beneath this airspace complex, which can occur at approximately 130 dB. Under the Proposed Action, the floor of the existing Juniper Low MOA would be raised from 300 feet AGL to 500 feet AGL and the proposed Juniper East Low MOA would be established at 500 feet AGL. Based on the calculations presented in the Draft EIS, aircraft operations within the existing Juniper Low MOA and proposed Juniper East Low MOA would have the greatest potential to generate noise at levels high enough to cause vibration-related structural damage to historic structures. A sensitive receptor beneath an aircraft would be exposed to maximum noise levels of 116 dB. However, as described in Section 4.5, *Cultural Resources*, this noise level would not be great enough to cause vibration-related structural damage to historic structures. Therefore, the Draft EIS found that noise or vibration-related impacts to historic structures located beneath the existing Juniper Low MOA or proposed Juniper East Low MOA would not be expected under the Proposed Action.

Further, as described Section 4.3, *Land Use and Visual Resources* due to the relatively infrequent presence of aircraft within the APE and the infrequent and short-term nature of chaff and flare use, the Draft EIS found that impacts on aesthetic characteristics would not be considered significant.

As part of an effort to conduct early and continuous consultation, the Oregon Military Department and Oregon ANG, in collaboration with NGB, have conducted previous outreach via formal correspondence as well as telephone with ten potentially affected Native American tribes under Section 106 of the NHPA, as amended, and associated implementing regulations (36 CFR 800). The Native American tribes include the Burns Paiute Tribe, Confederated Tribes of Coos, Lower Umpqua and Siuslaw Indians, Coquille Indian Tribe, Cow Creek Band of Umpqua Tribe of Indians, Confederated Tribes of the Grand Ronde Community, Klamath Tribes, Confederated Tribes of the Siletz Indians, Summit Lake Paiute Tribe, Confederated Tribes of the Umatilla Indian Reservation, and the Confederated Tribes of the Warm Springs. A copy of correspondence with the Native American tribes is available upon request.

Based on noise level calculations for tribal lands beneath the affected and proposed airspaces as well as feedback received in response to outreach to Native American representatives, no adverse effect to cultural resources, historic structures, or Traditional Cultural Properties would be expected as a result of the implementation of the Proposed Action.

Please review this information and respond with comments within 30 days. If you have questions concerning the Proposed Action, please contact me at (240) 612-8855. Please forward any written comments to: Mr. Kevin Marek, NGB/A7AM, Shepperd Hall, 3501 Fetchet Avenue, Joint Base Andrews, MD 20762-5157, or by e-mail: kevin.marek@ang.af.mil. Upon written request, a copy of the Final EIS and/or Record of Decision (ROD) will be provided. Thank you for your assistance.

Sincerely

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KEVIN MAREK, REM
Environmental Planner NGB A7AM
Environmental Plans & Requirements Branch

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4. Draft EIS on CD

NATIONAL GUARD BUREAU
3501 FETCHET AVENUE
JOINT BASE ANDREWS MD 20762-5157

9 September 2015

NGB/A7AM

Ms. Robyn Thorson
U.S. Fish and Wildlife Service
Pacific Region 1
911 NE 11th Ave
Portland, OR 97232

Subject: Endangered Species Act Consultation for the Environmental Impact Statement for Proposed Establishment and Modification of Oregon Military Training Airspace

Dear Ms. Thorson

The National Guard Bureau (NGB) is preparing an Environmental Impact Statement (EIS) in accordance with the National Environmental Policy Act (NEPA) to evaluate the potential impacts associated with the proposed establishment and expansion of Special Use Airspace, i.e. the Proposed Action, over portions of Oregon and small areas over northwestern Nevada and southwestern Washington. The NGB is requesting your written concurrence by 9 Oct 2015 on our determinations of "*no effect"* and *"may affect but not likely to adversely affect"*, as described below.

In support of the Oregon Air National Guard's (ANG's) 142d and 173d Fighter Wings, the Air Force and the NGB are proposing (Proposed Action) to expand, modify, and establish air-to-air training airspace areas in four locations around the state: 1) proposed expansion of Warning Area 570 (W-570) to the west over the Pacific Ocean; 2) proposed establishment of the Eel MOA directly underneath the existing Eel Air Traffic Control Assigned Area which is aligned north/south along the Oregon coast from approximately Astoria to Lincoln City and adjacent to W-570; 3) proposed establishment of the Redhawk MOA in north central Oregon roughly bounded by Highway 97/197 on the west, the towns of Wasco and Lexington on the north, US Highway 395 on the east, and US Highway 26 on the south; and 4) proposed expansion of the existing Juniper/Hart MOA Complex to the east approximately 20 miles which would extend from approximately Burns to Frenchglen in Oregon and to Big Mountain in northwestern Nevada.

In addition to the Proposed Action, three alternatives and the No-Action Alternative have also been analyzed. Alternative B includes the majority of airspace changes proposed for the Proposed Action; however, the Eel MOA would not be established. Alternative C includes the airspace changes proposed under the Proposed Action but the Redhawk MOA would not be established. Alternative D includes the airspace changes under the Proposed but would not include the eastward expansion of Juniper/Hart MOA Complex.

The NGB sent a letter to you on 7 June 2013 as part of the scoping phase of the Environmental Impact Analysis Process (EIAP), requesting assistance in identifying any potential biological resources issues or reasonably foreseeable impacts associated with the Proposed Action. Mr. Ted Buerger (USFWS Oregon Fish and Wildlife Office) replied on 28 June 2013 with a letter identifying permit requirements and recommended restrictions for aircraft operations within the proposed Eel Military Operations Area (MOA) and Juniper East Low MOA. The NGB engaged the USFWS in additional discussion regarding the integration of NEPA and Section 7 consultation under the federal Endangered Species Act in April

2014. In May 2014 Mr. Larry Salata provided the necessary information to include in order to integrate NEPA and Section 7 consultation at 50 CFR 402.14(c).

Following our previous correspondence, the proposed airspace boundaries have been revised (i.e., truncated) to address airspace- and air traffic-related concerns presented by the Federal Aviation Administration (FAA). Enclosed Figures 1 through 3 depict the locations of the currently proposed military airspace establishment and modifications included under the Proposed Action. Together, these areas constitute the project area for the Proposed Action. It is important to note that this proposed action *would involve airspace only* and does not include any components that would touch or otherwise directly affect the ground or water surfaces. The Proposed Action and potential impacts to federally listed species identified in the enclosed Draft EIS are described in further detail below.

The NGB is requesting your written concurrence of our determinations of *"no effect"* and *"may affect, but is not likely to adversely affect"* regarding federally listed species as contained in the enclosed Draft EIS for the proposed Establishment and Modification of Oregon Military Training Airspace. Please refer to the Sections 3.4 and 4.4 of the Draft EIS for greater detail on the species and our analysis.

The NGB has determined that the proposed establishment and modification military training airspace would have "*no effect*" on the following species:

• Columbian white-tailed deer	*Odocoileus virginianus leucurus*	Endangered
• Marbled murrelet	*Brachyramphus marmoratus*	Threatened
• Northern spotted owl	*Strix occidentalis caurina*	Threatened
• Short-tailed albatross	*Phoebastria albatrus*	Endangered
• Red tree vole	*Arborimus longicaudus*	Candidate
• Washington ground squirrel	*Urocitellus washingtoni*	Candidate
• Western snowy plover	*Charadrius nivosus ssp. nivosus*	Threatened

Further, the NGB has determined that the establishment and modification military training airspace "*may affect, but is not likely to adversely affect*" the following species as the effects of this action are insignificant, discountable, or reduced to negligible levels through the implementation of special procedures described in Section 6, *Special Procedures* of the Draft EIS.

• Gray wolf	*Canis lupus*	Endangered
• Greater sage-grouse	*Centrocercus urophasianus*	Candidate
• Yellow-billed cuckoo	*Coccyzus americanus*	Threatened

Additionally, though bald eagles are no longer listed under the federal ESA, and golden eagles have never been federally listed as threatened or endangered, these species are still protected under the Bald and Golden Eagle Protection Act (BGEPA), Migratory Bird Treaty Act, and the Lacey Act. Although the Proposed Action is unlikely to have significant impacts on bald and golden eagles, the USFWS expressed concerns during the scoping process over the potential for noise-related impacts on nesting pairs of bald eagles. The Draft EIS incorporates the USFWS recommendations for avoiding flights below 1,000 feet above ground-level (AGL) over these sites during the nesting season. All airspace floors, with the exception of the proposed Juniper Low MOA and Juniper Low East MOA, would have minimum altitude limits for flights at 11,000 feet MSL which corresponds to approximately 4,500 feet AGL so there would be no potential for aircraft to be within 1,000 feet of a nest site. However, the minimum altitude limit for the Juniper Low MOA and Juniper East Low MOA would be 500 feet AGL under the Proposed Action, which would allow for an aircraft to potentially be within 1,000 feet of a nest site. Consequently, implementation of the Proposed Action would include special procedures during

nesting season (1 January – 15 August) to reduce potential impacts to bald and golden eagles in areas underlying the proposed Juniper Low MOA and Juniper East Low MOA. Further, the Oregon ANG would comply with all permit requirements and would consult with the USFWS on an annual basis to identify eagle-related avoidance areas during low-altitude training activities (see Section 6.0, *Special Procedures*).

The Draft EIS also contains information on the potential for bird aircraft strikes. Bird strikes may occur during any phase of flight but are most likely to occur during the take-off, initial climb, approach and landing phases due to the greater number of birds flying at lower altitudes. As there would be no net increase in total allocated flying hours the number of bird strikes would be expected to remain consistent. The existing and proposed airspace areas are located within the Pacific North American Flyway; therefore, the greatest potential for bird strikes under existing and proposed conditions would occur during spring and fall migrations, when the number of birds in the air column increases and birds are typically flying at higher altitudes. The ANG has developed the Avian Hazard Advisory System (AHAS) to address and mitigate in-flight bird collision risks. The AHAS includes a Bird Avoidance Model (BAM) used to generate projected and actual geospatial bird data for use in airspaces. The AHAS uses Geographic Information System (GIS) technology combined with data on bird habitat, migration, and breeding characteristics to create a visual tool for analyzing bird-aircraft collision risk. Additionally, each installation maintains and implements a Bird Aircraft Strike Hazard (BASH) Plan that outlines procedures to minimize bird and other wildlife strikes by aircraft. This information, and the effective application of associated planning and management tools, can reduce the likelihood of collisions.

We appreciate your thorough review and assistance in this consultation process as we are committed to the conservation of federally listed species occurring beneath the existing and proposed military training airspace. If you have questions concerning the Proposed Action, please contact me at (240) 612-8855. Please forward any written comments by 9 Oct to: Mr. Kevin Marek, NGB/A7AM, Shepperd Hall, 3501 Fetchet Avenue, Joint Base Andrews MD 20762-5157, or by email: kevin.p.marek.civ@mail.mil. Upon written request, a copy of the Final EIS and/or Record of Decision (ROD) will be provided. Thank you for your assistance.

Sincerely

MAREK.KEVIN.P.1230396570
Digitally signed by MAREK.KEVIN.P.1230396570
DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=USAF, cn=MAREK.KEVIN.P.1230396570
Date: 2015.09.09 13:54:10 -04'00'

KEVIN MAREK, REM
Environmental Planner

Attachments:

1. Previous Correspondence
2. Figures 1-3
3. County Species Lists
4. Notice of Availability for Draft EIS
5. Draft EIS

Oregon
Kate Brown, Governor

Parks and Recreation Department
State Historic Preservation Office
725 Summer St NE Ste C
Salem, OR 97301-1266
Phone (503) 986-0690
Fax (503) 986-0793
www.oregonheritage.org

October 29, 2015

Mr. Robert Dogan
NGB/A7AM Shepperd Hall
3501 Fetchet Ave
Joint Base Andrews, MD 20762-5157

RE: SHPO Case No. 13-0875
Airspace Establishment & Modification Over Oregon, Nevada & SW Washington
EIS/establish & expand special use area over portions of Oregon
Multiple legals, Various, Various County

Dear Mr. Dogan:

We have reviewed the Draft Environmental Impact Statement submitted for the project referenced above, and we concur that the Double "O" Ranch, listed in the National Register of Historic Places, is the only National Register-listed or eligible property within the Juniper Low and Juniper East Low MOA's. We would note in addition, that while it appears (based on provided maps) that the P Ranch & Landmark and Frenchglen Hotel, both listed in the National Register, are within the Juniper D MOA, both are located extremely close to the portion of Juniper D that is within the Juniper East Low MOA. We urge added caution when approaching operational floors in the vicinity of Frenchglen, Oregon to avoid effects to these resources as well. We concur with the finding of no adverse effect for the proposed project.

This letter refers to above-ground historic resources only. Comments pursuant to a review for archaeological resources, if applicable, will be sent separately. Unless there are changes to the project, this concludes the requirement for consultation with our office under Section 106 of the National Historic Preservation Act (per 36 CFR Part 800) for above-ground historic resources. Local regulations, if any, still apply and review under local ordinances may be required. Please feel free to contact me if you have any questions, comments or need additional assistance.

Sincerely,

Jason Allen, M.A.
Historic Preservation Specialist
(503) 986-0579
jason.allen@oregon.gov

NEVADA
STATE HISTORIC PRESERVATION OFFICE

Department of Conservation and Natural Resources

Brian Sandoval, Governor
Leo M. Drozdoff, P.E., Director
Rebecca L. Palmer, SHPO

November 12, 2015

Mr. Kevin P. Marek, R.E.M.
Environmental Planner, NGB A7AM
Environmental Plans & Requirements Branch
National Guard Bureau
3501 Fetchet Avenue
Joint Base Andrews, MD 20762-5157

Re: Section 106 Consultation for Proposed Oregon Airspace Initiative, Oregon Air National Guard (NGB/A7AM/UT2013-2749)

Dear Mr. Marek:

The Nevada State Historic Preservation Office (SHPO) acknowledges receipt of supporting documentation and request for consultation under the authority of Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended. The proposed undertaking, the Oregon Airspace Initiative, is the modification and addition to military training airspace--predominantly within close proximity to ANG flying units in Oregon, as well as over small areas of southwestern Washington and northwestern Nevada. The SHPO's authority is limited to portions of the undertaking occurring in airspace over Nevada.

The SHPO acknowledges that the National Guard Bureau (NGB) has undertaken its National Environmental Policy Act (NEPA) and NHPA compliance responsibilities in tandem. Consequently, the NGB provided the SHPO with a copy of the *Draft Environmental Impact Statement for Proposed Establishment and Modification of Oregon Military Airspace* (July, 2015) for review and comment. The DEIS was prepared with a high degree of care, and addresses the potential consequences of several alternatives: (1) the Proposed Action, (2) Alternative B: No Modifications to Eel ATCAA, (3) Alternative C: No Redhawk MOA Complex, (4) Alternative D: No Expansion of Juniper/Hart MOA Complex, and a (5) No Action Alternative.

The SHPO understands that the portions of the undertaking located in Nevada airspace are limited to the southernmost portion of the Hart D MOA [military operations area] and Hart E and Hart F MOAs. Existing and proposed airspace usage for the Juniper/Hart MOA complex, a portion of which includes Nevada airspace, appears in Table ES-3 (p. ES-10) of the DEIS. The Executive Summary characterizes effects of the proposed undertaking to cultural resources on the ground, which includes archaeological and architectural historic properties, as "no impacts or negligible adverse impacts" (ES-15). The proposed undertaking involves no ground-disturbing activity at all, and potential indirect effects will be limited to visual, auditory (noise), and atmospheric (vibration) effects of military overflights on architectural historic properties. However, the NGB cites a National Research Council/National Academic of Sciences study that limits potential damage to structural components of historic architectural resources to note that the flight activity proposed in Nevada airspace will occur at or above a minimum altitude of 11,000 feet MSL and will therefore not generate a maximum sound level sufficient to generate noise vibration.

The SHPO notes that Native American consultation for the undertaking included the Summit Lake Paiute Tribe. Also, at SHPO request, the NGB contacted the Reno-Sparks Indian Colony. The tribes expressed no concerns regarding "the Proposed Action, affected or proposed airspaces, or sacred sites or other cultural resources-related concerns" (p. 3-87).

On the basis of the information contained in the DEIS and associated correspondence, the SHPO concurs with the federal agency finding of effect (No Adverse Effect) for the Proposed Action alternative.

Should you have any questions concerning this correspondence, please do not hesitate to contact me at 775.684.3437 or via e-mail at jernstein@shpo.nv.gov.

Sincerely,

Julie H. Ernstein, Ph.D., RPA
Deputy State Historic Preservation Officer

20632 & 20687

Allyson Brooks Ph.D., Director
State Historic Preservation Officer

October 28, 2015

Mr. Kevin Marek
NGB/A7AM
Shepperd Hall
3501 Fetchet Avenue
Joint Base Andrews, Maryland 20762-5157

In future correspondence please refer to:
Log: 102815-10-DOD
Re: Oregon ANG Airspace Establishment & Modification Project

Dear Mr. Marek:

The Washington State Department of Archaeology and Historic Preservation (DAHP) is in receipt of your letter and the Draft Environmental Impact Statement regarding the above referenced proposal. From your letter, we understand that the Oregon Air National Guard is proposing to expand, modify, and establish air to air training areas in four locations around Oregon plus portions of Washington, Nevada and California. In response, DAHP staff have reviewed your letter and the DEIS. As a result of our review we are providing the following comments and recommendations for your consideration:

1) APE Definition-Based upon our review of figure 4.2-1 in the DEIS, we understand that the southern tier of Pacific County is included in the EEL MOA. However, we recommend preparation of a map specifically titled as the Area of Potential Effects for cultural resources. We also recommend an APE map at a larger scale (at least for the Washington portion of the project) so we can get a more specific idea of the communities (i.e. Long Beach, Ilwaco, Chinook, etc.) that could be affected.
2) Tribal Consultation and TCPs-We recommend clarification of the consultation with Tribes within the APE in addition to description of the level of effort to identify traditional cultural properties within the APE. We have reviewed the matrix of tribal contact in Appendix H but the table is not clear about the nature or content of any feedback from tribes and if any TCPs have been identified.
3) Flight Patterns from Portland ANG Station-We understand that training flights will begin and end at the Oregon Air National Guard facility near Portland International Airport. However, the APE does not include flight patterns around the airport where decibel levels at take-offs and landings could be much higher than in EEL MOA. Our concern is the impact of noise levels at the Vancouver National Historic Reserve (VNHR) and the visitor experience at this National Park Service site. Therefore, we recommend that the APE be expanded to include areas surrounding the airport that could experience a change in noise levels and/or duration levels.

Thank you for the opportunity to review and comment. Should you have any questions, please feel free to contact me.

Sincerely,

Greg Griffith
Deputy State Historic Preservation Officer
(360) 586-3073
Greg.griffith@dahp.wa.gov

c: Oregon SHPO

United States Department of the Interior

FISH AND WILDLIFE SERVICE

Bend Field Office
63095 Deschutes Market Road
Bend, Oregon 97701
(541) 383-7146 FAX: (541) 383-7638

File Name: National Guard Bureau Airspace Training.doc
Tracking Numbers: 16-0190 and 15-0796
TAILS: 01EOFW00-2016-TA-0140

February 8, 2016

Kevin Marek, NGB/A7AM
Shepperd Hall
3501 Fetchet Avenue
Joint Base Andrews, MD 20762-5157

Re: Environmental Impact for Proposed Establishment and Modification of Oregon Military Training Airspace

Dear Mr. Marek:

The U.S. Fish and Wildlife Service Bend Field Office (Service) received your comment solicitation letter on December 10, 2015 regarding the preparation of an Environmental Impact Statement (EIS) to evaluate the potential impacts associated with the proposed establishment and expansion of Special Use Airspace, over portions of Oregon and small areas over northwestern Nevada and southwestern Washington. The Service provided comments during public scoping on September 8, 2015. We offer the following comments for use in finalizing the environmental impact analysis associated with this proposed action.

In your letter dated December 10, 2015, the National Guard Bureau (NGB) determined that the proposed action would have "no effect" on the following Endangered Species Act (ESA) listed species: Columbian white-tailed deer (*Odocoilleus virginianus leucurus*), marbled murrelet (*Brachyramphus marmoratus*), northern spotted owl (*Strix occidntalis caurina*), short-tailed albatross (*Phoebastria albatrus*), red tree vole (*Arborimus longicaudus*), Washington ground squirrel (*Urocitellus washingtoni*), and western snowy plover (*Charadrius nivosus ssp. nivosus*). Your determination that the action will have no effect on these listed species rests with the federal action agency. The Service has no regulatory or statutory authority for concurring with "no effect" determinations, and no consultation with the Service is required. We recommend that the federal action agency document their analyses, and maintain that documentation as part of their files.

The NGB also determined that the proposed establishment and modification of military training airspace "may affect, but is not likely to adversely affect" the gray wolf (*Canis lupus*) and yellow-billed cuckoo (*Coccyzus americanus*) within areas identified within the Juniper/Hart MOA Complex allowing a minimum altitude flight limit of 500 feet above ground level (AGL).

Sufficient information has been provided to determine the effects of the action to federally listed species, and to conclude whether the action is likely to adversely affect those species. Our concurrence is based on information included in the EIS, complete and successful implementation of the conservation measures described in the EIS, and the following rationale:

1. There are no known gray wolf territories within the Juniper/Hart MOA Complex area. Further, if wolves do move into this area, the proposed flight activities in this airspace are not expected to have any substantive effect on them. Wolves are highly adaptable, resilient animals. There is no evidence that they are sensitive to aerial activities occurring overhead, unless those activities involve direct pursuit of individuals by flying right at them near ground level (e.g., helicopter capture activities). In a recent incident in northeast Oregon, an Oregon Department of Fish and Wildlife crew flew low overhead while multiple wolves were engaged in pursuing an elk. The presence of the plane circling directly over them did not alter the wolves' hunting behavior.

2. Juniper/Hart MOA Complex does not provide both riparian woodlands greater than 81 ha in size and dynamic riverine processes necessary to create broad complex floodplains for yellow-billed cuckoo breeding and foraging. Therefore, the Juniper/Hart MOA Complex does not provide the primary constituent elements for yellow-billed cuckoo breeding or foraging.

3. Disturbance to individual yellow-billed cuckoo's from low level flight (below 1,000 feet AGL) will be limited to the occasional individual dispersing through the Juniper/Hart MOA Complex.

The Service recognizes the NGB's conservation efforts to reduce the threat of wildfire and/or noise to the greater sage-grouse (*Centrocercus urophasianus*) and golden eagle (*Aquila chrysaetos*) within areas proposed for low-altitude training activities (EIS, p. 4-66 and 4-97). The proposed conservation effort will require annual coordination between Oregon Air National Guard and the Service to identify potential changes to the eagle avoidance areas during low-altitude training activities.

This concludes informal consultation pursuant to the regulations implementing the Act (50 CFR 402.13). This action should be reanalyzed if new information reveals effects of the action that may affect listed species or critical habitat in a manner, or to an extent, not considered in this consultation. This action should also be reanalyzed if subsequently modified in a manner that causes an effect to a listed species or critical habitat that was not considered in this consultation, and/or a new species is listed or critical habitat is designated that may be affected by the action.

If you have any questions regarding the Service's comments, please contact Jerry Cordova or me at the Bend Field Office at 541/383-7146.

Sincerely,

Bridget Moran
Acting Field Supervisor

APPENDIX C

DRAFT EIS COMMENTS AND RESPONSES

Appendix C
Draft EIS Comments and Responses

Introduction

The Oregon Air National Guard (ANG), in coordination with the Oregon Military Department (OMD), conducted five scoping meetings in the towns of Tillamook, Astoria, Condon, Burns, and Prineville, Oregon from 17 through 21 June 2013. During this process scoping comments were received which helped shape the content of the analysis in the Draft Environmental Impact Statement (EIS). The publication of the Draft EIS was announced with a Notice of Availability (NOA), which appeared in the *Federal Register* on 24 July 2015, as well as public notices in *The Oregonian*, which appeared on 26 July and 10 August 2015. The Oregon ANG and OMD also provided press releases to other regional media outlets announcing the availability of the Draft EIS. Public and agency representatives were encouraged to provide written and oral comments during the public hearings (held in the same towns are the 2013 scoping meetings from 11 through 18 August 2015), or mail written comments on or before the comment period closing date of September 8, 2015. This appendix contains written comments on the Draft EIS received from federal, state, and local agencies, the general public, and Native Americans during the 60-day public comment period. Oral comments were also received during the public hearings; however, these comments were informal in nature and overlapped with written comments provided on the Draft EIS. All public comments (i.e., subject matter) have been fully addressed as required by Council on Environmental Quality (CEQ) regulations.

A broad variety of written comments on the Draft EIS were received, including 13 comments regarding Biological Resources, 12 comments regarding Land Use, and 14 comments regarding Airspace Management, as well as a number of comments addressing other resources areas. While all comments submitted were fully considered, only substantive comments were carried forward and responded to in this appendix. Substantive comments were addressed in a collective fashion in order to harmonize interpretation of the inputs and address the inputs in a reasonably efficient manner. Non-substantive comments – which were not responded to directly – are generally considered those comments that express a conclusion, an opinion, or a vote for or against the proposal itself, or some aspect of it; that only state a position for or against a particular alternative; or that otherwise state a personal

preference or opinion. Public and agency comments received were taken into consideration by the Air Force in its decision-making process. The following summarizes the Comment and Response Process.

Comment Receipt: Comments on the Draft EIS included written correspondence via U.S. Mail (letters), faxes, or emails, and oral testimony received during the public comment period. All written comments received during that period are included in the *Comments Received* section of Appendix B and a copy of the public hearing transcripts is also provided.

Comment Review: In accordance with 40 Code of Federal Regulations (CFR) 1503.4, comments were assessed and considered as follows:

- Each letter or e-mail was assigned a unique identification number. All submitted comments were then carefully reviewed.
- Within each comment letter or e-mail, substantive comments were identified and marked with brackets. Three criteria were used for determining substantive comments:
    1. The Proposed Action, conditions/location of an alternative, or other components of the Proposed Action was questioned.
    2. The methodology of the EIS (analysis and/or results) was questioned.
    3. The use, adequacy, or accuracy of data was questioned.
- All comments submitted were reviewed. In some cases, comments addressing similar issues were assigned the same response, or referred to responses provided to other comments.

Individually bracketed comments were assigned a number and assigned an appropriate response. These responses are organized by the primary resource area they address and consecutively by number. The responses to comments appear in the *Comment Responses* section of Appendix C.

Locating Comments: A directory begins on Page C-4 to locate commenters' names. As noted on the public displays, sign-in cards, comment forms, and copies of the Draft EIS and Executive Summary, providing their name in the EIS process meant that the commenter understood that their name and comment would be made a part of the public record for this EIS. An identification number was assigned to each comment letter and is labeled on the letter. All comments are organized according to these comment numbers in the *Comments Received* section.

The directory provides an alphabetical listing by last name of those who commented as well as a comment identification number. This is the number that was assigned to each comment letter.

Locating Responses to Comments: Individual responses to comments immediately follow the relevant comment letter. All substantive comments within each comment letter and oral comments from public hearings were assigned a comment response code, which are printed next to the brackets in the right margin of the page. Every bracketed comment has a corresponding response, intended to be read along with the comment it addresses.

The responses refer to both the Draft EIS and Final EIS documents, as appropriate. For example, if the commenter suggests a deficiency in the Draft EIS document, the response may refer to the Draft EIS for clarification. If the Final EIS includes amended information, including mitigations, the reader will be directed to that section of the Final EIS.

Public and agency involvement is an important part of the NEPA process, and all comments, whether bracketed or not, have been taken into consideration by the Air Force in its decision-making process.

Table of Contents

Directory for Individual Comments

United States Department of the Interior

OFFICE OF THE SECRETARY
Office of Environmental Policy and Compliance
620 SW Main Street, Suite 201
Portland, Oregon 97205-3026

IN REPLY REFER TO:
9043.1
ER15/0419

September 8, 2015

Kevin Marek, NGB/A7AM
Shepperd Hall
3501 Fetchet Avenue
Joint Base Andrews, MD 20762-5157

Dear Mr. Marek:

The U.S. Department of the Interior (Department) has reviewed the Draft Environmental Impact Statement (DEIS) for the Proposed Establishment and Modification of Oregon Military Training Airspace. The U.S. Fish and Wildlife Service (Service), one of the Department's component bureaus, provided comments during the scoping for the DEIS. While much of the information provided in the scoping for this document was incorporated into the DEIS, we still have concerns over the impact of low-level flights in the Juniper Low Military Operations Area (MOA) and, particularly, the proposed Juniper East Low MOA. We offer the following comments for use in developing the FEIS for this project.

Greater Sage-Grouse and Wildfire Threat

Greater sage-grouse (*Centrocercus urophasianus*) (sage-grouse) depend on a variety of shrub-steppe habitats throughout their life cycle and are considered obligate users of several species of sagebrush (e.g., *Artemisia tridentata* ssp. *wyomingensis* [Wyoming big sagebrush], *A. t.* ssp. *vaseyana* [mountain big sagebrush], and *A. t.* spp. *tridentata* [basin big sagebrush]). The primary threat to sage-grouse throughout the Proposed Action area is habitat fragmentation resulting from wildfire and the invasive annual grass conversion that often occurs after wildfire in low elevation sagebrush habitats.

DOI (Milchak) -1

Much of the area covered by the Proposed Action is occupied sage-grouse habitat and is in varying condition, but there are large areas that contain high levels of cheatgrass (*Bromus tectorum*) either in the understory of the sagebrush communities or in cheatgrass monocultures. Cheatgrass is an invasive annual grass that is found throughout much of our western rangelands; it outcompetes beneficial understory plant species and can dramatically alter fire ecology. The dominant species of sagebrush found in the action area must regenerate from seed if it is killed by fire. Cheatgrass is often able to take advantage of site resources earlier than sagebrush and other desirable perennial plant species, and thus it can dominate a site after a wildfire occurs. Sites dominated by annual grasses are unsuitable for sage-grouse. In addition, the continuous

fine fuel load tends to burn much more frequently, making it nearly impossible for sagebrush and other perennials to become reestablished.

In 2012, three large wildfires consumed nearly 10 percent of core sage-grouse habitat in Oregon. The fires burned through a variety of habitats in a wide range of conditions, but one of the primary drivers for these large fires was an increase in fine fuels (i.e., cheatgrass or other invasive annual grasses found throughout the sagebrush steppe). Similar large-scale losses occurred in Oregon in 2014 and along the Oregon/Idaho border in 2015. The DEIS dismisses information linking flare use to fires; however, the national fire occurrence database does not differentiate fires caused by flares (see page 3-110).

DOI (Milchak) -1 (cont.)

In the DEIS, the Oregon Air National Guard (Oregon ANG) states that "*Oregon ANG would restrict the use of flares in affected or proposed airspaces when the NFDRS rating rises to the level of extreme.*" The Department recognizes that the overall risk of wildfire from flare use is very low; however, due to the change in on-the-ground fuel conditions (especially increased concentrations of fine fuels), the remote location, the overall distance from fire-fighting resources, and the length of time a fire may burn prior to being reported, the potential does exist to lose sage-grouse habitat to accidental flare fires. For the FEIS, the Department recommends that the Oregon Air National Guard (ANG) analyze and address whether the wildfire risk associated with flare use would be reduced if the Oregon ANG restricted the use of flares within the proposed airspace when the NFDRS rating rises to the level of *High*, rather than *Extreme.*

Greater Sage-Grouse and Noise Threat

Male sage-grouse depend on acoustical signals to attract females to leks. If noise interferes with mating displays, and thereby female attendance, then males will not be drawn to leks, and the leks will eventually become inactive.

> The proposed action states: *Additionally, only 35 percent of those hours would be flown below 1,000 feet AGL. Consequently, maximum noise events resulting from direct aircraft overflights would be infrequent and of short duration. Additionally, in order to avoid impacts to the greater sage-grouse leks (i.e., aggregations of breeding males); the Oregon ANG would avoid greater sage-grouse core areas to the maximum extent practicable during the breeding season (i.e., 1 March to 31 May; Harrell 2008). Further, in the event that the Oregon ANG were to activate airspace over these core areas during the breeding season, flight altitudes would be restricted to 1,000 feet AGL or above over core areas within the Juniper Low MOAs, reducing the potential maximum exposure. Consequently, the Proposed Action may affect, but is not likely to adversely affect the greater sage-grouse.*

DOI (Milchak) -2

For the FEIS, the Department recommends that the Oregon ANG analyze the benefits associated with adding low density habitats, as identified by the Oregon Department of Fish and Wildlife in their *Greater Sage-Grouse Conservation Assessment and Strategy for Oregon* (Hagen 2011, beginning on page 80), to the 1,000 feet AGL restriction during breeding season to further avoid disturbance to lekking birds. As of 2014, there are approximately 51 occupied or occupied pending sage-grouse leks within the Juniper Low MOA. Of those, approximately 21 lie outside

of mapped core sage-grouse habitats. By adding mapped low density habitats, the area Oregon ANG operations would avoid all but two of these leks.

DOI (Milchak) -2 (cont.)

Golden Eagles and Noise/Disturbance Threat

Because management buffers have not been established for golden eagles (*Aquila chrysaetos*), the Service is applying the bald eagle (*Haliaeetus leucocephalus*) management guidelines. While there is little published empirical data on the impact of potentially-disturbing activities to golden eagles, the evidence suggests that golden eagles are more sensitive to disturbance than bald eagles. Although the Oregon ANG used the 1,000-foot bald eagle guidance buffer in the DEIS analysis, the Department is concerned that the Proposed Action is likely to result in disturbance to an unknown number of nesting golden eagles, especially during the early courtship and nesting season. Local golden eagle populations may indeed habituate to low-level overflights across the area in the long term, but, intense and sudden loud noise such as an F-15 flying over nesting cliffs at 500 feet will likely cause a reaction from some nesting golden eagles. Therefore, the Department recommends the Oregon ANG seek a programmatic eagle take permit from the Service for disturbance to golden eagles unless additional avoidance and minimization measures are adopted that make the risk of nest disturbance unlikely from the proposed activity. If Oregon ANG applies for a permit, then appropriate avoidance, minimization, and monitoring procedures would be a part of permit development.

As noted on pages 4-69 and 6-5 in the DEIS, the Oregon ANG has proposed three mitigation measures. Under the current regulations for the Bald and Golden Eagle Protection Act (Eagle Act), the Service has a threshold of "zero" for golden eagle take, including disturbance. Take occurring under an eagle permit would need to be mitigated in kind (i.e., loss of a bird would require conservation of a bird), and various mechanisms are available to achieve this mitigation. Therefore, the Department views the proposed mitigation in the DEIS as avoidance and minimization measures for take as opposed to compensatory mitigation that would meet the standards for permit issuance under the Eagle Act. While the intent of these measures is appropriate to minimize impacts, the future availability of annual monitoring data is uncertain, which means the measures might be unachievable. The Oregon Eagle Foundation, partially supported by the Service, recently completed five years of statewide golden eagle nest monitoring. Ongoing monitoring is not funded or planned. Much of the area in the proposed Juniper East Low MOA has been identified as a potential intensive monitoring area due to its long-term history of monitoring (primarily through Malheur National Wildlife Refuge personnel); however, there are no current commitments to continue such monitoring. Due to the uncertainty of providing annual nest status information, it will be very difficult to plan avoidance of specific nests. Therefore, avoidance could only be attained, and only in part, by assuming *all* nests are active and following the first measure to "establish buffer areas from surface to 1,000 feet AGL with a radius of 0.25 miles from mapped bald and golden eagle nests, and refrain from flying within these buffers from 1 January to 15 August." Upon application of these measures, the Service may be able to recommend that a permit is unnecessary.

DOI (Milchak) -3

Additional Comments

- The proper scientific name for western snowy plover is *Charadrius nivosus nivosus*. This should be corrected in the FEIS. DOI (Milchak) -4

- Table 3.3-2, on page 3-50, fails to include the Oregon Coast National Wildlife Refuge Complex. This should be corrected in the FEIS. DOI (Milchak) -5

- The DEIS states that impacts to wildlife will be short term and most animals will eventually acclimate to low-altitude flight activities (pages 4-66 through 4-69). The Department does not agree with this assertion. Wildlife varies tremendously in its tolerance for, and ability to acclimate to, anthropogenic disturbance such as an F-15 maneuvering at 250 knots and 500 feet AGL. While we recognize that the increased airspace will disperse disturbance across a greater area as the actual number of sorties or flight hours will remain the same, we recommend further avoidance of important habitats at critical times of the year, particularly during the lekking and nesting season for sage-grouse, any time the established fire danger is *High*, and during the nesting season for golden eagles, as noted above. DOI (Milchak) -6

- The DEIS states that the Juniper and Hart Mountain MOA Complex airspace has been expanded in the past to similar lateral dimensions, on a temporary basis, to support Sentry Eagle. The DEIS states that these temporary expansions are coordinated with the Federal Aviation Administration. Further expansion of the airspace, even temporarily, could have significant impacts to wildlife, particularly for migratory birds and waterfowl, especially further eastward expansion of Juniper and Hart Mountain MOA Complex towards Malheur Lake. DOI (Milchak) -7

We appreciate the opportunity to review and comment on the DEIS. If you have any questions on our comments please contact Mr. Jeff Everett, U.S. Fish and Wildlife Service, at (503) 231-6952. If you have any other questions or concerns, please feel free to contact me at (503) 326-2489.

Sincerely,

Allison O'Brien

Allison O'Brien
Regional Environmental Officer

Literature Cited

Hagen, C. 2011. Greater sage-grouse conservation assessment and strategy for Oregon: a plan to maintain and enhance populations and habitat. Oregon Department of Fish and Wildlife. Bend, Oregon. 207 pp.

FEDERAL GOVERNMENT AGENCIES

DOI (Milchak)-1: See Comment Response ODFW-1. A review of the fire history data in existing flare use areas is documented in Technical Report on Chaff and Flares, Technical Report No. 6, Flare Fire Risk Assessment (U.S. Air Force [USAF] 1995). The flare training areas examined covered a range of environments, both co-logically and in terms of management and regulations. In most areas, the percentage of fires caused by flares was unknown but usually considered to be low to nonexistent. Fires caused by training operations occur in both dry and temperate or humid environments and can occur during times of relatively low fire hazard conditions if ignition sources are present. In response to this comment, the Air National Guard (ANG) has reviewed publicly available data, including observed wildfire danger data maintained by the Wildland Fire Assessment System (2015), maintained by the U.S. Forest Service (USFS) Rock Mountain Research Station. Further, the ANG has prepared Appendix I, *Wildfire Hazard Analysis* to further assess the need for and utility of additional restrictions on flare use. This analysis found that the potential for wildfire associated with flare use would be negligible under the implementation of the Proposed Action. Additional restrictions on flare use based on wildfire danger rating would not further reduce less than significant impacts associated with wildfire risk and would limit the ability of the Oregon ANG to perform realistic training operations, such that the Proposed Action would not meet its intended purpose and need described in Section 1.5, *Purpose and Need for the Proposed Action*. Therefore, the special procedures associated with the National Fire Danger Rating System previously listed in the Draft EIS have been removed from Section 4.7., Section 4.8., and Section 6 of the Final EIS. However, in order to minimize wildfire risks while also accomplishing mission objectives, the Oregon ANG will continue to prohibit flare use below 5,000 feet above ground level (AGL) per Air Force Instruction (AFI) 11-2F-15V3 KF CH8.

DOI (Milchak)-2: See Comment Response Oregon Natural Desert Association (ONDA)-5. As described in *Greater Sage-Grouse Conservation Assessment and Strategy for Oregon: A Plan to Maintain and Enhance Populations and Habitat* (Oregon Department of Fish and Wildlife [ODFW] 2011) and summarized in Section 3.4 and Section 4.4, *Biological Resources*, "Core Areas" are high priority locations for protection from habitat loss and fragmentation, while "Low Density Areas" are areas for which such losses may be of less consequence. Low Density Areas beneath the proposed Juniper East Low Military Operations Area (MOA) expansion area would include less than 20 square miles. The majority of the Low Density Habitat identified in *Greater Sage-Grouse Conservation Assessment and Strategy for Oregon: A Plan to Maintain and Enhance Populations and Habitat* (ODFW 2011) is located under the existing Juniper Low MOA. Implementation of the Proposed Action would further reduce annual flight operations

over these areas from approximately 243 hours to 204 hours[1]. Consequently, the Proposed Action would not have significant impacts on the greater sage-grouse (See Table 4.2-1 in Section 4.2, *Noise* and Appendix E, *Noise*).

DOI (Milchak)-3: To address U.S. Fish and Wildlife (USFWS) concerns, special procedures were developed to avoid disturbances of bald and golden eagles. These procedures, which are described in Section 4.4, *Biological Resources* and Section 6, *Special Procedures*, include the establishment of seasonal buffer areas from the ground surface to 1,000 feet AGL within a radius of 0.25 miles from mapped bald and golden eagle nests. Flight operations would not occur within these buffer areas from January 1 to August 15. The Oregon ANG would assume that all mapped nests depicted in Figure 3.4-2 of the Final Environmental Impact Statement (EIS) are active and would follow all special procedures to avoid these nests. The Oregon ANG will coordinate annually with the USFWS to update the nesting buffer areas and to revise avoidance areas for bald and golden eagles beneath the Juniper Low MOA.

Consultation with the USFWS has completed. USFWS concurrence letter is located in Appendix B, *Public Involvement and Agency Coordination*. However, given the implementation of the special procedures described in Section 4.4, *Biological Resources* Section 6, *Special Procedures* and clarified here, the National Guard Bureau (NGB) does not anticipate seeking a programmatic eagle take permit.

DOI (Milchak)-4: ***The Final EIS has been clarified as a result of this comment.*** The correct scientific name for western snowy plover was confirmed and revised globally throughout Final EIS, including within Section 3.4 and Section 4.4, *Biological Resources.*

DOI (Milchak)-5: ***The Final EIS has been clarified as a result of this comment.*** The Oregon Coast National Wildlife Refuge (NWR) Complex consists of six NWRs along the Oregon Coast, including Three Arch Rocks, Oregon Islands, Cape Meares, Bandon Marsh, Nestucca Bay, and Siletz Bay. Appendix G, *Land Use and Land Management* specifically describes Oregon Island, Cape Meares, Nestucca Bay, and Siletz Bay NWRs in detail. These areas are also shown in Figure 3.3-1 within Section 3.3, *Land Use and Visual Resources*. The Final EIS does not describe Bandon Marsh as it is not located beneath the footprint of the proposed Eel MOA Complex. The Oregon Coast National Wildlife Refuge Complex, including Three Arch Rocks was identified specifically by name in the Final EIS (refer to Table 3.3-1 in the Final EIS and Appendix G, *Land Use and Land Management*).

[1] Total number of flight hours in Juniper Low and the proposed Juniper East Low MOA is not additive. Each MOA is assessed separately for impact. The hours provided in the comment responses and in Table 2-3 of the Final EIS, reflect the projected actual numbers within the proposed airspace.

DOI (Milchak)-6: Refer to Comment Responses DOI (Milchak)-1, DOI (Milchak)-2, and DOI (Milchak)-3.

DOI (Milchak)-7: The proposed airspace would not be expanded beyond the footprint described in Section 2, *Description of Proposed Action and Alternatives.*

United States Department of the Interior

OFFICE OF THE SECRETARY
Office of Environmental Policy and Compliance
620 SW Main Street, Suite 201
Portland, Oregon 97205-3026

IN REPLY REFER TO:
9043.1
ER15/0419

September 11, 2015

Kevin Marek, NGB/A7AM
Shepperd Hall
3501 Fetchet Avenue
Joint Base Andrews, MD 20762-5157

Dear Mr. Marek:

On September 8, 2015, the U.S. Department of the Interior (Department) submitted comments on the Draft Environmental Impact Statement (DEIS) for the Proposed Establishment and Modification of Oregon Military Training Airspace. After additional review of the DEIS, we are providing supplemental comments, because the Proposed Action area might have impacts on several parks managed by the National Park Service (NPS), one of the Department's component bureaus.

National Park System units within in the vicinity of the Proposed Action area include Lewis and Clark National Historical Park, John Day Fossil Beds National Monument, Oregon Caves National Monument, and Crater Lake National Park. The proposal specifically includes additions to existing airspace and new airspace located over John Day Fossil Beds National Monument, as well as Lewis and Clark National Historic Trail, Oregon National Historic Trail, and California National Historic Trail. The Department is concerned with the potential of the proposed actions to adversely affect soundscapes and visitor experience. We offer the following supplemental comments for use in developing the FEIS for this project.

Lewis and Clark National Historic Trail

The Proposed Eel Military Operations Area (MOA) and Eel High Air Traffic Control Assigned Airspace (ATCAA), Eel A and Eel B, are located along the Lewis and Clark National Historic Trail (L&C Trail). Congress established the L&C Trail in an amendment to the National Trails System Act in 1978 [16 U.S.C. § 1244(a)(6)]. The NPS administers the L&C Trail and is charged under this act with the identification and protection of the historic route, remnants, and artifacts of the Lewis and Clark Expedition for public use and enjoyment.

DOI (O'Brien) -1

The L&C Trail extends from Wood River, Illinois to the mouth of the Columbia River in Oregon, following the outbound and inbound routes of the Lewis and Clark Expedition. In the project area, the Corps of Discovery (Corps) explored both the north and south shores of the

Columbia River estuary, around Young's Bay, up the present Lewis and Clark River, and along the Pacific Coast. The Corps built a fortification and quarters named Fort Clatsop with the aid of local tribes to spend the winter of 1805-1806. Fort Clatsop is memorialized at present day Lewis and Clark National Historical Park (LEWI).

On page 3-44, in Figure 3.3-2, the legend lists "Historic and Senic [sic] Trail" under "Sensitive Land Uses and Visual Resources." However, the L&C Trail is not identified on the map. This omission should be corrected in the FEIS. If GIS data is needed, please contact Rachel Daniels at rachel_daniels@nps.gov or (402) 661-1934.

DOI (O'Brien) -1 (cont.)

On page 3-45, in Table 3.3-1, National Historic Trails are not listed in the Sensitive Land Use and Visual Resource Areas beneath the Proposed Eel MOA/ATCAA table. This omission should be corrected and the L&C Trail should be listed in this table in the FEIS.

According to the DEIS, the noise generated by aircraft flights appears to be the primary impact that will affect resources and visitor experiences at L&C Trail and LEWI. Table 4.2-1 estimates that noise level thresholds in Eel A and Eel B may reach 65 dB SEL during single events at a rate of 0.4 per day. Although this impact is less than significant, it is important to acknowledge and mitigate, if possible.

Soundscapes and Visitor Experience

The NPS manages, protects, and restores the acoustic and photic resources in all units of the National Park System. The NPS mission to conserve park resources and values unimpaired is a different standard than significance as defined by the Federal Aviation Administration (FAA) and other agencies. In recognition of the agencies' differences in mission and acknowledgement that special consideration needs to be given to the evaluation of noise impacts on noise sensitive areas, it is imperative to provide relevant new information in the FEIS for park managers to be able characterize the noise impacts from the proposed action and alternatives. Only then can NPS make determinations about potential or actual external impacts to park resources, values, and visitor experience.

DOI (O'Brien) -2

The noise analysis in the DEIS does not fully characterize the effects of the proposed action on visitors to units of the National Park System. Given the size and configuration of the proposed MOAs, as well as the sound levels generated by the aircraft using the MOAs, it is likely that most of the annual operations would be audible within national park units in Oregon.

American National Standards Institute (ANSI) S12.9, "Quantities and Procedures for Description and Measurement of Environmental Sound – Part 4: Noise Assessment and Prediction of Long-term Community Response," details a methodology for evaluating community response to noise. The method described in this standard is based on the Schultz curve for community response and provides the estimated percentage of a population that would be highly annoyed as a function of adjusted day-night sound level.

In quiet rural settings where there is a greater expectation for, and value placed on, peace and quiet, the method described in ANSI 12.9 / Part 4 adjusts the sound level input up by 10 dB. In

many units of the national park system there is a greater expectation of quieter conditions, which would therefore merit application of the 10 dB increase. John Day Fossil Beds National Monument is a particularly quiet park unit located within the area of potential effect. It is far from urban, industrial or transportation sound sources and is a place where visitors have secluded opportunities to experience natural sounds in an unimpaired condition. The sounds of civilization are generally confined to developed areas and specific hours of the day. Any addition to the ambient sounds levels from military overflights could unacceptably impact visitor experience, wildlife behaviors and the overall acoustic environment of the park.

DOI (O'Brien) -2 (cont.)

The noise analysis in the FEIS should incorporate the methodology provided in ANSI 12.9 / Part 4, including application of a 10 dB increase to estimated sound levels, in order to evaluate the environmental consequences of the proposed action specifically on park visitors, and to better support the conclusions reached in the DEIS.

Oregon and California National Historic Trails (NHT)

Although the Oregon National Historic Trail and the California National Historic Trail may be adversely affected by the proposed undertaking, the DEIS does not address the potential effects on cultural resources associated with these NHT resources, and fails to recognize that the Oregon NHT is within the area of potential effect. This omission should be corrected in the FEIS.

The Oregon NHT runs roughly east-west through the greater northern half of the project area, but is crossed specifically by the Redhawk A MOA/ATCAA, Redhawk B MOA/ATCAA, and the Redhawk C MOA/ATCAA. The Oregon NHT and the cultural resources associated with it are afforded consideration under the National Historic Preservation Act (NHPA), and given additional protection under the National Trails System Act (NTSA). The FEIS should provide further analysis to consider these resources in order to adequately consider the potential project effects on the Oregon National Historic Trail.

DOI (O'Brien) -3

The California NHT runs roughly east-west through the southern portion of the project area, but is crossed specifically by the Hart E MOA and the Hart F MOA. The California NHT and the cultural resources associated with it are afforded consideration under the National Historic Preservation Act (NHPA), and given additional protection under the National Trails System Act (NTSA). The FEIS should provide further information about the potential project effects on the California National Historic Trail.

NHTs are cultural landscapes comprised of physical remnants, viewsheds, and soundscapes. The analysis and discussion of potential project effects on NHTs should clearly address each of these three attributes.

Also, for future reference, the proposed Redhawk MOA/ATCAA (A, B, and C) project areas are also in the vicinity of the routes that are under consideration for possible addition to the existing NHTs.

Additional Comments

- On page 3-79, line 29, in the phrase "significant persons in or past", "or" should be changed to "the" or "our". DOI (O'Brien) -4

- On page 3-79, lines 4-8, the text reads, "Cultural resources represent and document activities, accomplishments, and traditions of previous civilizations and link current and former inhabitants of an area."

  The text is problematic because, in reality, defined cultural resources are not limited to representations of "previous civilizations." In the FEIS, the definition of cultural resources should be defined more correctly as "physical evidence or place of past human activity: site, object, landscape, structure; or a site, structure, landscape, object or natural feature of significance to a group of people traditionally associated with it." DOI (O'Brien) -5

We appreciate the opportunity to review and comment on the DEIS. If you have any questions regarding our comments, please contact one of the following NPS representatives:

- Dan Wiley, Chief of Resources Stewardship, Lewis and Clark National Historic Trail at (402) 661-1830 or www.nps.gov/LECL

- Brent Lignell, Environmental Protection Specialist, Natural Sounds & Night Skies Division, Overflights Program at (970) 225-3580 or www.nps.gov/nsnsd

- Lee Kreutzer, Cultural Resources Specialist/Archeologist, National Trails Program at (801) 741-1012x118 or www.nps.gov/ntir/

If you have any other questions or concerns, please feel free to contact me at (503) 326-2489.

Sincerely,

Allison O'Brien

Allison O'Brien
Regional Environmental Officer

DOI (O'Brien)-1: ***The Final EIS has been clarified as a result of this comment.*** This was an inadvertent omission. However, this clarification does not affect the underlying environmental analysis. The Lewis and Clark Historic Trail System has been added to the land use figures (i.e., Figure 3.3-2, 3.3-4, and 3.3-6) and is specifically referred to by name in Section 3.3.2.1 and 4.3.2.1 in the Final EIS as well as in Appendix G, *Land Use and Land Management*. Nevertheless, the impacts described for the footprint of the proposed Eel MOA Complex – beneath which the Lewis and Clark Historic Trail System is located – would remain as described in the Final EIS. As discussed in Comment Response ONDA-9, noise impacts are described in Table 4.2-1 within Section 4.2, Noise of the Final EIS. In terms of onset rate-adjusted monthly day-night average, A-weighted sound level (L_{dnmr}), the accepted metric for land use compatibility guidelines beneath Special Use Airspace (SUA), noise experienced beneath the proposed Eel MOAs would be 35.0. These noise levels are far less than the Federal Aviation Administration's (FAA's) 65 day night average sound level (DNL) threshold. Further, noise levels would remain under 55 DNL, which is the U.S. Environmental Protection Agency's (USEPA's) recommended noise threshold for residential areas, farms, and other outdoor areas where people spend widely varying amounts of time and other places in which quiet is a basis for use (USEPA 1974; refer to Section 4.2, *Noise*).

Other important concerns regarding aircraft operations within SUA include the number, intensity, and duration of individual noise events that contribute to the L_{dnmr}. As described in Section 4.2, *Noise* the number of events above 65 decibel (dB) Sound Exposure Level (SEL) would be less than 0.5 per day in all of the proposed MOAs. In summary, average noise levels would remain far below 55 DNL and events above 65 dB SEL would be very infrequent. Therefore, noise-related impacts to the Lewis and Clark Historic Trail System would be less than significant.

DOI (O'Brien)-2: Individual units within the National Park Service (NPS) system are listed and discussed in Appendix G, *Land Use and Land Management*. As described in Section 4.2, *Noise* of the Final EIS and Table 4.2-1, noise levels experienced beneath the proposed Eel MOAs and Redhawk MOAs would be 35.0 L_{dnmr}. Further, noise levels experienced beneath the newly established Juniper/Hart MOAs would be less than 40 $L_{dnmr,}$ and noise levels beneath the existing Juniper/Hart MOAs would be slightly reduced relative to existing conditions. (L_{dnmr} is the accepted metric for land use compatibility guidelines beneath SUA and represents the average for an entire month, utilizing the busiest month for modeling purposes.) Under the Proposed Action, none of the areas beneath the affected or proposed airspaces would experience noise levels greater than or equal to the FAA's 65 DNL threshold. Further, noise levels would remain under 55 DNL, which is the USEPA's recommended noise threshold for residential areas, farms, and other outdoor areas where people spend widely varying amounts of time and other places in which quiet is a basis for use (USEPA 1974; refer to Section 4.2, *Noise*). Even when adding 10 dB to estimated sound levels, per ANSI 12.9 / Part 4, the noise levels would remain below the FAA's 65 DNL threshold and

the 55 DNL threshold recommended by the USEPA for residential areas, farms, and other outdoor areas where quiet is a basis for use.

Other important concerns regarding aircraft operations within SUA include the number, intensity, and duration of individual noise events that contribute to the L_{dnmr}. Consequently, L_{dnmr} is generally supplemented with metrics describing instances of unpredictable, discrete short-term noise events that produce long-term average L_{dnmr}. Neither the FAA nor the USAF requires evaluation of SEL, but the Oregon ANG has elected to evaluate SEL for this analysis in an attempt to more fully and transparently address public concerns. As described in Section 4.2, *Noise* the number of events above 65 dB SEL would be less than 0.5 per day in all of the proposed MOAs. In summary, average noise levels would remain far below 55 DNL and events above 65 dB SEL would be very infrequent.

DOI (O'Brien)-3: ***The Final EIS has been clarified as a result of this comment.*** The Oregon National Historic Trail and the California National Historic Trail have been added to the land use figures (i.e., Figure 3.3-2, 3.3-4, and 3.3-6) and are specifically referenced by name in the Final EIS (refer to Section 3.3.2.1 and 4.3.2.1 of the Final EIS as well as Appendix G, *Land Use and Land Management*). It appears that segments of the National Historic Trails and/or Proposed Routes identified in the Trails Feasibility Study pass beneath portions of the proposed Redhawk and Juniper/Hart MOA Complex (NPS 2015). However, as described in Section 4.5, *Cultural Resources* the Proposed Action would not result in any ground disturbing activities that could directly disturb archaeological or other cultural resources, such as the Oregon and California National Historic Trails. Indirect impacts to these resources could include potential noise- or visual resources-related impacts. These issues are addressed in Comment Responses ONDA-3 and ONDA-12. The Redhawk MOA Complex and the Hart E and Hart F MOAs would be established with a floor of 11,000 feet above mean sea level (MSL). Noise levels experienced under the Redhawk MOA would be 35.0 L_{dnmr} and noise levels beneath the Hart E and Hart F MOAs would be 36.9 L_{dnmr} and 35.0 L_{dnmr}, respectively. Under the Proposed Action, none of the areas beneath the affected or proposed airspaces would experience noise levels greater than or equal to the FAA's 65 DNL threshold. Further, noise levels would remain under 55 DNL, which is the USEPA's recommended noise threshold for residential areas, farms, and other outdoor areas where people spend widely varying amounts of time and other places in which quiet is a basis for use (USEPA 1974; refer to Section 4.2, *Noise*).

With regard to potential visual resources impacts, the addition of increased or newly introduced overflights and the occurrence of periodic aircraft-generated noise and aircraft contrails above scenic and otherwise sensitive land use settings may be perceived as annoying or intrusive. However, any notable increase in aircraft activity and associated contrails would, by their nature, be transitory and short-term visual intrusions that would not block or obstruct views of any visual resource from any vantage point. Ultimately, the airspace expansion would result in a larger volume of

designated SUA available for aircraft maneuvering, resulting in a broader geographic distribution of training sorties and a reduced probability of visual and noise effects experienced at any individual location below the airspace. Additionally, the activation time of currently established airspace areas is expected to decrease under the Proposed Action, as more training could be accomplished in a larger airspace, shortening the required time of use (refer to Comment Response ONDA-3).

Consequently, potential impacts to the Oregon National Historic Trail and the California National Historic Trail would be less than significant. Additional consultation with the Oregon, Washington, and Nevada SHPOs would not be required as the Area of Potential Effect (APE) for the initial consultation efforts included all of the land area and associated historic resources within that area.

DOI (O'Brien)-4: ***The Final EIS has been clarified as a result of this comment.*** This typographical error was corrected in Section 3.5.1.1 of the Final EIS.

DOI (O'Brien)-5: ***The Final EIS was clarified as a result of this comment.*** This definition was revised as suggested in Section 3.5.1.1 of the Final EIS.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10
1200 Sixth Avenue, Suite 900
Seattle, WA 98101-3140

OFFICE OF
ECOSYSTEMS, TRIBAL AND
PUBLIC AFFAIRS

September 8, 2015

Mr. Kevin Marek
NGB/A7AM, Shepperd Hall
3501 Fetchet Avenue
Joint Base Andrews, Maryland 20762-5157

Dear Mr. Marek:

The U.S. Environmental Protection Agency has reviewed the Oregon Air National Guard Draft Environmental Impact Statement for Proposed Establishment and Modification of Oregon Military Training Airspace. We are submitting comments in accordance with our responsibilities under the National Environmental Policy Act and Section 309 of the Clean Air Act. Thank you for inviting our participation in this NEPA process.

The Air National Guard proposes to modify, expand, and establish new military training airspace over coastal, north central, and eastern Oregon, and the Pacific Ocean, as well as small portions of northwestern Nevada and southwestern Washington. The purpose of these actions is to provide adequately sized and appropriately configured airspace within close proximity to Oregon ANG flying units to support advanced 21st century air-to-air tactical fighter technologies and training mission requirements. Proposed airspace actions include:

- Reconfiguration, vertical and horizontal expansion, and conversion of the W-570 Warning Area and Bass/Bass South Air Traffic Control Assigned Airspaces (ATCAAs) to the W-570 Warning Area over the Pacific Ocean;
- Vertical and horizontal expansion of the Eel Military Operations Area (MOA) Complex over portions of Clatsop, Tillamook, Yamhill, and Lincoln counties in coastal Oregon and over Pacific County in Washington;
- Vertical modification and horizontal expansion of the Juniper/Juniper Low/Hart MOA Complex in eastern Oregon over portions of Harney County in Oregon and Humboldt and Washoe counties in northwestern Nevada; and
- Establishment of the Redhawk MOA Complex, a new 6,500 square mile MOA/ATCAA above portions of seven counties in central Oregon including Sherman, Gilliam, Morrow, Grant, Wheeler, Jefferson, and Wasco counties (11,000 ft MSL to 51,000 MSL/FL 510).

Based on the information provided, we are rating the Draft EIS as EC-2, Environmental Concerns, Insufficient Information. An explanation of the EPA rating system is enclosed. Our environmental concerns and recommendations for additional information include the following:

- The proposed action would expand military training activities over most of the remaining wild and scenic lands and waters of Oregon and Northwestern Nevada. In light of broad interest and concern regarding this and other recent proposed military training and testing expansions, we believe the public would benefit from engagement in a more comprehensive, programmatic dialogue regarding

the nature and extent of military training and testing expansions throughout the Pacific Northwest, other Western states and Alaska.

- The proposed Juniper East Low expansion area (500 ft AGL to 11,000 MSL) would be over the Malheur National Wildlife Refuge, which would result in potentially serious noise impacts and high bird strike risk in one of the most important habitat areas for migratory birds and other wildlife in the Northern Great Basin.[1]
- The proposed action would increase disturbance and risk of fire from use of flares in prime habitat for greater sage grouse, of which hundreds of thousands of acres have been lost to fire in recent years.
- Use of chaff would occur throughout proposed expansion areas, resulting in dispersion of a non-biodegradable pollutant within the aquatic and terrestrial environments of all affected areas, including wilderness, wildlife refuges, wild and scenic rivers, parklands, areas of critical environmental concern, and open marine waters.
- We believe that the cumulative effects assessment does not sufficiently analyze and convey how the permanent establishment and expansion of the proposed military training airspaces would cumulatively affect specific communities in areas already affected by commercial, general, and military aircraft and other noise. In addition, it does not convey the cumulative effects of the proposed action together with multiple other stressors upon specific wildlife species and populations, such as greater sage grouse or other at risk species.
- The extent to which marine mammals, birds, and other marine life would potentially be affected by the proposed action within the W-570A warning area (ocean surface to 50,000 ft MSL) and the proposed lowering of W-570B and W-570D areas (1,000 ft MSL to 50,000 ft ML) is not addressed.
- The EIS needs to provide information regarding the feasibility of implementing the new special procedures and airspace restrictions that would need to be tracked and observed by military pilots, air traffic controllers, and commercial and general aviation pilots, including discussion of accuracy and margin of error.

Our enclosed detailed comments provide further discussion of these issues.

We appreciate the opportunity to provide comments and invite you to contact us with any questions you may have. I can be reached at (206) 553-1601 or via electronic mail at reichgott.christine@epa.gov, or you may contact Elaine Somers at (206) 553-2966 or via electronic mail at somers.elaine@epa.gov.

Sincerely,

Christine B. Reichgott

Christine B. Reichgott, Manager
Environmental Review and Sediment Management Unit

Enclosures

[1] http://www.fws.gov/refuge/Malheur/about.html. The Malheur NWR constitutes a small percentage of the Northern Great Basin's total acreage but is a very important source of wildlife habitat relative to other portions of the Northern Great Basin. The refuge represents a crucial stop along the Pacific Flyway and offers resting, breeding, and nesting habitat for hundreds of migratory birds and other wildlife. Many of the species migrating through or breeding there are priority species in national bird conservation plans.

U.S. Environmental Protection Agency
Detailed comments on the
Oregon Air National Guard Proposed Establishment and Modification
of Oregon Military Training Airspace Draft EIS

Context and scope of the analysis

The proposed expansion of Oregon Air National Guard military training airspace is one of many recent and current proposed air, land, and sea military training and testing expansions in the Pacific Northwest and Alaska. The Pacific Northwest expansions involve Pacific coastal areas of Washington, Oregon, (and California), inland national forests, shrub steppe habitat, wilderness and other wildlands, national parkland, and wildlife refuges.[2] These areas encompass highly sensitive, biologically diverse, critically important habitats for native terrestrial, aquatic, and marine species. The training and testing expansions also affect communities that, together with these high value public lands and recreation areas, are integral to the quality of life in the Pacific Northwest. USEPA-1

The Draft EIS states that the need to provide realistic training and testing of advanced technological warfare systems has given rise to these expansions, which is a change from past training operations that were mainly on-base and in nearby designated air space. The effects of these military training and testing expansions are being analyzed in various separate NEPA documents, some of which are semi-programmatic in nature, but none of which provide a complete picture of proposed actions on a regional scale. Recent public comment period extensions for various NEPA analyses[3] indicate that these expansion activities are of interest to many. To improve communication and disclosure, it would be beneficial to give an overview of the broader context and extent of these changes and to conduct outreach that ensures meaningful participation for the affected public.

Recommendation: We recommend that this and other NEPA documents discuss the programmatic origin, rationale, geographic extent and general effects of these expansions, explain how the specific proposed action and NEPA analysis fit within the broader program, and discuss any reasonably foreseeable or potential future actions and their anticipated effects.

Juniper/Hart MOA Complex; Juniper East Low expansion area

Our greatest concerns involve the proposed Juniper East Low MOA expansion (500 ft AGL to 11,000 MSL). This MOA would be over the Malheur National Wildlife Refuge, which would result in potentially serious noise impacts and high bird strike risk in one of the most important habitat areas for USEPA-2

[2] Expansion activities include but are not limited to: US Navy NW Training and Testing (SEIS/OEIS); Oregon ANG Training Airspace Establishment and Modification; Expansion of EA-18G Growler Airfield Operations and fleet at NAS Whidbey Island; PNW Electronic Warfare Range, Olympic Peninsula; Northwest Aviation Operations Off-base Helicopter Training Areas for JBLM, WA; Land-Water Interface Surface Pier Extension at Naval Base Kitsap Bangor; Explosives Handling Wharf; Naval Weapons Training Facility Boardman; Coast Guard Transit Protection System Pier and Support Facilities; Overwater US Army/Navy and National Guard helicopter exercises in the Strait of Juan de Fuca and along the Pacific Coast; US Army Noise Assessment for Test Launches of the Reduced Range Practice Rocket at JBLM, WA. In Alaska: Gulf of Alaska Navy Training Activities.

[3] Examples include: PNW Electronic Warfare Range EA; Establishment of Helicopter Training Areas EA Scoping; EA-18G Growler Expansion EIS.

migratory birds and other wildlife in the Northern Great Basin.[4] We note that the recorded bird-strike occurrences are substantially higher for the 173 Fighter Wing (Klamath Falls) than for the 142 Fighter Wing (Portland): 61 vs. 28 incidents.[5] It is likely that the higher incidence of bird-strike is due to (1) the 173 FW predominant use of the Juniper Low MOA, (2) use of the Juniper Low MOA at 500 AGL, and (2) the proximity to Malheur NWR and its importance in the Pacific Flyway. With the proposed Juniper East Low MOA expansion, it would be reasonable to expect that the bird-strike incidence would substantially increase. This is because the proposed Juniper East Low MOA would directly affect the Malheur NWR airspace between 500 AGL and 11,000 MSL. Bird migrations occur within the full range of these elevations.[6]

USEPA-2 (cont.)

The noise impacts from low overflights would also be the most intense of any proposed expansion area at Lmax 116 dB, which constitutes a substantial impact in an area that is managed as a refuge for birds and other wildlife. The DEIS discusses physical effects of noise on livestock, but not on birds or other wildlife, particularly with respect to potential hearing loss, and disturbance during feeding, resting, nesting and rearing of young potentially leading to predation and other lethal and sub-lethal effects from single and repeated events. These impacts would be new to the Refuge, and would occur somewhat randomly in time and place but consistently and indefinitely into the future.[7]

USEPA-3

Use of chaff. In addition to bird strikes and loud noise events, the use of chaff and flares are of concern within the Juniper/Hart MOA complex, particularly within the proposed Juniper East Low expansion area. Chaff,[8] which consists of small, extremely fine fibers of aluminum-coated glass that disperse widely when ejected from aircraft, is most confined or concentrated in distribution when ejected from a low-altitude release in calm conditions.[9] Low altitude flights currently occur in W-570 and in Juniper Low MOA. They would be expanded to Juniper East Low under the proposed action.[10] The USAF study (1997) referenced in the DEIS states that "adverse effects to sensitive aquatic organisms may be possible in certain small confined water bodies. Freshwater aquatic environments are potentially more sensitive to chemicals released from chaff than terrestrial environments because (1) dissolution of materials occurs faster in water than on land; (2) chemicals are more mobile and more available to organisms; and (3) the thresholds of toxicity tend to be lower for sensitive aquatic species." The Malheur NWR includes Malheur, Hart, and Mud Lakes, used by waterfowl, shorebirds, passerines, raptors, and other wildlife, which would be subject to chaff deposition, dissolution, and decomposition.

USEPA-4

[4] http://www.fws.gov/refuge/Malheur/about.html. The Malheur NWR constitutes a small percentage of the Northern Great Basin's total acreage but is a very important source of wildlife habitat relative to other portions of the Northern Great Basin. The refuge represents a crucial stop along the Pacific Flyway and offers resting, breeding, and nesting habitat for hundreds of migratory birds and other wildlife. Many of the species migrating through or breeding there are priority species in national bird conservation plans.

[5] Draft EIS, p. 3-109

[6] Draft EIS, p. 3-106

[7] Draft EIS, p. 5-3

[8] The principal components of chaff are aluminum, silica glass fibers (silica dioxide, aluminum oxide, calcium+magnesium oxide, boron oxide, sodium+potassium oxide, iron oxide), stearic and palmitic acids. It also contains numerous trace metals and elements (USAF 1997).

[9] Draft EIS, p. 3-114

[10] However, chaff and flares would be used in all MOAs and proposed expansion areas.

The most recent study on the environmental effects of chaff[11] focuses on the toxicological effects, but states "there is no data on the re-suspension of chaff fibers and little is known about the breakdown of chaff under relevant conditions." It lists seven questions that still need to be addressed regarding deposition, resuspension, emissions, concentrations, and inhalation risks of chaff. These questions are particularly relevant to the Juniper/Hart MOA Complex and its proposed expansion areas, which are arid, open, and windy. USEPA-4 (cont.)

While the risks are not fully studied, based on lessons learned from the legacies of lead, selenium, metals, and other pollutants affecting wildlife refuges, and the known inhalation hazards of friable asbestos, fiberglass insulation, and similar substances, broadcast dispersal of chaff in pristine wilderness areas, such as Malheur NWR, appears risky and probably unwise. We recommend avoiding the use of chaff for training activities and replacing it with a biodegradable substitute.

Use of flares. Even though Oregon ANG has set a conservative floor of 5,000 ft AGL for flare use, we remain concerned about the potential for fire, particularly in arid environments. The Oregon Greater Sage Grouse Final EIS states, "Wildfire has been identified as one of the primary factors linked to loss of sagebrush-steppe habitat and corresponding population declines of greater sage grouse (Connelly and Braun 1997; Miller and Eddleman 2001). While fire is a naturally occurring disturbance in the sagebrush steppe, the incursion of nonnative annual grasses has facilitated an increase in mean fire frequency that can preclude the opportunity for sagebrush to become re-established…Within the Great Basin, the first five priority areas of conservation were singled out for the initial round of assessments because fire was identified as a primary threat to greater sage grouse habitat and the first phase of these assessments were completed in March of 2015." This primary concern regarding fire from use of flares would apply to all sagebrush steppe habitat in Oregon and northwestern Nevada affected by the Oregon ANG proposed action. USEPA-5

Recommendations:

- Because of the potential level of impacts, we believe Alternative D (no expansion of Juniper/Hart MOA Complex) or removal of the Juniper East Low expansion area from the proposed action would best protect resources in that area.
- Avoid use of flares in the Juniper/Hart MOA and its associated expansion areas, and in any airspace over lands where the fire danger is rated above moderate (i.e., rated as high, very high, or extreme).
- Avoid the use of chaff, particularly in any low airspace MOAs, and replace it with a biodegradable alternative.

Special procedures

More information is needed to clarify how Oregon ANG pilots will successfully implement the many flight restrictions in time and space that are detailed in the Special Procedures. These include: USEPA-6

- avoiding sage grouse leks and core areas during the breeding season (March 1 to May 31);
- avoiding overflights at low altitudes to the maximum extent practicable consistent with AFI 13-201 and Air Education and Training Command Supplement 12-201 (e.g, National Marine

[11] Farrell and Siciliano, 2005, Environmental Effects of Radio Frequency Chaff Released during Military Training Exercises: A Review of the Literature.

Sanctuaries, National Wildlife Refuges, farms and ranches, nesting sites, towns, recreation areas, etc.), and avoiding noise sensitive locations[12] beneath the proposed Juniper East Low MOA;
- avoidance of the seasonal buffer areas from surface to 1,000 ft AGL with a radius of 0.25 mile from mapped bald and golden eagle nests from January 1 to August 15;
- use of flares no lower than 5,000 ft AGL;
- no use of flares in extreme fire danger areas; emergency fuel dumps allowed only above 10,000 ft AGL and over unpopulated areas;
- avoiding wind farms;
- following bird-strike (BASH) plans; and
- relying upon visual avoidance of other aircraft, birds, and other hazards while flying 4th generation advanced technology aircraft at subsonic speeds of 20 nautical miles per minute and in W-570 at supersonic speeds as needed for training activities.

USEPA-6 (cont.)

Recommendation: The EIS should discuss the feasibility and success rate of implementing all of these procedures, and any mechanisms to ensure or facilitate implementation. Similarly, the EIS should discuss how Air Traffic Controllers would feasibly implement and track the additional complexities posed by the proposed action.

Cumulative effects

The cumulative effects analyses are brief discussions of airspace management, noise, land use and visual resources, biological resources, and safety. These discussions tend to focus upon impacts that occur within airspace only and do not convey the full array of stressors that affect populations of concern. For example, a cumulative effects assessment for biological resources could focus upon greater sage grouse. The analysis should be conducted within a context that acknowledges and accounts for past, present, and reasonably foreseeable human disturbance, habitat loss, alterations, degradation, and a steadily increasing number and type of disturbances and mortality sources[13], including the proposed action.

USEPA-7

Recommendation: Focus cumulative effects assessments on specific resources of concern, as discussed above.

Tribal consultation

While the Draft EIS states that as of March 2014, no concerns had been raised by any tribes[14], we have heard concerns expressed by at least one tribe (Coquille) that satisfactory consultation has not yet taken place regarding the proposed action.

USEPA-8

Recommendation: We recommend that steps for government-to-government consultation be taken to ensure that potentially affected tribes are meaningfully engaged.

[12] These noise sensitive locations are not identified in the Draft EIS.
[13] For example, consider impacts from climate change, habitat loss and fragmentation from fire and increased fire risk from widespread invasive grasses, collisions with wind turbines, wildlife-vehicular collisions, aircraft bird strikes, chemical poisonings, hazardous materials spills/releases and waste pits; increased predation due to transmission lines and other man-made structures that provide perches for predators.
[14] Draft EIS, p. 3-87

U.S. Environmental Protection Agency Rating System for Draft Environmental Impact Statements Definitions and Follow-Up Action*

Environmental Impact of the Action

LO – Lack of Objections

The U.S. Environmental Protection Agency (EPA) review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

EC – Environmental Concerns

EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce these impacts.

EO – Environmental Objections

EPA review has identified significant environmental impacts that should be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no-action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

EU – Environmentally Unsatisfactory

EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potential unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the Council on Environmental Quality (CEQ).

