CHANGE

U.S. DEPARTMENT OF TRANSPORTATION

FEDERAL AVIATION ADMINISTRATION

7400.2E CHG 4

SUBJ: FAA ORDER 7400.2, PROCEDURES FOR HANDLING AIRSPACE MATTERS

1. **PURPOSE.** This change transmits revised pages to Order 7400.2, Procedures for Handling Airspace Matters.

2. **DISTRIBUTION.** This change is distributed to select offices in Washington headquarters, regional offices, the FAA Technical Center, the FAA Aeronautical Center, all air traffic field facilities, international aviation field offices, and interested aviation public.

3. **EFFECTIVE DATE.** June 3, 2004.

4. **EXPLANATION OF CHANGES.** See the Explanation of Changes attachment which has editorial corrections and changes submitted through normal procedures.

5. **DISPOSITION OF TRANSMITTAL.** Retain this transmittal until superseded by a new basic order.

6. **PAGE CONTROL CHART.** See the Page Control Chart attachment.

/s/ Sabra Kaulia
Director, System Operations
and Safety

Date: April 22, 2004

Distribution: ZAT-740; AMA-522; AML-350; ATA-10; ATA-400 Initiated by: ATA-400

Procedures for Handling Airspace Matters

Explanation of Changes

a. Paragraph 5-1-6. SENSITIVE CASES REFERRED TO WASHINGTON

Amends the subject paragraph to correctly reflect the current practice. When a Regional office receives notice of proposed construction or alteration for a case that may be sensitive, or have a high public interest, ATA-400 needs to be briefed on the case in the event of a Congressional inquiry, or an inquiry from the Administrator's office. The language in the current order infers that the case will be reviewed at Headquarters. However, if Headquarters studies a case, it is impossible to be objective in the event the case is petitioned for discretionary review. Therefore, we are amending the paragraph to state the requirement that for a sensitive case, the Regional office must provide a briefing to ATA-400 prior to issuance of a determination.

b. Chapter 21. GENERAL

Incorporates National Security Areas into the list of Special Use Airspace areas.

c. Chapter 28. NATIONAL SECURITY AREAS

This change defines National Security Areas as a type of special use airspace and inserts a new Chapter 28, to set forth procedures regarding NSAs. The current Chapter 28, is now renumbered as Chapter 29; the current Chapter 29 is now Chapter 30; and the current Chapter 30 is now Chapter 31.

PAGE CONTROL CHART

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June 3, 2004

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Section 1. GENERAL

Section 2. PROCESSING OF PROPOSALS

Section 3. DETERMINATIONS

ANI	National Airspace System Implementation Program
APO	Office of Aviation Policy and Plans
APP	Office of Airport Safety and Standards
ARN	Communications, Navigation, Surveillance, and Infrastructure Directorate
ARP	Airport Reference Point
ARSR	Air Route Surveillance Radar
ARTCC	Air Route Traffic Control Center
ARU	Airborne Radar Unit
ASR	Airport Surveillance Radar
ASR	Spectrum Policy and Management
AST	Office of Commercial Space Transportation
ATA	Air Traffic Airspace Management Program
ATC	Air Traffic Control
ATCAA	Air Traffic Control Assigned Airspace
ATCRBS	Air Traffic Control Radar Beacon System
ATCSCC	Air Traffic Control System Command Center
ATCT	Airport Traffic Control Tower
ATD	Air Traffic Division
ATREP	Air Traffic Representative
ATS	Air Traffic Service
AVN	Aviation System Standards
CARF	Central Altitude Reservation Function
CASFO	Civil Aviation Security Field Office
CDRH	Center for Devices and Radiological Health
CFA	Controlled Firing Area
CFZ	Critical Flight Zone
CFR	Code of Federal Regulations
CP	Construction Permit
DF	Directional Finder
DME	Distance Measuring Equipment
DMS	Docket Management System
DNE	Does Not Exceed
DNH	Determination of No Hazard
DoD	Department of Defense
DOH	Determination of Hazard
DPH	Determination of Presumed Hazard
EBO	Exceeds But Okay
EMI	Electromagnetic Interference
ERP	Effective Radiated Power
FAAO	Federal Aviation Administration Order
FACSFAC	Fleet Area Control and Surveillance Facility

