

DEPARTMENT OF TRANSPORTATION
Federal Aviation Administration
Office of Commercial Space Transportation
Adoption of the Environmental Assessment
And
Finding of No Significant Impact
For
The Orbital/Sub-Orbital Program

Summary

The U.S. Air Force (USAF) acted as the lead agency, and the Federal Aviation Administration (FAA) was a cooperating agency, in the preparation of the July 2006 *Final Environmental Assessment for the Orbital/Sub-Orbital Program* (EA or 2006 EA; USAF 2006¹), which analyzed the potential environmental impacts of implementing the Orbital/Sub-Orbital Program (OSP). Under the OSP, the USAF would develop a new family of launch vehicles using surplus Minuteman (MM) II and Peacekeeper (PK) Inter-Continental Ballistic Missile (ICBM) rocket motors (along with commercial upper stages) to support orbital launches of both small and micro-satellites, and sub-orbital-trajectory missions. The MM-derived launch vehicles include the Minotaur I or Minotaur II vehicles and MM-derived target launch vehicles, and the PK-derived launch vehicles include the Minotaur IV launch vehicle and the OSP Heavy target launch vehicle. All OSP launches would be conducted from an existing government range and/or commercial spaceport located at Vandenberg Air Force Base (VAFB), CA; Kodiak Launch Complex, AK (now known as Pacific Spaceport Complex Alaska); Cape Canaveral Air Force Station (CCAFS), FL; and Wallops Flight Facility, VA. The USAF issued a Finding of No Significant Impact (FONSI) for the 2006 EA on 24 July, 2006.

The Missile Defense Agency and the National Aeronautics and Space Administration also participated as cooperating agencies in the preparation of the EA. The EA was prepared in accordance with the National

¹ United States Air Force (USAF). 2006. U.S. Air Force Environmental Assessment for the Orbital/Suborbital Program. Available: <http://oai.dtic.mil/oai/oai?verb=getRecord&metadataPrefix=html&identifier=ADA521627>. Accessed: September 20, 2016.

Environmental Policy Act of 1969, as amended (NEPA; 42 United States Code [U.S.C.] § 4321 et seq.); Council on Environmental Quality NEPA implementing regulations (40 Code of Federal Regulations [CFR] parts 1500 to 1508); the USAF's Environmental Impact Analysis Process (32 CFR 989); and FAA Order 1050.1, *Environmental Impacts: Policies and Procedures*.

The 2006 EA analyzed a maximum flight rate of six per year, where all six annual launches could occur from just one of the four ranges, or be spread across different ranges. For implementation of the OSP at each of the four ranges, the 2006 EA addressed applicable site modifications and construction activities (including some demolitions), rocket motor transportation, pre-flight preparations, flight activities, and post-launch operations. The 2006 EA considered pre-flight processing operations for the proposed launch vehicles at various support facilities at each of the four ranges to support implementation of the OSP. Specifically, the 2006 EA analyzed the potential environmental impacts of pre-flight processing operations of the Minotaur IV at VAFB. Building 1900 at VAFB is one of the support facilities considered in the 2006 EA to support pre-flight booster processing of the Minotaur IV.

Per the CEQ and USAF regulations, the 2006 EA also analyzed the No Action Alternative, under which the OSP would not be implemented.

Orbital Sciences Corporation (OSC), a wholly owned subsidiary of Orbital ATK, is currently proposing to conduct pre-flight processing (only) of Minotaur IV boosters at VAFB in support of its Operationally Responsive Space (ORS) missions. OSC has submitted an application to the FAA for a launch operator license for the pre-flight processing of Minotaur IV boosters in Building 1900 at VAFB. No launches of the Minotaur IV would occur from VAFB under the launch operator license for pre-flight processing operations.

In accordance with FAA Order 1050.1F, Paragraph 8-2.b, because more than three years have elapsed since the USAF issued a FONSI for the 2006 EA, the FAA prepared a Written Reevaluation (WR) (2016 WR, FAA 2016²) of the portions of the 2006 EA that are related to pre-flight processing of the Minotaur IV at VAFB, including the discussion of the affected environment and potential environmental impacts associated with pre-flight processing. In accordance with FAA Order 1050.1F, Paragraph 9-2.c, the 2016 WR concluded that the preparation of a supplemental or new environmental document is not necessary to support the FAA launch operator license issuance because the issuance of a launch operator license

² FAA. 2016. Written Reevaluation of the 2006 U.S. Air Force Environmental Assessment for the Orbital/Sub-Orbital Program.

to OSC for pre-flight processing (only) of the Minotaur IV in Building 1900 at VAFB conforms to the prior environmental documentation (i.e. the 2006 EA); the data contained in the 2006 EA remain substantially valid; there are no significant environmental changes; and that all pertinent conditions and requirements of the prior approval have been met or will be met in the current action. The 2016 WR is incorporated by reference in this FONSI.

Launches of the Minotaur IV vehicle processed at VAFB would occur from Launch Complex 46 (LC-46) at CCAFS in Florida under a separate license and environmental review, which has already been completed.