Adequacy of the Impact Statement

Category 1 – Adequate

EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis of data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

Category 2 – Insufficient Information

The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses or discussion should be included in the final EIS.

Category 3 – Inadequate

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the National Environmental Policy Act and or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

* From EPA Manual 1640 Policy and Procedures for the Review of Federal Actions Impacting the Environment. February, 1987.

USEPA (Somers)-1: Comment noted. Please see comments USEPA (Somers)-2 through 7.

USEPA (Somers)-2: As described in Section 2.3.2, *Evolution of the Proposed Action* the Juniper East Low MOA was originally configured underneath the entirety of the Juniper MOA expansion area. However, after initial outreach conducted by Oregon ANG with County representatives in the area, the eastward limits of the Juniper East Low MOA were modified to reduce potential conflicts with sensitive regional resources, including protected areas (e.g., Malheur NWR and Steens Mountain Cooperative Management and Protection Area). As currently proposed, the Juniper East Low MOA avoids more than 60 percent of the Malheur NWR. Further, as described in Section 3.2.2.4, *Noise Abatement Procedures* as well as Section 6, *Special Procedures*, avoidance of noise-sensitive areas is emphasized to all flying units utilizing SUA and is noted in Special Operating Procedures (SOPs) established for all SUA within the U.S. (e.g., AFI 11-202, Vol. 3 and Air Education and Training Command [AETC] Supplement 13-201). Additionally, avoidance of noise-sensitive areas is emphasized to all instructors and students associated with 173d Fighter Wing (173 FW) and 142d Fighter Wing (142 FW). SOPs identify areas, including the Malheur NWR, where overflights at low altitudes should be avoided to the maximum extent practicable (e.g., National Marine Sanctuaries [NMSs], NWRs, farms and ranches, nesting sites, towns, and recreation areas, etc.). Implementation of avoidance procedures for noise-sensitive areas provides additional training opportunities for military pilots associated with the avoidance of known threats in real-world flight missions. Scheduling agencies for SUAs are responsible for informing pilots of previously or newly identified noise-sensitive areas.

Contrary to the commenter's assumption that 173 FW bird strikes are due solely to proximity to Malheur NWR and the Pacific Flyway, the conclusion did not consider other germane factors such as sortie rate, locations of bird strikes, time of day, etc. Further, while the Oregon ANG recognizes that bird-aircraft strikes present potential biological impacts, these potential strikes also present a substantial safety issue for both 142 FW and 173 FW aircraft and pilots. In order to minimize the potential for bird-aircraft strikes, all ANG installations are required to develop and implement a Bird-Aircraft Strike Hazard (BASH) Plan (AFI 91-202). The 142 FW and the 173 FW have developed BASH Plans specific to wildlife conditions found at each installation. Key elements common to the 142 FW and 173 FW BASH Plans, and required by AFI 91-202, are described in Section 3.7, *Safety*. As described in Section 6, *Special Procedures* in order to mitigate BASH risks, the 142 FW and 173 FW would be required to: 1) Continue to implement a BASH Plan (AFI 91-202) specific to wildlife conditions found at each installation; monitor the Avian Hazard Advisory System (AHAS) as part of the standard preflight mission requirements, and modify or cancel sorties in areas or periods with "moderate" to "severe" BASH risks. (Refer to Section 3.7.2.1, *BASH-Related Safety* for further details regarding Oregon ANG avoidance of resident and migratory birds.)

USEPA (Somers)-3: Refer to Comment Response USEPA-2 and Comment Response ONDA-5. As described in Section 4.2, *Noise* the maximum noise generated from a direct overflight at 500 feet AGL would be 116 dB. However, flight activity within the Juniper East Low MOA would be limited to 45 total flight hours annually distributed throughout the combined approximately 1,000-square-mile Juniper East Low MOA. Additionally, only 35 percent of those hours would be flown below 1,000 feet AGL. Consequently, maximum noise events resulting from direct aircraft overflights would be extremely infrequent and of very short duration. Additionally, as discussed in Comment Response USEPA-2, avoidance of noise-sensitive areas – including the Malheur NWR – to the maximum extent practicable would be emphasized to all pilots, instructors, and students associated with 173 FW and 142 FW as required by AFI 11-202, Vol. 3 and AETC Supplement 13-201. Implementation of the Proposed Action would result in noise levels of 46.3 L_{dnmr} with virtually no events above 65 dB SEL. Under the Proposed Action, none of the areas beneath the affected or proposed airspaces would experience noise levels greater than or equal to the FAA's 65 DNL threshold. Further, noise levels would remain under 55 DNL, which is the USEPA's recommended noise threshold for residential areas, farms, and other outdoor areas where people spend widely varying amounts of time and other places in which quiet is a basis for use (USEPA 1974; refer to Section 4.2, *Noise*).

USEPA (Somers)-4: As described in Section 4.7, *Safety* and Section 4.8, *Hazardous Materials and Wastes*, deployment of chaff and flare during Oregon ANG training missions within the existing Juniper Low MOA and proposed Juniper East Low MOA would only occur at or above 5,000 feet AGL. Further, only 204 hours of total flight activities would occur throughout the Juniper Low MOA, and only 45 hours of total flight activities would occur throughout the proposed Juniper East Low MOA. Consequently, chaff and flare use within these areas would be very infrequent. The 2005 *Review of Literature* by Farrell and Siciliano from the University of Saskatchewan concluded "…it is highly unlikely chaff releases during training exercises will have a significant adverse impact on either ecosystem functioning or human and wildlife health…" This is consistent with the 1997 USAF Study. Additionally, no biodegradable substitute exists for self-protection chaff. As described in Section 3.8, *Hazardous Materials and Wastes* the materials in chaff and flares are generally nontoxic except in exorbitantly large quantities that humans or wildlife would not encounter as a result of chaff use associated with Oregon ANG operations. Levels of use and accumulation would have to be extremely high to generate any significant adverse effects. As a matter of course, 142 FW and 173 FW pilots avoid the Malheur NWR as part of standard noise abatement procedures, and chaff deployment above 5,000 ft AGL would have no discernible impacts to the wildlife refuge.

USEPA (Somers)-5: See Comment Response ODFW-1 and Comment Response USEPA-4. The narrative of the Final EIS includes additional information in Sections 4.7.2.1 and 4.8.2.1 to reflect the response to this comment and similar comments. Additionally, special procedures associated with the National Fire Danger Rating

System have been removed from Section 4.7, Section 4.8, and Section 6 of the Final EIS.

USEPA (Somers)-6: All special procedures described in the Final EIS, as summarized in Section 6, *Special Procedures* will be summarized in a Final Mitigation Plan. Adherence to these special procedures will be required by the Record of Decision (ROD) and monitored for effectiveness during implementation. Consistent with Council on Environmental Quality (CEQ) guidance, within 30 days of the ROD signature, a draft Mitigation Monitoring Plan (MMP) will be provided to the Assistant Undersecretary of the Air Force for Installations and Environment.

USEPA (Somers)-7: Council on Environmental Quality (CEQ) guidelines for considering cumulative effects under the National Environmental Policy Act (NEPA) (CEQ 1997) identify cumulative impacts as those environmental impacts resulting "from spatial and temporal crowding of environmental perturbations. The impacts of human activities will accumulate when a second perturbation occurs at a site before the ecosystem can fully rebound from the impacts of the first perturbation." Noting that environmental impacts result from a diversity of sources and processes, this guidance observes that "no universally accepted framework for cumulative impacts analysis exists," while noting that certain general principles have gained acceptance. The CEQ provides guidance on the extent to which agencies of the federal government is required to analyze the environmental impacts of past actions when they describe the cumulative environmental effect of an action (CEQ 2005). This guidance provides that a cumulative impacts analysis might encompass geographic boundaries beyond the immediate area of an action and a timeframe that includes past actions and foreseeable future actions. However, the CEQ guidelines observe, "[it] is not practical to analyze cumulative impacts of an action on the universe; the list of environmental impacts must focus on those that are truly meaningful" (CEQ 2005).

Per CEQ guidelines, the cumulative impacts analysis in the Final EIS focused on meaningful impacts from past, present, and reasonably foreseeable future actions. The level of analysis for each resource was commensurate with the intensity of the impacts identified in Section 4, *Environmental Consequences*. As described in the Final EIS, the Proposed Action would result in less than significant impacts to airspace management, noise, land use and visual resources, biological resources, and safety. Further, as described in Section 4, *Environmental Consequences*, the Proposed Action would not result in ground disturbing activities that would directly impact environmental resources; therefore, cumulative impact analysis focused on past, present, and reasonably foreseeable large-scale projects that would be likely to or have the potential to interact with and compound potential impacts associated with the airspace proposal. Future actions that are speculative were not considered and further, the cumulative impacts analysis did not consider broad general concepts such as population growth, etc. which the Proposed Action would not interaction or substantially contribute.

USEPA (Somers)-8: Tribal outreach and consultation has been on-going throughout the EIAP. Outreach efforts have been summarized in Section 4.5, *Cultural Resources* and documented in Appendix H, *Tribal Outreach* and included distribution of three letters as well as follow-up phone calls and/or in-person meetings. The Coquille Tribe responded to the 2 July 2012 outreach letter with the following comment:

"The Coquille Tribe has no objections or comments to make regarding the above referenced matter. We thank you for the opportunity to comment, and wish you well in your project." – Donald B. Ivy, Tribal Historic Preservation Office, Cultural Resources Program

The Oregon ANG and Oregon Military Department (OMD) have reached out to and conducted outreach and consultation with all tribes, requesting participation in the Public Hearings for the Draft EIS during a meeting on 29 June 2015 and in a letter dated 31 July 2015. However, no responses were received and no Native American representatives attended the Public Hearings for the Draft EIS. OMD conducted additional rounds of outreach in September and October 2015 to listen to and receive any tribal concerns with no additional comments added.

To: USAF JB A-NAFW NGB A7 Mailbox A7A NEPA COMMENTS
Subject: RE: Oregon Air National Guard (ANG) Training Airspace, Proposed Establishment and Modification Initiative

-----Original Message-----
From: Wright, Wendy [mailto:Wright.Wendy@epa.gov]
Sent: Wednesday, July 29, 2015 4:43 PM
To: USAF JB A-NAFW NGB A7 Mailbox A7A NEPA COMMENTS
Subject: Oregon Air National Guard (ANG) Training Airspace, Proposed Establishment and Modification Initiative

Please send a CD of this Initiative to:

Elaine Somers

ETPA - 202-3

20th Floor

1200 - Sixth Avenue

Seattle, WA 98101-3140

USEPA-1

Also, please tell me the date the announcement was published in the Federal Register. I looked in the Friday, July 24 Federal Register, but I did not see the announcement. Thank you for your assistance.

Wendy Wright

SEE Administrative Assistant

U.S. Environmental Protection Agency

1200 Sixth Avenue - 20th Floor

Seattle, WA 98101-3140

206.553.6232

UESPA (Wright)-1: An electronic version of the Draft EIS was delivered as requested.

Kevin Marek
NGB/A7AM
Shepperd Hall
3501 Fletchet Avenue,
Joint Base Andrews, MD 20762-5157

September 8, 2015

Oregon Department of Fish and Wildlife comments on the July 24, 2015 Draft Environmental Impact Statement for Proposed Establishment and Modification of Oregon Military Training Airspace

Dear Mr. Marek:

Thank you for the opportunity to provide comments on Draft Environmental Impact Statement for Proposed Establishment and Modification of Oregon Military Training Airspace. The Oregon Department of Fish and Wildlife (Department) has reviewed the Draft EIS and associated materials. The Department appreciates opportunities such as this to collaborate with our partners to ensure the proposal (if implemented) will use the best available methods to avoid, minimize, and mitigate impacts to Oregon's Fish and Wildlife and the habitats they depend on.

Department Authorities and General Comments:

Department comments are based on Oregon Revised Statute (ORS 496.012) which provides the Department with the statutory authority to manage wildlife resources in the State of Oregon. Additional specific ORS and Oregon Administrative Rules (OARs) are referenced where appropriate.

Avoidance and Minimization of Impacts to Greater Sage-Grouse and their Habitats

The Department recommends the Oregon Air National Guard (ANG) avoid and minimize potential impacts from the proposed action to Greater Sage-Grouse in Oregon by:

1. Reduce the wildfire risk associated with the flare use to the maximum extent possible. To provide this level of risk reduction, the Department recommends the Oregon ANG restrict the use of flares within the proposed airspace when the National Fire Danger Rating System rating rises to the level of high instead of extreme, as currently proposed. Wildfire has been identified as one of the primary threats to Greater Sage-Grouse throughout their range including Oregon (Stiver 2012, USFWS 2013); and

ODFW-1

2. Reduce the threat of noise disturbance to Greater Sage-Grouse during the breeding season to the maximum extent possible. The majority of Greater Sage-Grouse leks (breeding locations) are located within Core Areas and Low Density Areas identified in the Greater Sage-Grouse Conservation Assessment and Strategy for Oregon: A Plan to Maintain and Enhance Populations and Habitat (ODFW 2011). The Department recommends the Oregon ANG add Greater Sage-Grouse Low Density habitats to the currently proposed Core Area habitats avoidance measure as stated on Pages 4-66 and 4-67 of the DEIS:

   Additionally, only 35 percent of those hours would be flown below 1,000 feet AGL. Consequently, maximum noise events resulting from direct aircraft overflights would be infrequent and of short duration. Additionally, in order to avoid impacts to the greater sage-grouse leks (i.e., aggregations of breeding males), the Oregon ANG would avoid greater sage-grouse core areas to the maximum extent practicable during the breeding season (i.e., 1 March to 31 May; Harrell 2008). Further, in the event that the Oregon ANG were to activate airspace over these core areas during the breeding season, flight altitudes would be restricted to 1,000 feet AGL or above over core areas within the Juniper Low MOAs, reducing the potential maximum exposure. Consequently, the Proposed Action may affect, but is not likely to adversely affect the greater sage-grouse.

ODFW-2

Thank you for the opportunity to provide comment on the Draft EIS relevant to the proposed action and potential impacts and potential impacts to Greater Sage-Grouse in Oregon. Please contact me at 503.947.6082 or at art.c.martin@state.or.us if you have questions or need clarification on any of the contents of these Department comments.

Sincerely,

Art Martin
Energy and NRDA Coordinator
Wildlife Division
Oregon Dept. of Fish and Wildlife
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503-947-6082
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Literature Cited

Oregon Department of Fish and Wildlife. 2011. Hagen, Christian, and Robert Gene Anthony. Greater sage-grouse conservation assessment and strategy for Oregon: a plan to maintain and enhance populations and habitat. April 2011.

Western Association of Fish and Wildlife Agencies. 2012. Stiver, S. "Near-term greater sage-grouse conservation action plan. Range-wide Interagency Sage-Grouse Conservation Team and Western Association of Fish and Wildlife Agencies." Unpublished Report presented to Greater Sage-Grouse Executive Oversight Committee and Sage-Grouse Task Force, Hilton Head, SC, USA (2012).

U.S. Fish and Wildlife Service. 2013. Greater Sage-grouse (Centrocercus urophasianus) Conservation Objectives: Final Report. U.S. Fish and Wildlife Service, Denver, CO. February 2013.

STATE GOVERNMENT AGENCIES

ODFW (Martin)-1: In response to this comment, the ANG has reviewed publicly available data, including observed wildfire danger data maintained by the Wildland Fire Assessment System (2015), maintained by the USFS Rock Mountain Research Station. Further, the ANG has prepared Appendix I, *Wildfire Hazard Analysis* to further assess the need for and utility of additional restrictions on flare use. The necessity for flare use is highlighted in Appendix I, Section I.5.

The Oregon ANG has developed and routinely implements additional safety precautions to ensure safe flare-use (AFI 11-2F-15V3 KF CH 8). While the minimum federal chaff and flare release altitude requirement is 700 feet AGL, neither unit deploys chaff or flares below 5,000 feet AGL, which effectively eliminates the potential for wildfire related to flare use by the Oregon ANG (refer to Section 3.7, *Safety*). The burnout time for an MJU-7 flare is typically 3.5 to five seconds and occurs over a vertical distance of 200 to 400 feet. At the minimum release elevation of 5,000 feet AGL, the difference between the estimated burnout elevation and contact with any potentially flammable material is approximately 4,598 feet AGL (refer to Table 4.7-2 in Section 4.7, *Safety* of the Final EIS) nearly 1 mile (or the equivalent of 13 football fields) above the ground surface.[2] Even under rare circumstances in which a flare might require double the amount of time maximum predicted for burnout (i.e., 10 seconds), there would still be a 3,390-foot buffer before the flare would contact potentially flammable materials at the ground surface. If an unburned broken or whole flare struck the ground, it would not burn unless subject to temperatures or friction generating temperatures in the one to two-thousand-degree range (USAF 2011). Therefore, the potential for wildfire associated with flare use would be negligible under implementation of the Proposed Action. As further described in Appendix I, *Wildfire Hazard Analysis* additional restrictions on flare use based on wildfire danger rating would not further reduce less than significant impacts associated with wildlife and wildfire risk and would limit the ability of the Oregon ANG to perform realistic training operations, such that the Proposed Action would not meet its intended purpose and need described in Section 1.5, *Purpose and Need for the Proposed Action*. The narrative of the Final EIS includes additional information in Sections 4.7.2.1 and 4.8.2.1 to reflect the response to this comment and similar comments. Additionally, special procedures associated with the National Fire Danger Rating System have been removed from Section 4.7, Section 4.8, and Section 6 of the Final EIS.

ODFW (Martin)-2: See Comment Response ONDA-5. As described in *Greater Sage-Grouse Conservation Assessment and Strategy for Oregon: A Plan to Maintain and Enhance Populations and Habitat* (ODFW 2011), provides that "Core Areas" are high priority

[2] One football field includes 100 yards in the field of play as well as two 10-yard end zones, totaling approximately 360 feet.

locations for protection from habitat loss and fragmentation, while "Low Density Areas" are areas for which such losses may be of less consequence. Low Density Areas beneath the proposed Juniper East Low MOA expansion area would include less than 20 square miles. The majority of the Low Density Habitat identified in *Greater Sage-Grouse Conservation Assessment and Strategy for Oregon: A Plan to Maintain and Enhance Populations and Habitat* (ODFW 2011) is located under the existing Juniper Low MOA. Implementation of the Proposed Action would further reduce flight operations over these areas from 243 hours annually to 204 hours[3]. Consequently, the Proposed Action would not have significant impacts on the greater sage-grouse (refer to Table 4.2-1 in the Final EIS and Appendix E, *Noise*).

[3] Total number of flight hours in Juniper Low and the proposed Juniper East Low MOA is not additive. Each MOA is assessed separately for impact analyses. The hours provided in the comment responses and in Table 2-3 of the Final EIS reflect the projected actual numbers within the proposed airspace.

COUNTY COURT

P. O. Box 788 • Heppner, Oregon 97836
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TERRY K. TALLMAN, Judge
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DON RUSSELL, Commissioner
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Boardman, Oregon

September 8, 2015

Mr. Kevin Marek
NGB/A7AM
Shepperd Hall
3501 Fetchet Avenue
Joint Base Andrews, MD 20762-5157

RE: Oregon Airspace Initiative EIS

Dear Mr. Marek:

The Morrow County Court appreciates the opportunity to comment on the draft Environmental Impact Statement (dEIS) for the Oregon Airspace Initiative. It is specifically the proposed Redhawk Military Operations Area (MOA) that is of interest, which if approved, will cover the southern half of Morrow County with a floor of 11,000 feet Mean Sea Level (MSL). The dEIS identifies a proposed action and several alternatives. This letter does not delve into the specifics of those alternatives, but is focused on the Redhawk proposal overall.

As stated during the Scoping phase of this process Morrow County does not anticipate any concerns with land use or noise, however with the proposed winter training schedule over the Blue Mountains the County does have emergency preparedness and response concerns. This concern appears to be defined as part of Chapter 3.7 Safety, more specifically at 3.7.2 Existing Conditions 3.7.2.2 Other Aircraft Related Safety Issues Weather-Related Incidents, but does not specifically address incidents that would require search and rescue or other emergency preparedness activities. Addressing the Safety concerns from Chapter 3.7 as Safety Impacts is found at Chapter 4.7 Safety, however the base concern raised by Morrow County does not appear to be addressed. Morrow-1

> Morrow County finds that the draft Environmental Impact Statement does not adequately address the potential safety impacts should a plane be forced to land or crash land within the Redhawk MOA during winter training missions, nor does the draft Environmental Impact Statement address how local emergency response entities would cooperate with the Oregon National Guard and the Air Force should such an incident happen.

Since Scoping has concluded another issue has been raised of local concern. Wind energy developments throughout the area have been experiencing difficulties with obtaining the necessary clearances through the Federal Aviation Administration (FAA) because of 'clutter' as seen through the Fossil Radar Range. The concern is that the approval and use of the Redhawk MOA will exacerbate the already difficult task of obtaining clearance through the FAA leading to a further reduction in approved wind energy development projects. Several of the small counties underlying the Redhawk MOA are looking to renewable energy development as an economic opportunity into the future. As the Oregon Air National Guard is not proposing on Morrow-2

ground activities with an economic benefit, Morrow County wants to be sure that the development and use of the Redhawk MOA would not further curtail current economic endeavors.

Morrow-2 (cont.)

> Morrow County requests that the final Environmental Impact Statement address impacts of the Redhawk MOA on the Fossil Radar Range, further impacting renewable, particularly wind, energy development within and around Morrow County.

We look forward to working with you and others on this process. Should you have any questions concerning this letter please contact Carla McLane, Planning Director. Her contact information is as follows: 205 NE Third Street, P.O. Box 40, Irrigon, Oregon, 97844, 541-922-4624, cmclane@co.morrow.or.us.

Thank you for your consideration of our comments.

Cordially,

Terry K. Tallman
Judge

Leann Rea
Commissioner

Don Russell
Commissioner

LOCAL GOVERNMENT AGENCIES

Morrow County (McLane)-1: As described in the NGB response to the County's scoping letter, dated 25 March 2014, the USAF has procedures in place – and the NGB in turn adheres to these – that establish response measures and protocols when off-installation mishaps occur. In the event of a catastrophic mishap, emergency response duties would not fall on local jurisdictions; it would be the responsibility of the nearest active-duty installation to respond to the crash site. In the extremely unlikely event that a catastrophic mishap occurs in close proximity to a densely populated area, it is likely that in addition to personnel from the nearest active-duty installation, first responders would include local police and fire departments. In this extremely unlikely scenario, Oregon ANG would coordinate an orchestrated effort to respond to the crash site and would provide a clear chain of command and instructions regarding first-responder procedures as there are special evidence-handling procedures that must be followed during active-duty military investigations. In any event, it would ultimately be the responsibility of the Oregon ANG and the USAF to manage the response at the crash site and to ensure adherence to all applicable response measures and protocols.

Morrow County (McLane)-2: The potential for wind energy development beneath the proposed airspaces, including the proposed Redhawk MOA Complex, is discussed extensively in Section 5.1.2.1, *Regional Wind Energy Development*. Given the relatively high potential for wind energy development in Oregon, a number of wind turbine development projects have been proposed throughout the state. In administering Title 14 of the Code of Federal Regulations (CFR) §77, the FAA strives to promote air safety and the efficient use of the navigable airspace. Under 14 CFR §77, any individual or entity proposing to construct or develop a facility exceeding 200 feet AGL (or when requested) is required to provide notification in order for the FAA to conduct aeronautical studies based on information provided by proponents on an FAA Form 7460-1, *Notice of Proposed Construction or Alteration*. Through this process, the FAA is able to maintain a database of such proposed construction projects, including proposed wind energy development.

A number of wind turbines proposed to be constructed underneath or in the vicinity of the Redhawk MOA Complex have been recorded by the FAA's OE/AAA database (refer to Figure 5-2). In general, these proposed wind developments range in total height (tower plus turbine) from 25 feet to 500 feet (FAA 2013). Given the height of the proposed Redhawk MOA (i.e., with a floor elevation of 11,000 feet MSL), currently proposed as well as future proposed wind turbine development is would not be affected by the proposed airspace. Therefore, implementation of the Proposed Action is unlikely to affect FAA approval of wind energy development projects.

VIA EMAIL

September, 2, 2015

Kevin Marek, NGB/A7AM
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Re: Proposed Establishment and Modification of Oregon Military Training Airspace, Draft Environmental Impact Statement

Dear Mr. Marek:

Please accept these comments on behalf of the Oregon Natural Desert Association (ONDA) regarding the Draft Environmental Impact Statement (DEIS) for the Oregon Air National Guard Airspace Initiative. We appreciate the opportunity to provide input on this process. Although properly regulated airspace can have a relatively small impact on the ground below, no activity is without impacts. As described below, ONDA urges the National Guard to evaluate additional alternatives to reduce or avoid impacts to wilderness values and wildlife species and habitat.

ONDA is an organization of more than 4,500 members and supporters whose mission is to protect, defend, and restore Oregon's native desert ecosystems. ONDA's members regularly use and enjoy areas throughout central and southeastern Oregon that would be affected by the proposed airspace expansion. Our members use these places for recreational activities and value this landscape for its importance to wildlife, particularly the Greater sage-grouse (*Centrocercus urophasianus*). Areas of particular importance to our members include the Hart Mountain, Steens Mountain, the John Day Wild and Scenic River, and Wilderness, Wilderness Study Areas (WSA), Lands with Wilderness Character (LWC), and wildlife habitat throughout the proposed expansion areas. (Land Use and Visual Resources, Sections 3.3 and 4.3; Biology, 3.4 and 4.4; Noise, Sections 3.2 and 4.2). ONDA-1

The DEIS analyzes four alternatives that focus on different combinations of the proposed airspace additions and expansions. The narrow scope of the alternatives fails to consider how the proposed actions would impact wilderness values throughout the project area. In failing to consider impacts to WSAs and LWCs, the DEIS fails to analyze impacts to naturalness and solitude—two key components of wilderness—throughout tens of thousands of acres of specially managed public lands. Similarly, the DEIS also fails to analyze impacts to an area proposed in Congress for designation as Wilderness – the proposed Sutton Mountain Wilderness – introduced in the Senate as S.1255, the "Sutton Mountain and Painted Hills Area Preservation and Economic Enhancement Act of 2015." ONDA-2 ONDA-3

The DEIS also fails to properly analyze impacts to recreation and tourism for the communities that would be affected by the proposed military operation areas (MOAs). Significant amounts of recreation activity take place in the John Day River corridor below the proposed Redhawk MOA, as well as on and around Steens Mountain and Hart Mountain underlying the proposed Juniper and Hart MOA expansion areas, respectively. ONDA-4

Furthermore, the DEIS fails to consider alternatives that minimize impacts to wildlife in the regions where the Proposed Action is to take place. The Greater sage-grouse, a species the U.S. Fish and Wildlife Service has determined is "warranted" for listing under the Endangered Species Act, occurs throughout the project area. There is significant overlap between essential sage-grouse habitat and the proposed airspace expansions, especially in the Hart and Juniper MOAs. While the National Guard Bureau conducted some analysis of impacts from the Proposed Action on sage-grouse , the steps identified to reduce impacts to the species do not go far enough and the DEIS fails to properly analyze alternatives that would effectively minimize impacts to wildlife. ONDA-5

Under the preferred alternative the DOD would create the Redhawk MOA complex and expand the Eel MOA, Juniper MOA and Hart MOAs. ONDA is concerned that the DEIS fails to analyze a full range of alternatives and that the implementation of the Proposed Action will result in negative impacts to wilderness and wildlife values. ONDA holds the DOD accountable for the verbal commitment made during the public scoping meeting at the Prineville Public Library on August 8th to include ONDA's comments in the alternatives and analysis of effects of the Proposed Action and holds the DOD responsible for complying with the NEPA requirement to consider public input. ONDA is committed to preventing impacts to wilderness and wildlife values and as described below strongly urges the Oregon Air National Guard and DOD to conduct a more thorough analysis of a complete range of alternatives in order to identify a preferred alternative that minimizes impacts to wilderness values, recreation uses, and wildlife species and habitat within the project area. ONDA-6

I. Impacts to Wilderness Values

The proposed projects have the potential to negatively impact WSAs and LWCs within the proposed new and expanded MOAs. WSAs in Prineville, Burns, and Lakeview BLM Districts could be impacted, including the Spaulding, Basque Hills, Rincon, Hawk Mountain, Pats Cabin, Lower John Day, and Aldrich Mountain WSAs. ONDA-7

Among public lands resources, "lands with statutorily-defined wilderness characteristics are of particular importance." *Or. Natural Desert Ass'n v. Bureau of Land Mgmt*., 625 F.3d 1092, 1097 (9th Cir. 2010). In 1964, Congress identified the conservation of such lands as a national priority in the Wilderness Act. 16 U.S.C. §§ 1131–36. Intended to "secure for the American people of present and future generations the benefits of an enduring resource of wilderness[,]" the Wilderness Act provides for the protection and preservation of federal lands in their natural condition. *Id*. § 1131(a). Using unique words found in no other natural resource protection law, Congress defined a "wilderness," contrasted with "areas where man and his own works dominate the landscape," as:

> an area where the earth and its community of life are untrammeled by man, where man himself is a visitor who does not remain. An area of wilderness is further defined to mean in this chapter an area of undeveloped Federal land retaining its primeval character and influence, without permanent improvements or human habitation, which is protected and managed so as to preserve its natural conditions and which (1) generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable; (2) has outstanding opportunities for solitude or a primitive and unconfined type of recreation; (3) has at least five thousand acres of land or is of sufficient size to make practicable its preservation and use in an unimpaired condition; and (4) may also contain ecological, geological, or other features of scientific, educational, scenic, or historical value.

Id. § 1131(c); *see also* 43 U.S.C. § 1702(*i*) (Federal Land Policy and Management Act, adopting same definition).

WSAs are areas without roads that have been inventoried and found to have wilderness characteristics as defined in the Wilderness Act and the Federal Land Policy and Management Act (BLM, 2012). As the steward of our public lands, the BLM is required to manage WSAs in a manner that maintains the area's suitability for preservation as wilderness and to protect the wilderness characteristics until Congress determines whether or not they should be designated as Wilderness.

The DEIS states that the analysis of potential impacts to land use include identification and description of land use areas that may be affected by implementation of the Proposed Action (DEIS at 4-44). Yet, the DOD fails to identify WSAs and LWCs as areas that may be affected by the proposed action. In so doing, it fails to analyze potential impacts to the unique and finite wilderness values of these lands. This violates NEPA's requirement that agencies to take a "hard look" at the environmental consequences of proposed actions. ONDA-8

The DEIS fails to analyze the impacts of noise and the presence of aircraft on solitude and naturalness. As mentioned above, there are numerous WSAs and LWCs under the proposed airspace. Among the special resource values of these lands are opportunities to experience natural landscapes and solitude. Noise pollution and visual disturbances by aircraft over WSAs and LWCs could detract from solitude and naturalness. Additionally, the proposed action would result in impacts from noise and/or visual disturbances that would impact BLM's inability to manage these special resource areas in a manner that maintains their suitability for preservation as wilderness. ONDA-9

The DEIS states that "a land use impact would occur if a land use was placed into a noise level greater than what it is considered compatible with." DEIS at 4-44. In the Challis Wilderness EIS, the Air National Guard (ANG) "strongly objected" to the proposed establishment of wilderness areas on the basis that a Military Training Route (MTR) in the area was incompatible with the wilderness value of solitude (DOI, 1986). While the Proposed Action for the airspace initiative is to expand and establish new MOAs, the impacts of noise from military aircraft would be equal to ONDA-10

or greater than what is experienced from that generated by an MTR, and therefore the Proposed Action is incompatible with the wilderness value of solitude. ONDA-10 (cont.)

The DEIS states that "the proposed airspace must be capable of supporting both day and night operations." DEIS at 1-13. As described above, the wilderness value of solitude is incompatible with military operations and overflights. Overflights during the night are particularly offensive to wilderness values and the DEIS fails to analyze alternatives to minimize these impacts. ONDA-11

The DEIS only references impacts to naturalness once in regard to chaff debris. ONDA agrees that debris from chaff and flares impacts naturalness. However, the presence of military aircraft performing combat maneuvers and training missions above wilderness lands also would impact naturalness and solitude character, and the DEIS fails to analyze these impacts. ONDA also is concerned about potential impacts to naturalness, as well as human health and safety, from the risk of wildland fire resulting from chaff or flares. The DEIS must disclose and discuss this issue. ONDA-12

The DEIS fails to analyze potential alternatives that would reduce the impacts of noise and visual disturbances on special resource value areas within the Proposed Action area. One alternative would be to eliminate one or more of the new or expanded MOAs to minimize impacts to WSAs and LWCs. Another alternative would be to adjust the boundaries of one or more of the new or expanded MOAs to avoid WSAs and LWCs. ONDA-13

Recently, the Sutton Mountain and Painted Hills Area Preservation and Economic Enhancement Act of 2015 was introduced in Congress. The 58,000-acre wilderness, which includes the Sutton Mountain and Pat's Cabin Wilderness Study Areas, lies underneath the proposed Redhawk MOA complex. This area has incredible paleontological resources, abundant wildlife and myriad opportunities for primitive recreation. For these reasons, visitors come from all over the world to explore the greater Sutton Mountain landscape. ONDA-14

According to the Bureau of Land Management's recently finalized Resource Management Plan, Pat's Cabin and Sutton Mountain are part of the Bridge Creek Special Recreation Management Area. Under the plan, this area is managed to allow visitors to "engage in cross-country hiking and primitive overnight camping, big game and upland hunting, hiking, horseback riding, back-country navigation and exploration, photography and rock and fossil study in steep, challenging terrain." Because this proposed wilderness lies underneath the proposed Redhawk MOA complex, an analysis of how the proposed airspace will impact this area must be conducted. Furthermore the DOD must evaluate one or more alternatives that would *reduce* or *eliminate* impacts to the proposed wilderness. ONDA-15

II. Impacts to Recreation and Tourism

The DEIS fails to properly analyze potential impacts to recreation and tourism from noise in central and southeast Oregon. The DEIS states that tourism in Oregon is important to local economies, representing approximately 9% of employment, and highlights the significance of quiet recreation opportunities as one of the main sources of tourism in the Redhawk, Juniper, and Hart Proposed Action areas. DEIS at 4-109. Yet the DOD concludes that the Proposed Action would have negligible impacts on recreation and tourism, saying that the majority of the areas ONDA-16

impacted will experience flights at or above 11,000 MSL and "would result in generally inaudible sound levels." An aircraft flying at 11,000 MSL in the Juniper and Hart areas translates to roughly 6,000 feet above ground level (AGL), a height at which F-15 tactical fighter aircrafts are easily heard and would likely result in extraordinary impacts to quite recreation opportunities.

ONDA-16 (cont.)

Furthermore, the expansion of the Juniper MOA has a floor of 500 AGL and impacts to quiet recreation would be especially detrimental under this portion of the Proposed Action. The DEIS argues that the Hart and Juniper areas already experience flyovers and the current presence of aircraft justifies the proposed expansion of the airspace. DEIS at 4-110. This assertion is arbitrary, as the proposed action would result in an increase in the size of the flyover area, thus further degrading and reducing opportunities for quite recreation, solitude, and the ability to experience natural landscapes, and resulting in negative impacts to important economic drivers for local communities.

ONDA-17

The DEIS states that a land use would be affected if changes to the natural environment eliminate use or enjoyment of a place. DEIS at 4-45. User groups that live in and travel to these regions to enjoy the solitude, natural landscapes and quite recreation opportunities do not anticipate military operations will impact their experience. The enjoyment and use of these environments would be negatively impacted by the Proposed Action. One alternative the DEIS fails to explore to reduce the impact to recreation and tourism is to raise the floor of the proposed and expanded MOAs to at least 13,000 MSL to minimize both noise and visual disturbances from overflights. Similar to raising the floor, an alternative that considers elimination or boundary changes to the Proposed Action, minimizing impacts to recreation opportunities and limiting negative ramifications to local economies, should also have been analyzed.

ONDA-18

III. Impacts to Wildlife including Greater Sage-grouse

The DEIS fails to properly analyze alternatives that would minimize impacts to Greater sage-grouse. The proposed MOA expansion covers large swaths of private and public land that contain essential sage-grouse breeding, nesting, and brood-rearing habitat (Hagen *et al*., 2011). In fact, most of southeastern Oregon lies within one of just two remaining sage-grouse habitat "strongholds" in all of North America essential to the survival and recovery of this imperiled species. The flight activities that would be conducted within the expanded MOAs would affect sage-grouse. The sage-grouse is a species iconic to Oregon's high desert and is a true obligate of the sagebrush system it inhabits. The elaborate courtship display of sage-grouse is one of the most captivating wildlife-watching experiences in North America. The Hart C and Juniper D MOAs and the surrounding areas are home to sage-grouse and active lek sites, as well as many other species of plants and wildlife that share sagebrush uplands on public lands.

ONDA-19

In the U.S. Fish and Wildlife Service's 2010 "warranted" determination for Greater sage-grouse, which was based in large part on a Monograph issued in 2009 by the U.S. Geological Survey (Knick and Connelly, 2009), the Service detailed the threats to sage-grouse and the bird's disappearing sagebrush habitat. The Monograph and "warranted" finding present scientific information demonstrating that known threats to sage-grouse (including the types of habitat-impacting actions that are part of the Oregon Airspace Initiative) are now understood to affect

the species at far more significant spatial scales than previously understood. Scientific understanding of sage-grouse and actions that may prevent further loss of habitat have continued to evolve and expand since publication of the "warranted" finding and the Monograph. Examples such as BLM's National Technical Team report (USFWS, 2013) and the Oregon Department of Fish and Wildlife ("ODFW") Greater Sage-Grouse Conservation Assessment and Strategy (Hagen *et al*. 2011) clearly indicate that sage-grouse are affected by activities in their habitat and that there is real need to avoid, minimize, or mitigate for these activities to protect the species and preserve its habitat.

In 2011, the Oregon Department of Fish and Wildlife identified Core Areas representing the most important sage-grouse habitat in Oregon. A major threat to the sage-grouse is continuing loss and fragmentation of sage-grouse habitat from a variety of causes. Essentially any land use or activity that subdivides blocks of intact sagebrush causes fragmentation (USFWS 2010, defining fragmentation as "the separation or splitting apart of previously contiguous, functional habitat components of a species"). Guidance from the U.S. Fish and Wildlife Service and ODFW makes clear that the objective for disturbances in sage-grouse habitat is to avoid or significantly reduce any impacts in sage-grouse habitat because of the negative consequences for the species.

Physiological responses to noise in animals range from mild annoyance to panic and escape. Factors that can influence animal responses include whether an animal is feeding, resting, caring for young, distance to the sound pollution source, source type and suddenness and frequency of the source (Radle, 2007). Closer noise pollution sources generally are more likely to produce a response. Some indirect effects in response to overflights have been documented, such as eggs kicked from nests when birds flush, trampling or separation from young, increased predation, loss of feeding, and avoidance or abandonment of habitat. Recent research suggests that management of the natural soundscape is a critically important component of Greater Sage-grouse conservation and protection (Patricelli *et al*. 2013).

ONDA-19 (cont.)

ONDA appreciates the DEIS's consideration and analysis of potential impacts to sage-grouse during the breeding season, including measures to minimize impacts, such as avoiding core areas during breeding season and increasing the floor to 1,000 feet AGL (Juniper Low MOA) in the event that a flyover is unavoidable. But the DEIS fails to consider a reasonable range of alternatives to minimize impacts to sage-grouse and other wildlife species. For example, providing protective measures for sage-grouse only during the breeding season is insufficient. The DEIS needs to evaluate and mitigate for effects at and during other essential periods to sage-grouse survival and recovery – i.e. nesting, brood-rearing, and over-wintering. The consideration of only the breeding habitat is an incomplete analysis at best and does not provide the necessary measures to prevent impacts of the Proposed Action on sage-grouse.

Several actions could be taken to reduce impacts to sage-grouse especially in areas where the Proposed Action has the highest likelihood of impacting sage-grouse (Hart C and Juniper D MOAs). An alternative that evaluates no expansion of Hart C and Juniper D is necessary to consider how best to minimize impacts to sage-grouse. As with wilderness areas, altering the size and configuration of the proposed and expanded MOAs could avoid or minimize some impacts to wildlife species. The DOD must consider such boundary adjustments. Lastly, the floor of the

proposed and expanded MOAs could be raised, to at least 13,000' MSL, to minimize noise from overflights which would also benefit wildlife.

ONDA-19 (cont.)

IV. Additional Alternatives

The DEIS fails to consider a reasonable range of alternatives. The three action alternatives do little to address impacts to wildlife and wilderness values in the Proposed Action area. Similarly, the DEIS presents no alternatives that modify the Proposed Action to effectively limit impacts to recreation and tourism in the affected counties. At a minimum ONDA suggests that the DOD consider the following alternatives to minimize impacts to resource values.

1. Propose only the EEL MOA expansions. Do not propose the Juniper/Hart MOA expansions or creation of the Redhawk MOA. Limiting expansions and avoiding the creation of the new Redhawk MOA would best prevent negative impacts on wilderness values, recreation opportunities, and the wildlife and wildlife habitats affected by the training areas.

ONDA-20

2. Alter the Juniper/Hart MOA boundaries, using Highway 205 as the eastern border for the Hart C and Juniper D zones, in order to avoid affecting the Steens Mountain Cooperative Management and Protection Area[1] and Steens Mountain Wilderness Area and important wildlife habitat. By using this highway as the border, the impact to the wildlife and wilderness values within both the Hart C and Juniper D MOAs would be greatly reduced.

3. Propose the expansion of the Juniper/Hart MOA and the establishment of the Redhawk MOA with a floor for the new zones of 13,000 MSL. This will move all of the training activity further away from wildlife habitat and wilderness values, and therefore reduce the impact that the training exercises will have.

Conclusion

For these reasons, ONDA urges the National Guard Bureau to limit air combat training to areas where it will not unacceptably conflict with conservation of important natural resources. ONDA strongly encourages the National Guard Bureau to create additional, appropriate airspace expansion alternatives to reduce or avoid impacts to wilderness values and wildlife species. We look forward to reviewing the Final EIS for the Airspace Initiative.

[1] In 2000, Congress passed the Steens Mountain Cooperative Management and Protection Act of 2000 ("Steens Act"), 16 U.S.C. § 460nnn *et seq*. The Act established the Cooperative Management and Protection Area ("CMPA"), a 496,000-acre protected area managed by BLM and covering most of Steens Mountain. *Id*. § 460nnn-11(a). "The purpose of the [CMPA] is to conserve, protect, and manage the long-term ecological integrity of Steens Mountain for future and present generations." *Id*.§ 460nnn-12(a). The Act also established the 173,000-acre Steens Mountain Wilderness Area.

Please include or maintain ONDA on your mailing list (see address below) for all documents related to this proposal. If you have any questions regarding these comments, please feel free to contact us.

Sincerely,

Jeremy Austin, Hart-Sheldon Campaign Coordinator
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NON-GOVERNMENT SPECIAL INTEREST GROUPS

ONDA (Austin)-1: Issues surrounding greater sage-grouse (*Centrocercus urophasianus*) and land use, including federally and state-managed open space and wilderness areas, are discussed in Section 4.4, *Biological Resources* and Section 4.3, *Land Use and Visual Resources*, respectively. Additional information regarding land use, including wilderness areas, is also provided in Appendix G, *Land Use and Land Management*. As described in Comment Response ONDA-7, Wilderness Study Areas (WSAs) and Lands with Wilderness Characteristics (LWCs) have been defined and discussed in Appendix G, *Land Use and Land Management* within the Final EIS.

ONDA (Austin)-2: As described in Section 2.3.2, *Evolution of the Proposed Action*, the development of the current airspace proposal has been a result of more than five years of continuous coordination with the FAA's Air Route Traffic Control Center (ARTCC), Portland Terminal Radar Approach Control Facilities (TRACON), and myriad other regional airspace users (e.g., general aviation pilots, recreational glider clubs, etc.). The controlling ARTCC applied evaluative and exclusionary criteria to preliminarily design the placement of airspace boundaries. The specific locations and shapes of proposed airspace modifications were developed to account for aircraft flight path histories in the region in order to identify the most ideal locations and configurations for the proposed airspace with the least potential to impact surrounding military, commercial, and general aviation. No alternate locations exist for the establishment of proposed military airspace that would meet the purpose and need of the Proposed Action.

The current airspace proposal reflects an ongoing attempt to reduce potential conflicts with commercial and general aviation traffic, limit potential environmental concerns, and promote more responsible stewardship of airspace by the Oregon ANG. As a part of outreach during the development of the Proposed Action, the external boundaries of the proposed Juniper/Hart MOA Complex were revised to avoid Malheur Lake and the Malheur NWR, as well as the Steens Mountain Cooperative Management and Protection Area (see Figure 2-5 and Figure 3.3-4). The boundaries of the proposed Juniper Low MOA were revised during development of the airspace proposal to avoid these areas, as well as the Hart Mountain NWR, entirely. Further, the Redhawk MOA Complex has been segmented in order to reduce the need for and frequency of activation of the entire airspace area. As described in the Final EIS, potential direct and indirect impacts to the areas below the proposed airspace (e.g., noise, land use, and visual resources) would be less than significant relative to FAA thresholds presented in the approach to analysis. Further, noise impacts associated with the Proposed Action would be less than the USEPA threshold for areas where quiet is a recognized resource (USEPA 1974). Therefore, impacts to naturalness and solitude would be less than significant as well. Even if alternate locations for airspace establishment were available, the development of additional alternatives would not substantially reduce the impacts described for the Proposed Action.

ONDA (Austin)-3: The Painted Hills areas are shown in the Final EIS in Figure 3.3-5, just north of Highway 26 beneath the proposed Redhawk C MOA. While these areas are not identified by name within text/narrative of the Final EIS, the document analyzes land use beneath the Proposed Action area in Section 4.3, *Land Use and Visual Resources*. The proposed legislation that would have established the Sutton Mountain and Painted Hills Preservation Act was never enacted. However, impacts to these wilderness areas would be similar in context and intensity to those described for the other sensitive land uses located beneath the proposed airspace (refer to Section 4.3, *Land Use and Visual Resources*). In accordance with AFI 11-202, Vol. 3, and to the extent practicable and mission permitting, the USAF/ANG would conduct all training maneuvers above 2,000 feet AGL over national recreational areas, wildlife refuges, and wilderness areas.

Since the Proposed Action would not involve any ground disturbance, the primary effects of the Proposed Action on land use would be associated with visual resources and noise. Any notable increase in aircraft activity and associated contrails would by their nature be transitory and short-term visual intrusions, which would not permanently block or obstruct views of visual resources from any vantage point. Further, with the exception of Warning Area (W-) 570 and the Juniper Low MOAs, the proposed airspaces would have a floor of 11,000 feet MSL. Under the Proposed Action, none of the areas beneath the affected or proposed airspaces would experience noise levels greater than or equal to the 65 DNL threshold. In fact, noise levels would remain well below 55 DNL which is the USEPA's recommended noise threshold for residential areas, farms, and other outdoor areas where people spend widely varying amounts of time and other places in which quiet is a basis for use (USEPA 1974; refer to Section 4.2, *Noise*). Consequently, direct and indirect impacts to sensitive land uses below the proposed airspaces would be less than significant, as described in the Final EIS.

ONDA (Austin)-4: As recognized in the Final EIS, tourism, particularly outdoor recreation, is an important industry throughout the State of Oregon, representing approximately nine percent of employment, and four percent of total non-farm industry sector earnings throughout the state. The quiet, natural settings in rural Oregon are an important component of outdoor tourist attractions and recreation. While the Proposed Action would introduce additional flight activity above some of these areas, the activity in the proposed Eel MOAs and Redhawk MOA Complex as well as the majority of the Juniper/Hart MOA Complex expansion area (i.e., Hart C, Hart D, Hart E, and Hart F) would occur at or above 11,000 feet MSL and would result generally in inaudible sound levels at the ground surface that would not substantially or noticeably disrupt activities below the affected airspace; therefore, the Proposed Action would not have significant impacts on recreation or tourism. Further, flight activity within the proposed Juniper East Low MOA would not result in noise impacts that would exceed the USEPA's recommended noise threshold for residential areas, farms, and other outdoor areas where people spend widely varying amounts of time

and other places in which quiet is a basis for use (USEPA 1974; refer to Section 4.2, *Noise*). Refer to the discussion regarding sensitive land uses in Comment Response ONDA-3.

ONDA (Austin)-5: Following publication of the Draft EIS and after the public comment period closed, the USFWS determined that the greater sage-grouse is not warranted for federal listing under the Endangered Species Act (ESA) (80 Federal Register [FR] 59857; October 2, 2015). Within that Federal Register, it is noted "the behavioral response of sage grouse to overflight noise has not been examined." However, within Oregon, the ODFW has developed the *Greater Sage-Grouse Conservation Assessment and Strategy for Oregon: A Plan to Maintain and Enhance Populations and Habitat*. This plan includes identification of "Core Areas" of habitat warranting protection, limiting hunting and harvest restrictions, limiting construction activities within greater sage-grouse habitat during breeding season from one hour after sunset to two hours after sunrise[4], and restricting off-highway-vehicle use to areas more than two miles from nesting areas during breading season as well as other measures intended to mitigate potential disturbance. None of the proposed high MOAs (Juniper C and D, or Hart C, D, E, and F), which have a floor of 11,000 feet MSL, would generate sufficient noise to disturb sage-grouse (refer to Section 4.2, *Noise*). However, as shown in Figure 3.4-2 there are a number of sage-grouse Core Areas beneath the proposed Juniper East Low MOA. The Nevada Department of Wildlife (NDOW) raised concerns during the scoping process that noise generated by low-flying aircraft may impact greater sage-grouse during its breeding season. Based on the minimum distance between the noise-generating aircraft and the Core Areas at the ground surface, estimated maximum noise exposure for greater sage-grouse during a fly over at 500 feet would be approximately 116 dB, with the greatest exposure occurring beneath the Juniper Low MOA and Juniper East Low MOA. As previously described, flight activity within the existing Juniper Low MOA and the proposed Juniper East Low MOA, combined, would total about 249 flight hours annually, distributed throughout the combined approximately 5,000-square-mile Low MOAs. Additionally, the 173 FW anticipates 35 percent of those hours would be flown below 1,000 feet AGL based on training syllabus requirements. Consequently, as reflected in environmental analyses presented in the Final EIS (Table 4.2-1, and Appendix E, *Noise*), maximum noise events resulting from direct aircraft overflights would be infrequent and of very short duration. Additionally, in order to avoid impacts to the greater sage-grouse leks (i.e., aggregations of breeding males), the Oregon ANG would avoid greater sage-grouse Core Areas to the maximum extent practicable during the breeding season (i.e., 1 March to 31 May; Harrell 2008) and would fly over these areas consistent with training syllabus requirements, as analyzed.

[4] The 173 FW typically schedules flight training no earlier than 9:30am local time and concludes training operations generally before 3:00pm local time. This is consistent with the ODFW Greater-Sage Grouse Conservation Assessment and Strategy for Oregon.

ONDA (Austin)-6: Refer to Comment Response ONDA-2. It is important to note that as a part of the Environmental Impact Analysis Process (EIAP) conducted by the USAF to comply with the NEPA, alternatives to the Proposed Action are carried forward for analysis only if they can accomplish/satisfy the purpose of and need for the Proposed Action. Any potentially significant impacts resulting from these alternatives are disclosed during the EIAP and are mitigated to the extent feasible. As discussed with ONDA during the Public Hearings, the EIS has concluded that the Proposed Action and its alternatives would have less than significant impacts on all of the resources areas that have been analyzed.

The ONDA scoping letter dated 12 July 2013 requested the analysis of the Eel MOA Expansion as a standalone alternative; however, this would not meet the purpose and need of the Proposed Action due to the sea-state requirements, which often preclude the use of this airspace as described in Section 1.5.5, *Establishment of the Redhawk MOA Complex*. The ONDA scoping letter also suggested the proposed expansion of the Juniper Hart MOA with alternate boundaries using Highway 205 as the eastern boarder for Hart C and Juniper D. As described in Section 2.3.2, *Evolution of the Proposed Action* and in Comment Response ONDA-2, relevant accommodations have already been incorporated into the Proposed Action and its alternatives; for example, the originally proposed configuration of the Juniper Hart Low MOA was previously revised to avoid the Steens Mountain Cooperative Management and Protection Area and NWRs in this area. The other MOAs in the Juniper/Hart MOA would be established at 11,000 feet MSL, which would result in less than significant impacts on the noise environment and associated indirect impacts on biological resources. In addition, the proposed expansion of the Juniper/Hart MOAs was further segmented to allow for activation of airspace "blocks" only when needed and in order to facilitate more responsible stewardship of the airspace by the Oregon ANG. There would only be 58.5 hours of total annual use within Hart C and 56 hours of annual use within Hart D. Consequently, impacts would be less than significant. Imposing additional restrictions on these airspace segments would not meet the purpose and need of the Proposed Action. Further, with regard to the Juniper/Hart MOA Complex, the originally proposed expansion of the complex extended further east – without segmentation – and started at 10,000 feet MSL instead of the currently proposed floor of 11,000 feet MSL (refer to Figure 2-4). Additionally, the originally proposed new Juniper/Hart Air Traffic Control Assigned Airspaces (ATCAAs) extended up to 70,000 feet MSL instead of 51,000 feet MSL. As potential conflicts with regional airspace users were identified, the originally proposed expansion of the Juniper/Hart MOA Complex has been refined to the current proposal. The EIS does not analyze establishment of the MOAs at 13,000 feet MSL, as it would not meet the purpose and need of the Proposed Action; at this altitude the airspace would not provide sufficient volume to support all of the required training activities. Further, while raising the floor of the airspace from 10,000 feet MSL to 11,000 feet MSL addresses a number of potential airspace management conflicts, raising the floor of the airspace by an

additional 2,000 feet would not substantially reduce the already less than significant noise impacts described for the Proposed Action.

ONDA (Austin)-7: ***The Final EIS has been clarified as a result of this comment.*** See Comment Response ONDA-3. Specific reference to these WSAs and LWCs have been added to Appendix G, *Land Use and Land Management*. However, impacts to these areas would be these same as those described in the Final EIS for areas beneath the affected airspace areas. Consequently, the inclusion of the subject WSAs and LWCs would not measurably change the impacts described for the Proposed Action in the Final EIS.

ONDA (Austin)-8: Refer to Comment Responses ONDA-3 and ONDA-7.

ONDA (Austin)-9: Refer to Comment Response ONDA-3. Noise impacts are described in Table 4.2-1 within Section 4.2, *Noise* of the Final EIS. Noise experienced beneath the proposed Eel MOAs and Redhawk MOAs would be 35.0 L_{dnmr}. (L_{dnmr} is the accepted metric for land use compatibility guidelines beneath SUA and represents the average for an entire month utilizing the busiest month.) Further, noise levels experienced beneath the newly established Juniper/Hart MOAs would be less than 40 L_{dnmr}. Under the Proposed Action, none of the areas beneath the affected or proposed airspaces would experience noise levels greater than or equal to the FAA's 65 DNL threshold. Further, noise levels would remain under 55 DNL, which is the USEPA's recommended noise threshold for residential areas, farms, and other outdoor areas where people spend widely varying amounts of time and other places in which quiet is a basis for use (USEPA 1974; refer to Section 4.2, *Noise*).

Other important concerns regarding aircraft operations within SUA include the number, intensity, and duration of individual noise events that contribute to the L_{dnmr}. Consequently, L_{dnmr} is generally supplemented with metrics describing instances of unpredictable, discrete short-term noise events that produce long-term average L_{dnmr}. Neither the FAA nor the USAF requires evaluation of SEL, but the Oregon ANG has elected to evaluate SEL for this analysis in an attempt to more fully and transparently address public concerns. As described in Section 4.2, *Noise* the number of events above 65 dB SEL would be less than 0.5 per day in all of the proposed MOAs. In summary, average noise levels would remain far below 55 DNL and events above 65 dB SEL would be very infrequent.

ONDA (Austin)-10: See Comment Responses ONDA-3 and ONDA-9. As described in Section 3.1, *Airspace Management*, SUA and Military Training Routes (MTRs) are fundamentally different in that MTRs are generally low- to mid-altitude flight paths that are traveled (i.e., used for training) at regular to semi-regular intervals in a single direction. In contrast, SUA is a defined boundary throughout which non-patterned flight operations are distributed. Sensitive land uses beneath MTRs may be incompatible based on the altitude and frequency of use. However, in the case of the subject airspace proposal, due to the size and altitudes of the SUA as well as the

relative infrequency of operations, indirect visual resources and noise-related impacts would be less than significant and would not be incompatible with land uses beneath the proposed airspaces.

ONDA (Austin)-11: As discussed in Section 3.1 and Section 4.1, *Airspace Management* night flying (between 10:00 p.m. and 7:00 a.m.) accounts for between 5 and 10 percent of total existing Oregon ANG operations and proposed operations within the proposed Eel MOAs and Juniper/Hart MOA Complex. Under the Proposed Action no night flying would occur within the Redhawk MOA Complex. As further described in Appendix E, the L_{dnmr} metric averages A-weighted sound levels, with an additional 10-dB penalty added to noise events occurring between 10:00 p.m. and 7:00 a.m. This penalty is intended to account for generally lower background noise levels at night and the additional annoyance of nighttime noise events. Accounting for night operations under the Proposed Action, with this penalty added, average noise levels would still be substantially below the FAA's 65 DNL threshold. Further, noise levels would remain under 55 DNL, which is the USEPA's recommended noise threshold for residential areas, farms, and other outdoor areas where people spend widely varying amounts of time and other places in which quiet is a basis for use (USEPA 1974; refer to Section 4.2, *Noise*).

ONDA (Austin)-12: Chaff consists of small, extremely fine fibers of aluminum-coated glass that disperse widely when ejected from aircraft. During a particulate test conducted by the USAF's Air Combat Command (ACC), chaff debris settled quickly, indicating that chaff does not remain in the air column for long periods of time. Similarly, flares emit a small quantity of visible smoke when initially ignited. However, the effect of this activity on visual resources is negligible due to the altitudes at which flares are deployed, to the small quantity released, and the relatively short (3.5- to 5-seconds) burn time. Chaff and flare are currently used within the existing W-570 as and within the Juniper/Hart MOA Complex; the Oregon ANG has received no complaints regarding their use. Flare use by the 142 FW is anticipated to take place during 1,081 training sorties per year; for each training sortie involving flares, an average of 15 flares would be released. The 173 FW training syllabus applicable to this environmental analysis requires pilots to expend flares during training operations. In accordance with training syllabi, pilots expend flares during 33 out of 46 syllabus sorties. The ANG has prepared Appendix I, *Wildfire Hazard Analysis* to further assess the need for and utility of additional restrictions on flare use. The necessity for flare use is highlighted in Appendix I, Section I.5. If site-specific concerns should arise, resource agencies (e.g., BLM) and individual military entities (e.g., USAF/ANG) could develop and enforce agreements to limit the use of chaff or flares near sensitive land uses such as NWRs and public recreation lands, or Native American reservations and population centers.

Though implementation of the Proposed Action would not impact terrestrial landscape elements (i.e., there are no ground-disturbing elements of the Proposed

Action), the addition of increased or newly introduced overflights and the occurrence of periodic aircraft-generated noise and aircraft contrails above scenic and otherwise sensitive land use settings may be perceived as annoying or intrusive. Any notable increase in aircraft activity and associated contrails would, by their nature, be transitory and short-term visual intrusions that would not block or obstruct views of any visual resource from any vantage point. Further, the modification would result in a larger volume of designated SUA available for aircraft maneuvering, resulting in a broader geographic distribution of training sorties and a reduced probability of visual and noise effects from any individual location below the airspace. Additionally, the activation time is expected to decrease under the Proposed Action, as more training could be accomplished in a larger airspace, shortening the required time of use. (Refer to Comment Response ONDA-3.)

ONDA (Austin)-13: Information regarding development of the Proposed Action and its alternatives is discussed in Comment Response ONDA-2 and ONDA-7. No alternate airspace locations were identified during coordination with the FAA that could support mission training requirements of the Oregon ANG. Further, reducing the dimensions from what is currently proposed would result in constrained airspace, providing little to no benefit, and therefore not meeting the purpose and need of the Proposed Action. As described in Section 2.3.2, *Evolution of the Proposed Action* and Comment Response ONDA-2, the current airspace proposal reflects an ongoing attempt to reduce potential conflicts with commercial and general aviation traffic, limit potential environmental concerns, and promote more responsible stewardship of airspace by the Oregon ANG. Noise impacts beneath the proposed airspace are described in Table 4.2-1 within the Final EIS. Noise experienced beneath the Eel MOAs and Redhawk MOAs would be 35.0 L_{dnmr}. Noise levels in the newly established Juniper/Hart MOAs would be less than 40 L_{dnmr} and noise levels within the existing Juniper/Hart MOAs would decrease. The number of events above 65 dB SEL would be less than 0.5 per day in all of the proposed MOAs. Further as described in Comment Response ONDA-2, impacts to visual resources would be less than significant. Consequently, even if alternate locations for airspace establishment were available, the development of additional alternatives would not substantially reduce the impacts described for the Proposed Action.

ONDA (Austin)-14: Refer to Comment Response ONDA-3.

ONDA (Austin)-15: Refer to Comment Response ONDA-3.

ONDA (Austin)-16: Noise modeling takes into account topography beneath the airspace. See Appendix E, *Noise* and refer Comment Response ONDA-13.

ONDA (Austin)-17: As described in Table 4.2-1, noise levels within the Juniper Low East MOA would be 46.3 L_{dnmr}, with virtually no events above 65 dB SEL. This is due to both the size of the airspace, and its relatively low frequency of activation/use (i.e.,

only 45 hours per year). Additionally, noise levels would actually be reduced within the existing Juniper Low MOA, which would experience 204 hours of activity per year, reduced from 243 hours under existing conditions.

ONDA (Austin)-18: Refer to Comment Response ONDA-6.

ONDA (Austin)-19: Refer to Comment Response ONDA-5.

ONDA (Austin)-20: Refer to Comment Responses ONDA-2 and ONDA-6.

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August 3, 2015

Kevin Marek
NGB/A7AM
Shepperd Hall
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Joint Base Andrews MD 20762-5157

Re: Draft Environmental Impact Statement for Proposed Establishment and Modification of Oregon Military Training Airspace

Dear Mr. Marek,

The Aircraft Owners and Pilots Association (AOPA) submit the following comments to the National Guard Bureau (NGB) in regards to the Draft Environmental Impact Statement (DEIS) for the establishment and modification of military training airspace in Oregon. The proposal would create new Military Operations Areas (MOA) and Warning Areas in close proximity to general aviation airports, commonly used Victor airways, and VFR aircraft training areas and flight corridors. AOPA believes the establishment and expansion of this Special Use Airspace (SUA) would have a negative impact on general aviation in the Northwest United States region in terms of safety and accessibility.

Juniper East Low MOA

The Juniper East Low MOA would increase the overall size of the existing Juniper MOA by over 10 NMs to the east and would be effective from 500' AGL to 11,000' MSL when active. This would have serious implication on the Burns Municipal Airport (KBNO) which is just barely outside of this proposed expansion. This airport has over 5,000 aircraft operations per year with the majority being transient. They rely upon accessibility in order to receive these transient aircraft and thus to be self-sustaining. Extending this airspace could have serious economic implications if access to this airport was prevented from the east. AOPA-1

Airway V357 transits through the existing Juniper MOA from Lakeview VORTAC (LKV) to Wildhorse VOR/DME (ILR). Currently V357 is restricted to below 11,000' MSL when Juniper MOA is activated. This means IFR traffic are constrained between areas of high elevation below (nearly 6,000' MSL) and dangerous aerial activity above. The addition of Juniper East Low would further impact this airway by making it all but unusable to IFR traffic unless air traffic control and conditions could accommodate. Pilots must flight plan and expect to have to circumnavigate a huge amount of airspace in order to fly to BNO from the east. VFR traffic could still fly to BNO from the east but would need to transit through the MOA, possibly when the military is utilizing the airspace. AOPA-2

This MOA would further impact the RNAV (GPS) RWY 30 instrument approach procedure into BNO. A feeder route for this approach which would allow pilots to proceed to the Initial Approach Fix (IAF) and join the approach would be negatively affected as NIDIC intersection AOPA-3

would now be within this MOA. The FAA has established guidance on MOA floors in JO 74002.K and expect the floor of a MOA to be above 1,200' AGL unless "mission requirement exists and there is minimal adverse aeronautical effect." This FAA Order further states "provisions must also be made to accommodate instrument arrivals/departures at affected airports with minimum delay." The impact to this instrument approach procedure could cause greater delay to arrivals at BNO and have an adverse aeronautical effect.

AOPA-3 (cont.)

Eel MOAs

Proposed Eel MOAs A, B, C, and D overly Port of Ilwaco Airport (7W1), Astoria Regional Airport (AST), Seaside Municipal Airport (56S), Nehalem Bay State Airport (3S7), Tillamook Airport (TMK), Pacific City State Airport (PFC), and Siletz Bay State Airport (S45). The MOA would have a floor of 11,000' MSL and extend from W-570 to many miles inland.

AOPA-4

Several existing airways would be impacted and limited by the MOAs having a base altitude of 11,000' MSL. The Astoria VOR/DME (AST) to Newport VORTAC (ONP) route on V27 has a Minimum Enroute Altitude (MEA) as high as 8,000' when northbound. IFR traffic on this airway along the coast would have few altitude options should the MOA be active. Other airways impacted include V112, V182, and V187. Ensuring these airways are available to IFR traffic is critical to ensuring accessibility to the airports below and for transients heading to northern or southern Oregon.

AOPA-5

Flying the coast is a popular VFR method of navigation. Should these MOAs be active, VFR traffic would need to constantly be on alert due to the unusal flight activity taking place around them. A popular sight-seeing flight route would become impacted by additional SUA in this area. The AOPA Air Safety Institute offers courses on SUA airspace in order to highlight the activities in MOAs and educate pilots how to be competent in SUA procedures so they can confidently and safely fly through MOA airspace. We encourage our members to check with FSS or the controlling agency on SUA status.

Redhawk MOAs

The proposed Redhawk MOA's would adversely impact several airways should the base altitude be set at 11,000' MSL. Due to high elevation and other factors, the MEA for many airways crisscrossing the planned MOA area are already slightly below or above 11,000' MSL. The critical Kimberly VORTAC (IMB) is within this impacted area and has several Victor airways emanating from it that have MEA's at or above 9,000' MSL. According to the Instrument Procedures Handbook, the MEA "is the lowest published altitude between radio fixes that assures acceptable navigational signal coverage and meets obstacle clearance requirements between those fixes." This means IFR traffic flying lower than the MEA in this area would not likely be feasible or safe. These airways may become unavailable and require pilots to fly many miles out of their way and at a high cost in fuel.

AOPA-6

Economic Impact of Oregon Airports

Oregon airports provide a large contribution to the State economy per the Oregon Aviation Plan. The 2007 report showed all public-use airports in the state contributed more than $8 billion but the number grows to over $9 billion by 2014. It is important to mention that the 2014 report studied only half of the airports the 2007 report did so the contribution could be much bigger.

AOPA-7

Thousands of jobs in the state and many aviation and non-aviation businesses rely on the millions of dollars that are spent by those who fly in to the smaller airports of Oregon from elsewhere.

According to the 2007 report, the nine Oregon airports listed in Table 3.1-1 of the DEIS account for over 2,000 jobs, $60,400,000 in wages, and have business sales of $206,391,000. The placement of these MOA's could have a negative impact on these smaller airports which rely on accessibility. Although AOPA encourages members to educate themselves on how to safely navigate through MOA airspace, we know from a 2003 survey that 73% of GA pilots deviated around SUA. A survey taken in 2005 revealed that 68% of GA pilots deviate around SUA. Fixed Base Operator's (FBO) rely heavily on fuel sales and, should fewer pilots stop in because they are avoiding the MOA, their revenue could drop dramatically. The 2014 report highlighted that over 700,000 people visit the state via general aviation. Making it harder for visitors to fly to these smaller airports could hurt not only the airports but also the local economy.

AOPA-7 (cont.)

Conclusion and Recommendations

For the reasons stated above, the AOPA believes the proposal outlined in the DEIS would adversely impact general aviation. We believe measures should be taken by the NGB to adequately accommodate civil aviation and preserve the airspace accessibility in regards to their final proposal and EIS. The AOPA has several recommendations in this area that we believe could improve access and safety:

- Juniper Low MOA currently has a listed time of use of "by NOTAM, 2 hours and 30 minutes in advance, daylight hours." This does not allow flight planning as a pilot could take off and find out enroute a MOA has made his airway unavailable. The pilot may be forced to fly at a lower altitude that could have adverse winds or force him to be closer to high terrain. A fuel stop may even become necessary. Increasing the required notice for all proposed and current MOAs to be active should be a minimum of 24 hours in advance, with a preference for greater than 48 hours.

- Any change in airspace configuration must coincide with the VFR charting cycles to ensure the flying public is aware of the change. Safety could be significantly impacted should the airspace change be made before the change is charted and widely disseminated to pilots.

AOPA-8

- AOPA believes the NGB should consider higher base altitudes for MOA's as the availability of many airways could be greatly improved should the base altitude be increased just a few thousand feet. A base altitude of 15,000' MSL could allow the expansion of MOAs and improve the access to the IFR airways.

- The using authority must have a clear and efficient coordination and scheduling process to ensure MOA use is announced in as far in advance as possible and that it is widely disseminated to all users of the national airspace system. The activation process should be efficient but so should the deactivation process. Air traffic controllers must be told as quickly as possible when a MOA or Warning Area is no longer needed to be active so that IFR and VFR pilots can be made aware. This airspace should be made accessible to general aviation as much as possible.

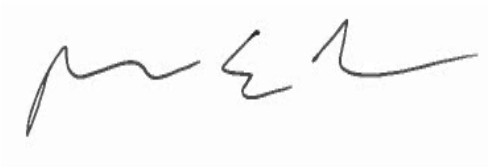
- AOPA encourages the NGB and FAA to formulate a letter of agreement detailing the procedures for access to the proposed SUA by IFR traffic. Allowing non-participating IFR traffic to safely transit the MOAs should be a top priority.

AOPA-10
(cont.)

The AOPA understands and supports the Oregon Air National Guard's need to train in order to have the readiness to support the national defense. We believe this training can be done in a manner that will not cause an undue negative effect on general aviation.

Thank you for the opportunity to comment on this important issue.

Sincerely,



Rune Duke
Director, Airspace and Air Traffic

The Aircraft Owners and Pilots Association (AOPA) is a not-for-profit individual membership organization of General Aviation Pilots and Aircraft Owners. AOPA's mission is to effectively serve the interests of its members and establish, maintain and articulate positions of leadership to promote the economy, safety, utility and popularity of flight in general aviation aircraft. Representing two thirds of all pilots in the United States, AOPA is the largest civil aviation organization the world.

Aircraft Owners and Pilots Association (AOPA) (Duke)-1: As discussed in Section 3.1 and Section 4.1, *Airspace Management* the Burns Municipal Airport is located approximately 13 miles to the northeast of the proposed Juniper B MOA and the Juniper East Low MOA. Given the distance between the airport and the proposed MOAs, as well as the proposed frequency of use, the proposed airspace is unlikely to have noticeable impacts on the airport. As currently proposed, the Juniper East Low MOA would extend from 500 feet AGL to 11,000 feet MSL and the Juniper B MOA would extend from 11,000 feet MSL to 18,000 feet MSL. As described in Comment Response DeCastro-1, all proposed new Oregon ANG airspace segments would only be activated on an as-needed basis – as a whole or individually – allowing for more responsible stewardship of the airspace regionally and helping to minimize conflicts with other users and reducing the overall amount of time an airspace area would be activated. Further, when a MOA is active, Instrument Flight Rules (IFR) traffic may be cleared to enter and pass through the area if adequate IFR separation criteria can be met and procedures are described in a Letter of Agreement between the unit and the Air Traffic Control (ATC) controlling agency (FAA Order 7400.2K). Nonparticipating Visual Flight Rules (VFR) aircraft are not prohibited from entering an active MOA; however, extreme caution is advised when such aircraft transit the area during military operations.

AOPA (Duke)-2: As discussed in Section 3.1 and Section 4.1, V-357 transits the existing Hart North MOA as well as the Juniper South and Juniper Low MOA. Under the Proposed Action, V-357 would transit the Hart A MOA, Juniper B MOA, and Juniper C MOA as well as the Juniper Low MOAs. Under the Proposed Action, annual flight activity in the existing airspaces would decrease substantially; flight activity within the Hart A MOA would be reduced from 205 hours to 188 hours; flight activity in the Juniper South MOA would be reduced from 1,278 hours to 624 hours; and flight activity within the Juniper Low MOA would be decreased from 243 hours to 204 hours. This overall decrease in flight activity within the existing airspaces could permit easier transit by general and commercial aviation within these areas. Under the proposed Action the Juniper C MOA would only experience 56 hours of flight activity annually and the Juniper East Low MOA would only experience 45 hours of flight activity annually. As described in Comment Response DeCastro-1, all proposed new Oregon ANG airspace segments would only be activated on an as-needed basis – as a whole or individually – allowing for more responsible stewardship of the airspace regionally and helping to minimize conflicts with other users and reducing the overall amount of time an airspace area would be activated. Further, when a MOA is active, IFR traffic may be cleared to enter and pass through the area if adequate IFR separation criteria can be met and procedures are described in a Letter of Agreement between the unit and the ATC controlling agency (FAA Order 7400.2K). Nonparticipating VFR aircraft are not prohibited from entering an active MOA; however, extreme caution is advised when such aircraft transit the area during military operations.

AOPA (Duke)-3: Mission requirements for the Juniper East Low MOA are described in Section 1.5.1, *Considerations for Military Training Airspace* and Section 1.5.4, *Expansion of the Juniper/Hart MOA Complex*. As described in the Final EIS, the potential environmental/socioeconomic impacts of the proposed Juniper/Hart MOA expansion would be less than significant.

AOPA (Duke)-4: These airports are named in Table 3.1-1 within Section 3.1, *Airspace Management* of the Final EIS. Each of these airports was considered during the analysis of environmental consequences provided in Section 4.1, *Airspace Management*.

AOPA (Duke)-5: As described in Section 3.1 and Section 4.1, *Airspace Management*, V-27 would transit beneath the floor of the Eel A, B, C, and D MOAs. V-112 and V-187 would transit beneath the floor the Eel A MOA and V-182 would transit beneath the floor of Eel D MOA (FAA 2013). As described in Comment Response DeCastro-1, all proposed new Oregon ANG airspace segments would only be activated on an as-needed basis – as a whole or individually – allowing for more responsible stewardship of the airspace regionally and helping to minimize conflicts with other users and reducing the overall amount of time an airspace area would be activated. Further, when a MOA is active, IFR traffic may be cleared to enter and pass through the area if adequate IFR separation criteria can be met and procedures are described in a Letter of Agreement between the unit and the ATC controlling agency (FAA Order 7400.2K). Nonparticipating VFR aircraft are not prohibited from entering an active MOA; however, extreme caution is advised when such aircraft transit the area during military operations.