FCC	Federal Communications Commission
FDA	Food and Drug Administration
FL	Flight Level
FPO	Flight Procedures Office
FSDO	Flight Standards District Office
FSS	Flight Service Station
GAO	General Accounting Office
HIL	High Intensity Light
IAP	Instrument Approach Procedures
ICAO	International Civil Aviation Organization
IFR	Instrument Flight Rules
ILS	Instrument Landing Systems
IR	IFR Military Training Routes
IRAC	Interdepartmental Radio Advisory Committee
J	Joule
L/MF	Low/Medium Frequency
LFZ	Laser Free Zone
LLWG	Local Laser Working Group
LMM	Middle Compass Locators
LOA	Letter of Agreement
LOD	Letter of Determination
LOM	Outer Compass Locators
LSO	Laser Safety Officer
MAJCOM	Major Military Commands
MCA	Minimum Crossing Altitudes
MCP	Minimum Crossing Point
MEA	Minimum En Route Altitude
MHA	Minimum Holding Altitudes
MIA	Minimum IFR Altitudes
MLS	Microwave Landing System
MOA	Military Operations Area
MOCA	Minimum Obstruction Clearance Altitude
MPE	Maximum Permissible Exposure
MRAD	Milliradian
MRU	Military Radar Unit
MSA	Minimum Safe Altitude
MSL	Mean Sea Level
MTR	Military Training Route
MVA	Minimum Vectoring Altitudes
NACO	National Aeronautical Charting Office
NAD	North American Datum
NAS	National Airspace System
NASA	National Aeronautics and Space Administration
NAVAID	Navigational Aid
NDB	Nondirectional Radio Beacons
NEPA	National Environmental Policy Act
NFDD	National Flight Data Digest
NFZ	Normal Flight Zone

NM	Nautical Miles
NOHD	Nominal Ocular Hazard Distance
NOTAM	Notices to Airmen
NPIAS	National Plan for Integrated Airport System
NPRM	Notice of Proposed Rulemaking
NR	Non-Rulemaking
NRA	Non-Rulemaking Airport
NSA	National Security Area
NWS	National Weather Service
OE	Obstruction Evaluation
OE/AAA	Obstruction Evaluation/Airport Airspace Analysis
OFZ	Obstacle Free Zone
PAPI	Precision Approach Path Indicator
PFC	Passenger Facility Charge
PL	Public Law
PSR	Project Status Request
RBS	Radar Bomb Sites
REIL	Runway End Identifier Lights
RNAV	Area Navigation
ROFA	Runway Object Free Area
RPZ	Runway Protection Zone
RVR	Runway Visual Range
RVV	Runway Visibility Value
SAMS	Special Use Airspace Management System
SFZ	Sensitive Flight Zone
SIAP	Standard Instrument Approach Procedure
SMO	System Maintenance and Operations
SR	Scientific/Research Lasers
STAR	Standard Terminal Arrival Routes
SUA	Special Use Airspace
TERABA	Termination/Abandoned Letter
TEREXP	Termination/Expired Letter
TERPS	United States Standard for Terminal Instrument Procedures
TERPSR	Termination Project Status Letter
TOFA	Taxiway Object Free Area
USC	United States Code
UTC	Coordinated Universal Time
VASI	Visual Approach Slope Indicator
VFR	Visual Flight Rule
VGSI	Visual Glide Scope Indicator
VOR	Very High Frequency Omnidirectional Range
VORTAC	Very High Frequency Omni-Directional Radio Range and Tactical Air Navigation Aid
VR	VFR Military Training Route

TBL 1-2-1

Part 2. OBJECTS AFFECTING NAVIGABLE AIRSPACE

Chapter 5. BASIC

Section 1. GENERAL

5-1-1. PURPOSE

The guidelines, procedures, and criteria detailed in this part supplement those contained in part 77, Objects Affecting Navigable Airspace, and address the following:

a. The performance of functions relating to the processing of notices of proposed construction or alteration;

b. The conduct of aeronautical studies of any existing or proposed object affecting the navigable airspace;

c. The conduct of aeronautical studies of the electromagnetic radiation effect of proposed or existing objects on the operation of air navigation facilities;

d. The conduct of aeronautical studies of the physical effect of proposed or existing objects on the line-of-sight view of all runways, taxiways, and traffic pattern areas from the airport traffic control tower; and

e. The conduct of aeronautical studies regarding the physical effect of proposed or existing objects on airport approach lighting systems.

