Final EIS

# Responses to Comments

# How to Use This Section

Chapter 3 includes comments raised by agencies and the public during the review of the Draft EIS and Air Force responses to substantive comments. Public and agency involvement is an important part of the NEPA process, and all comments are taken into consideration by the Air Force in its decision making process.

The Air Force would like to express appreciation for your comments. The fact that no responses were prepared for the many commentors who praised the F-22 and requested that the aircraft be based at a specific base does not in any way reduce the value of your participation.

**Comments**

Written, Oral, and Agency comments are organized in four sections as shown below.

- **Written Comments and Submitted Letters - 0001-0069**
  Members of the public submitted comments on the Draft EIS. This section contains these letters and written comments.
- **Native American and Alaska Native Letters - 7000-7001**
  This section contains letters received from Native Americans or Alaska Natives with comments on the Draft EIS.
- **Public Hearing Transcripts and Summaries - 8000-8084**
  Public hearings were conducted in 23 locations as part of the review of the Draft EIS. This section contains either verbatim transcripts from the hearings or a compilation of issues and questions raised by public or agency participants during the public hearing process.
- **Agency Letters - 9000-9023**
  Federal, state, and local agencies submitted letters on the Draft EIS. This section contains these letters.

**Responses**

Responses to comments are presented in this section. Responses were prepared as follows.

- **Comment Identification**
  Each written or oral comment was assigned an identification number.
- **Comment Review**
  The comments were reviewed and substantive comments were bracketed as described in section 3.1 of this Final EIS.
- **Response Number**
  Each bracketed comment was given a numbered response. Responses are presented consecutively by number.

| *Response Number* | *Response* |
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| 1 | Tyndall AFB Public Affairs is committed to follow up on complaints of low-flying aircraft. Tyndall has an established procedure for acting on such complaints. |
| 2 | Section TY3.2, Appendix AO-1, and Appendix AO-2 of the Draft EIS discuss previous research on the effects of aircraft noise on hearing. These studies demonstrate that neither current nor projected sorties would cause hearing damage from aircraft overflights. Furthermore, sound generated by F-22 overflights would not reach levels or durations associated with hearing loss. |
| 3 | Descriptions and analysis of air quality associated with the beddown of the F-22 is presented in the Draft EIS in sections LA3.3 (Langley), EG3.3 (Eglin), EL3.3 (Elmendorf), MH3.3 (Mountain Home), and TY3.3 (Tyndall). Appendices AO-1-1 and AO-3-1 provide additional detail on air quality analysis and methods. |
| 4 | The F-22 is expected to be slightly louder than the F-15C when compared under identical flight modes. Chapter 2 for each installation describes factors that would reduce overall noise levels from the F-22. In addition, data and comparisons are presented in the noise sections for each location and Appendix AO-1. |
| 5 | As described in the Draft EIS sections LA3.3, EG3.3, EL3.3, MH3.3, TY3.3, and Appendix AO-1, available information on F-22 engines indicates they produce slightly more criteria pollutants than F-15Cs. Because F-22s would fly more sorties than F-15Cs, total tons of criteria pollutants generated by flight operations would increase with beddown of the F-22. However, as demonstrated in the air quality analysis, the overall contribution of these activities to regional emissions is minimal-to-negligible at any of the five locations, and no regulatory thresholds would be met or exceeded. The regulatory thresholds have been established by USEPA to protect human health and safety. Since emissions in the training airspace for the five locations would not approach these thresholds, they do not represent a risk to human health or to the environment, including land and water resources. The emissions include the criteria pollutants and water vapor. |
| 6 | Draft EIS section MH2.2.2 establishes that chaff and flares would be used only in existing training airspace previously authorized for such activities. The 2,400 acres referred to in the comment seems to relate to the area around the base affected by noise (depicted in Figure MH3.2-1) where chaff or flares are not employed. |
| 7 | The sentence "Because of the remote nature of the area, the status and distribution of many of these species is not well known" (Draft EIS, section MH3.8.2) refers to special status species populations under currently used airspace. The land under the airspace will not be "tampered with" and special status species or their habitat will not be destroyed. |

| Response Number | Response |
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| 8 | The DoD American Indian and Alaska Native Policy (21 November 1999) emphasizes the importance of respecting and consulting with tribal governments on a government-to-government basis. The policy requires an assessment, through consultation, of the effect of proposed DoD actions that may have the potential to significantly affect protected tribal resources, tribal rights, and Indian lands before decisions are made by the services. For this EIS, the Air Force contacted the Shoshone-Paiute Tribes during IICEP, and conducted both a scoping meeting and a public hearing at the Duck Valley Reservation (for tribal members only) to provide the opportunity for the Tribes to identify concerns about the proposed action. The tribal government was provided with notification of the proposed action at an early stage in the process, and with copies of the Draft EIS for review and comment. In response, tribal members have provided comments that are contained in this volume of the EIS. Both written comments provided by the Tribes, and the results of discussions and testimony at the Tribal meetings were used in the development of this EIS and are considered in the Air Force decision making process. If Mountain Home AFB is selected for the Initial F-22 Operational Wing beddown as a result of the EIAP, additional consultation with the Tribes would take place. |
| 9 | During the Draft EIS review period, many individuals expressed differing perspectives regarding quality of life. Some citizens have expressed concern that their quality of life will be affected by the transition from the F-15C to F-22 aircraft. Others highly valued the introduction of the F-22 aircraft to each specific base. The effect of overflights and noise on human resources is discussed in the Draft EIS in Chapter 3 of each installation under sections 3.12, 3.13 and 3.14. Potential consequences to residential property values is discussed in each land use section.<br><br>Quality of life is a subjective judgment based on personal experiences and preferences. Even within a single community, notions on quality of life can vary a great deal. Each individual has a different perspective on how their quality of life has been affected by changes within the community. Some of the community characteristics that affect quality of life include population density, ethnic or social character, recreation, education, traffic and crime rates. An individual's ability to maintain their established lifestyle may also be an important element in determining quality of life. Various conventional lifestyles may be potentially affected by the proposal including farming and ranching, retirement living, recreation and leisure, and military. At each installation, the Air Force has been conducting military aircraft operations for over 50 years. Citizens may notice changes in military overflights in certain areas associated with the Initial F-22 Operational Wing beddown. Projected military operations and associated changes to the noise environment are described in the Draft EIS.<br><br>Many factors, including fluctuations in the national and regional economy, population changes, land investment shifts, and changes in social services or cultural amenities, could affect the quality of life. External fluctuation in the farming and ranching markets, decreases in income, or changes in weather could affect local economies to a greater degree than aircraft overflights. As under current conditions, noise from military aircraft operations may periodically disturb citizens and affect their enjoyment of solitude; however, opportunities for abundant periods of peace and quiet would continue as under present conditions. Therefore, existing quality of life should not be degraded due to the proposed action or alternatives. However, public concern about reductions in quality of life due to the proposed action and alternatives will be considered in the decision making process. |

| *Response Number* | *Response* |
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| 10 | Draft EIS section EG2.1.2 presents baseline data on the number and nature of sorties flown by F-15Cs and other aircraft at Eglin AFB. Eglin is a very busy base, with over 25,000 sorties per year. During a given period within the year, the amount of activity may increase temporarily due to deployments, exercises, and the need to meet other training requirements. At other times, lesser levels of activity occur. These requirements involve takeoffs, landings, and patterns over and near the base. The altitudes flown and flight tracks used for these activities have been long established at Eglin AFB. Also see Response Number 22. |
| 11 | Refer to Response Number 10. |
| 12 | Refer to Response Number 5. |
| 13 | Preparation of this EIS is an important step in the EIAP. Each step in the EIAP has been conducted with a careful, systematic approach. Each public and agency comment from scoping and the public comment period was rigorously reviewed and studied in detail to help shape this proposal. The document was prepared and reviewed by an interdisciplinary team composed of Air Force and contractor resource analysts. Each installation participated in the EIAP by providing information, reviewing documents, and supporting the public involvement process. Also see Response Number 95. |
| 14 | Eglin AFB and Tyndall AFB also have programs in place to reestablish long-leaf pine forests. The red-cockaded woodpecker occurs in many areas on Eglin AFB and high densities have been observed next to test areas even though these areas are among the noisiest on base from military jet aircraft overflights, sonic booms, and explosions. Based on this and other information regarding this species' ability to acclimate to noise related to military activity, minor changes in the noise environment associated with F-22 training will not impact these populations. |
| 15 | Each of the respective noise sections (i.e., 3.2) for the five locations indicate that all subsonic noise levels use A-weighting and all supersonic noise levels use C-weighting. Discussion of these weightings and associated frequencies are presented in Appendix AO-2 of the Draft EIS. |
| 16 | OSHA occupational noise exposure standard requires that administrative or engineering controls shall be implemented if noise exposure exceeds 90 dBA for an 8-hour day. A hearing conservation program shall be administered if exposure equals or exceeds an 8-hour time-weighted average level of 85 dBA, but the exposure limit is still 90 dBA.<br><br>OSHA standards make no direct mention of allowable noise exposure for time periods greater than 8 hours, the calculation of time-weighted average when exposure is composed of periods of noise at different levels includes a reference duration of 16 hours for a noise level of 85 dBA. As a result, it is reasonable to extend the 8-hour limit to 24 hours using the same trading relationship particularly since the noise is intermittent, not continuous (USEPA 1973).<br><br>OSHA regulations apply to workplace noise, not to community noise. OSHA standards do, however, represent the best understanding on the effects of noise dose on hearing, and their extension to 24 hours for community noise exposure is appropriate. |

| Response Number | Response |
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| 17 | The EIS analysis is designed to be consistent with the provisions of the Committee on Hearing, Bioacoustics, and Biomechanics "Guidelines for Preparing Environmental Impact Statements on Noise" (Committee on Hearing, Bioacoustics, and Biomechanics 1977), which prescribes that the primary measure for describing noise is the DNL metric, which is based on A-weighted noise levels of individual events. The DNL metric is the primary measure of a noise environment that affects a community over an entire 24-hour day, and is the measure that best relates to overall community annoyance (for additional discussion, refer to Draft EIS Appendix AO-2). |
| 18 | Noise data for the F-22 were measured in tests conducted at Edwards AFB, corrected for atmospheric conditions, and incorporated into the latest version of NOISEMAP (6.5) to predict noise levels at Langley AFB. The predictions do not take into account the effect of water surfaces at Langley AFB, which may increase the levels at some locations by 1 to 2 dB. Future versions of NOISEMAP will allow for water reflections to be included. This method of creating a noise profile of an aircraft under strict flight test conditions and applying the proper corrections to other locations based on the physics of sound propagation has been approved by the scientific community and is the basis of every noise model used worldwide (refer also to Draft EIS Appendices AO-1 and AO-2). |
| 19 | Commercial aircraft engines are designed for subsonic operations. F-22 military aircraft are designed for combat to achieve the aircraft characteristics described in the Draft EIS section 1.1.2. |
| 20 | People with hearing loss exhibit less temporary threshold shift when exposed to high levels of noise than those with normal hearing, and hence are less likely to incur a further loss in hearing. This does not necessarily imply that people with hearing loss can be exposed to high noise levels without concern for further loss, but it does indicate that they will not be any more at risk than those with normal hearing. As noted in Response Number 2, the projected levels and durations of noise generated by F-22s are not within the range generally associated with hearing loss. |
| 21 | Recruitment rarely occurs with conductive hearing loss (related to a mechanical problem involving the eardrum or three bones of the middle ear), but can be a feature of sensorineural hearing loss (involving the sensory nerves). It is generally mild, with the abnormal increase in loudness occurring near threshold levels of noise, but rarely continuing into high intensities to equal the loudness in an ear that has normal hearing (Sataloff *et al.* 1993). Aggravation of hearing loss through wearing of a hearing aid is not common if amplification is adjusted correctly. Such additional losses are rare, and are usually associated with powerful hearing aids, and in ultra-sensitive ears only. As noted in Response Number 2, projected levels and durations of noise generated by F-22s are not within the range generally associated with hearing loss. |

| Response Number | Response |
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| 22 | There are two types of charted military training airspace in the vicinity of Farmville, Virginia. The Farmville MOA spans several counties in the region and authorizes operations between 300 feet AGL and 5,000 feet MSL. Additionally, there are several MTRs that cross through the MOA. An MTR is a charted corridor along which military aircraft are authorized to perform low-altitude, high-speed operations; they have defined dimensions horizontally (route widths) and vertically (minimum and maximum altitudes). For those MTRs that cross the Farmville MOA, the authorized altitudes vary from 500 feet AGL to 7,000 feet MSL. Due to the high-altitude nature of the F-22 mission, the F-22 is not expected to use the MTR structure.<br><br>ACC policy restricts training sorties of most fighters to altitudes no lower than 500 feet AGL. The Federal Aviation Regulations governing all users, civil and military, also specify minimum altitudes. Specifically, Federal Aviation Regulation 91.11 requires aircraft to avoid congested areas of a city, town or settlement, or any open-air assembly of persons, such as a stadium, by 1,000 feet vertically when operating within a 2,000-foot lateral distance of such centers or assemblies. Outside of such areas and in sparsely populated regions, a 500-foot lateral separation of persons, vessels, vehicles and structures is required. When Air Force aircrews need low altitude training, they must adhere to both the ACC and FAA regulations. Therefore, the lowest altitude one should expect to see most Air Force aircraft would be 500 feet AGL although other aircraft and civilian aircraft may be observed at lower altitudes. |
| 23 | Stadelman (1958) studied the effects of simulated aircraft overflight noise and found there was no statistical difference in the hatchability of chicken eggs in incubators exposed to aircraft noise (120 decibels) versus controls (70 decibels). Conversely, he found that noise levels of about 115 decibels interrupted the setting tendency of 11 of 12 broody hens. In another study, it was found that chicks exposed to noise levels of 80 to 115 decibels did not show a difference in weight gain or feeding efficiency when compared to controls (Dufour 1980). This indicates that noise from military overflights has the potential to affect brooding chickens. However, there are two factors which would lessen this potential impact relative to baseline conditions. First, the F-22 would fly at higher altitudes than the F-15C in the Farmville MOA as shown on Table LA2.2-2. Second, an estimated 99.75 percent of the flights would be above 1,000 feet AGL and as shown on tables LA3.2-3 and LA3.2-4, the noise levels of the F-22 would be similar to current noise levels from the F-15C. Also, as can be seen in these tables, the noise levels above 1,000 feet AGL would be below the levels found to disrupt brooding hens. Since the deployment of the F-22 would result in fewer low-flying aircraft and reduced noise levels relative to current conditions, the potential to affect the brooding performance and other behaviors of chickens would likely be reduced relative to baseline conditions. Also, any airspace use violations by military aircraft should be reported to the Langley AFB Public Affairs Office. Also see Response Number 281. |
| 24 | Refer to Response Number 10. |
| 25 | Refer to Response Number 10. |
| 26 | Eglin AFB Public Affairs is committed to follow up on complaints of low-flying aircraft. Eglin AFB has an established procedure for acting on such complaints. In addition, the Draft EIS, section EG2.4, lists public and agency concerns derived from scoping meetings held April 3, 2000, July 12, 2000, and July 13, 2000, in the Eglin AFB area. The list includes specific issues raised by people living in the area. Also see Response Number 78. |