AOPA (Duke)-6: As described in Table 2-3 within the Final EIS the Redhawk A MOA would only be activated/utilized 33 hours annually and the Redhawk MOA B and C MOAs would only be activated/utilized 167 hours annually, with individual activation events generally varying between one and two hours. Further, when a MOA is active, IFR traffic may be cleared to enter and pass through the area if adequate IFR separation criteria can be met and procedures are described in a Letter of Agreement between the unit and the ATC controlling agency (FAA Order 7400.2K). Nonparticipating VFR aircraft are not prohibited from entering an active MOA; however, extreme caution is advised when such aircraft transit the area during military operations. Nonparticipating IFR arrivals and departures will be handled with minimal delay. Airspace stakeholders (e.g., civilian and commercial pilots) can utilize the "siteFrame" application on the FAA website to view SUA and MTR schedules based on their geographic location or by airspace name. Information is available to pilots for planning purposes; the latest SUA information can be also accessed by calling a local Flight Service Station at 1-800-WX-BRIEF. Information concerning ATCAA airspace can be obtained from the Seattle ARTCC. Further, as described in Comment Response DeCastro-1, all proposed new Oregon ANG airspace segments will be activated on an as-needed basis – as a whole or individually – allowing for more responsible stewardship of the airspace regionally and helping to

minimize conflicts with other users and reducing the overall amount of time an airspace area would be activated.

The FAA Western Service Center conducted a separate aeronautical circularization to determine what impact, if any, this request has on the aviation community, and will apply that information to their decision to approve or deny the request.

AOPA (Duke)-7: ***The Final EIS has been clarified as a result of this comment.*** The provided information regarding the contribution of Oregon airports to the state's economy was incorporated into the Final EIS. Socioeconomic impacts related to the underlying airports are described in Section 4.9, *Socioeconomics, Environmental Justice, and Children's Health and Safety*. The proposed Eel MOAs and Redhawk MOA Complex as well as the majority of the proposed Juniper/Hart MOA Complex expansion areas (i.e., Hart C, Hart D, Hart E, and Hart F) would have operational floors at 11,000 feet MSL, which would separate Oregon ANG training from affected populations such that ground-based economic activity – including employment – would not be impacted. However, as described in the FAA's Airman's Information Manual (AIM), whenever a MOA is being used, nonparticipating IFR traffic may still be cleared through a MOA if IFR separation can be provided by ATC and procedures are described in a Letter of Agreement between the unit and the ATC controlling agency (FAA Order 7400.2K). Otherwise, ATC will reroute or restrict nonparticipating IFR traffic. Similarly, VFR traffic may transit through active MOAs and are encouraged to contact the controlling agency before doing so; however, extreme caution is advised when such aircraft transit the area during military operations. Consequently, while general aviation pilots may avoid MOAs as a matter of principle, the establishment of the MOAs would not preclude local flight traffic, and would therefore have a negligible economic impact on underlying cities or airfields that benefit from fuel sales or tie-down fees.

AOPA (Duke)-8: Please refer to Section 6, *Special Procedures* for a description of special procedures related to airspace management. Select procedures that address a number of the concerns raised in this comment include:

- Flying schedules for the Oregon ANG are currently filed weekly with FAA's Seattle ARTCC, the controlling agency of regional airspace.

- All proposed new Oregon ANG airspace segments would only be activated by the scheduling authority on an as-needed basis – as a whole or individually – allowing for more responsible stewardship of the airspace regionally, allowing use by others when not needed for Oregon ANG training, and helping to minimize potential conflicts with other users.

- The public would be notified of the activation of the proposed Redhawk MOA Complex through a Notice to Airmen (NOTAM), which would be filed with the FAA controlling agency.

- Airspace stakeholders (e.g., civilian and commercial pilots) can utilize the "siteFrame" application on the FAA website to view SUA and military training route schedules based on their geographic location or by airspace name.

- Information is available to pilots for planning purposes; the latest SUA information can be also accessed by calling a local Flight Service Station at 1-800-WX-BRIEF. Information concerning ATCAA airspace can be obtained from the Seattle ARTCC.

- Pursuant to applicable practice, when a MOA is active, IFR arrivals and departures will be afforded minimal delay (FAA JO 7400.2K). It is anticipated that other nonparticipating IFR aircraft may obtain access consistent with the FAA Joint Use Policy and the anticipated Letter of Agreement. Nonparticipating VFR aircraft are not prohibited from entering an active MOA; however, extreme caution is advised when such aircraft transit the area during military operations.

With regard to the request for raising the floor of the proposed MOAs, please see Comment Response ONDA-6. Airspace with a floor of 15,000 feet MSL would not meet the purpose and need of the Proposed Action; at this altitude the airspace would not provide sufficient volume to support all of the required training activities.

Subject: RE: Oregon Airspace Initiative EIS

-----Original Message-----
From: Paul Speer [mailto:pbspeer@gmail.com]
Sent: Monday, August 03, 2015 11:59 AM
To: USAF JB A-NAFW NGB A7 Mailbox A7A NEPA COMMENTS
Subject: Oregon Airspace Initiative EIS

As a citizen I am very sensitive to ANG's role and the importance of well trained pilots and support crews so am not in the generic "just say no" camp with these sort of proposals.

That said, from a GA pilot standpoint any expansion of special airspace obviously comes with a price so needs to be looked at carefully.

The expansion inland at the coast with floor at 11,000 over the coast range is the one that causes me to take pause. There is one airway that runs down the coast that I know is used by local pilots, both VFR and IFR that will be right in the center of the expanded area. Also, off airway flights across the cost range from the Willamette valley by GA aircraft are routine. If there was a way to either push this expansion back out over the ocean, or to meaningfully raise the floor it would certainly be preferable for GA in the area, in my opinion. Speer-1

Regards,

Paul Speer

AOPA Airport Support Network Volunteer Pearson Field KVUO

Outgoing Chair Pearson Field Aviation Advisory Committee City of Vancouver

ASEL Commercial Instrument Rating

N97627

AOPA (Speer)-1: As described in Section 4.1, *Airspace Management* all proposed new Oregon ANG airspace segments would only be activated on an as-needed basis – as a whole or individually – allowing for more responsible stewardship of the airspace regionally and helping to minimize conflicts with other users and reducing the overall amount of time an airspace area would be activated. Further, when a MOA is active, IFR traffic may be cleared to enter and pass through the area if adequate IFR separation criteria can be met and procedures are described in a Letter of Agreement between the unit and the ATC controlling agency (FAA Order 7400.2K). Nonparticipating VFR aircraft are not prohibited from entering an active MOA; however, extreme caution is advised when such aircraft transit the area during military operations.

To: USAF JB A-NAFW NGB A7 Mailbox A7A NEPA COMMENTS
Subject: RE: air space comments

-----Original Message-----
From: Edward DeCastro [mailto:edwarddecastro@yahoo.com]
Sent: Wednesday, July 29, 2015 4:18 PM
To: USAF JB A-NAFW NGB A7 Mailbox A7A NEPA COMMENTS
Cc: Air Safety Institute
Subject: air space comments

There exists contiguous military use airspace from California to Oregon. Additionally, the USAF was granted more military airspace over Montana and Wyoming, reaching nearly to Oregon. The continued militarization of our airspace will simply hurry the death of general aviation, which seems to be the goal of the government. I oppose this proposal as I opposed the military expansion of the airspace over Montana and Wyoming. DeCastro-1

Stop the militarization of our nation's airspace!

Edward A. DeCastro

NOTICE: Due to Presidential Executive Orders, the National Security Agency (NSA) may have read this email without warning, warrant, or notice. They may do this without any judicial or legislative oversight. You have no legal recourse, nor protection from this intrusion on your personal freedoms. You may not review your file which is secret. The President reserves the right to use "signing statements" to give himself permission to ignore the law, as he is above accountability.

Never trust a government you can't shoot

PRIVATE CITIZENS

DeCastro-1: Existing regional airspace is depicted in Figure 3.1-2 within the Final EIS. As described, the majority of Oregon's coastline is overlaid by existing military airspace including the Bass ATCAAs, W-570, Eel ATCAA, and Dolphin MOAs. However, as described in Section 1.5, *Purpose and Need for the Proposed Action*, frequently present weather conditions along the Oregon coast and associated sea-states that prohibit over-water training represent a significant impact to training and foster the need to establish a MOA beneath the existing Eel ATCAA to expand the vertical confines of the existing airspace and facilitate required training. Current backup airspace (i.e., the Juniper/Hart MOA Complex) is located far away (as far as 140 nautical miles [NM]) and additional transit hours used to fly to and from this airspace waste fuel and inefficiently use allocated flight hours originally allocated/intended for training. Similarly, military training airspace over Montana and Wyoming is located even further away, and for that reason (among others) is not used by the Oregon ANG.

As described in Section 2.3.2, *Evolution of the Proposed Action*, revisions to the originally proposed configuration reflect an attempt to reduce potential conflicts with commercial and general aviation traffic, limit potential environmental concerns, and promote more responsible stewardship of airspace by the Oregon ANG. All proposed new Oregon ANG airspace segments would only be activated on an as-needed basis – as a whole or individually – allowing for more responsible stewardship of the airspace regionally and helping to minimize conflicts with other users and reducing the overall amount of time an airspace area would be activated. Further, pursuant to applicable practice, when a MOA is active, IFR arrivals and departures will be afforded minimal delay (FAA JO 7400.2K). It is anticipated that other nonparticipating IFR aircraft may obtain access consistent with the FAA Joint Use Policy and the anticipated Letter of Agreement. Nonparticipating VFR aircraft are not prohibited from entering an active MOA; however, extreme caution is advised when such aircraft transit the area during military operations.

To: USAF JB A-NAFW NGB A7 Mailbox A7A NEPA COMMENTS
Subject: RE: Oregon Airspace Initiative EIS

-----Original Message-----
From: Mark Donnelly [mailto:donnelly.m@mac.com]
Sent: Wednesday, July 29, 2015 5:23 PM
To: USAF JB A-NAFW NGB A7 Mailbox A7A NEPA COMMENTS
Subject: Oregon Airspace Initiative EIS

Oregon National Guard,

I am very concerned with the proposal to add more Military Operations Areas to the Oregon air space. You already have huge swaths of airspace dedicated to MOAs in eastern and coastal Oregon. As a private pilot, I pay for my own gas and have to fly long distances to avoid the MOAs. It is costly to me and sometimes increases my risk because of the terrain I must transit and the altitudes I must fly to avoid the existing MOAs. Please do not add MOA airspace to Oregon. There's already plenty of reserved space for training the Air National Guard. Seriously, what has changed in your mission that creates the requirement to grab more airspace away from the public NOW, after 14 years of constant war? Donnelly-1 Donnelly-2

Best regards,
Mark Donnelly

Donnelly-1: Refer to Comment Response DeCastro-1.

Donnelly-2: Please refer to Section 1.5, *Purpose and Need for the Proposed Action*. The overarching purpose of the Proposed Action is to provide properly configured and located military airspace to provide efficient, realistic mission-oriented training with adequate size and within reasonably close proximity to support advanced 21st Century air-to-air tactical fighter technologies and the current and evolving training requirements of the Oregon ANG in an era of increased operational complexity.

The overarching need for the Proposed Action is driven by several factors including travel distance and time required to access existing training airspace areas; and the frequency of weather conditions that limit the availability of coastal airspace areas for operational training. This results in loss of training time as fuel and flying hours are used to access back-up airspace. Details related to the units' training missions and objectives and requirements driving specific components of the Proposed Action are further described in Section 1.5, *Purpose and Need for the Proposed Action*.

To: USAF JB A-NAFW NGB A7 Mailbox A7A NEPA COMMENTS
Subject: RE: Air space

-----Original Message-----
From: B MORITZ [mailto:bmoritziii@me.com]
Sent: Thursday, July 30, 2015 2:36 PM
To: USAF JB A-NAFW NGB A7 Mailbox A7A NEPA COMMENTS
Subject: Air space

You do not need to increase airspace you have too much as it is. Use what you have. Your increase airspace cost me addition me Money in flying around it and increase my risk. Moritz-1

Sent from my iPhone

Moritz-1: Refer to Comment Response DeCastro-1.

Subject: RE: Oregon Airspace Initiative EIS

-----Original Message-----
From: Leonard Naidoff [mailto:naidoffl@charter.net]
Sent: Tuesday, August 25, 2015 4:51 PM
To: USAF JB A-NAFW NGB A7 Mailbox A7A NEPA COMMENTS
Subject: Oregon Airspace Initiative EIS

Sirs and Madams:
Having missed the previous comment period (17May2013) and being unable to attend the meetings in Tillamook on 11Aug2015 and Astoria on 12Aug2015, I appreciate the accommodation here and now to comment via email regarding your proposed Oregon Airspace Initiative EIS Draft.

I, and others here in Cannon Beach, Oregon are vehemently OPPOSED to your Training Plans as proposed in your Draft.

Here's why. It seems curious that you are now requesting permission to invade our airspace because it is already happening. I have been aware of numerous daily flyovers in recent past, some slow and low, then with thrusters activated, zooming off like a rocket. Also up high with telltale contrails (we count them now and saw one today around 0945 out east of town heading south) and at times what sounds like dogfighting with multiple jets. We once were plagued by sonic booms and that is always a unwelcomed threat. Cannon Beach was once evacuated when a boom was mistaken for an earthquake. Stupid but true. Does any of this sound like something you might expect in your own neighborhoods? Naidoff-1 Naidoff-2

Our present airspace is overactive now, with the constant Coast Guard copters flying and a tourist copter constantly flying and civilian aircraft and an occasional biplane and a vintage WW2 plane droning about. Add your zooming about and it is too much to endure. A veritable warzone. I find the talk of an "Asian Pivot" repugnant. I should know being a Vietnam 100% disabled veteran with PTSD who has lived in Cannon Beach for 39 years in peaceful bliss who now is felling stressed and vexed over your plans. Please take your flights elsewhere like metro PDX or train in simulators or over the desert. What exactly are you training for? Naidoff-3

One last comment about your environmental impact. Is it ever a good idea to continually tear up the atmosphere with craft and not injure it and us humanbeings in the longterm? Please consider that in your Draft. We here in Cannon Beach value our precious home environment more than each singular life. Please don't add to any further degradation. Thank you. Naidoff-4

Leonard Naidoff
Cannon Beach Oregon

Naidoff-1: As discussed in Section 1.5, *Purpose and Need for the Proposed Action*, military training airspace currently exists from 18,000 feet MSL to 50,000 feet MSL over the Northern Oregon coastline. The purpose of the proposed action is to provide properly configured military airspace to provide efficient, realistic mission-oriented training with adequate size and within reasonably close proximity to support 21st Century tactical fighter technologies and the current and evolving training mission requirements of the Oregon ANG in an era of increased operational complexity. Addressing current noise concerns is beyond the scope of this EIS. However, the potential for environmental impacts associated with the proposed action has been fully assessed in the EIS.

Naidoff-2: ***The Final EIS has been clarified as a result of this comment***. Please refer to Section 3.2.2.3 and 4.2.2.1 for a discussion and explanation of Oregon ANG supersonic activities. There is no Oregon ANG supersonic activity in the area identified by this comment (i.e., Cannon Beach). However, potential noise impacts associated with supersonic activities under the Proposed Action has been clarified in the Final EIS. Overwater airspace within the existing W-570 is uniquely suited for air-to-air combat training. This airspace provides the Oregon ANG with the ability to fly supersonic at altitudes as low as 10,000 feet MSL, which supports realistic mission oriented training for combat readiness. However, overwater Oregon ANG pilots along reach supersonic speeds when more than 15 NM offshore and with the nose of the aircraft pointed away from the coastline. Consequently, potential impacts to residential communities along the coast would be negligible. As discussed during the Public Hearings for the Draft EIS, the Oregon ANG understands concerns regarding supersonic flight. Under the Proposed Action, the frequency of overland supersonic flights would not change. Supersonic activity would only occur offshore within W-570 above 10,000 feet AGL and within the Juniper/Hart MOA Complex above 30,000 feet MSL. The Oregon ANG will only conduct overwater supersonic activities a minimum of 15 NM from the shoreline, and only when parallel to or pointed away from the coastline.

Naidoff-3: Refer to Comment Response Naidoff-1.

Naidoff-4: As described in the Final EIS, the Proposed Action would have no impacts or negligible adverse impacts on the following categories: coastal resources; compatible land use; construction impacts; Department of Transportation Act Section 4(f); farmlands; floodplains; hazardous materials, pollution prevention, and solid waste; historical, architectural, archaeological, and cultural resources; light emissions and visual impacts; natural resources and energy supply; socioeconomic impacts, environmental justice and children's environmental health and safety risks; secondary impacts; water quality; wetlands; and wild and scenic rivers. The Proposed Action would also have less than significant adverse impacts on air quality; fish, wildlife, and plants; noise; and airspace management as described in detail in Sections 3 and 4 of the Final EIS.

Subject: RE: Oregon Airspace Initiative EIS

-----Original Message-----
From: Craig Reinholt [mailto:n51cr@comcast.net]
Sent: Sunday, August 16, 2015 6:52 PM
To: USAF JB A-NAFW NGB A7 Mailbox A7A NEPA COMMENTS
Subject: Oregon Airspace Initiative EIS

Regarding the EEL MOA's, please understand that there is regular glider activity in these specific areas from April through October. Altitudes vary from 3000' to 10,000'. When conditions are favorable, there may be 15 or more gliders traveling back and forth through this area during daylight hours. Of those 15 gliders, maybe 3 will have transponders. If the MOA has 10,000' hard deck at all times, then the MOA initiative will be a non-issue to the Willamette valley glider activity. If not, we will regularly have conflicting traffic. If the MOA goes into effect to the ground, this initiative will effectively destroy soaring in Oregon. The Willamette Valley Soaring Club based at North Plains Oregon has 95 members. All other glider clubs and soaring operations combined in Oregon do not have near that many members.
If the bottom of the EEL MOAs are below 10,000, please cancel this portion of the proposed MOA initiative.

Reinholt-1

The size increase in the central Oregon MOA's is not as critical as the western Oregon MOA's, but it will impact the gliding club in Bend Oregon. These folks occasionally fly through the central Oregon MOA's. Also, gliders that originate in the Reno / Truckee, CA / Minden, NV area occasionally fly up to this area and return. The increased MOA size will make those flights more difficult to complete. Lastly, for many years, the Willamette Valley Soaring Club does an annual soaring event at the Alvord desert next to the Steen Mountains. They sometimes fly West into the Juniper and Hart MOAs. The increase in MOA size will severely limit the camps promotion and instruction of cross country soaring to our members.

Reinholt-2

As you can see, the Oregon Airspace Initiative EIS will severely impact many glider pilots (Oregon and out of state as well). Please reconsider and limit the dimensions OR completely remove the proposal.

Thank you.

Craig Reinholt
Soaring Society of America / Oregon Governor
875 E. 4th St.
Yamhill, OR 97148
h) (503) 662-0022

Reinholt-1: As described in the Final EIS (see Section 4.1, *Airspace Management*), the floor of the proposed Eel MOAs would be established at 11,000 feet MSL under the Proposed Action. All proposed new Oregon ANG airspace segments would only be activated by the FAA scheduling authority on an as-needed basis – as a whole or individually – allowing for more responsible stewardship of the airspace regionally, allowing use by others when not needed for Oregon ANG training, and helping to minimize potential conflicts with other users. Further, as described in Section 6, *Special Procedures*, flying schedules for the Oregon ANG would be filed weekly with FAA's Seattle ARTCC, the controlling agency of regional airspace. Airspace stakeholders (e.g., civilian and commercial pilots) can utilize the "siteFrame" application on the FAA website to view SUA and MTR schedules based on their geographic location or by airspace name. Information is available to pilots for planning purposes; the latest SUA information can also be accessed by calling a local Flight Service Station at 1-800-WX-BRIEF. Information concerning ATCAAs in the region can be obtained from the Seattle ARTCC.

Reinholt-2: See Comment Response Reinholt-1. As described in Section 4.1, *Airspace Management*, at least two recreational glider clubs, including the Willamette Valley Soaring Club and the Nevada Soaring Association, are known to use airspace in the vicinity of the Juniper/Hart MOA Complex. Outreach to the Willamette Valley Soaring Club is ongoing. Attempts by the Oregon ANG to communicate with the Nevada Soaring Association have not yet been successful and a dialogue has not been established to date.

While glider club operations within this area have the potential to result in airspace conflicts during certain discrete periods of the year, if the Proposed Action or one of its alternatives is implemented, the Oregon ANG shall develop a Memorandum of Understanding (MOU) to outline procedures that shall be implemented to ensure the continued safety of both glider and Oregon ANG pilots (see Section 6, *Special Procedures*). The Oregon ANG shall draft a MOU that shall include requirements to meet annually with the glider club representatives to discuss procedures. Among other topics, during these discussions the Oregon ANG shall communicate airborne operations, scheduling, and execution for both units. Glider pilots shall notify the 173 FW when there would be a desire to operate within Oregon ANG airspace. Both parties would agree upon deconflicting procedures.

To: USAF JB A-NAFW NGB A7 Mailbox A7A NEPA COMMENTS
Subject: RE: Hearing Schedule on proposed airspace takeovers

-----Original Message-----
From: Joe Smith [mailto:joe@smithcompound.com]
Sent: Wednesday, July 29, 2015 2:57 PM
To: USAF JB A-NAFW NGB A7 Mailbox A7A NEPA COMMENTS
Cc: Mary Rosenblum; Paul Ehrhardt
Subject: Hearing Schedule on proposed airspace takeovers

To the Guard:

The absence of a hearing somewhere in the northern Willamette Valley is inexcusable. The vast majority of GA pilots in Oregon live in the Willamette Valley, and much, if not most, of the GA air traffic in the areas that would be affected by the proposed expansions originates from there. Please, schedule at least one hearing in Salem or the greater Portland area. Smith-1

Joe Smith
Regional Director, Oregon Pilots Ass'n

R.P. Joe Smith
Lawyer
2211 NE 21st Ave.
Portland, OR 97212-4623
503-287-6577

Smith-1: Portland is located approximately 40 miles to the east of the proposed Eel MOAs. Meeting locations in the vicinity of Portland were held at Tillamook (approximately 1.5 hours from the Portland area) and Astoria (approximately 2 hours from the Portland area), because these areas are located beneath the Proposed Action area along coastal Oregon. Further, the meeting at Astoria facilitated participation from the Port of Astoria and Astoria Regional Airport as well as the AOPA.

To: USAF JB A-NAFW NGB A7 Mailbox A7A NEPA COMMENTS
Subject: RE: Oregon Airspace EIS

-----Original Message-----
From: Wayne Stonecipher [mailto:stoneyhill@aol.com]
Sent: Friday, July 31, 2015 12:30 PM
To: USAF JB A-NAFW NGB A7 Mailbox A7A NEPA COMMENTS
Subject: Oregon Airspace EIS

It is noted that you have not scheduled an hearings in the most pilot/system-user dense area of the state, thus requiring undue travel burden on many of those who might otherwise participate in the discussion. Was this incidental or deliberate?

Please revise your schedule to include events in the central PDX area, ie. Aurora Airport, or at least in the Salem area which would be more central to include users in the southern region of Oregon.

Stonecipher-1

Wayne H. Stonecipher
Yamhill, OR

Stonecipher-1: See Comment Response Smith-1.

To: USAF JB A-NAFW NGB A7 Mailbox A7A NEPA COMMENTS
Subject: RE: Oregon Airspace Initiative EIS

-----Original Message-----
From: Gary Strong [mailto:ponyblanket@frontier.com]
Sent: Wednesday, July 29, 2015 2:42 PM
To: USAF JB A-NAFW NGB A7 Mailbox A7A NEPA COMMENTS
Subject: Oregon Airspace Initiative EIS

Dear Sir:

I do not want any changes or additions to Oregon's military airspace.
I would rather it be reduced, especially over the High Desert areas.

General Aviation already faces too much red tape in Oregon.
Adding more restrictions and hoops to flying is incredibly counterproductive to pilot reward.

Please go fly elsewhere and leave the Oregon skies as free as they have been!

Gary Strong
Portland, Oregon

Strong-1

Strong-1: See Comment Response DeCastro-1.

Draft EIS Hearing Proceedings

August 11, 2015

Tillamook Air Museum

Tillamook, Oregon

SPEAKERS:

Major Stephan Bomar

Brigadier General Jeffrey Silver

Colonel Pete Teller

Lieutenant Alaric Michaelis

Jamie Flanders

Michele Cruz

* * *

P R O C E E D I N G S

MAJOR BOMAR: Thanks, everyone, for coming out. I'm Major Stephan Bomar. I'm the director of public affairs for the Oregon Military Department. I met with some of you out front. For your awareness, there's a tape recorder up here and we have a stenographer in the back recording everything for the record. We have a formal presentation that will take place, and then there will be time for questions and additional comments.

With that, the Commander of Domestic Operations Command is General Jeffrey Silver.

Sir.

BRIGADIER GENERAL SILVER: Thank you.

I have just a few comments for you guys before we let Colonel Teller and Lieutenant Colonel Michaelis do the formal part.

I am the domestic operations guy for the military for the state. I also was the operations commander at the 142nd Fighter Wing in Portland, and then I also worked down at the 173rd in Klamath Falls over the last few years.

Back in '08 I started working on this

proposal. We recognized that advances in the airplane and the need for weather backup airspace and increased volume of training due to Air Force requirements made us realize that needed to start working on more airspace to fulfill our training.

So we have three airspaces that we've been working on. I also am the assistant active General for air, so I'm very interested in the air matters that happen in the state, and then I'm on a national counsel for airspace. In fact, I'm one of the chairmen.

I oversee all airspace actions for the state. So I'm deeply involved in this kind of stuff. We're very interested in hearing what comments and concerns you guys have tonight.

Knowing that this is an environmental hearing we're keen on what might be noise problems or particulates that might come off the airplanes or something like that. But we're also interested in other issues that you might have, so speak about those and we'll take them down, and then they would go forward to the FAA's aeronautical process.

I'll get off the stage here. Colonel Teller and Lieutenant Michaelis are going to do the formal part, like I said, and then we will be around to talk to you guys or answer any questions you might have

after.

Thanks for being here.

MAJOR BOMAR: Thank you, sir.

Now for the formal part of our hearing, Colonel Pete Teller.

COLONEL PETE TELLER: Good evening, everyone. I'm Colonel Pete Teller. I'm an Appellate Military Judge of The United States Air Force from Joint Base Andrews, Maryland.

I'd like to make it clear from the outset that I'm here in my capacity as a Federal Judge solely to act as a moderator in this hearing. The Air Force Trial Judiciary is an independent organization. I do not work for or with anyone in this room. I'm not a member of this command or assigned to the Oregon Military Department. I report directly to the Judge Advocate General of the Air Force.

I have had no involvement with the preparation of this proposed action or the Environmental Impact Statement. I have not rendered legal advice or assistance with respect to this action.

I'm here tonight to serve as an independent public hearing officer regarding the Draft EIS. I'm responsible for providing everyone an opportunity to comment tonight on the proposed action, alternatives,

and associated environment analysis.

This public hearing provides you with the formal opportunity for comment. I do not make any recommendation or decision on whether the proposed project should be continued, modified, or abandoned, or how the EIS should be prepared. Therefore, during the public comment portion of his hearing, I urge you to direct your comments to the individuals on our panel.

The purpose of this public hearing is to provide you with an opportunity to comment on the findings of the Draft Environmental Impact Statement.

More importantly, this hearing is a formal opportunity for you to get involved in the National Environmental Policy Act (NEPA) process.

This hearing is scheduled to conclude at 9 p.m., but if necessary will continue until all comments have been received. This formal session may end before 9 p.m. if there are no more comments.

However, the overall hearing, including materials to be viewed and discussions with team members individually, will continue until all parties have left the meeting.

If following the presentation any members of the audience have questions regarding clarification of any points you may not have understood, you may fill

out a question card, which can be found at the registration desk, or on several tables throughout the room; or you may raise your hand and someone will bring you a card. Once you have filled out your question, please raise your hand again and one of our staff will collect them.

Only questions regarding clarification of the topics presented will be entertained. General comments on the action will not be read by our panel, but you may present your comment orally or submit it on one of the comment cards.

We will take a ten minute break to allow Lt. Col. Michaelis, the 142nd and 173rd Fighter Wing staff, National Guard Bureau staff, and the environmental consultants to review any questions submitted and identify the best person to answer each one.

After the break we will answer any questions we've received on the question cards from the audience. Once the question has been answered, members of the audience who checked the box on their registration card indicating their desire to provide oral comments will be asked to come forward.

Registration cards were available at the registration table as you came in. If you've not

filled out a card or indicated your desire to speak and wish to do so, please raise your hand and a card will be provided you now.

In addition, there are materials at the door describing the official Air National Guard proposal, the description of the proposed action and alternatives, and information on locations where you can review the Draft ESI statement after you leave tonight, if you've not already done so.

To ensure that all interested citizens have an opportunity to speak, I reserve the right to limit the comments to an appropriate time. If time allows after everyone has an opportunity to provide their comments, you may have more time. You will only be allowed to comment when your name is called. Elected officials and individuals representing organizations will be called upon first.

As a reminder, a stenographer is recording these proceedings for the record. We'll take a ten minute break every hour to allow the stenographer to take a break.

At this time -- well, skip that.

Throughout this hearing I ask that you to keep in mind that this public hearing is not a debate or any type of vote on the Draft EIS; nor is it

primarily designed as a question and answer session, although legitimate, clarifying questions may be asked.

At the conclusion of the hearing you may discuss the findings with the Draft EIS in greater detail with the staff members from 142nd and 173rd Fighter Wings, National Guard Bureau, and the consultant's technical representative.

I would also like to point out that this hearing is focused solely on the NEPA process and the Draft EIS. The Federal Aviation Administration, represented by Michele Cruz, will review the aeronautical implications of the Action in a separate process.

If you do not wish to provide oral comments, written comments will be accepted, and will be given equal consideration. Even if you do make an oral statement, you're welcome to also provide a written statement to reaffirm the comments you made, and provide any additional comments you'd like to make.

Written comments should be sent to the National Guard Bureau at the address printed on the comment form that you filled out, or via the project website. The email address is also provided on the comment sheets.

All relevant, substantive comments will be

included in the administrative record, and will be addressed in the final EIS. The formal comment period for the Draft EIS ends on September 8, 2015.

It is a requirement to inform you that under the Privacy Act of 1974 your name, address, and comments, if provided during this NEPA process will be used to compile mailing lists for sending project reports, brochures, and other information concerning the ESI to interested individuals and groups.

It will also be forwarded to Federal, State, and local agencies, and elected officials.

The addresses of the private individuals submitting comments will not, I repeat will not be published in any documents released to the public.

Failure to provide the information requested will prevent delivery of documents and notifications of further development. However, electronic copies of documents are available on the project website and in select libraries, with locations published in local newspapers.

Before we proceed with the presentation, if you have not reviewed a copy of the Draft EIS, copies are available for you to review while in attendance at this hearing at each of the information booths.

Further, you may pick up a CD with the

document on it at the check-in desk. If you did not receive other information materials that were available, please raise your hand and somebody will provide them to you.

At this point I will turn this over to Lt. Col. Alaric Michaelis, the Director of Operations for the Oregon Military Department.

LT. COL. MICHAELIS: Thank you, Your Honor.

Thank you very much for letting me come up and be the guy that gets hanged if anything goes wrong. Ben, I've met you. I missed your name. Todd, thank you. Okay, you guys, hold your comments until the end. There's a lot of you here.

No kidding, I want to apologize for the very formal scripted nature of the business, and that's just kind of it way goes. No kidding, when we're done with this, by all means, let's sit down and have a nice conversation if you have questions.

So, good evening. My name is Lt. Col. Michaelis. I'm the Director of Operations for the Oregon National Guard, which basically means I'm in charge of all things related to air for Oregon State, which includes this Airspace Initiative.

I'm also an F-15 Instructor Pilot and Evaluation Pilot down at Kingsley Field, so I fly with

those guys down there.

I want to welcome you to this important public hearing regarding the Draft Environmental Impact Statement for the proposed establishment and modification of Oregon Military Training Airspace.

Our goal this evening is to provide you with information about the proposed airspace action and the National Environmental Policy Act, commonly referred to as NEPA, and to facilitate your participation in and understanding of this process.

I would like to apology for the formality and scripted nature of the hearings. I look forward to having a real conversation with you during the breaks and after the formal proceedings.

Before I get started I'd like to introduce you to the individuals who are here this evening to assist in answering some of the questions about the airspace proposal, and to facilitate your participation in commenting on the findings of the Draft Environmental Impact Statement.

You've already met Col. Teller from Headquarter Air Force; General Silver. Back in the back, the other guy with the flight suit that's looking at all the cool airplanes, that's Col. Pappy French. He's actually one of the architects of the Airspace

Initiative, and one of the smarter guys on the panel.

Next we have Jamie Flanders, National Guard Bureau Airspace Manager. Devin Scherer, he's in the back there, he's also with the National Guard on-site support. We've got a bunch of other people in the back, as well, and they are helping us to develop the Environment Impact Statement. They're all from the Air National Guard, the National Guard Bureau, and our environmental consultants with Amec Foster Wheeler. And we've got Michele Cruz from the FAA, as well.

They will all be available after the current formal session to answer questions and to help facilitate this process. You will find that anyone in a uniform or name tag can either answer your questions or direct you to an individual who can.

The Oregon communities surrounding the 142nd Fighter Wing in Portland and the 173rd Fighter Wing in Klamath Falls are important to us, and community input is important to the environment analysis. Many you have been consistently supportive of the military and the Oregon Air National Guard, and this support is deeply appreciated. I thank you for that.

Like you, our Guardsmen and women live and work in Oregon and care deeply about its future. As

Guardsmen, many of our members work full time in their communities and support the Oregon Air National Guard by fulfilling their monthly and annual training requirements. We are all proud to be part of this community.

On a personal note, I myself trained to fly the F-15 in 2002 at Kingsley Field in Klamath Falls while I was still in the Active Duty Air Force. My wife, two daughters, and I fell in love with Oregon and I joined the Oregon Guard after my 11 year active duty commitment, and we plan on staying in Klamath Falls well after my retirement.

I'm an active community member and general aviation enthusiast, so this Airspace Initiative impacts me, just as it impacts you. What we hope to show you is that this Airspace Initiative is good for the community, good for the Air Force pilots, good for the United States Air Force, and ultimately good for America.

We make every effort to be good stewards of the Airspace. For example, we have fairly regular flying schedules, and generally only activate the Airspace a few hours at a time, twice a day. General aviation can de-conflict with time, or if unable with altitude, below 11,000 feet; or worst case, let us know

that you're going to be flying in that Military Operations area, the MOA, under visual flight rules and we will de-conflict with you.

When the weather precludes VFR in the MOA, then we will generally not be in the MOA, therefore we will not be a conflict. The airspace is much higher than any of your instrument approach procedures, and should have no influence on general aviation coming in or out of the area. We'll work with you to ensure as little inconvenience as possible, and to ensure no negative economic impact.

It's worth mentioning here that the 142 FW in Portland contributes $140 million annually to the economy, and 173 FW at Kingsley Field contributes $118.9 million annually. It is also the third largest employer in Klamath Falls. This is not the purpose of the EIS, however. The EIS is to discover and report the impact to the environment this Airspace Initiative has.

The EIS spells out in detail our mission and why we need this airspace. In the interest of time and to allow you to voice your questions and concerns, I will merely give you a brief summary and give you the bottom line upfront: The F-15C mission is air superiority, and that's period that. It has a 104 to

zero combat record, and has helped keep American troops unmolested from the air since it was put in service in 1976.

At Kingsley Field we are the sole F-15C Fighter Training Unit, so every F-15C pilots, known as an Eagle Driver, comes through Kingsley Field. As such, our mission is to produce the best air-to-air combat pilots, and serve our state and nation in times of peace and war.

Portland's 142nd FW's mission is to provide 24-hours continuous air defense and air sovereignty capabilities in support of homeland defense. As part of the Air Expeditionary Force, the unit is also tasked with maintaining a world-wide deployable combat fighting capability.

And, in fact, the 142nd is currently deployed to support Operation Atlantic Resolve, and that's why we don't have more of their presence here today. The 142 FW protects the Pacific Northwest skies from Northern California to the Canadian border as part of Aerospace Control Alert, and the North American Aerospace Defense Command. Both wings also stand ready to participate in state and federal contingency missions or natural disasters.

So, that's our mission.

Why do we need this airspace? We need this airspace so we can continue to adequately train to prevent or win the next conflict. Our recent ability to decisively win and prevent conflicts has been chiefly due to our superior training.

The airspace we currently use was originally designed for Vietnam-era fighters, and tactics in which most of the fighting took place within visual range. Now, with improvements in radar and weapons, the fight begins well-beyond visual range; 80nm-plus.

For Portland's 142nd Fighter Wing, they need to expand their existing airspace to facilitate training to these new threats and tactics. They also need an airspace that will allow them to fly when sea conditions make it unsafe to fly over the water, and to reduce their overall transit time and thereby increasing their training time.

In the case of Klamath Falls, they need to expand their existing airspace not only for the mission, but also for the ability to safely de-conflict the simultaneous missions going on in the airspace, which is done to facilitate the increased student throughput required to fulfill the Air Force needs.

All right. So what is airspace expansion?

So right now currently this EEL MOA, the Military Operating Area, it's already there, so the ATCAA is already there. It's from or 18,000 feet up to 27,000 feet.

The proposal is to now take that all the way up to 50,000 feet, so we'll have some more room to work above it. And that would be part of the ATCAA, and then also putting MOA down below it from 11,000 feet down to 18,000 feet.

For those of you that live in that area, our hope is that it will be completely transparent to you. You already have F-15Cs flying there. The only difference is they may be a little lower, but for a very short amount of time.

Most of our training starts at 30,000 feet, higher than most airliners, and about 100 nautical miles away from each other and concludes at lower altitudes. We go to lower altitudes to defend ourselves. Usually we will only be at these lower altitudes, 11,000 feet, which is almost two miles high, for a few minutes, and then we'll climb back up to higher altitudes and start again. You may never see or hear an F-15C in the airspace.

The Redhawk MOA/ATCAA is a new MOA, and it would affectively be a weather back-up for the 142nd.

Right now they need weather back-up because the sea states are unsafe for about a third of the time out there. By unsafe I mean it would likely lead to hypothermia and drowning to any ejecting pilot.

The Redhawk MOA/ATCAA would be a new airspace that would alleviate that problem. It is proposed to be from 11,000 feet up to 51,000 feet, and that is in that area right there.

All right. The Juniper Expansion. The Juniper Expansion is -- only this part of the Juniper Expansion would be a LOAT portion of the airspace. This would butt-up against the existing Juniper low airspace, and that would be the only low-level airspace we're talking about.

It's located in a rural area. And, again, we are only low for very a small portion of time. All the rest of the airspace starts at 11,000 feet to include all of the Hart MOAs, and goes up to 51,000 feet; accept for this Hart foxtrot, which is only up to 28,000 feet, and that's due to air traffic that goes through that area.

Okay. So that's our mission. I'll review the Airspace Initiative and why need the airspace. As a result of these needs, and as required by the National Environment Policy Act, the Air National Guard

has prepared the Draft Environment Impact Statement.

The Draft Environment Impact Statement analyzes potential environmental consequences that could result from implementation of the proposed action. The FAA will conduct their own analysis on how this will affect civil and commercial aviation. I will let Jamie discuss the impact that this Airspace Imitative has on the environment.

Again, I want to thank you for your attendance and your interest in this. Please let me know if you have any questions, or if you just want to have a normal conversation, please find me during the break.

With that, may God bless you, and God bless America. I'll turn this over to Mr. Jamie Flanders from the National Guard Bureau.

MR. JAMIE FLANDERS: Thank you, Sir.

As Colonel Michaelis indicated, I am Jamie Flanders, and I serve as the Airspace Manager for the National Guard Bureau in Washington DC. It is my purpose here today to discuss with you the findings of the Draft Environmental Impact Statement.

The goal in preparing the Draft Environmental Impact Statement is to support sound decision-making by providing an accurate assessment of

potential environmental impacts, and engaging in communication and involvement with the public. The results from this analysis will be considered before a decision is made by the Air Force on this proposal.

The Draft Environmental Impact Statement evaluates the impacts to nine resources by the proposed action, including noise; biological resources; air quality; socioeconomics; and safety. As described in the prepared draft document, we do not expect the proposed action to have any significant environment impacts.

Although we fully understand that charted military airspace can affect commercial and general aviation, and non-participating aircraft, these affects are aeronautical in nature.

If aeronautical concerns from commercial and general aviation users are raised during this public hearing, these will, of course, become part of the official record, but these will be considered during the FAA's aeronautical review.

However, we will certainly ensure that any concerns raised here are included in the aeronautical process for mitigation. Ms. Michele Cruz with the FAA will be speaking later about her role and their process for aeronautical review.

I will speak briefly to a few of the resource areas addressed in the Draft EIS. However, more in-depth information is provided for you in the document.

When the Air National Guard proposes modifying or establishing airspace, noise is generally the greatest concern for the public. Further, noise levels are important when determining the indirect effects to or on the other resource areas, for example, the effects on wildlife or livestock.

The Draft EIS provides information on noise, and the different types of metrics and noise models that were used to determine noise levels.

Different noise models and thresholds exist for different environments and situations. For example, noise model and associated metrics used to determine noise levels around airports are not really appropriate in determining noise levels in special-use airspace. Military aircraft operating in special-use airspace are completing training requirements that result in random flight paths, altitudes, and airspeeds.

In the Draft EIS we present noise levels in several ways in order to provide you with a relevant and meaningful analysis. In short, there are some

areas where the noise levels will be less because the same number of operations will be spread out over a larger area.

In the newly proposed areas, noise from military aircraft will be heard where in the past it may not have been. However, the analysis shows that operations will not cause any underlying areas to experience noise levels greater than the US Environmental Protection Agency's recommended threshold for noise in rural areas.

Other metrics, such as the Maximum Sound Level and the Sound Exposure Level, are also included to supplement our analysis. These metrics are important in assessing the potential interference caused by a noise event with normal conversation, TV watching, sleeping, or other common activities.

Results indicate that within the Juniper Low MOA, the Maximum Sound Level from an F-15 directly overhead at 500 feet at maximum speed could approach sounds similar to a single clap of thunder.

However, low-level flight operations and the avoidance of sensitive receptors, such as the residences, livestock, and National Wildlife Refuges by these pilot make these direct overhead flights extremely infrequent. In addition, the majority of the

airspace will be charted at 11,000 feet and above.

In January 2013 the Oregon Air National Guard provided noise demonstrations to the community leaders throughout the state. The demonstrations showed that training flight at or above 11,000 fee did not interfere with normal ambient noise levels, such as normal conversation.

Our analysis indicates that biological resources, including threatened and endangered species, would not be adversely affected. This was determined based on many of the same reasons that were already mentioned: Random flight activity; infrequent operations at low altitudes; avoidance of sensitive receptors, such as National Wildlife Refuges.

Impacts to biological resources can be direct or indirect. As mentioned previously, the proposed action does not include any construction or ground-disturbing activities, therefore a direct impact would be, for example, a bird-aircraft collision, which are avoided in various ways.

Indirect or secondary effects may include noise impacts to sensitive wildlife species, however, these affects are not expected for several reasons. For example, flight activity at the lower altitudes would only total 249 hours per year, which would be

distributed throughout 5,000 square miles.

Additionally, avoidance procedures would be in place to avoid identified habitat areas, such as bald eagle nesting sites.

Again, the Draft EIS contains the details of analysis, including cited literature or scientific papers. Further, the Draft EIS outlines all special procedures that will be implemented by the Oregon Air National Guard. As required by Federal Law, we will continue to consult with US Fish and Wildlife, and coordinate with the Oregon and Nevada Wildlife Departments.

With respect to air quality, the total flight hours allocated each to 142nd and 173rd Fighter Winds would not increase. Although, under the proposed action, time that was once spent flying from the airport to the training airspace would be used for actual training.

Consequently, the total military aircraft-related emissions, including transit and training, would not change following the implementation of the proposed action.

Within newly-established airspaces the total military aircraft-related criteria pollutant emissions would slightly increase due to the new flight

activities. Also, Polk County, Oregon and Washoe County, Nevada, were found to be in non-attainment or maintenance. However, pollutant concentrations within each airspace will not exceed existing thresholds.

Finally, the EPA exempts aircraft emissions over 3,000 feet above ground level because those studies show emissions above 3,000 feet do not affect ground level pollutant concentrations.

Safety is also a topic that piques public interest. Mishap rates are calculated per 100,000 hours of flying time. Because the proposed action is not for an increase in flight hours, the projected mishap rate for the Oregon Air National Guard is considerably less than the US Air Force-wide rate.

Live ammunition has not and will not be used by the Oregon Air National Guard during within the existing and proposed airspace. However, flares are currently used and will continue to be used.

Although the US Air Force has established 700 feet as a safe minimum distance for flare use, the Oregon Air National Guard has voluntarily raised that minimum to 5,000 feet, making the potential for fire hazard negligible.

As I've said, the Draft EIS discusses and analyzes the impacts to other resources and provides

greater detail to what I've just mentioned.

The Draft EIS was made available for your viewing at a number of public libraries and on the unit's websites beginning the 24th of July. Today's public hearing is the second of two public comment forums that provide the public an opportunity to comment on the scope and content of the EIS. The first forum, called a scoping meeting, was held here and at the other locations throughout the state in June, 2013.

Comments have also been solicited from local, state, and federal agencies that have jurisdiction over particular resources, such as biological resources, and that process began with the release to the Notice of Intent to prepare an Environment Impact Statement in May 2013, and continues today with public and agency review of the Draft EIS.

This hearing gives local communities an opportunity to comment on the analyses that have been presented in the Draft EIS. This formal comment period ends on September 8, 2015. We look forward to input provided from the public and local communities as we proceed through the NEPA process.

Following this period the oral and written comments received from both public and government agencies will be reviewed by the National Guard Bureau.

However, we will continue to accept comments through the NEPA process.

After all comments on the Draft Environmental Impact Statement have been reviewed, substantive comments that address the impact analysis presented in the Draft EIS will be responded to in the final EIS.

The final EIS will be released to the public for a 30-day period before a record of decision may be signed by the Secretary of the Air Force.

Following that decision, the National Guard Bureau will submit the final document to the Federal Aviation Administration for final decision-making, that is whether to accept the proposed action in part or in whole.

I will now turn the presentation over to Michele Cruz, FAA Western Service Area Airspace Specialist. She is an FAA military airspace expert responsible for processing all military airspace acquisition proposals throughout the Western United States. She has been involved with this project by evaluating the potential impact to aviation, general and commercial.

MS. CRUZ: Thank you. We're almost done.

As Jamie said, I work for the Federal

Aviation Administration and serve as a subject matter expert on military airspace. So I cover a 13-state region including Alaska, Hawaii, and Guam.

I will be able to answer any questions that you may have on the FAA's roles and responsibilities regarding military airspace proposals, our timeline, and the process that the FAA follows.

However, I must be clear that my and FAA's participation is to provide aeronautical technical expertise and is not to be construed as an FAA endorsement or support for this airspace action. No decisions concerning the proposal will be made at this meeting.

If requested, I can provide an overview of the procedures followed by the FAA for processing SUA proposals.

Additionally, please be advised that written comments on the aeronautical aspects of the proposal should be submitted during the public comment period associated with the aeronautical circularization.

We forecast that the aeronautical circularization will begin shortly after the closing of the Draft EIS public comment period. So we're actually tentatively scheduled to set that out on the 18th of

September.

MR. JAMIE FLANDERS: All right. Thank you, Ms. Cruz.

This concludes the explanation of the proposal, the NEPA process, and the findings of the Draft EIS. I now return the program back to our hearing officer.

COL. PETE TELLER: We will now recess the proceedings for ten to fifteen minutes to allow for the staff to review any clarifying questions submitted during the presentation.

As I previously mentioned, this hearing is not a debate, nor is it primarily designed as a question and answer session; although legitimate, clarifying questions may be asked. If you have questions on any of the information presented thus far, please write your question on the provided card.

Again, to be clear, this is for us to clarify any of the information presented this far. The time to provide your comments will follow once all questions have been addressed.

If you have not been provided a card for you question or a card with your desire to make a comment to our staff yet, now is the time to do so. After you filled out the question card, please provide

it to one of the team member identified by military uniform or name tag. You'll be alerted when it's time to reconvene.

Refreshments are available for your enjoyment. We'll be on break for about ten or fifteen minutes.

(Whereupon a recess was taken at 6:42 p.m.)

(Back on record at 6:56 p.m.)

COLONEL PETE TELLER: Okay. We're going to go ahead and reconvene the formal part of the hearing. Since we didn't have any questions, we'll go ahead and move to the commentary.

So the stenographer can accurately capture your comments, please clearly state your full name, and the full name the organization you represent, if any. There's no need to provide any other personal information such as your home address or phone number. Your oral comments will be used to develop a transcript and permanent public record of this meeting.

Again, as a courtesy to those who have registered to speak, please limit your comments to a reasonable period of time. This applies to all of our speakers.

Keep in mind that you're welcome to submit

written comments, and there are no page limits. The Air Force shall give equal weight to all comments, whether they are oral, written, or both.

You do not have to speak for the full time, however, if you choose to speak for the full five minutes I will advise you when your time is almost up. Again, please understand there is no page limit to written comment, and equal weight will given to both oral and written comment. They will all become a part of the official record and be included in the final EIS.

We only had one person with a desire to speak.

Mr. Hathaway.

MR. HATHAWAY: You know, I think maybe just for the record, just to be safe, we already discussed the conflict with the gliders. I fly in North Plains with gliders that are very hard to see on radar above -- we're going to be very rarely flying above 11,000 feet, but we have on occasion on the coast range.

As long as we have some kind of form of communication, I think it will probably not be a conflict at all. But there is a chance that -- it has very light output on the radios, and they might not be

able to communicate at times; very rarely.

It's not a very articulate comment, but that's all. I think it's been addressed. We've already talked about that.

COL. PETE TELLER: Very well. Thank you very much for your comment.

Anybody else with a desire to speak?

Okay. This evening's goal was to engage with you in open communication and to provide accurate information to ensure your informed participation in the NEPA process. I believe that we've achieved that goal.

Please feel free to review the information on the desks, and ask any additional questions that you may have regarding this proposed action.

Again, you have an opportunity during the formal comment period ending September 8, 2015 to provide written comments.

Please stop by the registration booth to get any additional materials you may need.

Thank you and have a good evening.

(Proceedings concluded at 7:00 p.m.)

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Draft EIS Hearing Proceedings

August 12, 2015

Loft at The Red Building

Astoria, Oregon

SPEAKERS:

Major Stephan Bomar

Brigadier General Jeffrey Silver

Colonel Pete Teller

Lieutenant Alaric Michaelis

Jamie Flanders

Michele Cruz

Be advised that Fritz Graham was introduced and recognized on the record as representing Senator Wyden in these proceedings.

Refer to Day 1 (Tillamook) minutes for introductory comments.

* * *

COL. PETE TELLER: This meeting is now convening. As we resume the formal part of the hearing, the first thing I'd like to do is give the National Guard Bureau an opportunity to address the question we received during break.

After that question has been answered we'll begin the formal comment portion of the hearing. If you still have questions following this hearing, please feel free to review the information on the desk or ask additional questions you may have regarding the proposed action.

Lt. Col. Michaelis.

LT. COL. MICHAELIS: Okay. Great.

"Could we get clarification on where supersonic versus subsonic operations will occur."

That's a great question. Obviously we don't want that big thunder clap right over a house.

So the only time it's ever going to happen it will always be above 30,000 feet. The EEL MOA will not have supersonic flight, so The Dolphin, we have the exact same thing. At 30,000 feet it will be dissipated to the point you wouldn't hear it anyway. But we still don't do it, just to make sure you don't find that one bubble of air that lets it through.

So there won't be supersonic flight below 30,000 feet? Does that answer your question? Okay. Good.

COL. PETE TELLER: Now that we've answered any questions that have been submitted, I'd like to begin the formal comment portion of the hearing. I'll call the speakers up in the order in which they signed up, elected officials having the opportunity to speak first.

So the stenographer can accurately capture your comments, please clearly state your full name and the full name of the organization you represent, if any. There's no need to provide any other personal information such as your home address or phone number.

If you wish to make an oral comment privately, we can arrange that either during one of the breaks or after the formal portion of the hearing.

The oral comments will be used to develop a

transcript and permanent public record of this proceeding. Again, as a courtesy to those others who've registered to speak, please limit your comments to ten minutes. This applies to all of our speakers.

Keep in mind you're welcome to submit written comments, and there are no page limits. The Air Force will give equal weight to all comments whether oral, written, or both.

You do not have to speak for the full ten minutes, however, if you choose to speak for the full ten minutes, I'll advise you when your time is almost up.

Following your comments I ask that you sit down so I can call on the next speaker. If you think you'll have more comments that you can present in the time allotted, make the most important comments first and then follow up by submitting the remainder of your comments in writing, if you wish.

Again, please understand there's no page limit to written comments, and equal weight will be given to both oral and written comments. They will all become part of the official record and will be included in the final Environment Impact Statement.

I'd now like to begin. I apologize in advance if I don't get your names correctly. The first

speaker is Mr. Raichl.

JOHN RAICHL: Sir, I'm not here to speak on the EIS deal. They said I could offer other comments. Would you like me to defer until you get all your EIS comments done.

COL. PETE TELLER: No, Sir. We'll go ahead and go through it.

JOHN RAICHL: Go ahead?

COL. PETE TELLER: Please.

JOHN RAICHL: General, officers, and members of the panel, thank you for holding this in our area. It's very convenient for us to be here tonight.

I'm President of the Port of Astoria Commission that is the owner of the Astoria Airport, and I have been given the blessing of the rest of the commissioners to speak on their behalf here for the position for Astoria and Astoria's concerns.

I'm also the ASN, the Airport Support Network volunteer for the airport for AOPA. If you'd like, I could talk to that differently, or I could combine whatever -- for brevity I can combine them, because the comments are quite short for the Port of Astoria.

COL. PETE TELLER: Whichever way you would think most effective.

JOHN RAICHL: Okay. And I do want to say I'm former Air Force, so I apologize to all the Air Force colleagues here; this is how far you can slide down after you leave the Air Force.

The only concerns -- and like I said, there's no EIS issues here, because the only concern that the Port of Astoria has -- and we have two of our Airport Advisory Committee members here also. One of them represents private industry of the airport, and another one is our Washington State representative because our regional airport serves both sides of the river.

We have two other members that aren't here. We have a Coast Guard representative that's not here, and two other members, one which some of you are very familiar with, it's Dr. Dills, recently retired Lieutenant Colonel from 173rd; and another Air Force colonel retired, Mark Smith. Maybe they chose not to be here tonight just so they didn't have to conflict.

The Astoria Airport, we think we're in the beginnings of a regrowth at the airport and resurgence of some general aviation activity. We have seen a continually increasing use of turbine aircraft coming into our airport.

We do have turbine aircraft based here, but

they're all helicopter right now. We have United States Coast Guard Columbia River, and they operate the three Jayhawks. Of course, they're here so I don't need to talk about them.

Then we have a Life Flight network helicopter, and we also have -- well, Mr. Turel runs mostly out of Seaside, but we also have the Barcat (phonetic) Helicopter that services the incoming and outgoing ships.

None of their operations, I think, would ever have a conflict with your 11,000 foot floor. The only thing that we are concerned about the EEL MOAs is the issue with Victor Airway No. 27 and Victor Airway No. 112. The transition airway goes down through the coast, and also 112 that comes from inland to Pieder (phonetic) and Ilwaco and up to Washington, and it goes over the Astoria VOR.

In talking with one of our airport advisory members who flies heavier iron than myself or Gary or the other members do, he was concerned about there's often IFR traffic at that altitude. I talked to a jet here recently that said it hasn't happened this summer, but in the past they've been coming in through a transition and they've been held out also into where we get into that airspace.

We are desperately trying to -- we're slated to have a FAA supported runway overlay and improve our airports. I think the time is coming -- we do have one company that owns a jet, it's just not located at the airport at this time until facilities are available, and we are looking at another one that will possibly have a jet based locally.

And so we just want to make sure that none of this activity would diminish our civilian side of being able to enhance and grow the airport. So that's the only comments I have for the EEL.

Most of us, and most of the pilots out there seem unaffected by it, and most of us don't have the equipment that we're going to rise up from out airport to 11,000 feet or descend that quick anyway, so.

Representing the pilots out there, and once again we have I think 55, 56 piston-engine aircraft based in the field, and very few of them are the type that are ICE capable; only a few of them that are even turbocharged. There's a lot of us that go through the airspace and into Idaho, Montana, Utah. And, typically, because of the weather in the wintertime, it's not going through the layer with icing, and so you run up through The Gorge, and then as soon as you get

through The Gorge, to weather on the other side is usually remarkable better or high ceilings.

You have -- east of your proposed Redhawk MOAs you have several quadrants that go up to the Wallows, go up to 10-2; there's a bunch of 9-4s and 9-5s; 9,500 foot quadrants. And so it's typical that we -- as soon as we get through the gorge and to The Dalles that we elevate ourselves to 11,500 and continue east. That is our only concern if the Redhawk MIA is active.

I talked to the Colonel earlier and understand that that is probably not going to be that often, and there would the possibility that they won't have to activate all three sections. But that proposal to those people at the airport that we represent had more concern than the proposal for over the airport airspace itself.

But the one other thing we have is, well, we have noticed, you know, that if you start up at the Canadian border with Roosevelt and the Okanogan MOA and you come right down through the center of our two northern states and Northern California, you have a lot of airspace that's already been taken up, you know. You have the Okanogan airspace, the Yakima firing range; different entities obviously, not just Air

Force. Then you have the Hanford restriction; the Boardman restriction; you have the IR routes that support areas from Whidbey Island Naval Station going down to Boardman gunnery range; and then this new proposal; then you get down to the Juniper and Hart Mountain MOAs and Goose MOA; and then down into the MOAs that fall around Red Bluff and all that. There is a lot of that that is already quite congested with it.

We support the military. We're proud of the military and the effort that they do. And I understand that the 173rd will now be doing all of the F-15 training right here in Oregon, and I think that's nice. That's a great thing for Oregon. We're just cautious. We're not opposed to any of this, we're just cautious, and our concerns is de-confliction -- possible de-confliction issues that might come up with the Redhawk MOA.

Other than that, I have nothing else for you.

Oh, the only other thing is, we have an industry here. This year the fisheries have found that the adequate biomass out there was not there to harvest. We don't have any fish spotters working right now, but we have a fish spotting in this region, usually eight to ten planes out of Astoria, and some

out of Ilwaco, Washington that work the area 2200 feet when they're doing biomass surveys up around 4,000 feet, taking photographs, and they work in that area that the MOA allows you to go down to 1,000, but I understand that that's already preexisting, and that has not been a problem in the past, so we don't see any reason for that to change.

Other than that, if you have any questions, that's all I have.

COL. PETE TELLER: Thank you, Sir.

JOHN RAICHL: Thank you.

COL. PETE TELLER: Mr. Balensifer.

HENRY BALENSIFER III: I actually will be submitting written comments as a lot of the questions we had were explained. Thank you.

COL. PETE TELLER: Thank you, Sir.

Mr. Kobes.

GARY KOBES: General, members of the panel, these are pretty much follow-up comments to what John had. I'll be just a little bit more specific.

It's not an issue that we object, the concern is the mixing of primarily IFR traffic. As John said, we don't anticipate any affect on general aviation, VFR traffic. But there may be issues with arrival procedures at some points depending on how air

traffic control sequences the planes in and sets them up.

And then on the departure procedures, particularly from Tillamook, the departure procedure there calls for a take off to the northwest, and I think it intersects the FETJU weight point at right about between EOB and ENC, if I'm not mistaken, and climbs to 5,000 feet. And then if you're eastbound or northbound or westbound -- north or south you've got a long ways to go to clear the bottom of the airspace if it's hot. Eastbound you have to fly at least about 25 miles. You've got 6,000 feet to climb from 5,000 to 11.

So that may not be an issue, but we do have concerns about high-performance turbine take-off from Astoria and the climb out to Astoria 1 departure with a citation or something of that nature. It could be wanting to punch up through the bottom of the MOA.

So from what you've explained, it seems like the amount of time that there's potential for conflicts is very, very, very small percentages, and hopefully as we work through the process we'll find ways to accommodate both needs.

Thank you.

COL. PETE TELLER: Thank you, sir.

MR. CRUZ: For those of you that have aeronautical concerns, if you come see me I'll take your information to make sure that you get a copy of the aeronautical circularization so that during that time those comments are on record and looked at by the FAA. I expect that to go out about a week after this public -- the environment public comment closes. Just come and see me and I'll add you to my list.

(Proceedings concluded at 7:15 p.m.)

* * *

Draft EIS Hearing Proceedings

August 14, 2015

Condon High School

Condon, Oregon

SPEAKERS:

Major Stephan Bomar

Brigadier General Jeffrey Silver

Colonel Pete Teller

Lieutenant Alaric Michaelis

Jamie Flanders

Michele Cruz

Be advised that Judge Steve Shaffer was introduced and recognized on the record in these proceedings.

Refer to Day 1 (Tillamook) minutes for introductory comments.

COL. PETE TELLER: Since we don't have any clarifying questions, we'll move into the formal comment portion. If you do have any questions, let me remind you that after the formal proceedings member of the staff will be around and will be able to answer those one-on-one.

I'll call Mr. Snyder.

LARRY SNYDER: My name is Larry Snyder. I'm a rancher southwest of Condon about five miles. I'm a former pilot. I'd like to testify as far as noise pollution affecting wildlife and cattle.

I used to own a ranch 20 miles north of Condon. At that time Whidbey Island pilots would come over there to the Boardman bombing range, and I've never seen any negative reactions from my cattle or wildlife in that area. Wildlife get accustomed to any kind of noise or actions, like when I'm working my fields, they get to where they just ignore it. So I

don't believe noise pollution is a problem.

As far as the noise, I hear that noise, and to me, it's pride in America. These people are doing a job to protect myself and my family and my country. I take great, great pride in our Air Force and our country. Some people just don't realize what this means to people.

I would testify very positive to this new additional airspace.

COL. PETE TELLER: Thank you, Mr. Snyder.

Mr. Bates.

MR. BATES: My name is Paul Bates and I live here in Condon. I'm also a pilot. I just checked that because I thought that I might want to say something. I have absolutely no problems with what's going on here. I cannot imagine environmental impact on this area.

COL. PETE TELLER: Very well. Thank you, sir.

(Proceedings concluded at 7:05 p.m.)

* * *

Draft EIS Hearing Proceedings

August 15, 2015

Harney County Center

Burns, Oregon

SPEAKERS:

Major Stephan Bomar

Brigadier General Jeffrey Silver

Colonel Pete Teller

Lieutenant Alaric Michaelis

Jamie Flanders

Michele Cruz

Refer to Day 1 (Tillamook) minutes for introductory comments.

Be advised there were no clarifying questions or comments provided by the public at this hearing.

* * *

Draft EIS Hearing Proceedings

August 17, 2015

Crook County Library

Prineville, Oregon

SPEAKERS:

Chris Ingersoll

Colonel Pete Teller

Lieutenant Alaric Michaelis

Jamie Flanders

Michele Cruz

Refer to Day 1 (Tillamook) minutes for introductory comments.

COL. PETE TELLER: I'd like to begin. The only person that's indicated a desire to speak is Mr. Austin.

Mr. Austin.

MR. JEREMY AUSTIN: Thank you. My name is Jeremy Austin. I work for Oregon Natural Desert Association.

As we kind of spoke at length previously, at this point my concerns are with wilderness value and wildlife values. We're concerned because the Draft EIS did not address wilderness study areas.

There's several wilderness study areas in the Juniper and Hart MOAs, the proposed expansions of the Juniper and Hart MOAs, and also in the Redhawk complex. Those are two area that Oregon Natural Desert Association works in, and we would like to see alternatives considered that analyze potential impacts of the expansion of the MOA and the creation of the MOA complex to wilderness study areas and wilderness values.

COL. PETE TELLER: I heard in the informal conversation that there was a specific alternative you

wanted considered with regard to a possible --

MR. JEREMY AUSTIN: We had submitted comments during the notice of intent comment period, and we're trying to figure out if those comments were received or not. The piece we had in those comments highlighted several alternatives.

The one we were just specifically talking about has to do with the Juniper D, the Juniper low area, Hart C, and basically bumping the eastern border of the expansion of the proposed MOA over to Highway 205 there to avoid the Steens Mountain Wilderness Area.

There's also some sage-grouse habitat in that region and it's an area of particular concern for us.

There's several other alternatives that we highlighted in there; the removal of whole MOAs or different combinations that we hoped would be considered and analyzed as alternatives and were not.

COL. PETE TELLER: Okay. I'll go ahead and include the hearing.

(Proceedings concluded at 7:11 p.m.)

* * *

C E R T I F I C A T E

I, Amanda K. Fisher, a Certified Shorthand Reporter and Notary Public for Oregon, do hereby certify that the parties involved in these public hearings personally appeared before me at the time and place set forth in the caption hereof; that at said time and place I reported in Stenotype all testimony and oral proceedings; that thereafter my notes were reduced to typewriting under my direction; and that the foregoing transcript, pages 1 to 58, both inclusive, constitutes a full, true and accurate record of all such testimony adduced and oral proceedings had, and of the whole thereof.

Witness my hand and stamp at Portland, Oregon, August 26th, 2015.

AMANDA K. FISHER
CSR No. 3229
Notary Public for the State of Oregon
Notary Commission No. 933197
My Commission Expires: 10/29/2018

APPENDIX D

DESCRIPTION OF AIRSPACES

Appendix D
Description of Airspaces

Introduction

Appendix D contains the proposal submitted to the Federal Aviation Administration (FAA) per FAA Order 7400.2J for the proposed Establishment and Modification of Oregon Military Training Airspace. This proposal includes 1) Modifications to Warning Area (W-) 570 and the Bass/Bass South Air Traffic Control Assigned Airspaces (ATCAAs); 2) Establishment of Eel Military Operations Area (MOA) and Modification of the Eel ATCAA; 3) Expansion of the Juniper/hart MOA Complex; and 4) Establishment of the Redhawk MOA Complex. Together these elements would provide properly configured and located military airspace to provide realistic mission-oriented training with adequate size in order to support the advanced 21st century air-to-air tactical fighter technologies as well as the current and evolving training mission requirements of the Oregon ANG. Additional information regarding the purpose and need for the Proposed Action can be found in Section 1, Introduction of the Draft Environmental Impact Statement (EIS).

Table of Contents

FAAO 7400.2J
Section 3. SUA PROPOSALS

21-3-3. PROPOSAL CONTENT

a. Proponent's Transmittal Letter. See proceeding**.**

b. Area Description.

W-570A Warning Area, OR Renamed from W-570

Boundaries.	Remain the same as published
Altitudes.	Remain the same
Times of use.	Remain the same
Controlling agency.	Remain the same
Using agency.	**Change to:** USAF, Air National Guard, 142 FW, Portland ANGB, OR

W-570B Warning Area, OR

Boundaries.	Beginning	at lat. 45º51'35"N, long. 125º30'00"W; to lat. 46º20'00"N, long. 124º46'00"W; to lat. 46º20'00"N, long. 124º21'00"W; thence south 12nm from and parallel to US shoreline to lat. 46º09'59"N, long. 124º20'05"W; to lat. 45º44'59"N, long. 125º30'05"W; to the point of beginning.
Altitudes.		1,000 feet MSL up to but not including FL500
Times of use.		Intermittent by NOTAM
Controlling agency.		FAA, Seattle ARTCC
Using agency.		USAF, Air National Guard, 142 FW, Portland ANGB, OR

W-570C Warning Area, OR

Boundaries.	Beginning	at lat. 46°09'59"N, long. 124°20'05"W;

	thence south 12nm from and parallel to US shoreline to lat. 45°58’00”N, long. 124°15’53”W; thence south 12nm from and parallel to US shoreline to lat. 45°36’00”N, long. 124°13’29”W; thence south 12nm from and parallel to US shoreline to lat. 45°12’00”N, long. 124°15’26”W; thence south 12nm from and parallel to US shoreline to lat. 44°41’53”N, long. 124°20’22”W; to lat. 44°37’59”N, long. 124°28’04”W; to lat. 44°50’35”N, long. 124°21’21”W; to lat. 44°54’02”N, long. 124°20’04”W; to the point of beginning.
Altitudes.	11,000 feet MSL up to but not including FL500
Times of use.	Intermittent by NOTAM
Controlling agency.	FAA, Seattle ARTCC
Using agency.	USAF, Air National Guard, 142 FW, Portland ANGB, OR

W-570D Warning Area, OR

Boundaries. Beginning	at lat. 45º10’00”N, long. 126º34’30”W; to lat. 45°17’00”N, long. 126°22’00”W; to lat. 45º51’35”N, long. 125º30’00”W; to lat. 45º44’59”N, long. 125º30’05”W; to lat. 44º10’59”N, long. 125º30’05”W; to lat. 44°04’00”N, long. 125°48’30”W; to lat. 43º43’30”N, long. 126º28’00”W; to lat. 43º55’00”N, long. 126º37’00”W; to lat. 45º00’00”N, long. 126º30’00”W; to the point of beginning.
Altitudes.	1,000 feet MSL up to but not including FL500
Times of use.	Intermittent by NOTAM
Controlling agency.	FAA, Seattle ARTCC

Using agency.		USAF, Air National Guard, 142 FW, Portland ANGB, OR

Eel A MOA, OR

Boundaries.	Beginning	at lat. 46°20’00”N, long. 124°21’00”W; to lat. 46°20’00”N, long. 123°50’00”W; to lat. 46°07’00”N, long. 123°30’00”W; to lat. 45°58’00”N, long. 123°30’00”W; to lat. 45°58’00”N, long. 124°15’53”W; thence north 12nm from and parallel to US shoreline to the point of beginning. to lat. 46°09’59”N, long. 124°20’05”W; thence north 12nm from and parallel to US shoreline to the point of beginning.
Altitudes.		11,000 feet MSL up to but not including FL180
Times of use.		Intermittent by NOTAM
Controlling agency.		FAA, Seattle ARTCC
Using agency.		USAF, Air National Guard, 142 FW, Portland ANGB, OR

Eel B MOA, OR

Boundaries.	Beginning	at lat. 45°58’00”N, long. 124°15’53”W; to lat. 45°58’00”N, long. 123°30’00”W; to lat. 45°36’00”N, long. 123°30’00”W; to lat. 45°36’00”N, long. 124°13’29”W; thence north 12nm from and parallel to US shoreline to the point of beginning.
Altitudes.		11,000 feet MSL up to but not including FL180
Times of use.		Intermittent by NOTAM
Controlling agency.		FAA, Seattle ARTCC
Using agency.		USAF, Air National Guard, 142 FW, Portland ANGB, OR

Eel C MOA, OR

Boundaries.	Beginning	at lat. 45°36'00"N, long. 124°13'29"W; to lat. 45°36'00"N, long. 123°30'00"W; to lat. 45°12'00"N, long. 123°30'00"W; to lat. 45°12'00"N, long. 124°15'26"W; then north 12nm from and parallel to US shoreline to the point of beginning.
Altitudes.		11,000 feet MSL up to but not including FL180
Times of use.		Intermittent by NOTAM
Controlling agency.		FAA, Seattle ARTCC
Using agency.		USAF, Air National Guard, 142 FW, Portland ANGB, OR

Eel D MOA, OR

Boundaries.	Beginning	at lat. 45°12'00"N, long. 124°15'26"W; to lat. 45°12'00"N, long. 123°30'00"W; to lat. 45°07'00"N, long. 123°30'00"W; to lat. 44°41'53"N, long. 124°20'22"W; then north 12nm from and parallel to US shoreline to the point of beginning.
Altitudes.		11,000 feet MSL up to but not including FL180
Times of use.		Intermittent by NOTAM
Controlling agency.		FAA, Seattle ARTCC
Using agency.		USAF, Air National Guard, 142 FW, Portland ANGB, OR

c. Airspace Statement of Need and Justification.

1. Describe the purpose and need for the proposed airspace.

Currently, there is a need to modify the configuration and vertical limits of W-570 and convert the Bass / Bass South ATCAAs into Warning Areas to more effectively meet the training requirements for the 142d Fighter Wing (FW). Additionally, due to frequent

persistent poor weather which causes dangerous sea states and prohibits over-water training due to Air Force regulations, there is a need to establish a MOA underneath the existing Eel ATCAA and to expand the vertical confines of the existing airspace. By establishing this increased airspace it will provide the 142 FW a viable training area, close to base, to conduct mission requirements of Basic Fighter Maneuvers (BFM) and Air Combat Maneuvers (ACM) training when weather conditions preclude over-water flights.

The 142 FW employs a fourth generation F-15C Single Seat Fighter Jet which can rapidly transit altitudes from the surface to 50,000 feet and fly at speeds exceeding 12 NM per minute. Although, the over-water airspace of W-570 is uniquely suited for air-to-air combat training by providing the pilots the ability to train high and low altitude, conduct supersonic flight tactics and featureless terrain, the current boundaries severely limit the tactical training available. W-570 is roughly 90 by 50 NM in size, which was adequate for training with F-4 Phantoms and older versions of the F-15. The advancements in avionics and weapons systems in the current generation of the F-15 have made the vertical and lateral boundaries of W-570 constrained and are insufficient to maximize pilot proficiency and experience to meet current training requirement.

The W-570 Bass/ Bass South ATCAAs proposal is a unique situation in that there are no changes to the current airspace lateral dimensions or altitudes based on scheduling agreements. Yet this configuration change dramatically improves the realistic mission-oriented training of the 142 FW pilots. As advancements in threat technologies and tactics have improved, the requirement to train at all altitudes and longer ranges has increased. By simply reconfiguring the internal divisions of W-570 Bass/Bass South ATCAAs and increasing the vertical dimensions of Eel ATCAA you instantly provided the increased training and flexibility of scheduling. This airspace also improves the viability of the Oregon ANG and the 142 FW to potentially receive the latest Fifth Generation aircraft like the F-22 Raptor or F-35 Lightning II.

Adjustments to the W-570 Bass/ Bass South ATCAAs are proposed to be broken up as W-570A, B, C, and D segments. These segments would only be activated on an as-needed basis individually, or as a whole, based upon mission requirements. This increased flexibility would allow for more responsible and efficient stewardship of the airspace by the 142 FW by not activating un-needed extra airspace. For example, if a training mission requirement only called for basic fighter maneuvers (BFM), which does not require large volumes of airspace, then W-570 C and D would not be activated while only W-570 A and B are. If rough seas or high wind velocity are reported in only one of the segments of W-570, a different segment could be activated individually and provide the appropriate training opportunities.

As mentioned to above, weather conditions over the Pacific Ocean, referred to as sea-states, prohibit training when wind velocity are greater than 25 knots and sea conditions that have wind-wave heights exceeding 5 feet. Due to operational safety guidelines contained in Air Force Instructions (AFI), these conditions prohibit over-water training operations, specifically in W-570 and the Bass/Bass South ATCAAs. Historically on

average, sea-states were out of limits approximately 23 percent of the scheduled time (2008-2011); reaching as high as 75 percent in a given month. In addition to inclement weather, factors such as adversary support, naval operations, and over-land training requirements further restrict airspace availability, requiring the 142 FW to utilize compatible backup airspace elsewhere, primarily utilizing the Juniper/Hart MOA Complex. This annual average of unavailability represents a significant impact to training.