The environmental review of Minotaur IV launches at CCAFS is covered by the following documents:

- 2008 FAA *Environmental Assessment for Space Florida Launch Site Operator License at Launch Complex-46* (2008 EA; FAA 2008³),
- 2010 *Final Supplemental Environmental Assessment to the September 2008 Environmental Assessment for Space Florida Launch Site Operator License* (2010 SEA; FAA 2010⁴), and
- 2015 FAA *Written Re-evaluation of the 2008 FAA Environmental Assessment for Space Florida Launch Site Operator License at Launch Complex-46 and the 2010 Final Supplemental Environmental Assessment to the September 2008 Environmental Assessment for Space Florida Launch Site Operator License, Cape Canaveral Air Force Station, Florida* (2015 WR⁵).

The 2008 EA evaluated the potential environmental impacts associated with issuing a launch site operator license to Space Florida for LC-46 and evaluated the impacts of launching several types of solid and liquid propellant vertical launch vehicles. The FAA issued a FONSI for the 2008 EA on September 2, 2008. The Proposed Action analyzed in the 2008 EA included pre-flight processing operations and launches occurring within the boundaries of CCAFS.

In 2010, the FAA, in cooperation with the USAF, prepared the 2010 Supplemental Environmental Assessment to the September 2008 Environmental Assessment for Space Florida Launch Site Operator

³ FAA. 2008. *Environmental Assessment for Space Florida Launch Site Operator License at Launch Complex-46, Cape Canaveral Air Force Station, Florida*.

⁴ FAA. 2010. *Final Supplemental Environmental Assessment for the September 2008 Environmental Assessment for the Space Florida Launch Site Operator License, Cape Canaveral Air Force Station, Florida*.

⁵ FAA. 2015. *Written Re-evaluation of the 2008 Environmental Assessment for Space Florida Launch Site Operator License at Launch Complex-46 and the 2010 Final Supplemental Environmental Assessment to the September 2008 Environmental Assessment for Space Florida Launch Site Operator License, Cape Canaveral Air Force Station, Florida*.

License (2010 SEA; FAA 2010). The 2010 SEA analyzed the potential environmental impacts of activities associated with the issuance of a launch site operator license to Space Florida to operate LC-36 and LC-46 as a commercial space launch site at CCAFS. The FAA issued a FONSI for the 2010 SEA in July 2010. Similar to the 2008 EA, the Proposed Action analyzed in the 2010 SEA included pre-flight processing operations and launches occurring within the boundaries of CCAFS.

In 2015, as part of the environmental review for renewing Space Florida's launch site operator license for LC-46, the FAA prepared the 2015 WR. The 2015 WR determined that the contents, analyses, and conditions of approval in the 2008 EA and 2010 SEA, which analyzed vehicle processing and launch operations at CCAFS, remain current and substantially valid and the preparation of a supplemental or new environmental document is not necessary to support the renewal of Space Florida's launch site operator license. Space Florida is currently authorized to operate a launch site at LC-46 at CCAFS under launch site operator license LSO 10-014. Thus, no additional environmental review is required to support launches of the Minotaur IV vehicle from LC-46 at CCAFS.

As described above, although pre-flight processing operations were considered in the 2008 EA, 2010 SEA, and 2015 WR, they were confined within the boundaries of CCAFS. For launch operations proposed at CCAFS, no pre-flight processing operations at VAFB were considered in the 2008 EA, 2010 SEA, or 2015 WR. Thus, the proposed pre-flight processing operations of the Minotaur IV at VAFB prior to launch from CCAFS is a new component of the Proposed Action analyzed in the 2008 EA, 2010 SEA, and 2015 WR. In accordance with 40 CFR § 1508.25(a)1, pre-flight processing operations of the Minotaur IV at VAFB and launch operations of Minotaur IV from LC-46 at CCAFS are connected actions, and thus, the 2010 EA and FONSI, 2010 SEA and FONSI, and 2015 WR are incorporated by reference in this FONSI.

Based on its independent review and evaluation of the EA, the FAA issues this FONSI concurring with, and formally adopting, in part, the analysis of impacts and findings in the 2006 EA related to pre-flight processing operations of the Minotaur IV at VAFB, supporting the FAA's issuance of a launch operator license to OSC for pre-flight processing of Minotaur IV at VAFB. The FAA is adopting those parts related to pre-flight processing of the Minotaur IV at VAFB, specifically sections 2.1.4.1, 2.1.4.1.3, 3.1, 4.1.1.1.1, 4.1.1.2.1, 4.1.1.3.1, 4.1.1.4.1, 4.1.1.5.1, 4.1.1.6.1, and 4.3.1 of the 2006 EA that include a discussion of the affected environment and potential environmental impacts associated with pre-flight processing.

After reviewing and analyzing available data and information on existing conditions and potential impacts related to pre-flight processing operations of Minotaur IV at VAFB, including as discussed in the 2006 EA, the FAA has determined the issuance of a launch operator license to OSC to conduct pre-flight

processing (only) of Minotaur IV at VAFB would not significantly affect the quality of the human environment within the meaning of NEPA. Therefore, the preparation of an environmental impact statement is not required, and the FAA is independently issuing this FONSI. The FAA has made this determination in accordance with applicable environmental laws and FAA regulations. The relevant portions of the 2006 EA, the 2008 EA and FONSI, the 2010 SEA and FONSI, the 2015 WR, and the 2016 WR are incorporated by reference into this FONSI.