| Response Number | Response |
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| 27 | Refer to Response Number 26. |
| 28 | Section EG3.2.1 of the Draft EIS analyzes both current and projected noise levels in the area encompassing Eglin AFB. All current and proposed flight activities are integrated into the analysis and the potential noise impacts are addressed throughout the various resource sections of the Draft EIS. Section EG3.2.2 provides information not only on cumulative noise levels (DNL), but also on levels associated with single flyovers (SEL and $L_{max}$). The analysis reflects the best available information on potential impacts in the affected area. |
| 29 | As noted in Chapter 3 for each base (see section 3.4, Safety, for each base), newer aircraft may have a higher accident rate during development, but this rate decreases substantially the more the aircraft is flown. No human endeavor, including flight, is entirely without risk. By the time of the F-22 beddown, substantial flight hours will have been logged and knowledge about the aircraft's safest flight regime will have been gained. |
| 30 | Studies examining the effects of noise on wildlife consistently have shown that, in general, wildlife species can acclimate to the types of noise associated with military aircraft training; the results of some of these studies are summarized in Appendix NR-4. Therefore, in general, noise from military aircraft does not have long-lasting effects on wildlife populations. The Air Force has conducted appropriate consultations with the USFWS and NMFS to ensure that aircraft operations do not result in adverse effects to threatened and endangered species. |
| 31 | Draft EIS section LA2.2.1 states that the F-22 would fly the same percent of time after dark as the F-15Cs currently using the airspace. Approximately 5 percent of this activity would occur during environmental night (10 pm to 7 am). The 1st Fighter Wing F-15Cs do not fly night sorties over the Farmville MOA. The requirement for night training is met by conducting night operations in overwater airspace. The F-22s would fly 238 fewer total sortie-operations per year in the Farmville MOA than the F-15Cs under baseline conditions. The F-22 is not projected to conduct any night sortie-operations in the Farmville MOA. Also see Response Number 46. |
| 32 | All three areas described in the comment underlie the Farmville MOA (see Draft EIS Figure LA2.2-1). Under FAA regulations, DoD aircraft must avoid municipal and small private airfields. Such avoidance locations are marked on the maps used by Air Force pilots in planning and executing sortie-operations. Because the F-22 incorporates sophisticated Global Positioning Satellite technology in the heads-up displays seen by the pilot, the ability to avoid noted locations will be enhanced. |
| 33 | Section LA3.2.2 of the Draft EIS establishes that noise levels in the Farmville MOA would remain below 45 DNL, as presently found. A factor likely to reduce noise effects under the Farmville MOA is that the F-22 would fly 238 fewer sortie-operations than that flown by F-15Cs under baseline conditions and the F-22 would use upper altitudes (e.g., above 1,000 feet AGL) of the Farmville MOA more than the F-15Cs. Section 2.7 of Appendix AO-2 provides information on noise effects on structures. It presents results from studies that indicate higher noise levels than those generated under the proposed action would need to be sustained to induce structural effects. |

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| 34 | Section LA3.2 of the Draft EIS summarizes information on speech interference and sleep disturbance from noise, and details are presented in Appendices AO-1 and AO-2. For speech interference, study data show that an SEL of 65 dB will begin to interfere with speech. While the F-15C and F-22 would exceed an SEL of 65 dB except at altitudes above 20,000 feet AGL, the potential for exposure to overflights would be minimal since the aircraft tend to fly randomly through the airspace. In addition, the F-22 would, at most, fly only 317 sortie-operations in the Farmville MOA, and spend most of the other time flying above 20,000 feet AGL and over water. For sleep disturbance, data indicate that the USEPA established an indoor DNL of 45 as necessary to protect against sleep interference. Typical dwellings provide 20 dB of structural noise insulation, conservatively. As such, with noise levels of less than 45 DNL in the Farmville MOA, indoor noise levels would be well below the USEPA guideline for sleep interference. Also see Response Number 33. |
| 35 | Training activities by the F-22 in the Farmville MOA are presented in Table LA2.2-1 of the Draft EIS. The F-22 would fly higher altitudes than the F-15C in the Farmville MOA as shown in Table LA2.2-2. A review of literature on the effects of jet noise on cattle is included in Appendix NR-4. |
| 36 | Section TY3.2 of the Draft EIS details baseline and projected noise levels in the area associated with the base and under the training airspace. |
| 37 | As explained in Draft EIS section LA2.1.1, the number of aircraft potentially based at Langley AFB is not substantially different from the number of aircraft historically based at Langley AFB. Actions to avoid infrequent hurricanes with the F-22 would not be different from actions taken with the F-15C. |
| 38 | As addressed in Appendix AO-2 of the Draft EIS, studies have shown that there is no evidence that military overflights increase death rates, reduce productivity rates, or otherwise have long-term negative effects on domestic animal and wildlife populations. Also see Response Number 67. |
| 39 | The Military Claims Act, 10 USC 2733, provides a mechanism for the payment of meritorious claims resulting from non-combat activities by the Air Force, including sonic booms caused by the operation of military aircraft. The Air Force is committed to promptly investigate any claims for damages to property or livestock caused by Air Force overflights, and to make payments as permitted under federal law. Refer to Appendix AO-2 of the Draft EIS for a discussion on the effects of sonic booms. Although scientific evidence indicates that sonic booms generally do not produce forces of the magnitude necessary to cause structural damage, claims alleging such damage are thoroughly investigated by the Air Force on a case-by-case basis. This ensures that the Air Force meets its obligation to both the claimant and the tax-paying public. |

| Response Number | Response |
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| 40 | Eliminating and minimizing risk is a basic tenant in the Air Force's Mishap Prevention Program. Several factors indicate that F-22 operations would not increase the chances of unaware interactions in the Susitna MOA. First, the F-22 would operate within the existing MOA. The MOA is charted and information about it is available to all civil pilots. Second, the MOA was designed to minimize impact on general aviation aircraft operating in that area. To the northeast, the MOA only extends as far north as Mt. Hunter and Mt. Dickey, and to the southwest, Mt. Dall. It does not extend to Mt. McKinley. The floor is 5,000 feet AGL or 10,000 feet MSL, whichever is higher. Third, while operating under VFR, civil aircraft may transit any active MOA. Fourth, improved avionics would enhance F-22 pilots' ability to avoid non-participating aircraft. Lastly, the F-22 will have VHF radios, aiding communication with civil aircraft on Common Traffic Advisory Frequency when necessary. |
| 41 | The Air Force considered several factors when selecting the locations for the public hearings, including providing sites offering reasonable access to the greatest number of people. Public hearing meeting locations were announced through newspaper display ads, press releases, public service announcements, flyers, and websites. |
| 42 | There is no published evidence that the health and welfare effects of noise are greater for senior citizens than for the community in general. In fact, there is scientific evidence that the acceptability of noise and sonic boom increases with age (Kryter 1970). |
| 43 | Refer to Response Number 33. |
| 44 | Refer to Response Number 9. |
| 45 | Noise levels generated by all aircraft and sortie-operations under baseline and projected conditions were analyzed for the Farmville MOA (see section LA3.2.2 of the Draft EIS). Each aircraft type, its flight parameters, and the number of sortie-operations were modeled as described in that section and Appendix AO-1. The cumulative noise level reported for the Farmville MOA (less than 45 DNL) reflects these factors. |
| 46 | All baseline and projected sortie-operations, including those by Langley AFB, other Air Force units, the Navy, and Air National Guard (i.e., all military users) were included in the analysis (see section LA2.2.1). These sortie-operations, which were used in the noise and safety analyses, were also considered in the cumulative analysis. |
| 47 | In accordance with NEPA and CEQ guidelines (40 CFR 1502.1), the analysis in the Draft EIS is scientific and objective rather than intuitive. Since individuals' perception of noise varies dramatically, one person's intuitive description could differ markedly from another person's. The procedures by which aircraft noise exposure and its effects were assessed represent best available technology and professionally accepted noise modeling tools. As described in Appendix AO-1, subsonic noise was computed using the recent MR_NMAP software (Armstrong Laboratory 1996). MR_NMAP uses the same physical principles used for aircraft noise analysis throughout the world, and was specifically validated for military airspace operations by numerous measurement programs under military airspace. MR_NMAP has been tested, used, and accepted as the appropriate tool to assess military aircraft noise in military operations areas, Warning Areas, and over training ranges. |

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| 48 | All current and proposed flight activities are integrated into the analysis and potential noise impacts are addressed throughout the various resource sections of the Draft EIS. Section LA3.2.2 provides information not only on cumulative noise levels (DNL), but also on levels associated with single flyovers (SEL and $L_{max}$). The analysis reflects best available information on potential impacts in the affected area. Also see Response Number 47. |
| 49 | Appendix HR-2 presents the many special use areas within the F-22 airspace, including the Farmville MOA. The potential for bird strikes was addressed in section LA3.4.2 and concludes that aircraft safety and bird aircraft strikes would not measurably differ from baseline conditions. |
| 50 | As presented in section LA3.3.2, nitrogen oxide emissions in the Farmville MOA would increase by about 45 tons per year. These emissions would be dispersed (rather than concentrated) throughout the vertical and horizontal expanse of the airspace, or almost 1,400 cubic miles. Since the area underlying the Farmville MOA is in attainment for all air quality standards, the additional minimal amounts of dispersed emissions from the F-22s would not measurably degrade air quality. Also see Response Number 5. |
| 51 | As presented in Chapter 2 and throughout the Draft EIS, the Air Force is evaluating five basing locations and their associated training airspace, as well as the no-action alternative. Most of the airspace, including the Farmville MOA, has been approved by the FAA and established for many years. Also see Response Number 104. |
| 52 | Aircrews are governed in their flying practices by both FAA rules and Air Force regulations, including lower altitude limits. For the Farmville MOA, the lower altitude limit is 300 feet AGL. The Air Force takes disciplinary measures for failure to adhere to such limits and rules. Also see Response Number 22. |
| 53 | Refer to Response Number 39. |
| 54 | Appendix AO-1 and Appendix AO-2 of the Draft EIS discuss the effects of aircraft noise on children and animals. |
| 55 | Refer to Response Number 5. |
| 56 | Close to the aircraft, sound levels are high and acoustic waveforms will indeed exhibit non-linear effects. However, F-22 noise data used in the analyses were measured at distances ranging from 500 to 1,000 feet from the aircraft, where amplitudes are lower and non-linear effects are negligible. These are the data that are adjusted for propagation distance and air and lateral attenuation to predict noise levels in the community. |
| 57 | Refer to Response Number 39. |
| 58 | Table LA2.2-2 indicates that supersonic flight is not, nor has it been, authorized in the Farmville MOA. All supersonic flight activity associated with the F-22s, if based at Langley, would occur in the over-water Warning Areas where it is authorized. Supersonic flight is authorized over land in other locations, including some of the MOAs associated with Elmendorf and Mountain Home AFBs. |
| 59 | Refer to Response Number 5. |
| 60 | Refer to Response Number 33. |
| 61 | Refer to Response Number 9. |

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| 62 | Refer to Response Number 58. |
| 63 | Refer to Response Number 5. |
| 64 | Refer to Response Number 33. |
| 65 | Refer to Response Number 5. |
| 66 | Refer to Response Number 9. |
| 67 | This EIS has been prepared in accordance with the requirements of NEPA and CEQ regulations, AFI 32-7061 as promulgated in Title 32 of the CFR Part 989, and the DoD Instruction 4715.9. In addition, laws and regulations that govern the 17 resource categories analyzed under this EIS were reviewed and applied. The analytical approaches, including the regulatory setting for each resource, are located in the Draft EIS Appendices. |
| 68 | Refer to Response Number 33. |
| 69 | Refer to Response Number 9. |
| 70 | Refer to Response Number 5. |
| 71 | Refer to Response Number 33. |
| 72 | Refer to Response Number 9. |
| 73 | A review of literature regarding the effects of noise on livestock appears in Appendix NR-4. The information in Appendix NR-4 indicates that domestic animals seem to habituate to military aircraft overflights. Also see Response Number 35. |
| 74 | Refer to Response Number 30. |
| 75 | Refer to Response Number 50. |
| 76 | Refer to Response Number 29. |
| 77 | The Air Force conducted a comprehensive public involvement process. In accordance with CEQ regulations (40 CFR 1502.19), the Air Force distributed copies of the Draft EIS at the beginning of the comment period to libraries and other public repositories so that individuals who had not indicated an interest in receiving the documents had access to those documents. The Draft EIS was also available on the World Wide Web (internet) at www.cevp.com. Through the scoping meeting held on July 20, 2000 in Farmville, Virginia, as well as newsletters (January and March 2001), the Air Force solicited names and addresses of individuals and organizations interested in receiving newsletters as well as a copy of the Draft EIS. The resulting list of those respondents indicating their interest in receiving such documentation was used to develop a mailing list. Advertisements for the scoping and public hearing meetings were run in local newspapers prior to the meetings (*Farmville Herald* July 5, 2000; May 16, 23, 25, 2001). A public hearing was held in Farmville on May 29, 2001. For those who requested the Draft EIS after the public comment period had begun, copies were shipped as soon as possible. Also see Response Number 469. |