Options for other suitable airspace areas are limited by their distance from Portland, size, or by scheduling needs of other military units in the region. In most cases, for distance, scheduling and availability, the only suitable over-land airspace is the Eel ATCAA, located adjacent to W-570 along the Oregon coast. Even though the over-land portions of Eel ATCAA are available when sea states preclude over-water training, it is rarely utilized (except for air-to-air refueling) due to the limited (i.e., vertically constrained) altitude structure of 18,000 feet MSL to 27,000 feet MSL. This limited altitude block provides almost no benefit for F-15 mission requirement subsets of Advanced Handling Considerations (AHC), BFM, and ACM, and cannot accommodate larger Offensive Counter-Air (OCA) or Defensive Counter-Air (DCA) training missions. Since realistic combat training requires a block of altitude much lower and higher than what is currently available within Eel ATCAA, the 142 FW currently utilizes the Juniper South and Hart North MOAs for BFM, ACM, Tactical Intercepts (TI), Aerospace Control Authority (ACA), OCA, and DCA training missions as a poor-weather, over-land backup airspace. The nearest border of Juniper South and Hart North MOAs however, is located approximately 170 NM from Portland. The closest over-land airspace suitable for BFM is the the Boardman MOA which is located 140 NM away, and the closest over-land airspace most appropriate to support both BFM and ACM airspace when not using the Juniper/Hart or Boardman MOAs is the Olympic MOA, which is also located 140 NM from Portland. The large distance and length of time required to reach these training areas cause mission degradation. Between 22 and 36 percent of fuel that could be used for training is expended during transit to and from the Juniper/Hart, Boardman, or Olympic MOAs. This results in reduced time for training in the MOA and less flexibility to repeat a difficult mission task, which be the difference between a successful training flight and a failed mission.

With the over-water weather conditions unique to the Northwest and the lack of a suitable over-land alternative, approximately 320 additional transit hours are flown by the 142d FW to and from the Juniper/Hart MOA complex per year. This equates to nearly 10 percent of the 142 FW's annual flying hour allocation and is enough hours to maintain three pilot's combat mission ready requirements throughout the year. These hours – if reallocated – would be used to better provide 142 FW pilots with sufficient flying hours to achieve higher mission readiness. Finally, increased transit time results in additional fuel and maintenance costs for the F-15. This issue is further exacerbated by the implementation of the Domestic Reduced Vertical Separation Minimum (DRVSM) airspace. The long distances flown to other over-land airspaces that would normally be flown at higher altitudes, to conserve fuel, are now more difficult to schedule due to the FAA-mandated procedures for non- DRVSM approved aircraft such as the F-15.

Potential suitable airspace for the 142 FW include the Juniper/Hart MOA Complex and the Boardman and Olympic MOAs which all exceed the researched maximum desired distances to training airspace (RAND Corporation 2001). Airspace areas that meet the prescribed maximum desired distance criteria from the 142 FW in Portland that could potentially be modified include W-570 and the Bass/Bass South ATCAAs (both over-water) as well as the Eel ATCAA. Establishment of a new MOA underneath the existing Eel ATCAA would provide over-land training airspace that would comply with the maximum desired distance to airspace for training missions.

142 FW is the primary ACA, or alert squadron, for the Pacific Northwest Western Area Defense Sector (WADS). To maintain proficiency in operating air defense combat air patrols, protecting Temporary Flight Restrictions (TFR) for President of the United States (POTUS) support missions, and intercepts escorting distressed civilian aircraft, the 142 FW conducts weekly practice scrambles out of its alert facility. This end-to-end system training provides WADS controllers, PDX Tower, FAA TRACON, Seattle Center controllers, and pilots proficiency for this critical no fail mission in defense of the United States. Often, due to poor over-water weather conditions, this training is cancelled for lack of adequate airspace or the ability to move a supporting Target of Interest (TOI) to over-land airspace. These cancelations could be avoided by increasing the vertical confines of Eel ATCAA/MOA and therefor allowing increased training opportunity of the ACA mission.

Moreover, the majority of mission ready pilots in the 142 FW are what is known as, “traditional guardsmen.” Traditional guardsmen have full time employment outside the Air National Guard. This limits the number of days they are available to participate in training. Regardless, these pilots are required to perform the same RAP requirements as full time pilots but accomplish them with approximately only 20 percent of the flying opportunities. Consequently, when weather prohibits use of W-570 and Juniper/Hart MOAs are not available, the time constraints for these pilots increase the difficulty of maintaining their CMR status. Furthermore, the increased transit time and loss of on station training time available compounds this problem for our “traditional guardsmen.” This year, the 142 FW requested 3700 flying hours to maintain proficiency and conduct training requirements. The NGB has only authorized the 142 FW to fly 3319 hours for the year. Budgetary requirements are beginning to reduce the much needed flying hours and the trend is anticipated to only continue. As flight hours are reduced, the cumulative effect of 320 plus hours of transit time is magnified through the lack of on station training time available to each pilot. The ability to fly for a reduced time while maintaining, or increasing training time is profound in its ability to generate more sorties and improve the overall fighting ability of the unit.

In the current economic climate, Air National Guard units must find ways to maintain mission readiness and avoid losing critical capabilities by increasing training efficiency in difficult budgetary times. By creating alternative airspace closer to the home station, units are able to balance their needs against fiscal challenges and, in this case, increase training efficiency by as much as 36 percent per flying hour. To be good stewards of our tax-payers dollars it is appropriate to expand Eel ATCAA and create a

MOA to provide the 142 FW the ability to bolster the nation's combat effectiveness through reduce transit and increased on-station training time.

Reconfiguring the W-570 and Bass/ Bass South ATCAAs and the creation of Eel MOA and Eel ATCAA vertical expansion will allow the 142 FW to be to be good stewards of our tax-payers dollars, ensure the full implementation of the F-15's combat capability and tactics against current and future threats, and providing future mission operations compatibility with Fifth Generation aircraft. The increased training of the 142 FW in their primary airspace will insure the success of the United States in any future conflict or defense of the Pacific Northwest.

PROPOSED ACTION

Under the Proposed W-570, Bass ATCAA, and Bass South ATCAA Action, the vertical limits and lateral configuration of W-570, Bass ATCAA, and Bass South ATCAA would be modified within their existing boundaries to meet training requirements of the 142 FW. W-570 would be renamed as W-570A, a new segment to be named W-570C would be created adjacent to the eastern boundary of W-570A from 11,000 feet above Mean Sea Level (MSL) to FL 500, Bass ATCAA and Bass South ATCAA would be converted and reconfigured to W-570B and W-570D respectively and the floor of these segments would be lowered from FL 180 (18,000 feet MSL) to 1,000 feet MSL. The ceilings of W-570A as well the existing Bass South ATCAA (to be renamed W-570C and portion of W-570D) would remain at Flight Level (FL) 500 (50,000 feet MSL) while the ceiling of the existing Bass South ATCAA (remaining portion to be renamed W-570D) would be raised from FL 270 (27,000 feet MSL) to FL 500. The proposed modification of the W-570 and Bass/Bass South ATCAA Complex would not have an increase in total 142 FW sorties; however, it would result in increased operations and time spent within the airspace complex over existing conditions. This increase of approximately 253 hours annually within the airspace would be in part due to the expanded vertical limits of the airspace accommodating additional training operations that cannot currently be supported.

Under the Proposed Action, the western-most ~3 NM of the existing Eel ATCAA would be converted into W-570C and the vertical limits of Eel would be expanded to include airspace from 11,000 feet MSL to FL 500 (50,000 feet MSL). The proposed Eel MOAs would be established directly underneath the resulting configuration of Eel ATCAA from 11,000 feet MSL up to but not including FL 180 (18,000 feet MSL). In addition, the proposed Eel High ATCAAs would be established directly above the existing Eel ATCAA from FL 270 (27,000 feet MSL) to FL 500 (50,000 feet MSL). Finally, the Eel MOA/ATCAA Complex would be divided into four segments (A, B, C, and D). The proposed establishment and modifications to the Eel MOA/ATCAA Complex would not result in an increase of total of 142 FW scheduled sorties per year largely because W-570 would remain the primary airspace and the expanded horizontal limits of Eel remain mostly unchanged. Aircraft currently transit through this airspace on their way to W-570. The Eel MOA/ATCAA Complex would see an increase of activity of approximately

305 hours annually over existing conditions. This increase would be from additional training operations that cannot currently be supported inside the Eel ATCAA.

Aeronautical impact:

The proposed action will have minimal impact on Jet routes, civilian traffic or Victor Route 27 which runs below the existing Eel ATCAA. When the Eel MOA is in use, it would be active down to 11,000' which would impact VFR traffic on this route however this would remain only a backup option in poor weather conditions. Through a Letter of Agreement with Seattle ARTCC, when the Victor Routes are needed, controllers can curtail military operations in order to allow joint use of the airspace and ensure deconfliction. Additionally, coordination is already in place to de-conflict with other aircraft requiring transit through the airspace.

2. Joint use. The Airspace will be available for joint use. The FAA joint-use policy per FAAO 7400.2J para 21-1-8 will be recognized. A Letter of Agreement with Denver ARTCC will outline procedures for scheduling, activating, and de-activating the airspace.

d. Air Traffic Control Assigned Airspace (ATCAA). Yes, the existing ATCAAs will also be expanded to support the proposed airspace. The existing Bass ATCAA will be incorporated into the proposed W-570 complex.

Eel A ATCAA, OR

Boundaries.	Beginning	at lat. 46°20'00"N, long. 124°21'00"W; to lat. 46°20'00"N, long. 123°50'00"W; to lat. 46°07'00"N, long. 123°30'00"W; to lat. 45°58'00"N, long. 123°30'00"W; to lat. 45°58'00"N, long. 124°15'53"W; thence north 12nm from and parallel to US shoreline to the point of beginning. to lat. 46°09'59"N, long. 124°20'05"W; thence north 12nm from and parallel to US shoreline to the point of beginning.
Altitudes.		FL180 up to but not including FL270
Times of use.		Intermittent by NOTAM
Controlling agency.		FAA, Seattle ARTCC
Using agency.		USAF, Air National Guard, 142 FW, Portland ANGB, OR

Eel B ATCAA, OR

Boundaries.	Beginning	at lat. 45°58’00”N, long. 124°15’53”W; to lat. 45°58’00”N, long. 123°30’00”W; to lat. 45°36’00”N, long. 123°30’00”W; to lat. 45°36’00”N, long. 124°13’29”W; thence north 12nm from and parallel to US shoreline to the point of beginning.
Altitudes.		FL180 up to but not including FL270
Times of use.		Intermittent by NOTAM
Controlling agency.		FAA, Seattle ARTCC
Using agency.		USAF, Air National Guard, 142 FW, Portland ANGB, OR

Eel C ATCAA, OR

Boundaries.	Beginning	at lat. 45°36’00”N, long. 124°13’29”W; to lat. 45°36’00”N, long. 123°30’00”W; to lat. 45°12’00”N, long. 123°30’00”W; to lat. 45°12’00”N, long. 124°15’26”W; thence north 12nm from and parallel to US shoreline to the point of beginning.
Altitudes.		FL180 up to but not including FL270
Times of use.		Intermittent by NOTAM
Controlling agency.		FAA, Seattle ARTCC
Using agency.		USAF, Air National Guard, 142 FW, Portland ANGB, OR

Eel D ATCAA, OR

Boundaries.	Beginning	at lat. 45°12’00”N, long. 124°15’26”W; to lat. 45°12’00”N, long. 123°30’00”W; to lat. 45°07’00”N, long. 123°30’00”W; to lat. 44°41’53”N, long. 124°20’22”W; then north 12nm from and parallel to US shoreline to the point of beginning.

Altitudes.		FL180 up to but not including FL270
Times of use.		Intermittent by NOTAM
Controlling agency.		FAA, Seattle ARTCC
Using agency.		USAF, Air National Guard, 142 FW, Portland ANGB, OR

Eel A High ATCAA, OR

Boundaries.	Beginning	at lat. 46°20’00”N, long. 124°21’00”W; to lat. 46°20’00”N, long. 123°50’00”W; to lat. 46°07’00”N, long. 123°30’00”W; to lat. 45°58’00”N, long. 123°30’00”W; to lat. 45°58’00”N, long. 124°15’53”W; thence north 12nm from and parallel to US shoreline to the point of beginning. to lat. 46°09’59”N, long. 124°20’05”W; thence north 12nm from and parallel to US shoreline to the point of beginning.
Altitudes.		FL270 up to but not including FL500
Times of use.		Intermittent by NOTAM
Controlling agency.		FAA, Seattle ARTCC
Using agency.		USAF, Air National Guard, 142 FW, Portland ANGB, OR

Eel B High ATCAA, OR

Boundaries.	Beginning	at lat. 45°58’00”N, long. 124°15’53”W; to lat. 45°58’00”N, long. 123°30’00”W; to lat. 45°36’00”N, long. 123°30’00”W; to lat. 45°36’00”N, long. 124°13’29”W; then north 12nm from and parallel to US shoreline to the point of beginning.
Altitudes.		FL270 up to but not including FL500
Times of use.		Intermittent by NOTAM
Controlling agency.		FAA, Seattle ARTCC

Using agency.		USAF, Air National Guard, 142 FW, Portland ANGB, OR

Eel C High ATCAA, OR

Boundaries.	Beginning	at lat. 45°36’00”N, long. 124°13’29”W; to lat. 45°36’00”N, long. 123°30’00”W; to lat. 45°12’00”N, long. 123°30’00”W; to lat. 45°12’00”N, long. 124°15’26”W; then north 12nm from and parallel to US shoreline to the point of beginning.
Altitudes.		FL270 up to but not including FL500
Times of use.		Intermittent by NOTAM
Controlling agency.		FAA, Seattle ARTCC
Using agency.		USAF, Air National Guard, 142 FW, Portland ANGB, OR

Eel D High ATCAA, OR

Boundaries.	Beginning	at lat. 45°12’00”N, long. 124°15’26”W; to lat. 45°12’00”N, long. 123°30’00”W; to lat. 45°07’00”N, long. 123°30’00”W; to lat. 44°41’53”N, long. 124°20’22”W; then north 12nm from and parallel to US shoreline to the point of beginning.
Altitudes.		FL270 up to but not including FL500
Times of use.		Intermittent by NOTAM
Controlling agency.		FAA, Seattle ARTCC
Using agency.		USAF, Air National Guard, 142 FW, Portland ANGB, OR

e. Activities.

1. For areas that will contain aircraft operations.

(a) The number and types of aircraft that will normally use the area.

F-15C: W-570 – 6,200 sorties per year
Eel MOAs – 1,600 sorties per year
Eel ATCAAs – 6,300 sorties per year

(b) Specific Activities and the maximum altitudes required for each type of activity planned.

Tactical combat maneuvering by fighter fixed wing aircraft involving abrupt, unpredictable changes in altitude, attitude, and direction of flight. Maximum altitude FL510.

(c) Supersonic Flight. N/A. Supersonic flight operations will be conducted only over open water within the W-570 Warning Areas down to 10,000 feet MSL.

2. Surface-to-surface or surface-to-air weapons firing. N/A.

f. Environmental and land use information.

1. Mr. Kevin Marek
NGB/A7AM, Bldg 3501
JB Andrews, MD 20762-5157
kevin.p.marek@mail.mil

2. 142 FW agrees to provide reasonable and timely aerial access to the underlying public and private land. This access will be coordinated via a proposed direct communication line with the 142 FW Airspace Office.

3. Not applicable.

g. Communications and Radar.

1. Ground based radar and radio communications will be used by Seattle ARTCC to monitor the airspace.

2. Longracks MRU may provide occasional military radar coverage.

h. Safety considerations.

1. Activity will be contained within the MOA using geographic references, inertial navigation, global positioning systems and TACAN radial/DME references. In addition, the 142FW uses a Situational Awareness DATA Link (SADL) display in which airspace boundaries are depicted and area borders easily defined.

2. Malfunctions will be handled in accordance with aircraft technical orders, Service Directives, and FARs.

i. Coordination summary.

National Guard Bureau/A236YR,
Seattle ARTCC,
Air Force Representative, Lt Col Richard Farnsworth, FAA Western Services Area

j. Area Chart. See attached

k. Environmental Documents. All applicable environmental documents will be provided separately.

l. Graphic Notice Information. N/A

m. Other. N/A

21-3-3. PROPOSAL CONTENT

a. Proponent's Transmittal Letter. See proceeding**.**

b. Area Description.

Change <u>Juniper North MOA, OR</u> to read:

<u>Juniper A MOA, OR</u>

Times of Use.	Intermittent by NOTAM
Using agency.	USAF, Air National Guard, 173 FW, Kingsley Field, OR
	all other information remains the same

Change <u>Juniper South MOA, OR</u> to read:

<u>Juniper B MOA, OR</u>

Times of Use.	Intermittent by NOTAM
Using agency.	USAF, Air National Guard, 173 FW, Kingsley Field, OR
	all other information remains the same

Change <u>Juniper Low MOA, OR</u> Using Agency to read:

Times of Use.	Intermittent by NOTAM
Using agency.	USAF, Air National Guard, 173 FW, Kingsley Field, OR
	all other information remains the same

Change <u>Hart North MOA, OR</u> to read:

<u>Hart A MOA, OR</u>

Times of Use.	Intermittent by NOTAM

Using agency. USAF, Air National Guard, 173 FW, Kingsley Field, OR

all other information remains the same

Change <u>Hart South MOA, OR</u> to read:

<u>Hart B MOA, OR</u>

Times of Use. Intermittent by NOTAM

Using agency. USAF, Air National Guard, 173 FW, Kingsley Field, OR

all other information remains the same

New Airspace:

<u>Juniper East Low MOA, OR</u>

Boundaries. Beginning at lat. 43°38'00"N, long. 119°34'04"W;
to lat. 43°33'19"N, long. 119°20'17"W;
to lat. 43°26'41"N, long. 119°09'26"W;
to lat. 43°04'20"N, long. 118°55'21"W;
to lat. 42°46'00"N, long. 118°55'21"W;
to lat. 42°46'00"N, long. 119°12'27"W;
to the point of beginning.

Altitudes. 500 feet AGL up to but not including 11,000 feet MSL

Times of use. Intermittent by NOTAM

Controlling agency. FAA, Seattle ARTCC

Using agency. USAF, Air National Guard, 173 FW, Kingsley Field, OR

<u>Juniper C MOA, OR</u>

Boundaries. Beginning at lat. 43°38'00"N, long. 119°34'04"W;
to lat. 43°33'19"N, long. 119°20'17"W;
to lat. 43°26'41"N, long. 119°09'26"W;
to lat. 43°10'08"N, long. 118°59'03"W;
to lat. 43°10'08"N, long. 119°22'26"W;
to the point of beginning.

Altitudes.		11,000 feet MSL up to but not including FL180
Times of use.		Intermittent by NOTAM
Controlling agency.		FAA, Seattle ARTCC
Using agency.		USAF, Air National Guard, 173 FW, Kingsley Field, OR

Juniper D MOA, OR

Boundaries.	Beginning	at lat. 43°10’08”N, long. 119°22’26”W; to lat. 43°10’08”N, long. 118°59’03”W; to lat. 42°46’00”N, long. 118°43’53”W; to lat. 42°40’00”N, long. 118°43’53”W; to lat. 42°40’00”N, long. 119°10’04”W; to the point of beginning.
Altitudes.		11,000 feet MSL up to but not including FL180
Times of use.		Intermittent by NOTAM
Controlling agency.		FAA, Seattle ARTCC
Using agency.		USAF, Air National Guard, 173 FW, Kingsley Field, OR

Hart C MOA, OR

Boundaries.	Beginning	at lat. 42°40’00”N, long. 119°10’04”W; to lat. 42°40’00”N, long. 118°43’53”W; to lat. 42°26’00”N, long. 118°43’53”W; to lat. 42°26’00”N, long. 119°13’34”W; to the point of beginning.
Altitudes.		11,000 feet MSL up to but not including FL180
Times of use.		Intermittent by NOTAM
Controlling agency.		FAA, Seattle ARTCC
Using agency.		USAF, Air National Guard, 173 FW,

Kingsley Field, OR

Hart D MOA, OR

Boundaries.	Beginning	at lat. 42°26’00”N, long. 119°13’34”W; to lat. 42°26’00”N, long. 118°43’53”W; to lat. 42°22’34”N, long. 118°43’53”W; to lat. 41°52’44”N, long. 118°52’07”W; to lat. 41°30’00”N, long. 119°18’36”W; to lat. 41°30’00”N, long. 119°27’04”W; to the point of beginning.
Altitudes.		11,000 feet MSL up to but not including FL180
Times of use.		Intermittent by NOTAM
Controlling agency.		FAA, Seattle ARTCC
Using agency.		USAF, Air National Guard, 173 FW, Kingsley Field, OR

Hart E MOA, OR

Boundaries.	Beginning	at lat. 41°30’00”N, long. 119°55’04”W; to lat. 41°30’00”N, long. 119°27’04”W; to lat. 41°30’00”N, long. 119°18’36”W; to lat. 41°10’00”N, long. 119°41’40”W; to lat. 41°10’00”N, long. 119°47’30”W; to the point of beginning.
Altitudes.		11,000 feet MSL up to but not including FL180
Times of use.		Intermittent by NOTAM
Controlling agency.		FAA, Seattle ARTCC
Using agency.		USAF, Air National Guard, 173 FW, Kingsley Field, OR

Hart F MOA, OR

Boundaries.	Beginning	at lat. 41°52’44”N, long. 118°52’07”W; to lat. 41°30’00”N, long. 118°58’19”W; to lat. 41°10’00”N, long. 119°23’36”W;

	to lat. 41°10’00”N, long. 119°41’40”W; to lat. 41°30’00”N, long. 119°18’36”W; to the point of beginning.
Altitudes.	11,000 feet MSL up to but not including FL180
Times of use.	Intermittent by NOTAM
Controlling agency.	FAA, Seattle ARTCC
Using agency.	USAF, Air National Guard, 173 FW, Kingsley Field, OR

c. Airspace Statement of Need and Justification.

1. Describe the purpose and need for the proposed airspace.

This Airspace Proposal, in conjunction with the Oregon Military Training Airspace EIS, proposes modification of the Juniper/Hart MOA Complex to increase efficiencies of ANG/USAF realistic mission-oriented training, considering the 173 FW increased aircraft inventory and student production, improved technology within the F-15C, and the advanced longer range employment tactics that are inherent in training for combat against emerging technologies of adversary aircraft.

Historically, the Juniper/Hart MOAs, and their associated ATCAAs, have accommodated high altitude supersonic Beyond Visual Range (BVR) mission set-up ranges. However, due to the increased long range capabilities of the F-15C, and similar emerging threat capabilities of adversary aircraft, existing space within the Juniper/Hart MOAs has been inefficient within recent years to provide realistic mission-oriented training. The Air Education and Training Command (AETC) formal F-15C Syllabus requires approximately 40% of the syllabus training missions to be BVR. Half of these missions require setup ranges in excess of 80NM.

In 2003, the 173 FW flew eight aircraft in the morning go, and six aircraft in the afternoon go (8-turn-6), with approximately 3800 programmed flying hours and 2800 sorties. In 2005, the 173 FW’s aircraft inventory increased from 18 Primary Assigned Aircraft (PAA) to 21 PAA. With this increase came an increase in programed student training and associated flying hours. In 2008, the 173 FW became the sole F-15C Formal Training Unit (FTU) in the US, and has nearly doubled its student production in the past five years. In 2013, it flew a 10-turn-8 flying schedule and executed 4700 hours with culminating in 3800 sorties; a 23% increase in flying hours and a 35% increase in sorties. In 2014, to meet Combat Air Force student production throughput, programmed flying training requires a 12-turn-10 flying operation flexing to an occasional 14-turn-10. The 173 FW is poised to increase student production even more pending approval from

the Air Force, which will add additional aircraft and flying hours. Under current flying hour programming, the 173 FW has been authorized up to 6200 flying hours as required to meet current and potential student throughput.

Whereas in the past the Juniper/Hart MOA accommodated two simultaneous BVR 2 v 2 tactical intercept missions, one in Juniper North/South and one in Hart North/South, each with approximately 50-60NM set-up range, increased F-15C capabilities have caused these missions to be staggered in time to afford safety and training realism. In the past, the 173 FW typically had 4-6 students that could be in the BVR portion of their syllabus, this requirement has grown to 6-8 students. With this number of students in the BVR portions of the syllabus at one time, it is very likely three to four 2 v 2 tactical intercept missions or four to five 1 v 1 tactical missions could be required during a single flying period. This is not possible within the current airspace configuration without staggering takeoff times; significantly increasing the total amount of time the airspace is activated.

In addition to the 173 FW mission, the 142 FW uses the Juniper/Hart Complex, including Juniper Low MOA, as a primary airspace when accomplishing over land Low Altitude Step-down Training (LASDT). It also uses the Juniper/Hart Complex as back-up airspace during winter months when there's significant weather or sea states are out of limits under its primary airspace, W-570. For these periods, the 142 FW is routinely scheduled/NOTAM'd to use the Juniper/Hart Complex 45 min prior to 173 FW mission start time and historically activates the airspace 30% of the time for this purpose.

Since 2010, as a measure for better airspace stewardship, the 173FW moved to a NOTAM and airspace activation process that has reduced the total NOTAM'd airspace time and more accurately aligns airspace NOTAM time with airspace activation time. In addition, 173 FW tracks utilization (actual time in the MOA) as a percentage of activation time. On average, the airspace is utilized 80% of the time it is activated. Currently, the 173 FW makes schedule requests to NOTAM Juniper/Hart Complex (0900-1200 PST) and (1300-1600 PST). The first 45 min of each block are to accommodate the 142 FW if they need to activate the airspace as a back-up option. On a normal day, without slips in takeoff times, the 173 FW is done with missions in Juniper/Hart Complex at 1130 and 1530 PST and returns the airspace back to Seattle Air Route Traffic Control Center (ZSE). Without an increase in the airspace requested in this proposal, there will be continued increases in activation time, and larger blocks of requested NOTAM times during times when long range BVR training peaks.

The proposed Juniper/Hart Complex airspace expansion would add significant flexibility to both Oregon ANG's flying wings and other NAS users. The 173 FW could expand into the new MOA segments when needed during increased BVR syllabus mission requirements, allowing two simultaneous 4 v 4 scenarios, three 2 v 2 scenarios, or four to five 1 v 1 scenarios, mitigating the increase in airspace activation time by minimizing staggered launches. It would also allow concurrent missions of the 173 FW operating in the south and the 142 FW operating in the north with minimal impact on each other, reducing what currently can be an additional 45 minutes of activation time.

Although Dolphin MOA is the 173FW's primary back-up airspace, the ATCAA above it is capped approximately 20 percent of the time at FL230 due to Air-to-Air Refueling operations conducted in AR-8A/B. While Dolphin can adequately accommodate some types of BVR training, its supersonic restrictions preclude realistic long range high altitude training. Its lateral dimensions also preclude the full realm of maneuvering often required during long range tactics.

PROPOSED ACTION

Under the Proposed Action, the eastern boundary of the existing Juniper/Hart airspace complex would be extended approximately 20 miles to the east and the southern boundary would be extended approximately 20 miles to the south. Once established, the existing and proposed airspace segments would be renamed alphabetically to include: Juniper A through D MOAs and Hart A through E MOAs. Expansion of the existing Juniper Low MOA would include the proposed Juniper East Low MOA which would be located directly underneath the proposed Juniper C MOA and a majority of the proposed Juniper D MOA. The proposed Juniper East Low MOA would be established from 500 feet above ground level (AGL) to 10,999 feet MSL. In addition, the Proposed Action would include raising the floor of the existing Juniper Low MOA from 300 feet AGL to 500 feet AGL. New ATCAAs would be established directly above the proposed Juniper/Hart MOAs. The proposed new airspace segments would be activated on an as-needed basis as a whole or individually. 173 FW training activity within the existing portions of the Juniper/Hart MOA Complex would decrease given that the distribution of total airspace usage would now be spread out to include operations within the expanded Juniper/Hart MOA Complex, distributing flight activities across a broader geography. Training missions would spend the majority of the time within the overall Juniper/Hart MOA Complex above 11,000 feet MSL. By segmenting the proposed MOAs and ATCAAs, the 173 FW would be able to activate the required airspace to meet the mission objectives during any specific training exercise. In previous years, the Juniper/Hart MOA Complex has been expanded to similar lateral dimensions on a temporary basis to support the ANG's largest air-to-air combat exercise, Exercise Sentry Eagle, which typically includes multiple units from across the country.

Aeronautical impact: The proposed action will have minimal impact on Victor Routes 122 and 357 as they currently run through the existing Juniper/Hat MOAs. Through a current Letter of Agreement with ZSE, when the Victor Routes are needed, controllers can curtail military operations in order to allow joint use of the airspace. The proposed expansion will have minimal impact on the Burns (BNO) and Roaring Springs (Pvt) airports. Burns airport sits approximately 15NM outside of the proposed northeast boundary of Juniper C and Juniper East Low MOAs. The floor of the proposed Hart C MOA is 11,000' MSL (6,400' AGL) above the Roaring Springs airport. Military training routes VR1301, VR319/VR316 currently fall within the Juniper Low MOA and scheduling conflicts have been mitigated through internal military scheduling. The proposed Juniper Low East would expand into a segment of VR1352. Similar military scheduling coordination would mitigate conflicts. High altitude Q-35 route will pass

approximately 10NM from the eastern boundary of the Juniper C ATCAA if established. Similar control measures used by controllers and pilots for other boundaries would be used to mitigate spill outs. Hart E MOA/ATCAA could pose a challenge to efficient routing for commercial traffic when Reno MOA/ATCAA is also activated. This could be mitigated through military scheduling coordination with Reno MOA Scheduling Agency and real time activation restrictions set by Seattle ARTCC.

2. Joint use. The Airspace will be available for joint use. The FAA joint-use policy per FAAO 7400.2J para 21-1-8 will be recognized. A Letter of Agreement with Seattle ARTCC will outline procedures for scheduling, activating, and de-activating the airspace.

d. Air Traffic Control Assigned Airspace (ATCAA). Yes, ATCAAs will be created to support the proposed airspace.

Juniper A ATCAA, OR

Boundaries.	Beginning	at lat. 43°55'59"N, long. 120°44'04"W; to lat. 43°57'05"N, long. 120°26'24"W; to lat. 43°50'30"N, long. 120°07'48"W; to lat. 43°21'00"N., long.120°31'48"W; to the point of beginning.
Altitudes.		FL180 up to but not including FL510
Times of use.		Intermittent by NOTAM
Controlling agency.		FAA, Seattle ARTCC
Using agency.		USAF, Air National Guard, 173 FW, Kingsley Field, OR

Juniper B ATCAA, OR

Boundaries.	Beginning	at lat. 43°21'00"N, long. 120°31'48"W; to lat. 43°50'30"N, long. 120°07'48"W; to lat. 43°38'00"N, long. 119°34'04"W; to lat. 42°40'00"N, long. 119°10'04"W; to lat. 42°40'00"N, long. 120°18'04"W; to the point of beginning.
Altitudes.		FL180 up to but not including FL510
Times of use.		Intermittent by NOTAM
Controlling agency.		FAA, Seattle ARTCC

Using agency. USAF, Air National Guard, 173 FW, Kingsley Field, OR

Juniper C ATCAA, OR

Boundaries. Beginning at lat. 43°38’00”N, long. 119°34’04”W;
to lat. 43°33’19”N, long. 119°20’17”W;
to lat. 43°26’41”N, long. 119°09’26”W;
to lat. 43°10’08”N, long. 118°59’03”W;
to lat. 43°10’08”N, long. 119°22’26”W;
to the point of beginning.

Altitudes. FL180 up to but not including FL510

Times of use. Intermittent by NOTAM

Controlling agency. FAA, Seattle ARTCC

Using agency. USAF, Air National Guard, 173 FW, Kingsley Field, OR

Juniper D ATCAA, OR

Boundaries. Beginning at lat. 43°10’08”N, long. 119°22’26”W;
to lat. 43°10’08”N, long. 118°59’03”W;
to lat. 42°46’00”N, long. 118°43’53”W;
to lat. 42°40’00”N, long. 118°43’53”W;
to lat. 42°40’00”N, long. 119°10’04”W;
to the point of beginning.

Altitudes. FL180 up to but not including FL510

Times of use. Intermittent by NOTAM

Controlling agency. FAA, Seattle ARTCC

Using agency. USAF, Air National Guard, 173 FW, Kingsley Field, OR

Hart A ATCAA, OR

Boundaries. Beginning at lat. 42°40'00"N, long. 120°18'04"W.;
to lat. 42°40'00"N, long. 119°10'04"W;
to lat. 42°26'00"N, long. 119°13'34"W;
to lat. 42°26'00"N, long. 120°13'06"W;

		to the point of beginning.
Altitudes.		FL180 up to but not including FL510
Times of use.		Intermittent by NOTAM
Controlling agency.		FAA, Seattle ARTCC
Using agency.		USAF, Air National Guard, 173 FW, Kingsley Field, OR

Hart B ATCAA, OR

Boundaries.	Beginning	at lat. 42°26'00"N, long. 120°13'06"W; to lat. 42°26'00"N, long. 119°13'34"W; to lat. 41°30'00"N, long. 119°27'04"W; to lat. 41°30'00"N, long. 119°55'04"W; to the point of beginning.
Altitudes.		FL180 up to but not including FL510
Times of use.		Intermittent by NOTAM
Controlling agency.		FAA, Seattle ARTCC
Using agency.		USAF, Air National Guard, 173 FW, Kingsley Field, OR

Hart C ATCAA, OR

Boundaries.	Beginning	at lat. 42°40’00”N, long. 119°10’04”W; to lat. 42°40’00”N, long. 118°43’53”W; to lat. 42°26’00”N, long. 118°43’53”W; to lat. 42°26’00””N, long. 119°13’34”W; to the point of beginning.
Altitudes.		FL180 up to but not including FL510
Times of use.		Intermittent by NOTAM
Controlling agency.		FAA, Seattle ARTCC
Using agency.		USAF, Air National Guard, 173 FW, Kingsley Field, OR

Hart D ATCAA, OR

Boundaries.	Beginning	at lat. 42°26’00”N, long. 119°13’34”W; to lat. 42°26’00”N, long. 118°43’53”W; to lat. 42°22’34”N, long. 118°43’53”W; to lat. 41°52’44”N, long. 118°52’07”W; to lat. 41°30’00”N, long. 119°18’36”W; to lat. 41°30’00”N, long. 119°27’04”W; to the point of beginning.
Altitudes.		FL180 up to but not including FL510
Times of use.		Intermittent by NOTAM
Controlling agency.		FAA, Seattle ARTCC
Using agency.		USAF, Air National Guard, 173 FW, Kingsley Field, OR

Hart E ATCAA, OR

Boundaries.	Beginning	at lat. 41°30’00”N, long. 119°55’04”W; to lat. 41°30’00”N, long. 119°27’04”W; to lat. 41°30’00”N, long. 119°18’36”W; to lat. 41°10’00”N, long. 119°41’40”W; to lat. 41°10’00”N, long. 119°47’30”W; to the point of beginning..
Altitudes.		FL180 up to but not including FL510
Times of use.		Intermittent by NOTAM
Controlling agency.		FAA, Seattle ARTCC
Using agency.		USAF, Air National Guard, 173 FW, Kingsley Field, OR

Hart F ATCAA, OR

Boundaries.	Beginning	at lat. 41°52’44”N, long. 118°52’01”W; to lat. 41°30’00”N, long. 118°58’19”W; to lat. 41°10’00”N, long. 119°23’36”W; to lat. 41°10’00”N, long. 119°41’40”W; to lat. 41°30’00”N, long. 119°18’36”W; to the point of beginning.

Altitudes.	FL180 up to but not including FL280
Times of use.	Intermittent by NOTAM
Controlling agency.	FAA, Seattle ARTCC
Using agency.	USAF, Air National Guard, 173 FW, Kingsley Field, OR

e. Activities.

1. For areas that will contain aircraft operations.

(a) The number and types of aircraft that will normally use the area.

F-15C: Juniper Low MOAs – 1,149 sorties per year
Juniper MOAs – 4,133 sorties per year
Hart MOAs – 1,504 sorties per year

(b) Specific Activities and the maximum altitudes required for each type of activity planned.

Tactical combat training maneuvering by fighter fixed wing aircraft involving abrupt, unpredictable changes in altitude, attitude, and direction of flight. Maximum altitude for training missions can be up to FL510.

(c) Supersonic Flight. Supersonic flight operations will only be conducted above FL300.

2. Surface-to-surface or surface-to-air weapons firing. N/A.

f. Environmental and land use information.

1. Comments regarding environmental and land use aspects of this proposal may be sent to:

Mr. Kevin Marek
NGB/A4AM, Bldg 3501
JB Andrews, MD 20762-5157
kevin.p.marek.civ@mail.mil

2. Areas underneath the proposed Juniper/Hart MOAs where there are underlying private or public use airfields will be provided reasonable and timely aerial access to such land. Deconfliction and avoidance will be accomplished by a combination of Seattle ARTCC advisories to VFR aircraft in the confines of the MOA, F-15 own-ship radars and visual separation at a minimum of 1000 feet.

3. N/A

g. Communications and Radar.

1. Ground based radar and radio communications will be provided by Seattle ARTCC to monitor the airspace.

2. Shadow MRU may provide occasional military radar coverage.

h. Safety considerations.

1. Activity will be contained within the MOA using geographic references, inertial navigation, global positioning systems and TACAN radial/DME references. In addition, the 173FW uses a Fighter Data Link (Link-16) displays in which flight and own-ship positions and area boundaries are depicted.

2. The employment of flares above 5,000 feet AGL will be authorized. The employment of chaff will be authorized. No other types of ordnance will be released.

3. Malfunctions will be handled in accordance with aircraft technical orders, Service Directives, and FARs.

i. Coordination summary.

National Guard Bureau
NGB/A3AA, Mr. Jamie Flanders
NGB/A7AM, Mr. Devin Scherer
Federal Aviation Administration
Seattle ARTCC, Ms. Lisa Faulk
Western Service Area Air Traffic Representative, Michele Cruz
Western Service Area Environmental Specialist, Dr. Caroline Poyurs
Air Force Representative, Lt Col Richard Farnsworth, FAA Western Services Area

j. Area Chart. Falcon View depictions

k. Environmental Documents. All applicable environmental documents will be provided separately.

l. Graphic Notice Information. N/A

m. Other.

21-3-3. PROPOSAL CONTENT

a. Proponent's Transmittal Letter. See proceeding**.**

b. Area Description.

Redhawk A MOA, OR

Boundaries.	Beginning	at lat. 45º33'00"N, long. 120º52'00"W; to lat. 45º30'00"N, long. 120º15'30"W; to lat. 45º00'00"N, long. 120º24'00"W; to lat. 45º06'00"N, long. 121º01'00"W; to the point of beginning.
Altitudes.		11,000 feet MSL up to but not including FL180
Times of use.		Intermittent by NOTAM
Controlling agency.		FAA, Seattle ARTCC
Using agency.		USAF, Air National Guard, 142 FW, Portland ANGB, OR

Redhawk B MOA, OR

Boundaries.	Beginning	at lat. 45º30'00"N, long. 120º15'30"W; to lat. 45º23'00"N, long. 119º08'00"W; to lat. 44º35'00"N, long. 119º09'00"W; to lat. 45º00'00"N, long. 120º24'00"W; to the point of beginning.
Altitudes.		11,000 feet MSL up to but not including FL180
Times of use.		Intermittent by NOTAM
Controlling agency.		FAA, Seattle ARTCC
Using agency.		USAF, Air National Guard, 142 FW, Portland ANGB, OR

Redhawk C MOA, OR

Boundaries.	Beginning	at lat. 45º06'00"N, long. 121º01'00"W; to lat. 45º00'00"N, long. 120º24'00"W; to lat. 44º35'00"N, long. 119º09'00"W; to lat. 44º25'00"N, long. 119º09'00"W; to lat. 44º27'00"N, long. 121º01'00"W; to the point of beginning.
Altitudes.		11,000 feet MSL up to but not including FL180
Times of use.		Intermittent by NOTAM
Controlling agency.		FAA, Seattle ARTCC
Using agency.		USAF, Air National Guard, 142 FW, Portland ANGB, OR

c. Airspace Statement of Need and Justification.

1. Describe the purpose and need for the proposed airspace.

This Airspace Proposal, in conjunction with the Oregon Military Training Airspace EIS, proposes the establishment of a new over-land Redhawk MOA Complex which is needed by the 142d Fighter Wing as a "weather contingency" airspace to enable air-to-air training when weather or sea states restrict overflight of the coastal airspace areas. The location, size and proximity of this airspace will ensure that the 142 FW will be able to maintain proficiency and training requirements in preparation for combat against emerging technologies of adversary aircraft.

The 142 FW employs fourth generation F-15C Single Seat Fighter Jets which can rapidly transit altitudes from the surface to 50,000 feet and fly at speeds exceeding 12 NM per minute. The primary training area for the 142 FW is W-570, an over-water airspace off the coast of Oregon. Frequent weather conditions over the Pacific Ocean that extend into the coastal airspace ranges often produce sea states and weather conditions that prohibit over-water training. Airspace further inland and east of the Cascade Mountain range is generally unaffected by these weather systems. Further, although the proposed modification to the Eel ATCAA would provide valuable over-land training airspace that the 142 FW needs, it would not support all mission types in which the pilots are required to train. The modified Eel airspace would only provide space for Advanced Handling Characteristics (AHC), Basic Fighter Maneuvers (BFM), Air Combat Maneuvering (ACM), and Aerospace Control Authority (ACA)missions. Therefore, the 142 FW has a need for suitable over-land airspace that will allow its pilots to more efficiently conduct the full suite of realistic training operations of Tactical Intercepts (TI),

Defensive Counter Air (DCA) and Offensive Counter Air (OCA) to be prepared to fulfill their mission requirements.

Weather conditions over the Pacific Ocean cause out of limit sea-states which prohibit training when wind velocities are greater than 25 knots and/or wind-wave heights exceed 5 feet. Due to operational safety guidelines contained in Air Force Instructions (AFI), these conditions prohibit over-water training operations in W-570 and the Bass/Bass South ATCAAs. Historically, sea-states were out of limits approximately 23 percent of the scheduled time (2008-2011); reaching as high as 75 percent in a given month. In addition to inclement weather, factors such as adversary support, naval operations, and over-land training requirements further restrict airspace availability, requiring the 142 FW to utilize compatible airspace elsewhere, primarily the Juniper/Hart MOA Complex. This annual average of unavailability represents a significant impact to training.

Options for other suitable airspace areas are limited by their distance from Portland, size, or by scheduling needs of other military units in the region. In most cases, for distance, scheduling and availability, the only suitable over-land airspace is the proposed Eel ATCAA/ MOA complex, located adjacent to W-570 along the Oregon coast. Unfortunately, this airspace isn't a functional alternative to accommodate larger TI, OCA) or DCA training missions.

The 142 FW currently utilizes the Juniper South and Hart North MOAs for BFM, ACM, TI, ACA, OCA, and DCA training missions when poor weather conditions require over-land training. The nearest border of Juniper South and Hart North MOAs is located approximately 170 NM from Portland. The distance and time required to reach this area for over-land training causes mission degradation. Between 22 and 36 percent of fuel that could be used for training is expended during transit to and from the available backup areas; Juniper/Hart, Boardman, and Olympic MOA. This results in reduced time for training in the MOA and less flexibility to repeat a difficult mission task, which could be the difference between a successful training flight and a failed mission. With the over-water weather conditions unique to the Northwest, and the lack of a suitable alternative airspace, approximately 320 additional transit hours are flown by the 142d FW transit to and from the Juniper/Hart MOA Complex per year. This is nearly 10 percent of the 142 FW's annual flying hour allocation and is enough hours to maintain three pilot's combat mission ready requirements throughout the year. These hours – if reallocated – would be used to better provide 142 FW pilots with sufficient flying training to achieve higher mission readiness. Finally, increased transit time results in additional fuel and maintenance costs for the F-15. This issue is further exacerbated by the implementation of the Domestic Reduced Vertical Separation Minimum (DRVSM) airspace. The long distances flown to other over-land airspaces that would normally be flown at higher altitudes to conserve fuel are now more difficult to schedule due to the FAA-mandated procedures for non- DRVSM approved aircraft such as the F-15. Potential suitable airspace for the 142 FW includes the Juniper/Hart MOA Complex and the Boardman and Olympic MOAs, which all exceed the reasearched maximum desired distances to training airspace (RAND Corporation 2001). Establishment of a new

Redhawk MOA Complex would provide excellent over-land backup training airspace, within the maximum desired distance, for small Offensive Counter-Air (OCA) or Defensive Counter-Air (DCA) training missions.

142 FW is the primary Aerospace Control Authority (ACA) squadron for the Pacific Northwest Western Area Defense Sector (WADS). To maintain proficiency in operating air defense combat air patrols, protecting Temporary Flight Restrictions (TFR) for President of the United States (POTUS) support missions, and intercepts escorting distressed civilian aircraft, the 142 FW conducts weekly practice scrambles out of its alert facility. This end-to-end system training provides WADS controllers, PDX Tower, FAA TRACON, Seattle Center controllers, and pilots proficiency for this critical no fail mission in defense of the United States. Often, due to poor over-water weather conditions, this training is cancelled for lack of adequate airspace or the ability to move a supporting Target of Interest (TOI) to over-land airspace. These cancelations could be avoided through the establishment of a new over-land Redhawk MOA Complex therefor allowing increased training opportunity of the ACA mission.

Moreover, the majority of mission ready pilots in the 142 FW are what is known as, “traditional guardsmen.” Traditional guardsmen have full time employment outside the Air National Guard. This limits the number of days they are available to participate in training. Regardless, these pilots are required to perform the same RAP requirements as full time pilots but accomplish them with approximately only 20 percent of the flying opportunities. Consequently, when weather prohibits use of W-570 and Juniper/Hart MOAs are not available, the time constraints for these pilots increase the difficulty of maintaining their CMR status.

This year the 142 FW requested 3700 flying hours to maintain proficiency and conduct training requirements. The NGB has only authorized the 142 FW to fly 3319 hours for the year. Budgetary requirements are beginging to reduce the much needed flying hours and the trend is anticipated to only continue. As flight hours are reduced, the cumulative effect of 320 plus hours of transit time is magnified through the lack of on station training time available to each pilot. The ability to fly for a reduced time while maintaining, or increasing training time is profound in its ability to generate more sorties, increase training, and improve the overall fighting ability of the unit.

In the current economic climate, Air National Guard units must find ways to maintain mission readiness and avoid losing critical capabilities by increasing training efficiency in difficult budgetary times. By creating alternative airspace closer to the home station, units could balance their needs against fiscal challenges and increase training efficiency by as much as 36 percent per flying hour. As good stewards of our tax-payers dollars it is only right to create a new over-land Redhawk MOA Complex and provide the 142 FW the ability to bolster the nation’s combat effectiveness through reduce transit, increased on station time, and improved tactics.

PROPOSED ACTION

Under the Proposed Action, a new over-land MOA Complex would be established approximately 100 miles east-southeast of Portland in central/northern Oregon, roughly bound by Highway 97/197 on the West, the towns of Wasco and Lexington on the North, U.S. Highway 395 on the East, and U.S. Highway 26 on the South. This location was determined through coordination with the FAA Seattle ARTCC, which controls the airspace in this area. The proposed Redhawk MOAs (A, B, and C) would be established from 11,000 feet MSL to, but not including FL 180 (18,000 feet MSL). Given that the majority of residents in this region of Oregon generally reside at elevations of 5,000 feet MSL or below, the proposed MOAs would be established at an elevation equivalent to approximately 6,000 feet above ground level (AGL). In addition, associated ATCAAs would be established directly above the proposed Redhawk MOA from FL 180 to FL 500 (50,000 feet MSL). The proposed Redhawk MOA Complex would have the sufficient lateral and vertical space to efficiently provide enough maneuvering airspace to support the majority of Ready Aircrew Program (RAP) training requirements for the 142 FW.

Establishment of the proposed Redhawk MOA Complex would help to alleviate concerns related to scheduling conflicts, or prohibitive weather conditions, with other regional airspaces. Dividing the complex into three segments would allow for the greatest scheduling flexibility and efficient use and responsible stewardship of the airspace. The proposed airspace segments would be activated on an as-needed basis as a whole, or individually.

Aeronautical impact:

The proposed action will have minimal impact on the multiple Victor Routes which run below the proposed Redhawk MOA. When the MOA is in use, it would be active down to 11,000' which would impact VFR traffic on these routes however this airspace would remain only a backup option in poor weather conditions and further be limited through the activation of only those segments that are needed. Through a Letter of Agreement with Seattle ARTCC that will be created, when the Victor Routes are needed, controllers can curtail military operations in order to allow joint use of the airspace and ensure deconfliction. Additionally, the location for this airspace will have the least impact on civilian traffic through the prior coordination with Seattle Center providing the historical flight path data around that area. One feeder point on the published HHOOD TWO arrival is located inside the western boarder of Redhawk A MOA. After discussions with Seattle Center, Redhawk A MOA would only be released so to not interfear with inbound airline traffic into Portland and therefore be restricted in altitude. This will have no effect on civilian traffic, only to military operations.

2. Joint use. The Airspace will be available for joint use. The FAA joint-use policy per FAAO 7400.2J para 21-1-8 will be recognized. A Letter of Agreement with Seattle ARTCC will outline procedures for scheduling, activating, and de-activating the airspace.

d. Air Traffic Control Assigned Airspace (ATCAA). Yes, ATCAAs will be required to support the proposed airspace.

Redhawk A ATCAA, OR

Boundaries.	Beginning	at lat. 45º33'00"N, long. 120º52'00"W; to lat. 45º30'00"N, long. 120º15'30"W; to lat. 45º00'00"N, long. 120º24'00"W; to lat. 45º06'00"N, long. 121º01'00"W; to the point of beginning.
Altitudes.		FL180 up to but not including FL510
Times of use.		Intermittent by NOTAM
Controlling agency.		FAA, Seattle ARTCC
Using agency.		USAF, Air National Guard, 142 FW, Portland ANGB, OR

Redhawk B ATCAA, OR

Boundaries.	Beginning	at lat. 45º30'00"N, long. 120º15'30"W; to lat. 45º23'00"N, long. 119º08'00"W; to lat. 44º35'00"N, long. 119º09'00"W; to lat. 45º00'00"N, long. 120º24'00"W; to the point of beginning.
Altitudes.		FL180 up to but not including FL510
Times of use.		Intermittent by NOTAM
Controlling agency.		FAA, Seattle ARTCC
Using agency.		USAF, Air National Guard, 142 FW, Portland ANGB, OR

Redhawk C ATCAA, OR

Boundaries.	Beginning	at lat. 45º06'00"N, long. 121º01'00"W; to lat. 45º00'00"N, long. 120º24'00"W; to lat. 44º35'00"N, long. 119º09'00"W; to lat. 44º25'00"N, long. 119º09'00"W; to lat. 44º27'00"N, long. 121º01'00"W; to the point of beginning.

Altitudes.	FL180 up to but not including FL510
Times of use.	Intermittent by NOTAM
Controlling agency.	FAA, Seattle ARTCC
Using agency.	USAF, Air National Guard, 142 FW, Portland ANGB, OR

e. Activities.

1. For areas that will contain aircraft operations.

(a) The number and types of aircraft that will normally use the area.

F-15C:

Redhawk MOAs – 800 sorties per year
Redhawk ATCAAs – 1,100 sorties per year

(b) Specific Activities and the maximum altitudes required for each type of activity planned.

Tactical combat training maneuvering by fighter fixed wing aircraft involving abrupt, unpredictable changes in altitude, attitude, and direction of flight. Maximum altitude for training missions can be up to FL510.

(c) Supersonic Flight. Supersonic flight operations will only be conducted above FL300.

2. Surface-to-surface or surface-to-air weapons firing. N/A.

f. Environmental and land use information.

1. Mr. Kevin Marek
NGB/A4AM, Bldg 3501
JB Andrews, MD 20762-5157
kevin.p.marek.civ@mail.mil

2. 142 FW agrees to provide reasonable and timely aerial access to the underlying public and private land. This access will be coordinated via a proposed direct communication line with the 142 FW Airspace Office.

3. Not applicable.

g. Communications and Radar.

1. Ground based radar and radio communications will be used by Seattle ARTCC to monitor the airspace.

2. N/A.

h. Safety considerations.

1. Activity will be contained within the MOA using geographic references, inertial navigation, global positioning systems and TACAN radial/DME references. In addition, the 142 FW uses a Situational Awareness DATA Link (SADL) display in which airspace boundaries are depicted and area borders easily defined.

2. The employment of flares above 5,000 feet AGL will be authorized. The employment of chaff is authorized. No other types of ordnance will be released.

3. Malfunctions will be handled in accordance with aircraft technical orders, Service Directives, and FARs.

i. Coordination summary.

National Guard Bureau/A3AA,
Seattle ARTCC,
Air Force Representative, Lt Col Richard Farnsworth, FAA Western Services Area

j. Area Chart. Please see attached.

k. Environmental Documents. All applicable environmental documents will be provided separately.

l. Graphic Notice Information. N/A

m. Other. N/A

APPENDIX E

NOISE

Appendix E
Noise

Introduction

Appendix E contains information used to support the technical noise analysis in the Environmental Impact Statement (EIS). An aircraft operations noise modeling summary paper is provided to introduce the metrics used in the technical modeling. This summary is followed by a detailed description of the onset-rate adjusted day-night average sound level (L_{dnmr}) metric and the relationship between this metric and Federal Aviation Administration (FAA) Order 1050.1E. As a part of the noise impact analysis for the EIS both existing and proposed Military Operations Areas (MOA) were modeled, including proposed Juniper Low MOA. Included within the text files in this appendix are MR_NMAP noise model inputs (e.g., MOA boundaries, aircraft operations, avoidance areas, etc.) and results for the two metrics, L_{dnmr} and Sound Exposure Level (SEL) above 65 decibels (dB). An additional file is provided that includes calculation for L_{max} of F-15 aircraft at various altitudes above ground level.

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Noise Background

General

Noise, often defined as unwanted sound, is one of the most common environmental issues associated with aircraft operations. Of course, aircraft are not the only sources of noise in a rural surrounding. Noise from interstate and local roadway traffic, rail, industrial, and neighborhood sources also intrude on the everyday quality of life in these areas. Nevertheless, aircraft are readily identifiable to those affected by their noise and are typically singled out for special attention and criticism. Consequently, aircraft noise issues often dominate analyses of environmental impacts.

Sound is a physical phenomenon consisting of small vibrations, which travel through a medium (i.e., intervening substance) such as air, and are sensed by the human ear. Whether that sound is interpreted as pleasant (e.g., music) or unpleasant (e.g., transportation-related noise) depends largely on the listener's current activity, past experience, and attitude toward the source of that sound. It is often true that one person's music is another person's noise.

The measurement and human perception of sound involves two basic physical characteristics – intensity and frequency. Intensity is a measure of the acoustic energy of the sound vibrations and is expressed in terms of sound pressure. The higher the sound's pressure, the more energy carried by the sound and the louder the perception of that sound. The second important physical characteristic is frequency, which is the number of times per second the air vibrates or oscillates. Low-frequency sounds are characterized as rumbles or roars, while high-frequency sounds are typified by sirens or screeches.

The loudest sounds which can be detected comfortably by the human ear, have intensities that are 1 trillion times higher than those of sound that cannot be detected by humans. Because of this vast range, any attempt to represent the intensity of sound using a linear scale becomes very unmanageable. As a result, a logarithmic unit known as the decibel (dB) is used to represent the intensity of a sound. Such a representation is known as a sound level.

A sound level of 0 dB is approximately the threshold of human hearing and is barely audible under extremely quiet listening conditions. Normal speech has a sound level of approximately 60 dB. Sound levels above about 120 dB begin to be felt inside the human ear as discomfort and eventually pain at still higher levels.

Because of the logarithmic nature of the dB unit, sound levels cannot be added or subtracted directly and are somewhat cumbersome to handle mathematically. However, some simple rules of thumb

Noise Background

are useful in dealing with sound levels. First, if a sound's intensity is doubled, the sound level increases by 3 dB, regardless of the initial sound level. Thus, for example:

60 dB + 60 dB = 63 dB, and

80 dB + 80 dB = 83 dB.

The total sound level produced by two sounds of different levels is usually only slightly more than the higher of the two. For example:

60.0 dB + 70.0 dB = 70.4 dB.

Because the addition of sound levels behaves differently than that of ordinary numbers, such an addition is often referred to as "dB addition" or "energy addition." The latter term arises from the fact that what we are really doing when we add dB values is first converting each dB value to its corresponding acoustic energy, then adding the energies using the normal rules of addition, and finally converting the total energy back to its dB equivalent.

An important facet of dB addition arises later when the concept of time-average sound levels is introduced to explain Day-Night Average A-Weighted Sound Level (DNL) (see the Noise Metrics discussion below). Because of the logarithmic units, the time-average sound levels are dominated by the louder levels, which occur during the averaging period. As a simple example, consider a sound level of 100 dB that lasts for 30-seconds, followed by a sound level of 50 dB which also lasts for 30-seconds. The time-average sound level over the total 60-second period is 97 dB, not 75 dB.

Sound frequency is measured in terms of cycles per second (cps), or hertz (Hz), which is the preferred scientific unit for cps. The normal human ear can detect sounds over a wide range of frequencies. However, not all frequencies in this range are heard equally well by the human ear which is most sensitive to frequencies in the 1,000 to 4,000 Hz range. In measuring community noise, this frequency dependence is taken into account by adjusting the very high and low frequencies to approximate the human ear's lower sensitivity to those frequencies. This is called "A-weighting" and is commonly used in measurements of community environmental noise.

Sound levels measured using A-weighting are referred to as A-weighted sound levels. However, since most environmental impact analysis documents deal only with A-weighted sound levels, the adjective "A-weighted" is often omitted, and A-weighted sound levels are referred to simply as sound levels. In some instances the author will indicate that the levels have been A-weighted by using the abbreviation dBA for decibel. As long as the use of A-weighting is understood to be used, there is no difference implied by the terms "sound level" and "A-weighted sound level" or by the units dB and

Noise Background

dBA. In this document all sound levels are A-weighted sound levels and the adjective "A-weighted" has been omitted.

Sound levels do not represent instantaneous measurements but rather averages over short periods of time. Two measurement time periods are most common – one second and one-eighth of a second. A measured sound level averaged over one second is called a slow response sound level; one averaged over one-eighth of a second is called a fast response sound level. Most environmental noise studies use slow response measurements, and the adjective "slow response" is usually omitted. It is easy to understand why the proper descriptor "slow response A-weighted sound level" is usually shortened to "sound level" in environmental impact analysis documents.

Noise Metrics

A "metric" is defined as something "of, involving, or used in measurement." As used in environmental noise analyses, a metric refers to the unit or quantity, which quantitatively measures the effect of noise on the environment. Noise studies have typically involved a confusing proliferation of noise metrics as individual researchers have attempted to understand and represent the effects of noise. As a result, past literature describing environmental noise abatement has included many different metrics.

More recently, however, various federal agencies involved in environmental noise mitigation have agreed on common metrics for environmental impact analysis documents, and both the Department of Defense (DoD) and the Federal Aviation Administration (FAA) have specified those which should be used for federal aviation noise assessments. These metrics are as follows:

Maximum Sound Level

The highest A-weighted sound level measured during a single event in which the sound level changes value as time goes on (e.g., an aircraft overflight) is called the maximum A-weighted sound level (ALM) or maximum sound level, for short.

Sound Exposure Level

Individual time-varying noise events have two main characteristics – a sound level which changes throughout the event and a period of time during which the event is heard. Although the maximum sound level, described above, provides some measure of the intrusiveness of the event, it alone does not completely describe the total event. The period of time during which the sound is heard is also

Noise Background

significant. The Sound Exposure Level (SEL) combines both of these characteristics into a single metric.

SEL is a logarithmic measure of the total acoustic energy transmitted to the listener during the event. Mathematically, it represents the sound level of the constant sound that would, in one second, generate the same acoustic energy, as did the actual time-varying noise event. Since aircraft overflights usually last longer than one second, the SEL of an overflight is usually greater than the ALM of the overflight.

Note that SEL is a composite metric (i.e., made up of distinct parts), which represents both the intensity of a sound level and its duration. It does not directly represent the sound level heard at any given time, but rather provides a measure of the net impact of the entire acoustic event. It has been well established in the scientific community that SEL measures this impact much more reliably than just the A-weighted sound level.

Because the SEL and the ALM are both A-weighted sound levels expressed in dBs, there is sometimes confusion between the two, so the specific metric used should be clearly stated.

Day-Night Average A-Weighted Sound Level

Time-averaged sound levels are measurements of sound levels, which are averaged over a specified length of time. These levels provide a measure of the average sound energy during the measurement period.

For the evaluation of community noise effects, and particularly aircraft noise effects, DNL is used. DNL averages aircraft sound levels at a location over a complete 24-hour period, with a 10 dB adjustment added to those noise events which take place between 10:00 p.m. and 7:00 a.m. (local time). This 10 dB “penalty” represents the added intrusiveness of sounds which occur during normal sleeping hours, both because of the increased sensitivity to noise during those hours and because ambient sound levels during nighttime are typically about 10 dB lower than during daytime hours.

DNL provides a single measure of overall noise impact, but does not provide specific information on the number of noise events or the individual sound levels, which occur during the day. For example, a DNL of 65 could result from a few very noisy events, or many quieter events during the 24-hour period.

Noise Background

As noted earlier for SEL, DNL does not represent the sound level heard at any particular time, but rather represents the total sound exposure. Scientific studies and social surveys, which have been conducted to determine community annoyance to all types of environmental noise, have found DNL to be the best measure of that annoyance. Its use is endorsed by the following scientific communities: American National Standards Institute (1980, 1988); United States Environmental Protection Agency [USEPA] (1974); and Federal Interagency Committee on Noise [FICON] (1980, 1992).

Opinion surveys about aircraft noise have been conducted in different countries to find the percentages of groups of people who express various degrees of annoyance when exposed to different levels of DNL. The results of these surveys are remarkably consistent. Synthesis of Social Surveys of Noise Annoyance (Schultz 1978) was published in 1978. A more recent study has reaffirmed the results found in the 1978 study (Fidell et al. 1991). In general, correlation coefficients of 0.85 to 0.95 are found between the percentages of groups of people highly annoyed and the level of average noise exposure. The correlation coefficients for the annoyance of individuals are relatively low, however, on the order of 0.5 or less. This is not surprising, considering the varying personal factors that influence the manner in which individuals react to noise. Nevertheless, the findings of these and other studies substantiate that community annoyance to aircraft noise is represented quite reliably using DNL.

This relation between community annoyance and time-average sound level also has been confirmed for infrequent aircraft noise events. Community Reactions to Helicopter Noise (Schmoer et al. 1991) reported the reactions of individuals in a community to daily helicopter overflights correlated quite well with the daily time-average sound levels over this range of numbers of daily noise events.

The use of DNL has been criticized recently as not accurately representing community annoyance and land-use compatibility with aircraft noise. Much of that criticism stems from a lack of understanding of the basis for the measurement or calculation of DNL. One frequent criticism is based on the inherent feeling that people react more to single noise events and not as much to “meaningless” time-average sound levels.

In fact, a time-average noise metric, such as DNL, takes into account both the noise levels of all individual events which occur during a 24-hour period and the number of times those events occur. As described briefly above, the logarithmic nature of the dB unit causes the noise levels of the loudest events to control the 24-hour average.

Noise Background

As a simple example of this characteristic, consider a case in which only one aircraft overflight occurs in daytime during a 24-hour period, creating a sound level of 100 dB for 30 seconds. During the remaining 23-hours, 59-minutes, and 30 seconds of the day, the ambient sound level is 50 dB. The DNL for this 24-hour period is 65.5. Assume, as a second example that ten such 30-second overflights occur in daytime hours during the next 24-hour period, with the same ambient sound level of 50 dB during the remaining 23-hours and 55-minutes of the day. The DNL for this 24-hour period is 75.4. Clearly, the averaging of noise over a 24-hour period does not ignore the louder single events and tends to emphasize both the sound levels and number of those events. This is the basic concept of a time-averaged sound metric such as DNL.

Onset Rate-Adjusted Day-Night Average

Onset rate-adjusted day-night average, a-weighted sound level (Ldnmr) is an additional noise metric which has been developed specifically for aircraft operations at low altitudes along Military Training Routes (MTRs) by the USAF under direction of the Armstrong Aerospace Medical Research Laboratory. Individual low-altitude events on MTRs are different from typical noise sources because the rapid onset of aircraft noise can create a "startle" effect. The Ldnmr is similar to the DNL in that it is an average metric with a 10 dB penalty for events occurring between 10:00 p.m. and 7:00 a.m. However, Ldnmr represents an average for an entire month utilizing the highest monthly sortie activity, and includes an additional 0 to 11 dB penalty to compensate for the "startle" effect of a low-altitude overflight. Because of this penalty, Ldnmr always equals or exceeds DNL. Ldnmr is currently the approved MTR noise metric for the armed services, and the USAF recommends calculation of Ldnmr values for noise assessments along MTRs. Because it is a conservative measure of average noise exposure over time with built-in penalties for rapid onset of noise, Ldnmr closely correlates with the probability of "highly annoying" a noise receptor, and is appropriate to use in areas where receptors would be highly sensitized to potential noise impacts.

Noise Effects

Hearing Loss

Noise-induced hearing loss is probably the best defined of the potential effects of human exposure to excessive noise. Federal workplace standards for protection from hearing loss allow a time-average level of (Equivalent Continuous Sound Pressure Level (LEQ) 90 dB over an 8-hour period, or LEQ 85 dB averaged over a 16-hour period. Even the most protective criterion suggests a time-averaged sound level of DNL 70 over a 24-hour period. Since it is unlikely that airport neighbors will remain outside

their homes 24-hours per day for extended periods of time, and there is little possibility of hearing loss below a DNL of 75, this protection level is extremely conservative.

Nonauditory Health Effects

Nonauditory health effects of long-term noise exposure, where noise may act as a risk factor have not been found to occur at levels below those which protect against noise-induced hearing loss (described in Section C.3.1). Most studies attempting to clarify such health effects have found that noise exposure levels established for hearing protection will also protect against any potential nonauditory health effects, at least in workplace conditions. The best scientific summary of these findings is contained in the lead paper at the National Institute of Health Conference on Noise and Hearing Loss, held on 22-24 January 1990 in Washington, D.C. (Von Gierke 1990).

> *The nonauditory effects of chronic noise exposure, when noise is suspected to act as one of the risk factors in the development of hypertension, cardiovascular disease, and other nervous disorders, have never been proven to occur as chronic manifestations at levels below these criteria [an average of 75 dB for complete protection against hearing loss for an eight-hour day]. At the recent (1988) International Congress on Noise as a Public Health Problem, most studies attempting to clarify such health effects did not find them at levels below the criteria protective of noise-induced hearing loss, and even above these criteria, results regarding such health effects were ambiguous. Consequently, one comes to the conclusion that establishing and enforcing exposure levels protecting against noise-induced hearing loss would not only solve the noise-induced hearing loss problem but also any potential nonauditory health effects in the work place*.

Although these findings were directed specifically at noise effects in the work place, they are equally applicable to aircraft noise effects in the community environment. Research studies regarding the nonauditory health effects of aircraft noise are ambiguous at best, and often contradictory. In addition, even those studies which purport to find such health effects use time-averaged noise levels of 75 dB and higher for their research.

For example, in an often-quoted paper, two University of California at Los Angeles (UCLA) researchers apparently found a relationship between aircraft noise levels under the approach path to Los Angeles International Airport (LAX) and increased mortality rates among the exposed residents by using an average noise exposure level greater than 75 dB for the “noise-exposed” population (Meacham et al. 1979). Nevertheless, three other UCLA professors analyzed those same data and found no relation between noise exposure and mortality rates (Frericks et al. 1980).

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As a second example, two other UCLA researchers used this same population near LAX to show a higher rate of birth defects in 1970-1972 when compared with a control group residing away from the airport (Jones et al. 1978). Based on this report, a separate group at the United States Center for Disease Control performed a more thorough study of populations near Atlanta's Hartsfield International Airport for 1970-1972 and found no relation in their study of 17 identified categories of birth defects to aircraft noise levels above 65 dB (Edmonds et al. 1979).

In summary, there is no scientific basis for claims that potential auditory or nonauditory health effects exist for aircraft time-average sound levels below 75 dB.

Annoyance

The primary effect of aircraft noise on exposed communities is one of annoyance. Noise annoyance is defined by USEPA as any negative subjective reaction on the part of an individual or group (USEPA 1974). As noted in the discussion of DNL community annoyance is best measured by that metric.

It is often suggested that a lower DNL, such as 60 or 55, be adopted as the threshold of community noise annoyance for airport environmental analysis documents. While there is no technical reason why a lower level cannot be measured or calculated for comparison purposes, a DNL of 65:

1. Provides a valid basis for comparing and assessing community noise effects;
2. Represents a noise exposure level which is normally dominated by aircraft noise and not other community or nearby highway noise sources; and
3. Reflects the FAA's threshold for grant-in-aid funding of airport noise mitigation projects.

The United States Department of Housing and Urban Development (HUD) also established a DNL standard of 65 for eligibility for federally guaranteed home loans. Although the FAA , HUD, and DoD consider 65 DNL as the threshold of significance for assessing noise impacts, this threshold does not distinguish between urban, suburban, or rural settings. Along with several other federal agencies, the USEPA takes a more conservative approach to noise assessment including a more restrictive 55 DNL threshold for noise in rural areas or "places in which quiet is a basis for use" (USEPA 1974).

Speech Interference

Speech interference associated with aircraft noise is a primary cause of annoyance to individuals on the ground. The disruption of routine activities such as radio or television listening, telephone use, or family conversation gives rise to frustration and irritation. The quality of speech communication is also important in classrooms, offices, and industrial settings and can cause fatigue and vocal strain in

those who attempt to communicate over the noise. Research has shown that "whenever intrusive noise exceeds approximately 60 dB indoors, there will be interference with speech communication" (FICON 1992). A steady A-weighted background sound level of 60 dB will produce 93 percent intelligibility; that of 70 dB will produce 66 percent intelligibility; and that of 75 dB will produce 2 percent intelligibility (Figure C-1 in USEPA 1974).

Sleep Interference

Sleep interference may be measured in either of two ways: "Arousal" represents actual awakening from sleep, while a change in "sleep stage" represents a shift from one of four sleep stages to another stage of lighter sleep without actual awakening. In general, arousal requires a somewhat louder noise level than does a change in sleep stage.

An analysis sponsored by the United States Air Force (USAF) summarized 21 published studies concerning the effects of noise on sleep (Pearsons et al. 1989). The analysis concluded that a lack of reliable studies in homes, combined with large differences among the results from the various laboratory studies and the limited in-home studies, did not permit development of an acceptable accurate assessment procedure. The noise events used in the laboratory studies and in contrived in-home studies were presented at much higher rates of occurrence than would normally be experienced in the home. None of the laboratory studies were of sufficiently long duration to determine any effects of habituation, such as that which would occur under normal community conditions.

Nevertheless, some guidance is available in judging sleep interference. The USEPA identified an indoor DNL of 45 as necessary to protect against sleep interference (USEPA 1974). Since typical dwelling units provide a sound level reduction of 20 dB, an outdoor noise level of DNL 65 would cause minimal interference with sleep.

The FICON (FICON 1992) reviewed the sleep disturbance issue and presented an USAF-developed sleep disturbance dose-response prediction curve, based on data from Analyses of the Predictability of Noise-Induced Sleep Disturbance (Pearsons et al. 1989), as an interim tool for analysis of potential sleep disturbance. This interim curve shows that for an indoor SEL of 65 dB, approximately 15 percent or less of those exposed would be awakened.

Noise Background

Noise Effects on Domestic Animals and Wildlife

Wildlife species differ greatly in their responses to noise. Each species has adapted, physically and behaviorally, to fill its ecological role in nature, and its hearing ability usually reflects that role. Animals rely on their hearing to avoid predators, obtain food, and communicate with and attract other members of their species. Aircraft noise may mask or interfere with these functions. Secondary effects may include nonauditory effects similar to those exhibited by humans – stress, hypertension, and other nervous disorders. Tertiary effects may include interference with mating and resultant population declines.

There are many scientific studies available regarding the effects of noise on wildlife and some anecdotal reports of wildlife "flight due to noise". Few of these studies or reports include any reliable measures of the actual noise levels involved.

In the absence of definitive data on the effect of noise on animals, the Committee on Hearing, Bioacoustics, and Biomechanics of the National Research council has proposed that protective noise criteria for animals be taken to be the same as for humans (National Academy of Sciences 1977).

Effects of Noise-Induced Vibration on Structures and Humans

The sound from aircraft overflight travels from the exterior to the interior of the house in one of two ways: through the solid structural elements and directly through the air. The sound transmission starts with noise impinging on the wall exterior. Some of this sound energy will be reflected away and a portion of this energy will make the wall vibrate. The vibrating wall radiates sound into the airspace, which in turn sets the interior finish surface vibrating, with some of the energy lost in the airspace. This surface then radiates sound into the dwelling interior. Vibrational energy also bypasses the air cavity by traveling through the studs and edge connections.

Normally, the most sensitive components of a structure to airborne noise are the windows and, infrequently, the plastered walls and ceilings. An evaluation of the peak sound pressure impinging on (i.e., affecting) the structure is normally sufficient to determine the possibility of damage. In general, sound levels above 130 dB (peak sound pressure for window breakage) may be of more concern than other frequencies. Conservatively, only sounds lasting more than one second above a sound level of 130 dB are potentially damaging to structural components (Von Gierke et al 1991).

In terms of average acceleration of wall or ceiling vibration, the thresholds for structural damage (International Organization for Standardization [ISO] 1989) are:

Noise Background

- 0.5 m/s/s – threshold of risk of damage to sensitive structures (i.e. ancient monuments); and
- 1.0 m/s/s/ - threshold of risk of damage to normal dwellings (i.e. houses with plaster ceilings and walls).

Noise-induced structural vibration may also cause annoyance to dwelling occupants because of induced secondary vibrations, or "rattle", of objects within the dwelling – hanging pictures, dishes, plaques, etc. Loose windowpanes may also vibrate noticeably when exposed to high levels of noise, causing homeowners to fear breakage. In general, such noise-induced vibrations occur at sound levels above those considered normally compatible with residential land use. Thus, noise levels compatible for residential land use (i.e., below DNL 65) would not cause significant secondary noise-induced vibrations.

In the assessment of vibrations on humans, the following factors determine if a person will perceive and possibly react to building vibrations:

- Type of excitation: steady state, intermittent, or impulsive vibration;
- Frequency of the excitation. ISO 2631-2 recommends a frequency range of 1 to 80 Hz be used for assessing the effect of vibration on humans;
- Orientation of the body with respect to the vibration;
- The use of the occupied space; and
- Time of day.

Noise Effects on Terrain

It has been suggested that noise levels associated with low-flying aircraft may affect the terrain under the flight path by disturbing fragile soil or snow structures, especially in mountainous areas, causing landslides or avalanches. There are no known instances of such effects, and it is considered improbable that such effects will result from routine, subsonic aircraft operations.

Noise Effects on Historical and Archaeological Sites

Because of the potential for increased fragility of structural components of historical buildings and other historical sites, aircraft noise may affect such sites more severely than newer, modern structures. Again, there are few scientific studies of such effects to provide guidance for their assessment.