For any questions or to request a copy of the EA, contact:

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Purpose and Need

OSC is under contract to the USAF Space & Missile Systems Center Operationally Responsive Space (ORS) office to provide commercial launch services for the ORS missions. The purpose of OSC's proposal to conduct pre-flight processing operations of Minotaur IV boosters at VAFB is to remain responsive to solicitations for commercial launch services for their ORS customer. The Minotaur IV has successfully launched six times over the past six years, including three times from VAFB, two times from the Kodiak Launch Complex, Alaska, and once from the Wallops Flight Facility, VA. Pre-flight processing of Minotaur IV boosters for all these launches occurred at VAFB. The purpose of OSC's current proposal is to continue pre-flight processing of Minotaur IV at VAFB in support of its commercial launch services for the ORS missions.

The purpose of FAA's Proposed Action is to fulfill the FAA's responsibilities as authorized by the Commercial Space Launch Act (51 U.S.C. Subtitle V, ch. 509, §§ 50901-50923) for oversight of commercial space launch activities, including licensing launch activities.

The need for FAA's Proposed Action results from the statutory direction from Congress under the Commercial Space Launch Act, 51 U.S.C 50901(b) to, in part, "protect the public health and safety, safety of property, and national security and foreign policy interests of the United States" while "strengthening and [expanding] the United States space transportation infrastructure, including the

enhancement of United States launch sites and launch-site support facilities, and development of reentry sites, with Government, State, and private sector involvement, to support the full range of United States space-related activities.”

Proposed Action

The FAA’s Proposed Action is to issue a launch operator license to OSC to conduct pre-flight processing of the Minotaur IV boosters at VAFB. The license would authorize OSC to conduct pre-flight processing of the Minotaur IV boosters at VAFB over the 5-year term of the license. Pre-flight activities include a series of work processes and tests required to process boosters and conduct integration tests for the Minotaur IV. These activities would be performed in Building 1900 at VAFB and include but are not limited to: power up and power down procedures, power checks, verification tests, payload assemblies, battery procedures, ordnance installation, and preparation for transport. No engine tests would be conducted at VAFB.

The Minotaur IV boosters would be prepared individually at VAFB for transport to CCAFS for integration and launch from LC-46. The Proposed Action covered in this FONSI includes Minotaur IV pre-flight processing activities occurring within the boundary of VAFB in support of ORS missions, as described herein. The proposed pre-flight processing operations of Minotaur IV at VAFB and its launch from LC-46 at CCAFS are connected actions, wherein the potential environmental impacts of launch operations at CCAFS have been analyzed in environmental documents previously prepared by the FAA; specifically, the 2008 EA and FONSI, the 2010 SEA and FONSI, and the 2015 WR. This FONSI incorporates by reference these previously prepared environmental documents for consideration of launch impacts at CCAFS.

Minotaur IV Launch Vehicle

The Minotaur IV proposed for the ORS-5 mission is a five-stage launch vehicle (Exhibits 1 and 2).⁶ The first three stages consist of government furnished equipment in refurbished Peacekeeper solid rocket motors (SRM). The first, second, and third stages consist of the SR118, SR119, and SR120 motors, respectively. The fourth stage is the Orion 38 SRM, and the final stage comprises the Insertion Stage Assembly (ISA) Orion 38 SRM. The Minotaur IV vehicle would use hydroxyl-terminated polybutadiene

⁶ For the purposes of analysis in this FONSI, details of the ORS-5 mission are included here. The FAA intends to issue a launch operator license to OSC to support not only ORS-5 but a number of ORS missions. The FAA has determined there is no material difference between ORS missions that are relevant to environmental concerns.

(HTBP) and nitrate ester polyether (NEPE) solid propellants with boron potassium nitrate (BKNO₃) ignition booster charges in its five stages.