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| 78 | Air Force Instructions require a 45-day comment period (AFI 32-7061, section 3.8.3.1). However, the Draft EIS public comment period of 60 days, which ended 25 June 2001, included an extension and exceeded NEPA, CEQ, and Air Force regulations. Comments are accepted throughout the EIAP starting with the Notice of Intent. |
| 79 | Refer to Response Number 33. |
| 80 | Refer to Response Number 9. |
| 81 | Refer to Response Number 73. |
| 82 | Refer to Response Number 30. |
| 83 | Refer to Response Number 5. |
| 84 | Refer to Response Number 29. |
| 85 | Refer to Response Number 77. |
| 86 | Tyndall AFB Public Affairs is committed to follow up on sonic boom complaints and investigate reports of damage. Tyndall AFB has established procedures for acting on such complaints. Any claims for damage, when evaluated and found to be valid, are processed in accordance with established DoD procedures. Tyndall AFB Public Affairs and 325th Fighter Wing leadership make every effort to inform the public of their procedures for dealing with noise-related issues. These efforts include public press releases and meetings with concerned citizens. |
| 87 | Normal flight procedures for the F-22 will be written once flight testing is complete and will be stated in AFI 11F-22, Vol 3, Chap 3. This chapter will apply to each F-22 unit. Each individual base may have unique noise abatement procedures that may modify normal procedures (more restrictive for flight path/airspeed) as outlined in AFI 11F-22, Vol 3, Chap 8, which defines local operating procedures and is base specific. These procedures as published in AFI 11F-22 are F-22 aircraft specific and compliance with them is mandatory.<br><br>In regards to strange airfield noise restrictions, each base publishes general flight procedures such as noise abatement procedures that apply to all aircraft in the Flight Information Publication IFR Supplement in the remarks section for that airfield. As part of flying into that field, pilots are required to refer to the IFR supplement as part of the flight plan filing procedure. If for some reason an aircraft has to divert into a strange airfield, each aircraft carries an IFR supplement on board to make sure the airfield is suitable for landing. |
| 88 | Until flight testing is complete, actual aircraft flight procedures will continue to evolve. The Draft EIS takes a conservative approach in forecasting expected noise contours. The flight profile modeled for the F-22 keeps the aircraft in military (that is, non-afterburning) power until 2 nautical miles past the departure end of the runway and 2,000 feet AGL prior to reducing power to 70 percent. The aircraft will normally climb out at 350 knots indicated airspeed. Based on early flight test results, the aircraft will normally reach 350 knots prior to 2 miles and 2,000 feet in military power. This will allow the pilot to either climb higher or reduce power sooner, either of which will reduce the forecast noise levels, hence the claim of a conservative approach. |

| Response Number | Response |
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| 89 | As discussed in section 2.1, F-22 training flights would closely match those performed by operational F-15C in terms of nature and duration. The Air Force has an outstanding flight discipline and safety record. In addition to FAA governing rules and regulations, the Air Force has its own operating instructions and regulations. A strong standardization and evaluation program is used to guarantee the discipline and integrity of the operation. Any discrepancies noted are quickly corrected and in the very rare case when someone is unable to meet the demands of military flying, there are administrative steps that are used to remove them from flight operations or service in the Air Force. The Air Force airspace rules apply to all DoD participants. |
| 90 | Refer to Response Number 87. |
| 91 | Refer to Response Number 87. |
| 92 | Refer to Response Number 87. |
| 93 | Refer to Response Number 9. |
| 94 | Section LA3.2.1 of the Draft EIS establishes that the total off-base area affected by noise would decrease under the proposed action. Section LA3.12.1 describes the projected changes to noise conditions and the effects on land uses around Langley AFB. As the analysis indicates, the overall noise conditions in the off-base area would not differ significantly from baseline or recent conditions. Some off-base areas would experience slight increases in noise, while others would experience slight decreases. |
| 95 | Although some F-22 data for noise, air quality, and safety are currently incomplete or unavailable, this EIS provides a thorough analysis using known parameters. The CEQ regulations implementing NEPA recognize that such a situation may occur. This situation is addressed in accordance with 40 CFR § 1502.22, *Incomplete or Unavailable Information*. More information on NEPA and its implementing regulations is included in the Aircraft Operations section at the beginning of Chapter 3 for each installation (LA3.1, EG3.1, EL3.1, MH3.1, and TY3.1). |
| 96 | Refer to Response Number 46. |
| 97 | Refer to Response Number 9. |
| 98 | NEPA requires that the Air Force characterize the cultural resources known or likely to be found in the area associated with the proposed action. Section LA3.11 of the Draft EIS identifies these resources both at the base and under airspace. In addition, for Langley AFB proper, the Air Force will continue the ongoing consultation process with the Virginia DHR in compliance with Section 106 of the NHPA. This consultation has resulted in a memorandum of agreement between the Air Force and the DHR identifying protection measures for any cultural resources that may be affected at the base. |
| 99 | Refer to Response Number 34. |
| 100 | Farmville MOA was assessed and described throughout the portion of the Draft EIS covering Langley AFB (LA). Under the description of the proposed action (LA2), baseline and projected airspace use for the Farmville MOA is presented in section LA2.2.1, including Table LA2.2-1 and Figure LA2.2-1. The MOA is analyzed specifically in sections LA3.1.2, 3.2.2, 3.3.2, 3.6.2, 3.8.2, 3.11.2, 3.12.2, and 3.14.2. All of these sections include analysis of the potential effects of the projected increase in sortie-operations in the Farmville MOA. |

| Response Number | Response |
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| 101 | Refer to Response Number 42. |
| 102 | Refer to Response Number 51. |
| 103 | Refer to Response Number 42. |
| 104 | The airspace, including the Farmville MOA, has been approved by the FAA and most has been established for many years. While relatively little training by aircraft from Langley AFB occurs in the Farmville MOA under baseline conditions (7 percent) and under the proposed action (3 percent), it is an important component of the overall training. Some overland flight training is essential, and the Farmville MOA offers such training opportunities and lies close to Langley AFB. As presented in section LA2.2.1, in excess of 95 percent of all projected training activities in primary airspace would occur in over-water training areas. Also see Response Number 46. |
| 105 | Refer to Response Number 95. |
| 106 | Table LA2.2-1 demonstrates that in excess of 95 percent of all projected training activities would occur in over-water training areas. Simulation would also be used (see requirement for construction of simulator facility at Langley AFB in Table LA2.1-3), but simulation does not provide sufficient realism for training and cannot be used exclusively. |
| 107 | Refer to Response Number 5. |
| 108 | Refer to Response Number 29. |
| 109 | Under NEPA, the agency proposing the action prepares the environmental documentation and also makes the decision concerning the action. According to CEQ regulations (40 CFR 1508.16), the Air Force as the proponent acts as the lead agency. The Secretary of the Air Force or a designated representative will make the final decision with substantial input from other members of the Air Force staff. A decision will be made only after reviewing the environmental analysis, public and agency comments, and other pertinent factors. |
| 110 | Refer to Response Number 95. |
| 111 | Refer to Response Number 95. |
| 112 | Refer to Response Number 73. |
| 113 | Refer to Response Number 9. |
| 114 | The baseline in the Draft EIS for Mountain Home AFB is correct. The baseline information was derived from ongoing Air Force and interagency programs and activities at Mountain Home AFB. As noted in section MH2.2.1, these include sortie-operations by the 366th Wing, Idaho ANG, and other users. |
| 115 | NEPA and CEQ regulations do not require an agency to postpone or wait for long-term or possible studies to propose or assess actions. Rather, it requires the use of best available information or presentation of data even if their conclusions contradict one another. This EIS has fulfilled these requirements. Also see Response Number 95. |
| 116 | All agency comments were reviewed and incorporated and included in the preparation of the Draft EIS. Furthermore, the analysis reflects the on-going cooperative efforts with the BLM. The letters received from the BLM are provided in Chapter 2 of this document. |

| *Response Number* | *Response* |
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| 117 | The Air Force operates under many restrictions designed to reduce the effects of aircraft noise on lands and the resources underlying the airspace. Also see Response Number 120. |
| 118 | Although the Draft EIS states that the land use pattern is characterized as rural, it also identifies the numerous special use areas (that are by definition public lands) present within the airspace. Narrative regarding special use areas is presented in section MH3.12.2; Appendix HR-2 contains tables listing each area by airspace unit. |
| 119 | Existing natural resources and land uses under the airspace, including special use areas, are analyzed in sections MH3.6.2, MH3.8.2, and MH3.12.2. See also Response Number 142. |
| 120 | The Air Force is honoring and will continue to honor its commitments and responsibilities identified in the Enhanced Training in Idaho EIS, Record of Decision, the Supplemental Record of Decision, and additional measures identified in the Enhanced Training in Idaho Settlement Agreement. |
| 121 | Chapter 2 of this document includes a modification to clarify that the Air Force will continue to honor its commitments identified in the Enhanced Training in Idaho Settlement Agreement. Also see Response Number 120. |
| 122 | The location described in the comment appears to underlie the southeastern corner of the Susitna MOA. Section EL3.2.2 indicates that noise levels in this MOA would remain below 45 DNL. Sonic booms would not increase since in the MOA only functional check flights are authorized to fly supersonic in this airspace. No maneuvering supersonic flight is authorized. |
| 123 | Refer to Response Number 22. |
| 124 | Refer to Response Number 31. |
| 125 | Refer to Response Number 106. |
| 126 | Refer to Response Number 9. |
| 127 | Refer to Response Number 104. |
| 128 | As indicated in Appendix NR-4, low-level aircraft flights may potentially result in horses taking flight, and other behaviors. F-22 training levels under the Langley alternative are discussed in Table LA2.2-2. Furthermore, F-22 training in the Farmville MOA is unlikely to adversely impact horses and other livestock because of the reduction in low-level flights. |
| 129 | Refer to Response Number 9. |
| 130 | Refer to Response Number 128. |
| 131 | Refer to Response Number 33. |
| 132 | Section 2.2 of the Draft EIS describes the process used to identify alternatives. This process considered many factors, including the capabilities offered by airspace associated with the bases. Although specific capabilities vary among the bases, all of the alternative bases analyzed in the EIS meet the basic airspace requirements. |

| Response Number | Response |
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| 133 | Although aircraft noise is an established part of the environment on an Air Force base, Langley AFB has and will continue to reduce noise impacts by implementing quiet hours and routing air traffic to minimize its effects on residential land uses. Furthermore, on-going renovations to Lighter-Than-Air housing units have incorporated the use of double-pane insulated windows, which also serve to reduce the impacts of noise inside residences. |
| 134 | Figure EL3.2-1 in the Draft EIS shows that noise levels of 65 DNL or greater do not extend outside Elmendorf AFB to the south (towards downtown Anchorage). |
| 135 | Refer to Response Number 4. |
| 136 | Refer to Response Number 77. |
| 137 | Refer to Response Number 46. |
| 138 | Refer to Response Number 109. |
| 139 | The Air Force has conducted extensive consultations with the Shoshone-Paiute Tribes or Tribal representatives regarding Mountain Home AFB operations. The Air Force has made an effort to learn more about Shoshone-Paiute concerns, to reduce intrusions in some locations, and to accommodate the Shoshone-Paiute when they are holding ceremonies. The Air Force is committed to continuing these efforts. With respect to the proposed action, in section MH3 of the Draft EIS, under each applicable resource is a Native American Concerns section that outlines issues identified during scoping. |
| 140 | Aircrews are governed in their flying practices by both FAA rules and Air Force regulations, including lower altitude limits. The Air Force takes disciplinary measures for failure to adhere to such limits and rules. As addressed in section MH2.2, the Air Force has implemented flight and defensive countermeasure release restrictions over Duck Valley Reservation. By agreement, the Air Force conducts no flights over the Duck Valley Reservation below 15,000 feet AGL. Thus, Mountain Home AFB aircraft generally avoid flights over the Duck Valley Reservation. Also see Response Number 120. |
| 141 | In the past, the Air Force has offered to provide a Boom Event Analyzer Recorder (sonic boom monitor). It should be noted that a noise monitoring study will occur as part of the Enhanced Training in Idaho Settlement Agreement. |
| 142 | No construction, traffic, or surface activity would occur under airspace associated with this project; and no projected air or water quality consequences would result under the airspace (see sections MH3.3.2 and MH3.5.1 of the Draft EIS). |
| 143 | Emergency civilian airspace access receives priority operational handling for air ambulance flights when required and requested by the pilot. In addition, F-22 flight activities would, on average, occur above altitudes used commonly by civilian emergency response aircraft. |
| 144 | During the past seven years, the Air Force has provided more than $1 million to fund ethnographic studies addressing Shoshone-Paiute Tribal traditional resources. This is in addition to the hundreds of thousands of dollars spent on archaeological surveys on existing and proposed Air Force ranges in Idaho. |
| 145 | Refer to Response Number 67. |
| 146 | The need for basing the Initial F-22 Operational Wing is presented in sections 1.2 and 1.3 of the Draft EIS. |

| *Response Number* | *Response* |
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| 147 | Refer to Response Number 8. |
| 148 | Refer to Response Number 8. |
| 149 | The Air Force recognizes that intangible concerns can be identified only through discussions with concerned Native American groups. Opportunities for tribal members to convey this information, whether verbally or in writing, were provided at community meetings at the Duck Valley Reservation and as described in Response Numbers 8 and 153. |
| 150 | Refer to Response Number 140. |
| 151 | Refer to Response Number 8. |
| 152 | Refer to Response Number 8. |
| 153 | As required by federal regulation, the Air Force uses professional archaeologists, meeting the Secretary of the Interior's qualifications, to identify National Register-eligible historic properties. In addition, the Air Force recognizes the unique character of Native American traditional resource concerns and understands that effects to traditional resources can be identified only through discussions with concerned Native American groups. The Air Force has provided opportunities for tribal members to convey this information, whether verbally or in writing, at community meetings at the Duck Valley Reservation. In addition, during the past seven years, the Air Force has provided more than $1 million to fund ethnographic studies addressing the Tribes' traditional resources. This is in addition to the hundreds of thousands of dollars spent on archeological surveys on existing and proposed Air Force ranges in Idaho. During this EIS process, Native American concerns were addressed more extensively than that of any other group. Native American concerns in the Mountain Home area are identified in the Draft EIS in sections MH3.1.2 (Airspace); 3.2.2 (Noise); 3.4.2 (Safety); 3.6.2 (Terrestrial Communities); 3.10 (Cultural and Traditional Resources); 3.12.2 (Land Use); and 3.14.2 (Environmental Justice). |
| 154 | As described in Response Number 153, Native American concerns in the Mountain Home area are identified in sections MH3.1.2 (Airspace), 3.2.2 (Noise), 3.4.2 (Safety), 3.5.1 (Soil and Water), 3.6.2 (Terrestrial Communities), 3.10.1 (Visual), 3.11.2 (Cultural and Traditional Resources), 3.12.2 (Land Use), and 3.14.2 (Environmental Justice). |
| 155 | Refer to Response Number 29. |
| 156 | The effects of noise on wildlife are discussed in Appendix NR-4. Year-to-year variation in sage grouse population levels is the result of natural variation. It is generally understood by resource managers and the scientific community that observed regional declines are primarily the result of habitat conversion from sagebrush dominate steppe to seeded and annual exotic grasslands. The Draft EIS does acknowledge that a potential exists for increased sonic booms to affect sage grouse under the Mountain Home alternative (section MH3.8.2). |
| 157 | Draft EIS section MH2.2.1 describes the flight restrictions employed by all aircrews when operating in the training airspace associated with Mountain Home AFB. These include altitude, locational, and seasonal restrictions designed to address issues concerning Native Americans, wildlife, and recreationists under the airspace. Such restrictions would remain in force should a decision be made to base the Initial F-22 Operational Wing at Mountain Home AFB. |

| *Response Number* | *Response* |
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| 158 | Cumulative effects of other actions that may be affected by the proposal at Mountain Home AFB are addressed in Draft EIS section MH4. |
| 159 | Refer to Response Number 8. |
| 160 | Information used in the historical setting (Appendix CR-2) was taken from Air Force documents previously reviewed by the Tribes or their consultants. Additional summaries of Tribal treaties are included in Chapter 2 of this document. |
| 161 | In accordance with NEPA and CEQ regulations, the Draft EIS addresses impacts to human resources (sections 3.12 [Land Use], 3.13 [Socioeconomics], and 3.14 [Environmental Justice] for each installation). Recreation resource information is presented in each land use section (3.12). The Human Resource appendices (HR-1 through HR-4 in Volume 2) provide additional detail regarding each of these disciplines. |
| 162 | The Air Force recognizes and complies with the federal statutes listed in the comment, as well as its own internal regulations regarding the management and consideration of cultural resources. Appendix CR-1 of the Draft EIS lists federal statutes and DoD policy addressing Native American issues. |
| 163 | Refer to Response Number 8. |
| 164 | As described in section 2.1.2, chaff consists of fibers smaller than the size of a hair and composed of materials found commonly in nature such as silica and aluminum. The chaff fibers break down to constituents comparable to soil (Air Force 1997a). Section 2.1.2 also describes the restrictions applied to the use of chaff. |
| 165 | Studies regarding the concentration of aluminum in the environment as a result of the use of chaff have shown that the concentrations are low enough that no adverse effects to wildlife would be expected. Studies of farm animals have shown that animals did not eat chaff by itself but could ingest it when mixed with food (the chaff itself had to be coated with molasses for ingestion to occur at all). Cattle and goats were fed chaff in their feed and they showed no differences in weight or development and no abnormalities in their digestive tracts when compared to controls (Spargo 1999). Due to their size, intact chaff fibers are too large to be inhaled. However, chaff fibers can be fragmented once on the ground and the degree of inhalation of these fragments, if any, is not known (Spargo 1999). |
| 166 | Table MH2.2-2 shows that supersonic activity is not authorized in the Paradise East and West MOAs. In the Owyhee and Jarbidge MOAs, where supersonic activity is authorized, such flights are restricted to 10,000 feet AGL or higher, and prohibited over the Duck Valley Reservation. |
| 167 | Refer to Response Number 95. |
| 168 | Sections MH3.2.2 and MH3.11.2 of the Draft EIS identify concerns expressed by Native Americans in the Mountain Home area regarding subsonic and supersonic aircraft noise. Sections EL3.2.2 and EL3.11.2 identify Alaska Native concerns. |
| 169 | Refer to Response Number 153. |