Noise Background

One study involved the measurements of sound levels and structural vibration levels in a superbly restored plantation house, originally built in 1795, and now situated approximately 1,500 feet from the centerline at the departure end of Runway 19L at Washington Dulles International Airport. These measurements were made in connection with the proposed scheduled operation of the supersonic Concorde aircraft at Dulles (Wesler 1977). There was a special concern for the building's windows, since roughly half of the 324 windowpanes were original. No instances of structural damage were found. Interestingly, despite the high levels of noise during Concorde takeoffs, the induced structural vibration levels were actually less than those induced by touring groups and vacuum cleaning.

As noted above for the noise effects of noise-induced vibrations on normal structures, assessments of noise exposure levels for normally compatible land uses should also assist in protecting historic and archaeological sites from structural damage caused by aircraft noise.

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Noise Background

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Onset Rate-Adjusted Day-Night Average

Aircraft operations in Special Use Airspace (SUA), such as Military Operating Areas (MOAs) and Warning Areas, generate a noise environment somewhat different from other community noise environments. Overflights are sporadic, occurring at random times and varying from day to day and week to week. This situation differs from most community noise environments, in which noise tends to be continuous or patterned (e.g., airfields). Individual military overflight events also differ from typical community noise events in that noise from a low-altitude, high airspeed flyover can have a rather sudden onset (i.e., a rapid increase in noise).

To represent these differences, the conventional Day-Night Average A-Weighted Sound Level (DNL) metric is adjusted to account for the "surprise" effect of the sudden onset of aircraft noise events on humans (Plotkin *et al.* 1987; Stusnick *et al.* 1992; Stusnick *et al.* 1993). For aircraft exhibiting a rate of increase in sound level (called onset rate) of from 15 to 150 dB per second, an adjustment or penalty ranging from 0 to 11 dB is added to the normal SEL (refer to Sections 3.2 and 4.2 as well as Appendix E in the Preliminary Draft Environmental Impact Statement). Onset rates above 150 dB per second require an 11 dB penalty, while onset rates below 15 dB per second require no adjustment. The DNL is then determined in the same manner as for conventional aircraft noise events and is designated as Onset-Rate Adjusted Day-Night Average Sound Level (L_{dnmr}). Because of their regular occurrences of aircraft operations, the number of average daily operations is determined by using the calendar month with the highest number of operations. The monthly average is denoted L_{dnmr}. Noise levels are calculated the same way for both DNL and L_{dnmr}. L_{dnmr} is interpreted by the same criteria as used for DNL.

$$\mathbf{L_{dnmr} \geq DNL}$$

L_{dnmr} is always equal to or greater than DNL, so the impact is generally higher than would have been predicted if the onset rate and busiest-month adjustments were not accounted for. There are several points of interest in the noise-annoyance relation. The first is DNL of 65 dB. This is a level most commonly used for noise planning purposes and represents a compromise between community impact and the need for activities like aviation which do cause noise. Areas exposed to DNL above 65 dB are generally not considered suitable for residential use. The second is DNL of 55 dB, which was identified by USEPA as a level "...requisite to protect the public health and welfare with an adequate margin of safety," (USEPA 1974) which is essentially a level below which adverse impact is not expected. The third is DNL of 75 dB. This is the lowest level at which adverse health effects could be credible (USEPA 1974). The very high annoyance levels correlated with DNL of 75 dB make such areas unsuitable for residential land use.

The Schultz curve, which correlates sound level and receptor annoyance, is generally applied to annual average DNL; however, the Schultz curve can also be used with L_{dnmr} as the noise metric as L_{dnmr} is always equal to or greater than DNL.

Relation to FAA Order 1050.1E

Section 14 within Appendix A, *Analysis of Environmental Impact Categories*, of FAA Order 1050.1E describes the requirements and procedures to be used in environmental impact analysis with regard to noise impacts. Within this section subsection 14.2b states that:

> "…AEE has approved the DoD computer models MR_NMAP and MR_BOOMMAP for use and analysis of Special Use Airspace (SUA)."

As the Proposed Action is associated with the establishment and modification of SUA, MR_NMAP version 3.0 was used to determine existing and proposed sound levels, using the metric L_{dnmr}.

Precedent for L_{dnmr} Noise Metric

The L_{dnmr} noise metric has been used and approved for a number of NEPA documents supporting different DoD airspace actions within the FAA Western Service Center, where the FAA has been both as a cooperating and reviewing agency:

Western Service Center

- *Draft Environmental Impact Statement for Proposed Continued Use and Projected Future Operations at Naval Weapons System Training Facility Boardman (2012)*
- *Environmental Assessment for Proposed Aircraft Robust and Short-term Construction Projects at the 173rd Fighter Wing Klamath Falls Airport-Kingsley Field (2007)*
- *Environmental Impact Statement for White Elk Military Operations Area EIS (2011)*

Other FAA Service Center

- *Environmental Impact Statement for United States Air Force F-35A Operational Basing (2012)*
- *Environmental Assessment for F-22A Beddown Environmental Assessment (2006)*

***** MOA RANGE NOISEMAP *****
Version 3.0
Release Date 2/7/2013

CASE INFORMATION
Case Name:BASELINE W570 - Baseline Scenario
Site Name:OREGON ANG AIRSPACE

SETUP PARAMETERS
Number of MOAs and Ranges = 1 Number of tracks = 0
Lower Left Corner of Grid in feet (X Y pair) = -224550., -404550.
Upper Right Corner of Grid in feet (X Y pair) = 224550., 404550.
Grid spacing = 900. feet Number of events above an SEL of 65.0 dB
Temperature = 59 F Humidity = 70 Flying days per month = 30

MOA SPECIFICATIONS

MOA name W570

Lat (deg)	Long (deg)
45.74973	-125.50140
46.16640	-124.33471
44.90055	-124.33443
44.84305	-124.35583
44.63305	-124.46777
44.18304	-125.50140
45.74973	-125.50140

Floor = 0 feet AGL Ceiling = 18000 feet AGL

MISSION DATA
Mission name = 142 W570 BASELINE
Aircraft code =FM0430300 Speed = 400 kias Power = 90.0
Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
1000	3000	5.0
3000	5000	5.0
5000	7000	5.0
7000	18000	85.0

MOA OPERATION DATA
MOA name = W570

Mission Name	Daily Day OPS	Daily Night OPS	Monthly Day OPS	Monthly Night OPS	Yearly Day OPS	Yearly Night OPS	Time On Range (minutes)
142 W570 BASELINE		5.000	0.000	150.00	0.00	1800.	0. 30.

***** MOA RANGE NOISEMAP *****
RESULTS

The noise metric is Ldnmr.

MOA RESULTS

MOA Name	MOA Area (sq statute miles)	Uniform Distributed Sound Level (dB)	Number of Daily Events Above SEL of 65.0 dB
W570	5940.8	40.1	0.1

<Run Log>
Date: 10/15/2014
Start Time: 15:34:22
Stop Time: 15:34:39
Total Running Time: 0 minutes and 18 seconds.

***** MOA RANGE NOISEMAP *****
Version 3.0
Release Date 2/7/2013

CASE INFORMATION
Case Name:BASELINE JUNIPER HART - Baseline Scenario
Site Name:OREGON ANG AIRSPACE

SETUP PARAMETERS
Number of MOAs and Ranges = 4 Number of tracks = 0
Lower Left Corner of Grid in feet (X Y pair) = 141159., -312267.
Upper Right Corner of Grid in feet (X Y pair) = 770259., 676833.
Grid spacing = 900. feet Number of events above an SEL of 65.0 dB
Temperature = 59 F Humidity = 70 Flying days per month = 30

MOA SPECIFICATIONS

MOA name MOA US HART NORTH

Lat (deg)	Long (deg)
42.66667	-120.30109
42.66668	-119.16775
42.43334	-119.22608
42.43334	-120.21832
42.66667	-120.30109

Floor = 6000 feet AGL Ceiling = 13000 feet AGL

MOA name MOA US HART SOUTH

Lat (deg)	Long (deg)
42.43334	-120.21832
42.43334	-119.22608
41.49999	-119.45109
41.49999	-119.91776
42.43334	-120.21832

Floor = 6000 feet AGL Ceiling = 13000 feet AGL

MOA name MOA US JUNIPER NORTH

Lat (deg)	Long (deg)
43.93308	-120.73444
43.95141	-120.43999
43.84169	-120.12998
43.35001	-120.52999
43.93308	-120.73444

Floor = 6000 feet AGL Ceiling = 12000 feet AGL

MOA name MOA US JUNIPER SOUTH

Lat (deg)	Long (deg)
43.35001	-120.52999
43.84169	-120.12998

43.63335 -119.56664
42.66668 -119.16775
42.66667 -120.30109
43.35001 -120.52999
Floor = 6000 feet AGL Ceiling = 12000 feet AGL

MISSION DATA

Mission name = 142 HART NORTH BASELINE
Aircraft code =FM0430300 Speed = 400 kias Power = 90.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
6000	10000	50.0
10000	13000	50.0

Mission name = 142 HART SOUTH BASELINE
Aircraft code =FM0430301 Speed = 350 kias Power = 85.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
6000	10000	50.0
10000	13000	50.0

Mission name = 142 JUNIPER NORTH BASELINE
Aircraft code =FM0430300 Speed = 350 kias Power = 90.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
6000	10000	50.0
10000	13000	50.0

Mission name = 142 JUNIPER SOUTH BASELINE
Aircraft code =FM0430300 Speed = 400 kias Power = 90.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
6000	10000	50.0
10000	13000	50.0

Mission name = 173 HART NORTH BASELINE
Aircraft code =FM0430300 Speed = 400 kias Power = 90.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
6000	10000	50.0
10000	13000	50.0

Mission name = 173 HART SOUTH BASELINE

Aircraft code =FM0430300 Speed = 400 kias Power = 90.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
6000	10000	50.0
10000	13000	50.0

Mission name = 173 JUNIPER NORTH BASELINE

Aircraft code =FM0430302 Speed = 350 kias Power = 89.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
6000	10000	50.0
10000	13000	50.0

Mission name = 173 JUNIPER SOUTH BASELINE

Aircraft code =FM0430300 Speed = 400 kias Power = 90.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
6000	10000	50.0
10000	13000	50.0

MOA OPERATION DATA

MOA name = MOA US HART NORTH

Mission Name	Daily Day OPS	Daily Night OPS	Monthly Day OPS	Monthly Night OPS	Yearly Day OPS	Yearly Night OPS	Time On Range (minutes)
142 HART NORTH BASELINE	1.389	0.000	41.67	0.00	500.	0.	10.
173 HART NORTH BASELINE	6.419	0.000	192.58	0.00	2311.	0.	3.

MOA name = MOA US HART SOUTH

Mission Name	Daily Day OPS	Daily Night OPS	Monthly Day OPS	Monthly Night OPS	Yearly Day OPS	Yearly Night OPS	Time On Range (minutes)
142 HART SOUTH BASELINE	0.556	0.000	16.67	0.00	200.	0.	5.
173 HART SOUTH BASELINE	5.111	0.000	153.33	0.00	1840.	0.	11.

MOA name = MOA US JUNIPER NORTH

Mission Name	Daily Day OPS	Daily Night OPS	Monthly Day OPS	Monthly Night OPS	Yearly Day OPS	Yearly Night OPS	Time On Range (minutes)
142 JUNIPER NORTH BASELINE	1.667	0.000	50.00	0.00	600.	0.	25.
173 JUNIPER NORTH BASELINE	1.442	0.000	43.25	0.00	519.	0.	4.

MOA name = MOA US JUNIPER SOUTH

Mission Name	Daily Day OPS	Daily Night OPS	Monthly Day OPS	Monthly Night OPS	Yearly Day OPS	Yearly Night OPS	Time On Range (minutes)		
142 JUNIPER SOUTH BASELINE	4.167	0.000	125.00	0.00	1500.	0.	25.		
173 JUNIPER SOUTH BASELINE	9.042	0.000	271.25	0.00	3255.	0.	12.		

***** MOA RANGE NOISEMAP *****
RESULTS

The noise metric is Ldnmr.

MOA RESULTS

MOA Name	MOA Area (sq statute miles)	Uniform Distributed Sound Level (dB)	Number of Daily Events Above SEL of 65.0 dB
MOA US HART NORTH	874.6	41.4	0.3
MOA US HART SOUTH	2416.1	38.2	0.2
MOA US JUNIPER NORTH	640.9	43.9	0.3
MOA US JUNIPER SOUTH	3800.9	41.5	0.8

<Run Log>
Date: 10/15/2014
Start Time: 15:52: 3
Stop Time: 15:53: 2
Total Running Time: 0 minutes and 60 seconds.

***** MOA RANGE NOISEMAP *****
Version 3.0
Release Date 2/7/2013

CASE INFORMATION
Case Name:BASELINE JUNIPER LOW - Baseline Scenario
Site Name:OREGON ANG AIRSPACE

SETUP PARAMETERS
Number of MOAs and Ranges = 1 Number of tracks = 0
Lower Left Corner of Grid in feet (X Y pair) = 125398., 155778.
Upper Right Corner of Grid in feet (X Y pair) = 664498., 694878.
Grid spacing = 900. feet Number of events above an SEL of 65.0 dB
Temperature = 59 F Humidity = 70 Flying days per month = 30

MOA SPECIFICATIONS

MOA name MOA US JUNIPER LOW

Lat (deg)	Long (deg)
43.93308	-120.73444
43.95141	-120.43999
43.63335	-119.56776
42.76668	-119.20747
42.76667	-120.33360
43.93308	-120.73444

Floor = 300 feet AGL Ceiling = 6000 feet AGL

MISSION DATA
Mission name = 142 JUNIPER LOW BASELINE
Aircraft code =FM0430300 Speed = 420 kias Power = 90.0
Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
500	1000	35.0
1000	3000	35.0
3000	5000	20.0
5000	6001	10.0

Mission name = 173 JUNIPER LOW BASELINE
Aircraft code =FM0430300 Speed = 420 kias Power = 90.0
Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
500	999	20.0
1000	2999	40.0
3000	5000	35.0
5000	6001	5.0

MOA OPERATION DATA

MOA name = MOA US JUNIPER LOW

Mission Name	Daily Day OPS	Daily Night OPS	Monthly Day OPS	Monthly Night OPS	Yearly Day OPS	Yearly Night OPS	Time On Range (minutes)		
142 JUNIPER LOW BASELINE			1.667	0.000	50.00	0.00	600.	0.	10.
173 JUNIPER LOW BASELINE			1.833	0.000	55.00	0.00	660.	0.	13.

***** MOA RANGE NOISEMAP *****
RESULTS

The noise metric is Ldnmr.

MOA RESULTS

MOA Name	MOA Area (sq statute miles)	Uniform Distributed Sound Level (dB)	Number of Daily Events Above SEL of 65.0 dB
MOA US JUNIPER LOW	4044.8	46.5	0.0

<Run Log>
Date: 10/15/2014
Start Time: 15:45:29
Stop Time: 15:45:55
Total Running Time: 0 minutes and 27 seconds.

***** MOA RANGE NOISEMAP *****
Version 3.0
Release Date 2/7/2013

CASE INFORMATION
Case Name:BASELINE MTR - Baseline Scenario
Site Name:OREGON ANG AIRSPACE

SETUP PARAMETERS
Number of MOAs and Ranges = 0 Number of tracks =10
Lower Left Corner of Grid in feet (X Y pair) = -851125., -1.
Upper Right Corner of Grid in feet (X Y pair) = 1., 2.
Grid spacing = 0. feet Number of events above an SEL of 65.0 dB
Temperature = 59 F Humidity = 70 Flying days per month = 30

TRACK SPECIFICATIONS
Track name IR300/313

Flag Notation	Latitude	Longitude	Left (feet)	Right (feet)	Floor 1 (feet AGL)	Floor 2 (feet AGL)	Radius (feet)	Angle (degrees)
LW	42.28333	-120.25832	24304.	24304.	100			
LW	42.10000	-120.05831	24304.	24304.	100			
LW	40.94999	-119.14997	24304.	24304.	100			
LW	40.89999	-118.98331	24304.	18228.	100			
LW	41.08665	-118.49996	24304.	18228.	100			
LW	41.34999	-117.81663	24304.	24304.	100			
LW	41.44999	-117.73331	18228.	24304.	100			
LW	41.89166	-117.64993	18228.	24304.	100			
LW	41.99166	-117.63329	18228.	24304.	100			
LW	42.08333	-117.61662	24304.	24304.	100			
LW	42.14167	-117.58330	24304.	24304.	100			
LW	42.64167	-117.20829	24304.	24304.	100			
LW	42.65746	-117.19821	24304.	24304.	100			
LW	42.71667	-117.16660	24304.	24304.	100			
LW	42.90001	-117.15829	54685.	24304.	100			
LW	43.79169	-117.15827	54685.	18228.	100			
LW	43.85002	-117.15827	24304.	18228.	100			
LW	43.91669	-117.18330	24304.	24304.	100			

Track name IR342

Flag Notation	Latitude	Longitude	Left (feet)	Right (feet)	Floor 1 (feet AGL)	Floor 2 (feet AGL)	Radius (feet)	Angle (degrees)
LW	44.31669	-119.71664	24304.	24304.	0			
LW	43.93336	-119.71664	24304.	24304.	0			
LW	43.30502	-119.69997	24304.	24304.	500			
LW	42.90334	-120.76333	24304.	24304.	500			
LW	43.46835	-120.74999	24304.	24304.	500			
LW	44.16503	-120.08331	24304.	24304.	500			
LW	45.21672	-120.49999	24304.	24304.	500			
LW	45.33336	-120.30832	24304.	24304.	500			
LW	45.72504	-119.68331	24304.	24304.	500			

Track name IR343

Flag Notation	Latitude	Longitude	Left (feet)	Right (feet)	Floor 1 (feet AGL)	Floor 2 (feet AGL)	Radius (feet)	Angle (degrees)

LW	46.57033	-120.44460	24304.	24304.	7000			
LW	45.93338	-119.29997	24304.	24304.	6000			
LW	46.06172	-118.89996	24304.	24304.	6000			
LW	45.91504	-118.38329	24304.	24304.	6000			
LW	45.56671	-117.92496	24304.	24304.	8000			
LW	45.38671	-118.30830	24304.	24304.	500			
LW	44.75170	-119.63331	24304.	24304.	500			
LW	45.29838	-120.13665	24304.	24304.	5000			
LW	45.38338	-120.44999	24304.	24304.	5000			
LW	45.58336	-121.18333	24304.	24304.	5000			
LW	45.98838	-121.08167	24304.	24304.	6000			
LW	46.21670	-120.94999	24304.	24304.	11000			
LW	46.98340	-120.53332	24304.	24304.	11000			
LW	47.22506	-120.05331	24304.	24304.	7000			
LW	47.60506	-119.28330	24304.	24304.	7000			
LW	47.75008	-119.58331	24304.	24304.	7000			

Track name VR316

Flag Notation	Latitude	Longitude	Left (feet)	Right (feet)	Floor 1 (feet AGL)	Floor 2 (feet AGL)	Radius (feet)	Angle (degrees)
LW	43.23335	-117.24994	36457.	36457.	100			
LW	43.18335	-117.68330	60761.	60761.	100			
LW	43.12501	-118.49996	60761.	60761.	100			
LW	42.91668	-119.49998	60761.	30381.	100			
LW	43.09168	-120.07498	30381.	30381.	100			
LW	43.70002	-120.11665	60761.	60761.	100			
LW	43.91669	-119.49997	60761.	60761.	100			
LW	43.79502	-118.99997	60761.	30381.	100			
LW	43.67002	-118.49996	60761.	60761.	100			
LW	43.55835	-118.04996	60761.	60761.	100			
LW	43.52502	-117.37496	24304.	24304.	100			
LW	43.51668	-117.14162	24304.	24304.	100			

Track name VR319

Flag Notation	Latitude	Longitude	Left (feet)	Right (feet)	Floor 1 (feet AGL)	Floor 2 (feet AGL)	Radius (feet)	Angle (degrees)
LW	43.51668	-117.14162	24304.	24304.	100			
LW	43.52502	-117.37496	60761.	60761.	100			
LW	43.55835	-118.04996	60761.	60761.	100			
LW	43.67002	-118.49996	30381.	60761.	100			
LW	43.79502	-118.99997	60761.	60761.	100			
LW	43.91669	-119.49997	60761.	60761.	100			
LW	43.70002	-120.11665	30381.	30381.	100			
LW	43.09168	-120.07498	30381.	60761.	100			
LW	42.91668	-119.49998	60761.	60761.	100			
LW	43.10835	-118.49996	60761.	60761.	100			
LW	43.18335	-117.68330	36457.	36457.	100			
LW	43.23335	-117.24994	36457.	36457.	100			

Track name VR1251

Flag Notation	Latitude	Longitude	Left (feet)	Right (feet)	Floor 1 (feet AGL)	Floor 2 (feet AGL)	Radius (feet)	Angle (degrees)
LW	39.83331	-124.50004	12152.	12152.	200			
LW	40.24998	-124.36670	12152.	12152.	200			
LW	40.69999	-123.75003	12152.	12152.	200			
LW	41.13332	-123.85003	12152.	12152.	200			
LW	41.61666	-123.58336	12152.	12152.	1000			

LW	41.93333	-122.98335	12152.	12152.		200	
LW	42.16667	-122.46668	12152.	12152.		200	
LW	42.68334	-122.13334	12152.	12152.		200	
LW	42.65001	-121.11666	12152.	12152.		200	
LW	41.88333	-120.59999	12152.	12152.		200	
LW	41.66666	-119.81665	12152.	12152.		200	
LW	40.20831	-119.54165	12152.	12152.		200	
LW	39.88331	-118.65830	12152.	12152.		200	
LW	40.05831	-118.36663	12152.	12152.		200	
LW	40.01664	-118.14996	12152.	12152.		200	
LW	39.93331	-118.24163	12152.	12152.		200	

Track name VR1254

Flag Notation	Latitude	Longitude	Left (feet)	Right (feet)	Floor 1 (feet AGL)	Floor 2 (feet AGL)	Radius (feet)	Angle (degrees)
LW	41.63333	-121.30000	12152.	12152.		200		
LW	41.88333	-120.59999	12152.	12152.		200		
LW	41.66666	-119.83331	12152.	12152.		200		
LW	41.06665	-120.11665	12152.	12152.		200		
LW	40.20831	-119.54165	12152.	12152.		200		
LW	39.88331	-118.65830	12152.	12152.		200		
LW	40.05831	-118.36663	12152.	12152.		200		
LW	40.01664	-118.14996	12152.	12152.		200		
LW	39.93331	-118.24163	12152.	12152.		200		

Track name VR1301

Flag Notation	Latitude	Longitude	Left (feet)	Right (feet)	Floor 1 (feet AGL)	Floor 2 (feet AGL)	Radius (feet)	Angle (degrees)
LW	44.31669	-116.54995	30381.	30381.		100		
LW	44.58336	-117.46661	30381.	30381.		100		
LW	44.15002	-118.09995	30381.	30381.		100		
LW	44.08336	-118.98330	30381.	30381.		100		
LW	43.35001	-119.88332	30381.	30381.		100		
LW	42.76667	-118.96664	30381.	30381.		100		
LW	42.59055	-117.86810	30381.	30381.		100		
LW	42.53334	-116.99993	30381.	30381.		100		

Track name VR1352

Flag Notation	Latitude	Longitude	Left (feet)	Right (feet)	Floor 1 (feet AGL)	Floor 2 (feet AGL)	Radius (feet)	Angle (degrees)
LW	44.77003	-119.63664	24304.	24304.		200		
LW	43.20668	-119.13831	24304.	24304.		200		
LW	42.73334	-118.29996	24304.	24304.		200		
LW	42.31667	-117.81660	24304.	24304.		200		
LW	40.98332	-117.98329	24304.	24304.		200		
LW	40.13331	-118.06663	24304.	24304.		200		
LW	40.01664	-118.14996	24304.	24304.		200		

Track name VR1353

Flag Notation	Latitude	Longitude	Left (feet)	Right (feet)	Floor 1 (feet AGL)	Floor 2 (feet AGL)	Radius (feet)	Angle (degrees)
LW	41.31665	-118.79996	24304.	24304.		1000		
LW	42.20000	-119.53331	24304.	24304.		1000		
LW	42.51667	-120.24998	24304.	24304.		500		
LW	43.06334	-120.79166	24304.	24304.		500		
LW	43.46668	-120.74999	24304.	24304.		500		
LW	43.72502	-120.34998	24304.	24304.		200		
LW	45.20003	-120.49998	24304.	24304.		200		

LW 45.63338 -119.83331 24304. 24304. 200

MISSION DATA

Mission name = IR300 A10
Aircraft code =FM0090100 Speed = 325 kias Power = 5333.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
500	1000	65.0
1000	4000	35.0

Mission name = IR300 C17
Aircraft code =FM0200100 Speed = 250 kias Power = 92.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
500	1000	65.0
1000	4000	35.0

Mission name = IR300 F15
Aircraft code =FM0430300 Speed = 420 kias Power = 90.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
500	1000	65.0
1000	4000	35.0

Mission name = IR342 EA6B
Aircraft code =FM0370100 Speed = 301 kias Power = 90.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
500	1000	65.0
1000	4000	35.0

Mission name = IR343 EA6B
Aircraft code =FM0370100 Speed = 301 kias Power = 90.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
500	1000	65.0
1000	4000	30.0
4000	11000	5.0

Mission name = VR316 A10
Aircraft code =FM0090100 Speed = 325 kias Power = 5333.0

Altitude Distribution

Lower Alt	Upper Alt	Percent

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
500	1000	65.0
1000	4000	35.0

Mission name = VR316 C130
Aircraft code =FM0290300 Speed = 170 kias Power = 970.0
Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
500	1000	65.0
1000	4000	35.0

Mission name = VR319 A10
Aircraft code =FM0090100 Speed = 325 kias Power = 5333.0
Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
500	1000	100.0

Mission name = VR1251 C17
Aircraft code =FM0200100 Speed = 250 kias Power = 92.0
Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
500	1000	65.0
1000	4000	35.0

Mission name = VR1251 C130
Aircraft code =FM0290300 Speed = 170 kias Power = 970.0
Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
500	1000	65.0
1000	4000	35.0

Mission name = VR1251 F16
Aircraft code =FM0440200 Speed = 420 kias Power = 90.0
Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
500	1000	65.0
1000	4000	35.0

Mission name = VR1251 F18
Aircraft code =FM0450100 Speed = 420 kias Power = 92.0
Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization

500	1000	65.0
1000	4000	35.0

Mission name = VR1254 C17
Aircraft code =FM0200100 Speed = 250 kias Power = 92.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
500	1000	65.0
1000	4000	35.0

Mission name = VR1254 C130
Aircraft code =FM0290300 Speed = 170 kias Power = 970.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
500	1000	65.0
1000	4000	35.0

Mission name = VR1254 F18
Aircraft code =FM0450100 Speed = 420 kias Power = 92.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
500	1000	65.0
1000	4000	35.0

Mission name = VR1301 A10
Aircraft code =FM0090100 Speed = 325 kias Power = 5333.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
500	1000	65.0
1000	4000	35.0

Mission name = VR1301 C130
Aircraft code =FM0290300 Speed = 170 kias Power = 970.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
500	1000	65.0
1000	4000	35.0

Mission name = VR1301 F15
Aircraft code =FM0430300 Speed = 420 kias Power = 90.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization

500	1000	65.0
1000	4000	35.0

Mission name = VR1301 F18
Aircraft code =FM0450100 Speed = 420 kias Power = 92.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
500	1000	65.0
1000	4000	35.0

Mission name = VR1352 EA6B
Aircraft code =FM0370100 Speed = 300 kias Power = 90.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
500	1000	65.0
1000	4000	35.0

Mission name = VR1353 EA6B
Aircraft code =FM0370100 Speed = 300 kias Power = 90.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
500	1000	65.0
1000	4000	35.0

TRACK OPERATION DATA

Track name = IR300/313

Mission Name	Daily Day OPS	Daily Night OPS	Monthly Day OPS	Monthly Night OPS	Yearly Day OPS	Yearly Night OPS
IR300 F15	0.108	0.000	3.25	0.00	39.	0.

Track name = IR342

Mission Name	Daily Day OPS	Daily Night OPS	Monthly Day OPS	Monthly Night OPS	Yearly Day OPS	Yearly Night OPS
IR342 EA6B	0.025	0.000	0.75	0.00	9.	0.

Track name = IR343

Mission Name	Daily Day OPS	Daily Night OPS	Monthly Day OPS	Monthly Night OPS	Yearly Day OPS	Yearly Night OPS
IR343 EA6B	0.011	0.000	0.33	0.00	4.	0.

Track name = VR316

Mission Name	Daily Day OPS	Daily Night OPS	Monthly Day OPS	Monthly Night OPS	Yearly Day OPS	Yearly Night OPS
VR316 C130	0.083	0.000	2.50	0.00	30.	0.

Track name = VR319

Mission Name	Daily Day OPS	Daily Night OPS	Monthly Day OPS	Monthly Night OPS	Yearly Day OPS	Yearly Night OPS
VR319 A10	0.006	0.000	0.17	0.00	2.	0.

Track name = VR1251

Mission Name	Daily Day OPS	Daily Night OPS	Monthly Day OPS	Monthly Night OPS	Yearly Day OPS	Yearly Night OPS
VR1251 F18	0.056	0.000	1.67	0.00	20.	0.

Track name = VR1254

Mission Name	Daily Day OPS	Daily Night OPS	Monthly Day OPS	Monthly Night OPS	Yearly Day OPS	Yearly Night OPS
VR1254 F18	0.008	0.000	0.25	0.00	3.	0.

Track name = VR1301

Mission Name	Daily Day OPS	Daily Night OPS	Monthly Day OPS	Monthly Night OPS	Yearly Day OPS	Yearly Night OPS
VR1301 F18	0.011	0.000	0.33	0.00	4.	0.

Track name = VR1352

Mission Name	Daily Day OPS	Daily Night OPS	Monthly Day OPS	Monthly Night OPS	Yearly Day OPS	Yearly Night OPS
VR1352 EA6B	0.014	0.000	0.42	0.00	5.	0.

Track name = VR1353

Mission Name	Daily Day OPS	Daily Night OPS	Monthly Day OPS	Monthly Night OPS	Yearly Day OPS	Yearly Night OPS
VR1353 EA6B	0.161	0.000	4.83	0.00	58.	0.

***** MOA RANGE NOISEMAP *****
RESULTS

The noise metric is Ldnmr.

TRACK RESULTS

Track Name = IR300/313

Track Segment	Maximum Centerline Level (dB)	Number of Events Above SEL of 65.0 dB
01 - 02	43.5	0.1
02 - 03	43.5	0.1
03 - 04	43.5	0.1
04 - 05	44.1	0.1
05 - 06	44.1	0.1
06 - 07	43.5	0.1
07 - 08	44.1	0.1
08 - 09	44.1	0.1
09 - 10	44.1	0.1
10 - 11	43.5	0.1
11 - 12	43.5	0.1
12 - 13	43.5	0.1
13 - 14	43.5	0.1
14 - 15	43.5	0.1
15 - 16	41.5	0.1
16 - 17	41.8	0.1
17 - 18	44.1	0.1

Track Name = IR342

Track Segment	Maximum Centerline Level (dB)	Number of Events Above SEL of 65.0 dB
01 - 02	30.6	0.0
02 - 03	30.6	0.0
03 - 04	30.6	0.0
04 - 05	30.6	0.0
05 - 06	30.6	0.0
06 - 07	30.6	0.0
07 - 08	30.6	0.0
08 - 09	30.6	0.0

Track Name = IR343

Track Segment	Maximum Centerline Level (dB)	Number of Events Above SEL of 65.0 dB
01 - 02	15.4	0.0
02 - 03	16.0	0.0
03 - 04	16.0	0.0
04 - 05	16.0	0.0
05 - 06	15.0	0.0
06 - 07	27.1	0.0
07 - 08	27.1	0.0
08 - 09	16.6	0.0
09 - 10	16.6	0.0
10 - 11	16.6	0.0

11 - 12	16.0	0.0
12 - 13	13.8	0.0
13 - 14	13.8	0.0
14 - 15	15.4	0.0
15 - 16	15.4	0.0

Track Name = VR316

Track Segment	Maximum Centerline Level (dB)	Number of Events Above SEL of 65.0 dB
01 - 02	21.8	0.0
02 - 03	19.6	0.0
03 - 04	19.6	0.0
04 - 05	20.8	0.0
05 - 06	22.5	0.0
06 - 07	19.6	0.0
07 - 08	19.6	0.0
08 - 09	20.8	0.0
09 - 10	19.6	0.0
10 - 11	19.6	0.0
11 - 12	23.4	0.0

Track Name = VR319

Track Segment	Maximum Centerline Level (dB)	Number of Events Above SEL of 65.0 dB
01 - 02	10.4	0.0
02 - 03	7.0	0.0
03 - 04	7.0	0.0
04 - 05	8.0	0.0
05 - 06	7.0	0.0
06 - 07	7.0	0.0
07 - 08	9.5	0.0
08 - 09	8.0	0.0
09 - 10	7.0	0.0
10 - 11	7.0	0.0
11 - 12	8.8	0.0

Track Name = VR1251

Track Segment	Maximum Centerline Level (dB)	Number of Events Above SEL of 65.0 dB
01 - 02	39.8	0.0
02 - 03	39.8	0.0
03 - 04	39.8	0.0
04 - 05	39.8	0.0
05 - 06	34.2	0.0
06 - 07	39.8	0.0
07 - 08	39.8	0.0
08 - 09	39.8	0.0
09 - 10	39.8	0.0
10 - 11	39.8	0.0
11 - 12	39.8	0.0
12 - 13	39.8	0.0
13 - 14	39.8	0.0
14 - 15	39.8	0.0
15 - 16	39.8	0.0

Track Name = VR1254

Track Segment	Maximum Centerline Level (dB)	Number of Events Above SEL of 65.0 dB
01 - 02	31.6	0.0
02 - 03	31.6	0.0
03 - 04	31.6	0.0
04 - 05	31.6	0.0
05 - 06	31.6	0.0
06 - 07	31.6	0.0
07 - 08	31.6	0.0
08 - 09	31.6	0.0

Track Name = VR1301

Track Segment	Maximum Centerline Level (dB)	Number of Events Above SEL of 65.0 dB
01 - 02	30.6	0.0
02 - 03	30.6	0.0
03 - 04	30.6	0.0
04 - 05	30.6	0.0
05 - 06	30.6	0.0
06 - 07	30.6	0.0
07 - 08	30.6	0.0

Track Name = VR1352

Track Segment	Maximum Centerline Level (dB)	Number of Events Above SEL of 65.0 dB
01 - 02	28.1	0.0
02 - 03	28.1	0.0
03 - 04	28.1	0.0
04 - 05	28.1	0.0
05 - 06	28.1	0.0
06 - 07	28.1	0.0

Track Name = VR1353

Track Segment	Maximum Centerline Level (dB)	Number of Events Above SEL of 65.0 dB
01 - 02	35.3	0.1
02 - 03	35.3	0.1
03 - 04	38.7	0.1
04 - 05	38.7	0.1
05 - 06	38.7	0.1
06 - 07	38.7	0.1
07 - 08	38.7	0.1

<Run Log>
Date: 10/15/2014
Start Time: 15:38:45
Stop Time: 15:38:47
Total Running Time: 0 minutes and 2 seconds.

***** MOA RANGE NOISEMAP *****
Version 3.0
Release Date 2/7/2013

CASE INFORMATION
Case Name:PROPOSED W570 - Baseline Scenario
Site Name:OREGON ANG AIRSPACE

SETUP PARAMETERS
Number of MOAs and Ranges = 4 Number of tracks = 0
Lower Left Corner of Grid in feet (X Y pair) = -420311., -585692.
Upper Right Corner of Grid in feet (X Y pair) = 298789., 403408.
Grid spacing = 900. feet Number of events above an SEL of 65.0 dB
Temperature = 59 F Humidity = 70 Flying days per month = 30

MOA SPECIFICATIONS

MOA name W570A

Lat (deg)	Long (deg)
45.74973	-125.50140
46.16640	-124.33471
44.90055	-124.33443
44.84305	-124.35582
44.63305	-124.46777
44.18304	-125.50140
45.74973	-125.50140

Floor = 0 feet AGL Ceiling = 18000 feet AGL

MOA name W570B

Lat (deg)	Long (deg)
45.74973	-125.50140
45.85973	-125.50000
46.33335	-124.76666
46.33335	-124.33472
46.16640	-124.33471
45.74973	-125.50140

Floor = 1000 feet AGL Ceiling = 18000 feet AGL

MOA name W570C

Lat (deg)	Long (deg)
46.33335	-124.33472
46.33335	-124.21665
44.76666	-124.21666
44.63194	-124.46777
44.84305	-124.35582
44.90055	-124.33443
46.16640	-124.33471
46.33335	-124.33472

Floor = 11000 feet AGL Ceiling = 18000 feet AGL

MOA name W570D

Lat (deg)	Long (deg)
45.85973	-125.50000
45.28334	-126.36668
45.16667	-126.57502
45.00000	-126.50002
43.92498	-126.61668
43.72498	-126.46668
44.06665	-125.80834
44.18304	-125.50140
45.74973	-125.50140
45.85973	-125.50000

Floor = 1000 feet AGL Ceiling = 18000 feet AGL

MISSION DATA

Mission name = 142 W570A PROPOSED
Aircraft code =FM0430300 Speed = 400 kias Power = 90.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
1000	3000	5.0
3000	5000	5.0
5000	7000	5.0
7000	18000	85.0

Mission name = 142 W570B PROPOSED
Aircraft code =FM0430300 Speed = 400 kias Power = 90.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
1000	3000	5.0
3000	5000	5.0
5000	7000	5.0
7000	18000	85.0

Mission name = 142 W570C PROPOSED
Aircraft code =FM0430300 Speed = 400 kias Power = 90.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
11000	14999	50.0
14999	18000	50.0

Mission name = 142 W570D PROPOSED
Aircraft code =FM0430300 Speed = 400 kias Power = 90.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization

1000	3000	5.0
3000	5000	5.0
5000	7000	5.0
7000	18000	85.0

MOA OPERATION DATA

MOA name = W570A

Mission Name	Daily Day OPS	Daily Night OPS	Monthly Day OPS	Monthly Night OPS	Yearly Day OPS	Yearly Night OPS	Time On Range (minutes)	
142 W570A PROPOSED		5.000	0.000	150.00	0.00	1800.	0.	30.

MOA name = W570B

Mission Name	Daily Day OPS	Daily Night OPS	Monthly Day OPS	Monthly Night OPS	Yearly Day OPS	Yearly Night OPS	Time On Range (minutes)	
142 W570B PROPOSED		1.667	0.000	50.00	0.00	600.	0.	10.

MOA name = W570C

Mission Name	Daily Day OPS	Daily Night OPS	Monthly Day OPS	Monthly Night OPS	Yearly Day OPS	Yearly Night OPS	Time On Range (minutes)	
142 W570C PROPOSED		1.528	0.000	45.83	0.00	550.	0.	8.

MOA name = W570D

Mission Name	Daily Day OPS	Daily Night OPS	Monthly Day OPS	Monthly Night OPS	Yearly Day OPS	Yearly Night OPS	Time On Range (minutes)	
142 W570D PROPOSED		1.944	0.000	58.33	0.00	700.	0.	12.

***** MOA RANGE NOISEMAP *****
RESULTS

The noise metric is Ldnmr.

MOA RESULTS

MOA Name	MOA Area (sq statute miles)	Uniform Distributed Sound Level (dB)	Number of Daily Events Above SEL of 65.0 dB
W570A	5940.9	40.1	0.1
W570B	871.2	40.6	0.1

W570C	673.0	35.0	0.7
W570D	5592.4	35.0	0.0

<Run Log>
Date: 10/15/2014
Start Time: 15:31:50
Stop Time: 15:33:21
Total Running Time: 1 minutes and 31 seconds.

***** MOA RANGE NOISEMAP *****
Version 3.0
Release Date 2/7/2013

CASE INFORMATION
Case Name:PROPOSED EEL MOA - Baseline Scenario
Site Name:OREGON ANG AIRSPACE

SETUP PARAMETERS
Number of MOAs and Ranges = 4 Number of tracks = 0
Lower Left Corner of Grid in feet (X Y pair) = -134550., -326702.
Upper Right Corner of Grid in feet (X Y pair) = 134550., 302398.
Grid spacing = 900. feet Number of events above an SEL of 65.0 dB
Temperature = 59 F Humidity = 70 Flying days per month = 30

MOA SPECIFICATIONS

MOA name EEL A MOA

Lat (deg)	Long (deg)
46.33334	-124.21667
46.33334	-123.83334
46.11667	-123.50000
45.96667	-123.50000
45.96667	-124.21667
46.33334	-124.21667

Floor = 11000 feet AGL Ceiling = 50000 feet AGL

MOA name EEL B MOA

Lat (deg)	Long (deg)
45.96667	-123.50000
45.96667	-124.21667
45.60000	-124.21667
45.60000	-123.50000
45.96667	-123.50000

Floor = 11000 feet AGL Ceiling = 50000 feet AGL

MOA name EEL C MOA

Lat (deg)	Long (deg)
45.60000	-124.21667
45.60000	-123.50000
45.19999	-123.50000
45.19999	-124.21667
45.60000	-124.21667

Floor = 11000 feet AGL Ceiling = 50000 feet AGL

MOA name EEL D MOA

Lat (deg)	Long (deg)
45.19999	-123.50000

45.19999 -124.21667
44.76665 -124.21667
45.11666 -123.50000
45.19999 -123.50000
Floor = 11000 feet AGL Ceiling = 50000 feet AGL

MISSION DATA

Mission name = 142 EEL A PROPOSED
Aircraft code =FM0430300 Speed = 350 kias Power = 90.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
11000	15000	50.0
15000	18000	50.0

Mission name = 142 EEL B PROPOSED
Aircraft code =FM0430300 Speed = 350 kias Power = 90.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
11000	15000	50.0
15000	18000	50.0

Mission name = 142 EEL C PROPOSED
Aircraft code =FM0430300 Speed = 350 kias Power = 90.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
11000	15000	50.0
15000	18000	50.0

Mission name = 142 EEL D PROPOSED
Aircraft code =FM0430300 Speed = 350 kias Power = 90.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
11000	15000	50.0
15000	18000	50.0

MOA OPERATION DATA

MOA name = EEL A MOA

Mission Name	Daily Day OPS	Daily Night OPS	Monthly Day OPS	Monthly Night OPS	Yearly Day OPS	Yearly Night OPS	Time On Range (minutes)	
142 EEL A PROPOSED		0.500	0.000	15.00	0.00	180.	0.	20.

MOA name = EEL B MOA

Mission Name	Daily Day OPS	Daily Night OPS	Monthly Day OPS	Monthly Night OPS	Yearly Day OPS	Yearly Night OPS	Time On Range (minutes)	
142 EEL B PROPOSED		0.750	0.000	22.50	0.00	270.	0.	20.

MOA name = EEL C MOA

Mission Name	Daily Day OPS	Daily Night OPS	Monthly Day OPS	Monthly Night OPS	Yearly Day OPS	Yearly Night OPS	Time On Range (minutes)	
142 EEL C PROPOSED		0.750	0.000	22.50	0.00	270.	0.	20.

MOA name = EEL D MOA

Mission Name	Daily Day OPS	Daily Night OPS	Monthly Day OPS	Monthly Night OPS	Yearly Day OPS	Yearly Night OPS	Time On Range (minutes)	
142 EEL D PROPOSED		0.500	0.000	15.00	0.00	180.	0.	20.

***** MOA RANGE NOISEMAP *****
RESULTS

The noise metric is Ldnmr.

MOA RESULTS

MOA Name	MOA Area (sq statute miles)	Uniform Distributed Sound Level (dB)	Number of Daily Events Above SEL of 65.0 dB
EEL A MOA	751.2	35.0	0.4
EEL B MOA	876.9	35.0	0.4
EEL C MOA	963.2	35.0	0.4
EEL D MOA	625.0	35.0	0.5

<Run Log>
Date: 10/15/2014
Start Time: 16: 2:41
Stop Time: 16: 2:46
Total Running Time: 0 minutes and 5 seconds.

***** MOA RANGE NOISEMAP *****
Version 3.0
Release Date 2/7/2013

CASE INFORMATION
Case Name:PRPOSED JUNIPER HART MOAs - Baseline Scenario
Site Name:OREGON ANG AIRSPACE

SETUP PARAMETERS
Number of MOAs and Ranges = 10 Number of tracks = 0
Lower Left Corner of Grid in feet (X Y pair) = -314550., -584550.
Upper Right Corner of Grid in feet (X Y pair) = 314550., 584550.
Grid spacing = 900. feet Number of events above an SEL of 65.0 dB
Temperature = 59 F Humidity = 70 Flying days per month = 30

MOA SPECIFICATIONS

MOA name HART A MOA

Lat (deg)	Long (deg)
42.66667	-120.30112
42.66667	-119.16777
42.43333	-119.22610
42.43333	-120.21834
42.66667	-120.30112

Floor = 6000 feet AGL Ceiling = 13000 feet AGL

MOA name HART B MOA

Lat (deg)	Long (deg)
42.43333	-120.21834
42.43333	-119.22610
41.49998	-119.45111
41.49999	-119.91778
42.43333	-120.21834

Floor = 6000 feet AGL Ceiling = 13000 feet AGL

MOA name HART C MOA

Lat (deg)	Long (deg)
42.66667	-119.16777
42.66667	-118.73138
42.43333	-118.73138
42.43333	-119.22610
42.66667	-119.16777

Floor = 6000 feet AGL Ceiling = 13000 feet AGL

MOA name HART D MOA

Lat (deg)	Long (deg)
42.43333	-119.22610
42.43333	-118.73138

42.37611 -118.73138
41.87888 -118.86860
41.49999 -119.31000
41.49998 -119.45111
42.43333 -119.22610
Floor = 6000 feet AGL Ceiling = 13000 feet AGL

MOA name HART E MOA

Lat (deg)	Long (deg)
41.49999	-119.91778
41.49998	-119.45111
41.49999	-119.31000
41.16665	-119.69444
41.16665	-119.79445
41.49999	-119.91778

Floor = 6000 feet AGL Ceiling = 13000 feet AGL

MOA name HART F MOA

Lat (deg)	Long (deg)
41.87888	-118.86860
41.49999	-118.97194
41.16665	-119.39333
41.16665	-119.69444
41.49999	-119.31000
41.87888	-118.86860

Floor = 6000 feet AGL Ceiling = 13000 feet AGL

MOA name JUNIPER A MOA

Lat (deg)	Long (deg)
43.93307	-120.73446
43.95141	-120.44001
43.84168	-120.13000
43.35001	-120.53001
43.93307	-120.73446

Floor = 6000 feet AGL Ceiling = 13000 feet AGL

MOA name JUNIPER B MOA

Lat (deg)	Long (deg)
43.35001	-120.53001
43.84168	-120.13000
43.63335	-119.56667
42.66667	-119.16777
42.66667	-120.30112
43.35001	-120.53001

Floor = 6000 feet AGL Ceiling = 13000 feet AGL

MOA name JUNIPER C MOA

Lat (deg)	Long (deg)
43.63335	-119.56667

43.51307 -119.20000
43.17112 -118.98555
43.17112 -119.37555
43.63335 -119.56667
Floor = 6000 feet AGL Ceiling = 13000 feet AGL

MOA name JUNIPER D MOA

Lat (deg)	Long (deg)
43.17112	-119.37555
43.17112	-118.98555
42.76611	-118.73221
42.66667	-118.73221
42.66667	-119.16777
43.17112	-119.37555

Floor = 6000 feet AGL Ceiling = 13000 feet AGL

MISSION DATA

Mission name = 142 HART A PROPOSED
Aircraft code =FM0430300 Speed = 400 kias Power = 90.0
Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
6000	10000	50.0
10000	13000	50.0

Mission name = 142 HART B PROPOSED
Aircraft code =FM0430301 Speed = 350 kias Power = 85.0
Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
6000	10000	50.0
10000	13000	50.0

Mission name = 142 HART C PROPOSED
Aircraft code =FM0430301 Speed = 350 kias Power = 85.0
Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
6000	10000	50.0
10000	13000	50.0

Mission name = 142 HART D PROPOSED
Aircraft code =FM0430301 Speed = 350 kias Power = 85.0
Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
6000	10000	50.0
10000	13000	50.0

Mission name = 142 HART E PROPOSED
Aircraft code =FM0430301 Speed = 350 kias Power = 85.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
6000	10000	50.0
10000	13000	50.0

Mission name = 142 HART F PROPOSED
Aircraft code =FM0430301 Speed = 350 kias Power = 85.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
6000	10000	50.0
10000	13000	50.0

Mission name = 142 JUNIPER A PROPOSED
Aircraft code =FM0430300 Speed = 350 kias Power = 90.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
6000	10000	50.0
10000	13000	50.0

Mission name = 142 JUNIPER B PROPOSED
Aircraft code =FM0430300 Speed = 400 kias Power = 90.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
6000	10000	50.0
10000	13000	50.0

Mission name = 142 JUNIPER C PROPOSED
Aircraft code =FM0430300 Speed = 400 kias Power = 90.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
6000	10000	50.0
10000	13000	50.0

Mission name = 142 JUNIPER D PROPOSED
Aircraft code =FM0430300 Speed = 400 kias Power = 90.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
6000	10000	50.0
10000	13000	50.0

Mission name = 173 HART A PROPOSED
Aircraft code =FM0430300 Speed = 400 kias Power = 90.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
6000	10000	50.0
10000	13000	50.0

Mission name = 173 HART B PROPOSED
Aircraft code =FM0430300 Speed = 400 kias Power = 90.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
6000	10000	50.0
10000	13000	50.0

Mission name = 173 HART C PROPOSED
Aircraft code =FM0430300 Speed = 400 kias Power = 90.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
6000	10000	50.0
10000	13000	50.0

Mission name = 173 HART D PROPOSED
Aircraft code =FM0430300 Speed = 400 kias Power = 90.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
6000	10000	50.0
10000	13000	50.0

Mission name = 173 HART E PROPOSED
Aircraft code =FM0430300 Speed = 400 kias Power = 90.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
6000	10000	50.0
10000	13000	50.0

Mission name = 173 HART F PROPOSED
Aircraft code =FM0430300 Speed = 400 kias Power = 90.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
6000	10000	50.0
10000	13000	50.0

Mission name = 173 JUNIPER A PROPOSED
Aircraft code =FM0430302 Speed = 350 kias Power = 89.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
6000	10000	50.0
10000	13000	50.0

Mission name = 173 JUNIPER B PROPOSED
Aircraft code =FM0430300 Speed = 400 kias Power = 90.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
6000	10000	50.0
10000	13000	50.0

Mission name = 173 JUNIPER C PROPOSED
Aircraft code =FM0430300 Speed = 400 kias Power = 90.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
6000	10000	50.0
10000	13000	50.0

Mission name = 173 JUNIPER D PROPOSED
Aircraft code =FM0430300 Speed = 400 kias Power = 90.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
6000	10000	50.0
10000	13000	50.0

MOA OPERATION DATA

MOA name = HART A MOA

Mission Name	Daily Day OPS	Daily Night OPS	Monthly Day OPS	Monthly Night OPS	Yearly Day OPS	Yearly Night OPS	Time On Range (minutes)	
142 HART A PROPOSED		1.111	0.000	33.33	0.00	400.	0.	10.
173 HART A PROPOSED		6.419	0.000	192.58	0.00	2311.	0.	3.

MOA name = HART B MOA

Mission Name	Daily Day OPS	Daily Night OPS	Monthly Day OPS	Monthly Night OPS	Yearly Day OPS	Yearly Night OPS	Time On Range (minutes)	
142 HART B PROPOSED		0.417	0.000	12.50	0.00	150.	0.	5.
173 HART B PROPOSED		5.111	0.000	153.33	0.00	1840.	0.	9.

MOA name = HART C MOA

Mission Name	Daily Day OPS	Daily Night OPS	Monthly Day OPS	Monthly Night OPS	Yearly Day OPS	Yearly Night OPS	Time On Range (minutes)	
142 HART C PROPOSED		0.111	0.000	3.33	0.00	40.	0.	5.
173 HART C PROPOSED		3.014	0.000	90.42	0.00	1085.	0.	3.

MOA name = HART D MOA

Mission Name	Daily Day OPS	Daily Night OPS	Monthly Day OPS	Monthly Night OPS	Yearly Day OPS	Yearly Night OPS	Time On Range (minutes)	
142 HART D PROPOSED		0.028	0.000	0.83	0.00	10.	0.	5.
173 HART D PROPOSED		3.014	0.000	90.42	0.00	1085.	0.	3.

MOA name = HART E MOA

Mission Name	Daily Day OPS	Daily Night OPS	Monthly Day OPS	Monthly Night OPS	Yearly Day OPS	Yearly Night OPS	Time On Range (minutes)	
142 HART E PROPOSED		0.003	0.000	0.08	0.00	1.	0.	1.
173 HART E PROPOSED		1.967	0.000	59.00	0.00	708.	0.	3.

MOA name = HART F MOA

Mission Name	Daily Day OPS	Daily Night OPS	Monthly Day OPS	Monthly Night OPS	Yearly Day OPS	Yearly Night OPS	Time On Range (minutes)	
142 HART F PROPOSED		0.003	0.000	0.08	0.00	1.	0.	1.
173 HART F PROPOSED		1.967	0.000	59.00	0.00	708.	0.	2.

MOA name = JUNIPER A MOA

Mission Name	Daily Day OPS	Daily Night OPS	Monthly Day OPS	Monthly Night OPS	Yearly Day OPS	Yearly Night OPS	Time On Range (minutes)	
142 JUNIPER A PROPOSED		1.111	0.000	33.33	0.00	400.	0.	25.
173 JUNIPER A PROPOSED		1.442	0.000	43.25	0.00	519.	0.	2.

MOA name = JUNIPER B MOA

Mission Name	Daily Day OPS	Daily Night OPS	Monthly Day OPS	Monthly Night OPS	Yearly Day OPS	Yearly Night OPS	Time On Range (minutes)	
142 JUNIPER B PROPOSED		1.389	0.000	41.67	0.00	500.	0.	15.
173 JUNIPER B PROPOSED		9.042	0.000	271.25	0.00	3255.	0.	9.

MOA name = JUNIPER C MOA

Mission Name	Daily Day OPS	Daily Night OPS	Monthly Day OPS	Monthly Night OPS	Yearly Day OPS	Yearly Night OPS	Time On Range (minutes)

142 JUNIPER C PROPOSED	0.317	0.000	9.50	0.00	114.	0.	10.
173 JUNIPER C PROPOSED	3.014	0.000	90.42	0.00	1085.	0.	2.

MOA name = JUNIPER D MOA

Mission Name	Daily Day OPS	Daily Night OPS	Monthly Day OPS	Monthly Night OPS	Yearly Day OPS	Yearly Night OPS	Time On Range (minutes)
142 JUNIPER D PROPOSED	0.239	0.000	7.17	0.00	86.	0.	10.
173 JUNIPER D PROPOSED	3.014	0.000	90.42	0.00	1085.	0.	2.

***** MOA RANGE NOISEMAP *****
RESULTS

The noise metric is Ldnmr.

MOA RESULTS

MOA Name	MOA Area (sq statute miles)	Uniform Distributed Sound Level (dB)	Number of Daily Events Above SEL of 65.0 dB
HART A MOA	874.7	41.0	0.3
HART B MOA	2416.5	37.1	0.2
HART C MOA	382.6	39.7	0.3
HART D MOA	1411.3	35.0	0.1
HART E MOA	423.0	36.9	0.2
HART F MOA	612.0	35.0	0.1
JUNIPER A MOA	640.8	42.2	0.1
JUNIPER B MOA	3800.8	38.5	0.2
JUNIPER C MOA	486.4	38.5	0.2
JUNIPER D MOA	773.2	36.3	0.1

<Run Log>
Date: 10/15/2014
Start Time: 15:47:13
Stop Time: 15:50: 0
Total Running Time: 2 minutes and 47 seconds.

***** MOA RANGE NOISEMAP *****
Version 3.0
Release Date 2/7/2013

CASE INFORMATION
Case Name:PROPOSED JUNIPER LOW and JUNIPER LOW EAST MOAs - Baseline Scenario
Site Name:OREGON ANG AIRSPACE

SETUP PARAMETERS
Number of MOAs and Ranges = 2 Number of tracks = 0
Lower Left Corner of Grid in feet (X Y pair) = -330311., -26505.
Upper Right Corner of Grid in feet (X Y pair) = 208789., 512595.
Grid spacing = 900. feet Number of events above an SEL of 65.0 dB
Temperature = 59 F Humidity = 70 Flying days per month = 30

MOA SPECIFICATIONS

MOA name JUNIPER EAST LOW MOA

Lat (deg)	Long (deg)
43.63335	-119.56667
43.55946	-119.34110
43.44473	-119.15721
43.07612	-118.92693
42.76667	-118.92693
42.76667	-119.20750
43.63335	-119.56667

Floor = 500 feet AGL Ceiling = 11000 feet MSL

MOA name MOA US JUNIPER LOW

Lat (deg)	Long (deg)
43.93307	-120.73446
43.95141	-120.44001
43.63335	-119.56778
42.76667	-119.20750
42.76667	-120.33362
43.93307	-120.73446

Floor = 500 feet AGL Ceiling = 11000 feet MSL

MISSION DATA
Mission name = 142 JUNIPER EAST LOW PROPOSED
Aircraft code =FM0430300 Speed = 420 kias Power = 90.0
Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
500	1000	35.0
1000	3000	35.0
3000	5000	20.0
5000	6000	10.0

Mission name = 142 JUNIPER LOW PROPOSED
Aircraft code =FM0430300 Speed = 420 kias Power = 90.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
500	1000	35.0
1000	3000	35.0
3000	5000	20.0
5000	6000	10.0

Mission name = 173 JUNIPER EAST LOW PROPOSED
Aircraft code =FM0430300 Speed = 420 kias Power = 90.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
500	1000	20.0
1000	3000	40.0
3000	5000	35.0
5000	6000	5.0

Mission name = 173 JUNIPER LOW PROPOSED
Aircraft code =FM0430300 Speed = 420 kias Power = 90.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
500	1000	20.0
1000	3000	40.0
3000	5000	35.0
5000	6000	5.0

MOA OPERATION DATA

MOA name = JUNIPER EAST LOW MOA

Mission Name	Daily Day OPS	Daily Night OPS	Monthly Day OPS	Monthly Night OPS	Yearly Day OPS	Yearly Night OPS	Time On Range (minutes)		
142 JUNIPER EAST LOW PROPOSED			0.167	0.000	5.00	0.00	60.	0.	10.
173 JUNIPER EAST LOW PROPOSED			1.181	0.000	35.42	0.00	425.	0.	5.

MOA name = MOA US JUNIPER LOW

Mission Name	Daily Day OPS	Daily Night OPS	Monthly Day OPS	Monthly Night OPS	Yearly Day OPS	Yearly Night OPS	Time On Range (minutes)		
142 JUNIPER LOW PROPOSED			1.500	0.000	45.00	0.00	540.	0.	10.
173 JUNIPER LOW PROPOSED			1.833	0.000	55.00	0.00	660.	0.	10.

***** MOA RANGE NOISEMAP *****
RESULTS

The noise metric is Ldnmr.

MOA RESULTS

MOA Name	MOA Area (sq statute miles)	Uniform Distributed Sound Level (dB)	Number of Daily Events Above SEL of 65.0 dB
JUNIPER EAST LOW MOA	975.9	46.3	0.0
MOA US JUNIPER LOW	4044.5	45.8	0.0

<Run Log>
Date: 10/15/2014
Start Time: 15:40:30
Stop Time: 15:41:17
Total Running Time: 0 minutes and 47 seconds.

***** MOA RANGE NOISEMAP *****
Version 3.0
Release Date 2/7/2013

CASE INFORMATION
Case Name:PROPOSED REDHAWK MOA - Baseline Scenario
Site Name:OREGON ANG AIRSPACE

SETUP PARAMETERS
Number of MOAs and Ranges = 3 Number of tracks = 0
Lower Left Corner of Grid in feet (X Y pair) = -314550., -208789.
Upper Right Corner of Grid in feet (X Y pair) = 314550., 330311.
Grid spacing = 900. feet Number of events above an SEL of 65.0 dB
Temperature = 59 F Humidity = 70 Flying days per month = 30

MOA SPECIFICATIONS

MOA name REDHAWK A MOA

Lat (deg)	Long (deg)
45.10001	-121.01668
45.55001	-120.86668
45.50001	-120.25834
45.00001	-120.40000
45.10001	-121.01668

Floor = 7500 feet AGL Ceiling = 14500 feet AGL

MOA name REDHAWK B MOA

Lat (deg)	Long (deg)
45.50001	-120.25834
45.38334	-119.13332
44.58333	-119.14999
45.00001	-120.40000
45.50001	-120.25834

Floor = 7500 feet AGL Ceiling = 14500 feet AGL

MOA name REDHAWK C MOA

Lat (deg)	Long (deg)
45.10001	-121.01668
45.00001	-120.40000
44.58333	-119.14999
44.41666	-119.14999
44.45000	-121.01668
45.10001	-121.01668

Floor = 7500 feet AGL Ceiling = 14500 feet AGL

MISSION DATA
Mission name = 142 REDHAWK A PROPOSED
Aircraft code =FM0430300 Speed = 350 kias Power = 90.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
7500	11500	50.0
11500	14500	50.0

Mission name = 142 REDHAWK B PROPOSED
Aircraft code =FM0430300 Speed = 350 kias Power = 90.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
7500	11500	50.0
11500	14500	50.0

Mission name = 142 REDHAWK C PROPOSED
Aircraft code =FM0430300 Speed = 350 kias Power = 90.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
7500	11500	50.0
11500	14500	50.0

MOA OPERATION DATA

MOA name = REDHAWK A MOA

Mission Name	Daily Day OPS	Daily Night OPS	Monthly Day OPS	Monthly Night OPS	Yearly Day OPS	Yearly Night OPS	Time On Range (minutes)	
142 REDHAWK A PROPOSED	0.278	0.000	8.33	0.00	100.	0.	20.	

MOA name = REDHAWK B MOA

Mission Name	Daily Day OPS	Daily Night OPS	Monthly Day OPS	Monthly Night OPS	Yearly Day OPS	Yearly Night OPS	Time On Range (minutes)	
142 REDHAWK B PROPOSED	1.389	0.000	41.67	0.00	500.	0.	20.	

MOA name = REDHAWK C MOA

Mission Name	Daily Day OPS	Daily Night OPS	Monthly Day OPS	Monthly Night OPS	Yearly Day OPS	Yearly Night OPS	Time On Range (minutes)	
142 REDHAWK C PROPOSED	1.389	0.000	41.67	0.00	500.	0.	20.	

***** MOA RANGE NOISEMAP *****
RESULTS

The noise metric is Ldnmr.

MOA RESULTS

MOA Name	MOA Area (sq statute miles)	Uniform Distributed Sound Level (dB)	Number of Daily Events Above SEL of 65.0 dB
REDHAWK A MOA	1016.1	35.0	0.0
REDHAWK B MOA	2674.9	35.0	0.0
REDHAWK C MOA	2808.4	35.0	0.0

<Run Log>
Date: 10/15/2014
Start Time: 15:37:30
Stop Time: 15:37:41
Total Running Time: 0 minutes and 12 seconds.

***** MOA RANGE NOISEMAP *****
Version 3.0
Release Date 2/7/2013

CASE INFORMATION
Case Name:PROPOSED ALT B REDHAWK MOA - Baseline Scenario
Site Name:OREGON ANG AIRSPACE

SETUP PARAMETERS
Number of MOAs and Ranges = 3 Number of tracks = 0
Lower Left Corner of Grid in feet (X Y pair) = -239169., -133408.
Upper Right Corner of Grid in feet (X Y pair) = 299931., 315692.
Grid spacing = 900. feet Number of events above an SEL of 65.0 dB
Temperature = 59 F Humidity = 70 Flying days per month = 30

MOA SPECIFICATIONS

MOA name REDHAWK A MOA

Lat (deg)	Long (deg)
45.10001	-121.01668
45.55001	-120.86668
45.50001	-120.25834
45.00001	-120.40000
45.10001	-121.01668

Floor = 7500 feet AGL Ceiling = 14500 feet AGL

MOA name REDHAWK B MOA

Lat (deg)	Long (deg)
45.50001	-120.25834
45.38334	-119.13332
44.58333	-119.14999
45.00001	-120.40000
45.50001	-120.25834

Floor = 7500 feet AGL Ceiling = 14500 feet AGL

MOA name REDHAWK C MOA

Lat (deg)	Long (deg)
45.10001	-121.01668
45.00001	-120.40000
44.58333	-119.14999
44.41666	-119.14999
44.45000	-121.01668
45.10001	-121.01668

Floor = 7500 feet AGL Ceiling = 14500 feet AGL

MISSION DATA
Mission name = 142 EEL A PROPOSED
Aircraft code =FM0430300 Speed = 350 kias Power = 90.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
11000	15000	50.0
15000	18000	50.0

Mission name = 142 EEL B PROPOSED
Aircraft code =FM0430300 Speed = 350 kias Power = 90.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
11000	15000	50.0
15000	18000	50.0

Mission name = 142 EEL C PROPOSED
Aircraft code =FM0430300 Speed = 350 kias Power = 90.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
11000	15000	50.0
15000	18000	50.0

Mission name = 142 EEL D PROPOSED
Aircraft code =FM0430300 Speed = 350 kias Power = 90.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
11000	15000	50.0
15000	18000	50.0

Mission name = 142 REDHAWK A PROPOSED
Aircraft code =FM0430300 Speed = 350 kias Power = 90.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
7500	11500	50.0
11500	14500	50.0

Mission name = 142 REDHAWK B PROPOSED
Aircraft code =FM0430300 Speed = 350 kias Power = 90.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
7500	11500	50.0
11500	14500	50.0

Mission name = 142 REDHAWK C PROPOSED
Aircraft code =FM0430300 Speed = 350 kias Power = 90.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
7500	11500	50.0
11500	13500	50.0

MOA OPERATION DATA

MOA name = REDHAWK A MOA

Mission Name	Daily Day OPS	Daily Night OPS	Monthly Day OPS	Monthly Night OPS	Yearly Day OPS	Yearly Night OPS	Time On Range (minutes)	
142 EEL A PROPOSED		0.500	0.000	15.00	0.00	180.	0.	20.
142 REDHAWK A PROPOSED		0.278	0.000	8.33	0.00	100.	0.	20.

MOA name = REDHAWK B MOA

Mission Name	Daily Day OPS	Daily Night OPS	Monthly Day OPS	Monthly Night OPS	Yearly Day OPS	Yearly Night OPS	Time On Range (minutes)	
142 EEL B PROPOSED		0.750	0.000	22.50	0.00	270.	0.	20.
142 REDHAWK B PROPOSED		1.389	0.000	41.67	0.00	500.	0.	20.

MOA name = REDHAWK C MOA

Mission Name	Daily Day OPS	Daily Night OPS	Monthly Day OPS	Monthly Night OPS	Yearly Day OPS	Yearly Night OPS	Time On Range (minutes)	
142 EEL C PROPOSED		0.750	0.000	22.50	0.00	270.	0.	20.
142 EEL D PROPOSED		0.500	0.000	15.00	0.00	180.	0.	20.
142 REDHAWK C PROPOSED		1.389	0.000	41.67	0.00	500.	0.	20.

***** MOA RANGE NOISEMAP *****
RESULTS

The noise metric is Ldnmr.

MOA RESULTS

MOA Name	MOA Area (sq statute miles)	Uniform Distributed Sound Level (dB)	Number of Daily Events Above SEL of 65.0 dB
REDHAWK A MOA	1016.1	35.0	0.0
REDHAWK B MOA	2674.9	35.0	0.0
REDHAWK C MOA	2808.4	35.0	0.2

<Run Log>
Date: 10/15/2014
Start Time: 15:36:10
Stop Time: 15:36:27
Total Running Time: 0 minutes and 17 seconds.

***** MOA RANGE NOISEMAP *****
Version 3.0
Release Date 2/7/2013

CASE INFORMATION
Case Name:PROPOSED EEL MOA - Baseline Scenario
Site Name:OREGON ANG AIRSPACE

SETUP PARAMETERS
Number of MOAs and Ranges = 4 Number of tracks = 0
Lower Left Corner of Grid in feet (X Y pair) = -134550., -326702.
Upper Right Corner of Grid in feet (X Y pair) = 134550., 302398.
Grid spacing = 900. feet Number of events above an SEL of 65.0 dB
Temperature = 59 F Humidity = 70 Flying days per month = 30

MOA SPECIFICATIONS

MOA name EEL A MOA

Lat (deg)	Long (deg)
46.33334	-124.21667
46.33334	-123.83334
46.11667	-123.50000
45.96667	-123.50000
45.96667	-124.21667
46.33334	-124.21667

Floor = 11000 feet AGL Ceiling = 50000 feet AGL

MOA name EEL B MOA

Lat (deg)	Long (deg)
45.96667	-123.50000
45.96667	-124.21667
45.60000	-124.21667
45.60000	-123.50000
45.96667	-123.50000

Floor = 11000 feet AGL Ceiling = 50000 feet AGL

MOA name EEL C MOA

Lat (deg)	Long (deg)
45.60000	-124.21667
45.60000	-123.50000
45.19999	-123.50000
45.19999	-124.21667
45.60000	-124.21667

Floor = 11000 feet AGL Ceiling = 50000 feet AGL

MOA name EEL D MOA

Lat (deg)	Long (deg)
45.19999	-123.50000

45.19999 -124.21667
44.76665 -124.21667
45.11666 -123.50000
45.19999 -123.50000
Floor = 11000 feet AGL Ceiling = 50000 feet AGL

MISSION DATA

Mission name = 142 EEL A PROPOSED
Aircraft code =FM0430300 Speed = 350 kias Power = 90.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
11000	15000	50.0
15000	18000	50.0

Mission name = 142 EEL B PROPOSED
Aircraft code =FM0430300 Speed = 350 kias Power = 90.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
11000	15000	50.0
15000	18000	50.0

Mission name = 142 EEL C PROPOSED
Aircraft code =FM0430300 Speed = 350 kias Power = 90.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
11000	15000	50.0
15000	18000	50.0

Mission name = 142 EEL D PROPOSED
Aircraft code =FM0430300 Speed = 350 kias Power = 90.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
11000	15000	50.0
15000	18000	50.0

Mission name = 142 REDHAWK A PROPOSED
Aircraft code =FM0430300 Speed = 350 kias Power = 90.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
7500	11500	50.0
11500	14500	50.0

Mission name = 142 REDHAWK B PROPOSED

Aircraft code =FM0430300 Speed = 350 kias Power = 90.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
7500	11500	50.0
11500	14500	50.0

Mission name = 142 REDHAWK C PROPOSED

Aircraft code =FM0430300 Speed = 350 kias Power = 90.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
7500	11500	50.0
11500	13500	50.0

MOA OPERATION DATA

MOA name = EEL A MOA

Mission Name	Daily Day OPS	Daily Night OPS	Monthly Day OPS	Monthly Night OPS	Yearly Day OPS	Yearly Night OPS	Time On Range (minutes)	
142 EEL A PROPOSED		0.500	0.000	15.00	0.00	180.	0.	20.
142 REDHAWK A PROPOSED		0.139	0.000	4.17	0.00	50.	0.	20.

MOA name = EEL B MOA

Mission Name	Daily Day OPS	Daily Night OPS	Monthly Day OPS	Monthly Night OPS	Yearly Day OPS	Yearly Night OPS	Time On Range (minutes)	
142 EEL B PROPOSED		0.750	0.000	22.50	0.00	270.	0.	20.
142 REDHAWK B PROPOSED		0.389	0.000	11.67	0.00	140.	0.	20.

MOA name = EEL C MOA

Mission Name	Daily Day OPS	Daily Night OPS	Monthly Day OPS	Monthly Night OPS	Yearly Day OPS	Yearly Night OPS	Time On Range (minutes)	
142 EEL C PROPOSED		0.750	0.000	22.50	0.00	270.	0.	20.
142 REDHAWK C PROPOSED		0.389	0.000	11.67	0.00	140.	0.	20.

MOA name = EEL D MOA

Mission Name	Daily Day OPS	Daily Night OPS	Monthly Day OPS	Monthly Night OPS	Yearly Day OPS	Yearly Night OPS	Time On Range (minutes)	
142 EEL D PROPOSED		0.500	0.000	15.00	0.00	180.	0.	20.

***** MOA RANGE NOISEMAP *****

RESULTS

The noise metric is Ldnmr.

MOA RESULTS

MOA Name	MOA Area (sq statute miles)	Uniform Distributed Sound Level (dB)	Number of Daily Events Above SEL of 65.0 dB
EEL A MOA	751.2	35.0	0.0
EEL B MOA	876.9	35.0	0.0
EEL C MOA	963.2	35.0	0.2
EEL D MOA	625.0	35.0	0.5

<Run Log>
Date: 10/15/2014
Start Time: 16: 1:35
Stop Time: 16: 1:43
Total Running Time: 0 minutes and 9 seconds.