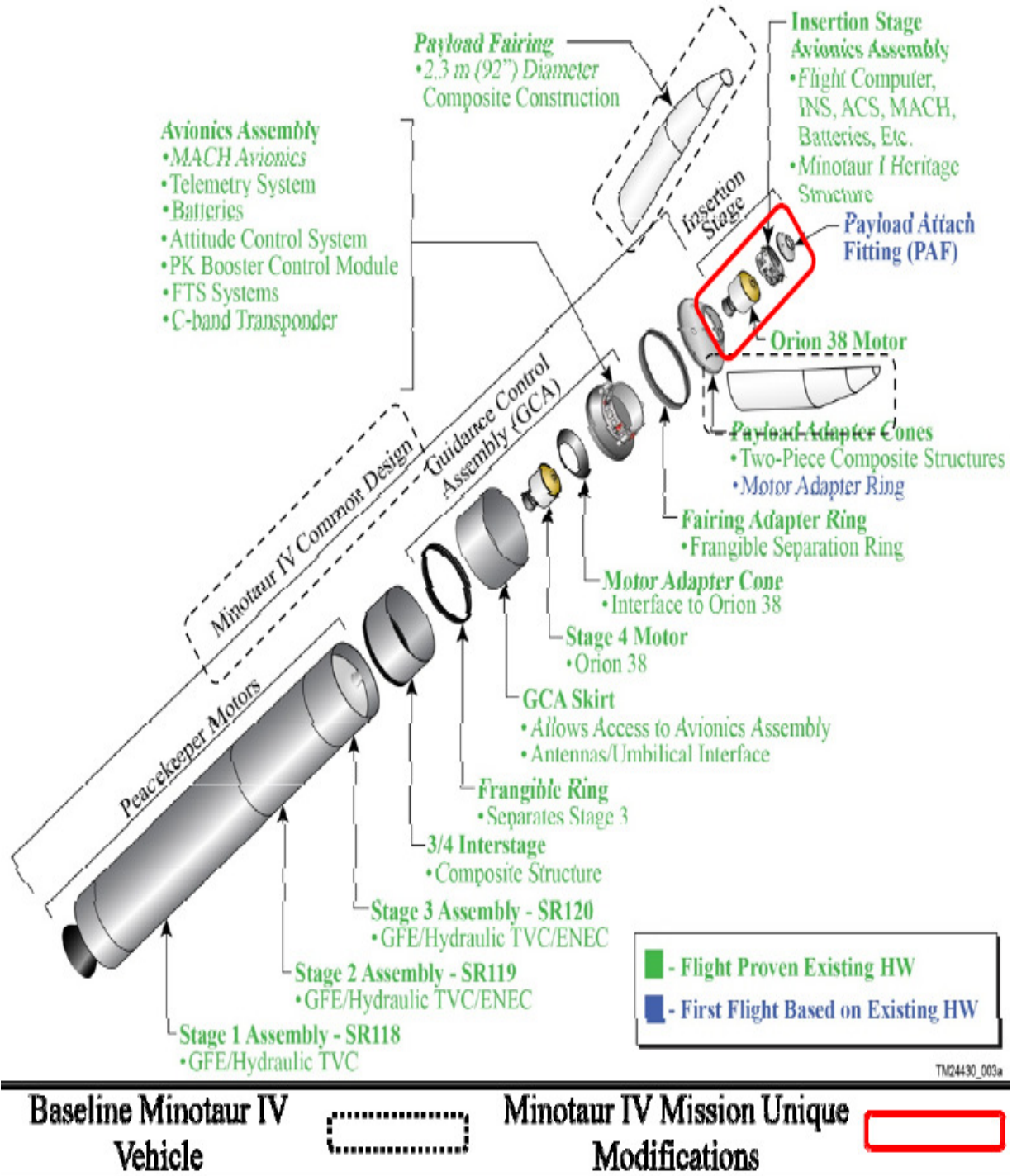
As shown in Exhibits 1 and 2, the upper stack assembly consists of the front section, payload, and fairing. The front section contains the 3/4 Interstage structure, the Orion 38/Guidance and Control Assembly (GCA) module, the 4/5 Interstage, and the Payload Attach Fitting (PAF)\Fairing Assembly. The GCA module integrates the Stage 4 Orion 38 motor and the avionics module structure. The ISA integrates the ISA cylinder with the Orion 38 motor. The 3/4 Interstage and 4/5 Interstage structures are an Orbital ATK design. Exhibit 1 shows the mission unique modifications associated with the ORS-5 mission compared to the baseline Minotaur IV vehicle. Except for the minor modifications in the Insertion Stage, the overall launch vehicle characteristics remain the same as the Minotaur IV launch vehicle analyzed in the 2006 EA. The 2006 EA analyzed the baseline configuration of the Minotaur IV with a fifth stage consisting of the Star-37 instead of the Orion 38 SRM. However, the Star-37 has the same main propellant chemical composition as the Orion 38 SRM. The only difference is the propellant mass of 1,699 pound-mass in the Orion 38 and 2,350 pound-mass for the Star-37 SRM.

Pre-Flight Processing of Minotaur IV Boosters at Building 1900 at VAFB

OSC would conduct pre-flight processing of Minotaur IV boosters in the Minotaur Processing Facility, also known as Building 1900, at VAFB. Building 1900 is located on north VAFB near the intersection of North Road and El Rancho Oeste Road (as shown in Figure 2-5 of the 2006 EA).