| Response Number | Response |
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| 170 | The Jarbidge, Owyhee, Paradise East/West, and Saddle MOAs and overlying ATCAAs were analyzed as the affected airspace units. This analysis is contained in sections MH2.2 and MH3.1 of the Draft EIS. As the replacement for the F-15Cs at Mountain Home AFB, the F-22 would conduct the same types of missions and training programs. The F-22 would use the training airspace associated with Mountain Home AFB in a manner similar to the F-15C operational squadron's current use of the airspace. All F-22 flight activities would take place in existing airspace; no airspace modifications would be required for the F-22. Also see Response Number 120. |
| 171 | Refer to Response Number 156. |
| 172 | The historical settings provided for each of the bases considered in the Draft EIS are brief summaries of all human history on the land. Consultation with Native American groups is not necessary to produce a short summary of area history, because this information is widely available. Tribal and Alaska Native sources (such as web sites) were used whenever possible. As indicated in Response Number 160, information used in the historical setting (Appendix CR-2) was taken from Air Force documents previously reviewed by the Tribes or their consultants. Additional summaries of Tribal treaties are included in Chapter 2 of this document. |
| 173 | The Mountain Home portion of the EIS includes analysis for both Mountain Home AFB and vicinity, as well as the affected airspace units including the Jarbidge, Owyhee, Paradise East/West, and Saddle MOAs and overlying ATCAAs. |
| 174 | Within MOAs, all aircraft operating under VFR must use see and avoid measures to preclude conflicts. Such procedures have been used successfully for more than two decades and would continue to be enforced should the Air Force decide to base the Initial F-22 Operational Wing at Mountain Home AFB. In addition, the existing military radar unit at Mountain Home AFB will continue to provide air traffic control for the area and further reduce the potential for conflicts. Also, the F-22 would fly most of the time at altitudes above those used by smaller civilian aircraft. |
| 175 | Refer to Response Number 172. |
| 176 | The F-22 does not use laser-guided weapons. |
| 177 | Refer to Response Number 139. |
| 178 | Section MH3.2.2 describes baseline and projected noise environment, including sonic booms, for the training airspace associated with Mountain Home AFB. This section and others (e.g., Natural Resources) present potential effects of supersonic noise and sonic booms and describe the nature of the associated startle effect on people and wildlife. Appendix AO-2 also provides data on noise effects under subsonic and supersonic conditions. |
| 179 | Refer to Response Number 141. |
| 180 | Refer to Response Number 142. |
| 181 | Refer to Response Number 143. |
| 182 | Refer to Response Number 144. |
| 183 | Noise from military aircraft training has not been shown to affect plants. |
| 184 | Refer to Response Number 120. |

| Response Number | Response |
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| 185 | As indicated in Draft EIS Table MH2.2-1, the authorized base altitude of the Owyhee and Jarbidge MOAs is 100 feet AGL, but F-22 operations are restricted to above 500 feet. With a primary mission of air-to-air combat, the F-22s of the Initial Operational Wing would fly 95 percent of the time above 5,000 feet AGL. Also see Response Number 140. |
| 186 | Refer to Response Number 39. |
| 187 | Refer to Response Number 8. |
| 188 | The Air Force recognizes the need for protection of National Register-eligible or listed cultural sites. Mountain Home AFB maintains an active cultural resources management program, including a staff and contractor training program, to protect sites under its jurisdiction (i.e., on Air Force-owned or managed lands). In addition, the Air Force takes special precautions to preserve the confidentiality of site locations and to avert vandalism. Other lands under airspace are managed by private, state, and federal entities. |
| 189 | Refer to Response Number 188. |
| 190 | Refer to Response Number 8. |
| 191 | Should a decision be made to beddown the Initial F-22 Operational Wing at Mountain Home AFB, compliance with Section 106 of the NHPA would take place. Compliance would include Tribal consultation as appropriate, as well as consultation with the SHPO. |
| 192 | In assessing potential sites for basing the Initial F-22 Operational Wing, the Air Force examined a range of characteristics for all the candidate bases. As a result of these examinations, the Air Force proposes construction of on-base housing at Mountain Home AFB to meet the demand associated with the influx of three squadrons of F-22 personnel. |
| 193 | Refer to Response Number 132. |
| 194 | This EIS is not tiered from any other Air Force proposal(s). The baseline information contained in the Draft EIS (section MH3) reflects ongoing Air Force and interagency programs and activities at Mountain Home AFB. These activities and programs would continue operating at planned levels as reflected in current Air Force management plans. These plans include recent activities (e.g., Enhanced Training in Idaho, Juniper Butte Range Integrated Natural Resource Management Plan) that have been approved by Air Force and have existing NEPA documentation. |
| 195 | As stated in section MH3.8.2, information regarding the status and distribution of some special status species beneath the airspace is not well known because of the remoteness of the area. Using the best available information, analysis in the Draft EIS assumed that populations of sensitive species have the potential to occur under affected airspace. In general, aircraft noise is not known to affect plants and as summarized in Appendix NR-4, many wildlife species acclimate to noise from military aircraft. |

| *Response Number* | *Response* |
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| 196 | Section MH3.2.2 analyzes both baseline and projected subsonic and supersonic noise levels in the area under the training airspace associated with Mountain Home AFB (this includes the levels projected under the Enhanced Training In Idaho EIS). All baseline and proposed flight activities are integrated into the analysis and potential noise impacts are addressed throughout the various resource sections of the Draft EIS. Section 3.2 provides information not only on cumulative noise levels (DNL), but also on levels associated with single flyovers (SEL and $L_{max}$). The nature and magnitude of supersonic noise is also analyzed throughout the Draft EIS. The analysis reflects the best available information on potential impacts in the affected area. Also see Response Number 47. |
| 197 | Refer to Response Number 141. |
| 198 | Refer to Response Number 158. |
| 199 | There have been few, if any, long-term studies of the effects of noise on wildlife. Many of the short-term studies, 1 to 2 years or less, are summarized in Appendix NR-4 and from this information, it appears that many species may be momentarily affected by noise but in most cases resume their previous activity shortly after the noise event. In some cases, animals become habituated to noise from military aircraft and show no outward reaction. |
| 200 | Refer to Response Number 95. |
| 201 | On-the-ground activities at Juniper Butte Range would be unaffected by proposed F-22 operations and remain unchanged from what was presented in the Enhanced Training in Idaho EIS, Record of Decision, and subsequent agreements. |
| 202 | Refer to Response Number 196. |
| 203 | The Air Force has prepared this EIS in accordance with NEPA and its implementing regulations. Although the Navy's realignment of 156 F/A-18 aircraft to NAS Oceana was analyzed in section LA4, *Cumulative Effects, Irreversible, and Irretrievable Commitment of Resources*, and incorporated into the baseline conditions of this EIS, the Navy carries out its own independent and separate NEPA process. |
| 204 | Refer to Response Number 203. |
| 205 | The proposed F-22 beddown is not linked to past or proposed actions of the Navy, although the Draft EIS (section LA4) addresses potential cumulative effects of Air Force and Navy actions. Increases in or changes to Navy aircraft in the region have been and will continue to be assessed under separate NEPA documentation prepared by the Navy. |
| 206 | Refer to Response Number 9. |
| 207 | The airspace noted in the comment, the Farmville MOA, has a ceiling (upper limit) of 5,000 feet MSL established by the FAA (refer to Figure LA3.1-1). As such, all aircraft using the MOA must fly below that ceiling. |
| 208 | Refer to Response Number 34. |
| 209 | Making a decision prior to the ROD would be predecisional and inconsistent with the NEPA process. |
| 210 | Refer to Response Number 9. |
| 211 | Refer to Response Number 29. |
| 212 | Refer to Response Number 9. |

| *Response Number* | *Response* |
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| 213 | Refer to Response Number 46. |
| 214 | Refer to Response Number 3. |
| 215 | The Air Force establishes specific avoidance procedures around small private and municipal airfields. Such avoidance procedures are maintained for each MOA and military aircrews build them into their daily flight plans. Operations by the F-22s would adhere to existing avoidance procedures. |
| 216 | Refer to Response Number 52. |
| 217 | Refer to Response Number 34. |
| 218 | Refer to Response Number 23. |
| 219 | No aspect of the proposed Initial F-22 Operational Wing beddown involves or requires expansion of airspace. Langley AFB and the four alternative bases were carried forward for detailed analysis, in part, because they all were associated with existing airspace that meets F-22 operational requirements (see Draft EIS section 2.2). |
| 220 | Refer to Response Number 219. |
| 221 | Draft EIS section 2.2.3 defines the reasons the Air Force identified Langley AFB as the preferred alternative. All the alternatives are analyzed equally. Section 2.4.3 provides a comparison among these alternatives as well as the proposed action. Although the environmental effects of all five bases are compared in the EIS, these comparisons have no bearing on the suitability of these bases for future F-22 beddowns (see section 2.4.3). |
| 222 | Chapter 1 of the Draft EIS details the proposal and indicates that it would involve 72 PAI F-22s and 6 BAI F-22s. This proposal includes no other beddowns or actions regarding the F-22. While the Air Force plans to purchase 339 total F-22s, currently no other locations for operational squadrons have been proposed. If and when such proposals are developed, the Air Force will undertake appropriate environmental analysis under NEPA. |
| 223 | Refer to Response Number 222. |
| 224 | Refer to Response Number 4. |
| 225 | Refer to Response Number 221. |
| 226 | The Air Force plans to use F-15Cs at least through 2025, but with decreasing effectiveness at countering the changing threats worldwide. |
| 227 | Draft EIS section 1.1.2 describes the ordnance and weapons the F-22 can carry. See also Response Number 176. |
| 228 | The F-22 can fly further than the F-15. |
| 229 | As indicated in Draft EIS section 1.1.1, the F-22 can be refueled in the air. |
| 230 | As presented in Chapter 2 and throughout the Draft EIS, the Air Force is evaluating five basing locations and their associated training airspace, as well as the no-action alternative. No other location or training airspace for operational squadrons is being evaluated in this EIS. |

| *Response Number* | *Response* |
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| 231 | Section 2.1.1 of the Draft EIS indicates that the Air Force has no plans or proposals for relocating or retiring the F-15Cs identified at this time. The aircraft could be transferred, sold, or simply retired, or a combination of one or more of these actions. If and when the Air Force defines such a proposal, the potential environmental consequences would be addressed in a separate environmental analysis that also considers the cumulative effects of the beddown of the Initial Operational Wing. |
| 232 | Draft EIS sections 1.3 and 2.2.2 provide background on why the Initial F-22 Operational Wing would include three squadrons. |
| 233 | Refer to Response Number 222. |
| 234 | Draft EIS section EL2.2.1 describes the potential minimal use of Galena and King Salmon forward operating bases, indicating that it would be similar to current practices by F-15Cs. No new construction is proposed. |
| 235 | The impacts of implementing the Elmendorf alternative on biological resources appears in sections EL3.6 through EL3.9 of the Draft EIS. Proposed management actions appear in section EL5 of the Draft EIS. |
| 236 | Refer to Response Number 231. |
| 237 | Support aircraft such as the Airborne Warning and Control System are not used every day for training. |
| 238 | As stated in section EL3.1 of the Draft EIS, flight activities by the F-22 would continue to involve the same coordination in the area of Elmendorf AFB and the MOAs as used by the F-15Cs. All Air Force MTR missions are coordinated with the Flight Service Stations servicing that area. The notice is sent out at least two hours prior to the mission. |
| 239 | Refer to Response Number 222. |
| 240 | Refer to Response Number 4. |
| 241 | Table 2.1-7 details the projected training activities for the F-22s, including general altitude ranges for each activity. See also Response Number 440. |
| 242 | The F-22s would use existing Alaska MOAs (see section EL2.2) and continue to adhere to all existing FAA rules and Air Force regulations. The F-22s would use existing MOAs through which general aviation aircraft flying VFR have no restrictions. The Air Force provides the special use airspace information service using telephone, web page, and VHF radios for conveying information about interior MOA activities near Fairbanks. These procedures would not change.<br><br>Local wing flight safety offices are required to manage a Mid-Air Collision Avoidance program. They routinely provide information on local area procedures and activity to the surrounding civilian airfields via pamphlets and periodic briefings in an effort to minimize conflict between military and civilian air traffic. |
| 243 | As described in section LA3.13 of the Draft EIS, there would be an increase in direct employment at the installation during the construction phase but a small reduction once operations commenced. This contrasts with projected increases in direct operations employment should the mission be located at other candidate installations. However, the reduction in direct operations employment would be small and is not expected to generate adverse effects. |

| *Response Number* | *Response* |
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| 244 | The F-22 Environmental and Health Working Group was established several years ago to assist all affected agencies in compliance with applicable environmental and occupational health federal, state, and local laws and Air Force policies. One of the objectives of the working group is to provide an open forum to exchange information on substitution/elimination technologies for hazardous materials and to ensure that pollution prevention opportunities are recognized and addressed. Also see Response Number 508. |
| 245 | As described in the Draft EIS, the NEPA process is an important element in providing information to decisionmakers. Compliance with NEPA guidance for preparation of an EIS involves several critical steps, including many that provide an opportunity for public involvement. These steps include publication of a Notice of Intent in the *Federal Register*; public and agency scoping; preparation of the Draft EIS; public and agency review period; preparation of the Final EIS; and publication of a Notice of Availability and issuance of a Record of Decision. As described in section 1.3 of the Draft EIS, the Air Force must establish operational F-22 wings to fulfill the F-22's essential air dominance role. The decision to select a location for the first operational wing is the responsibility of the Air Force. Also see Response Number 13. |
| 246 | As described within the Flight Information Publications, the flight patterns used at Langley AFB meet all FAA regulations. The Sunday approach pattern is different from the training approach pattern normally used. Runway approach and landing is a normal and essential part of the pilot training activity. However, this type of training is not conducted on Sundays. |
| 247 | The beginning of section LA3 describes how the F-22 noise levels correlate to those generated by F-15Cs and F-18s. Appendix AO-1 in the Draft EIS provides further detail on this topic. Also see Response Number 95. |
| 248 | Refer to Response Number 4. |
| 249 | Tables LA 3.2-1 and LA 3.2-2 present acreage information for the noise contours in the vicinity of Langley AFB. As indicated, the 75 to 80 DNL noise contour affects 1,689 acres under baseline conditions while 2,056 acres would be affected under projected conditions. Of the additional 367 affected acres, 75 occur on base, the remaining 292 acres are exposed to 70 to 75 DNL under baseline conditions. |
| 250 | Appendix AO-1 describes the program used to model noise. |
| 251 | Data on aircraft engine and airframe noise in the full range of flight modes are measured and updated as aircraft are added or retired from the inventory. While not necessarily measured at the specific base of interest, they are measured under controlled scientific conditions in order to ensure their universal applicability. These measurements are used in the noise models used in the Draft EIS. As noted in the Draft EIS, not all such measurements have been performed for the F-22, so where data are absent, comparable surrogate data from similar aircraft and engines have been used. Also see Response Number 95. |
| 252 | The Air Force conducts a program called AICUZ which identifies noise conditions at and around a base. This program also provides land use recommendations to surrounding communities and includes public meetings to discuss the noise environment. In addition, as described in section LA2.1.2, F-22 operations would adhere to existing restrictions, avoidance procedures, and quiet-hours program. Also see Response Number 4. |
| 253 | Refer to Response Number 9. |