5-1-2. AUTHORITY

a. The FAA's authority to promote the safe and efficient use of the navigable airspace, whether concerning existing or proposed structures, is predominantly derived from Title 14 U.S.C. Section 44718 (Section 44718). It should be noted however, that Section 44718 does not provide specific authority for the FAA to regulate or control how land (real property) may be used in regard to structures that may penetrate navigable airspace.

b. Title 14 of the Code of Federal Regulations (14 CFR) part 77, Objects Affecting Navigable Airspace, was adopted to establish notice standards for proposed construction or alteration that would protect aircraft from encountering unexpected structures.

5-1-3. POLICY

The prime objective of the FAA in administering Section 44718 and 14 CFR part 77 in conducting obstruction evaluation studies is to ensure the safety of air navigation and efficient utilization of navigable airspace by aircraft.

5-1-4. SCOPE

a. 49 U.S.C. Sections 40103 and 44718, and part 77 apply only to structures located within any state, territory, or possession of the United States, within the District of Columbia, or within territorial waters (12 NM) surrounding such states, territories, or possessions.

b. Structures that are subject to study requirements associated with 49 U.S.C. Section 40103, 44718, and part 77 may be man made (including mobile structures) or of natural growth and terrain whether existing, proposed, permanent, or temporary.

5-1-5. RESPONSIBILITY

The responsibility for managing the obstruction evaluation program for those structures that may affect the navigable airspace is delegated to the regional ATD.

5-1-6. SENSITIVE CASES REFERRED TO WASHINGTON

The regional ATD Manager, or designated representative, shall brief sensitive or high profile cases to ATA-400 before issuing, revising, or extending the determination.

5-1-7. PERIODIC REVIEW

ATA-400 shall conduct special and periodic reviews of regional aeronautical studies, processing procedures, and issued correspondence to ensure agency-wide continuity in the execution of the obstruction evaluation program. ASR-100, AAS-100, AFS-420, and AVN-100 shall assist in these reviews as requested.

5-1-8. AUTOMATION

a. To the extent practicable, the obstruction evaluation/airport airspace analysis (OE/AAA) automated programs shall be used in lieu of manual processing.

b. Automated obstruction evaluation (OE) correspondence forms shall be used.

5-1-9. OE/AAA AUTOMATED SYSTEM AIRPORT/RUNWAY DATABASE

a. To ensure the automated part 77 obstruction criteria and the military part 77 obstruction criteria conflict analysis programs consider all known plans on file, the regional Airports Division is responsible for maintaining the automated airport/runway database.

1. Either the Airports Division or the Airports District Office shall enter the ultimate airport reference point for any proposed public-use or military airport into the database within two working days from receipt of the information.

2. Either the Airports Division or the Airports District Office shall enter any change of airport status from private-use to public-use into the database within two working days from receipt of the information. As workload permits, information on private-use airports shall also be entered into the database.

3. Either the Airports Division or the Airports District Office shall enter all other public-use and military airport/runway information in the database within 10 working days from receipt of the information.

b. Airports shall resolve and correct any discrepancies that have been identified in the automated airport/runway database.

c. Any required corrections shall be forwarded to ATA-100.

5-1-10. TRAINING

Employees involved with the OE/AAA program shall attend the Basic Obstruction Evaluation and Airport/Airspace Analysis Course offered by the FAA Academy.

5-1-11. PERIODIC MEETINGS

To provide a forum to discuss regional OE/AAA issues, each region should conduct periodic meetings for all personnel involved in processing OE/AAA cases.

5-1-12. RELEASE OF INFORMATION

Requests from the public for access to or copies of information contained in obstruction evaluation study files are occasionally made to the regional offices. Such requests shall be processed in accordance with the provisions of the Freedom of Information Act (5 U.S.C. 552), as implemented by part 7 of the Department of Transportation Regulations and Order 1200.23, Public Availability of Information. Information should not be released on any case until a final determination has been made.