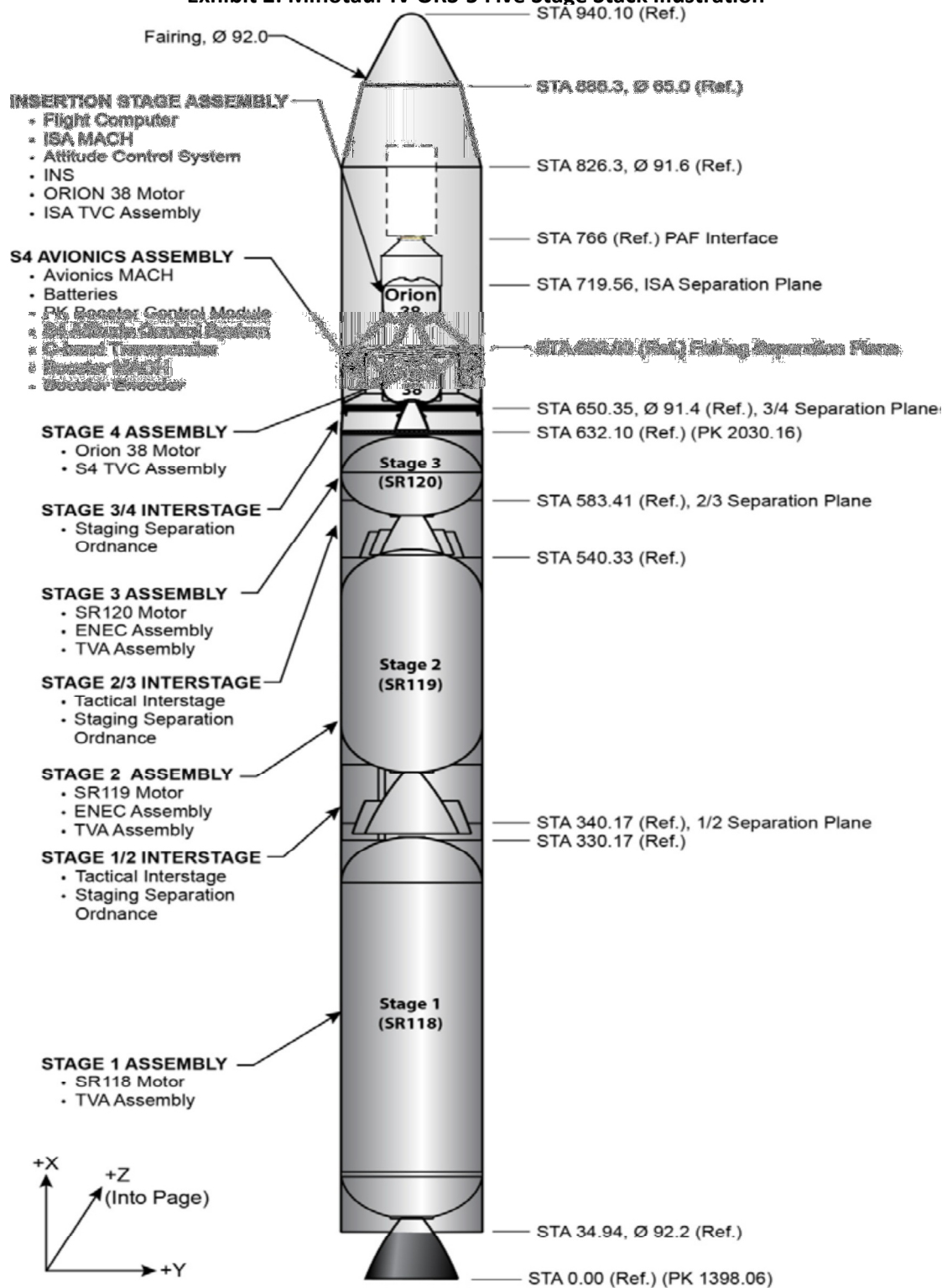
The first three stages of the Minotaur IV launch vehicle—SR-118, SR-119, and SR-120—would arrive individually at VAFB from Hill Air Force Base, Utah, by truck and/or rail using specialized equipment to handle the heavy motors. The upper stages—Orion 38 SRM—would be shipped to VAFB directly from the manufacturer. Pre-flight processing begins upon arrival of the boosters at VAFB, and ends when departing the boundaries of VAFB. Upon arrival, each motor would be inspected and offloaded at Building 1900 using overhead cranes to initiate motor/booster processing. As part of booster processing and integration and systems testing, Flight Termination System charge assemblies would be added to each motor for the purpose of terminating motor thrust if unsafe conditions develop during powered flight.

Exhibit 1: Minotaur IV QPS E Illustration



TM24430_003a

Exhibit 2: Minotaur IV ORS-5 Five Stage Stack Illustration



1045-0609_003

Pre-flight processing of SR-118, SR-119, and SR-120 would involve inspection of various booster components and systems, mechanical integration, integration tests, installation of necessary components, and final preparations for transport of these SRMs to CCAFS using a commercial heavy hauler. See Exhibits 3a and 3b for an example of booster processing in Building 1900 at VAFB. The pre-flight processing of Orion 38 SRMs at VAFB would involve similar steps for Stage 4 Orion 38 Integration and ISA Orion 38 Integration. As part of motor validation at VAFB, the Stage 4 Orion 38 and ISA Orion 38 would be prepped for testing (see Exhibit 4). Lastly, electrical systems checks of integrated assemblies would be conducted before final acceptance and transport of all stages to CCAFS. Some examples of pre-flight processing steps and system tests include, but are not limited to, integration verification tests, Li-ion battery maintenance, software code load, ordnance systems tests, telemetry/instrumentation verification, mini flight simulation tests, mission simulation test, ordnance installation, bracket installation, pressurization, Minotaur IV safing procedure, battery capacity test, and in-vehicle transponder test. Pre-flight processing operations would involve handling SRMs, ordnance, and batteries used in the Minotaur IV, and processing and integration activities for the booster would require the use of small quantities of lubricants, paints, sealants, and solvents. All pre-flight processing of motors at VAFB Building 1900 would have full OSC operations safety support for monitoring and ensuring safe and efficient operations.