| *Response Number* | *Response* |
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| 254 | Section LA2.1.2 indicates that activity (sorties) at the base would increase by approximately 7 percent with the F-22 beddown. It also states that the F-22 "would employ similar departure, closed pattern, and landing procedures" as the F-15Cs. |
| 255 | Section LA2.2.1 of the Draft EIS states that the F-22 would fly the same percent of time after dark as the F-15Cs currently using the airspace. Approximately 5 percent of this activity would occur during environmental night (10:00 pm to 7:00 am). Should the F-22s be based at Langley AFB, night sorties would increase by less than one per day over baseline conditions. The requirements to fly at night are based on the types of missions and threats that pilots are expected to encounter; pilots must train as they will fight. |
| 256 | Refer to Response Number 4. |
| 257 | Potential impacts from noise were analyzed for each installation. Section EL3.2 describes the baseline and projected noise conditions associated with Elmendorf AFB. The analysis will be considered in the decision making process. See also Response Number 4. |
| 258 | The analysis in section EL3.2 and supported by data in Appendix AO-1 and AO-2 of the Draft EIS demonstrate that neither baseline nor projected noise levels from aircraft overflights approach those considered by OSHA for human health and safety. |
| 259 | There is a consensus in the scientific community that noise is measured by cumulative noise metrics. Because of the variety of communities and circumstances, there is no single threshold for impact. What is acceptable in urban communities may not be in rural areas; what is desirable in rural areas may be unattainable in cities. Rather, analysis considers the overall amount of noise exposure along with the duration and nature (subsonic vs. supersonic). It also considers the amount of change in noise levels from baseline to projected conditions. As presented in section EL3.2.1, subsonic noise levels in the Alaska MOAs would not measurably change with the beddown of F-22s. Also see Response Number 494. |
| 260 | The Draft EIS, in sections LA3.2, EG3.2, EL3.2, MH3.2, and TY3.2, describes baseline and projected noise conditions associated with the five locations. The analysis will be considered as part of the decision making process. |
| 261 | Refer to Response Number 221. |
| 262 | As of summer 2001, five F-22s are undergoing flight testing. |
| 263 | Refer to Response Number 232. |
| 264 | Refer to Response Number 222. |
| 265 | Based upon current estimates, each F-22 costs approximately $84 million. |
| 266 | Draft EIS section EL2 describes how the beddown of the Initial F-22 Operational Wing would occur if Elmendorf AFB were selected. It includes no proposal for the F-22s to be based at Eielson AFB in Fairbanks, Alaska. |
| 267 | Section EL2.2.1 of the Draft EIS and Table EL2.2-1 provide information on the sortie-operations in the Alaska MOAs. |
| 268 | Section 1.1.2 of the Draft EIS describes the size, features, and characteristics of the F-22. |
| 269 | Refer to Response Number 222. |
| 270 | Refer to Response Number 4. |

| Response Number | Response |
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| 271 | Refer to Response Number 221. |
| 272 | Draft EIS section EL2.1.4 indicates that the F-22 beddown at Elmendorf AFB would increase personnel by 286 and section EL3.13 indicates that additional short-term and long-term employment would be generated in the community. |
| 273 | Section EL3.2.1 describes the differences in sonic booms generated at different altitudes and in different modes of flight. It also describes the differences in supersonic activity between the F-15Cs and F-22s. Appendices AO-1 and AO-2 also address these topics. |
| 274 | The specific number of sonic booms heard in any given location is dependent on many factors, including flight altitude, attitude, and meteorological conditions. The number of sonic booms would increase if the Initial F-22 Operational Wing were based at Elmendorf AFB. Figure EL3.2-2 in Section EL.3.2.2 of the Draft EIS provides an estimate of the increase in sonic booms per month for each MOA where supersonic flight is authorized. |
| 275 | Section EL2.1.1 indicates that the 42 PAI F-15Cs (2 squadrons: 1 of 24 aircraft and 1 of 18 aircraft) would be replaced by 72 PAI F-22s (3 squadrons of 24 aircraft) for a net increase of 30 aircraft. The total number of aircraft at Elmendorf AFB is presented in Table 2.1-2 of the Draft EIS. |
| 276 | Refer to Response Number 275. |
| 277 | Supersonic flight is authorized in the Susitna MOA only for functional check flights (Table EL2.2-2). Such flights are uncommon and do not involve maneuvering like that used in air combat training. Sortie-operations by the F-22s would not alter current functional check flight activities in the MOA. |
| 278 | Refer to Response Number 221. |
| 279 | Draft EIS section LA2.1.4 indicates that total personnel on Langley AFB would decrease by 243 if the Initial F-22 Operational Wing were to be based at that location. |
| 280 | The list of preparers of the EIS appears in Chapter 5 of the Draft EIS. |
| 281 | The characteristics of the F-15C and F-22 are presented in section 1.1 of the Draft EIS. The comparison of the characteristics of these aircraft with other aircraft is beyond the scope of the EIS. |
| 282 | Refer to Response Number 41. |
| 283 | Refer to Response Number 4. |
| 284 | While the F-22 has enhanced supersonic capabilities and supercruise that permit sustained supersonic flight with reduced fuel use, entire training events or sortie-operations would not be conducted in the supersonic mode. Section EL3.2.2 describes a typical air-to-air training engagement, indicating that the F-22 would be supersonic for about 3 to 4.5 minutes during the 14-minute engagement. This section also presents the number of sonic booms projected for the F-22s in different airspace units. |
| 285 | Refer to Response Number 222. |
| 286 | Refer to Response Number 231. |
| 287 | Refer to Response Number 231. |

| *Response Number* | *Response* |
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| 288 | Refer to Response Number 222. |
| 289 | When needed, the F-22 would conduct aerial refueling using the same methods and restrictions as the F-15Cs. Aerial refueling has been conducted for decades and will continue to be performed under strict guidelines designed to maximize the safety of the aircrews involved. Most aerial refueling is and would be performed at higher altitudes. Some "misting" of fuel may occur when the aircraft disengage from fueling, but at the altitudes it is released, it evaporates before reaching the ground. |
| 290 | Refer to Response Number 41. |
| 291 | The top speed of the F-22 exceeds Mach 1.7. |
| 292 | Refer to Response Number 268. |
| 293 | Refer to Response Number 267. |
| 294 | The Air Force performed a comprehensive public involvement process. In accordance with CEQ regulations (40 CFR 1502.19), the Air Force distributed copies of the Draft EIS at the beginning of the comment period to libraries and other public repositories so that individuals who had not indicated an interest in receiving the documents had access to those documents. Through the scoping meetings near the bases and within training airspace and follow-up newsletters, the Air Force solicited names and addresses of individuals and organizations interested in receiving newsletters as well as a copy of the Draft EIS. The resulting list of those respondents indicating their interest in receiving such documentation was used to develop a mailing list. Advertisements for the meetings were run in local newspapers prior to the meetings. For those who requested the Draft EIS after the public comment period had begun, copies were shipped as soon as possible. |
| 295 | Refer to Response Number 265. |
| 296 | Mountain Home AFB is active and is being considered as an alternative location for beddown of the Initial F-22 Operational Wing. |
| 297 | Section 2.2.1 of the Draft EIS includes a description of the runway requirements for an F-22. A runway must be 8,000 feet long, paved, and rated as medium load. Airfields that do not meet the 8,000 foot paved surface criteria for F-22 operations would not normally be considered for alternative airfield or emergency use. |
| 298 | Refer to Response Number 268. |
| 299 | Refer to Response Number 273. |
| 300 | Section EL3.1.1 of the Draft EIS describes the baseline and projected airspace management conditions at and around Elmendorf AFB. The EIS recognizes the need for continued coordination between Elmendorf AFB and FAA Alaska Region to ensure management of the local airspace environment. |
| 301 | Refer to Response Number 294. |
| 302 | The EIS, in sections LA3.4, EG3.4, EL3.4, MH3.4, and TY3.4, describes baseline and projected safety conditions associated with the five locations. As these sections indicate, there is relatively little difference among the locations in terms of aircraft safety. |

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| 303 | As described in section EL3.13, there would be an increase in direct employment at the installation during the construction phase but employment during operation would depend on the specific base. At Elmendorf AFB and at other candidate installations there would be a projected increase in direct operations employment should the mission be located at that candidate installation. |
| 304 | Some of the scientific studies regarding the effects of noise, including sonic booms, on domestic animals and wildlife are summarized in Appendix NR-4 of the Draft EIS. Sonic booms likely result in temporary startle effects on some species of wildlife but as indicated in section EL3.6.2, supersonic flight is not expected to have adverse affects on wildlife. This is principally because sonic booms currently occur in the affected airspace and even though the deployment of the F-22 would result in more sonic booms, many would be at higher altitudes then under current conditions and, therefore, be weaker (see section EL3.2.2). |
| 305 | Section EL3.1.2 of the Draft EIS addresses the potential effects of the F-22 sortie-operations on civil aviation. Should the Initial F-22 Operational Wing be based at Elmendorf AFB, the Air Force would continue its public awareness and information program for civil aviation. While the importance of the DoD mission is recognized, adherence to all FAA regulations and local restrictions is equally important and would continue. The Draft EIS concludes that the increased sortie-operations in the MOAs would not likely conflict with civil aviation because civil flights can transit MOA airspace under VFR.<br><br>In addition, imposition of constraints on air tour operators would not result from the F-22 beddown. Air tour operations are conducted almost exclusively outside the boundaries of the Susitna MOA. The MOA floor was established at 5,000 feet AGL or 10,000 feet MSL, whichever is higher, precisely to deconflict with general aviation activity below. Air Force airspace managers also maintain close contact with the National Park Service aviation manager for Denali National Park. |
| 306 | Refer to Response Number 132. |
| 307 | Refer to Response Number 304. |
| 308 | Refer to Response Number 275. |
| 309 | Moose calving concentration areas occur under most of the Elmendorf airspace being considered for use by the F-22. As indicated in Appendix NR-4 of the Draft EIS and in the *Alaska Military Operations Areas EI*S (Air Force 1995), the effects of noise from aircraft on moose is not well documented. Some of the studies cited in these reports indicate that moose may be only temporally disturbed by aircraft overflights and they may be more sensitive to such disturbances during critical calving and wintering periods. Sonic booms from the F-22 would likely result in temporary startle effects on moose but as indicated in section EL3.6.2, supersonic flight is not expected to have adverse affects on wildlife. Even though the deployment of the F-22 would result in more sonic booms, many would be at higher altitudes than under current conditions. The overpressures from sonic booms decrease as altitude increases (see section EL3.2.2). |

| Response Number | Response |
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| 310 | Foundations for buildings on permafrost are different than most conventional foundations because buildings on permafrost rest on a set of point supports rather than a continuous foundation. This is similar to houses built on piers in low-lying areas. All else being equal, the stiffness of the floor will be less on piers than for a continuous foundation.<br><br>The primary effects of a sonic boom on a structure are (in descending order of occurrence) rattling of objects inside the structure, damage to the structure itself, and vibrations that can be felt by the occupants. Most complaints about sonic booms experienced indoors are associated with rattle and damage (as addressed in Appendix AO-2, section 2.7). Complaints about vibrations that are directly felt are rare.<br><br>Sonic boom damage is almost always to brittle components, like glass and plaster. This depends on the load on these elements from the boom. The load varies depending on the orientation of the building to the boom, i.e., walls facing the boom are at higher risk than those facing away. Rattle is similarly related to the incidence direction of the boom, i.e., pictures on walls facing the boom (or facing directly away from it) are most likely to rattle. Sonic booms propagate downward, but at the Mach numbers associated with this type of airspace are usually at shallow (near-horizontal) angles, so it is the walls of a structure that usually have the highest exposure. Because of the short duration of sonic booms, the response of a building element (e.g., a wall) depends primarily on that element, without considering the rest of the structure ("Sonic Boom Damage to Conventional Structures" [Haber and Nakaki 1989]). The difference in floor stiffness will not affect damage risk.<br><br>If there is floor motion, then it is likely to be greater for a point-supported structure than for one with a conventional foundation. But because booms do not directly impinge on floors, floor motion is less than that of walls, which are directly exposed. Data summarized in "Evaluation of Human Response to Structural Vibration Induced by Sonic Boom" (Sutherland and Czech 1992), show that floor motion is typically about quarter that of wall motion. Even if greater than normal, floor motion is not expected to be as significant as the effects of rattle and potential glass and plaster damage. Damage risk to dwellings on pier construction will not be higher than for conventional structures. Also refer to the Draft EIS Appendix AO-2. |
| 311 | Refer to Response Number 284. |
| 312 | Refer to Response Number 284. |
| 313 | Refer to Response Number 309. |

| Response Number | Response |
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| 314 | The Preface of the Draft EIS provides a description of the steps that are required to prepare the EIS. The Notice of Intent to publish this EIS appeared in the *Federal Register* on March 3, 2000, and marked the beginning of the EIS process. The Record of Decision (the final step in the EIS process) is currently scheduled to be released in December 2001. As indicated in section 2.1.1, the beddown of the F-22 would start in September 2004 and be completed by June 2007. Also see Response Number 310. |
| 315 | Refer to Response Number 314. |
| 316 | The analysis of projected supersonic activity is based on several field studies of areas under military training airspace (see Appendix AO-2 of the Draft EIS). Projections regarding the number of sonic booms in a given area stem from data from these studies and the projected nature and amount of flight activities of the F-22. |
| 317 | Refer to Response Number 316. |
| 318 | Refer to Response Number 273. |
| 319 | Refer to Response Number 314. |
| 320 | In the Draft EIS, each installation section (3.2) on noise and Appendices AO-1 and AO-2 present the background and references for the research supporting the analysis. Studies relevant to the noise analysis have been conducted for decades using military airspace in a wide variety of environments. |
| 321 | Draft EIS section EL2.2.1 and Table EL2.2-2 describe the altitude distribution of the F-22s. As projected, the F-22s would fly, on average, above 10,000 feet about 80 percent of the time and above 30,000 feet for 30 percent of the time. The pilots receive a mission pre-briefing and avoidance areas are included in the pre-briefing. |
| 322 | While Air Force aircrews need low-altitude training, they are prohibited from flying below the minimum altitudes established by the FAA and those defined by ACC for the operation of the specific aircraft. Additionally, FAA regulations require aircraft to avoid congested areas of a city, town, or settlement, or any open-air assembly of persons by 1,000 feet above the highest obstacle within a horizontal radius of 2,000 feet of the aircraft. Outside of congested areas, aircraft must avoid any person, vessel, vehicle, or structure by 500 feet. Also see Response Number 325. |
| 323 | Refer to Response Number 322. |
| 324 | As presented in section 2.1.2, the FAA permits civil aviation operating under VFR to transit MOA airspace such as that charted in Alaska using see and avoid techniques. No penalties would result. |
| 325 | Aircrews are governed in their flying practices by both FAA and Air Force regulations, including altitude limits. The Air Force takes disciplinary action for failure to adhere to such rules and limits. Improved computers on the F-22 will enhance pilot situational awareness and improve the pilot's ability to keep within airspace limits. Questions about Air Force activity should be directed immediately to the nearest base public affairs office where they will be investigated. In Alaska, an 800 number is provided (800-538-6647). |
| 326 | Refer to Response Number 325. |
| 327 | Refer to Response Number 274. |