Section 2. NOTICES

5-2-1. REQUIREMENTS

a. Requirements for notifying the FAA of proposed construction or alteration are contained in Sections 77.13 (see FIG 5-2-1, FIG 5-2-2, FIG 5-2-3, and FIG 5-2-4) and 77.15. Advisory Circular 70/7460-2, Proposed Construction of Objects that May Affect the Navigable Airspace, provides the public guidance on the application of these notice requirements.

b. No notice is required, as specified in Section 77.15(c), for certain equipment installations "of a type approved by the Administrator" when the equipment is installed in accordance with the established FAA siting criteria. Equipment installed in compliance with the siting criteria without waivers and which does not affect other runways, does not have to be considered under part 77 criteria.

c. Examples of equipment not requiring notice are:

1. Wind equipment (except supplemental wind cones);

2. Transmissometers (Runway Visibility Value (RVV) and Runway Visual Range (RVR) equipment);

3. Instrument Landing Systems (ILS); and

4. Visual Glide Slope Indicators (VGSI).

5-2-2. PROCESSING

a. Air Traffic personnel shall administer obstruction evaluation studies with the coordinated assistance of Airports, Airway Facilities, Frequency Management, Flight Standards, Flight Procedures Office, and military representatives.

b. The regional ATD shall process notices received under the provisions of Sections 44718 and part 77 as OE cases. The exception to this is notices received under those provisions that pertain to structures located on a public-use airport which shall be processed by the Airports Division as a nonrulemaking airport (NRA) case (defined in Part 3, Airport Airspace Analysis, of this order). However, if the notice pertains to a temporary structure or a structure that radiates a frequency, the Airports Division may request that Air Traffic process the notice as an OE case.

c. If notice is required by any other FAA regulation, the appropriate division shall process the notice under that regulation.

5-2-3. FAA FORMS

Standard FAA forms are established for use in conducting obstruction evaluation studies. The standard FAA forms are:

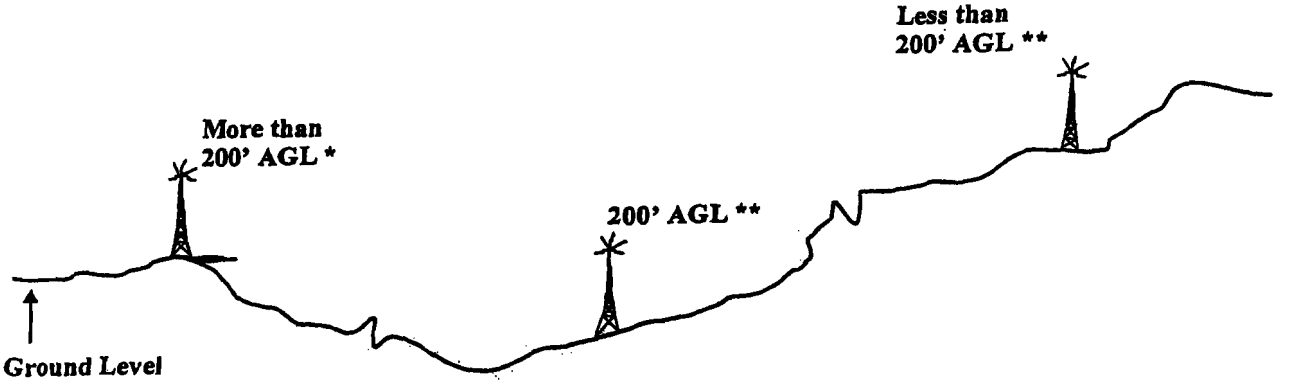
a. FAA FORM 7460-1, Notice of Proposed Construction or Alteration (OE notice).

b. FAA FORM 7460-2, Notice of Actual Construction or Alteration (Supplemental Notice).

NOTICE OF CONSTRUCTION OR ALTERATION

§77.13(a)(1) - A notice is required for any proposed construction or alteration that would be more than 200 feet in height above the ground level at its site.

§77.13(a)(1) - Notice Requirement Anywhere



* Notice Required

** Notice Not Required

FIG 5-2-1

Chapter 1. AERONAUTICAL STUDIES

Section 1. GENERAL

6-1-1. POLICY

An obstruction evaluation study shall be conducted for all complete OE notices received.