***** MOA RANGE NOISEMAP *****
Version 3.0
Release Date 2/7/2013

CASE INFORMATION
Case Name:PRPOSED JUNIPER HART MOAs - Baseline Scenario
Site Name:OREGON ANG AIRSPACE

SETUP PARAMETERS
Number of MOAs and Ranges = 10 Number of tracks = 0
Lower Left Corner of Grid in feet (X Y pair) = -314550., -584550.
Upper Right Corner of Grid in feet (X Y pair) = 314550., 584550.
Grid spacing = 900. feet Number of events above an SEL of 65.0 dB
Temperature = 59 F Humidity = 70 Flying days per month = 30

MOA SPECIFICATIONS

MOA name HART A MOA

Lat (deg)	Long (deg)
42.66667	-120.30112
42.66667	-119.16777
42.43333	-119.22610
42.43333	-120.21834
42.66667	-120.30112

Floor = 6000 feet AGL Ceiling = 13000 feet AGL

MOA name HART B MOA

Lat (deg)	Long (deg)
42.43333	-120.21834
42.43333	-119.22610
41.49998	-119.45111
41.49999	-119.91778
42.43333	-120.21834

Floor = 6000 feet AGL Ceiling = 13000 feet AGL

MOA name HART_ C MOA

Lat (deg)	Long (deg)
42.66667	-119.16777
42.66667	-118.73138
42.43333	-118.73138
42.43333	-119.22610
42.66667	-119.16777

Floor = 6000 feet AGL Ceiling = 13000 feet AGL

MOA name HART_D MOA

Lat (deg)	Long (deg)
42.43333	-119.22610
42.43333	-118.73138

42.37611 -118.73138
41.87888 -118.86860
41.49999 -119.31000
41.49998 -119.45111
42.43333 -119.22610
Floor = 6000 feet AGL Ceiling = 13000 feet AGL

MOA name HART_E MOA
Lat Long
(deg) (deg)
41.49999 -119.91778
41.49998 -119.45111
41.49999 -119.31000
41.16665 -119.69444
41.16665 -119.79445
41.49999 -119.91778
Floor = 6000 feet AGL Ceiling = 13000 feet AGL

MOA name HART_F MOA
Lat Long
(deg) (deg)
41.87888 -118.86860
41.49999 -118.97194
41.16665 -119.39333
41.16665 -119.69444
41.49999 -119.31000
41.87888 -118.86860
Floor = 6000 feet AGL Ceiling = 13000 feet AGL

MOA name JUNIPER A MOA
Lat Long
(deg) (deg)
43.93307 -120.73446
43.95141 -120.44001
43.84168 -120.13000
43.35001 -120.53001
43.93307 -120.73446
Floor = 6000 feet AGL Ceiling = 13000 feet AGL

MOA name JUNIPER B MOA
Lat Long
(deg) (deg)
43.35001 -120.53001
43.84168 -120.13000
43.63335 -119.56667
42.66667 -119.16777
42.66667 -120.30112
43.35001 -120.53001
Floor = 6000 feet AGL Ceiling = 13000 feet AGL

MOA name JUNIPER C MOA
Lat Long
(deg) (deg)
43.63335 -119.56667

43.51307 -119.20000
43.17112 -118.98555
43.17112 -119.37555
43.63335 -119.56667
Floor = 6000 feet AGL Ceiling = 13000 feet AGL

MOA name JUNIPER D MOA

Lat (deg)	Long (deg)
43.17112	-119.37555
43.17112	-118.98555
42.76611	-118.73221
42.66667	-118.73221
42.66667	-119.16777
43.17112	-119.37555

Floor = 6000 feet AGL Ceiling = 13000 feet AGL

MISSION DATA

Mission name = 142 HART A PROPOSED
Aircraft code =FM0430300 Speed = 400 kias Power = 90.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
6000	10000	50.0
10000	13000	50.0

Mission name = 142 HART B PROPOSED
Aircraft code =FM0430301 Speed = 350 kias Power = 85.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
6000	10000	50.0
10000	13000	50.0

Mission name = 142 HART C PROPOSED
Aircraft code =FM0430301 Speed = 350 kias Power = 85.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
6000	10000	50.0
10000	13000	50.0

Mission name = 142 HART D PROPOSED
Aircraft code =FM0430301 Speed = 350 kias Power = 85.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
6000	10000	50.0
10000	13000	50.0

Mission name = 142 HART E PROPOSED
Aircraft code =FM0430301 Speed = 350 kias Power = 85.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
6000	10000	50.0
10000	13000	50.0

Mission name = 142 HART F PROPOSED
Aircraft code =FM0430301 Speed = 350 kias Power = 85.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
6000	10000	50.0
10000	13000	50.0

Mission name = 142 JUNIPER A PROPOSED
Aircraft code =FM0430300 Speed = 350 kias Power = 90.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
6000	10000	50.0
10000	13000	50.0

Mission name = 142 JUNIPER B PROPOSED
Aircraft code =FM0430300 Speed = 400 kias Power = 90.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
6000	10000	50.0
10000	13000	50.0

Mission name = 142 JUNIPER C PROPOSED
Aircraft code =FM0430300 Speed = 400 kias Power = 90.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
6000	10000	50.0
10000	13000	50.0

Mission name = 142 JUNIPER D PROPOSED
Aircraft code =FM0430300 Speed = 400 kias Power = 90.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
6000	10000	50.0
10000	13000	50.0

Mission name = 142 REDHAWK PROPOSED 2
Aircraft code =FM0430300 Speed = 350 kias Power = 90.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
6000	10000	50.0
10000	13000	50.0

Mission name = 142 REDHAWK PROPOSED 3
Aircraft code =FM0430300 Speed = 350 kias Power = 90.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
6000	10000	50.0
10000	13000	50.0

Mission name = 142 REDHAWK PROPOSED 5
Aircraft code =FM0430300 Speed = 350 kias Power = 90.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
6000	10000	50.0
10000	13000	50.0

Mission name = 142 REDHAWK PROPOSED 6
Aircraft code =FM0430300 Speed = 350 kias Power = 90.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
6000	10000	50.0
10000	13000	50.0

Mission name = 142 REDHAWK PROPOSED 7
Aircraft code =FM0430300 Speed = 350 kias Power = 90.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
6000	10000	50.0
10000	13000	50.0

Mission name = 142 REDHAWK A PROPOSED 8
Aircraft code =FM0430300 Speed = 350 kias Power = 90.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
6000	10000	50.0
10000	13000	50.0

Mission name = 142 REDHAWK PROPOSED 4
Aircraft code =FM0430300 Speed = 350 kias Power = 90.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
6000	10000	50.0
10000	13000	50.0

Mission name = 173 HART A PROPOSED
Aircraft code =FM0430300 Speed = 400 kias Power = 90.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
6000	10000	50.0
10000	13000	50.0

Mission name = 173 HART B PROPOSED
Aircraft code =FM0430300 Speed = 400 kias Power = 90.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
6000	10000	50.0
10000	13000	50.0

Mission name = 173 HART C PROPOSED
Aircraft code =FM0430300 Speed = 400 kias Power = 90.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
6000	10000	50.0
10000	13000	50.0

Mission name = 173 HART D PROPOSED
Aircraft code =FM0430300 Speed = 400 kias Power = 90.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
6000	10000	50.0
10000	13000	50.0

Mission name = 173 HART E PROPOSED
Aircraft code =FM0430300 Speed = 400 kias Power = 90.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
6000	10000	50.0
10000	13000	50.0

Mission name = 173 HART F PROPOSED
Aircraft code =FM0430300 Speed = 400 kias Power = 90.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
6000	10000	50.0
10000	13000	50.0

Mission name = 173 JUNIPER A PROPOSED
Aircraft code =FM0430302 Speed = 350 kias Power = 89.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
6000	10000	50.0
10000	13000	50.0

Mission name = 173 JUNIPER B PROPOSED
Aircraft code =FM0430300 Speed = 400 kias Power = 90.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
6000	10000	50.0
10000	13000	50.0

Mission name = 173 JUNIPER C PROPOSED
Aircraft code =FM0430300 Speed = 400 kias Power = 90.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
6000	10000	50.0
10000	13000	50.0

Mission name = 173 JUNIPER D PROPOSED
Aircraft code =FM0430300 Speed = 400 kias Power = 90.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
6000	10000	50.0
10000	13000	50.0

MOA OPERATION DATA

MOA name = HART A MOA

Mission Name	Daily Day OPS	Daily Night OPS	Monthly Day OPS	Monthly Night OPS	Yearly Day OPS	Yearly Night OPS	Time On Range (minutes)	
142 HART A PROPOSED		1.389	0.000	41.67	0.00	500.	0.	10.

173 HART A PROPOSED	6.419	0.000	192.58	0.00	2311.	0.	3.

MOA name = HART B MOA

Mission Name	Daily Day OPS	Daily Night OPS	Monthly Day OPS	Monthly Night OPS	Yearly Day OPS	Yearly Night OPS	Time On Range (minutes)
142 HART B PROPOSED		0.417	0.000	12.50	0.00	150.	0. 5.
142 REDHAWK PROPOSED	2	0.178	0.000	5.33	0.00	64.	0. 5.
173 HART B PROPOSED		5.111	0.000	153.33	0.00	1840.	0. 9.

MOA name = HART_ C MOA

Mission Name	Daily Day OPS	Daily Night OPS	Monthly Day OPS	Monthly Night OPS	Yearly Day OPS	Yearly Night OPS	Time On Range (minutes)
142 HART C PROPOSED		0.111	0.000	3.33	0.00	40.	0. 5.
142 REDHAWK PROPOSED	3	0.047	0.000	1.42	0.00	17.	0. 5.
173 HART C PROPOSED		3.014	0.000	90.42	0.00	1085.	0. 3.

MOA name = HART_D MOA

Mission Name	Daily Day OPS	Daily Night OPS	Monthly Day OPS	Monthly Night OPS	Yearly Day OPS	Yearly Night OPS	Time On Range (minutes)
142 HART D PROPOSED		0.028	0.000	0.83	0.00	10.	0. 5.
142 REDHAWK PROPOSED	4	0.011	0.000	0.33	0.00	4.	0. 5.
173 HART D PROPOSED		3.014	0.000	90.42	0.00	1085.	0. 3.

MOA name = HART_E MOA

Mission Name	Daily Day OPS	Daily Night OPS	Monthly Day OPS	Monthly Night OPS	Yearly Day OPS	Yearly Night OPS	Time On Range (minutes)
142 HART E PROPOSED		0.003	0.000	0.08	0.00	1.	0. 1.
173 HART E PROPOSED		1.967	0.000	59.00	0.00	708.	0. 3.

MOA name = HART_F MOA

Mission Name	Daily Day OPS	Daily Night OPS	Monthly Day OPS	Monthly Night OPS	Yearly Day OPS	Yearly Night OPS	Time On Range (minutes)
142 HART F PROPOSED		0.003	0.000	0.08	0.00	1.	0. 1.
173 HART F PROPOSED		1.967	0.000	59.00	0.00	708.	0. 2.

MOA name = JUNIPER A MOA

Mission Name	Daily Day OPS	Daily Night OPS	Monthly Day OPS	Monthly Night OPS	Yearly Day OPS	Yearly Night OPS	Time On Range (minutes)
142 JUNIPER A PROPOSED		1.111	0.000	33.33	0.00	400.	0. 25.
142 REDHAWK PROPOSED	5	0.469	0.000	14.08	0.00	169.	0. 25.
173 JUNIPER A PROPOSED		1.442	0.000	43.25	0.00	519.	0. 2.

MOA name = JUNIPER B MOA

Mission Name	Daily Day OPS	Daily Night OPS	Monthly Day OPS	Monthly Night OPS	Yearly Day OPS	Yearly Night OPS	Time On Range (minutes)
142 JUNIPER B PROPOSED		1.389	0.000	41.67	0.00	500.	0. 15.
142 REDHAWK PROPOSED 6		0.775	0.000	23.25	0.00	279.	0. 15.
173 JUNIPER B PROPOSED		9.042	0.000	271.25	0.00	3255.	0. 9.

MOA name = JUNIPER C MOA

Mission Name	Daily Day OPS	Daily Night OPS	Monthly Day OPS	Monthly Night OPS	Yearly Day OPS	Yearly Night OPS	Time On Range (minutes)
142 JUNIPER C PROPOSED		0.317	0.000	9.50	0.00	114.	0. 10.
142 REDHAWK PROPOSED 7		0.133	0.000	4.00	0.00	48.	0. 10.
173 JUNIPER C PROPOSED		3.014	0.000	90.42	0.00	1085.	0. 2.

MOA name = JUNIPER D MOA

Mission Name	Daily Day OPS	Daily Night OPS	Monthly Day OPS	Monthly Night OPS	Yearly Day OPS	Yearly Night OPS	Time On Range (minutes)
142 JUNIPER D PROPOSED		0.239	0.000	7.17	0.00	86.	0. 10.
142 REDHAWK A PROPOSED 8		0.100	0.000	3.00	0.00	36.	0. 10.
173 JUNIPER D PROPOSED		3.014	0.000	90.42	0.00	1085.	0. 2.

***** MOA RANGE NOISEMAP *****
RESULTS

The noise metric is Ldnmr.

MOA RESULTS

MOA Name	MOA Area (sq statute miles)	Uniform Distributed Sound Level (dB)	Number of Daily Events Above SEL of 65.0 dB
HART A MOA	874.7	41.3	0.3
HART B MOA	2416.5	37.2	0.2
HART_ C MOA	382.6	39.8	0.3
HART_D MOA	1411.3	35.0	0.1
HART_E MOA	423.0	36.9	0.2
HART_F MOA	612.0	35.0	0.1
JUNIPER A MOA	640.8	43.6	0.1
JUNIPER B MOA	3800.8	39.0	0.2
JUNIPER C MOA	486.4	39.1	0.2
JUNIPER D MOA	773.2	36.7	0.1

<Run Log>
Date: 10/15/2014
Start Time: 15:56:45
Stop Time: 16: 0:30
Total Running Time: 3 minutes and 46 seconds.

***** MOA RANGE NOISEMAP *****
Version 3.0
Release Date 2/7/2013

CASE INFORMATION
Case Name:BASELINE JUNIPER HART - Baseline Scenario
Site Name:OREGON ANG AIRSPACE

SETUP PARAMETERS
Number of MOAs and Ranges = 4 Number of tracks = 0
Lower Left Corner of Grid in feet (X Y pair) = 141159., -312267.
Upper Right Corner of Grid in feet (X Y pair) = 770259., 676833.
Grid spacing = 900. feet Number of events above an SEL of 65.0 dB
Temperature = 59 F Humidity = 70 Flying days per month = 30

MOA SPECIFICATIONS

MOA name MOA US HART NORTH

Lat (deg)	Long (deg)
42.66667	-120.30109
42.66668	-119.16775
42.43334	-119.22608
42.43334	-120.21832
42.66667	-120.30109

Floor = 6000 feet AGL Ceiling = 13000 feet AGL

MOA name MOA US HART SOUTH

Lat (deg)	Long (deg)
42.43334	-120.21832
42.43334	-119.22608
41.49999	-119.45109
41.49999	-119.91776
42.43334	-120.21832

Floor = 6000 feet AGL Ceiling = 13000 feet AGL

MOA name MOA US JUNIPER NORTH

Lat (deg)	Long (deg)
43.93308	-120.73444
43.95141	-120.43999
43.84169	-120.12998
43.35001	-120.52999
43.93308	-120.73444

Floor = 6000 feet AGL Ceiling = 13000 feet AGL

MOA name MOA US JUNIPER SOUTH

Lat (deg)	Long (deg)
43.35001	-120.52999
43.84169	-120.12998

43.63335 -119.56664
42.66668 -119.16775
42.66667 -120.30109
43.35001 -120.52999
Floor = 6000 feet AGL Ceiling = 13000 feet AGL

MISSION DATA

Mission name = 142 HART NORTH ALT D
Aircraft code =FM0430300 Speed = 400 kias Power = 90.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
6000	10000	50.0
10000	13000	50.0

Mission name = 142 HART SOUTH BASELINE
Aircraft code =FM0430301 Speed = 350 kias Power = 85.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
6000	10000	50.0
10000	13000	50.0

Mission name = 142 JUNIPER NORTH ALT D
Aircraft code =FM0430300 Speed = 350 kias Power = 90.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
6000	10000	50.0
10000	13000	50.0

Mission name = 142 JUNIPER SOUTH ALT D
Aircraft code =FM0430300 Speed = 400 kias Power = 90.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
6000	10000	50.0
10000	13000	50.0

Mission name = 173 HART NORTH BASELINE
Aircraft code =FM0430300 Speed = 400 kias Power = 90.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
6000	10000	50.0
10000	13000	50.0

Mission name = 173 HART SOUTH BASELINE

Aircraft code =FM0430300 Speed = 400 kias Power = 90.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
6000	10000	50.0
10000	13000	50.0

Mission name = 173 JUNIPER NORTH BASELINE

Aircraft code =FM0430302 Speed = 350 kias Power = 89.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
6000	10000	50.0
10000	13000	50.0

Mission name = 173 JUNIPER SOUTH BASELINE

Aircraft code =FM0430300 Speed = 400 kias Power = 90.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
6000	10000	50.0
10000	13000	50.0

MOA OPERATION DATA

MOA name = MOA US HART NORTH

Mission Name	Daily Day OPS	Daily Night OPS	Monthly Day OPS	Monthly Night OPS	Yearly Day OPS	Yearly Night OPS	Time On Range (minutes)
142 HART NORTH ALT D	1.111	0.000	33.33	0.00	400.	0.	10.
173 HART NORTH BASELINE	6.419	0.000	192.58	0.00	2311.	0.	3.

MOA name = MOA US HART SOUTH

Mission Name	Daily Day OPS	Daily Night OPS	Monthly Day OPS	Monthly Night OPS	Yearly Day OPS	Yearly Night OPS	Time On Range (minutes)
142 HART SOUTH BASELINE	0.556	0.000	16.67	0.00	200.	0.	5.
173 HART SOUTH BASELINE	5.111	0.000	153.33	0.00	1840.	0.	11.

MOA name = MOA US JUNIPER NORTH

Mission Name	Daily Day OPS	Daily Night OPS	Monthly Day OPS	Monthly Night OPS	Yearly Day OPS	Yearly Night OPS	Time On Range (minutes)
142 JUNIPER NORTH ALT D	1.222	0.000	36.67	0.00	440.	0.	25.
173 JUNIPER NORTH BASELINE	1.442	0.000	43.25	0.00	519.	0.	4.

MOA name = MOA US JUNIPER SOUTH

Mission Name	Daily Day OPS	Daily Night OPS	Monthly Day OPS	Monthly Night OPS	Yearly Day OPS	Yearly Night OPS	Time On Range (minutes)	
142 JUNIPER SOUTH ALT D	1.742	0.000	52.25	0.00	627.	0.	15.	
173 JUNIPER SOUTH BASELINE	9.042	0.000	271.25	0.00	3255.	0.	12.	

***** MOA RANGE NOISEMAP *****
RESULTS

The noise metric is Ldnmr.

MOA RESULTS

MOA Name	MOA Area (sq statute miles)	Uniform Distributed Sound Level (dB)	Number of Daily Events Above SEL of 65.0 dB
MOA US HART NORTH	874.6	40.9	0.3
MOA US HART SOUTH	2416.1	38.1	0.2
MOA US JUNIPER NORTH	640.9	42.8	0.1
MOA US JUNIPER SOUTH	3800.9	39.6	0.2

<Run Log>
Date: 10/15/2014
Start Time: 15:54:25
Stop Time: 15:55:23
Total Running Time: 0 minutes and 59 seconds.

***** MOA RANGE NOISEMAP *****
Version 3.0
Release Date 2/7/2013

CASE INFORMATION
Case Name:PROPOSED JUNIPER LOW and JUNIPER LOW EAST MOAs - Baseline Scenario
Site Name:OREGON ANG AIRSPACE

SETUP PARAMETERS
Number of MOAs and Ranges = 1 Number of tracks = 0
Lower Left Corner of Grid in feet (X Y pair) = -330311., -26505.
Upper Right Corner of Grid in feet (X Y pair) = 208789., 512595.
Grid spacing = 900. feet Number of events above an SEL of 65.0 dB
Temperature = 59 F Humidity = 70 Flying days per month = 30

MOA SPECIFICATIONS

MOA name MOA US JUNIPER LOW

Lat (deg)	Long (deg)
43.93307	-120.73446
43.95141	-120.44001
43.63335	-119.56778
42.76667	-119.20750
42.76667	-120.33362
43.93307	-120.73446

Floor = 500 feet AGL Ceiling = 11000 feet MSL

MISSION DATA
Mission name = 142 JUNIPER EAST LOW PROPOSED
Aircraft code =FM0430300 Speed = 420 kias Power = 90.0
Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
500	1000	35.0
1000	3000	35.0
3000	5000	20.0
5000	6000	10.0

Mission name = 142 JUNIPER LOW PROPOSED
Aircraft code =FM0430300 Speed = 420 kias Power = 90.0
Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
500	1000	35.0
1000	3000	35.0
3000	5000	20.0
5000	6000	10.0

Mission name = 173 JUNIPER LOW PROPOSED
Aircraft code =FM0430300 Speed = 420 kias Power = 90.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
500	1000	20.0
1000	3000	40.0
3000	5000	35.0
5000	6000	5.0

MOA OPERATION DATA

MOA name = MOA US JUNIPER LOW

Mission Name	Daily Day OPS	Daily Night OPS	Monthly Day OPS	Monthly Night OPS	Yearly Day OPS	Yearly Night OPS	Time On Range (minutes)		
142 JUNIPER EAST LOW PROPOSED	0.167	0.000	5.00	0.00	60.	0.	10.		
142 JUNIPER LOW PROPOSED	1.500	0.000	45.00	0.00	540.	0.	10.		
173 JUNIPER LOW PROPOSED	1.833	0.000	55.00	0.00	660.	0.	13.		

***** MOA RANGE NOISEMAP *****
RESULTS

The noise metric is Ldnmr.

MOA RESULTS

MOA Name	MOA Area (sq statute miles)	Uniform Distributed Sound Level (dB)	Number of Daily Events Above SEL of 65.0 dB
MOA US JUNIPER LOW	4044.5	46.5	0.0

<Run Log>
Date: 10/15/2014
Start Time: 15:43:31
Stop Time: 15:44: 6
Total Running Time: 0 minutes and 35 seconds.

***** MOA RANGE NOISEMAP *****

Version 3.0
Release Date 2/7/2013

CASE INFORMATION

Case Name:F15 PW-220 LMAX - Baseline Scenario

Site Name:VOLK SAA

SETUP PARAMETERS

Number of MOAs and Ranges = 0 Number of tracks = 6
Lower Left Corner of Grid in feet (X Y pair) = -359550., -269550.
Upper Right Corner of Grid in feet (X Y pair) = 359550., 269550.
Grid spacing = 900. feet Number of events above an LMAX of 65.0 dB
Temperature = 59 F Humidity = 70 Flying days per month = 30

TRACK SPECIFICATIONS

Track name F15 LMAX_1K

Flag Notation	Latitude	Longitude	Left (feet)	Right (feet)	Floor 1 (feet AGL)	Floor 2 (feet AGL)	Radius (feet)	Angle (degrees)
LW	43.96788	-90.77038	101.	101.	1000			
LW	43.77851	-90.20390	101.	101.	1000			

Track name F15 LMAX_2K

Flag Notation	Latitude	Longitude	Left (feet)	Right (feet)	Floor 1 (feet AGL)	Floor 2 (feet AGL)	Radius (feet)	Angle (degrees)
LW	43.73819	-90.14280	101.	101.	2000			
LW	43.49285	-89.28254	101.	101.	2000			

Track name F15 LMAX_4K

Flag Notation	Latitude	Longitude	Left (feet)	Right (feet)	Floor 1 (feet AGL)	Floor 2 (feet AGL)	Radius (feet)	Angle (degrees)
LW	43.51856	-88.96410	101.	101.	4000			
LW	44.14748	-88.95306	101.	101.	4000			

Track name F15 LMAX_8K

Flag Notation	Latitude	Longitude	Left (feet)	Right (feet)	Floor 1 (feet AGL)	Floor 2 (feet AGL)	Radius (feet)	Angle (degrees)
LW	44.53044	-88.94405	101.	101.	8000			
LW	44.53946	-89.95574	101.	101.	8000			

Track name F15 LMAX_10K

Flag Notation	Latitude	Longitude	Left (feet)	Right (feet)	Floor 1 (feet AGL)	Floor 2 (feet AGL)	Radius (feet)	Angle (degrees)
LW	44.42927	-88.94902	101.	101.	10000			
LW	44.48355	-89.95984	101.	101.	10000			

Track name F15 LMAX_500

Flag Notation	Latitude	Longitude	Left (feet)	Right (feet)	Floor 1 (feet AGL)	Floor 2 (feet AGL)	Radius (feet)	Angle (degrees)
LW	44.02644	-90.72537	101.	101.	500			
LW	43.80704	-90.19390	101.	101.	500			

MISSION DATA

Mission name = F15 LMAX_1K
Aircraft code =FM0430300 Speed = 400 kias Power = 90.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
1000	1050	100.0

Mission name = F15 LMAX_2K
Aircraft code =FM0430300 Speed = 400 kias Power = 90.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
2000	2050	100.0

Mission name = F15 LMAX_4K
Aircraft code =FM0430300 Speed = 400 kias Power = 90.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
4000	4050	100.0

Mission name = F15 LMAX_8K
Aircraft code =FM0430300 Speed = 400 kias Power = 90.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
8000	8050	100.0

Mission name = F15 LMAX_10K
Aircraft code =FM0430300 Speed = 400 kias Power = 90.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
10000	10050	100.0

Mission name = F15 LMAX_500
Aircraft code =FM0430300 Speed = 400 kias Power = 90.0

Altitude Distribution

Lower Alt (feet AGL)	Upper Alt (feet AGL)	Percent Utilization
500	550	100.0

TRACK OPERATION DATA

Track name = F15 LMAX_1K

Mission Name	Daily Day OPS	Daily Night OPS	Monthly Day OPS	Monthly Night OPS	Yearly Day OPS	Yearly Night OPS
F15 LMAX_1K	1.014	0.000	30.42	0.00	365.	0.

Track name = F15 LMAX_2K

Mission Name	Daily Day OPS	Daily Night OPS	Monthly Day OPS	Monthly Night OPS	Yearly Day OPS	Yearly Night OPS
F15 LMAX_2K	1.014	0.000	30.42	0.00	365.	0.

Track name = F15 LMAX_4K

Mission Name	Daily Day OPS	Daily Night OPS	Monthly Day OPS	Monthly Night OPS	Yearly Day OPS	Yearly Night OPS
F15 LMAX_4K	1.014	0.000	30.42	0.00	365.	0.

Track name = F15 LMAX_8K

Mission Name	Daily Day OPS	Daily Night OPS	Monthly Day OPS	Monthly Night OPS	Yearly Day OPS	Yearly Night OPS
F15 LMAX_8K	1.014	0.000	30.42	0.00	365.	0.

Track name = F15 LMAX_10K

Mission Name	Daily Day OPS	Daily Night OPS	Monthly Day OPS	Monthly Night OPS	Yearly Day OPS	Yearly Night OPS
F15 LMAX_10K	1.014	0.000	30.42	0.00	365.	0.

Track name = F15 LMAX_500

Mission Name	Daily Day OPS	Daily Night OPS	Monthly Day OPS	Monthly Night OPS	Yearly Day OPS	Yearly Night OPS
F15 LMAX_500	1.014	0.000	30.42	0.00	365.	0.

***** MOA RANGE NOISEMAP *****
RESULTS

The noise metric is Lmax.

TRACK RESULTS

Track Name = F15 LMAX_1K

Track Segment	Maximum Centerline Level (dB)	Number of Events Above LMAX of 65.0 dB
01 - 02	110.7	1.0

Track Name = F15 LMAX_2K

Track Segment	Maximum Centerline Level (dB)	Number of Events Above LMAX of 65.0 dB
01 - 02	104.9	1.0

Track Name = F15 LMAX_4K

Track Segment	Maximum Centerline Level (dB)	Number of Events Above LMAX of 65.0 dB
01 - 02	98.2	1.0

Track Name = F15 LMAX_8K

Track Segment	Maximum Centerline Level (dB)	Number of Events Above LMAX of 65.0 dB
01 - 02	90.1	1.0

Track Name = F15 LMAX_10K

Track Segment	Maximum Centerline Level (dB)	Number of Events Above LMAX of 65.0 dB
01 - 02	87.2	1.0

Track Name = F15 LMAX_500

Track Segment	Maximum Centerline Level (dB)	Number of Events Above LMAX of 65.0 dB
01 - 02	116.0	1.0

<Run Log>
Date: 11/ 5/2014
Start Time: 22:51:46
Stop Time: 22:51:46
Total Running Time: 0 minutes and 1 seconds.

APPENDIX F

AIR QUALITY

Appendix F
Air Quality

Introduction

Appendix F contains information used to support the technical air quality analysis in the Environmental Impact Statement (EIS). Specifically this appendix includes the Record of Non-Applicability (RONA) for Clean Air Conformity and calculations associated with military aircraft operations within the each of the existing and proposed Military Operations Areas (MOAs). Additionally, this appendix includes greenhouse gas (GHG) emissions to support analysis consistent with Council on Environmental Quality (CEQ) Draft Guidance (2014) on Considering Climate Change in NEPA Reviews, which provides federal agencies with direction on when and how to consider the effects of GHG emissions and climate change in their evaluations of proposed federal actions.

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RECORD OF NON-APPLICABILITY (RONA)
FOR CLEAN AIR CONFORMITY
PROPOSED ESTABLISHMENT AND MODIFICATION
OF OREGON MILITARY TRAINING AIRSPACE

The Proposed Action falls under the Record of Non-Applicability (RONA) category and is documented with this RONA. The U.S. Environmental Protection Agency (USEPA) published Determining Conformity of General Federal Actions to State or Federal Implementation Plans: Final Rule, in the 30 November 1993, Federal Register (40 Code of Federal Regulations [CFR] Parts 6, 51, and 93). The U.S. Air Force (USAF) published the *United States Air Force Conformity Guide*, dated August 2010. These publications provide implementing guidance to document Clean Air Act Conformity Determination requirements.

Federal regulations state that no department, agency, or instrumentality of the Federal Government shall engage in, support in any way or provide financial assistance for, license to permit, or approve any activity that does not conform to an applicable implementation plan. It is the responsibility of the Federal agency to determine whether a Federal action conforms to the applicable implementation plan, before the action is taken (40 CFR Part 1 51.850[a]).

Federal action may be exempt from conformity determinations if they do not exceed designated *de minimis* levels for criteria pollutants (40 CFR Part 51.853[b]). Federal actions may also be exempt from conformity determinations if they would result in no emissions increase or an increase in emissions that is clearly *de minimis*, including the routine movement of mobile assets, such as ships and aircraft, in home port reassignments and stations (when no new support facilities or personnel are required) to perform as operational groups and/or for repair or overhaul (Oregon State Implementation Plan [SIP] 340-250-0020[4][b][H]). The Proposed Action, described below, involves the proposed establishment and modification of military training airspace for use by the 142d Fighter Wing (142 FW) and 173d Fighter Wing (173 FW) of the Oregon Air National Guard (ANG).

Table 1. *De minimis* Threshold Levels for Criteria Pollutants Pursuant to 40 CFR Part 51.853

Criteria Pollutant	Attainment Status	*De minimis* Threshold (tons/year)
Ozone (VOC or NO_x)	Serious nonattainment	50
	Severe nonattainment	25
	Extreme nonattainment	10
	Other areas outside an ozone transport region	100
Ozone (NO_x)	Marginal and moderate nonattainment inside an ozone	100
	Maintenance	100
Ozone (VOC)	Marginal and moderate nonattainment inside an ozone	50
	Maintenance within an ozone transport region	50
	Maintenance outside an ozone transport region	100
Carbon monoxide (CO), sulfur dioxide (SO_2), and nitrogen dioxide (NO_2)	All nonattainment & maintenance	100
PM_{10}	Serious nonattainment	70
	Moderate nonattainment & maintenance	100
Lead (Pb)	All nonattainment & maintenance	25

PROPOSED ACTION

Action Proponent: Oregon ANG

Action Title: Establishment and Modification of Oregon Military Training Airspace

Action Location: The affected and proposed airspace included in the Proposed Action would be located over coastal, Central, and Eastern Oregon as well as the Pacific Ocean. In addition, small portions of the proposed airspace included in the Proposed Action would be located above northwestern Nevada and the southwestern-most corner of Washington State.

Of the counties underlying the proposed airspaces, only Polk County, OR and Washoe County, NV are in a *nonattainment* or *maintenance* status for one or more criteria pollutants. Polk County, underlying a small portion of the proposed Eel D MOA is in *nonattainment* for CO and *maintenance* for O_3. Additionally, Washoe County, underlying a portion of the proposed Hart E MOA and Hart F MOA is in *nonattainment* for PM_{10} and *maintenance* for CO and O_3.

Anticipated Date and Duration of Proposed Action: The Proposed Action would result in the establishment of Special Use Airspace (SUA) for as military training airspace over the foreseeable future. The proposed airspace would be established upon completion of the National Environmental Policy Act (NEPA) planning and review process and approval of the airspace proposal by the Federal Aviation Administration (FAA), anticipated in Calendar Year (CY) 2014.

Proposed Action: The Proposed Action includes the modification and establishment of SUA including Air Traffic Control Assigned Airspaces (ATCAAs) and Military Operations Areas (MOAs). The proposed airspace improvements would be used by the 142 FW and the 173 FW of the Oregon ANG, to conduct F-15 training exercises.

Under the Proposed Action, the vertical limits and lateral configuration of Warning Area (W)-570, Bass ATCAA, and Bass South ATCAA would be modified within their existing external boundaries to meet training requirements of the 142 FW. The floors of Bass ATCAA and Bass South ATCAA would be lowered to 1,000 feet above mean sea level (MSL), and a new segment to be named W-570C, with a floor of 11,000 feet MSL, would be established adjacent to the west of the existing W-570 airspace. These airspace areas are located over the Pacific Ocean with the western boundary of W-570C paralleling the coastline at a distance of 12 nautical miles (NM).

The establishment of the Eel MOAs (A-D) and Eel High ATCAA would occur over western Oregon and would be partially located over the Pacific Ocean and coastal Oregon. The Eel proposed MOAs would have a floor of 11,000 feet MSL, while the floor of Eel High ATCAA would be established at the ceiling of existing Eel ATCAA, at 27,000 feet MSL.

The expansion of the Juniper/Hart MOA Complex in Eastern Oregon would include the establishment of Juniper MOAs C and D as well as Hart MOAs C, D, E, and F

adjacent and to the east of the existing MOA complex. These MOAs would be established with floors of 11,000 feet MSL. Additionally, the proposed Juniper East Low MOA would be established with a floor of 500 feet AGL adjacent and to the east of the existing Juniper Low MOA beneath Juniper C and the majority of the Juniper D.

The proposed Redhawk MOA Complex would be established with a ceiling at 11,000 feet MSL above Central Oregon.

EMISSIONS SUMMARY:

The Proposed Action does not include any changes to the existing inventories of F-15 aircraft at the 142 FW and 173 FW and implementation would not result in any increases to total annual flight hour or sortie authorizations for either unit. Further, the Proposed Action would not include any ground disturbance or the development or construction of any support facilities. Additionally, the Proposed Action would not result in any changes to manpower levels at either unit.

Training hours within the proposed Eel MOA/ATCAA and W-570 would increase slightly due to decreased transit time associated with the modification of existing airspace and establishment of new airspace; however, the concentration of each pollutant within the existing Eel ATCAA would decrease as training operations would be distributed throughout the airspace utilizing newly available altitude blocks and diluting emissions. Total training hours within the existing Juniper/Hart MOA Complex would be reduced as these operations would be redistributed within the proposed airspaces (i.e., Redhawk MOA Complex), reducing total emissions within the existing Juniper/Hart MOA Complex. Therefore, overall aircraft operational emissions would not be expected to change substantially. Establishment of the Redhawk MOA Complex would introduce new air-to-air F-15 training operations to the area. While establishment of the Redhawk MOA Complex would introduce new military aircraft related criteria pollutant emissions, the Proposed Action would not be expected to substantially increase pollutant emissions or alter relative pollutant concentrations in the airspace. Table 2 below illustrates the total anticipated annual mobile emissions associated with the modification and establishment of the proposed airspaces.

EMISSIONS EVALUATION AND CONCLUSION:

With respect to the General Conformity Rule, effects on air quality would be considered significant if a proposed action would result in emissions that exceed *de minimis* threshold levels established in 40 CFR 93.153(b) for individual pollutants in *nonattainment* or maintenance areas.

As described above, only Polk County, OR and Washoe County, NV are in *nonattainment* or *maintenance* for at least one criteria pollutant. However, the proposed airspace above these counties would be established at 11,000 feet MSL under the Proposed Action. The Federal Aviation Administration (FAA) conducted a study of ground level concentrations caused by elevated aircraft emissions released above ground level (AGL) using USEPA-approved models and conservative assumptions. The study concluded that aircraft operations at or above the average mixing height of 3,000 feet AGL have a very small effect on ground level concentrations and could not directly result in a violation of the Nation Ambient Air Quality Standards (NAAQS) in a local area. Therefore, USEPA's final rule (40 CFR 93.153) exempts as *de minimis* aircraft emissions above the 3,000 foot AGL mixing height, including the subject mobile aircraft emissions resulting from the implementation of the Proposed Action. All other proposed airspaces would be established over counties that are in *attainment* for all criteria pollutants. Consequently, a General Conformity Determination would not be needed.

General Conformity under the Clean Air Act (CAA), Section 176, has been evaluated for the Proposed Action according to the requirements of 40 CFR 93, Subpart B. The requirements of this rule are not applicable to the Proposed Action because mobile aircraft emissions above 3,000 feet AGL are exempted as *de minimis* under USEPA's final rule 40 CFR 93.153. Therefore, the General Conformity Rule Determination procedures are not required, resulting in this RONA.

W-570: Existing emissions and emission concentrations from generated from military flights within the airspace.			
Pollutant	lbs/year	tpy	Exsisting concentration of pollutant (µg/m3)
CO	24599.68	12.30	0.047115124
VOC	2739.04	1.37	0.005246012
Nox	738145.44	369.07	1.413750673
SOx	27338.72	13.67	0.052361136
PM	9302.4	4.65	0.017816644
HAPs	1051.305568	0.53	0.002013538

W-570 & Eel MOAs: Proposed emissions and emission concentrations from generated from military flights within the airspace.			
Pollutant	lbs/year	tpy	Proposed concentration of pollutant (µg/m3)
CO	22848.00	11.42	0.040114454
VOC	2544.00	1.27	0.004466525
Nox	685584.00	342.79	1.20368645
SOx	25392.00	12.70	0.04458098
PM	8640.00	4.32	0.015169331
HAPs	1505.35	0.75	0.002642962

Eel W570	hours
Existing	900
Proposed	1200

Juniper & Hart: Existing emissions and emission concentrations from generated from military flights within the airspace.			
Pollutant	lbs/year	tpy	Exsisting concentration of pollutant (µg/m3)
CO	45258.08	22.63	0.179021844
VOC	5039.24	2.52	0.019933104
Nox	1358027.64	679.01	5.371783609
SOx	50297.32	25.15	0.198954948
PM	17114.4	8.56	0.067697336
HAPs	3046.507776	1.52	0.012050698

Juniper & Hart: Proposed emissions and emission concentrations from generated from military flights within the airspace.			
Pollutant	lbs/year	tpy	Proposed concentration of pollutant (µg/m3)
CO	34443.36	17.22	0.107495148
VOC	3835.08	1.92	0.011968998
Nox	1033517.88	516.76	3.225531918
SOx	38278.44	19.14	0.119464145
PM	13024.8	6.51	0.040649426
HAPs	2585.137608	1.29	0.008068021

Juni/Hart	hours
Existing	2377
Proposed	1809

Redhawk: Existing emissions and emission concentrations from generated from military flights within the airspace.			
Pollutant	lbs/year	tpy	Exsisting concentration of pollutant (µg/m3)
CO	0	0	0
VOC	0	0	0
Nox	0	0	0
SOx	0	0	0
PM	0	0	0
HAPs	0	0	0

Redhawk: Proposed emissions and emission concentrations from generated from military flights within the airspace.			
Pollutant	lbs/year	tpy	Proposed concentration of pollutant (µg/m3)
CO	6987.68	3.49	0.015795117
VOC	778.04	0.39	0.0017587
Nox	209674.44	104.84	0.473953058
SOx	7765.72	3.88	0.017553817
PM	2642.40	1.32	0.005972943
HAPs	406.85	0.20	0.000919658

Redhawk	hours
Existing	0
Proposed	367

Existing	3277
Proposed	3376

Existing

Installation	Airspace Clusters	Time in Airspace Clusters (hr/yr)	Total
142	W-570	900	1976
	Juniper and Hart	1076	
	Redhawk	0	
173	Juniper and Hart	1301	1301

Proposed

Installation	Airspace Clusters	Time in Airspace Clusters (hr/yr)	Total
142	W-570 and Eel MOAs	1200	2076
	Juniper and Hart	509	
	Redhawk	367	
173	Juniper and Hart	1300	1300

		142	**173**
Class A	1.88	**0.058148**	**0.0457592**
hours	100000	3093	2434
Class B	4.97	**0.153722**	**0.1209698**
hours	100000	3093	2434

Airspace	Change in GHG Emissions (proposed - existing) (tons/yr)
W-570 and Bass/Bass South ATCAA	4727
Eel ATCAA	5699
Juniper/Hart MOA Complex	-10595
Total change in GHG Emissions	-168

Engine Type	Power Setting	Fuel Flow Rate (lb/hr)	Emission Factor (lb/1000lb fuel)
F100-PW-220	Military	9679	3252.46
F100-PW-229	Military	11490	3252.46

	Existing		Proposed Action		Difference
Airspace	Annual Usage	GHG Emissions (tons/yr)	Annual Usage	GHG Emissions (tons/yr)	(proposed - existing) tons/yr
W-570	900 hrs	16817	900 hrs	16817	0
(surface to FL 500)	1,800 ops		1,800 ops		
Bass ATCAA	42 hrs	785	100 hrs	1869	1084
(FL 180 to FL 500)	250 ops		600 ops		
Bass South ATCAA	17 hrs	318	142 hrs	2653	2336
(FL 180 to FL 270)	100 ops		700 ops		
W-570 C	N/A		70 hrs	1308	1308
(11,000 MSL to FL 500)			550 ops		

Total difference (Proposed - Existing) 4727

Assumed all engines types are F100-PW-229

Emission Factor and fuel usage rate from "Air Emissions Guide for Air Force Mobile Sources", August 2012

Engine Type	Power Setting	Fuel Flow Rate (lb/hr)	Emission Factor (lb/1000lb fuel)
F100-PW-220	Military	9679	3252.46
F100-PW-229	Military	11490	3252.46

	Existing		Proposed Action		Difference
Airspace	Annual Usage	GHG Emissions (tons/yr)	Annual Usage	GHG Emissions (tons/yr)	(proposed - existing) tons/yr
Eel MOA A	N/A	0	60 hrs	1121	1121
(11,000 MSL to FL 180)		0	180 ops		
Eel MOA B		0	90 hrs	1682	1682
(11,000 MSL to FL 180)		0	270 ops		
Eel MOA C		0	90 hrs	1682	1682
(11,000 MSL to FL 180)		0	270 ops		
Eel MOA D		0	60 hrs	1121	1121
(11,000 MSL to FL 180)		0	180 ops		
Eel ATCAA A	333 hrs	6222	60 hrs	1121	-5101
(FL 180 to FL 270)	4,000 ops		720 ops		
Eel ATCAA B		0	90 hrs	1682	1682
(FL 180 to FL 270)			1,080 ops		
Eel ATCAA C		0	90 hrs	1682	1682
(FL 180 to FL 270)			1,080 ops		
Eel ATCAA D		0	60 hrs	1121	1121
(FL 180 to FL 270)			720 ops		
Eel High ATCAA A	N/A	0	7.6 hrs	142	142
(FL 270 to FL 500)			90 ops		
Eel High ATCAA B		0	11.4 hrs	213	213
(FL 270 to FL 500)			135 ops		
Eel High ATCAA C		0	11.4 hrs	213	213
(FL 270 to FL 500)			135 ops		
Eel High ATCAA D		0	7.6 hrs	142	142
(FL 270 to FL 500)			90 ops		

Total difference (Proposed - Existing) 5699

Assumed all engines types are F100-PW-229

Emission Factor and fuel usage rate from "Air Emissions Guide for Air Force Mobile Sources", August 2012

Engine Type	Power Setting	Fuel Flow Rate (lb/hr)	Emission Factor (lb/1000lb fuel)
F100-PW-220	Military	9679	3252.46
F100-PW-229	Military	11490	3252.46

	Baseline		Proposed Action		Difference
Airspace	Annual Usage	GHG Emissions (tons/yr)	Annual Usage	GHG Emissions (tons/yr)	(proposed - existing) tons/yr
Juniper Low MOA	243 hrs	4541	204 hrs	3812	-729
(300 AGL to 11,000 MSL)	1,260 ops		1,200 ops		
Juniper North MOA	286 hrs	5344	188 hrs	3513	-1831
(11,000 MSL to FL 180)	1,119 ops		919 ops		
Juniper South MOA	1,278 hrs	23880	624 hrs	11660	-12220
(11,000 MSL to FL 180)	4,755 ops		3,755 ops		
Hart North MOA	205 hrs	3831	188 hrs	3513	-318
(11,000 MSL to FL 180)	2,811 ops		2,711 ops		
Hart South MOA	365 hrs	6820	281.5 hrs	5260	-1560
(11,000 MSL to FL 180)	2,040 ops		1,990 ops		
Juniper East Low MOA	--		45 hrs	841	841
(500 AGL to			485 ops		
11,000 MSL)					
Juniper C MOA	--		56 hrs	1046	1046
(11,000 MSL to			1,199 ops		
FL 180)					
Juniper D MOA	--		59 hrs	1102	1102
(11,000 MSL to			1,171 ops		
FL 180)					
Hart ATCAA F	--		58.5 hrs	1093	1093
(FL 180 to			1,125 ops		
FL 280)					
Hart ATCAA F	--		56 hrs	1046	1046
(FL 180 to			1,095 ops		
FL 280)					
Hart ATCAA F	--		32 hrs	598	598
(FL 180 to			708 ops		
FL 280)					
Hart ATCAA F	--		18 hrs	336	336
(FL 180 to			708 ops		
FL 280)					
Juniper ATCAA	1,000 hrs	18685	1,000 hrs	18685	0
(FL 180 to	4,500 ops		4,500 ops		
FL 510**)**					
Hart ATCAA	367 hrs	6858	330 hrs	6166	-691
(FL 180 to	2,000 ops		1,800 ops		
FL 510					
Hart ATCAA F	--		37 hrs	691	691
(FL 180 to			200 ops		
FL 280)					
			Total difference (Proposed - Existing)		-10595

Assumed all engines types are F100-PW-229

Emission Factor and fuel usage rate from "Air Emissions Guide for Air Force Mobile Sources", August 2012

APPENDIX G

LAND USE AND LAND MANAGEMENT

Appendix G
Land Use

Introduction

The Proposed Action area, which includes the footprint of the existing and proposed airspace, encompasses large areas of the State of Oregon as well as small areas above the State of Washington and Nevada. Land use types and visual resources below the existing and proposed airspace are varied and included urbanized regions, rural farmland and timberlands, and remote and virtually unaltered open spaces that provide recreational opportunities and wildlife protection. Due to the large footprint of the Proposed Action area the Environmental Impact Statement (EIS) describes land use and visual resources at a regional overview level. This appendix provides additional information regarding specific land uses beneath the Proposed Action areas – including a description of county-level socioeconomic demographics as well as identification of state parks, national forests, national parks, national wildlife refuges, wild and scenic rivers, and tribal lands as well as other local, state, and federal land use types. This appendix also describes National Historic Trails, Wilderness Study Areas, and Lands with Wilderness Characteristics located beneath the existing and proposed airspace. Further, this appendix provides additional information regarding planning entities and regulations applicable to land uses and visual resources below the Proposed Action area.

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APPENDIX G
LAND USE AND LAND MANAGEMENT

The following provides a detailed description of available land use and land management information for public and private lands beneath the affected and proposed airspaces.

Land use and management decisions occur at the local level within county and city governments, state level for State Parks and State Forests, and at the federal level for National Forests, National Parks, National Wildlife Refuges (NWRs), Wilderness Areas, Wilderness Study Areas (WSAs), Lands with Wilderness Characteristics (LWCs) Wild and Scenic Rivers, National Historic Trail, Areas of Critical Environmental Concern (ACEC), Marine Protected Areas (MPAs), and Research Natural Areas (RNAs).

- *National Forests* are federal lands administered by the U.S. Department of Agriculture – Forest Service (USFS) that largely consist of forested and woodland areas that are used both for recreation and natural resources extraction.

- *National Wildlife Refuge* is a designation for protected areas managed by the U.S. Fish and Wildlife Service (USFWS) for the conservation of sensitive or unique populations of fish, wildlife, and vegetation.

- *Wilderness Areas* were established under the Wilderness Act, which created the National Wilderness Preservation System and recognized wilderness as "an area where the earth and its community of life are untrammeled by man, where man himself is a visitor who does not remain." Designated wilderness is the highest level of conservation protection for federal lands. Only Congress may designate wilderness or change the status of wilderness areas. Wilderness areas are designated within existing federal public land. Congress has directed four federal land management agencies—USFS, Bureau of Land Management (BLM), USFWS, and National Park Service (NPS)—to manage wilderness areas so as to preserve and, where possible, to restore their wilderness character.

- *Wilderness Study Areas* contain undeveloped U.S. federal land retaining its primeval character and influence, without permanent improvements or human habitation, and managed to preserve its natural conditions.

- *Lands with Wilderness Characteristics* can generally be defined as unroaded BLM public land areas greater than 5,000 acres in size that have maintained their primitive character and are primarily undeveloped

- *Wild and Scenic Rivers* are designated protected rivers or river segments under the National Wild and Scenic Rivers Act. A river or river segment may be designated for protection as a wild and scenic river by the U.S. Congress or the Secretary of the Interior.

- *National Historic Trails* are a network of scenic, historic, and recreation trails created by the National Trails System Act of 1968. These trails provide for outdoor recreation needs, promote the enjoyment, appreciation, and preservation of open-air, outdoor areas and historic resources, and encourage public access and citizen involvement.

- *Areas of Critical Environmental Concern* are public lands managed by the BLM that require special management in order to protect the area's resource values. The resources may be wildlife habitat, special viewsheds, or, areas of cultural or historical importance. The ACEC may also require special management due to hazards.

- *Marine Protected Areas* are designated ocean areas that are set aside by state or national authority for a variety of conservation and management methods. Protected areas may be established to protect ecosystems, preserve cultural resources, aid in marine or coastal research, or sustain fisheries production (National Oceanic and Atmospheric Association [NOAA] 2013).

- *Research Natural Areas* are reserved areas, which contain important ecological and scientific values and are managed for minimum human disturbance. The goals of RNAs are to preserve examples of all significant natural ecosystems for comparison with those influenced by man; to

provide educational and research areas for ecological and environmental studies; and to preserve gene pools of typical and endangered plants and animals (BLM 2007a).

Additionally, affected and proposed airspace occurs over areas of tribal lands, where local land use decisions regarding management and allowable activities are made and enforced by tribal governments. This section provides an overview of the land use and management beneath the proposed areas of airspace modification.

REGIONAL SETTING

The majority of proposed airspace actions are located within the State of Oregon. However, the proposed expansion of the Juniper/Hart Military MOA Complex would include airspace over portions of Humboldt and Washoe counties in northwestern Nevada. Additionally, modifications to the Eel ATCAA would include airspace over a small portion of Pacific County in Washington and modification to W-570 and the Bass/Bass South ATCAAs would occur over the Pacific Ocean. Land uses below the airspace are varied and include urbanized regions (e.g., Astoria, Condon, Frenchglen, etc.), rural farmland and timberlands, and remote and virtually unaltered open spaces that provide recreational opportunities and wildlife protection. The Great Basin Desert occupies the southeastern third of Oregon, with the predominant land use consisting of farmland and National Forest lands. The western half of the state is predominately forestland, with land uses consisting primarily of private timberlands, National Forest, and pockets of urban areas.

NATIONAL HISTORIC TRAILS

The National Trails System is the network of scenic, historic, and recreational trails created by the National Trails System Act of 1968. These trails provide for outdoor recreation needs, promote the enjoyment, appreciation, and preservation of open-air, outdoor areas and historic resources, and encourage public access and citizen involvement.

National Historic Trails are designated to protect the remains of significant overland or water routes to reflect the history of the nation. Most of these trails are scenic highway routes and are not specifically established or maintained as hiking trails, though they may provide opportunities for hiking and other outdoor activities along their routes.

The proposed and affected airspace included in the Proposed Action overlies or is in close proximity to a number of segments of the California Historic Trail, Oregon Historic Trail, and the Lewis and Clark Historic Trail.

California Historic Trail

The California Historic Trail was an emigrant trail spanning approximately 2,000 miles across the western half of North American from the Missouri River to the State of California. After it was established, the first half of the California Trail followed the same corridor of networked river valley trails as the Oregon Trail and the Mormon Trail, namely the valleys of the Platte, North Platte, and Sweetwater Rivers to Wyoming. In the States of Wyoming, Idaho, and Utah the California and Oregon trails split into several different trails or cutoffs. Once in western Nevada and eastern California, the pioneers worked out several paths over the rugged Carson Range and Sierra Nevada mountains into the gold fields, settlements, and cities of Northern California. The main routes initially (1846–1848) being the Truckee Trail to the Sacramento Valley and after about 1849 the Carson Trail route to the American River and the Placerville, California gold digging region.

Oregon National Historic Trail

The Oregon Trail is an approximately 2,200-mile historic east–west large-wheeled wagon route and emigrant trail that connected the Missouri River to valleys in Oregon. The eastern part of the Oregon Trail spanned part of the State of Kansas and nearly all of the States of Nebraska and Wyoming. The western half of the trail spanned most of the States of Idaho and Oregon.

The Oregon Trail was laid by fur trappers and traders from about 1811 to 1840 and was only passable on foot or by horseback. By 1836, when the first migrant wagon

train was organized in Independence, Missouri, a wagon trail had been cleared to Fort Hall, Idaho. Wagon trails were cleared further and further west, eventually reaching all the way to the Willamette Valley in Oregon. What came to be called the Oregon Trail was complete, even as improved roads, cutoffs, ferries and bridges made the trip faster and safer almost every year. From various starting points in Missouri, Iowa or Nebraska Territory, the routes converged along the lower Platte River Valley near Fort Kearny, Nebraska Territory and led to rich farmlands west of the Rocky Mountains.

From the early to mid-1830s the Oregon Trail and its many offshoots were used by about 400,000 settlers, ranchers, farmers, miners, and businessmen and their families. The eastern half of the trail was also used by travelers on the California Trail before turning off to their separate destination. Use of the trail declined as the first transcontinental railroad was completed in 1869, making the trip west substantially faster, cheaper, and safer. Today, modern highways such as Interstate 80 and Interstate 84 follow parts of the same course westward and pass through towns originally established to serve those using the Oregon Trail.

National Park Service Feasibility Study

The NPS is preparing a feasibility study to evaluate some 64 routes for possible additions to the Oregon and California National Historic Trails, among others. This study was authorized by Congress — in response to years of sustained public interest— under the Omnibus Public Land Management Act of 2009.

The 10 Oregon Trail study routes listed in the Act are:

- Naches Pass Trail in Washington
- Cowlitz River Route in Washington
- Whitman Mission Route in Oregon and Washington
- Upper Columbia River Route in Oregon and Washington
- Meek Cutoff in Oregon

- Free Emigrant Road in Oregon
- Cutoff to Barlow Road in Oregon
- North Alternate Oregon Trail in Idaho
- Goodale's Cutoff in Idaho
- North Side Alternate in Idaho

Also listed in the Act are seven routes that are already designated segments of the California National Historic Trail. This study will determine whether they should be designated as Oregon National Historic Trail as well. They are:

- St. Joe Road in Missouri and Kansas
- Council Bluffs Road in Iowa and Nebraska
- Old Fort Kearny Road (Oxbow Trail) in Nebraska
- Raft River to Applegate in Idaho, Utah and Nevada
- Sublette Cutoff in Wyoming
- Applegate Route in Nevada, California, and Oregon
- Childs Cutoff in Wyoming

Lewis and Clark Historic Trail

The Lewis and Clark National Historic Trail is a route across the U.S. commemorating the Lewis and Clark Expedition of 1804 to 1806. It is part of the National Trails System of the U.S., extending for approximately 3,700 miles from Wood River, Illinois, to the mouth of the Columbia River in Oregon.

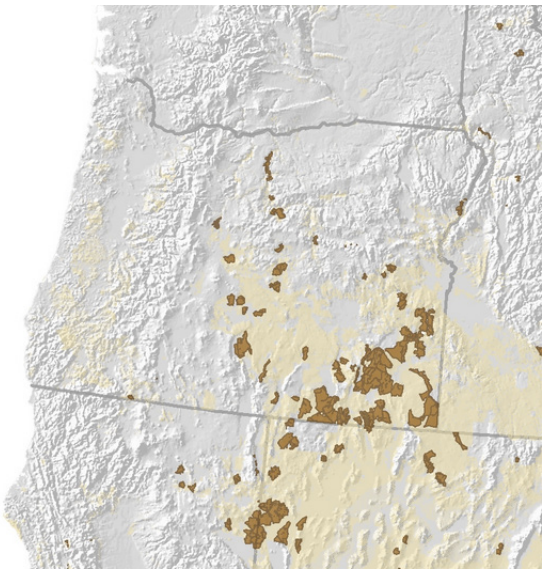
The trail is administered by the NPS, but sites along the trail are managed by federal land management agencies, state, local, tribal, and private organizations. The trail is not a hiking trail, but provides opportunities for hiking, boating and horseback riding at many locations along the route. The trail is the second longest

of the 23 National Scenic and National Historic Trails. Beginning at the Camp Dubois recreation in Illinois, it passes through portions of Missouri, Kansas, Iowa, Nebraska, South Dakota, North Dakota, Montana, Idaho, Oregon, and Washington.

WILDERNESS STUDY AREAS

The BLM manages 517 WSAs containing approximately 12.6 million acres located in the Western States and Alaska. The Federal Land Policy and Management Act of 1976 (FLPMA) directed the BLM to inventory and study its roadless areas for wilderness characteristics. To be designated as a WSA, an area must have the following characteristics:

- Size – Roadless areas of at least 5,000 acres of public lands or of a manageable size;
- Naturalness – Generally appears to have been affected primarily by the forces of nature; and
- Opportunities – Provides outstanding opportunities for solitude or primitive and unconfined types of recreation.



There are 89 WSAs in Oregon covering approximately 2.7 million acres in Central and Eastern Oregon.

In addition, WSA often have special qualities such as ecological, geological, educational, historical, scientific and scenic values. The congressionally directed inventory and study of BLM's roadless areas received extensive public input and participation. By November 1980, the BLM had completed field inventories and designated about 25 million acres of WSAs. Since 1980, Congress has reviewed some of these areas and has designated some as wilderness and released others for non-wilderness uses. Until Congress makes a final

determination on a WSA, the BLM manages these areas to preserve their suitability for designation as wilderness.

There are 89 WSAs in Oregon covering approximately 2.7 million acres. There are no WSAs underlying the proposed Eel MOA Complex; however, a number of WSAs occur beneath the proposed Redhawk MOA Complex, including the Redhawk A MOA and Redhawk C MOA. WSAs also occur beneath the proposed the Juniper/Hart MOA Complex, including beneath the proposed Juniper East Low MOA; however, no WSAs occur beneath the Juniper C MOA or the Hart F MOA.

LANDS WITH WILDERNESS CHARACTERISTICS

The BLM is required to maintain inventories of LWCs. LWCs provide a range of uses and benefits in addition to their value as settings for solitude or primitive and unconfined recreation. Section 201 of the FLPMA requires the BLM to maintain an inventory of all public lands and their resources and other values, including wilderness characteristics. It also provides that the preparation and maintenance of the inventory shall not, of itself, change or prevent change of the management or use of public lands. The BLM conducts the inventory process using the criteria from Section 2(c) of the Wilderness Act to determine the presence of wilderness characteristics, such as:

- Size – The roadless area has at least 5,000 acres of contiguous public lands (or is of sufficient size to make practicable the preservation and use in an unimpaired condition);

- Naturalness – The area generally appears to have been affected primarily by the forces of nature, with any human imprints being substantially unnoticeable;

- Outstanding opportunities – The area provides outstanding opportunities for solitude or a primitive and unconfined type of recreation; and

- Supplemental values – The area may also contain ecological, geological, or other features of scientific, educational, scenic or historical value.

In 2013, the BLM completed its Lands with Wilderness Characteristics Inventory (LWCI) updates for western Oregon:

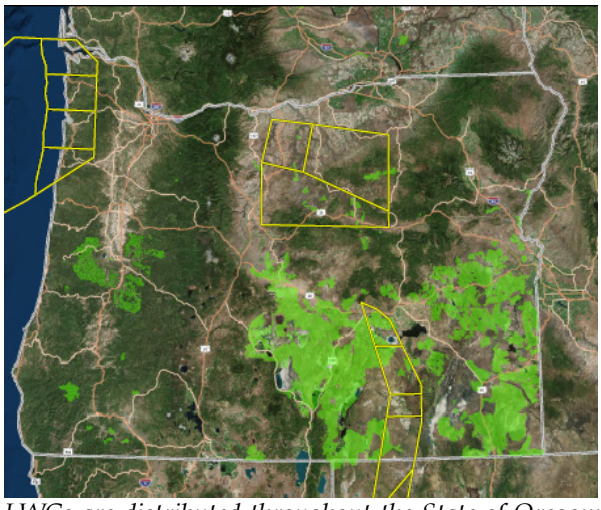
- No areas were found to meet the minimum criteria for having wilderness characteristics on the Eugene District, Klamath Falls Resource Area of the Lakeview District, or Roseburg District

- The Coos Bay District inventory found one area that possesses wilderness characteristics totaling 3,048 acres.

- The Medford District inventory found seven areas that possess wilderness characteristics totaling 85,254 acres, including Berry Creek, Burton Nine Mile, Dakubetede, Round Top Mountain, Wellington, Whiskey Creek, and Wild Rouge. The remaining areas examined in detail were found to lack wilderness characteristics for a variety of reasons.

- The Salem District inventory found four areas, including a total of nine subunits, that possess wilderness characteristics, resulting in a total of 2,624 acres including Table Rock, Opal Creek Evans Mountain, Opal Creek Nasty Rock, and South Fork Clackamas. All areas rely on adjacent BLM wilderness or other federal lands with wilderness characteristics to meet the size criterion.

Inventory updates are also underway in the Vale District for the Malheur and Jordan Resource Areas as well as the Baker Resource Area. A complete list of LWCs in Oregon can be found in Wilderness Review Intensive Inventory (1980) prepared by the BLM. No LWCs occur beneath the existing Eel ATCAA. LWCs are sparsely distributed beneath the proposed Redhawk MOA Complex, and densely distributed beneath the



LWCs are distributed throughout the State of Oregon; however, the majority occur in the southeastern region of the state.

existing and proposed areas of the Juniper/Hart MOA Complex, including the proposed Juniper East Low MOA.

EEL ATCAA AND W-570 AIRSPACE

Local Land Use Management

The Eel ATCAA is located over portions of Clatsop, Tillamook, Yamhill, Polk, and Lincoln counties in coastal Oregon as well as a small inclusion over Pacific County in Washington. The W-570 airspace is located entirely offshore over the Pacific Ocean. Northwestern Oregon and southwestern Washington are predominately characterized by forestland, which extends from the rocky coastline into coastal foothills and the mountainous Coast Range. Land uses in this region consist primarily of private timberlands, federal and state-owned lands, and pockets of urban areas. Private land use and management underlying the Eel ATCAA are predominantly governed at the local level by county and city governments. However, state agencies also manage substantial areas underlying the airspace, including 38 State Parks and two State Forests. Federally managed lands underlying the existing and proposed airspace include one National Forest, five NWRs, Areas of Critical Environmental Concern (ACEC) and one National Historic Park. No Wild and Scenic Rivers occur within these areas.

Local Land Use and Management

Under the Proposed Action Eel MOA A-D would be established beneath the existing Eel ATCAA over coastal Oregon above the counties of Clatsop, Tillamook, Yamhill, Polk, and Lincoln in Oregon, and Pacific County in Washington. These counties are predominantly rural, containing a few pockets of urban areas and numerous unincorporated communities. Incorporated cities tend to control local land use decisions; whereas land use in and around unincorporated communities are often made at the county government level. Population density and incorporated and unincorporated areas are provided in Table G-1.

Table G-1. Population and Urban Areas beneath Eel ATCAA and W-570

Location	Area Square Miles	Population per Square Mile	Incorporated Cities	Unincorporated Communities
Clatsop Co., OR	1,085	41	5	35
Tillamook Co., OR	1,333	23	7	33
Yamhill Co., OR	718	139	10	24
Polk Co., OR	741	102	17	24
Lincoln Co., OR	1,194	47	7	27
Pacific Co., WA	1,224	22	10	14

Source: U.S. Census Bureau 2010.

Clatsop County

Clatsop County encompasses 1,085 square miles, including 180 square miles of Pacific Ocean and freshwater. The population of Clatsop County is 37,039 people (U.S. Census Bureau 2010). The population density is approximately 41 people per square mile, with most urban development located along the coast.[1] Inland areas are primarily rural and densely forested. The county contains five incorporated cities (Astoria, Cannon Beach, Gearhart, Seaside, and Warrenton) and 35 unincorporated communities.

The confluence of the Columbia River with the Pacific Ocean supports a world-renowned fishery that enables a healthy local marine services industry that includes worldwide shipping, boat construction, repair and maintenance. Just inland, dense temperate rain forest environments provide important habitat and recreational opportunities as well as resource extraction (i.e., logging). Logging occurs in areas that are set back from water features and provides substantial employment. The natural beauty and natural resources drive tourism, recreation, and resource-based industries, which are primary economic drivers in the county.

Land ownership in the county is primarily private; however, substantial areas of publicly owned lands also occur. In particular, Clatsop (154,000 acres) and

[1] As a point of reference, the population densities for the cities of Portland and Salem are approximately 4,376 persons per square mile and 3,229 persons per square mile, respectively (U.S. Census Bureau 2010).

Tillamook State Forests (364,000 acres) comprise a substantial portion of the eastern and southern part of the county, respectively.

Tillamook County

Tillamook County is a coastal county that encompasses 1,333 square miles, including 231 square miles of Pacific Ocean and freshwater. The population of Tillamook County is 25,250 (U.S. Census Bureau 2010). The population density is approximately 23 people per square mile, with the majority of urban development located along the coast. Similar to Clatsop County, inland areas are primarily rural and densely forested. The county contains seven incorporated cities (Bay City, Garibaldi, Manzanita, Nehalem, Rockaway Beach, Tillamook, and Wheeler) and 33 unincorporated communities.

Urban development is concentrated near Tillamook Bay in the City of Tillamook in the northern part of the county as well as in Pacific City in the southern part of the county. Primary industries that drive land use include agriculture, timber harvest, tourism, and fishing. Dairy farming is a major industry in the county, along with timber harvest. Approximately 44 percent of the county is under state ownership, primarily within Tillamook State Forest.

Yamhill County

Yamhill County encompasses 718 square miles including 2.8 square miles of freshwater located the Willamette Valley region. The population of Yamhill County is 99,193 (U.S. Census Bureau 2010). The population density is approximately 139 people per square mile. The county contains ten incorporated cities and 24 unincorporated communities.

The major industries of the county are agriculture, forest products, manufacturing, and education. Timber is Yamhill County's number one basic export, with approximately one third of the county consisting of state and privately owned commercial timber holdings (Yamhill County 1996). Substantial agricultural operations also occur, including wheat, barley, horticulture, and dairy farming. Additionally, Yamhill County contains substantial grape wine cultivation, with over 80 wineries and 200 vineyards located within the county. Urban development

is greater in the eastern half of the county in McMinnville, Carlton, Newberg, and Sheridan in the southern part of the county. Forest dominates the western half of the county.

Land area affiliated with the Confederate Tribes of Grand Ronde Community is located in the southwestern part of the county.

Polk County

Polk County encompasses approximately 741 square miles located the Willamette Valley region. The population of Polk County is 76,353 (U.S. Census Bureau 2010). The population density is approximately 102 people per square mile. The county contains 17 incorporated cities and 24 unincorporated communities.

Land area affiliated with the Confederate Tribes of Grand Ronde Community is located in the northwestern part of the county.

Lincoln County

Lincoln County is a coastal county that encompasses 1,194 square miles, including 214 square miles of Pacific Ocean and freshwater. The population of Lincoln County is 46,034 (U.S. Census Bureau 2010). The population density is approximately 47 people per square mile. The county contains seven incorporated cities and 27 unincorporated communities. Urban development is concentrated along the coast in Lincoln County. Major cities include Lincoln City, Newport, and Toledo. Inland areas of Lincoln County are forested.

Land area affiliated with the Confederated Tribes of the Siletz Indians is located in the northeastern part of the county.

Pacific County

Pacific County is the southernmost coastal county in Washington and encompasses 1,224 square miles, including 291 square miles of Pacific Ocean and freshwater. The population of Pacific County is 20,930 (U.S. Census Bureau 2010). The population density is approximately 22 people per square mile. The county

contains ten incorporated cities and 14 unincorporated communities. Urban development in Pacific County, Washington is concentrated on the Long Beach Peninsula and along the Willapa River. Inland Pacific County is forested and logging is a prominent land use.

The Shoalwater Bay Tribe has land located on the north shore of Willapa Bay, to the north of the proposed Eel MOA/ATCAA Complex.

State Land Use and Management

Areas managed by the State of Oregon include state forests and state parks. State and federally owned and managed areas are multi-use, with recreation often a primary component of land use management.

State Forests

State forest lands comprise a significant percentage of public forest lands in northwest Oregon and provide important timberlands as well as a wide variety of recreational opportunities for local residents and visitors. The *Northwest Oregon State Forests Management Plan* provides management direction for over 615,000 acres of state forest land, located in twelve northwest Oregon counties (Oregon Department of Forestry 2010). State forests that occur beneath the Eel airspace include portions of the Clatsop and Tillamook State Forests. The majority of state forest lands in northwestern Oregon are owned and managed by the Board of Forestry and managed in accordance with the *Northwestern Oregon State Forests Management Plan*. This plan takes a comprehensive, multi-resource approach to forest management and includes a description of each forest resource, and information about current management programs for these resources. The resource management goals and strategies are intended to achieve a proper land use balance among the resources and achieve the greatest permanent value through a system of integrated management (Oregon Department of Forestry 2010).

Recreational use of the state forest lands primarily occur dispersed along roads, rivers, and streams. Recreational activities include hunting, target shooting, fishing, dispersed or campground camping, and off-highway vehicle use. Other

uses are hiking, horseback riding, mountain biking, and scenic viewing (at viewpoints). Hunting use is concentrated in the fall deer and elk seasons, beginning with the opening of bow season in late August (Oregon Department of Forestry 2010).

Tillamook State Forest is comprised of approximately 364,000 acres of forest land. Prior to 1933 the land within Tillamook State Forest was almost entirely privately owned. After a series of severe wildfires in the 1930s, known as the Tillamook Burn, many landowners allowed the forestlands to be foreclosed by the counties rather than pay taxes. Counties began to deed land in the Tillamook Burn to the Board of Forestry in 1940, and about 255,000 acres eventually came under state ownership.[2] In June 1973, the former Tillamook Burn was dedicated as the new Tillamook State Forest. The 364,000 acre forest includes 255,000 acres from the Tillamook Burn, and other unburned forest land. Tillamook State Forest contains an extensive trail network that provides recreational opportunities for hiking, horseback riding, mountain bike riding, and OHV use. There are ten designated campgrounds in the forest.

Clatsop State Forest is 98 percent controlled by Board of Forestry Lands with the remaining two (2) percent of the Clatsop State Forest is Common School Fund Land. These lands were privately owned, logged between 1910 and 1940, and then became tax-delinquent. Clatsop and Columbia Counties foreclosed when landowners could not pay their taxes, and ownership reverted to the county. Many landowners filed for bankruptcy and lost their land during the Great Depression. Eventually, the counties deeded these cutover and unmanaged forest lands to the Board of Forestry to manage as a state forest. According to the agreement, the Department of Forestry would replant the lands, protect them from fire, and manage the new forest. Then, as timber was harvested, the counties would receive two-thirds of the net revenue.

State Parks

Oregon State Parks are managed and maintained by the Oregon Parks and Recreation Department. Management is focused on providing for multiple uses

[2] Most of the remaining 100,000 acres is owned by private timber companies and BLM.

including recreation, education, and conservation. The mission of the Parks and Recreation Department is to provide and protect outstanding natural, scenic, cultural, historic and recreational sites for the enjoyment and education of present and future generations. State Parks are governed primarily by regulations and policies contained within the individual State Park plans (i.e., *Tillamook County Coastal State Parks Master Plan*). There are 72 State Parks located below the Eel airspace, which are listed below:

- Fort Stevens SP
- Del Rey Beach SP
- Arcadia Beach SP
- Ecola SP
- Tolovana Beach SP
- Gleneden Beach SP
- Boiler Bay SP
- Cape Kiwanda SP
- Fogarty Creek SP
- Bradley SP
- Saddle Mountain SP
- Nehalem Bay SP
- Vermonia SP
- Lewis and Clark Historical SP
- Rocky Creek SP
- Twin Rocks SP
- Elmer Feldenheimer SP
- Otter Crest SP
- Hug Point SP
- Devil's Punchbowl SP
- Oswald West SP
- Bald Peak SP
- Cape Lookout SP
- Beverly Beach SP
- Erratic Rock SP
- Robert Straub SP
- Agate Beach SP
- Champoeg SP
- Manhattan Beach SP
- Yaquina Bay SP
- Roads End SP
- Maud Williamson SP
- South Beach SP
- Ona Beach SP
- Neskowin Beach SP
- Lost Creek SP
- Beachside SP
- Governor Patterson Memorial SP
- Driftwood Beach SP
- Smelt Sands SP
- Yachats Ocean Road SP
- Cape Meares SP
- Ellmaker SP
- William B. Nelson Devil's Lake SP
- Tillicum Beach SP
- Seal Rock SP
- Oceanside Beach SP
- Grayland Beach SP
- Yachats SP
- Neahkahnie-Manzanita SP
- Haystack Hill SP
- Pacific Pines SP

- H.B. Van Duzer Forest SP
- Cougar Valley SP
- Roads End SP
- Leadbetter Point SP
- Gleneden Beach SP
- Fishing Rock SP
- Depoe Bay Whale Watch Center SP
- Sunset Beach SP
- D River SP
- Oceanside Beach SP
- Gearhart Ocean SP
- Symons SP
- Rockaway Beach SP
- Sunset Highway SP
- Sand Lake SP
- Clay Myers SP
- Munson Creek SP
- Devil's Lake SP
- Cape Disappointment SP
- Fort Columbia SP

Federal Land Use and Management

Federal lands below the existing and proposed airspace modifications include lands managed by the USFS, the USFWS, the National Park Service, the BLM, and the National Marine Fisheries Service (NMFS), as discussed below.

National Forests

The USFS manages lands for multiple use and sustained yields of various products and services, for example, timber harvesting, recreation, grazing, watershed protection, and fish and wildlife habitats. Most of USFS lands are designated national forests, but there are also national grasslands and other lands. Portions of one national forest occur beneath the Eel MOA.

Siuslaw National Forest extends along the Central Oregon coast and east into the Coast Range Mountains. The forest encompasses approximately 630,000 acres, of which the Eel airspace overlies the northern-most portion of the forest. Special management areas within the forest include the Sand Lake Recreation Area, Cascade Head Scenic Research Area, Mary's Peak Scenic Botanical Area, Cape Perpetua Scenic Area, Oregon Dunes National Recreation Area, Drift Creek Wilderness, Cummins Creek Wilderness, and Rock Creek Wilderness. The only special management areas beneath the airspaces are Sand Lake Recreation Area and Cascade Head Research Natural Area. Recreation uses within the park include

hiking, whale watching, birding, horseback riding, dune buggy driving, swimming, camping, and fishing (USFS 2012).

- *Sand Lake Recreation Area* consists of 1,076 acres of open sand dunes surrounded by forest and the Pacific Ocean. Recreation options available within the recreation area include fishing, swimming crabbing and kayaking in the Sand lake Estuary; hiking, wildlife viewing and camping. Off-Highway Vehicle (OHV) riding is available on the dunes and is managed by county law enforcement and the USFS in compliance with permits and regulations set by the State of Oregon (USFS 2012).
- *Sand Lake Research Natural Area* consists of 220 acres of unstabilized dune grassland communities found along the Oregon Coast. It is managed by the USFS and is located in the northwest portion of the Siuslaw National Forest, just north of the Sand Lake Recreation Area. Purposes for the establishment of the area includes research on the long-term community succession following catastrophic fire within an undisturbed parabola dune system, and the protection of unstabilized dune grass and associated Sitka spruce and western hemlock forest (Pacific Northwest Interagency Natural Areas Network 2013).
- *Cascade Head Research Natural Area* includes an 11,890 acre experimental forest and a 9,670 acre scenic research area. The entire area is designated a Biosphere Reserve as part of the United Nations Biosphere Reserve system. It is managed jointly by the USFS and research partners. Research partners include The Nature Conservancy, state and private universities in Oregon and Washington, Oregon Department of Fish and Wildlife (ODFW), Oregon Department of Agriculture, National Aeronautics and Space Administration (NASA), USEPA, and NMFS. Listed endangered species found within the area include the northern spotted owl (*Strix occidentalis caurina*), marbled murrelet (*Brachyramphus marmoratus*), Coho salmon (*Oncorhynchus kisutch*), and Oregon silver spot butterfly (*Speyeria zerene hippolyta*) (Forest Science Lab 2013). Recreation available within the Natural Area is limited to hiking only. Overnight camping is not permitted (USFS 2012).
- *Neskowin Crest Research Natural Area* consists of a 1,190 acre area managed by the USFS and located in the northwestern corner of the Cascade Head Experimental Forest. It is managed in an undisturbed condition as much as possible where compatible with objectives of the Cascade Head Experimental Forest and the Cascade Head Scenic Research Area (USFS 1990). Neskowin Crest Research Natural Area is located within the boundaries of both the Cascade Head Research Natural Area and the Siuslaw National Forest.