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| 328 | It is Air Force policy to comply with both the spirit and intent of local, state and federal regulations on the management and disposal of hazardous wastes. All Air Force installations have developed hazardous waste management plans as a part of this overall environmental protection program. |
| 329 | Refer to Response Number 227. |
| 330 | The pitot tube (measures air data) in the nose of the airplane is for testing purposes only and will not be on the production models. |
| 331 | The stealth aspect of the aircraft is broken when the doors open for the missiles to be fired but is reestablished when the doors are closed. The open doors create drag that affects the speed of the aircraft. |
| 332 | Refer to Response Number 313. |
| 333 | The F-22 will employ a transponder just like commercial airliners and it will indicate the exact position of the F-22 to Air Traffic Controllers. |
| 334 | Refer to Response Number 227. |
| 335 | Refer to Response Number 331. |
| 336 | Refer to Response Number 333. |
| 337 | Public scoping meetings at locations near or under the Stony MOA included McGrath, Sleetmute, and Lime Village. A directory in this chapter provides the comments received on the Draft EIS from these areas. |
| 338 | Refer to Response Number 228. |
| 339 | Sorties are defined in section 2.1.1 as the takeoff, mission, and landing of a single aircraft. The same section explains that the increase in sorties results from a net increase in aircraft (more F-22s than F-15Cs) and the increased average number of sorties an F-22 would fly per month (20) as compared to an F-15C (18). |
| 340 | Refer to Response Number 242. |
| 341 | Due to different requirements and the size of the F-22, new hangars would need to be constructed at Elmendorf AFB to support the F-22s (see section EL2.1.3). |
| 342 | Refer to Response Number 242. |
| 343 | Refer to Response Number 242. |
| 344 | Refer to Response Number 234. |
| 345 | Refer to Response Number 305. |
| 346 | Composite materials are used in the manufacture of aircraft currently in the Air Force inventory, such as the F-15 and F-16. Although the F-22 contains a higher percentage of these composite materials, effective procedures have been developed to respond to contamination, such as carbon fiber contamination, which would be used to respond to an F-22 incident. These procedures are incorporated into installation contingency response plans. |
| 347 | No new or different support aircraft (e.g., tankers) would be required for the F-22. |

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| 348 | Refer to Response Number 4. |
| 349 | Refer to Response Number 234. |
| 350 | Refer to Response Number 333. |
| 351 | Refer to Response Number 234. |
| 352 | As a new aircraft with stealth components and new avionics, the maintenance for the F-22 would differ from that performed for the F-15Cs. As indicated in section 2.1.1, maintenance of an F-22 would require fewer personnel than an F-15C. |
| 353 | The F-22 has two radios with VHF/UHF capability (excluding an emergency Guard radio and a backup radio). |
| 354 | Refer to Response Number 234. |
| 355 | Refer to Response Number 265. |
| 356 | As presented in section 2.1.2 of the Draft EIS and the Aircraft Operations sections for each alternative, the airspace available at each base is sufficient to meet the training requirements of the F-22. |
| 357 | As presented in the Draft EIS (section 2.1.2), the F-22 would use the airspace associated with the selected beddown base and would fly to the Nellis Range Complex, Nevada; Utah Test and Training Range, Utah; or the approved ranges associated with Eglin AFB, Florida for ordnance delivery training.<br><br>While the possibility exists that an F-22 from the Initial Operational Wing based at a location other than Mountain Home AFB or Elmendorf AFB could fly in Mountain Home AFB's or Elmendorf AFB's training airspace, it would be an unusual and rare occurrence. Should an F-22 fly in the airspace, its pilot would adhere to all existing seasonal, locational, and altitude restrictions, just like all other users of the airspace. Rare sortie-operations by F-22s or other aircraft would not alter conditions previously assessed for the airspace. |
| 358 | As indicated in section 1.1.3, the F-22 initial test and evaluation period is from 1997 through 2003. |
| 359 | Refer to Response Number 262. |
| 360 | Refer to Response Number 221. |
| 361 | Refer to Response Number 262. |
| 362 | Refer to Response Number 234. |
| 363 | Refer to Response Number 222. |
| 364 | Fewer total F-22 aircraft are planned for purchase than the total of F-15Cs. |
| 365 | Refer to Response Number 4. |
| 366 | Refer to Response Number 227. |
| 367 | Refer to Response Number 241. |
| 368 | Draft EIS section 2.1.2 details the differences in the speed and altitude distribution between the F-15Cs and F-22s. The F-22s would generally fly higher and faster. |
| 369 | Refer to Response Number 289. |

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| 370 | Refer to Response Number 231. |
| 371 | Refer to Response Number 368. |
| 372 | Refer to Response Number 222. |
| 373 | Refer to Response Number 284. |
| 374 | Refer to Response Number 267. |
| 375 | Refer to Response Number 222. |
| 376 | Refer to Response Number 222. |
| 377 | Refer to Response Number 222. |
| 378 | Refer to Response Number 4. |
| 379 | Refer to Response Number 231. |
| 380 | Refer to Response Number 221. |
| 381 | As indicated in Appendix NR-4, fish have been known to startle from noise and shadows of low flying aircraft. The F-22 will not be flying low enough to create shadows over aquatic habitats and fish may well habituate to noise. In addition, as discussed in Appendix NR-4, noise from aircraft does not travel very far in water. Therefore, it is believed that aircraft overflights would not have an effect on fish. |
| 382 | Refer to Response Number 265. |
| 383 | F-22s land just like F-15Cs. |
| 384 | Refer to Response Number 297. |
| 385 | Refer to Response Number 242. |
| 386 | Refer to Response Number 39. |
| 387 | If the Initial F-22 Operational Wing beddown were to occur at Elmendorf AFB, the Air Force concurs that Alaska Coastal Management Program consistency discussions would be addressed later in the planning process. As suggested in the 14 June 2001 letter from the State of Alaska, the Air Force would submit the required information to the State of Alaska. |
| 388 | Refer to Response Number 192. |
| 389 | Refer to Response Number 132. |
| 390 | Refer to Response Number 78. |
| 391 | If Eglin AFB or Tyndall AFB were selected for the Initial F-22 Operational Wing beddown, the Florida Division of Historic Resources would be consulted prior to the beginning of construction or renovation in compliance with Section 106 of the NHPA. |
| 392 | As indicated in section LA3.7.1 of the Draft EIS, no wetlands, streams, creeks, ponds, or lakes have been identified in the proposed construction areas on Langley AFB, and a Clean Water Act Section 404 Permit would not be required. The construction areas are well defined, and if the Langley alternative is implemented, they are not expected to change. |

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| 393 | The Air Force will minimize indirect as well as direct impacts to nearby water resources through compliance with all applicable stormwater regulations. These regulations and required permits will be developed and complied with both during and subsequent to any construction activities. As discussed in section LA3.5.1, since more than 5 acres would be disturbed by construction of F-22 related facilities, a VPDES stormwater permit would be required. Since Langley AFB already has an existing VPDES permit, the existing permit would have to be updated as required. Coordination with DEQ addressing VPDES permitting is already occurring. Under the VPDES permit, a SWPPP addressing erosion and sediment control would need to be developed prior to construction at Langley AFB. The SWPPP would include best management practices addressing the elimination or reduction of sediments and non-stormwater discharges. As appropriate, an Erosion and Sediment Control Plan would also be prepared prior to construction. |
| 394 | As presented in section LA3.4.1, the F-22, by design, has no capability to "dump" fuel. |
| 395 | The Air Force has consulted and will continue to consult with the USFWS in Virginia throughout the course of this project. The Air Force has also consulted and will continue to consult with Virginia DEQ and the Virginia Department of Game and Inland Fisheries during the course of this project. |
| 396 | In accordance with the Hazardous Waste Management Plan, as referred to in section LA3.17.1 of the Draft EIS, the Air Force will characterize for transportation and disposal all hazardous wastes including those generated by construction and operation of the F-22 facilities. In addition, the 1st Fighter Wing Asbestos Management Plan 32-10 provides guidance on the management of asbestos. Prior to demolition or renovation of a building, an asbestos survey would be conducted. Any identified asbestos-containing materials would be disposed of in accordance with the asbestos management plan. Additional information on asbestos-containing material has been included in Chapter 2 of this document. |
| 397 | Refer to Response Number 396. |
| 398 | The Air Force has agreed to abide by the provisions of the Chesapeake Bay Preservation Act. The purpose of the preservation areas is to protect and improve the water quality of the Chesapeake Bay and its tributaries. These areas consist of Resource Protection Areas and Resource Management Areas. Resource Protection Areas are tidal shores, tidal wetlands, tributary perennial streams, and a 100-foot buffer zone landward of the Resource Protection Area. The Resource Management Area is a 100-foot area landward of the Resource Protection Area that includes floodplains, highly erodible soils including steep slopes, highly permeable soils, and non-tidal wetlands not included in the Resource Protection Area. The purpose of preserving these areas is to prevent increases and to ultimately reduce non-point source pollution into the Chesapeake Bay. General performance criteria have been developed for land inside the Resource Protection Areas including minimizing land disturbance as much as possible, preserving native vegetation, minimizing impervious cover, and other criteria. This is a state program administered by local governments. |
| 399 | As stated in sections LA2.3 and LA3.5.1 of the Draft EIS, the Air Force will comply with recommendations to reduce erosion, control sedimentation, control stormwater runoff, and improve drainage. The Air Force will comply with the Virginia Coastal Resources Management Program to the maximum extent practicable. |
| 400 | Refer to Response Number 393. |

| *Response Number* | *Response* |
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| 401 | Refer to Response Number 399. |
| 402 | Refer to Response Number 393. |
| 403 | Refer to Response Number 393. |
| 404 | As discussed in Table LA5.0-1 of the Draft EIS, the Air Force will employ standard best management practices such as watering graded areas covering soil stockpiles to control fugitive dust. |
| 405 | As stated in section 2.1.3 of the Draft EIS, the Air Force will comply with all required reviews and permits required to implement the proposed action. The Air Force will take all reasonable precautions to limit emissions of ozone precursors, VOC and $NO_x$, principally by controlling or limiting the burning of fossil fuels. The Air Force will adhere to standards codified in 9 VAC 5 Chapter 40 applying to existing stationary sources, including those pertaining to sources of VOC emissions in VOC emissions control areas. |
| 406 | As stated in section 2.1.3 of the Draft EIS, the Air Force will comply with all required reviews and permits required to implement the proposed action. Asphalt paving operations associated with the proposed action will be performed in compliance with 9 VAC 5 Chapter 40 Article 39 (Emission Standards for Asphalt Paving Operations). All asphalt used and/or applied will be of the emulsified asphalt type, with the exceptions provided in 9 VAC 5-40-5510.B and C. In addition, the annual average VOC content of the emulsified asphalts used shall not exceed 6 percent of VOCs by volume, as specified in 9 VAC 5-40-5510.D. |
| 407 | As stated in section 2.1.3 of the Draft EIS, the Air Force will comply with all required reviews and permits needed to implement the proposed action. Time-of-year restrictions applicable to sources in VOC emissions control areas for "cut-back asphalt" usage will be adhered to. As specified in 9 VAC 5-40-5510.B.2, usage and or application will be restricted to the months of November through March, when necessary. |
| 408 | As discussed in section LA3.17.1 and Appendix CI-1 of the Draft EIS, the Air Force currently employs pollution prevention (P2) techniques. Langley AFB and all of the alternative locations maintain active P2 programs in order to protect and enhance the environment and reduce occupational safety and health risks to base personnel. The P2 Program plans support the concept of reducing use of hazardous and toxic substances and the generation of wastes through source reduction and environmentally sound recycling. According to the plans, generation of hazardous substances, pollutants, or contaminants will be reduced or eliminated at the source. Pollution that cannot be eliminated at the source will be recycled in an environmentally safe manner. Pollution that cannot be recycled is disposed of in a manner approved of by the USEPA. In addition, P2 programs include submitting to the states and local emergency planning committees of annual Tier II forms, which are an updated inventory of chemicals or extremely hazardous substances in excess of specific threshold limits. Under the law, the installations would also be required to prepare and submit a Toxic Release Inventory report for a variety of listed chemicals if the reportable quantities established by the USEPA for a calendar year are exceeded. |
| 409 | The Air Force complies with applicable state and federal guidelines and industry standards for energy conservation and efficiency. |
| 410 | Refer to Response Number 392. |
| 411 | Refer to Response Number 393. |

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| 412 | Refer to Response Number 393. |
| 413 | The Air Force has spoken with representatives of the Virginia Department of Game and Inland Fisheries and the USFWS regarding bald eagles in the area of Langley AFB. The bald eagle nests 3 miles due east of Langley AFB. This nest site was active during the 2000-2001 breeding season and the bald eagles have nested at this location for two years. This nest site is in an area with a high degree of human activity, including the existing military aircraft flights at Langley AFB. USFWS and Virginia Department of Game and Inland Fisheries requirements regarding overflights of bald eagle nests are that aircraft be no less the 1,000 feet above a nest and at least 1,320 feet from the nest on the horizontal axis. Language was added to the EIS and the tables in Appendix NR-2 regarding this bald eagle nest site and the required minimum flight distances. Also see Response Number 254. |
| 414 | Refer to Response Number 393. |
| 415 | Refer to Response Number 398. |
| 416 | The Air Force will continue the ongoing consultation process with the Virginia DHR for this action in compliance with Section 106 of the NHPA. |
| 417 | Open burning is not proposed as part of F-22 beddown, therefore, a permit would not be required. |
| 418 | As indicated in Draft EIS section LA2.3, the Air Force has and will coordinate with DEQ regarding new emissions units and the need to amend the Synthetic Minor Operating Permit for Langley AFB. New emission units will be permitted as outlined in New Source 9 VAC 5 Chapter 80 (Permits for New and Modified Stationary Sources). Permits to construct and operate will be obtained prior to construction, as required by this rule. New emissions sources will be designed, built, and equipped to comply with standards of performance prescribed under 9 VAC 5 Chapter 50 and with emissions standards prescribed under 9 VAC 5 Chapter 60. |
| 419 | As stated in section 2.1.3 of the Draft EIS, the Air Force will comply with all required reviews and permits required to implement the proposed action. The Air Force will contact the DEQ Tidewater Regional Office for additional information regarding limitations of the use of "cut-back asphalt" in VOC emission control areas. Any use of "cut-back asphalt" will follow guidance set forth by DEQ. Also see Response Numbers 406 and 407. |
| 420 | The Air Force has determined that its activities are consistent with the Coastal Zone Management Act and the Virginia Coastal Resources Management Program. Construction projects associated with the beddown of the F-22 at Langley AFB would not affect sensitive coastal resources such as riparian zones and wetlands. In addition, best management practices, as indicated in Table LA5.0-1, would be in place to minimize erosion and stormwater runoff into the coastal zone. Consistent with the information provided in the Draft EIS, the Air Force has determined that this project is in compliance with the Enforceable Programs of the Virginia Coastal Resources Management Program. |
| 421 | Refer to Response Number 395. |
| 422 | Refer to Response Number 395. |
| 423 | Refer to Response Number 396. |
| 424 | Refer to Response Number 396. |