No Action Alternative

Under the No Action Alternative, the FAA would not issue a launch operator license to OSC to conduct pre-flight processing operations of the Minotaur IV at VAFB. The No Action Alternative would not meet the stated purpose and need.

Environmental Impacts

The 2006 EA analyzed the potential environmental impacts of pre-flight processing operations of the Minotaur IV at VAFB. Potential impacts of issuance of a launch operator license to OSC for pre-flight processing of Minotaur IV boosters at VAFB are addressed below.

The following presents the FAA's review and evaluation of the relevant portions of the 2006 EA, which analyzed the potential environmental impacts of the pre-flight processing operations of the Minotaur IV at VAFB.

Exhibit 3a: Peacekeeper Booster Processing in Building 1900 at VAFB



Source: Orbital ATK, 2016⁷.

Exhibit 3b: Peacekeeper Booster Processing in Building 1900 at VAFB



Source: Orbital ATK, 2016⁸.

⁷ Orbital ATK. 2016. ORS-5 Integration and Test Activities – VAFB Operations.

⁸ Ibid.

Exhibit 4: Stage 4 Orion 38 and ISA Orion 38 Ready to Test



Source: Orbital ATK, 2016⁹.

The discussion summarizes the environmental impacts analysis presented in the 2016 WR, which re-evaluated portions of the 2006 EA that are related to pre-flight processing of the Minotaur IV at VAFB, including the discussion of the potential environmental impacts associated with pre-flight processing. The 2016 WR is incorporated by reference in this FONSI and concluded that issuance of a launch operator license to OSC for pre-flight processing of the Minotaur IV in Building 1900 at VAFB conforms to the prior environmental documentation (i.e. the 2006 EA); the data contained in the 2006 EA remain substantially valid; there are no significant environmental changes; and that all pertinent conditions and requirements of the prior approval have been met or will be met in the current action.

This FONSI incorporates the parts of the 2006 EA by reference that are related to pre-flight processing operations of the Minotaur IV at VAFB and is based on the related potential impacts discussed therein.

⁹ Ibid.

The FAA is adopting those parts related to pre-flight processing of the Minotaur IV at VAFB, specifically sections 2.1.4.1, 2.1.4.1.3, 3.1, 4.1.1.1.1, 4.1.1.2.1, 4.1.1.3.1, 4.1.1.4.1, 4.1.1.5.1, 4.1.1.6.1, and 4.3.1 of the 2006 EA that include a discussion of the affected environment and potential environmental impacts associated with pre-flight processing. The FAA has determined the analysis of pre-flight processing impacts presented in the EA represents the best available information regarding the potential impacts associated with the FAA's regulatory responsibilities as described in this FONSI.

The 2006 EA determined that the Proposed Action (pre-flight processing of the Minotaur IV boosters at Building 1900) would not result in impacts related to the following environmental impact categories: land use; natural resources and energy supply; socioeconomics, environmental justice, and children's environmental health and safety risks; visual effects; and water resources. The 2016 WR demonstrates that no substantial changes to these impact categories have occurred since publication of the 2006 EA. Accordingly, these environmental impact categories are not discussed further in this FONSI. The potential environmental impacts on these impact categories from launch operations at LC-46 at CCAFS have been previously analyzed in the 2008 EA, 2010 SEA, and 2015 WR, which are incorporated by reference in this FONSI.

The following environmental resource categories were not analyzed in the 2006 EA but are required to be considered in accordance with FAA Order 1050.1F, Paragraph 4-1 *Environmental Impact Categories*: coastal resources, Department of Transportation Act, Section 4(f), farmlands. As documented in the 2016 WR and briefly explained below, the pre-flight processing operations under the Proposed Action would not result in impacts related to these resources and thus they are not discussed further in this FONSI. The potential environmental impacts on these impact categories from launch operations at LC-46 at CCAFS have been previously analyzed in the 2008 EA, 2010 SEA, and 2015 WR, which are incorporated by reference in this FONSI.