- *Reneke Creek Research Natural Area* consists of 480 acres managed by the USFS. The most notable scientific feature of this RNA is an ecosystem dominated by red alder that is drained by two matched perennial streams. These streams are particularly useful for studying nutrient cycling in a deciduous forest (USFS 1990). Reneke Creek Research Natural Area is located within the boundaries of the Siuslaw National Forest, but outside of the Cascade Head Research Area.
- *High Peak – Moon Creek Research Natural Area* consists of a 1,526 acre tract of coniferous forest containing stands of 100- to 150-year-old Douglas-fir, a small, old-growth (500+) years Douglas-fir dominated stand, and riparian vegetation. It is managed by the BLM. Research within the Natural Area has focused on distribution, habitat, and population for various species, and studies focusing on old-growth stand characterizations and conditions for forest communities (USFS 2006). High Peak – Moon Creek Research Natural Area is within the boundaries of the Eel MOA, but outside the boundaries of the Cascade Head Research Natural Area and the Siuslaw National Forest.
- *Hebo and Little Hebo Experimental Research Areas* are plots within the Siuslaw National Forest that are part of a Long-term Ecosystem Productivity study taking place at various sites on the Olympic Peninsula, Oregon Cascades, Coastal Siskiyous, Oregon Coast Range, and the Washington Cascades. The experiment is led by the Forest Science Laboratory, which is managed under the USFS. The experiment seeks to evaluate the 200-year effects of plant assemblage and woody-debris changes on soil properties linked to productivity and on actual net primary productivity and diversity of these assemblages (Forest Science Lab 2000).
- *Saddle Bag Mountain Research Natural Area* is a 300-acre tract of land occupying the summit and western slopes of Saddle Bag Mountain managed by the BLM. A notable scientific feature of the RNA includes populations of Pacific silver fire and noble fire that have been isolated on and near Saddle Bag Mountain for hundreds of years representing genetically unique populations due to their long periods of isolation. Research in the RNA has focused on Old Growth communities, biological monitoring studies, and the establishment of four permanent vegetation plots to characterize and monitor change in forest composition and structure (USFS 2007). Saddle Bag Mountain Research Natural Area is within the boundaries of the Eel MOA, but outside the boundaries of the Cascade Head Research Natural Area and the Siuslaw National Forest.

National Parks

The National Park System is comprised of diverse units ranging from historical structures to cultural and natural areas. National Parks are managed for the protection of natural and cultural resources and for public recreation and sight-seeing. Portions of one National Park occur beneath the Eel airspace.

Lewis and Clark National Historical Parks is made up of 12 separate park sites located along an approximate 40-mile stretch of the Pacific Coast from Long Beach, Washington to Cannon Beach, Oregon. Parks include: Cape Disappointment State Park, Washington; Fort Columbia State Park, Washington; Fort Stevens State Park, Oregon; Ecola State Park, Oregon; and Sunset Beach State Park, Oregon. The parks commemorate the Lewis and Clark expedition and Native American cultures on the Pacific Coast by providing historical and cultural information, displays and interactive experiences (National Park Service 2006).

National Wildlife Refuges

The USFWS manages 95.4 million acres nationally, primarily to conserve and protect wildlife and plants. The 793 units of the NWR System include refuges, waterfowl production areas, and wildlife coordination units. Units can be created by an act of Congress or executive order, and the USFWS also may acquire lands for migratory bird purposes. Five NWRs occur beneath the Eel airspace.

Lewis and Clark NWR is located within Clatsop County beneath the northeastern boundary of Eel A and encompasses approximately 35,000 acres of tidelands and open water in the Columbia River estuary. Of the 35,000 acres, approximately 8,300 acres are made up of islands and sand bars. The refuge is managed by the USFWS and includes monitoring wildlife populations, improving island habitats, regulating waterfowl hunting, and coordinating with local, state, and other federal agencies relative to human activities in the estuary. Wildlife found in the refuge includes a variety of shorebirds, waterfowl, fish, and mammal species. Recreation and education opportunities available include fishing, hunting, and wildlife observation and photography (USFWS 2013).

Oregon Islands NWR is divided into a number of small units that include all rocks and islands off the shore of Oregon and above the mean high tide line. That equates to approximately 1,853 rocks, reefs and islands, two headland areas, and approximately 320 miles of the Oregon coast, underlying the Eel MOA/ATCAA Complex. Wildlife found in the refuge includes seabirds, seals, and sea lions. Recreation includes beach going, environmental education, photography, and wildlife observation. Boaters are requested to maintain a distance of 500 feet from all rocks and islands. Further, aircraft are requested to maintain 2,000 feet AGL from all rocks, reefs, and islands (USFWS 2013).

Cape Meares NWR is located within Tillamook County beneath Eel C and includes approximately 138 acres managed by the USFWS. The refuge encompasses old-growth forest dominated by Sitka spruce and western hemlock. Wildlife common to the refuge includes tufted puffins (*Fratercula cirrhata*), common murres (*Uria aalge*), bald eagles (*Haliaeetus leucocephalus*), sea lions, harbor seals (*Phoca vitulina*), and grey whales (*Eschrichtius robustus*). Recreation opportunities include guided tours of the historic lighthouse, wildlife observation, and photography (USFWS 2013).

Siletz Bay NWR is located within Lincoln County beneath Eel D and encompasses 513 acres of protected salt marsh, brackish marsh, tidal sloughs, mudflats, and coniferous and deciduous forestland. It provides nursery habitat for salmon, steelhead, and cutthroat trout (*Oncorhynchus* spp.). Wildlife found in the refuge includes a variety of waterfowl, raptors, amphibians, reptiles, and mammal species. Recreation opportunities include wildlife observation, photography, and interpretive paddle tours through Siletz Bay Refuge (USFWS 2013).

Nestucca Bay NWR is located within Tillamook County and underlies the boundary between Eel C and D encompassing approximately 888 acres of tidal marsh, tidal mudflats, grassland, woodland, pasture, forested lag, and freshwater bogs. A major purpose of the refuge is to provide wintering habitat for geese. The Nestucca Bay NWR supports about one tenth of the world's Dusky Canada Goose (*Branta canadensis occidentalis*) population. The refuge is closed to all public use, except on two occasions in February and October.

Three Arch Rocks is located within Tillamook County beneath Eel C and consists of 15 acres on three large and six small rocky islands located approximately 0.5 miles offshore. It is one of the smallest designated wilderness areas in the U.S., but features the largest colony of breeding tufted puffins (*Fratercula cirrhata*) and the largest common murre (*Uria aalge*) colony south of Alaska. It is the only northern Oregon pupping site for the threatened Steller sea lion (*Eumetopias jubatus*).

Areas of Critical Environmental Concern

The BLM manages 261.5 million acres nationally and has a multiple-use, sustained-yield mandate that supports a variety of uses and programs, including energy development, timber harvesting, recreation, grazing, wild horses and burros, cultural resources, and conservation. BLM managed lands beneath the existing Eel ATCAA include four Areas of Critical Environmental Concern (ACEC):

- *Elk Creek ACEC* is located within Tillamook County and underlies segment C of the Eel Airspace. Resources designated for special management include botanical, fish and wildlife, and natural process resources.
- *Nestucca River ACEC* is located within Tillamook County and underlies with eastern boundary of segment C of the Eel Airspace. Resources designated for special management include fish and wildlife, and scenic resources.
- *Lost Prairie ACEC* is located within Lincoln County and underlies with segment D of the Eel Airspace near the southeastern boundary of the segment. Resources designated for special management include botanical and natural process resources.

Wild and Scenic Rivers

There are no designated wild and scenic rivers within Clatsop, Tillamook, Yamhill, Lincoln, or Pacific counties.

National Historic Trails

The proposed Eel MOA/ATCAA is not located above either the California or the Oregon National Historic Trails nor any of the proposed routes included in the

NPS Feasibility Study. However, the proposed Eel A MOA is located over a small portion of the Lewis and Clark National Historic Trail along the Columbia River.

Tribal Lands

The Confederated Tribes of the Siletz Indians is located in the northeastern part of Lincoln County, but outside of the proposed Eel MOA/ATCAA. Land area affiliated with the Confederate Tribes of Grand Ronde Community is located in the northwestern region of Polk County and the southwestern portion of Yamhill County beneath the proposed Eel MOA/ATCAA. Additionally, the Shoalwater Bay Tribe has land located on the north shore of Willapa Bay. See Section 3.5, *Cultural Resources* for additional information regarding Native American tribes.

Marine Protected Areas

On-going activities off the coast of Oregon include commercial fishing, recreational fishing, and wildlife viewing (Oregon State University 2012). Numerous marine protected areas have been established off of the Oregon coast, which are managed by state and federal resource agencies.

Marine Protected Areas existing below the Eel and W-570 airspaces are listed below with usage descriptions applicable to each area. National marine protected areas have the conservation and protection focus identified for each area (ODFW 2013, NOAA 2012).

- *Columbia River Salmon Conservation Zone* is located off the coast of Clatsop County and underlies segment A of the Eel Airspace. Commercial and recreational fishing are restricted. The conservation focus is natural heritage and sustainable fishery production.
- *Haystack Rock Marine Garden* is located off the coast of Clatsop County and underlies segment B of the Eel Airspace. Commercial and recreational fishing are restricted. The conservation focus for the reserve is natural heritage and the protection focus is on intertidal and seabird colony resources.
- *Boiler Bay Research Reserve* is located off the coast of Lincoln County and crosses the boundary between segment D of the Eel Airspace and undesignated airspace near the southern boundary of the segment. Commercial and recreational fishing are restricted. The conservation focus

for the reserve is natural heritage and the protection focus is on diverse intertidal habitat.

- *Cape Kiwanda Marine Garden* is located off the coast of Tillamook County and underlies segment C of the Eel Airspace near the southern boundary of the segment. Commercial and recreational fishing are restricted. The conservation focus for the reserve is natural heritage and the protection focus is on intertidal communities and seabird nesting
- *Netarts Bay Shellfish Preserve* is located off the coast of Tillamook County and underlies segment C of the Eel Airspace. Commercial and recreational fishing are restricted. The conservation focus for the reserve is natural heritage and the protection focus is on Olympia oysters.
- *Cascade Head North Marine Protected Area* is located off the coast of Lincoln County and Tillamook County. It underlies segment D of the Eel Airspace. Commercial and recreational salmon, crabbing, and groundfish fishing are permitted. All other extractive uses including new ocean development are prohibited.
- *Cascade Head West Marine Protected Area* is located off the coast of Lincoln County near the northern boundary between Lincoln County and Tillamook County, along the western boarder of Cascade Head Marine Reserve. It underlies segment D of the Eel Airspace. Commercial and recreational salmon fishing and crabbing are allowed. All other extractive uses including new ocean development are prohibited.
- *Cascade Head South Marine Protected Area* is located off the coast of Lincoln County near the northern boundary between Lincoln County and Tillamook County. It underlies segment D of the Eel Airspace. Use of trawls, nets, and new ocean development are prohibited.
- *Cascade Head Marine Reserve* is located off the coast of Lincoln County near the northern boundary between Lincoln County and Tillamook County. It underlies segment D of the Eel Airspace. No extractive activities are allowed.
- *Cape Falcon Shoreside Marine Protected Area* is located off the coast of Lincoln County near the northern boundary between Lincoln County and Tillamook County. It underlies segment B of the Eel Airspace. Recreational fishing and crabbing are allowed from shore.
- *Cape Falcon West Marine Protected Area* is located off the coast of Clatsop County and Tillamook County, along the western boundary of Cape Falcon Marine Reserve. It underlies segment B of the Eel Airspace. Commercial and recreational salmon fishing and crabbing are allowed. All other extractive uses including new ocean development are prohibited.

- *Cape Falcon Marine Reserve* is located off the coast of Lincoln County near the northern boundary between Lincoln County and Tillamook County. It underlies segment B of the Eel Airspace. No extractive activities are allowed.

JUNIPER/HART MOA COMPLEX

The existing Juniper/Hart MOA Complex overlies approximately 7,928 square miles extending in a north to south direction from approximately 25 miles south of the Grant/Harney County line, in Oregon to approximately 15 miles north of the Humboldt/Pershing County line in Nevada. Central Oregon and northern Nevada are primarily arid due to the rain shadow effect of the Cascades on the western boundary of the region. Outdoor recreational activities, timber, and ranching are the primary economic activities. Lands underlying the Juniper/Hart MOA Complex are predominantly managed by the BLM. Other federally managed lands underlying the existing and proposed airspace include three NWRs and one Wild and Scenic River. Private land holdings are governed at the local level by county and city governments. No National Parks occur within these areas.

Local Land Use and Management

Proposed modifications to the Juniper MOA Complex would extend the training space east from the existing Juniper North and South MOAs, including the Juniper Low MOA. However, this extension would remain within Harney County. The extension of Hart North and South MOA east and south from its existing dimensions would extend the airspace in Harney County in Oregon and establish airspace over Humboldt County and Washoe County in northwestern Nevada. Modifications would also affect the existing Juniper Low MOA airspace over Crook, Deschutes, Lake and Harney County by raising the airspace floor from 300 feet to 500 feet AGL. The small section of airspace extending into the California would be unchanged under the Proposed Action.

Table G-2. Population and Urban Areas beneath the Proposed Juniper/Hart MOA Complex

Location	Area Square Miles	Population per Square Mile	Incorporated Cities	Unincorporated Communities
Harney County, OR	10,226	1	2	23
Lake County, OR	8,358	1	2	12
Deschutes County, OR	3,055	38	4	19
Crook County, OR	2,987	7	1	8
Humboldt County, NV	9,658	2	1	7
Washoe County, NV	6,551	67	2	66

Source: U.S. Census Bureau 2010.

Harney County

Harney County has a total area of 10,226 square miles, of which 10,134 square miles are land and 92 square miles are water, mostly as part of Malheur Lake. The population of Harney County is 7,422 with a population density of approximately one (1) person per square mile (U.S. Census Bureau 2010). The county contains two incorporated cities (Burns and Hines) and 23 unincorporated communities. Urban development is concentrated within the City of Burns, with the rest of the county being very rural.

Harney County is in the eastern half of the state and falls into the Farm Zoning as designated by the Oregon Department of Land Conservation and Development (State of Oregon 2009). Prominent land uses include farming and ranching (Harney County 2009).

Land area affiliated with the Summit Lake Paiute Tribe is located in the northern part of the county.

Lake County

Lake County has a total area of 8,358 square miles, of which 8,136 square miles are land and 223 square miles are water. The population of Lake County is 7,895 with a population density of approximately one (1) person per square mile (U.S. Census Bureau 2010). The county contains two incorporated cities (Lakeview and Paisley) and 12 unincorporated communities. Lake County is in the south eastern half of

the state and falls into the Farm Zoning as designated by the Oregon Department of Land Conservation and Development (Oregon Department of Land Conservation and Development 2009). Land use is focused on lumber and agricultural uses (Lake County 2011).

Deschutes County

Deschutes County has a total area of 3,055 square miles, of which 3,018 square miles are land and 37 square miles are water. The population of Deschutes County is 157,733 with a population density of approximately 38 people per square mile (U.S. Census Bureau 2010). The county contains four incorporated cities (Lakeview and Paisley) and 19 unincorporated communities. Urban development is concentrated the cities of Bend, Redmond, and La Pine, with the rest of the county being very rural.

Deschutes County is in the center of the state and falls primarily into the Farm Zoning as designated by the Oregon Department of Land Conservation and Development (State of Oregon 2009), though forest zoning may be found along the western boundary of the county as the landscape enters the Cascade Mountain Range. Prominent land uses include management for recreation and tourism activities, logging, and farming (Deschutes County 2011). The most southeastern portion of the county is covered by the airspace.

Crook County

Crook County has a total area of 2,987 square miles, of which 2,979 square miles are land and 8 square miles are water. The population of Crook County is 20,978 with a population density of approximately seven (7) people per square mile (U.S. Census Bureau 2010). The county contains one incorporated city (Prineville) and eight (8) unincorporated communities. Crook County is located to the north of Deschutes County. The airspace would only cover a portion along the southern boundary of the county. Land use includes ranching, logging, recreation, agriculture and farming (Crook County 2012).

Humboldt County

Humboldt County is located in northern Nevada and has a total area of 9,658 square miles, of which 9,648 square miles are land and 10 square miles are water. The population of Humboldt County is 16,528 with a population density of approximately two (2) people per square mile (U.S. Census Bureau 2010). The county contains one incorporated city (Winnemucca) and seven (7) unincorporated communities. Mining and agriculture are two of the main types of land use (Humboldt County 2005). The major city within Humboldt County is Winnemucca.

Washoe County

Washoe County is located in the western part of Nevada. Washoe County has a total area of 6,551 square miles, of which 6,342 square miles are land and 209 square miles are water. The population of Washoe County is 421,407 with a population density of approximately 67 people per square mile (U.S. Census Bureau 2010). The county contains two incorporated cities (Reno and Sparks) and 66 unincorporated communities.

Urban development is concentrated in the southern part of the county in and around the cities of Reno and Sparks. The proposed airspace expansion would only extend into the northern part of the county. The northern part of the county is rural. The major land use designation in the northern part of the county is public lands with significant portions identified as wilderness area, and wilderness study areas.

State Land Use and Management

Areas managed by agencies of the State of Oregon include state forests and state parks. No state forests occur within the existing Juniper/Hart MOA Complex.

State Parks

Management of Oregon state parks is focused on providing for multiple uses including recreation, education, and conservation. State parks are governed

primarily by regulations and policies contained within the individual or regional state park plans. There are 15 state parks located below the existing Juniper/Hart MOA Complex and the proposed Juniper/Hart Expansion Area, which are listed below:

- Frenchglen State Park
- Pete French Round Barn State Park
- Fort Rock State Park
- Three Sisters
- Smith Rock State park
- Redmond-Bend Juniper State Park
- Robert Sawyer Shop State Park
- La Pine State Park
- Chandler State Park
- Booth State Park
- Goose Lake State Park
- Peter Skene Ogden State Park
- Cline Falls State Park
- Tumalo State Park
- Pilot Butte State Park

Federal Land Use and Management

Federally managed areas existing below the proposed airspace modifications include lands managed by the USFS, USFWS, and BLM, as described below.

National Forests

Malheur National Forest is located in Eastern Oregon and encompasses approximately 1.7 million acres that are managed by the USFS. The forest is managed under a multi-use principle, which includes recreation, logging, and conservation. Vegetation includes high desert grasslands, sage, juniper, pine, fir, and alpine meadows (USFS 2012). Recreation uses are consistent with those described for the Umatilla National Forest above.

Fremont-Winema National Forest, framed by major migratory bird flyways, offers a setting of classic Western beauty derived from the land's volcanic legacy. The ecosystem ranges from towering snow-capped peaks to wide-open sage basins. Pivotal to the economy and communities of south central Oregon, this 2.3 million acre forest is known for its many recreational opportunities, scenic vistas and wild places where visitors can still find solitude.

National Wildlife Refuges

Malheur NWR consists of 187,000 acres in central Harney County, including Malheur, Mud, and Harney Lakes, and 120,000 acres of lake associated wetlands. The Diamond Craters Outstanding Natural Area is located adjacent to the eastern boundary of the refuge. It is managed by the USFWS and was established by President Theodore Roosevelt in 1908.

The refuge is located within the Pacific Flyway and serves as an important resting point for migratory bird species. Bird watching is a popular recreational activity at this refuge. Other wildlife in the area includes waterfowl and deer (*Odocoileus* spp.). Vegetation includes sagebrush, greasewood and wild rye (USFWS 2012).

Sheldon NWR, located in northern Nevada, consists of more than half a million acres of protected high desert habitat managed by the USFWS. It is part of the Sheldon-Hart Mountain NWR Complex that includes the Sheldon NWR in Nevada, and the Hart Mountain National Antelope Refuge in Oregon. Hart Mountain National Antelope Refuge is not located below any of the airspace proposed for modification. Sheldon NWR encompasses varied landscapes of deep gorges, lush springs, rolling hills, and rugged tablelands. Protected wildlife includes wintering herds of pronghorn antelope and bands of bighorn sheep. Old homesteads, the Virgin Valley mining district and geothermal hot springs can also be found within the refuge (USFWS 2011).

Hart Mountain Antelope NWR, is located on a massive fault block ridge that ascends abruptly nearly three quarters of a mile above the Warner Valley floor in a series of rugged cliffs, steep slopes, and knife-like ridges. Visitors experience views of the beautiful Warner Valley Wetlands while ascending the west side, which is cut by several deep gorges. Hart, Potter, and DeGarmo canyons, the most rugged, extend from the valley floor to the top of the main ridge. The east side of the mountain is less precipitous, descending in a series of rolling hills and low ridges to the sagebrush-grasslands typical of southeastern Oregon and the Great Basin. The rugged diversity of the terrain creates a rich mix of habitat types, home to more than 300 species of wildlife. Featured species include pronghorn antelope, California bighorn sheep, mule deer, sage grouse, and redband trout. The 278,000-acre refuge is one of the most expansive wildlife habitats in the arid West free of

domestic livestock. Since its creation in 1936 as a range for remnant herds of pronghorn antelope, management of the refuge has broadened to include conservation of all wildlife species characteristic of this high desert habitat and restoration of native ecosystems for the public's enjoyment education, and appreciation.

Bureau of Land Management

Steens Mountain Cooperative Management and Protection Area (CMPA) consists of approximately 428,156 acres located in central Harney County and is managed by the BLM and the Steens Mountain Advisory Council. Land within the CMPA is to be maintained and enhanced through cooperative projects between the BLM, private landowners, tribes, and other public interests. Sustainable grazing and recreational use is permitted in designated areas. The Steens Mountain Wilderness surrounds part of Steens Mountain making up approximately 170,166 acres of the CMPA's total 428,156 acres. Approximately 100,000 acres of this wilderness area is designated as livestock free. Land protections in addition to the designated CMPA and Wilderness Areas include approximately 900,000 acres of federal land in southeastern Oregon allocated as off limits to mineral and geothermal extraction (BLM 2012). This area also includes two Wild and Scenic Rivers.

Hawksie-Walksie Research Natural Area is a 17,328-acre Research Natural Area managed by the BLM in southern Oregon.

East Fork High Rock Canyon Wilderness Area is located in northern Nevada and is managed by the BLM. The 52,618-acre Wilderness Area includes large areas of broad volcanic uplands and deeply cut drainages. The main vegetation type is sagebrush, with willows, aspens and other riparian vegetation found in the canyons. Remains of early homesteads can be found in the East Fork of High Rock Canyon. Wildlife in the area includes California bighorn sheep, mule deer, pronghorn antelope, mountain lions, coyotes, and sage-grouse. Nesting habitat for raptors can be found in the canyons. The Applegate-Lassen Emigrant Trail is located along the western boundary of the area.

North Black Rock Range Wilderness Area is located in northern Nevada and encompasses the northern portion of the Black Rock Range. The 30,648-acre area

is managed by the BLM. The dominant vegetation is sagebrush and willows, cottonwoods, aspens, and riparian species, which can be found in canyons. Wildlife found in this area includes the threatened Lahontan cutthroat trout, as well as California bighorn sheep, mule deer, pronghorn antelope, mountain lions, coyotes, and sage-grouse.

Little High Rock Lake Wilderness Area consists of 48,355 acres in northern Nevada and is managed by the BLM. The area includes broad volcanic uplands, deep cut drainages, and Mahogany Mountain. The dominant vegetation type is sagebrush, with willows (*Salix* spp.), chokecherry (*Aronia* spp.), and other riparian vegetation found in canyons. Wildlife includes California bighorn sheep (*Ovis canadensis californiana*), mule deer (*Odocoileus hemionus*), pronghorn antelope (*Antilocapra americana*), and sage-grouse (*Centrocercus urophasianus*). Habitat for nesting raptors can be found in the canyons.

High Rock Wilderness Area, located in Northern Nevada and managed by the BLM, is comprised of 59,107 acres. Sagebrush is the dominant vegetation type, with saltbush and greasewood occurring at lower elevations. Willows, cottonwoods, aspens, and other riparian species can be found in canyons. High Rock Lake occasionally fills with waters flowing from High Rock and Little High Canyons. A portion of the Applegate-Lassen Emigrant Trail crosses through the northern portion of the Wilderness Area and extends across Washoe County into California.

Other smaller wilderness areas include Mt. Washington NWA, Gearhart Mountain NWA, North Black Rock Range NWA, Three Sisters NWA, and Black Canyon NWA.

Areas of Critical Environmental Concern located below the Juniper/Hart MOA Complex are listed below with the resource area responsible for the areas designation.

- *High Rock Canyon ACEC*: Resources designated for special management include scenic, and fish and wildlife resources.
- *Warner Wetlands ACEC*: Resources designated for special management include cultural, fish and wildlife, natural processes, and scenic resources.

- *Lake Abert ACEC*: Resources designated for special management include cultural, fish and wildlife, natural processes, and scenic resources.
- *Abert Rim ACEC*: Resources designated for special management include botanical, cultural, and fish and wildlife resources.
- *Soldier Meadows ACEC:* In 1982, 307 acres were designated as the Soldier Meadows Area of Critical Environmental Concern to protect special natural heritage resources. The ACEC now contains 2,077 acres to protect these rare natural and cultural resources. Special rules apply to recreation and commercial uses in the ACEC

Wild and Scenic Rivers

Wild and Scenic Rivers are preserved for possessing outstandingly remarkable scenic, recreational, geologic, fish and wildlife, historic, cultural, or other similar values. Rivers or segments of rivers so designated are preserved in their free-flowing condition and are not dammed or otherwise impeded. National wild and scenic designation essentially vetoes the licensing of new hydropower projects on or directly affecting the river. It also provides very strong protection against bank and channel alterations that adversely affect river values, protects riverfront public lands from oil, gas and mineral development, and creates a federal reserved water right to protect flow-dependent values (USFS 2009). The modified airspace would extend over three Wild and Scenic Rivers.

The BLM is the agency responsible for managing the five segments of one National Wild and Scenic River. The Donner und Blitzen Wild and Scenic River system has nine river segments, though only five would be located below the airspace. The Donner und Blitzen Wild and Scenic River, along with two other rivers designated as Wild and Scenic (Wildhorse River and Kiger River) fall within Steens Mountain Cooperative Management and Protection Area (CMPA) (BLM 2005).

National Historic Trails

The proposed Juniper/Hart MOA Complex is not located above Oregon National Historic Trail or the Lewis and Clark National Historic Trail; however, the proposed Hart B, Hart E, and Hart F MOAs overlie small segments of the California National Historic Trail. Additionally, the proposed Juniper C MOA, including the proposed Juniper East Low MOA and the existing Juniper A and

Juniper B MOAs overlie segments of a proposed route of the Oregon National Historic Trail.

Tribal Lands

The Summit Lake Paiute Tribe is located south of the Sheldon National Wildlife Refuge in the western part of Humboldt County. The reservation was established in 1913 and is 12,573 acres with 10,098 acres of trust lands. Tribal headquarters are located in Sparks, Nevada.

Wind Development

Wind development testing is currently ongoing below the Juniper/Hart MOA Complex. There are two stages of wind development land use identified below the airspace. The first is an authorized right of way (ROW). This means that the land within the ROW is approved for wind tower development. The second is developed and existing wind towers. The authorized Wagontire wind test ROW is located predominately in Lake County, though a small portion of it extends into Harney County. The entire ROW is located below the existing Juniper Low MOA. Three existing Met towers are located in Lake County below the existing Juniper Low MOA. Met towers are used to gather wind data necessary for site evaluation and development of wind energy project. All three are identified by the BLM, though none are identified within the FAA's database of wind development. The first two, Wagontire Met1 and Wagontire Met2, are located within the authorized Wagontire ROW. The third tower, Little Glass Butte, is located north of the Wagontire ROW in a relinquished test ROW. A relinquished ROW is a test area that has been authorized for wind development but development has not been pursued. None of the existing ROWs or Met towers adversely impact training activities within the existing Juniper Low MOA (Oregon ANG 2013). No other authorized or existing wind developments exist below the existing Juniper/Hart MOA Complex.

REDHAWK MOA COMPLEX

The proposed establishment of the Redhawk MOA Complex would create an approximately 6,518-square mile training space in north-central Oregon over

portions of Sherman, Gilliam, Morrow, Grant, Wheeler, Jefferson, and Wasco counties. Central Oregon is primarily arid due to the rain shadow effect of the Cascades on the western boundary of the region. Outdoor recreational activities, timber, and ranching are the primary economic activities. Lands underlying the proposed Redhawk MOA Complex are predominantly privately owned. Private land holdings are governed at the local level by county and city governments. State controlled lands include 11 state parks. Federally managed lands underlying the proposed airspace include portions of three national forests, one national monument, and two wild and scenic rivers.

Local Land Use and Management

The proposed Redhawk MOA Complex would overlie Sherman, Gilliam, Morrow, Grant, Wheeler, Jefferson, Crook, and Wasco counties. This area is predominantly privately owned lands utilized for agriculture, primarily ranching, as well as some timber production.

Table G-3. Population and Urban Areas within Proposed Redhawk MOA Complex

Location	Area Square Miles	Population per Square Mile	Incorporated Cities	Unincorporated Communities
Sherman County	831	2	4	10
Gilliam County	1,223	2	3	8
Morrow County	2,047	5	5	11
Grant County	4,529	2	9	18
Wheeler County	1,715	1	3	9
Jefferson County	1,791	12	3	12
Crook County	2,987	7	1	8
Wasco County	2,395	10	6	23

Source: U.S. Census Bureau 2010.

Sherman County

Sherman County has a total area of 831 square miles, of which 823 square miles are land and eight (8) square miles are water. The population of Harney County is 1,765 with a population density of approximately two (2) people per square mile

(U.S. Census Bureau 2010). The county contains four incorporated cities (Grass Valley, Moro, Rufus, and Wasco) and 10 unincorporated communities.

Sherman County is sparsely populated; the largest city within the county has a population of just 380 people. The economy is rural and major type of land use is farming and ranching. The Sherman Agricultural Research Station is located outside of Moro in the northern portion of the county (Sherman County 2012). The county is predominantly an agricultural county, primarily wheat and barley, although the local economy includes ranching and tourism. The county contains the Biglow Canyon Wind Farm, the largest wind farm in Oregon. Additionally two wind energy generating facilities have been proposed within Sherman County (Oregon State University 2012).

Gilliam County

Gilliam County has a total area of 1,223 square miles, of which 1,204 square miles is land and 19 square miles is water. The population of Gilliam County is 1,871 with a population density of approximately two (2) people per square mile (U.S. Census Bureau 2010). The county contains three incorporated cities (Arlington, Condon, and Lonerock) and eight unincorporated communities.

Gilliam County is predominantly an agricultural county, with urban development concentrated in the county's two major cities: Arlington and Condon (Gilliam County 2012). Additionally, there are four proposed wind energy generating facilities located within Gilliam County (Oregon State University 2012).

Morrow County

Morrow County has a total area of 2,047 square miles, of which 2,031 square miles are land and 16 square miles are water. The population of Morrow County is 11,173 with a population density of approximately five (5) people per square mile (U.S. Census Bureau 2010). The county contains five incorporated cities (Boardman, Heppner, Ione, Irrigon, and Lexington) and 11 unincorporated communities.

Morrow County is bisected by the Blue Mountains; north of the mountains land use is predominantly agricultural, south of the mountains the land is forested with land use more oriented around forestry. Three wind energy generating facilities are proposed within Morrow County (Oregon State University 2012). Urban development that would be located below the airspace is limited to the City of Heppner.

Grant County

Grant County has a total area of 4,529 square miles, of which 5,228 square miles are land and one (1) square mile is water. The population of Grant County is 7,445 with a population density of approximately two (2) people per square mile (U.S. Census Bureau 2010). The county contains nine incorporated cities and 18 unincorporated communities. Grant County has a forested and mountainous landscape. Land use is predominantly forestry and ranching uses.

Wheeler County

Wheeler County has a total area of 1,715 square miles, including approximately 1 square mile of water. The population of Wheeler County is 1,441 with a population density of approximately one (1) person per square mile (U.S. Census Bureau 2010). The county contains three incorporated cities (i.e., Fossil, Mitchell, and Spray) and nine unincorporated communities. Wheeler County contains a mix of mountainous and forested terrain. Ranching and forestry are the predominant land uses within the county.

Jefferson County

Jefferson County has a total area of 1,791 square miles, of which 1,781 square miles are land and 10 square miles are water. The population of Jefferson County is 21,720 with a population density of approximately 12 people per square mile (U.S. Census Bureau 2010). The county contains three incorporated cities (i.e., Culver, Madras, and Metolius) and 12 unincorporated communities.

Agriculture is the predominant source of income in this county, with vegetable, grass and flower seeds, garlic, mint and sugar beets cultivation. Jefferson County also has vast rangelands and an industrial base related to forest products.

The Confederated Tribes of the Warm Springs area located in the northwestern area of the county. The proposed airspace would only extend over the eastern half of the county and the airspace above the Confederated Tribes of the Warm Springs would not be impacted.

Crook County

Crook County has a total area of 2,987 square miles, of which approximately eight square miles is water. The population of Crook County is 20,978 with a population density of approximately seven (7) people per square mile (U.S. Census Bureau 2010). The county contains one incorporated city (i.e., Prineville) and eight unincorporated communities.

Agriculture and forestry are the predominant land uses, which include the cultivation of hay, grain, mint, potatoes, and seed. Range and forest lands allow grazing for a sizable livestock industry. The proposed airspace would cover the northern-most extent of the county. Land use in this northern extent is predominantly within the Ochoco National Forest, which is a main source of lumber as well as popular for tourism and recreation (Crook County 2012).

Wasco County

Wasco County has a total area of 2,395 square miles, of which 2,381 square miles are land and 14 square miles are water. The population of Wasco County is 25,213 with a population density of approximately 10 people per square mile (U.S. Census Bureau 2010). The county contains six incorporated cities (i.e., Antelope, Dufur, Maupin, Mosier, Shaniko, and The Dalles) and 23 unincorporated communities.

The county's economy is based upon agriculture, including orchards, wheat farming, and livestock ranching, as well as lumber, manufacturing, electric power, transportation, and tourism. Land use in the northern and eastern parts of the

county is dominated by agriculture, and land use in the western part of the county contains more forested areas utilized for timber production and recreation. Additionally, two wind energy generating facilities have been proposed within Wasco County (Oregon State University 2012).

Wind Development

Multiple wind towers have been approved and proposed within Sherman County along the northern boundary of the proposed Redhawk MOA Complex. A single tower has been proposed and approved within Wasco County beneath the proposed Redhawk MOA Complex. The towers in Sherman County are proposed at a height of 500 feet and the wind tower in Wasco County is proposed at a height of 265 feet (Oregon State University 2012).

State Lands and Management

Areas managed by agencies of the State of Oregon include state forests and state parks. No state forests occur beneath the proposed Redhawk MOA Complex.

State Parks

As previously described, the management of Oregon state parks is focused on providing for multiple uses including recreation, education, and conservation. State parks are governed primarily by regulations and policies contained within the individual or regional state park plans. There are 11 state parks located below the proposed Redhawk MOA Complex, which are listed below:

- Cottonwood Canyon State Park
- White River Falls State Park
- Memaloose State Park
- Koberg Beach State Park
- J.S. Burres State Park
- Deschutes-Hilderbrand State Park
- Mayer State Park
- Somers State Park
- Cove Palisades State Park
- Deschutes-Hilderbrand State Park
- John Day Chaparral Access State Park

Federal Lands and Management

The proposed Redhawk MOA Complex overlies approximately 6,518 square miles in a roughly rectangular shape above parts of Sherman, Gilliam, Morrow, Grant, Wheeler, Jefferson, and Wasco counties. Federally managed areas existing below the proposed airspace modifications include lands managed by the USFS, National Park Service, and BLM, as described below.

National Forests

Umatilla National Forest extends through northeastern Oregon and southeastern Washington encompassing approximately 1.4 million acres managed by the USFS. Only the most western portion of the Umatilla National Forest would be covered by the proposed Redhawk MOA Complex. There are no designated wildernesses that would be covered by the proposed airspace. Recreation uses within the park include campgrounds, lake activities, river rafting, snow activities, hiking, and mushroom and huckleberry gathering. Wildlife found within this area include a variety of fish, bird, and mammal species (USFS 2012).

Malheur National Forest is located in Eastern Oregon and encompasses approximately 1.7 million acres that are managed by the USFS. The proposed Redhawk MOA Complex would only extend above a northwestern portion of the forest. The forest is managed under a multi-use principle, which includes recreation, logging, and conservation. Vegetation includes high desert grasslands, sage, juniper, pine, fir, and alpine meadows (USFS 2012). Recreation uses are consistent with those described for the Umatilla National Forest above.

Ochoco National Forest encompasses 850,000 acres of which approximately 95,000 are estimated to be old growth. It is managed by the USFS and occupies lands within Crook, Harney, Wheeler, and Grant counties. Wilderness areas within the Ochoco National Forest are: Black Canyon Wilderness, Bridge Creek Wilderness, and Mill Creek Wilderness. The proposed Redhawk MOA Complex would only extend over Bridge Creek and Mill Creek Wildernesses (USFS 2012).

Bridge Creek Wilderness is a 5,357 acre wilderness area in Wheeler County managed by the USFS. The wilderness area includes a portion of the Ochoco

Mountains with North Point peak and East Point peak located within Bridge Creek Wilderness. Vegetation includes white fir (*Abies concolor*), lodgepine (*Pinus contorta*), sagebrush, and bunchgrass. Water features within the area include: Thompson, Pisgah, Masterson, Nelson, and Maxwell springs.

Mill Creek Wilderness is a 17,323 acre wilderness area in Crook County managed by the USFS. It includes two tributaries of the Ochoco Creek, Mill Creek and Marks Creek, which are home to small trout. Vegetation includes prairie and open meadow communities, lodgepole pine forest, and ponderosa pine (*Pinus ponderosa*).

National Parks

John Day Fossil Beds National Monument consists of three widely separated units (i.e., Sheep Rock, Painted Hills, and Clarno) in east-central Oregon. The proposed airspace would be located over the Clarno and Painted Hills units. The National Monument is managed by the National Park Service and is known for its well-preserved layers of fossil plants and animals. The area is an important area of paleontological research, but is also popular for camping, hiking, river rafting, fishing, and mountain biking (National Park Service 2013).

Wild and Scenic Rivers

The BLM and the USFS are the agencies responsible for managing the two National Wild and Scenic Rivers beneath the proposed Redhawk MOA Complex. Two wild and scenic rivers occur beneath the proposed Redhawk MOA Complex: the Deschutes River and the John Day River. The Deschutes River is designated a National Scenic River for 30 miles and a National Recreation River for 143 miles.

National Historic Trails

The proposed Redhawk MOA Complex is not located above either the California or Oregon National Historic Trail or the Lewis and Clark National Historic Trail. However, the proposed Redhawk A and Redhawk C MOAs are located over small segments of a proposed route of the Oregon National Historic Trail.

Tribal Lands

The Confederated Tribes of the Warm Springs are located west of the proposed airspace; no portion of tribal land is located below the proposed airspace.

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APPENDIX H

TRIBAL OUTREACH

Appendix H
Tribal Outreach

Introduction

Appendix H contains tribal correspondence and consultation efforts under Section 106 of the National Historic Preservation Act of 1966, as amended, and associated implementing regulations (36 Code of Federal [CFR] 800). This appendix provides a complete tribal distribution list as well as example outreach letters that were sent to federally recognized tribes to notify tribal governments of public scoping meetings and hearings for the Draft Environmental Impact Statement (EIS). Additionally a matrix has been provided in this appendix that summarizes all written and phone communication contacts with each of the tribes.

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TRIBAL DISTRIBUTION LIST

Mr. Les Minthorn
Tribal Chair
Confederated Tribes of the Umatilla Indian Reservation
46411 Timíne Way
Pendleton, OR 97801

Teara Farrow-Ferman, Culture Resources Program Manager Confederated Tribes of the Umatilla Indian Reservation
46411 Timíne Way
Pendleton, OR 97801

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1708 H Street
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Mr. William Cowan
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P.O. Box 549
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Mr. Perry Chocktoot
Culture & Heritage Director
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Chiloquin, OR 97624

Mr. Reynold Leno
Tribal Council Chair
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9615 Grand Ronde Rd
Grand Ronde, OR 97347

Mr. Eirik Thorsgard, THPO
Confederated Tribes of Grand Ronde
9615 Grand Ronde Rd
Grand Ronde, OR 97347

Mr. Dan Courtney
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2371 NE Stephens Street, Suite 100
Rosenburg, OR 97470

Ms. Rhonda Malone
Cultural Resources Coordinator
Cow Creek Band of Umpqua Tribe of Indians
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Rosenburg, OR 97470

Ms. Brenda Meade
Tribal Chair
Coquille Indian Tribe
3050 Tremont Street
North Bend, OR 97459

Ms. Nicole Norris, THPO
Coquille Indian Tribe
3050 Tremont Street
North Bend, OR 97459

Mr. Bob Garcia
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Ms. Charisse Soucie
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Burns, OR 97720

Ms. Agnes Castronuevo
Cultural Resources Manager
Burns Paiute Tribe
100 Pasigo St
Burns, OR 97720

Mr. Austin Greene
Tribal Chair
Confederated Tribes of Warm Springs
P.O. Box C
Warm Springs, OR 97761

Ms. Sally Bird, Cultural Resources Manager
Confederated Tribes of Warm Springs
P.O. Box C
Warm Springs, OR 97761

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SALEM, OREGON 97309-5047

<<Contact.>>
<<Address>>
<<Address>>
<<Address>>
<<Address>>

Subject: National Historic Preservation Act Section 106 Consultation for the Environmental Impact Statement for Proposed Airspace Establishment and Modification, Oregon Air National Guard

Dear <<Contact>>:

This letter is intended to follow up on previous correspondence regarding the Airspace Establishment and Modification proposed by the Oregon Air National Guard (ANG). The Oregon ANG is proposing to expand and establish air-to-air training airspace areas in four locations around the state (Attachment 1). As part of the scoping process for the Environmental Impact Statement currently in development, we will be conducting public scoping meetings to solicit input concerning the proposed Airspace Establishment and Modification.

Public scoping meetings will be held in the following Oregon communities from 6:00 p.m.-9:00 p.m.: Tillamook (June 17), Astoria (June 18), Condon (June 19), Burns (June 20), and Prineville (June 21).

The Oregon ANG, National Guard Bureau, and OMD are committed to early and continuous consultation with all potentially affected Native American tribes under Section 106 of the National Historic Preservation Act of 1966, as amended, and associated implementing regulations (36 CFR 800). Because we recognize the Burns Paiute Tribe as a sovereign nation, and as an important stakeholder in this process, we would like to offer to consult with you, government-to-government, in order to facilitate a meaningful and collaborative dialogue and ensure your concerns for this region regarding natural resources, cultural resources, and properties of traditional, customary, or religious importance are addressed. We invite your staff to participate at any of the planned public scoping meetings during the week of June 17-21. In addition, we will make all reasonable attempts to coordinate direct government-to-government consultation or staff level meetings as requested, potentially during closed sessions prior to the scheduled public scoping meetings or an alternate time at your convenience.

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We look forward to further discussions with the <<Tribe>> to further define the appropriate level of continued engagement concerning this action. If you would like to participate in direct consultation, attend any of the upcoming public scoping meetings, or have any questions about this project, please feel free to contact Lt. Col. Chris Casson, Joint Force Headquarters/Oregon ANG at (541) 885-6531 or chris.casson@ang.af.mil.

Sincerely,

RAYMOND F. REES
Major General
The Adjutant General

Enclosures

Attachment 1 – Regional Location Map

Cc: <<Contact>>

Mr. Kris C. Mitchell, Tribal Coordinator, OMD

Mr. Dennis Griffin, State Archaeologist, Oregon SHPO

Mr. Chris Eck, Cultural Resources Program Manager (NGB/A7AN)

From: FRENCH, FREDERICK LtCol USAF ANG 173 FW/JFHQ/A3 [frederick.french@ang.af.mil]
Sent: Tuesday, July 24, 2012 2:09 PM
To: Don Ivy
Cc: Chen, Andrew L; Scherer, Devin CTR USAF ANG NGB/A7
Subject: RE: ANG Airspace- Establishment and Modification of Airspace in Oregon and Nevada

Thank you Mr. Ivy for you and the Tribe's time in reviewing the letters.

Lt Col Wes "Pappy" French
Oregon ANG A3
JFHQ-OR-AC-A3
BB (541) 205-2340, W (541) 885-6531
DSN 830-6531
Salem (503) 584-2218, DSN 355

-----Original Message-----
From: Don Ivy [mailto:donivy@coquilletribe.org]
Sent: Tuesday, July 24, 2012 1:17 PM
To: FRENCH, FREDERICK LtCol USAF ANG 173 FW/JFHQ/A3
Cc: Nicole Norris
Subject: ANG Airspace- Establishment and Modification of Airspace in Oregon and Nevada

July 24, 2012

Sirs:

The coquille tribe has no objections or comments to make regarding the above referenced matter. We thank you for the opportunity to comment, and wish you well in your project.

Sincerely,

Donald B. Ivy

Tribal Historic Preservation Office

Cultural Resources Program

-----Original Message-----
From: Mitchell, Kris C Mr CIV NG [mailto:kris.c.mitchell@us.army.mil]
Sent: Monday, July 30, 2012 8:57 AM
To: FRENCH, FREDERICK LtCol USAF ANG 173 FW/JFHQ/A3
Cc: Elliott, Gerald E Mr CIV NG
Subject: FW: Oregon National Guard (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: FOUO

LtCol French--
I sent the following response to the Warm Springs Tribe in response to their question. Thought you should have a copy for your Administrative Record. Please let me know if you have questions. Thanks.

Kris Mitchell
NEPA/Cultural Resources Manager
Oregon Military Department (AGI-E)
Office: 503-584-3164 Cell: 503-779-7504
email: kris.c.mitchell@us.army.mil

-----Original Message-----
From: Mitchell, Kris C Mr CIV NG
Sent: Monday, July 30, 2012 8:12 AM
To: Sally Bird
Subject: RE: Oregon National Guard (UNCLASSIFIED)

Classification: UNCLASSIFIED
Caveats: NONE

Sally--
Good morning, the short answer is "yes", you are reading the letter correctly!

Thanks for attaching the letter, even though I'm cc'd on it along with you, I haven't received it yet! The letter refers to an EIS for airspace modification by the Air National Guard. They do their own environmental stuff, but I have been involved with their project a little and think that I understand what they are proposing. You are correct in that it is all airspace related with nothing proposed on the ground. In fact, the majority of it is above 5,000 feet. They are located at Kingsley Field in K-Falls (Perry's daughter works there) and are the Nation's only fighter pilot training school for the F-15 Eagle, so most of their training is high altitude fighter jet against fighter jet. The airspace marked "Juniper Low" is the only one that would extend as low as 500 feet above the ground in places.

Though they show "Boardman" airspace on the map, they are not proposing anything there. However, there is another project that I am working on for the Army National Guard in cooperation with the Navy that does include ground disturbing proposals on the Navy property at Boardman, as well as the unmanned aerial (drone) training in the restricted airspace above it. We are working

with CTUIR for this project, in fact I will be headed over to Pendleton this afternoon for a meeting with Catherine Dickson tomorrow morning regarding a TCP study that they are going to do for us. You had indicated at a past CRCG meeting that since our proposed ground disturbance is located east of Willow Springs, it would be appropriate to coordinate with CTUIR.

If you need more detail on the Army Guard/Navy project at Boardman, I can provide that. If you need more detail on the Air Guard project referred to in the letter, then I can put you in touch with the folks that are running that project. Either way, let me know if you have questions or need additional info. Thanks!

Kris Mitchell
NEPA/Cultural Resources Manager
Oregon Military Department (AGI-E)
Office: 503-584-3164 Cell: 503-779-7504
email: kris.c.mitchell@us.army.mil

-----Original Message-----
From: Sally Bird [mailto:sally.bird@wstribes.org]
Sent: Friday, July 27, 2012 3:45 PM
To: Mitchell, Kris C Mr CIV NG
Subject: Fwd: Oregon National Guard

Hello Kris,
So, I had a question for you...

The Tribe has recently looked at developed of airspace for unmanned drone testing. There are some ground disturbing issues that come up...roads, airstrips, etc., am I reading this correctly and there will be none of that, pacifically on the Juniper, Redhawk and Boardman project areas?

If there is, has a survey been completed yet?

Thanks,
Sally

Classification: UNCLASSIFIED
Caveats: NONE

Classification: UNCLASSIFIED
Caveats: FOUO

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SAMPLE TRIBAL OUTREACH LETTER

[Contact]
[Official Title]
[Address]
[Address]

Subject: National Historic Preservation Act Section 106 Consultation for the Environmental Impact Statement for Proposed Airspace Establishment and Modification, Oregon Air National Guard

Dear [Contact]:

The Oregon Air National Guard (ORANG) contacted your tribe in May and June 2013 regarding the Establishment and Modification of Oregon Military Training Airspace, which proposes to expand the ORANG's air-to-air training airspace areas in four locations around the state (Attachment 1). As part of the ORANG's Environmental Impact Analysis Process, we are conducting public hearings to solicit comments on the Draft Environmental Impact Statement (EIS) for the Proposed Action, which is scheduled to be released for public comment on 24 July 2015.

The ORANG, National Guard Bureau, and Oregon Military Department are committed to sustained and meaningful consultation with Native American tribes. As such, we would like to invite your tribe to be a consulting party in the review of the Draft EIS to help identify historic properties that may have traditional religious and cultural significance to your tribe. If the Proposed Action is found to adversely impact such properties, we would like to consult with you about possible ways to avoid, minimize or mitigate the potential adverse effects.

The ORANG invites your staff to participate in the review of the Draft EIS during upcoming public hearings. These public scoping meetings are scheduled for the following Oregon communities:

Locations and Times for Draft EIS Public Scoping Meetings	
Tillamook Air Museum 6030 Hangar Rd, Tillamook, OR 97141	August 11, 6:00-9:00pm

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Locations and Times for Draft EIS Public Scoping Meetings	
The Loft at the Red Building 20 Basin St, Astoria, OR 97103	August 12, 6:00-9:00pm
Condon High School 210 East Bayard St, Condon, OR 97823	August 14, 6:00-9:00pm
Harney County Center 484 North Broadway Ave, Burns, OR 97720	August 15, 2:00-5:00pm
Crook County Library 175 NW Meadow Lakes Dr, Prineville, OR 97754	August 17, 6:00-9:00pm

If these places and times are not convenient for your tribe, members of my staff will make every effort to accommodate alternate plans.

We look forward to continuing our positive and productive relationship with the [Tribe]. If you would like to participate in direct consultation, attend any of the upcoming public hearings, or have any questions about this project, please feel free to contact Lt. Col. Alaric Michaelis, Joint Force Headquarters/Oregon ANG via e-mail at alaric.t.michaelis2.mil@mail.mil.

Sincerely,

DAN HOKANSON
Major General
The Adjutant General

Enclosures

Attachment 1 – Regional Location Map

Cc: Mr. Kris C. Mitchell, Tribal Coordinator, OMD
Mr. Dennis Griffin, State Archaeologist, Oregon SHPO

Summary of Tribal Outreach for the Proposed Establishment and Modification of Oregon Military Training Airspace

Federally Recognized Native American Tribe	Outreach Letter	Written Response Received	Phone Call	Face-to-Face Meeting	Tribal Persons Contacted	Concerns	Concurrence
Burns Paiute Tribe	2 July 2012 25 May 2013 5 June 2013 31 July 2015	-	17 May 2013 13 June 2013	29-30 September 2015	Jason Fenton (Environmental Manager) and Agnes Castronuevo (Cultural Resources)	None to Date	
Confederated Tribes of Coos Lower Umpqua & Siuslaw Indians	2 July 2012 25 May 2013 5 June 2013 31 July 2015	-	17 May 2013 (voicemail) 13 June 2013	29-30 September 2015	Howard Crombie (Environmental Coordinator) and Jesse Beers (Cultural Resources)	None to Date	
Coquille Indian Tribe	2 July 2012 25 May 2013 5 June 2013 31 July 2015	24 July 2012	17 May 2013 (voicemail) 11 June 2013	29-30 September 2015	Nicole Norris (THPO)	None to Date	
Cow Creek Band of Umpqua Tribe of Indians	2 July 2012 25 May 2013 5 June 2013 31 July 2015	-	17 May 2013 (voicemail) 10 June 2013	29-30 September 2015	Amy Amoroso (Natural Resources) and Rhonda Malone (Cultural Resources)	None to Date	
Confederate Tribes of Grand Ronde Community	2 July 2012 25 May 2013 5 June 2013 31 July 2015	-	17 May 2013 10 June 2013	22 April 2013 29-30 September 2015	Mike Wilson (Natural Resources Director) and Eirik Thorsgard (THPO)	None to Date	
Klamath Tribes	2 July 2012 25 May 2013 5 June 2013 31 July 2015	-	17 May 2013 (voicemail) 21 May 2013 10 June 2013 (voicemail)	-	Will Hatcher (Natural Resources Director) and Perry Chocktoot (Cultural and Heritage Director)	None to Date	
Confederate Tribes of Siletz	2 July 2012 25 May 2013 5 June 2013 31 July 2015	-	17 May 2013 10 June 2013 (voicemail)	29-30 September 2015	Mike Kennedy (Natural Resources Manager) and Robert Kentta (Cultural Resources Director)	None to Date	
Summit Lake Paiute Tribe	2 July 2012 25 May 2013 5 June 2013 31 July 2015	-	3 April 2014 (voicemail) 29 April 2014 (voicemail)	29-30 September 2015	Randi DeSoto (Chairperson)	None to Date	
Confederated Tribes of the Umatilla Indian Reservation	2 July 2012 25 May 2013 5 June 2013 31 July 2015	24 April 2013	17 May 2013 10 June 2013 (voicemail) 12 June 2013	29-30 September 2015	Audie Huber (Natural Resources) and Teara Ferman (Cultural Resources Manager)	None to Date	
Confederated Tribes of Warm Springs	2 July 2012 25 May 2013 5 June 2013 31 July 2015	27 July 2012	17 May 2013 (voicemail) 13 June 2013 (voicemail)	29-30 September 2015	Robert Bruno (Natural Resources General Manager) and Sally Bird (Cultural Resources Manager)	Requested confirmation that no ground disturbing activities were included in the Proposed Action (Confirmed by Mr. Kris Mitchell, Oregon Military Department)	
Reno-Sparks Indians Colony	31 July 2015	-	7 February 2013 (voicemail) 12 February 2013	-	Michon Ebon (THPO)	None to Date	

APPENDIX I

WILDFIRE HAZARD ANALYSIS

Appendix I
Wildfire Hazard Analysis

Introduction

Appendix I contains a wildfire hazard analysis that assesses the potential issues associated with flare use within the existing and proposed airspaces. These analysis specifically address comments on the Draft Environmental Impact Statement (EIS) provided by the U.S. Fish and Wildlife Service (USFWS), Oregon Department of Fish and Wildlife (ODFW), and Oregon Natural Deserts Association (ONDA). This appendix also provides a complete record of fire danger rating data from 2015 which was derived from the Wildland Fire Assessment System (U.S. Forest Service [USFS] 2016).

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APPENDIX I
WILDFIRE HAZARD ANALYSIS

EXECUTIVE SUMMARY

The Oregon Air National Guard (ANG) published a Draft Environmental Impact Statement (EIS) in July 2015 to evaluate the proposed establishment and modification of military training airspace over coastal, central, and eastern Oregon. The Proposed Action includes modifications to existing Military Operations Areas (MOAs), Air Traffic Control Assigned Airspaces (ATCAAs), and Warning Areas as well as the establishment of new military training airspace. The need for the Proposed Action is driven by several factors described in the Draft EIS, including travel distance and time required to access existing training airspace areas and the frequency of weather conditions that limit the availability of coastal airspace areas for operational training.

Several agencies and non-governmental organizations responded with comments on the Draft EIS (refer to Appendix C of the Final EIS). Some comments related to the use of chaff and flare as a part of training activities raised concerns regarding the potential for increases in wildfire risk, particularly in the more arid and fire-prone region of central and eastern Oregon (refer to Appendix C, specifically comment responses ONDA-12, ODFW-1, DOI (Milchak)-1, DOI (Milchak)-6, and USEPA-5). Commenters asked the Oregon ANG to consider expanding flare use restrictions from "extreme" to "high and extreme". Additionally, USFWS asked the Oregon ANG to avoid flare use during golden eagle nesting season.[1]

This technical analysis focuses on the issue of flare use in training by the Oregon ANG, wildfire danger, and wildfire history across the state as a whole but with a more in depth analysis of wildfire conditions in eastern Oregon as a case study. Wildfire danger is not a quantitative value that translates equally across agencies and terrain, and it is subjective to some degree, as it is a tool that management agencies use to communicate the risks of wildfire to the general public. This is particularly true for the Proposed Action which includes airspace areas that span multiple counties and overlies Federal and state lands

[1] Additionally, as original described in the Draft EIS, the Oregon ANG would establish seasonal buffer areas from surface to 1,000 feet AGL with a radius of 0.25 miles from mapped bald and golden eagle nests (flight operations would not occur within these buffer areas from 1 January - 15 August).

managed by multiple agencies. Therefore, in addition to wildfire danger ratings, other measures to calculate overall fire risk (e.g., weather, fuels, topography, minimum altitude, etc.) have been evaluated and presented where appropriate.

Due to mission critical training requirements and other important safety considerations the Oregon ANG has adopted and employs highly conservative operating (altitude restrictions) procedures and standards throughout its mission critical use of flares during training. The Final EIS declines to adopt commenters' suggestions to expand flare use restriction during "high and extreme" fire danger. The Draft EIS included a special procedure restricting the use of flares over areas deemed to be in the "extreme" wildfire risk category as determined under the National Fire Danger Rating System (NFDRS). However, upon further analysis, this additional measure has been determined unnecessary and impracticable due to the Oregon ANG's standard operating procedures of restricting flare use below 5,000 feet AGL. Flares released at an altitude of 5,000 feet AGL would not have the potential to ignite wildfires. The remainder of this technical analysis explains, details and provides support for the Oregon ANG's decisions, as reflected in the Final EIS.

I.1 INTRODUCTION

The purpose of the Proposed Action, as described in further detail within Section 1, *Introduction* of the Draft EIS, is to modify existing airspaces as well as establish new airspaces for the purpose of providing properly configured and located military airspace to support military training activities. The need for the Proposed Action is driven by several factors, including travel distance and time required to access existing training airspace areas as well as the frequency of weather conditions that limit the availability of existing coastal airspace areas for training. Under the Proposed Action, new airspace would be established over central Oregon and the eastern boundary of the existing Juniper/Hart MOA Complex in eastern Oregon would be extended approximately 20 miles to the east and 25 miles to the south.

Comments on the Draft EIS regarding the use of flares during training were received from three agencies, U.S. Fish and Wildlife Service (USFWS), U.S. Environmental Protection Agency (USEPA), and Oregon Department of Fish and Wildlife (ODFW), as well as one non-governmental organization, Oregon Natural Desert Association (ONDA) (refer to Appendix C, specifically comment responses ONDA-12, ODFW-1, DOI-1, DOI-6, USEPA-4, and USEPA-5). Concerns expressed centered on the use of flares during "high" and

"extreme" wildfire danger conditions, particularly in the more arid region of eastern Oregon, where desert sagebrush habitat exists.

Wildfire danger is normally defined as a descriptor of the combination of factors which affect the initiation, spread, and difficulty of control of wildfires in an area. These factors include fuels, weather, topography, and risk. The National Fire Danger Rating System (NFDRS) ratings are established by fire weather meteorologists at local National Weather Service (NWS) offices using predictive modelling based on broad vegetation patterns, daily and historic weather conditions, and historic wildfire occurrence data at different locations. The resulting wildfire hazard rating is distributed to requesting agencies. Wildfire danger is usually expressed in descriptive terms (i.e., "low", "moderate", "high", "very high", and "extreme") (National Wildfire Coordinating Group 2002).

As described in the Draft EIS, the Oregon ANG takes several conservative precautions with the use of flares, particularly in times of fire hazard conditions. Per Air Force Instruction (AFI) 11-214, the minimum altitude for flare use by F-15s over all Federal land is 700 feet above ground level (AGL), in order to ensure flares are completely extinguished before reaching the ground. However, due to increased wildfire risk in the arid west, the Oregon ANG has voluntarily raised the minimum elevation flare use for all training operations to 5,000 feet AGL (AFI 11-2F-15V3 KF CH 8). Based on the burnout time of five seconds for an MJU-7 flare (i.e., the flare model used by Oregon ANG pilots) and the minimum release elevation of 5,000 feet AGL, the difference between the estimated burn out elevation and contact with any potentially flammable material is approximately 4,598 feet AGL (refer to Table 4.7-2 in the Final EIS) nearly 1 mile, or the equivalent of 13 football fields, above the ground surface.[2] Even under rare circumstances in which a flare might require double the amount of time predicted for burnout (i.e., 10 seconds), there would still be a 3,390-foot buffer before the flare would contact flammable materials at the ground surface. MJU-7 flares do not have enough flammable materials to support burn times of longer durations.

Comments provided by USFWS on the Draft EIS requested that the Oregon ANG analyze whether wildfire risk would be reduced if flare use was restricted in the proposed airspace

[2] One football field includes 100 yards in the field of play as well as two 10-yard end zones, totaling approximately 360 feet

when NFDRS was at a "high" wildfire danger rating. Additional restrictions on the seasonal use of flares would not appear to measurably affect or reduce the potential for wildfires. Instead, restricting flare use based on local and national designations would unduly burden and seriously interfere with not only the Oregon ANG's mission critical training requirements but also the U.S. Department of Defense's (DoD's) tactical defense training mandate. "Extreme" wildfire risk areas are typically only known for the current or following day for a given area. Limited advance warning of these "extreme" fire conditions would not give the Oregon ANG the appropriate amount of time to adjust the weekly flight scheduling with FAA and established daily flight plans. Changes to the flight plan without the appropriate amount of notice, may result in loss of flare training for one or more days. The inability to deploy flares, even if just for a few days a year, could delay or inhibit critical training for the Oregon ANG. In order to minimize wildfire risks, while also accomplishing mission objectives, the Oregon ANG would continue to prohibit flare use below 5,000 feet AGL. Further limiting use of airspace for flare training based on fire ratings would significantly reduce the Oregon ANG pilots' ability to train and would not provide additional fire safety benefits. Therefore, the requested mitigation measure based on the National Fire Danger Rating would not be practicable.

Figure 1. Washington and Oregon BLM Districts

I.2 EXISTING REGIONAL SETTING

Vegetation types and topography vary widely across the State of Oregon, from forestland in the coastal region of the state, the Cascade Mountains in the central region of the state, and the high desert in the southeast portion of the state. Land use types within coastal forestlands generally range from private timberlands to National Forest and other federally and state-managed lands, with pockets of urban areas. The Great Basin Desert occupies approximately the southeast third of Oregon. Central Oregon and northern Nevada are primarily arid due to the rain shadow effect caused by the Cascades on the western boundary of the region. Land use types in these areas vary from forests to urban areas and from farmland to sagebrush.

Complete descriptions of land use types beneath the proposed airspaces included in the Proposed Action area are provided in the Final EIS (refer to Section 3.3, *Land Use and Visual Resources* and Appendix G, *Land Use and Land Management*). The existing Juniper/Hart MOA Complex overlies approximately 7,928 square miles in southeastern Oregon. Lands underlying the Juniper/Hart MOA Complex are predominantly managed by the U.S. Bureau of Land Management (BLM). Other federally managed lands underlying the existing and proposed airspace include three National Wildlife Refuges (NWRs), U.S. Forest Service (USFS) land (Burns District), and one Wild and Scenic River. Private land holdings are governed at the local level by county and city governments. No National Parks occur within these areas. Proposed modifications to the Juniper/Hart MOA Complex would include extensions of the airspace to the east and south. The extension of the existing Hart North and South MOA east and south from its existing dimensions would extend the airspace in Harney County in Oregon and establish new airspace over Humboldt County and Washoe County in northwestern Nevada.

The State of Oregon contains 56 million acres (90 percent of all lands) that are potentially burnable. Significantly for this analysis, 22 percent of those burnable acres (56 million acres) are classified as moderate-to-high wildfire risk (Oregon Department of Forestry [ODF] 2013). Although this analysis is largely focused on eastern Oregon, it should be noted that entire state of Oregon is considered highly flammable. Overall wildfire hazards within the state are increased with an increased reduction in moisture and increase in temperature, which is typical of the wildfire season, beginning in May and lasting through October (see Table 1).

Table 1. Fire Season Start and End across the State Forests of Oregon

Fire Season	Start Date	End Date	Total Days	Number of Fires	Acres Burned
2013	May 10	October 21	164	1,186	104,167
2014	May 22	October 23	154	1,119	53,387
2015	June 1	October 28	149	1,080	86,625
10-Year Average (2005 – 2014)	May 29	October 25	-	987	27,599

Source: ODF 2016a.

Known wildfire hazards in Oregon include lightning and human-caused fires. Over 50 percent of all wildfires in eastern Oregon since 1960 have been caused by lightning strikes (ODF 2016; see Figure 2).

Figure 2. Percent Cause of Fires in Eastern Oregon from 1960 to 2016 (ODF 2016d)

In 2015, persistent drought covered most of the state and intensified throughout the summer; by mid-September, Oregon Governor Kate Brown declared drought in 26 of 36 counties. Lightning-caused fires spread quickly in central and eastern Oregon. Approximately 50,000 lightning strikes in Oregon from May through mid-September accounted for 272 fires which burned 69,625 acres, or 80 percent of the total ODF-protected acres that burned in 2015. This total was more than twice the 10-year average for lightning fires (ODF 2016). The extreme fuel conditions and fire weather of 2015 prompted industrial and public fire prevention on a new scale. For example, in northwest Oregon officials had to discourage recreational shooting, as it was becoming a source of wildfire ignition.

I.3 METHODOLOGY

As stated above, wildfire danger is a subjective description normally defined as a combination of factors which affect the initiation, spread, and difficulty of control of wildfires in an area. A wildfire danger rating takes into account current and antecedent weather, fuel types, and both live and dead fuel moisture (ODF 2016b). However, wildfire danger ratings are not used or applied uniformly throughout the State of Oregon. While

there is a high-level of cooperation among land use agencies throughout the state, wildfire danger ratings and overall reporting varies greatly.

Readily accessible Federal, state, and interagency sources were used to gather data in an effort to summarize wildfire history and wildfire danger in the region. In addition to publicly available data, additional information was gathered from Federal and state agencies and via interagency cooperation through inquiries via email and telephone. Regional wildfire danger statistics were derived from the Wildland Fire Assessment System (WFAS), which was developed by the Fire Behavior unit at the Fire Sciences Laboratory in Missoula, Montana. The WFAS is supported and maintained at the National Interagency Fire Center (NIFC). As the foundation of the NWS Digital Services Program, the National Digital Forecast Database (NDFD) consists of gridded forecasts of sensible weather elements (e.g., maximum temperature, cloud cover, wind speed, relative humidity, etc.), which are used to make a determination regarding the level of wildfire danger (i.e., "low", "moderate", "high", "very high", and "extreme"). The NDFD contains a matrix of digital forecasts as reported by NWS field offices working in collaboration with the National Centers for Environmental Prediction (NCEP).

I.4 DATA ANALYSIS

The analysis below provides a regional overview of key variables influencing wildfire, including weather, fuels, and topography. These variables have been used to make inferences about the wildfire season and overall wildfire risk within the State of Oregon throughout the year. Additional analysis of the annual wildfire danger ratings associated with areas beneath and in the vicinity of the Juniper/Hart MOA Complex is also provided as a case study using 2015 wildfire data from the WFAS.

Weather

Weather is the most variable factor affecting wildfire behavior, with some geographic locations having a favorable overall climate for wildfire activity. Predominant wind directions also play a role in influencing a wildfire's path. Oregon's climate varies throughout the state but it is generally mild with cool summers and cold winters. The coastal regions are mild to cool year-round while eastern Oregon's high desert areas are hot in the summer and cold in the winter. Precipitation generally occurs year-round in much of Oregon; however, in southeast Oregon in the desert sagebrush, most precipitation falls in the winter. Table 2 provides long-term climate data for the region beneath the Juniper/Hart MOA Complex in eastern Oregon.

Table 2. 1981-2010 Temperature Normals at O O Ranch, Oregon (USC00356302)

Month	Precipitation (inches)	Min Temperature (°F)	Average Temperature (°F)	Max Temperature (°F)
January	0.74	19.4	30.0	40.6
February	0.72	23.3	33.9	44.5
March	1.07	28.1	41.0	53.8
April	1.04	30.8	45.4	59.9
May	1.71	35.9	51.3	66.8
June	0.73	41.1	59.3	77.6
July	0.37	47.0	66.7	86.4
August	0.36	44.2	65.3	86.4
September	0.47	35.8	57.0	78.2
October	0.72	30.0	47.4	64.7
November	0.96	24.4	36.5	48.6
December	0.87	18.0	29.0	40.0

Source: NOAA 2016a.
Notes: The O O Ranch National Climatic Data Center (NCDC) Station (USC00356302) is located beneath the Juniper C MOA.

Wildfire conditions, particularly in eastern Oregon, are generally greatest during late spring and early fall months, with a sharp decrease in precipitation and a corresponding increase in overall temperature (refer to Table 2). However, it is likely that in the future, conditions could continue to be warmer and drier during the spring and fall months as a result of climate change. Nature Conservancy climate models, which compare long-term average climate data between 1961-1990 to long-term modeled climate data in 2040-2069) predict approximately 10-degree increases in annual temperature throughout the state with little to no increase in annual precipitation (The Nature Conservancy 2016).

The Fire Weather Planning Forecast is a zone-type product used by land management personnel for decision-making and planning. The forecast decision (the wildfire danger rating) affects firefighter safety, protection of the public and property, and resource allocation. Weather parameters represent average conditions across the given zone.

In eastern Oregon, the Burns Interagency Fire Zone (BIFZ) is a group of cooperative members that includes the Bureau of Land Management (BLM), U.S. Forest Service (USFS), USFWS, and ODF. The BIFZ is divided into two fire-weather zones (north and south), based on the dominant vegetation type in those areas. The southern zone of the BIFZ overlaps with the Juniper/Hart MOA and is dominated by sagebrush (NWS 2016).

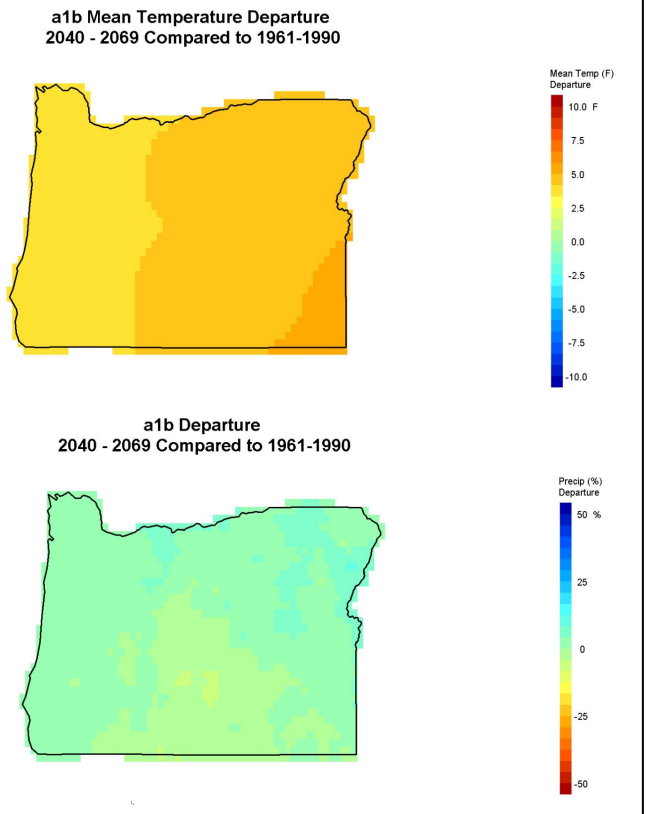


Figure 3. Projected Departures from Temperature and Precipitation Normals (The Nature Conservancy 2016)

Fuels

A wildfire's main source of fuel is natural vegetation. Fuels in Oregon vary widely, from coastal forests to high desert plants and grasslands, and is made up of many types of vegetation, ranging from conifer, brush, and rangeland fuel types. Sagebrush vegetation varies considerably across the BLM Burns District, from very dense to very sparse. Western juniper does occur in these areas, especially at mountainous foothills and in the northern portion of the district, and these areas comprise the densest stands of vegetation/fuels (BLM 2016).

Fuel moisture tends to be highest at the beginning of the fire season in May and lowest toward the end of fire season in October (see Figure 4).

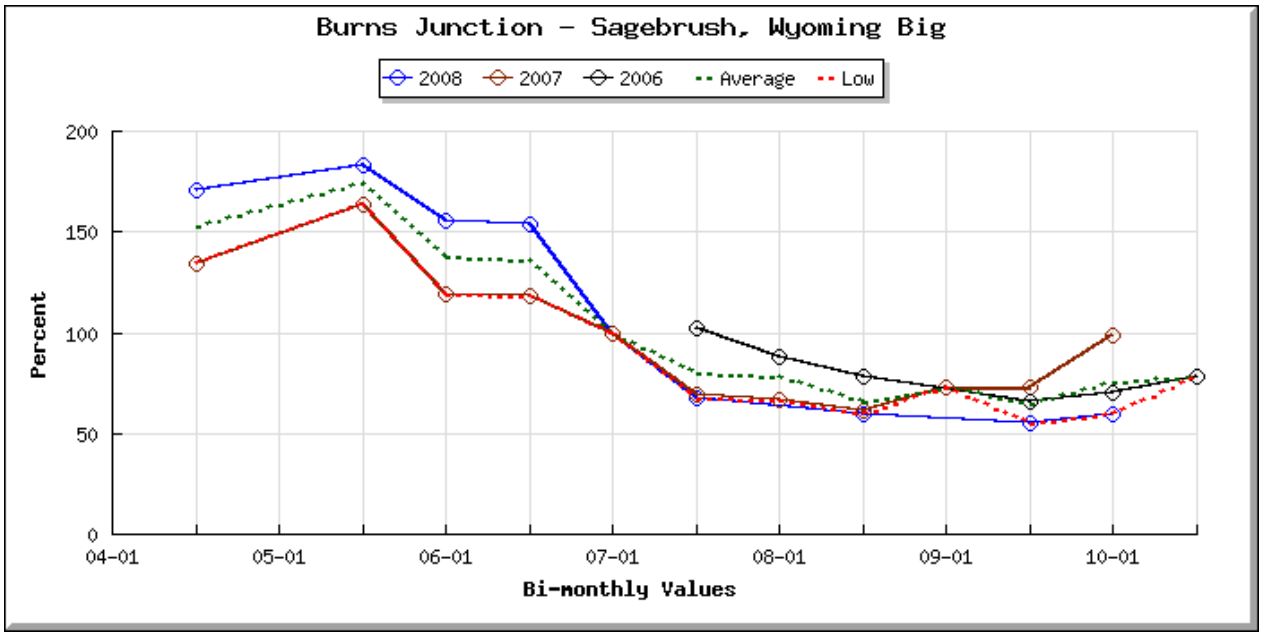


Figure 4. Fuel Moisture for Sagebrush in Southeast Oregon in 2008, 2007, and 2006 (USFS 2016a)

Topography

Topography influences the movement of air, directing a wildfire's course. Slope is a key topographic feature in fire behavior. The topography of Oregon is highly varied and consists of mountainous regions, large valleys, high elevation desert plateau, dense evergreen forests, and redwood forests along the coast. The highest point in Oregon is Mount Hood (11,249 feet above mean sea level [MSL]) in the Cascade Mountains, which stretch from northern California into Canada.