6-1-2. AERONAUTICAL STUDY NUMBERS

For ease of use of the OE/AAA automated obstruction programs and correspondence, a separate aeronautical study number shall be assigned and a separate obstruction evaluation study shall be conducted for:

a. Each site (location), structure (height), or sponsor.

1. At times, a single sponsor may file notice for multiple sites. Each site shall be assigned a separate aeronautical study number and a separate obstruction evaluation study shall be conducted.

2. At times, a single FAA Form 7460-1 may be received for a single project that covers multiple structures such as an antenna array, windmill clusters, housing development, cluster of buildings, utility poles, or catenaries. Each structure shall be assigned a separate aeronautical study number and a separate obstruction evaluation study shall be conducted. However, a single determination addressing all of the structures may be issued.

3. At times, multiple sponsors may be competing for the same FCC license in the same market area and may file notice for the same communications band/frequency/channel using the same effective radiated power at the same location and height. A separate FAA Form 7460-1 should be submitted for each sponsor with information specific to the structure and sponsor. Separate aeronautical study numbers shall be assigned and separate obstruction evaluation studies conducted.

NOTE-
A single structure with multiple points of interest, such as a building, may be processed as a single obstruction evaluation study provided that all information including items such as maps, blue prints, elevations, etc., are coordinated with each division for evaluation. In the automated obstruction evaluation case screen, the highest site elevation, or finished floor elevation should be recorded as the site elevation. The tallest point on the structure should be recorded as the above ground elevation, and the closest point of the structure to the closest runway should be recorded as the latitude/longitude. This information would be considered worst case and should be used for recording purposes. For analysis purposes, it may be necessary to use specific information for each point of interest.

b. Changes to marking/lighting recommendations.

c. Revisions or corrections to coordinates or elevations after the study has been verified and made available for evaluation by other FAA divisions. This would include revisions or corrections to a notice received from the sponsor; revisions or corrections made necessary by the FAA due to mistakes; revisions or corrections as a result of "as-built" surveys; and revisions or corrections due to receipt of supplemental notice.

d. Aeronautical studies that supercede previous studies shall include a reference to the previous aeronautical study number.

6-1-3. STUDY OF EXISTING STRUCTURES

a. The authority for conducting aeronautical studies of existing structures is contained in Section 40103, Section 44718, and part 77. These studies are conducted when deemed necessary by the FAA to determine the physical or electromagnetic effect on the use of the navigable airspace and air navigation facilities. Obstruction evaluation studies may be initiated as a result of:

1. Information received or a situation observed (e.g., structures reported by flight inspection crews).

2. A request for a study from another FAA component, another agency, or a person with a valid interest in the matter.

3. A notice received under the provisions of part 77 for proposed construction or alteration that has already been started and, therefore, must be considered an existing structure.

4. A structure blocking all or portions of runways, taxiways, or traffic patterns from being seen from an airport traffic control tower.

5. Other situations for which such an aeronautical study would be appropriate.

b. Situations that may require obstruction evaluation of existing structures include, but are not limited to:

1. Determining the effect of a change in aeronautical procedures.

2. Determining the effect of a proposed runway construction, extension, or realignment.

3. Determining the need for providing technical assistance in the design and development of airports.

4. Determining whether the FAA should recommend that an existing structure be altered or removed.

5. Determining whether the FAA should recommend that an existing structure be made conspicuous by marking and/or lighting in accordance with current standards.

6. Determining whether the marking and/or lighting display on an existing structure can be removed or reduced without adversely affecting aviation safety or should be increased to more effectively make its presence known to airmen.

7. Determining whether an existing structure has an electromagnetic effect upon an air navigation or communications facility, or obstructs the required line of sight from an airport traffic control tower.

8. Providing recommendations to FCC concerning dismantling abandoned antenna structures.

9. Providing technical assistance or information to a person, or government organization (Federal, state or local) expressing an interest in the structure and the FAA's responsibility associated with the structure's effect on the safe and efficient use of the navigable airspace.

c. Conduct an aeronautical study for an existing structure in the same manner as proposed structures except as specifically noted in this order.

6-1-4. PROPOSALS UNDER CONSTRUCTION

A proposal for which construction has already started shall be studied as an existing structure. Construction is considered to have started if actual structural work has begun such as the laying of a foundation but not including excavation.