- Coastal Resources- Pre-flight processing operations would be consistent with existing operations at VAFB and no new construction would occur. Therefore, the Proposed Action would not result in any impacts on coastal resources. Coastal resources would continue to be managed in accordance with all Federal, State, and local laws.
- Department of Transportation Act, Section 4(f)- The FAA is subject to Section 4(f) of the Department of Transportation (DOT) Act, 49 United States Code § 303, as a non-exempt DOT agency. Because the USAF is not subject to Section 4(f), the 2006 EA did not specifically consider impacts to Section 4(f) properties. Section 4(f) protects significant publicly owned

parks, recreational areas, wildlife and waterfowl refuges, and public and private historic sites. Section 4(f) provides that the Secretary of Transportation may approve a transportation program or project requiring the use of publicly owned land from a public park, recreation area, or wildlife or waterfowl refuge of national, state, or local significance, or land of an historic site of national, State, or local significance, only if there is no feasible and prudent alternative to the using that land and the program or project includes all possible planning to minimize harm resulting from the use. A significant impact would occur if an alternative involves more than a minimal physical use of a Section 4(f) property or is deemed a “constructive use” substantially impairing the 4(f) property, and mitigation measures do not eliminate or reduce the effects of the use below the threshold of significance. The Proposed Action does not include acquisition of any lands or development of new facilities. Noise generated during pre-flight processing would be intermittent and confined to VAFB. As a result, there would be no physical use or constructive use of any Section 4(f) properties. The Proposed Action would not result in any impacts on Section 4(f) properties.

- Farmlands- The Proposed Action would not convert prime or unique farmland to non-agricultural use. No farmlands are located near VAFB. The Proposed Action would not result in any impacts on farmlands.

The following sections discuss the Proposed Action’s potential environmental impacts related to air quality; biological resources (fish, wildlife, and plants); climate; hazardous materials, solid waste, and pollution prevention; historical, architectural, archaeological, and cultural resources; and noise and noise-compatible land use. The potential environmental impacts on these impact categories from launch operations at LC-46 at CCAFS have been previously analyzed in the 2008 EA, 2010 SEA, and 2015 WR, which are incorporated by reference in this FONSI.

Air Quality

Santa Barbara County is classified as an attainment/unclassified area for the National Ambient Air Quality Standards for all criteria pollutants. Santa Barbara County is classified as an attainment/unclassified area for the California Ambient Air Quality Standards for all criteria pollutants except ozone and PM₁₀, for which the county is classified as nonattainment. The primary air quality impacts resulting from pre-flight processing operations at VAFB would be related to exhaust emissions

of criteria pollutants from trucks and other equipment used during pre-flight processing. Proper tuning and preventive maintenance of support vehicles would serve to minimize engine exhaust emissions. Pre-flight processing operations would be conducted in compliance with all applicable Santa Barbara County Air Pollution Control District rules and regulations, including those that cover the use of any organic solvents (Rule 317), architectural coatings (Rule 323), surface coating of metal parts and products (Rule 330), or sealants (Rule 353), thereby minimizing emissions during booster processing and integration. Further, no hazardous liquid propellants, such as hydrazine, would be used as part of the Proposed Action. The increase in exhaust emissions due to activities related to pre-flight processing operations would be minimal. The Proposed Action would not result in an exceedance of any air quality standards and therefore would not result in significant impacts.

Biological Resources (including Fish, Wildlife, and Plants)

Pre-flight booster processing and integration tests would be conducted inside Building 1900. Operation of vehicles and other equipment would occur on existing roads and paved or gravel surfaces. Thus, the Proposed Action would not have an effect on fish or vegetation.

The intermittent movement of trucks and other load-handling equipment as part of pre-processing activities at VAFB would not produce substantial levels of noise. Any wildlife exposure to noise associated with these activities would be short term and localized, occurring near existing facilities and along roadways. Therefore, the Proposed Action would have minimal impacts on wildlife, including habitat, and would not affect state or federally protected species, including species listed under the Federal Endangered Species Act.

Climate

In August 2016, the White House Council on Environmental Quality released final guidance regarding the consideration of greenhouse gases (GHGs) in NEPA documents for federal actions (CEQ 2016¹⁰). The 2016 guidance encourages agencies to draw from their experience and expertise to determine the appropriate level and type of analysis required to comply with NEPA; discusses methods to appropriately analyze reasonably foreseeable direct, indirect, and cumulative GHG emissions and

¹⁰ CEQ (Council on Environmental Quality). 2016. Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews. Memorandum for heads of federal departments and agencies. August 1. Available: https://www.whitehouse.gov/sites/whitehouse.gov/files/documents/nepa_final_ghg_guidance.pdf. Accessed: September 20, 2016.

climate effects; and recommends that agencies quantify a proposed action's projected direct and indirect GHG emissions, taking into account available data and GHG quantification tools.

Emissions of GHGs (e.g., carbon dioxide and water vapor) due to the Proposed Action would be extremely small relative to U.S. annual GHG emissions. The contribution of GHG emissions to global climate change would be negligible. The Proposed Action would not result in significant climate-related impacts.