The area of desert sagebrush below the Juniper/Hart MOAs has an elevation ranging from 4,200 to 7,600 feet MSL (Pacific Northwest Wildfire Coordinating Group [PNWCG] and NWS 2011). This area is characterized by large variations in topography at the local level, with large flat open spaces as well as mountainous areas and steep ravines and box canyons. Given the overall size of the Juniper/Hart MOA Complex, a generalization of the topography cannot be presented in a way that is meaningful in describing fire hazard severity. However, it can be stated that during times of low fuel moisture, areas with complex topographies can be more prone to the spread of large fires.

Wildfire Danger

Since 2007, WFAS has been producing wildfire danger forecasts using data from the National Digital Forecast Database (USFS 2016b). However, overall wildfire danger

throughout a region is extremely localized given the varying microclimates, fuels, and topographies that occur over large land areas. Additionally, while the WFAS maintains data on observed wildfire danger across the country, uniform reporting has not yet been achieved. Although some stations report data regularly, other stations report more sporadically, therefore it is not possible to compare wildfire danger ratings at one station or within one particularly region over large expanses of time.

In order to give the most accurate representation of wildfire danger severity, the WFAS was reviewed for the reporting stations located closest to the Juniper/Hart MOA Complex. Seven stations were generally reviewed for representative fire data: Rock Creek, Fish Fin, Basque Hills, and Painted Hill, which are located beneath the proposed airspace, and Grass Mountain, Red Butte, and Allison, located east/northeast of the airspace.

Figure 5. WFAS Fire Weather Observation Data in Eastern Oregon

Source: USFS 2016b.

29-AUG-15: Fire Weather Observations from WIMS @ 1700 Mountain Time
: Ordered By Stn Id. KBDI= -99 = No Annual Precip for Station / PPT = Observed Precipitation (Inches)

Stn ID	Stn Name	Elev	Lat	Long	Mdl	Tmp	RH	Wind	PPT	ERC	BI	SC	KBDI	HUN	THOU	TEN	STL	ADJ	IC	(Staffing Specs)
353406	FT ROCK	4430	43.4	120.8	7T	72	23	15	.00	15	76	72	472	7	8	5	3+	H	52	ERC/ 17/ 21/80/95
353421	SUMMIT	6147	42.2	120.2	7G	64	48	22	.00	72	102	30	438	6	7	9	4	H	24	BI / 96/110/90/97
353422	COFFEE POT 2	5250	42.5	120.6	7C	71	30	24	.00	16	67	54	421	7	8	6	3+	H	50	ERC/ 21/ 23/90/97
353423	STRAWBERRY	5590	42.2	120.8	7C	69	32	12	.00	17	46	22	259	7	8	6	3+	M	44	ERC/ 22/ 24/90/97
353424	ROCK CREEK	5640	42.5	119.6	7T	70	41	17	.00	11	69	86	350	5	7	7	3+	M	35	BI / 91/110/90/97
353428	BROWNS WELL	4500	43.5	120.2	7C	76	26	17	.00	19	59	35	436	6	7	5	3+	H	63	ERC/ 21/ 23/80/95
353429	SUMMER LAKE	5400	42.7	120.7	7G	69	28	18	.00	79	108	31	380	7	7	6	5	V	51	ERC/ 71/ 78/90/97
353501	ALLISON	5320	43.9	119.5	7C	70	28	7	.00	18	37	13	193	7	8	5	4	H	37	ERC/ 16/ 20/90/97
353511	RIDDLE MTN	6281	43.1	118.4	7T	73	28	16	.00	17	90	94	305	5	6	5	5	V	59	ERC/ 11/ 15/80/95
353512	WAGONTIRE	6510	43.3	119.8	7T	65	33	35	.00	14	132	263	124	6	7	6	5	V	50	BI / 55/ 89/80/95
353515	CROW FLAT	5130	43.8	118.9	7C	71	29	8	.00	17	38	15	342	6	8	6	4	H	34	ERC/ 16/ 20/90/97
353516	FISH FIN	4900	42.4	119.1	7T	77	27	25	.00	16	114	172	559	5	6	5	3+	H	50	ERC/ 22/ 25/80/95
353517	SAGE HEN	4400	43.5	119.2	7T	72	33	22	.00	13	91	131	352	5	6	6	5	V	41	BI / 51/ 72/80/95
353520	BASQUE HILLS	4990	42.2	118.9	7T	79	23	28	.00	19	140	221	498	4	6	4	5	E	69	BI / 48/ 75/80/95
353521	P HILL	4880	42.8	118.9	7T	74	31	22	.00	17	109	148	386	5	6	5	5	V	56	BI / 48/ 75/80/95
353522	BALD MTN	5480	43.5	118.4	7T	71	34	13	.00	15	73	68	257	5	6	5	4	H	43	BI / 48/ 75/80/95
353524	ANTELOPE	6460	44.0	118.4	7C	67	39	35	.00	14	79	85	328	6	7	7	3+	M	38	ERC/ 16/ 20/90/97
353525	FOSTER FLAT	4999	42.9	119.2	7A	72	34	18	.00	2	35	98	536	5	7	6	3+	M	29	BI / 38/ 51/80/95
353526	MOON HILL	6100	42.8	118.6	7T	73	30	14	.00	17	80	76	237	5	6	5	5	V	51	BI / 48/ 75/80/95
353527	LITTLE MCCOY CR	5080	42.7	118.5	7A	80	23	12	.00	3	45	128	297	4	5	4	3+	H	45	BI / 48/ 75/80/95
353612	GRASMT	4800	42.6	117.4	7T	81	18	27	.00	21	144	220	382	4	5	4	5	E	71	BI / 64/ 89/80/95

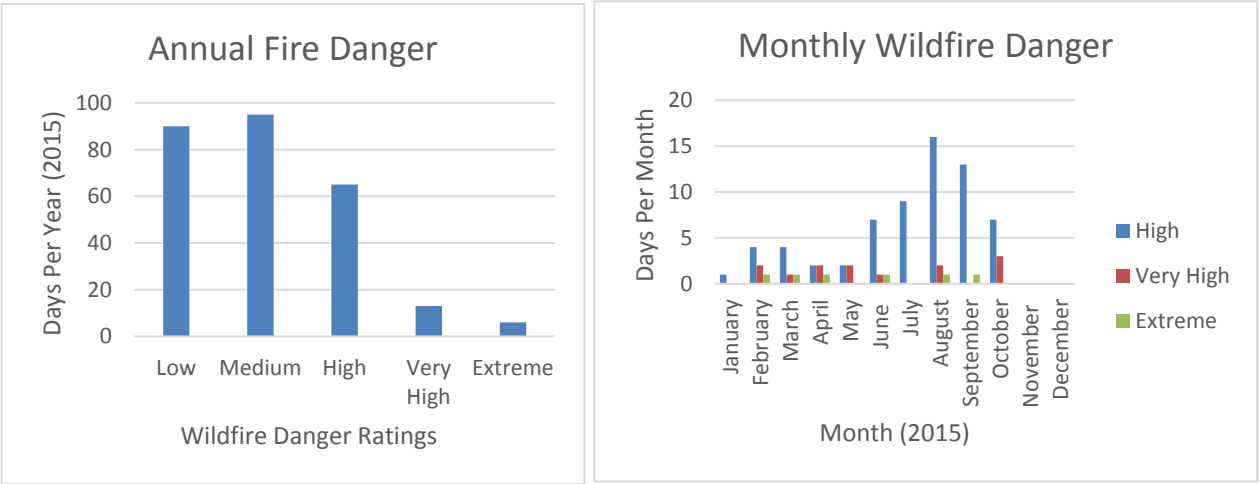
Notes: ADJ = NFDRS Wildfire Danger Rating
M = Moderate, H = High, V = Very High, E = Extreme

As demonstrated by Figure 5 above, while each of the seven stations are located within approximately 100 miles of each other, wildfire danger ratings can vary substantially depending on localized conditions. For example, on 29 August 2015 Rock Creek Station, located beneath the proposed Hart A MOA, reported a "moderate" wildfire danger, while Basque Hills, located 40 miles to the southeast beneath the proposed Juniper D MOA, reported an "extreme" wildfire danger (USFS 2016b). It is rare that the wildfire danger

ratings are uniform beneath the airspace, even during the wildfire season. The WFAS data revealed that more often than not, the wildfire danger beneath the airspace is a matrix of different ratings based on extremely localized condition.

In order to generalize the overall wildfire danger over time, each day of 2015 observed wildfire danger record was examined. Rock Creek Station was the preferred reporting station given its central location beneath the Juniper/Hart MOA Complex. However, if data was not available for a particular day at Rock Creek Station, then data was selected from the nearest station that did report information for that date. Grass Mountain and the other stations located east/northeast of the airspace were only selected if no stations located beneath the proposed airspace reported data. It should also be noted that there were 96 days throughout the year where either no stations throughout the State of Oregon and/or within 100 miles of the Juniper/Hart MOA Complex reported wildfire danger data in 2015.

Figure 6. Representation of Annual and Monthly Fire Danger Ratings in Eastern Oregon



As depicted in Figure 6, data from the WFAS revealed that wildfire danger beneath and within the vicinity of the Juniper/Hart MOA Complex is "high", "very high", or "extreme" approximately 31 percent of the days with recorded fire hazard data (i.e., 84 days of the 269 days for which a fire danger rating was recorded). As this data excludes days where wildfire danger data was not available, this relative percentage could be even greater. Within the fire season (i.e., May through October), stations reported "high", "very high", and "extreme" wildfire danger ratings approximately 40 percent of the time (excluding days where wildfire danger data was not available). Monthly wildfire danger

ratings greater than "moderate" were reported most often during the months of August and September, however, there were at least 6 days reported as "high", "very high", or "extreme" during each month of the fire season.

Wildfire Preparedness

Many interagency fire groups exist in Oregon and the surrounding regions, necessitated by the high cost and technical skill required of fighting wildfires. The level of resources and personnel and equipment available at any given time fluctuates depending on the time of year, location, and wildfire danger.

Oregon's Complete and Coordinated Fire Protection System relies on landowners and forestry professionals to share firefighting resources and equipment. Other Federal and state agencies, such as the National Wildland Fire Coordinating Group and the National Interagency Fire / Coordination Center (NMAC) via the Northwest Coordination Center for the Geographic Area of Oregon and Washington (PNWCG/MAC), BLM, USFS, NPS, Bureau of Indian Affairs (BIA), USFWS, and many other collaborators, are also involved (ODF 2016).

Since 1995, the BLM has been integrated with the USFS for fire and aviation management. In the Pacific Northwest, the fire program is managed cooperatively between the two agencies and in close collaboration with the Pacific Northwest Wildfire Coordinating Group, an interagency group including the five Federal wildland fire agencies, two state forestry agencies, and two state fire marshal associations. The agencies administer fire, fuels, and aviation programs cooperatively, increasing efficiency and capitalizing on the expertise of each agency's personnel (BLM 2016b).

The BIFZ has a standard for increasing vigilance and crew availability as wildfire danger increases (see Table 3).

Table 3. Burns Interagency Fire Zone Information for the Southern Zone in 2015

Wildfire Danger Level Adjective	Dispatch Level	Management Actions
High	3	Work hours are from 9:30 AM to 6 PM Phone and radio monitored by BICC until 1800 Prepare daily updates to fire recording phone Daily staffing reports required Consider increasing patrols following dry lightning storms

Wildfire Danger Level Adjective	Dispatch Level	Management Actions
		Predicted LAL between 4 and 6, bump up to Level IV
Very High	4	All of the above PLUS Briefings for Agency Administrators as needed Extended staffing hours if appropriate Consider fire restrictions and public safety messages Consider cancelling planned project work and prescribed fires
Extreme	5	All of the above PLUS Consider ordered stand-by or cancelled leave for employees Consider daily briefings for Agency Administrators Issue regular press releases Maintain regular communication with local fire chiefs and county fire marshals

Source: Burns Interagency Fire Zone 2015.

The State of Oregon is one of three states to adopt a state-wide sage-grouse conservation plan that includes interagency regulatory mechanisms. It also addresses wildfire, a major concern in sagebrush areas. Increases in funding and logistical support for Rangeland Fire Protection Areas have been provided to improve suppression efforts, and the rapid deployment of smokejumpers to remote areas helped limit the fires in sage-grouse habitat. Prescribed wildfire, treatment of encroaching juniper stands, and protection of existing sagebrush habitat are planned BLM activities (USFWS 2016).

I.5 DISCUSSION

Correspondence received from the USFWS and USEPA requested that the Oregon ANG further restrict the use of flares when the NFDRS reports a "high" wildfire danger rating. As described in Section 1.4, *Analysis* these additional restrictions on the use of flares throughout the year would eliminate the ability of pilots to deploy flares in the proposed airspace – including Juniper/Hart MOA Complex – during approximately one third of the year.

Impact to the Oregon ANG Mission

Combat-effective chaff and flare deployment requires training and frequent use by aircrews in order to both master the devices' capabilities and ensure safe and efficient handling by ground crews. The Oregon ANG needs to conduct training operations using chaff and flares, in order to provide aircrews with the skills needed to meet and defeat potential hostile challenges to the nation's security and vital interests. Training is

conducted through simulated battle conditions within Department of Defense (DoD) weapons ranges, electronic combat ranges, and other airspace areas, such as MOAs and Military Training Routes (MTRs) that have been assessed and approved for chaff or flare use. Chaff and flares also are used in field exercises. The training resources represented by the use of chaff and flares must be available to support development and implementation of the tactics necessary to prevail in potential combat situations.

The 173d Fighter Wing (173 FW) is the sole Formal Training Unit (FTU) for the F-15C. The FTU is a step in a multi-year journey for a student pilot to become a Combat Mission Ready (CMR) fighter pilot. This journey is known as a "pipeline" due to its multi-step nature and is managed by Headquarters Air Education Training Command, Air Combat Command, and the Air Force Personnel Center. The necessity for flare use during FTU training missions is highlighted within formal studies and required by the F-15C training syllabus. Approximately 33 of the 46 sorties in the Initial Course require flare use by the student pilots and their support aircraft. Reducing deployment of flares or delaying their use in training would result in decreased combat effectiveness by fighter aircrew and a delay in advancing within their "pipeline" training. As mentioned previously, the Oregon ANG does not have the authority to alter "pipeline" training (e.g., restructuring courses or altering training requirements). Delaying a student during their Initial Qualification training would exacerbate an already critical fighter pilot shortage in the Combat Air Force (CAF).

The Initial Qualification Course is approximately 130 training days. Classes are scheduled throughout the year based on requirements driven by the aforementioned commands. As there is not an annual class start date for the Initial Course, the training program and individual training missions could not feasibly avoid the 6-month fire season between May and October. Eliminating the use of the airspace for approximately 84 days out of the year (i.e., during "high", "very high", and "extreme" fire danger) would would not be practicable and would result a corresponding delay of up to 84 days in pilot production, which could have carry over effects on future class recruitment. This would severely impact the overall pilot throughput, and would not meet the purpose and need of the Proposed Action to provide a more usable airspace to support efficient, realistic mission-oriented training. The annual number of days considered as "extreme" is also very unpredictable and has the potential to restrict the ability of the Oregon ANG to fully execute pilot training if "extreme" conditions exist for an extended period of time. The inability to deploy flares, even if just for a few days a year, could delay or inhibit critical training for the Oregon ANG and would not be practicable.

Existing Special Procedures Related to Flares

The Oregon ANG already conservatively prohibits the use flares below 5,000 feet AGL, which is well beyond the Air Combat Command requirement of a minimum altitude of 700 feet AGL (i.e., the minimum altitude required by AFI 11-214). Additionally Oregon ANG pilots engage a safety on the aircraft that prevents the release of flares on Low A/A training missions, which effectively eliminates the potential to release a flare below 5,000 feet AGL, barring any pilot error. Based on the burnout time for an MJU-7 flare of five seconds and the minimum release elevation of 5,000 feet AGL, the difference between the estimated burnout elevation and contact with any potentially flammable material is approximately 4,598 feet AGL (refer to Table 4.7-2 in the Final EIS), nearly 1 mile, or the equivalent of 13 football fields, above the ground surface. Due to the limited physical quantity of flammable material, flares released at 5,000 feet AGL could not possibly reach the ground surface before extinguishing. Consequently, regardless of the fire danger rating below the aircraft, flares released at an altitude of 5,000 feet AGL would not have the potential to ignite wildfires. In the rare event that a flare fails to ignite and contacts the ground surface, it is handled by the ANG as unexploded ordinance. If an unburned broken or whole flare struck the ground, it would not burn unless subject to temperatures or friction generating temperatures in the one to two thousand degree range (USAF 2011).

I.6 CONCLUSION

In order to minimize wildfire risks, while also accomplishing mission objectives, the Oregon ANG will continue to prohibit flare use below 5,000 feet AGL. The continued implementation of this standard operating procedure per AFI 11-2F-15V3 KF CH 8 would effectively eliminate the potential for wildfire related to flare use by the Oregon ANG regardless of the underlying fire danger rating.

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ATTACHMENT A

WFAS (2015) Fire Danger Data

Date	Station	Elev	Lat	Long	Tmp	RH	Wind	PPT	ERC	BI	SC	KBDI	ADJ	IC
1/1/2015	N/A													
1/2/2015	GRASMT	4800	42.6	117.4	24	63	2	0	7	18	7	179	L	5
1/3/2015	N/A													
1/4/2015	N/A													
1/5/2015	GRASMT	4800	42.6	117.4	44	53	6	0	3	14	10	179	L	5
1/6/2015	N/A													
1/7/2015	ROCK_CREEK	5640	42.5	119.6	57	44	3	0	11	27	11	449	L	10
1/8/2015	N/A													
1/9/2015	GRASMT	4800	42.6	117.4	30	95	0	0.01	0	0	0	179	L	0
1/10/2015	N/A													
1/11/2015	N/A													
1/12/2015	ROCK_CREEK	5640	42.5	119.6	33	95	8	0.07	0	0	0	449	L	0
1/13/2015	GRASMT	4800	42.6	117.4	37	76	5	0.01	2	9	6	179	L	4
1/14/2015	GRASMT	4800	42.6	117.4	39	66	7	0	6	29	25	179	L	11
1/15/2015	BASQUE_HILLS	4990	42.2	118.9	37	62	9	0	1	11	11	510	L	3
1/16/2015	GRASMT	4800	42.6	117.4	42	88	11	0.08	0	0	0	179	L	0
1/17/2015	N/A													
1/18/2015	N/A													
1/19/2015	N/A													
1/20/2015	N/A													
1/21/2015	N/A													
1/22/2015	BASQUE_HILLS	4990	42.2	118.9	42	36	7	0	12	45	31	510	M	17
1/23/2015	GRASMT	4800	42.6	117.4	36	75	1	0	0	0	0	179	L	0
1/24/2015	N/A													
1/25/2015	N/A													
1/26/2015	N/A													
1/27/2015	FISH_FIN	4900	42.4	119.1	45	62	3	0	0	0	0	633	L	0
1/28/2015	BASQUE_HILLS	4990	42.2	118.9	49	54	5	0	6	27	19	512	M	9
1/29/2015	BASQUE_HILLS	4990	42.2	118.9	49	54	10	0	11	53	48	512	H	23
1/30/2015	N/A													
1/31/2015	N/A													
2/1/2015	N/A													
2/2/2015	BASQUE_HILLS	4990	42.2	118.9	49	76	12	0.05	0	0	0	512	L	0
2/3/2015	ROCK_CREEK	5640	42.5	119.6	49	63	25	0.02	0	0	0	452	L	0
2/4/2015	BASQUE_HILLS	4990	42.2	118.9	51	43	10	0	9	48	47	512	M	18
2/5/2015	BASQUE_HILLS	4990	42.2	118.9	60	15	27	0	20	146	227	512	E	67
2/6/2015	N/A													
2/7/2015	N/A													
2/8/2015	N/A													
2/9/2015	BASQUE_HILLS	4990	42.2	118.9	50	45	27	0.11	13	113	200	512	V	39

Date	Station	Elev	Lat	Long	Tmp	RH	Wind	PPT	ERC	BI	SC	KBDI	ADJ	IC
2/10/2015	FISH_FIN	4900	42.4	119.1	50	41	4	0	0	0	0	633	L	0
2/11/2015	BASQUE_HILLS	4990	42.2	118.9	52	41	12	0	13	66	63	512	H	31
2/12/2015	GRASMT	4800	42.6	117.4	51	63	3	0	8	23	11	162	L	8
2/13/2015	BASQUE_HILLS	4990	42.2	118.9	57	36	17	0	14	84	102	512	V	38
2/14/2015	N/A													
2/15/2015	N/A													
2/16/2015	N/A													
2/17/2015	N/A													
2/18/2015	N/A													
2/19/2015	BASQUE_HILLS	4990	42.2	118.9	57	24	4	0	19	47	20	513	M	29
2/20/2015	BASQUE_HILLS	4990	42.2	118.9	44	46	8	0	13	52	37	513	H	23
2/21/2015	GRASMT	4800	42.6	117.4	40	60	15	0.02	2	19	26	165	L	8
2/22/2015	GRASMT	4800	42.6	117.4	33	43	10	0	13	58	47	165	M	25
2/23/2015	FISH_FIN	4900	42.4	119.1	39	15	6	0	21	56	28	633	M	37
2/24/2015	FISH_FIN	4900	42.4	119.1	56	5	4	0	24	50	19	633	H	38
2/25/2015	BASQUE_HILLS	4990	42.2	118.9	49	28	11	0	16	70	58	513	H	35
2/26/2015	N/A													
2/27/2015	GRASMT	4800	42.6	117.4	34	94	5	0.05	0	0	0	165	L	0
2/28/2015	N/A													
3/1/2015	N/A													
3/2/2015	BASQUE_HILLS	4990	42.2	118.9	42	38	8	0	12	50	37	487	H	20
3/3/2015	BASQUE_HILLS	4990	42.2	118.9	35	41	11	0	14	64	57	487	H	29
3/4/2015	ROCK_CREEK	5640	42.5	119.6	42	34	8	0	15	54	36	449	M	25
3/5/2015	FISH_FIN	4900	42.4	119.1	58	14	5	0	21	52	23	604	M	36
3/6/2015	BASQUE_HILLS	4990	42.2	118.9	62	18	5	0	21	54	26	487	H	38
3/7/2015	GRASMT	4800	42.6	117.4	59	22	6	0	20	55	27	167	M	36
3/8/2015	N/A													
3/9/2015	GRASMT	4800	42.6	117.4	58	22	3	0	20	39	13	169	M	24
3/10/2015	BASQUE_HILLS	4990	42.2	118.9	66	11	15	0	23	110	106	490	E	86
3/11/2015	BASQUE_HILLS	4990	42.2	118.9	49	62	13	0.01	2	15	19	491	L	6
3/12/2015	BASQUE_HILLS	4990	42.2	118.9	52	58	6	0.07	4	21	17	491	L	8
3/13/2015	N/A													
3/14/2015	GRASMT	4800	42.6	117.4	53	81	10	0.05	0	0	0	173	L	0
3/15/2015	GRASMT	4800	42.6	117.4	64	28	20	0.01	15	99	129	174	V	44
3/16/2015	BASQUE_HILLS	4990	42.2	118.9	53	54	16	0.04	3	31	50	493	M	13
3/17/2015	GRASMT	4800	42.6	117.4	54	57	10	0	4	29	32	175	L	11
3/18/2015	BASQUE_HILLS	4990	42.2	118.9	50	36	5	0	16	45	23	493	M	23
3/19/2015	N/A													
3/20/2015	GRASMT	4800	42.6	117.4	68	18	4	0	21	45	17	178	M	30
3/21/2015	N/A													

Date	Station	Elev	Lat	Long	Tmp	RH	Wind	PPT	ERC	BI	SC	KBDI	ADJ	IC
3/22/2015	N/A													
3/23/2015	N/A													
3/24/2015	FISH_FIN	4900	42.4	119.1	41	64	9	0	1	10	10	605	L	3
3/25/2015	N/A													
3/26/2015	BASQUE_HILLS	4990	42.2	118.9	66	33	10	0	17	69	53	496	H	42
3/27/2015	N/A													
3/28/2015	N/A													
3/29/2015	N/A													
3/30/2015	N/A													
3/31/2015	N/A													
4/1/2015	ROCK_CREEK	5640	42.5	119.6	40	41	7	0.04	13	46	29	449	L	19
4/2/2015	N/A													
4/3/2015	BASQUE_HILLS	4990	42.2	118.9	56	13	13	0	23	99	86	501	E	78
4/4/2015	N/A													
4/5/2015	N/A													
4/6/2015	FISH_FIN	4900	42.4	119.1	49	19	12	0	20	82	68	609	H	52
4/7/2015	FISH_FIN	4900	42.4	119.1	39	62	8	0	2	11	9	609	L	3
4/8/2015	FISH_FIN	4900	42.4	119.1	45	69	15	0.25	2	19	26	604	L	
4/9/2015	N/A													
4/10/2015	ALLISON	5320	43.9	119.5	56	27	7	0	16	34	13	10	M	30
4/11/2015	N/A													
4/12/2015	N/A													
4/13/2015	ROCK_CREEK	5640	42.5	119.6	61	19	18	0	19	106	119	450	V	61
4/14/2015	ROCK_CREEK	5640	42.5	119.6	34	54	27	0	6	68	159	451	M	19
4/15/2015	N/A													
4/16/2015	ROCK_CREEK	5640	42.5	119.6	57	16	8	0	21	66	40	451	H	45
4/17/2015	ROCK_CREEK	5640	42.5	119.6	65	16	7	0	21	62	34	452	M	43
4/18/2015	N/A													
4/19/2015	N/A													
4/20/2015	N/A													
4/21/2015	ROCK_CREEK	5640	42.5	119.6	66	18	8	0	19	63	38	456	M	37
4/22/2015	ROCK_CREEK	5640	42.5	119.6	53	30	17	0	17	94	104	457	V	50
4/23/2015	ROCK_CREEK	5640	42.5	119.6	57	31	12	0	14	68	61	457	M	31
4/24/2015	P_HILL	4880	42.8	118.9	49	39	6	0.3	6	24	15	266	L	13
4/25/2015	N/A													
4/26/2015	N/A													
4/27/2015	ROCK_CREEK	5640	42.5	119.6	62	26	9	0	18	64	44	438	M	39
4/28/2015	N/A													
4/29/2015	FISH_FIN	4900	42.4	119.1	64	39	12	0	13	64	60	603	M	29
4/30/2015	ROCK_CREEK	5640	42.5	119.6	60	16	6	0.01	21	56	28	440	M	38

Date	Station	Elev	Lat	Long	Tmp	RH	Wind	PPT	ERC	BI	SC	KBDI	ADJ	IC
5/1/2015	GRASMT	4800	42.6	117.4	71	12	6	0	12	34	16	161	M	36
5/2/2015	N/A													
5/3/2015	N/A													
5/4/2015	ROCK_CREEK	5640	42.5	119.6	72	16	13	0	21	92	79	444	V	69
5/5/2015	ROCK_CREEK	5640	42.5	119.6	58	18	14	0	20	93	85	445	V	63
5/6/2015	FISH_FIN	4900	42.4	119.1	55	20	10	0	20	74	52	608	H	46
5/7/2015	FISH_FIN	4900	42.4	119.1	52	29	15	0	15	80	84	608	M	37
5/8/2015	N/A													
5/9/2015	N/A													
5/10/2015	N/A													
5/11/2015	ROCK_CREEK	5640	42.5	119.6	61	36	11	0	13	60	53	448	M	25
5/12/2015	ROCK_CREEK	5640	42.5	119.6	43	84	12	0.07	0	0	0	448	L	0
5/13/2015	ROCK_CREEK	5640	42.5	119.6	47	56	5	0.23	0	0	0	438	L	0
5/14/2015	ROCK_CREEK	5640	42.5	119.6	41	89	4	0.17	0	0	0	421	L	0
5/15/2015	ROCK_CREEK	5640	42.5	119.6	41	95	12	0.64	0	0	0	357	L	0
5/16/2015	N/A													
5/17/2015	N/A													
5/18/2015	N/A													
5/19/2015	ROCK_CREEK	5640	42.5	119.6	55	68	13	0.04	2	14	19	323	L	6
5/20/2015	ROCK_CREEK	5640	42.5	119.6	49	84	1	0.34	0	0	0	295	L	0
5/21/2015	BASQUE_HILLS	4990	42.2	118.9	63	38	4	0.11	5	11	3	384	L	8
5/22/2015	P_HILL	4880	42.8	118.9	62	53	6	0.15	4	12	5	61	L	8
5/23/2015	N/A													
5/24/2015	N/A													
5/25/2015	N/A													
5/26/2015	ROCK_CREEK	5640	42.5	119.6	64	35	12	0	14	67	61	232	M	33
5/27/2015	ROCK_CREEK	5640	42.5	119.6	67	29	12	0	17	76	64	233	H	45
5/28/2015	ROCK_CREEK	5640	42.5	119.6	71	30	5	0	14	38	17	235	M	23
5/29/2015	BASQUE_HILLS	4990	42.2	118.9	77	23	7	0	8	19	8	341	L	17
5/30/2015	GRASMT	4800	42.6	117.4	74	28	7	0	4	12	4	43	L	11
5/31/2015	GRASMT	4800	42.6	117.4	83	14	11	0	6	20	9	47	M	24
6/1/2015	BASQUE_HILLS	4990	42.2	118.9	71	26	22	0	7	42	42	348	M	36
6/2/2015	ROCK_CREEK	5640	42.5	119.6	61	42	14	0.02	10	62	72	246	M	25
6/3/2015	ROCK_CREEK	5640	42.5	119.6	62	41	8	0.01	10	45	34	247	L	17
6/4/2015	ROCK_CREEK	5640	42.5	119.6	65	31	12	0	5	20	12	248	L	14
6/5/2015	ROCK_CREEK	5640	42.5	119.6	73	32	14	0	6	24	16	251	L	19
6/6/2015	ROCK_CREEK	5640	42.5	119.6	73	32	14	0	6	24	16	251	L	19
6/7/2015	N/A													
6/8/2015	ROCK_CREEK	5640	42.5	119.6	82	23	5	0	9	23	9	258	L	19
6/9/2015	ROCK_CREEK	5640	42.5	119.6	77	34	14	0	5	23	16	262	L	16

Date	Station	Elev	Lat	Long	Tmp	RH	Wind	PPT	ERC	BI	SC	KBDI	ADJ	IC
6/10/2015	N/A													
6/11/2015	ROCK_CREEK	5640	42.5	119.6	77	16	11	0	13	50	33	267	H	46
6/12/2015	ROCK_CREEK	5640	42.5	119.6	76	21	13	0	12	53	41	270	H	46
6/13/2015	ROCK_CREEK	5640	42.5	119.6	73	13	13	0	15	62	47	272	H	58
6/14/2015	FISH_FIN	4900	42.4	119.1	81	16	7	0	16	44	21	438	M	38
6/15/2015	ROCK_CREEK	5640	42.5	119.6	74	24	11	0	10	42	31	278	M	30
6/16/2015	ROCK_CREEK	5640	42.5	119.6	79	21	8	0	12	40	22	281	M	31
6/17/2015	ROCK_CREEK	5640	42.5	119.6	81	18	10	0	14	51	33	284	H	45
6/18/2015	ALLISON	5320	43.9	119.5	76	22	6	0	11	19	5	66	M	25
6/19/2015	GRASMT	4800	42.6	117.4	79	18	5	0	16	38	15	122	M	33
6/20/2015	P_HILL	4880	42.8	118.9	79	17	6	0	16	44	21	102	M	36
6/21/2015	FISH_FIN	4900	42.4	119.1	81	10	18	0	19	94	94	457	V	88
6/22/2015	ROCK_CREEK	5640	42.5	119.6	77	18	8	0	15	48	26	297	M	39
6/23/2015	ROCK_CREEK	5640	42.5	119.6	79	22	9	0	13	47	30	299	M	35
6/24/2015	ROCK_CREEK	5640	42.5	119.6	85	11	11	0	18	65	44	303	H	59
6/25/2015	ROCK_CREEK	5640	42.5	119.6	89	14	4	0	18	36	13	307	M	32
6/26/2015	ROCK_CREEK	5640	42.5	119.6	94	12	7	0	18	50	25	313	H	45
6/27/2015	BASQUE_HILLS	4990	42.2	118.9	97	11	18	0	20	103	106	420	E	93
6/28/2015	ROCK_CREEK	5640	42.5	119.6	87	6	6	0	17	43	19	303	M	42
6/29/2015	ROCK_CREEK	5640	42.5	119.6	89	22	10	0.11	15	55	37	329	M	42
6/30/2015	ROCK_CREEK	5640	42.5	119.6	88	20	13	0	15	67	55	333	H	53
7/1/2015	ROCK_CREEK	5640	42.5	119.6	92	18	3	0	16	31	10	338	M	24
7/2/2015	ROCK_CREEK	5640	42.5	119.6	93	15	9	0	18	58	35	343	H	50
7/3/2015	ROCK_CREEK	5640	42.5	119.6	91	20	10	0	17	61	40	349	H	51
7/4/2015	ROCK_CREEK	5640	42.5	119.6	89	15	9	0	19	61	37	353	H	53
7/5/2015	ROCK_CREEK	5640	42.5	119.6	68	54	13	0.01	3	18	18	357	L	9
7/6/2015	ROCK_CREEK	5640	42.5	119.6	83	20	8	0.1	15	50	29	360	M	37
7/7/2015	ROCK_CREEK	5640	42.5	119.6	74	32	9	0	10	42	31	363	M	24
7/8/2015	ROCK_CREEK	5640	42.5	119.6	59	64	8	0.44	0	0	0	342	L	0
7/9/2015	ROCK_CREEK	5640	42.5	119.6	72	42	9	0.01	5	22	16	342	L	13
7/10/2015	ROCK_CREEK	5640	42.5	119.6	69	49	9	0.36	3	14	10	308	L	8
7/11/2015	ROCK_CREEK	5640	42.5	119.6	70	46	17	0.43	4	24	25	266	L	16
7/12/2015	ROCK_CREEK	5640	42.5	119.6	69	37	11	0	5	26	20	268	L	16
7/13/2015	ROCK_CREEK	5640	42.5	119.6	75	26	7	0	11	35	19	270	M	25
7/14/2015	ROCK_CREEK	5640	42.5	119.6	73	34	8	0	7	26	17	272	L	16
7/15/2015	ROCK_CREEK	5640	42.5	119.6	76	29	11	0	11	47	36	274	M	36
7/16/2015	ROCK_CREEK	5640	42.5	119.6	75	22	15	0	13	65	59	276	H	54
7/17/2015	FISH_FIN	4900	42.4	119.1	75	20	5	0	15	36	15	486	M	26
7/18/2015	ROCK_CREEK	5640	42.5	119.6	76	20	10	0	14	52	35	278	M	43

Date	Station	Elev	Lat	Long	Tmp	RH	Wind	PPT	ERC	BI	SC	KBDI	ADJ	IC
7/19/2015	ROCK_CREEK	5640	42.5	119.6	81	19	5	0	14	35	14	281	M	27
7/20/2015	ROCK_CREEK	5640	42.5	119.6	82	20	6	0	15	40	18	284	M	32
7/21/2015	ROCK_CREEK	5640	42.5	119.6	81	22	12	0	13	55	44	287	M	40
7/22/2015	ROCK_CREEK	5640	42.5	119.6	78	29	17	0.04	12	66	70	290	H	51
7/23/2015	ROCK_CREEK	5640	42.5	119.6	75	25	13	0.78	11	53	46	231	M	40
7/24/2015	ROCK_CREEK	5640	42.5	119.6	77	21	12	0	14	57	44	233	H	48
7/25/2015	ROCK_CREEK	5640	42.5	119.6	77	17	14	0	15	68	57	236	H	59
7/26/2015	ROCK_CREEK	5640	42.5	119.6	70	37	12	0	7	39	34	238	M	24
7/27/2015	ROCK_CREEK	5640	42.5	119.6	63	34	10	0.13	9	37	28	240	M	26
7/28/2015	ROCK_CREEK	5640	42.5	119.6	72	17	6	0	14	38	17	242	M	32
7/29/2015	ROCK_CREEK	5640	42.5	119.6	81	14	10	0	16	55	35	245	H	51
7/30/2015	ROCK_CREEK	5640	42.5	119.6	89	11	9	0	18	56	33	250	H	56
7/31/2015	ROCK_CREEK	5640	42.5	119.6	88	12	4	0	16	34	12	255	M	28
8/1/2015	FISH_FIN	4900	42.4	119.1	96	11	5	0	19	44	18	492	M	39
8/2/2015	ROCK_CREEK	5640	42.5	119.6	86	17	12	0	16	63	47	265	H	53
8/3/2015	ROCK_CREEK	5640	42.5	119.6	80	25	10	0.02	13	49	34	269	M	36
8/4/2015	ROCK_CREEK	5640	42.5	119.6	83	15	6	0	17	43	19	272	M	37
8/5/2015	ROCK_CREEK	5640	42.5	119.6	71	34	11	0	9	44	36	275	M	27
8/6/2015	ROCK_CREEK	5640	42.5	119.6	77	25	7	0	13	40	22	277	M	28
8/7/2015	ROCK_CREEK	5640	42.5	119.6	74	20	12	0	14	59	46	279	M	41
8/8/2015	ROCK_CREEK	5640	42.5	119.6	78	18	10	0	15	56	37	282	M	43
8/9/2015	ROCK_CREEK	5640	42.5	119.6	80	12	14	0	19	78	65	285	H	73
8/10/2015	FISH_FIN	4900	42.4	119.1	84	16	7	0	18	52	27	514	M	40
8/11/2015	ROCK_CREEK	5640	42.5	119.6	84	10	14	0	20	83	69	291	V	80
8/12/2015	ROCK_CREEK	5640	42.5	119.6	85	11	10	0	20	67	43	295	H	63
8/13/2015	ROCK_CREEK	5640	42.5	119.6	87	9	13	0	21	82	64	299	H	78
8/14/2015	ROCK_CREEK	5640	42.5	119.6	77	14	16	0	19	89	83	303	H	77
8/15/2015	ROCK_CREEK	5640	42.5	119.6	75	25	10	0	14	55	39	305	M	37
8/16/2015	ROCK_CREEK	5640	42.5	119.6	79	16	10	0	18	64	42	307	H	53
8/17/2015	ROCK_CREEK	5640	42.5	119.6	79	13	11	0	20	72	50	310	H	62
8/18/2015	ROCK_CREEK	5640	42.5	119.6	82	14	9	0	19	63	38	313	H	54
8/19/2015	ROCK_CREEK	5640	42.5	119.6	85	14	10	0	19	66	44	316	H	54
8/20/2015	ROCK_CREEK	5640	42.5	119.6	83	15	9	0	19	63	39	320	H	53
8/21/2015	ROCK_CREEK	5640	42.5	119.6	78	18	16	0	18	88	84	324	H	71
8/22/2015	ROCK_CREEK	5640	42.5	119.6	79	11	8	0	21	62	35	327	H	55
8/23/2015	ROCK_CREEK	5640	42.5	119.6	88	10	17	0	21	102	101	331	E	92
8/24/2015	ROCK_CREEK	5640	42.5	119.6	84	15	14	0	20	87	74	335	H	74
8/25/2015	ROCK_CREEK	5640	42.5	119.6	83	12	14	0	20	88	75	338	H	74
8/26/2015	ROCK_CREEK	5640	42.5	119.6	84	8	13	0	22	89	72	341	V	82
8/27/2015	ROCK_CREEK	5640	42.5	119.6	83	15	12	0	20	78	60	344	H	61

Date	Station	Elev	Lat	Long	Tmp	RH	Wind	PPT	ERC	BI	SC	KBDI	ADJ	IC
8/28/2015	ROCK_CREEK	5640	42.5	119.6	81	19	17	0	17	91	94	347	H	63
8/29/2015	ROCK_CREEK	5640	42.5	119.6	70	41	17	0	11	69	86	350	M	35
8/30/2015	ROCK_CREEK	5640	42.5	119.6	68	27	11	0	15	63	49	352	M	37
8/31/2015	ROCK_CREEK	5640	42.5	119.6	75	23	8	0	17	56	33	354	M	39
9/1/2015	ROCK_CREEK	5640	42.5	119.6	78	19	14	0	19	83	73	356	H	65
9/2/2015	ROCK_CREEK	5640	42.5	119.6	70	26	15	0	15	77	75	358	H	48
9/3/2015	ROCK_CREEK	5640	42.5	119.6	54	57	10	0.03	2	14	12	359	L	6
9/4/2015	ROCK_CREEK	5640	42.5	119.6	51	55	14	0.02	2	17	20	360	L	7
9/5/2015	ROCK_CREEK	5640	42.5	119.6	53	41	13	0.12	8	46	47	360	M	27
9/6/2015	BASQUE_HILLS	4990	42.2	118.9	69	14	3	0	20	41	15	507	M	33
9/7/2015	ROCK_CREEK	5640	42.5	119.6	68	22	14	0	15	68	60	362	H	52
9/8/2015	ROCK_CREEK	5640	42.5	119.6	77	15	10	0	17	60	40	364	H	52
9/9/2015	ROCK_CREEK	5640	42.5	119.6	84	11	9	0	18	60	36	367	H	53
9/10/2015	ROCK_CREEK	5640	42.5	119.6	87	10	9	0	20	63	37	370	H	60
9/11/2015	ROCK_CREEK	5640	42.5	119.6	88	12	12	0	19	72	54	374	H	64
9/12/2015	ROCK_CREEK	5640	42.5	119.6	87	12	9	0	19	62	37	378	H	53
9/13/2015	ROCK_CREEK	5640	42.5	119.6	76	14	7	0	18	51	26	382	M	40
9/14/2015	ROCK_CREEK	5640	42.5	119.6	66	45	22	0.02	5	48	80	384	M	25
9/15/2015	ROCK_CREEK	5640	42.5	119.6	52	56	9	0.35	0	0	0	368	L	0
9/16/2015	ROCK_CREEK	5640	42.5	119.6	47	72	15	0.03	0	3	2	365	L	1
9/17/2015	ROCK_CREEK	5640	42.5	119.6	52	50	10	0.02	3	14	11	363	L	7
9/18/2015	ROCK_CREEK	5640	42.5	119.6	66	26	7	0	10	33	18	364	M	23
9/19/2015	ROCK_CREEK	5640	42.5	119.6	72	22	9	0	12	43	27	365	M	32
9/20/2015	ROCK_CREEK	5640	42.5	119.6	78	19	10	0	13	49	33	367	M	40
9/21/2015	ROCK_CREEK	5640	42.5	119.6	79	18	9	0	14	47	29	369	M	38
9/22/2015	ROCK_CREEK	5640	42.5	119.6	77	15	14	0	15	67	57	371	H	57
9/23/2015	ROCK_CREEK	5640	42.5	119.6	74	16	11	0	15	57	40	373	H	46
9/24/2015	ROCK_CREEK	5640	42.5	119.6	78	10	15	0	19	81	70	375	H	79
9/25/2015	ROCK_CREEK	5640	42.5	119.6	80	12	20	0	17	94	102	377	E	82
9/26/2015	ROCK_CREEK	5640	42.5	119.6	75	18	14	0	15	68	59	379	H	54
9/27/2015	REDBU	4460	43.5	117.8	69	34	4	0	10	25	10	370	L	18
9/28/2015	ROCK_CREEK	5640	42.5	119.6	77	10	6	0	18	46	20	383	M	40
9/29/2015	ROCK_CREEK	5640	42.5	119.6	77	12	11	0	17	64	45	385	H	55
9/30/2015	ROCK_CREEK	5640	42.5	119.6	67	17	4	0	15	33	12	387	M	22
10/1/2015	N/A													
10/2/2015	ROCK_CREEK	5640	42.5	119.6	65	25	20	0	13	79	96	389	H	54
10/3/2015	ROCK_CREEK	5640	42.5	119.6	51	40	10	0	5	26	22	390	L	13
10/4/2015	ROCK_CREEK	5640	42.5	119.6	63	37	7	0	8	30	19	391	L	17
10/5/2015	BASQUE_HILLS	4990	42.2	118.9	71	31	5	0	13	37	18	545	M	26
10/6/2015	ROCK_CREEK	5640	42.5	119.6	72	21	12	0	14	59	46	393	M	43

Date	Station	Elev	Lat	Long	Tmp	RH	Wind	PPT	ERC	BI	SC	KBDI	ADJ	IC
10/7/2015	ROCK_CREEK	5640	42.5	119.6	69	24	9	0	12	45	30	394	M	29
10/8/2015	ROCK_CREEK	5640	42.5	119.6	78	17	9	0	16	53	33	396	M	42
10/9/2015	ROCK_CREEK	5640	42.5	119.6	82	8	15	0	19	85	73	398	V	80
10/10/2015	ROCK_CREEK	5640	42.5	119.6	74	19	21	0	15	92	110	400	V	67
10/11/2015	ROCK_CREEK	5640	42.5	119.6	69	24	9	0	13	48	31	401	M	32
10/12/2015	ROCK_CREEK	5640	42.5	119.6	76	15	9	0	17	55	34	403	M	44
10/13/2015	ROCK_CREEK	5640	42.5	119.6	76	17	10	0	16	58	39	405	H	45
10/14/2015	ROCK_CREEK	5640	42.5	119.6	76	17	10	0	16	58	39	405	H	45
10/15/2015	ROCK_CREEK	5640	42.5	119.6	80	14	8	0	18	54	30	409	M	43
10/16/2015	ROCK_CREEK	5640	42.5	119.6	79	18	12	0	16	66	51	411	H	51
10/17/2015	ROCK_CREEK	5640	42.5	119.6	57	76	12	0.2	0	0	0	413	L	0
10/18/2015	BASQUE_HILLS	4990	42.2	118.9	57	62	5	0.14	2	10	5	559	L	4
10/19/2015	ROCK_CREEK	5640	42.5	119.6	52	51	12	0	2	16	14	413	L	7
10/20/2015	ROCK_CREEK	5640	42.5	119.6	52	52	7	0	7	33	26	413	L	12
10/21/2015	ROCK_CREEK	5640	42.5	119.6	62	30	9	0	15	59	42	414	M	31
10/22/2015	ROCK_CREEK	5640	42.5	119.6	59	36	7	0	13	47	29	415	M	21
10/23/2015	ROCK_CREEK	5640	42.5	119.6	61	18	8	0	19	63	39	416	M	40
10/24/2015	ROCK_CREEK	5640	42.5	119.6	63	17	10	0	20	74	53	417	H	48
10/25/2015	ROCK_CREEK	5640	42.5	119.6	60	26	22	0	17	112	153	418	V	51
10/26/2015	ROCK_CREEK	5640	42.5	119.6	57	24	15	0	18	88	88	418	H	50
10/27/2015	BASQUE_HILLS	4990	42.2	118.9	63	18	10	0	13	50	34	490	H	38
10/28/2015	ROCK_CREEK	5640	42.5	119.6	47	73	9	0.04	0	2	1	420	L	0
10/29/2015	ROCK_CREEK	5640	42.5	119.6	50	51	15	0.01	7	56	76	420	M	21
10/30/2015	GRASMT	4800	42.6	117.4	53	52	9	0	2	12	8	321	L	5
10/31/2015	N/A													
11/1/2015	N/A													
11/2/2015	ROCK_CREEK	5640	42.5	119.6	38	75	10	0	0	0	0	420	L	0
11/3/2015	ROCK_CREEK	5640	42.5	119.6	36	50	16	0	5	43	68	420	L	15
11/4/2015	ROCK_CREEK	5640	42.5	119.6	35	59	9	0.03	2	14	13	420	L	5
11/5/2015	ROCK_CREEK	5640	42.5	119.6	42	40	12	0	11	60	59	420	M	24
11/6/2015	N/A													
11/7/2015	N/A													
11/8/2015	N/A													
11/9/2015	BASQUE_HILLS	4990	42.2	118.9	39	63	11	0.13	2	12	10	483	L	4
11/10/2015	ROCK_CREEK	5640	42.5	119.6	36	61	16	0	2	19	28	420	L	8
11/11/2015	N/A													
11/12/2015	BASQUE_HILLS	4990	42.2	118.9	48	48	2	0	11	27	11	483	M	10
11/13/2015	ROCK_CREEK	5640	42.5	119.6	54	29	12	0	16	71	62	420	M	36
11/14/2015	N/A													
11/15/2015	N/A													

Date	Station	Elev	Lat	Long	Tmp	RH	Wind	PPT	ERC	BI	SC	KBDI	ADJ	IC
11/16/2015	BASQUE_HILLS	4990	42.2	118.9	29	72	11	0.01	0	0	0	483	L	0
11/17/2015	BASQUE_HILLS	4990	42.2	118.9	44	64	14	0	0	0	0	483	L	0
11/18/2015	ROCK_CREEK	5640	42.5	119.6	40	62	8	0	2	12	11	420	L	5
11/19/2015	ROCK_CREEK	5640	42.5	119.6	50	60	26	0.01	3	38	87	420	L	17
11/20/2015	GRASMT	4800	42.6	117.4	37	53	9	0.1	10	48	39	324	M	19
11/21/2015	N/A													
11/22/2015	N/A													
11/23/2015	ROCK_CREEK	5640	42.5	119.6	53	32	12	0	15	69	62	420	M	33
11/24/2015	BASQUE_HILLS	4990	42.2	118.9	40	81	12	0	0	0	0	483	L	0
11/25/2015	N/A													
11/26/2015	N/A													
11/27/2015	N/A													
11/28/2015	N/A													
11/29/2015	N/A													
11/30/2015	GRASMT	4800	42.6	117.4	32	52	8	0	11	45	34	324	M	17
12/1/2015	ROCK_CREEK	5640	42.5	119.6	38	60	15	0	0	0	0	420	L	0
12/2/2015	BASQUE_HILLS	4990	42.2	118.9	42	65	8	0.11	0	0	0	483	L	
12/3/2015	GRASMT	4800	42.6	117.4	42	61	21	0.01	2	20	37	324	L	8
12/4/2015	GRASMT	4800	42.6	117.4	40	63	17	0	7	59	90	324	M	23
12/5/2015	N/A													
12/6/2015	N/A													
12/7/2015	BASQUE_HILLS	4990	42.2	118.9	49	65	17	0	0	0	0	483	L	0
12/8/2015	FISH_FIN	4900	42.4	119.1	54	61	17	0	0	0	0	665	L	0
12/9/2015	N/A													
12/10/2015	GRASMT	4800	42.6	117.4	38	65	26	0.17	2	23	49	324	L	10
12/11/2015	BASQUE_HILLS	4990	42.2	118.9	36	52	12	0	0	0	0	470	L	0
12/12/2015	N/A													
12/13/2015	N/A													
12/14/2015	BASQUE_HILLS	4990	42.2	118.9	26	66	20	0	0	0	0	470	L	0
12/15/2015	BASQUE_HILLS	4990	42.2	118.9	26	74	6	0	0	0	0	470	L	0
12/16/2015	GRASMT	4800	42.6	117.4	31	72	14	0	1	10	15	322	L	3
12/17/2015	ROCK_CREEK	5640	42.5	119.6	39	69	31	0.12	0	0	0	366	L	0
12/18/2015	BASQUE_HILLS	4990	42.2	118.9	39	57	29	0.01	0	0	0	470	L	0
12/19/2015	BASQUE_HILLS	4990	42.2	118.9	39	57	29	0.01	0	0	0	470	L	0
12/20/2015	N/A													
12/21/2015	BASQUE_HILLS	4990	42.2	118.9	41	69	33	0.01	0	0	0	470	L	0
12/22/2015	N/A													
12/23/2015	N/A													
12/24/2015	N/A													
12/25/2015	N/A													

Date	Station	Elev	Lat	Long	Tmp	RH	Wind	PPT	ERC	BI	SC	KBDI	ADJ	IC
12/26/2015	N/A													
12/27/2015	N/A													
12/28/2015	GRASMT	4800	42.6	117.4	20	80	5	0				322	L	0
12/29/2015	BASQUE_HILLS	4990	42.2	118.9	30	58	4	0.01	0	0	0	470	L	0
12/30/2015	BASQUE_HILLS	4990	42.2	118.9	26	63	5	0.05	0	0	0	470	L	0
12/31/2015	N/A													

Weather Variables:

Elev = Elevation
Lat = Latitude
Long = Longitude
Tmp = Temperature (Celcius)
RH = Relative Humity
Wind = Wind Speed
PPT = Precipitation

Fire Weather Metrics:

ERC = Energy Release Component - Based upon the estimated potential available energy released per unit area in the flaming zone of a fire. It is dependent upon the same fuel characteristics as the spread component. The day to day variations of the ERC are caused by changes in the moisture contents of the various fuel classes, including the 1000 hour time lag class. ERC is derived from predictions of the rate of heat release per unit area during flaming combustion and the duration of the burning. Expressed in BTU's per square foot.

BI = Burning Index - A measure of fire intensity. BI combines the Spread Component and Energy Release Component to relate to the contribution of fire behavior to the effort of containing a fire. BI has no units, but in general it is 10 times the flame length of a fire.

SC = Spread Component - A rating of the forward rate of spread of a head fire. It integrates the effect of wind, slope, and fuel bed and fuel particle properties. The daily variations are caused by the changes in the wind and moisture contents of the live fuels and the dead fuel timelag classes of 1, 10, and 100 hr.

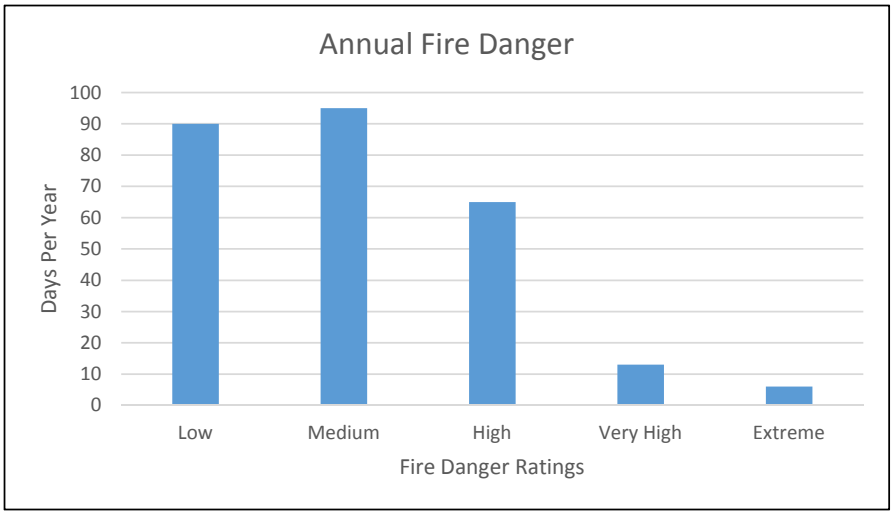
KBDI = Keetch-Byram Drought Index A number between 0-800 representing the amount of moisture in the top 8 inches of soil. Zero is saturated, 800 is maximum drought stress. It is calculated from recent precipitation measurements in relation to the average annual precipitation. It is important to note that the KBDI is customized for each geographic area and that often the scale shows less of a range in variation.

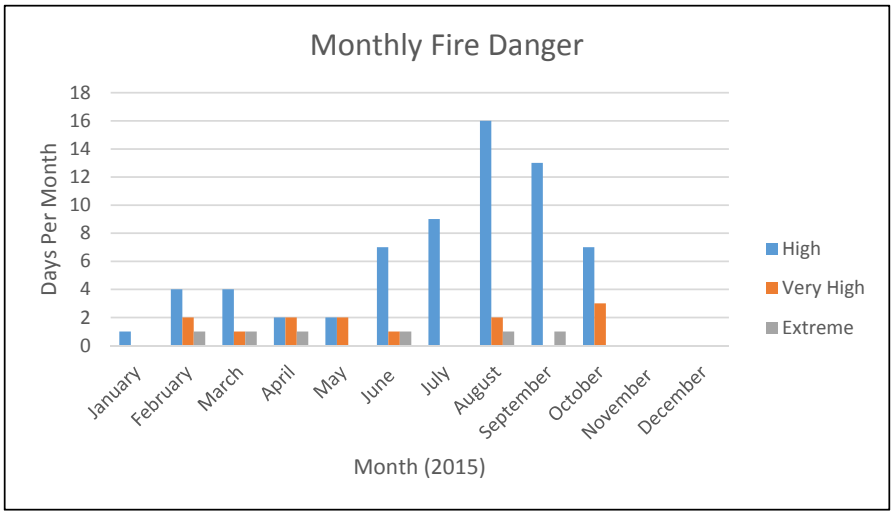
ADJ = National Fire Danger Rating System Adjacentive: Low, Moderate, High, Very High, Extreme.

IC = Ignition Component - Related to the probability of a firebrand producing a fire that will require suppression action. It is mainly a function of the 1 hour time lag (fine fuels) fuel moisture content and the temperature of the receptive fine fuels. IC has no units. A percentage of probability from 1-100.

Annual Fire Hazard Data		
Category	**Days**	**Percent**
Days Not Reported	96	
Low	90	
Medium	95	
High	65	24%
Very High	13	5%
Extreme	6	2%
Total Above Medium	84	31%

Fire Hazard by Month			
Month	**High**	**Very High**	**Extreme**
January	1	0	0
February	4	2	1
March	4	1	1
April	2	2	1
May	2	2	0
June	7	1	1
July	9	0	0
August	16	2	1
September	13	0	1
October	7	3	0
November	0	0	0
December	0	0	0





APPENDIX J

FAA COOPERATING AGENCY CORRESPONDENCE

Appendix J
Public Involvement and Agency Coordination

Introduction

Appendix J contains cooperating agency communication between the U.S. Air Force (USAF) and Federal Aviation Administration (FAA).

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DEPARTMENT OF THE AIR FORCE
WASHINGTON DC

OFFICE OF THE ASSISTANT SECRETARY

AUG 15 2012

SAF/IEE
1665 Air Force Pentagon
Washington, DC 20330-1665

Mr. Dennis Robert
Director, Airspace Services (AJV-1)
Federal Aviation Administration
800 Independence Avenue SW, Room 400 East
Washington, DC 20591

Dear Mr. Robert:

The Air Force requests your formal participation in preparation of an environmental impact statement (EIS) for the Proposed Airspace Modifications, Oregon Air National Guard, 142d Fighter Wing, Portland International Airport, Portland, Oregon, as prescribed in the President's Council on Environmental Quality National Environmental Policy Act (NEPA) Regulations, 40 CFR § 1501.6, *Cooperating Agencies*.

As a cooperating agency, the Air Force requests you participate in various portions of the EIS development as may be required. Specifically, the Air Force asks for your support as a cooperating agency by:

- Participating in the scoping process;
- Assuming responsibility, upon request by the Air Force, for developing information and preparing analyses on issues for which you have special expertise;
- Making staff support available to enhance interdisciplinary review capability; and
- Responding, in writing, to this request.

To avoid unnecessary delays in the NEPA process, the Air Force must have timely support from cooperating agencies. In turn, the Air Force will ensure it provides the necessary information and related materials in a timely fashion to enable your agency to complete its review and respond promptly. Should you or your staff have further questions regarding this memo, our points of contact for this action are Mr. Jack Bush and Mr. Alan Shafer. Mr. Bush can be reached at (703) 614-0237 or jack.bush@pentagon.af.mil. Mr. Shafer can be reached at (202) 767-8633 or alan.shafer@pentagon.af.mil.

Sincerely,

TIMOTHY K. BRIDGES
Deputy Assistant Secretary of the Air Force
(Environment, Safety and Occupational Health)

Attachment:
FAA/DoD MOU Concerning Environmental Review of SUA

cc:
SAF/IEI/GCN
HQ USAF/A7C/A30
NGB/A7A/A3A
AFLOA/JACE

U.S. Department
of Transportation
Federal Aviation Administration

OCT 11 2012

Mr. Timothy Bridges
Deputy Assistant Secretary of the Air Force
SAF/IEE
Department of the Air Force
1665 Air Force Pentagon
Washington DC 20350-1665

Dear Mr. Bridges:

Thank you for your letter requesting the Federal Aviation Administration (FAA) participate as a cooperating agency in the Environmental Impact Statement (EIS) to evaluate the potential environmental consequences resulting from the Proposed Air Space Modifications, Oregon Air National Guard, 142nd Fighter Wing, Portland International Airport, Portland Oregon.

Since the proposal involves special use airspace (SUA), the FAA will cooperate following the guidelines described in the Memorandum of Understanding (MOU) between the FAA and the Department of Defense Concerning SUA Environmental Actions, dated October 4, 2005, and in accordance with 40 CFR § 1501.6, NEPA regulations regarding cooperating agencies.

Modification of SUA resides under the jurisdiction of the Western Service Center, Operations Support Group, 1601 Lind Ave. SW, Renton, Washington. The Western Service Center will be the primary focal point for matters related to both airspace and environmental matters. Mr. John Warner is the Manager of the Operations Support Group. FAA Order 7400.2, Procedures for Handling Airspace Matters, Chapter 32, indicates that the airspace aeronautical and environmental processes should be conducted in tandem as much as possible; however, they are separate processes. Approval of either the aeronautical process or the environmental process does not automatically indicate approval of the entire proposal. I have enclosed Appendix 2, 3, and 4 of FAA Order 7400.2 for additional details.

A copy of the incoming correspondence and this response is being forwarded to Mr. Warner of the Western Service Center, Operations Support Group. Mr. Warner can be contacted at 425-203-4500 for further processing of your proposal.

Sincerely,

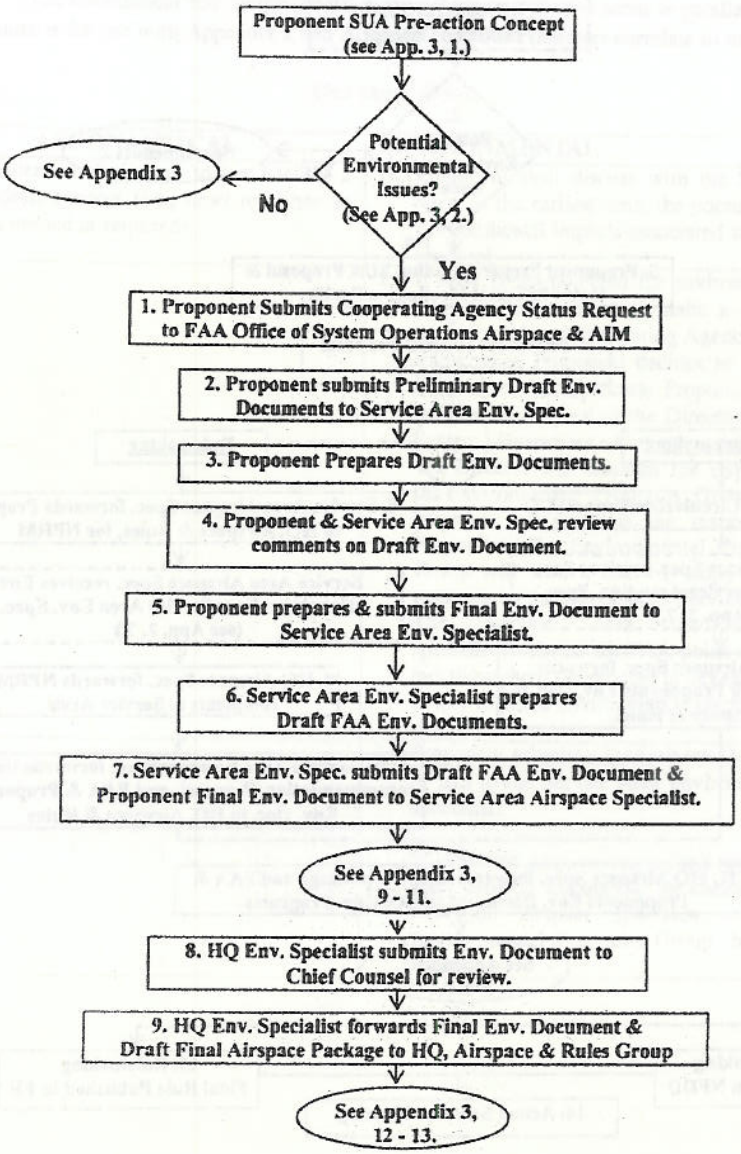
FOR

Dennis E. Roberts
Director, Airspace Services
Air Traffic Organization

3 Enclosures

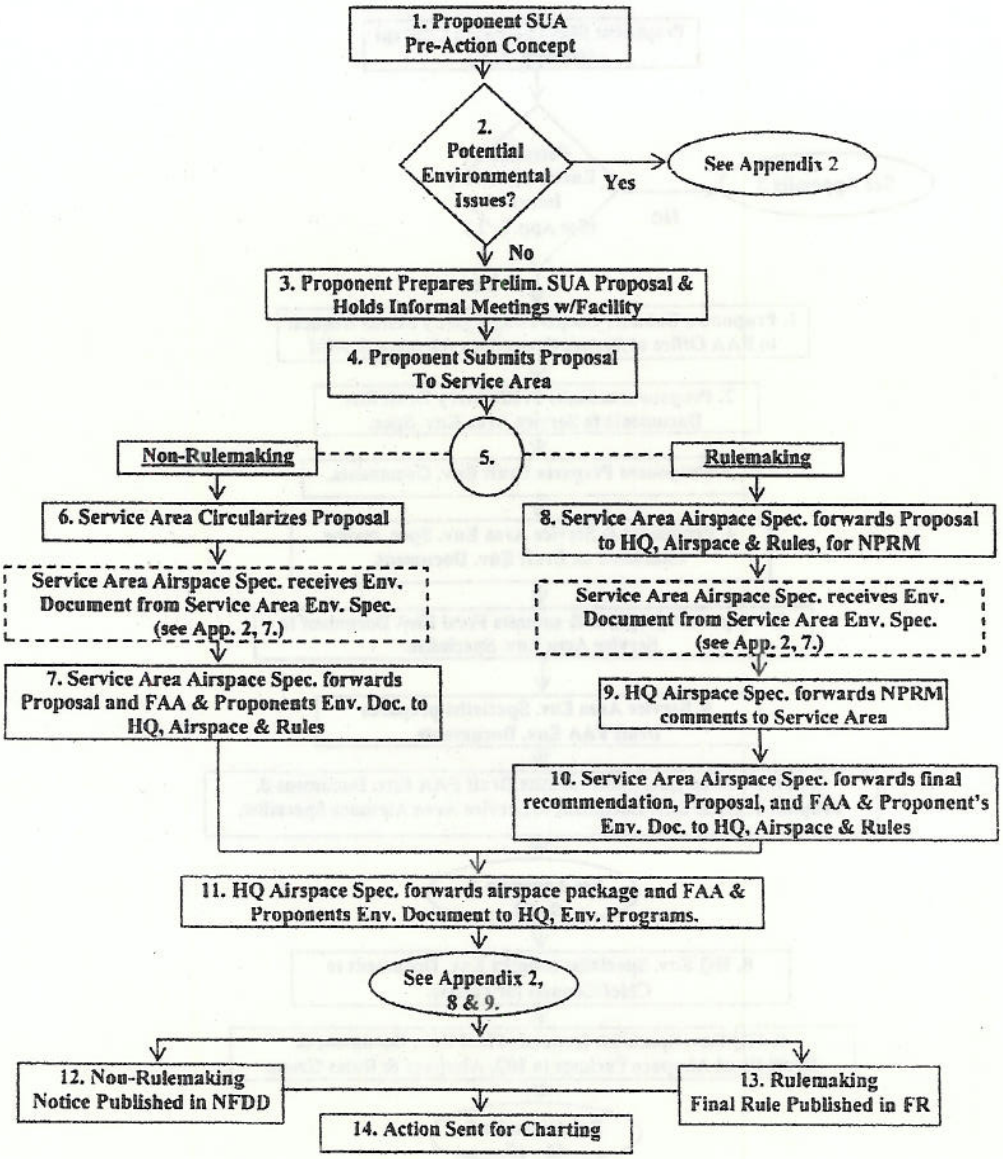
Appendix 2. Procedures For Processing SUA Actions Environmental Process Flow Chart

(This Chart is for use with Appendix 4 and the numbers correlate to the numbers in the Environmental column of that table.)



Appendix 3. Procedures For Processing SUA Actions Aeronautical Process Flow Chart

(This Appendix is for use with Appendix 4 and the numbers correlate to the numbers in the Aeronautical column of that table.)



Appendix 4. FAA Procedures for Processing SUA Actions Aeronautical and Environmental Summary Table

(The aeronautical and environmental processes may not always occur in parallel.)
(This Appendix is for use with Appendix 2 and Appendix 3, and the numbers correlate to numbers on those charts.)

(See note below.)

AERONAUTICAL	ENVIRONMENTAL
1. Proponent shall present to the Facility a Pre-draft concept (i.e., new/ revisions to SUA needed or required).	1. Proponent shall discuss with the Service Area, at the earliest time, the potential for environmental impacts associated with the proposal.
	2. If there is the potential for environmental impacts, Proponent shall make a request to the FAA for a Cooperating Agency (CA) status when Proponent decides to initiate the environmental process. Proponent shall forward the request to the Director of the System Operations Airspace and AIM. The Director will transmit the request to the Environmental Programs Group who prepares and forwards the response to Proponent. The Environmental Programs Group will send a courtesy copy of the response to the responsible Service Area. The Service Area environmental specialist works as the FAA point of contact throughout the process in development of any required environmental documentation.
	3. Proponent submits a Preliminary Draft EA or EIS to the Service Area environmental specialist. The Service Area environmental specialist shall provide comments, in consultation with the airspace specialist and the Environmental Programs Group, back to Proponent.

2. Proponent forwards the aeronautical proposal to the FAA Service Area for review and processing by the airspace specialist.	4. Proponent prepares a Draft EA or EIS with a 45-day public comment period. As the FAA CA point of contact, the Service Area environmental specialist reviews the associated draft environmental documentation to ensure that the Proponent addressed adequately all environmental concerns submitted on the Preliminary Draft. If required, the Service Area environmental specialist forwards the draft environmental documentation to the Environmental Programs Group for review and comment by the headquarters environmental specialist and the Office of Chief Counsel.
3. The Service Area airspace specialist, in accordance with this order, determines the type of airspace action(s) necessary, either Non-Rulemaking or Rulemaking. FAA Service Area and Proponent determine if informal Airspace Meetings are required.	
For Non-Rulemaking:	
4. The Service Area airspace specialist sends out a circularization with a 45-day public comment period. The Service Area airspace specialist reviews and prepares, in consultation with the Proponent, responses to the aeronautical comments from the study and circularization in accordance with Chapter 21 of this order.	5. The Proponent reviews comments received on their Draft EA/FONSI or EIS and prepares their responses to the comments, in consultation with the FAA and other cooperating agencies, if necessary, and in accordance with Chapter 32 of this order.
	6. Proponent prepares and submits their Final EA/FONSI or EIS/ROD to the Service Area environmental specialist.
	7. The Service Area environmental specialist prepares a Draft FAA FONSI/ROD or Draft FAA Adoption Document/ROD.
	8. The Service Area environmental specialist submits the Draft FAA FONSI/ROD or Draft FAA Adoption Document/ROD and the Proponent's Final EA/FONSI or EIS/ROD to the Service Area airspace specialist for inclusion with the airspace proposal package.
5. The Service Area airspace specialist then sends the completed package containing the aeronautical proposal, response to comments, Proponent's Final EA/FONSI, and the Draft FAA FONSI/ROD to the Headquarters Airspace and Rules Group with their recommendation.	

Appendix 4-2 FAA Procedures for Processing SUA Actions Aeronautical and Environmental Summary Table

For Rulemaking:	
6. The Service Area airspace specialist sends the proposal to the Airspace and Rules Group who prepares a Notice of Proposed Rulemaking (NPRM). The Headquarters Airspace and Rules Group submits the NPRM for publication in the Federal Register with a 45-day comment period in accordance with Chapter 2 of this order.	
7. The Headquarters airspace specialist sends comments received on the NPRM to the Service Area airspace specialist for resolution.	
8. The Service Area airspace specialist then sends the completed package containing the response to comments, final service area recommendation, the proposal, Proponent's Final EA/FONSI or EIS/ROD, and the Draft FAA FONSI/ROD or Draft FAA Adoption Document/ROD to the Headquarters Airspace and Rules Group for preparation of the Final Rule.	
9. The Headquarters airspace specialist forwards the draft final rule package or draft non-rulemaking case summary (NRCS) with all supporting documentation to the Headquarters Environmental Programs Group for review (after all aeronautical comments have been resolved).	9. The Headquarters environmental specialist reviews the package for environmental technical accuracy; then submits the environmental documentation to the Office of the Chief Counsel, Airports and Environmental Law Division, for legal sufficiency review (having collaborated throughout the process).
	10. The Chief Counsel's environmental attorney's comments are incorporated into the final FAA environmental decision and signed by Headquarters Environmental Programs Group Manager. The package is then returned to the Headquarters Airspace and Rules Group.
10. For Non-rulemaking: The non-rulemaking action is published in the National Flight Data Digest. 11. For Rulemaking: The Final Rule is published in the Federal Register. The Final Rule will contain a reference to the decision rendered and location of documentation for the associated environmental process.	

Consult the following documents throughout the process for further information:

- Council on Environmental Quality Regulations for Implementing the National Environmental Policy Act (NEPA), 40 CFR Parts 1500-1508
- FAA Order 1050.1E, "Environmental Impacts: Policies and Procedures"
- FAA Order 7400.2, "Procedures for Handling Airspace Matters," Part 5
- FAA Order 7400.2, Chapter 32, "Environmental Matters" and the associated appendixes (for specific SUA environmental direction)

NOTE: The time periods below are for a non-controversial aeronautical proposal and its associated environmental process. The time periods are for FAA review/processing only. Times for proponent and/or environmental contract support processing must be added.

ENVIRONMENTAL: The estimated time of completion for EA processing is 12 to 18 months or, for EIS processing, 18 to 36 months.

AERONAUTICAL (Non-Rulemaking): A minimum 4 months is required from submission of the Formal Airspace Proposal by the Proponent to the Service Area through completion of the circularization process. Additionally, a minimum of 6 months is required from submission of the Formal Airspace Proposal by the Service Area to Headquarters through completion of the charting process.

AERONAUTICAL (Rulemaking): A minimum 6 weeks for Service Area processing, and a minimum of 9 months to complete rulemaking once the formal package is received at Headquarters.