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| 425 | Refer to Response Number 392. |
| 426 | Refer to Response Number 393. |
| 427 | Refer to Response Number 393. |
| 428 | Refer to Response Number 398. |
| 429 | Refer to Response Number 399. |
| 430 | Chapter 2 of the Final EIS clarifies that all air-to-ground training involving ordnance delivery would occur at the Nellis Range Complex in Nevada, Utah Test and Training Range, Utah, or approved ranges associated with Eglin AFB, Florida. Dare County Range is not projected to be used for ordnance delivery. Rather, as noted in section LA2.2.1, the Restricted Airspace (R-5314) and the overlying Hatteras B ATCAA would be used "occasionally" by F-22s. Since the F-22 is not projected to conduct ordnance delivery training at Dare County Range, the activities would consist of those listed in Table 2.1-7 that are feasible and authorized. |
| 431 | The sentence referred to in the comment addresses Langley AFB only. The affected areas around Langley AFB are shown in Figure LA3.2-1 of the Draft EIS. Section LA3.2 describes baseline and projected noise contours for the base and primary and secondary occasional use airspace. |
| 432 | Chapter 3 of the Draft EIS (see sections 3.12 and 3.14) addresses those human resources that could be affected by changes in noise levels from F-22 aircraft operations, which include land use and environmental justice. While the beddown of the Initial F-22 Operational Wing would cause changes (either increases or decreases) in socioeconomic resources including employment, population, and housing demand in jurisdictions with economic ties to the installations, changes to these socioeconomic resources would be negligible for the training airspace since the project does not propose any construction or employment changes in areas underlying the airspace. The fact that socioeconomics is not specifically addressed for airspace areas is not intended to imply that airspace areas are either more or less capable of responding to environmental impacts than jurisdictions with economic ties to the base, simply that the beddown would result in minimal effects on these resources. |
| 433 | Chapter 2 of this document includes clarification to section 2.4.1, Resource Definitions, to further describe the regions analyzed in the Draft EIS. |
| 434 | Since the F-22 is not projected to conduct ordnance delivery training at Dare County Range, neither the amount nor nature of ordnance on the range would be affected. |
| 435 | Refer to Response Number 430. |
| 436 | Table LA2.2-1 shows that sortie-operations in all 12 occasional use airspace units would increase by 164 annually over baseline conditions. In terms of the total airspace use of these units, this represents about a 0.5 percent increase in activity. Further characterization of the current conditions would not be warranted given the negligible amount of change. Also see Response Number 437. |

| Response Number | Response |
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| 437 | By virtue of their designation as occasional use, these airspace units are not those considered for use by F-22s as part of a major force exercise. As stated in section LA2.2.1, F-22 sortie-operations in the various pieces of occasional use airspace would be minimal and the possible increase in activity would not exceed normal year to year variations in use. |
| 438 | Both are correct. R-5314 is restricted airspace overlying Dare County Range. The Hatteras B ATCAA overlies R-5314. The scale of Figure LA2.2-1 made it difficult to depict the underlying range, but the text and Table LA2.2-1 clarify the presence of restricted airspace over Dare County Range. |
| 439 | Refer to Response Number 436. |
| 440 | Draft EIS section LA2.2.1 and Table LA2.2-2 describe the altitude distribution of F-15C and F-22 flights. Wherever feasible based on airspace altitude limitations, the F-22s would fly most of the time above 10,000 feet and higher. This would apply to occasional use airspace as well, depending upon the upper altitude limits of the specific airspace unit. Also see Response Number 430. |
| 441 | Safety conditions would not change measurably in any one airspace and more detailed characterization of the safety conditions described in LA3.4.2 would not be warranted. Also see Response Number 436. |
| 442 | Tables showing the number of acres of each special use area under the airspace for all alternatives and associated figures are included in Appendix HR-2. |
| 443 | Studies examining the effects of noise on wildlife consistently have shown that, in general, wildlife species can acclimate to subsonic noise associated with military aircraft training. The results of some of these studies are summarized in Appendix NR-4. |
| 444 | Section LA3.6.2 of the Draft EIS explains that the prohibition applies to Langley AFB as a location. Section LA2.2.2 states that chaff and flares would be used in the over-water Warning Areas. |
| 445 | In Figure AO-1-1 in Appendix AO-1 of the Draft EIS, VR-1754 was not labeled due to the presence of numerous other MTRs occurring in a similar location. As stated in Draft EIS section LA2.2.1, VR-1754 is part of the occasional use airspace and would not receive more than minimal use. The Draft EIS projects use of occasional airspace that would be similar to the F-15Cs. As indicated in the *Final Environmental Assessment for the Proposed Force Structure Change at Langley AFB* (Air Force 1998) (incorporated by reference into the Draft EIS – see section 2.3), the F-15Cs may use VR-1754 seven or fewer times per year. Because of the F-22's mission, it is unlikely that use of the MTR would be even this much. |
| 446 | The beginning of Chapter 3 of the Draft EIS summarizes the methodology used for the impact analysis. Appendices for each resource group (AO-1, NR-1, HR-1, CR-1, CI-1) in Volume 2 of the Draft EIS presents the analytical approach for each of the resources analyzed in the Draft EIS. |
| 447 | Refer to Response Number 46. |
| 448 | The State of North Carolina Department of Administration, with the intent that they would distribute to all applicable state agencies, was provided a Draft EIS for review. |

| *Response Number* | *Response* |
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| 449 | A land use map has been incorporated into the errata. It depicts land use areas below the noise contours as well as noise sensitive receptors. The acreage of land affected by noise as well as population figures are presented in Table HR-4-2 in Volume 2 of the Draft EIS. |
| 450 | As part of the Air Force's AICUZ Program, Langley AFB utilizes data regarding noise from airfield activities to generate noise contours and provides guidance on land uses that are compatible with different levels of noise exposure. These data are published in a publicly released AICUZ Report to assist local agencies and entities with their land use planning and development decisions and to minimize, to the extent feasible, encroachment of incompatible uses in areas exposed to airfield noise. If the F-22 beddown were implemented at Langley AFB, the AICUZ information would be updated once the first squadron is in place and operational (see section LA 3.12.1 of the Draft EIS). The schools and their respective school districts have been added to the EIS distribution list and provided copies of the Draft EIS, which discusses potential environmental consequences to properties within the noise contours surrounding the base. |
| 451 | As presented in Draft EIS section LA3.16.1, the projected net reduction in employment at Langley AFB by 243 personnel under the proposed action would result in a decrease in peak hour travel demand when compared to the baseline condition. For purposes of transportation impact assessment, it is assumed that all of these 243 personnel that travel during the peak travel periods of the day use privately-owned vehicles and that the vehicle occupancy is 1.0 persons per vehicle. Typically these would be one a.m. work trip, one p.m. work trip and up to one non-home-based trip off of the installation for each employee per day. Since the a.m. and p.m. work trips coincide with the two peak travel periods in the affected area, a reduction of 243 vehicle trips during each period is anticipated. The use of the indicated ratio of employees to vehicles and vehicle occupancy is consistent with the transportation assessment for all other alternatives. |
| 452 | The Air Force makes flexi-time and flexi-place available and encourages the use of carpooling. |
| 453 | Section 2.1.3 indicates that various reviews will be required depending upon the alternative selected and that all applicable regulations will be complied with. |
| 454 | Refer to Response Number 408 |
| 455 | Appendix NR-4 provides a summary of some of the literature regarding the effects of noise on whales, porpoises, and dolphins; little effect from aircraft noise was noted. Beluga whales in Alaska showed varying reactions to fixed-wing aircraft including no response to aircraft within 328 to 656 feet, some reaction (diving or turning abruptly) to aircraft up to 1,508 feet in elevation (Richardson *et al.* 1995). As indicated in section EL3.9.1, the Beluga whale is often observed beneath the approach corridors of Anchorage International Airport, Merrill Field, and Elmendorf AFB; therefore, the beddown of the F-22 at Elmendorf AFB would not be expected to affect this species. Studies indicate that noise from military aircraft overflights had little effect on peregrine falcons in Alaska and elsewhere and other species of raptors, including the northern goshawk. There have been few studies of the effects of noise on perching birds, including the remaining species mentioned in this comment (see Appendix NR-4). Additionally, the *Alaska Military Operations Area EIS* (Air Force 1995) Record of Decision mandated that the Air Force spend $2,500,000 to study the effects of noise in the interior MOAs. The studies (ongoing) include: American Peregrine Falcons, Dall Sheep, Neotropical Passerine birds, human use, and ambient noise levels. The studies are being completed in concert with land management agencies affected within the guidelines of the Record of Decision-mandated Resource Protection Council. Chapter 2 of this document includes clarifications and corrections to the Draft EIS. |

| *Response Number* | *Response* |
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| 456 | Table 2.4-1 of this document has been corrected to read "Mountain Home has a slightly greater potential for impacts than the Langley alternative because habitat of the burrowing owl, a special status species, may be affected." |
| 457 | The Air Force initiated informal consultation (as defined and authorized by 50 CFR 402.13) with the NMFS and the USFWS in May 2000, and it has continued to informally consult with these agencies during the course of this project. This ongoing consultation and coordination with the NMFS and the USFWS, coupled with the assessment of potential impacts to federally listed, proposed, and candidate species, demonstrate compliance with the ESA. Copies of letters sent to the NMFS and the USFWS appear in Appendix PI-1 of Volume 2 of the Draft EIS. The potential impacts of the alternatives to species covered by the ESA are summarized in the Draft EIS. |
| 458 | NEPA does not require a Biological Assessment; however, potential impacts to listed species or critical habitat are thoroughly discussed in the Draft EIS sections LA3.8, EG3.8, EL3.8, MH3.8, and TY3.8. Also see Response Number 457. |
| 459 | If selected for the Initial F-22 Operational Wing beddown, all applicable stormwater regulations would be complied with during construction activities, including the preparation of SWPPPs. Sections EL2.3, 3.5.1 and MH2.3 and 3.5.1 indicate the intent to obtain appropriate NPDES permits for construction activities. |
| 460 | The Draft EIS (section 3.6 for each installation) establishes that habitat fragmentation would be minor for most of the areas disturbed at the five bases during construction because construction would occur solely in developed areas (Langley and Eglin AFB) or previously developed areas and associated disturbed habitat (Mountain Home and Elmendorf AFB). Of the 73 acres that would be disturbed at Tyndall AFB, an estimated 24 acres of slash pine mesic woods and plantations may be affected, and the loss of this habitat may result in some minor habitat fragmentation next to the airfield. |
| 461 | Roads and powerlines constructed at Langley and Eglin would be in developed areas and would not affect sensitive habitats or endangered wildlife, and corridors linking wildlife habitats would not be required. All roads and power lines would be placed to avoid sensitive habitats and sensitive species to the extent possible. It is not anticipated that corridors linking segments of habitat would be required. Landscaping at these three bases would be consistent with current landscaping, and would utilize native plants where possible. |
| 462 | If selected for the Initial F-22 Operational Wing beddown, relocation of the sewage lagoon would be a major construction project consisting of many different actions. Construction plans would include procedures to prevent spills and/or releases of contaminated groundwater into the environment. Procedures to prevent contaminated soils from being released to surface water and air would also be included in the plans. The original site would be capped following relocation. As described in section MH2.3 of the Draft EIS, applicable permits will be obtained; and as stated in Table MH5.0-1, best management practices would be employed. |
| 463 | Refer to Response Number 462. |
| 464 | Refer to Response Number 462. |

| Response Number | Response |
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| 465 | The Air Force has invited comments from both Alaska Natives and Native Americans regarding the proposed action and alternatives during scoping, public hearings, and the review of the Draft EIS. Opportunities for comment were provided at meetings in Alaska Native villages and on the Duck Valley Reservation near Mountain Home AFB (refer to Response Number 8). In response, Alaska Natives and Native Americans have provided comments that are contained in this chapter and are considered in the Air Force decision making process. |
| 466 | Refer to Response Number 459. |
| 467 | When the Initial Operational Wing beddown decision is made, the base SWPPP would be upgraded, as necessary, to include the six phases of SWPPP development and implementation. |
| 468 | The Air Force, prior to scoping and the public hearings, coordinated with the Piedmont Planning District. In addition, several local officials, including the mayor and town manager, received a copy of the newsletter, which contained information on the public hearing schedule. Also see Response Number 77. |
| 469 | The Air Force is preparing a presentation for interested citizens in Farmville and Prince Edward County. The presentation will clarify the use and management of the Farmville MOA. Also see Response Number 104. |
| 470 | While Langley AFB schedules the Farmville MOA, other users fly in the airspace as well. Given the training needs for all branches of the military and the limited training airspace, users must share available airspace. Overall, training in the Farmville MOA is expected to continue at sortie rates consistent with those presented in Table LA2.2-1. |
| 471 | Refer to Response Number 120. |
| 472 | Refer to Response Number 116. |
| 473 | The analyses of the potential effects from the beddown of the F-22 aircraft at Mountain Home AFB on lands under the airspace are included in section MH3.12.2 in the Draft EIS. |
| 474 | Refer to Response Number 357. |
| 475 | Refer to Response Number 231. |
| 476 | Special training exercises at Air Force locations are addressed in specific NEPA analyses for those locations or for the exercises. F-22 aircraft based at the initial beddown location may train incidentally with other aircraft at alternative locations. This incidental training would be comparable to that which is done by transient aircraft in military airspace throughout the nation. |
| 477 | Refer to Response Number 222. |
| 478 | The Air Force will continue to evaluate the use of chaff based on mission needs. In addition, as stated in the Supplemental Record of Decision, the Air Force has agreed to continue to work to discuss and resolve the use of chaff as one of the five additional areas as part of the Memorandum of Agreement between the Air Force and Enhanced Training in Idaho cooperating agencies. |
| 479 | Chapter 2 of this document includes clarifications and corrections to the Draft EIS. |
| 480 | The change in supersonic noise levels is noted in section MH3.2.2. |