Hazardous Materials, Solid Waste, and Pollution Prevention

Hazardous materials to be used and stored onsite in support of pre-flight processing operations consist of various solvents and cleaners, paints and primers, adhesives, alcohol, lubricants, and propellants. The booster processing, integration tests, and inspections and vehicle integration during pre-flight processing are all routine activities at VAFB. During pre-flight processing, all hazardous materials and associated wastes would be responsibly managed in accordance with the well-established policies and procedures, such as OSC's Hazardous Materials Management Plan; Hazardous Waste Management Plan; Spill Prevention, Control and Counter Measures Plan; and Hazardous Materials Emergency Response Plan in order to avoid or minimize impacts on human or environmental health resulting from hazardous material spills or improper handling of hazardous materials or solid wastes. In addition, OSC operates under its Minotaur III/IV Operations Safety Plan (Orbital Sciences Corporation 2009a¹¹) for processing of the Minotaur IV launch vehicle at Building 1900 and the Emergency Evacuation Plan (Orbital Sciences Corporation 2009b¹²) for the Minotaur Processing Facility Building 1900. The Proposed Action would not have significant impacts related to hazardous materials, solid waste, and pollution prevention.

Historical, Architectural, Archeological, and Cultural Resources

The Proposed Action does not involve new construction or any ground disturbing activities. Removal, alteration, or physical impingement of any archaeological resources or historic properties would not occur. The Proposed Action does not represent a new type of activity in the area that would affect the character or setting of cultural resources. Although Building 1900 has been determined to be eligible for listing on the National Register of Historic Places, the types of pre-flight processing operations proposed

¹¹ Orbital Sciences Corporation. 2009a. OSP Minotaur III/IV Operations Safety Plan. TM-20947. January 23. Revised September 22, 2009.

¹² Orbital Sciences Corporation. 2009b. Emergency Evacuation Plan Minotaur Processing Facility (MPF) Building 1900, Vandenberg Air Force Base. TM-20535. January 23.

to occur in the building are similar to that of the earlier Minuteman and Peacekeeper Inter-Continental Ballistic Missile support programs that have been occurring at VAFB for decades. Therefore, the Proposed Action would not affect historic properties. The Proposed Action would not have a significant impact on historical, architectural, archaeological, or cultural resources.

Noise and Noise-Compatible Land Use

The area surrounding VAFB primarily consists of undeveloped and rural land; therefore, impacts on noise-sensitive receptors are not expected under the Proposed Action. The highest noise levels in the area are those associated with industrial facilities, transportation routes, occasional aircraft flyovers, and noise resulting from missile and space launches at VAFB. Noise produced during pre-flight processing operations at VAFB would be consistent with the noise produced during existing operations at VAFB and primarily consist of the use of trucks and other load handling equipment, and would essentially be confined to the immediate area surrounding the activities. Booster processing and integration tests would occur inside Building 1900. In addition, noise exposure levels would need to comply with USAF Hearing Conservation Program requirements and other applicable occupational health and safety regulations. The Proposed Action would not result in significant noise impacts.

Cumulative Impacts

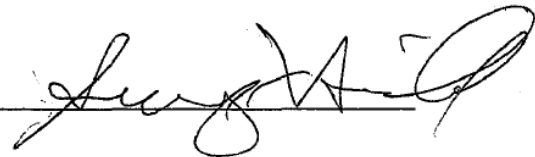
As discussed above, minimal environmental impacts are expected from the Proposed Action of issuing a launch operator license for pre-flight processing operations of the Minotaur IV boosters at VAFB. The 2006 EA analyzed the potential environmental impacts of implementing the OSP, including site modifications, rocket motor transportation, pre-flight preparations, flight activities, and post-launch operations at each of the four proposed launch sites, including VAFB. Thus, pre-flight processing operations are one component of the OSP. The 2006 EA analyzed the potential cumulative impacts associated with implementing the entire OSP at VAFB. Cumulative impacts associated with launch operations of the Minotaur IV at CCAFS have been evaluated in the 2008 EA, 2010 SEA, and 2015 WR, which are incorporated by reference in this WR. The impacts associated with the Proposed Action would not be expected to increase beyond those considered in the 2006 EA.

Agency Finding and Statement

As documented above and in the 2016 WR, the FAA has conducted an independent evaluation of the portions of the EA to be adopted and finds that they adequately address the proposed FAA action. The

FAA is adopting those parts related to pre-flight processing of the Minotaur IV at VAFB, specifically sections 2.1.4.1, 2.1.4.1.3, 3.1, 4.1.1.1.1, 4.1.1.2.1, 4.1.1.3.1, 4.1.1.4.1, 4.1.1.5.1, 4.1.1.6.1, and 4.3.1 of the 2006 EA that include a discussion of the affected environment and potential environmental impacts associated with pre-flight processing. In addition, the FAA finds that the EA, in conjunction with the 2016 WR, complies with NEPA, the applicable CEQ regulations, and FAA Order 1050.1F. The FAA has determined that no significant impacts would occur as a result of the Proposed Action and, therefore, that the preparation of an Environmental Impact Statement is not warranted and a FONSI in accordance with 40 CFR Section 1501.4(e) is appropriate.

After careful and thorough consideration of the facts contained herein, the undersigned finds that the proposed Federal action is consistent with existing national environmental policies and objectives as set forth in Section 101 of NEPA and other applicable environmental requirements and will not significantly affect the quality of the human environment or otherwise include any condition requiring consultation pursuant to Section 102(2)(C) of NEPA.

APPROVED: 

DATE: 11/10/16

Dr. George C. Nield
Associate Administrator for
Commercial Space Transportation