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| 481 | The Draft EIS also acknowledges in section MH3.12.2 that some visitors and recreationists to primitive areas would likely be annoyed by the increase in supersonic activities. |
| 482 | The Draft EIS analyzed potential impacts on National Park resources and park visitors; however, Denali National Park and Preserve is the only national park unit that exists under primary airspace (see section EL3.12.2). Many other national park units exist under military training airspace; however, the beddown of the F-22 would not result in the use of those airspaces. Therefore, Craters of the Moon National Monument, Hagerman Fossil Beds National Preserve, and City of Rocks National Preserve are not discussed in this EIS. |
| 483 | Refer to Response Number 482. |
| 484 | Refer to Response Number 222. |
| 485 | As presented in the Draft EIS (section 2.1.2), the F-22 would use the airspace associated with the selected beddown base and is projected to fly to the Nellis Range Complex, Nevada; Utah Test and Training Range, Utah; or approved ranges associated with Eglin AFB, Florida for ordnance delivery training or other training. All potentially affected units of the National Park Service are analyzed under the five locations described in the Draft EIS. Incidental use of other airspace, such as Nellis AFB, have been previously analyzed for the full range of environmental issues. Deployments, as described in the Draft EIS, represent activities overseas and outside the United States. For training preceding or following deployments, existing facilities such as Nellis Range Complex would be used. All restrictions regarding interactions with National Park Service units would be followed just like current practices in these airspace units. |
| 486 | Refer to Response Number 222. |
| 487 | As identified in Appendices PI-1 and PI-2, the Air Force has included the National Park Service in the IICEP for this EIS and welcomes continued coordination on proposals. |
| 488 | Refer to Response Number 357. |
| 489 | Within the Susitna MOA, which overlies Denali National Park and Preserve, supersonic activity would be limited to functional check flights (refer to section EL3.2.2). The Draft EIS acknowledges on page EL3-50 that it is possible that the new level of supersonic activity will be perceived by some as an unwanted intrusion that may impede management goals for special use areas under the MOAs. |
| 490 | Part of Denali National Park and Preserve underlies the Susitna MOA (an estimated 945,700 acres), and supersonic flights are authorized for this MOA (see Table EL2.2-2). However, supersonic activity is limited to functional check flights, which take place after maintenance activities. Supersonic functional check flights occur infrequently in this MOA and this is not expected to change for the F-22. Sonic booms resulting from the deployment of the F-22 at Elmendorf AFB would not result in additional effects on wildlife populations in Denali National Park and Preserve. |
| 491 | While the design of the F-22 enhances the capability to fly supersonic, the application of that capability is in control of a highly trained, disciplined pilot. Not only do pilots plan and conduct training to adhere to restrictions in a given airspace, they also plan and conduct it according to appropriate mission requirements. As demonstrated throughout the EIS (e.g., section 2.1.2), the F-22's supersonic activities would be performed as part of air combat maneuvering. Such maneuvering is conducted at higher altitudes because that is where real combat engagements would occur and it provides an important safety margin. |

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| 492 | Table EL2.2-1 shows the number of baseline and projected sortie-operations in the Susitna and Yukon 1-5 MOAs. These data demonstrate that despite the percentage increase in sortie-operations, the actual number of sortie-operations would increase by less than one per flying day for each of these MOAs. Given that the F-22s would generally fly at higher altitudes, cumulative noise conditions in the MOAs would not change perceptibly (see Figure EL3.2-2). Use of higher altitudes by F-22s would also reduce noise levels associated with individual flyovers (see Tables EL3.2-3 and EL3.2-4). |
| 493 | The only National Park unit affected is Denali National Park and Preserve underlying the Susitna MOA. As presented on Figure EL3.2-2, the noise levels will remain under 45 DNL within the Susitna MOA. Therefore, the noise environment currently experienced by park visitors will not be perceptibly different should the F-22 beddown occur at Elmendorf AFB. Also see Response Number 494. |
| 494 | Use of the DNL cumulative metric, as recommended by FICON, is accepted as the principle metric for describing environmental noise exposure (as noted in the Draft EIS, Appendix AO-2). DNL is appropriate, because it not only accounts for the total number of overflight events and the time they occur, it also accounts for the duration of the events and the maximum noise levels associated with the events. There are no new descriptors or metrics of sufficient scientific standing to substitute for the DNL cumulative noise exposure metric. As presented in all noise sections in the Draft EIS, inclusion of the $L_{max}$ and SEL metrics is useful to further describe the noise levels attributed to individual overflights. Coupled with the data on sortie-operations provided in the Draft EIS, these metrics provide information on the number and relative noise levels associated with overflights in the airspace units. Collectively, DNL, $L_{max}$, and SEL provide adequate analysis of the all components of the existing and projected environment, including wilderness and park areas. Although DNL can be supplemented with other metrics to characterize specific effects (as presented in the Draft EIS, Appendix AO-2), to date there is no consensus among various agencies on the desired metrics relative to the new field of wilderness psychoacoustics. |
| 495 | The Air Force looks forward to reviewing the backcountry management plan and accompanying environmental documentation. In addition, the Air Force welcomes the opportunity to continue to work with National Park Service staff in charge of the plan. The June 2000 meeting between Air Force airspace managers and the National Park Service staff revealed no concerns over Susitna MOA operations, and ended with a commitment to remain in contact should any issues develop. |
| 496 | Refer to Response Number 305. |
| 497 | As noted in section 3.4 for each base, the Air Force places significant emphasis on avoiding bird-aircraft strikes. For several decades, the Air Force has been at the forefront of mapping bird migrations relative to military airspace and developing predictive models for areas of concerns. The data used in the Draft EIS is derived from the Air Force's program. In addition, each base maintains a BASH plan designed to minimize the risk of bird-aircraft strikes. Data from the plan are used by pilots in planning all of their flight activities. |
| 498 | Figures LA2.2-1, EG2.2-1, EL2.2-1, MH2.2-1, and TY2.2-1 show the locations of the airspace projected for use by the F-22s for each base. Appendix AO-1 of the Draft EIS contains figures that show the military training routes traversing the airspace. MTRs are not a part of the primary training airspace. |
| 499 | Refer to Response Number 231. |

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| 500 | The box provides a summary and emphasizes the major components of the action. As presented in section 2.1.1, PAI aircraft would be those that conduct sorties and sortie-operations, and therefore have the potential to affect the environment. BAI aircraft are backups, and would be used only to replace a PAI F-22. Thus, a maximum of only 72 aircraft would be operational at any given time. |
| 501 | There is no discrepancy. The methods used to project F-22 sorties are detailed in Draft EIS section 2.1.1 and further explained in Tables AO-1-1, AO-1-2, and AO-1-3 in Appendix AO-1. As explained in section 2.1.1, the 333 sorties are training exercises at another location; hence, 11,187 is the correct number. |
| 502 | The Executive Summary is correct - chaff and flare use during an F-22 sortie is expected to be similar or less than that of an F-15C sortie. However, F-22 chaff use would likely decrease because of the increased capability of the F-22 to avoid detection. For purposes of a conservative analysis, F-15 chaff usage numbers were employed. Section 2.1.2 and Table 2.1-10 of the Draft EIS detail the use of chaff and flares. |
| 503 | Refer to Response Number 485. |
| 504 | Most of the sonic booms currently produced by the F-15C are below 30,000 feet, while it is estimated that 60 percent of the sonic booms that would be produced by the F-22 would be above 30,000 feet. As indicated in section EL3.2.2, the ground-level effect sonic booms generated at higher altitudes would be less than those from lower altitudes. Therefore, as concluded in the Draft EIS, the sonic booms generated by the F-22 at the Elmendorf MOAs would not result in significant effects on wildlife, including sensitive species. Also see Response Number 489. |
| 505 | As described in Chapter 2 for each installation (see section 2.1.2 for each installation), F-22s are able to accelerate more quickly to climb speed allowing them to reduce the power setting earlier than the F-15C. The F-22 would generate more noise closer to the runway and less noise further from the runway. Therefore, the F-22 uses its power for shorter durations, thereby reducing the cumulative noise. |
| 506 | Supersonic flight is authorized only within the Warning Areas beyond 3 to 12 nautical miles offshore. Table HR-2-1 in Appendix HR-2 of the Draft EIS indicates that neither of the units mentioned in the comment underlie affected airspace. |

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| 507 | The Draft EIS in each socioeconomics section, identifies the estimated project-related change in population at each base as a result of changes in direct and secondary employment from the F-22 beddown. There is a population decrease projected for Langley AFB and increases at the other four bases: 503 persons at Eglin AFB; 658 persons at Elmendorf AFB; 2,761 persons at Mountain Home AFB and 4,208 persons at Tyndall AFB. It is possible that individual units of the National Park Service in the vicinity of the bases could experience some increase in visitation as a result of the project. The share of total visitation at an individual park represented by such increases would be relatively small in most cases given the portion of the regional population represented by the project and the large area from which visitors to national parks are likely to be drawn. For example, the project-related population would be less than 1 percent of the 1999 regional population in the vicinity of Eglin AFB, Elmendorf AFB, and Mountain Home AFB, and 2.6 percent of the regional population at Tyndall AFB.<br><br>Gulf Islands National Seashore contains 137,458 acres in 11 separate stretches along 150 miles of barrier islands and coastal mainland from West Ship Island in Mississippi to the eastern tip of Santa Rosa Island in Florida and reported 4,597,270 recreation visits in 1999. Tyndall AFB is located approximately 100 miles east of the easternmost portion of Gulf Islands National Seashore and Eglin AFB is located within approximately 10-20 miles. |
| 508 | As presented in each installations' community infrastructure section, both hazardous and non-hazardous wastes will be generated during F-22 maintenance activities. Existing hazardous materials and hazardous waste management programs will be retained and used to manage F-22 hazardous materials and wastes. |
| 509 | The text of the EIS was revised to reflect the correct bald eagle nesting dates in Virginia, and language regarding the 1,000-foot vertical buffer zone was also added. |
| 510 | If the Initial F-22 Operational Wing beddown were to occur at Tyndall, the State of Florida and the USACE jurisdictional wetlands, if any, would be mapped. If jurisdictional wetlands would be affected, a Joint Application for Works in the Waters of Florida would be submitted to the appropriate state agency. Generally, the USACE will not issue a permit until after the state issues its required authorization. Language describing this process was added to the EIS. As indicated in section TY3.8.1, surveys for sensitive species that could occur in the construction zone would be conducted prior to construction. Such surveys would be coordinated with the USFWS office in Panama City, Florida. Chapter 2 of this document includes clarifications and corrections to the Draft EIS. |
| 511 | As indicated in section MH3.7.1, jurisdictional wetlands in and near the construction zone would be mapped if the Mountain Home alternative was selected. |
| 512 | As stated in section MH3.8.1, the potential for the *Lepidium papilliferum* (slickspot peppergrass - federal candidate plant species) to occur at Mountain Home AFB is low. Previous surveys of rare plants have been conducted at Mountain Home AFB and have not yielded evidence of *Lepidium papilliferum*. |
| 513 | The proposed management action in Table EL5.0-1 is written correctly. |

| *Response Number* | *Response* |
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| 514 | Elmendorf AFB currently maintains a web page (www.elmendorf.af.mil) with information regarding airspace and ranges. As part of the mitigation measures associated with the *Alaska Military Operations Areas EIS* (Air Force 1995), a brochure entitled "Military/USAF flying in Alaska" is being prepared by the 611 Air Operations Group (in association with the National Park Service, USFWS, BLM, Alaska Department of Fish and Game, and the FAA). |
| 515 | Appendix NR-4 of the Draft EIS provides a brief summary of the Harrington and Veitch study (1992) mentioned in the comment. The discussion regarding the effects of aircraft noise on caribou in Appendix NR-4 will be expanded to include the work of Maier *et al.* (1998), as recommended. Also, information regarding on-going studies of the effects of military overflights on Dall sheep is included in Chapter 2 of this document; however, the assessment of caribou and Dall sheep does not change. |
| 516 | Refer to Response Number 234. |
| 517 | The potential effects of overflights on traditional Alaska Native subsistence activities are discussed in sections EL3.1.2 (Airspace), EL3.2.2 (Noise), EL3.6.2 (Terrestrial Communities), EL3.11.2 (Cultural and Traditional Resources), EL3.13.1 (Socioeconomics), and EL3.14.2 (Environmental Justice) of the Draft EIS. |
| 518 | If Elmendorf AFB were selected as the location for the Initial F-22 Operational Wing beddown, the Air Force would continue its commitment to reduce the potential for consequences to cultural and environmental resources. Management actions, included in Table EL5.0-1, are designed to enhance environmental quality while not significantly reducing the effectiveness of the F-22 beddown. |
| 519 | Refer to Response Number 387. |
| 520 | Refer to Response Number 78. |
| 521 | Effects of noise on property values are addressed in section LA 3.12.1 of the Draft EIS. Residential property values in the vicinity of airfields in general are affected by a variety of non-noise factors such as national, regional, and community economic conditions; national and regional trends in employment, inflation and interest rates; local population changes; and real estate development. A recent study indicates that aircraft noise, "is predictably unrelated to residential property sale prices in the vicinity of Langley Air Force Base [and]…strongly suggests a lack of causal relationship as well" (Fidell *et al.* 1996). Specifically for Langley, property sales trends are historically similar within and outside of the 65 DNL and above noise contours. While the property value study does not specifically address the overland training airspace associated with Langley AFB (i.e., the Farmville MOA) which is more rural in character, property values are likely to be affected by similar types of factors. Noise levels at the Farmville MOA are projected to remain below 45 DNL under both baseline and project conditions (see Figure LA3.2-2 in the Draft EIS). While property values may be affected by local perceptions of environmental issues, such as noise exposure, the complex interaction of multiple economic and real estate factors makes the estimation of such effects highly speculative. |

| *Response Number* | *Response* |
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| 522 | Economic growth of an area is affected by a number of national, regional, and local factors such as national employment and unemployment trends, inflation and interest rates. At the regional and local level, economic growth can be affected by labor force availability and wages, other business costs, the amount of developable land and applicable regulations, state and local tax structure and incentives, availability and cost of housing and the perceived quality of life. Areas surrounding civilian airports, where noise may be present, frequently attract commercial and aviation-related growth. In addition, while exposure to aircraft noise can be seen as a quality of life consideration, a 1996 study of airfield noise conducted for the vicinity of Langley AFB indicates that aircraft noise "is predictably unrelated to residential property sale prices [and]… strongly suggests a lack of causal relationship as well." Also see Response Number 521. |
| 523 | Refer to Response Number 104. |
| 524 | Refer to Response Number 51. |
| 525 | Refer to Response Number 77. |
| 526 | Refer to Response Number 78. |
| 527 | Refer to Response Number 251. |
| 528 | As described in section LA 3.12.1 and presented in Table LA 5.0-1, if Langley AFB were selected as the location for the beddown of the Initial Operational Wing, and once flying operations have commenced, the Air Force would conduct a detailed noise study and land use analysis based on actual flight parameters in the vicinity of Langley AFB. Langley AFB personnel would continue to work with the City of Hampton to ensure compatible land use development based on the established land use recommendations contained in the AICUZ program. In addition, a land use map for the vicinity of Langley AFB has been incorporated into Chapter 2 of this Final EIS. It depicts land use areas within the noise contours as well as noise-sensitive receptors. The Draft EIS discusses potential environmental consequences to properties within the noise contours in section LA3.12.1. In the interim, the current AICUZ report should be used to address property owner questions. |
| 529 | Refer to Response Number 528. |