6-1-5. STRUCTURES EXCEEDING 2,000 FEET

Any proposed structure that would exceed a height of 2,000 feet above ground is presumed to have a substantial adverse effect upon the safe and efficient use of navigable airspace and shall be determined to be a hazard to air navigation unless the sponsor, at the time of filing, makes a clear and compelling showing to the contrary.

a. Notices proposing a structure greater than 2,000 feet in height above the ground that are accompanied with the detailed graphic required in Section 77.17(c) shall be processed in the normal manner with one exception. Send one copy of the notice and a detailed graphic to ATA-400 for coordination prior to the issuance of a determination.

b. Notices received without the detailed graphic shall be responded to with a determination stating that the proposed structure is presumed to be, inherently, a hazard to air navigation and the sponsor has the burden of overcoming this presumption in accordance with Section 77.17(c).

6-1-6. FEASIBILITY STUDIES

a. A feasibility study is a limited aeronautical review based on very broad, estimated, or general information supplied for the structure. The study usually addresses only certain issues; e.g., feasibility of height at a general location, feasibility of frequency and power at a general location.

b. Requests for feasibility studies should be accommodated to the extent existing resources and workloads allow. The need for coordination with other divisions will be based on the type of information supplied for the structure.

c. A feasibility study shall result in a report rather than an official determination.

6-1-7. TOWER OWNERSHIP

While the FAA must maintain a means of contacting parties responsible for filing FAA Form 7460-2, it is not responsible for tracking changes in tower ownership. The FCC antenna structure registration program is specifically intended to register and maintain current files with regards to ownership of antenna structures. Therefore, if the FAA receives ownership changes it shall not make those corrections to issued determinations. However, the ownership change should be noted in the automated and/or manual case file. Additionally, request that the sponsor notify the FCC, and, for assurance, forward a copy of the change to the FCC.

6-1-8. INFORMAL AIRSPACE MEETINGS

Informal airspace meetings may be held with interested parties to discuss the obstruction evaluation study and to gather additional facts or information relevant to the study.

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Section 2. INITIAL PROCESSING/VERIFICATION

6-2-1. INITIAL REVIEW

a. Prior to assigning an aeronautical study number, review the submission for completeness. The following information should be considered:

1. Ground elevation of the site (site elevation);

2. Above ground elevation of the structure (AGL);

3. Latitude and longitude of the structure; and

4. A 7.5-Minute U.S.G.S. Topographic Map (Quadrangle Chart) depicting the site of the structure.

b. If the submission package contains all of the required information, assign an aeronautical study number, enter the data into the OE/AAA automation program, and initiate an obstruction evaluation study. Exceptions may be made for emergency situations in accordance with 77.17(d).

c. If the submission package does not contain the required information, it may be returned to the sponsor with a clear explanation and a request for the sponsor to provide the information necessary to initiate the study.

d. For submission packages pertaining to structures that may be time critical, an effort should be made to obtain the required information by telephone. Information received by telephone conversation should be recorded in a written memo to the file. Also, request the sponsor to provide the same information in writing.

6-2-2. VERIFICATION

a. The regional ATD shall verify each obstruction evaluation case to ensure that the submitted site elevation and coordinates appear to be correct and that all necessary information has been included. Verification shall include, as a minimum, the following actions:

1. Compare the submitted site depiction to the submitted coordinates when plotted;

2. Compare the submitted site elevation to the ground contour elevations in the area of the submitted coordinates when plotted;

3. If a survey is submitted, compare the information contained on the survey, with the submitted information and the site as plotted;

4. If the submission involves an existing structure, compare the submitted information to the digital obstacle file, with the previous aeronautical study (if any), and possibly the FCC tower registration information;

5. Ensure that the submission provides a complete description and clearly explains the reason for submission. The submission should include sufficient information to allow each division to accomplish its specialized portion of the obstruction evaluation;

6. If the submission involves a structure that would normally radiate frequencies, ensure that the frequencies and effective radiated power are included;

7. If the submission involves a structure over 200 feet AGL, ensure marking and/or lighting preferences are part of the submission. Sponsors shall be required to specifically request the type of marking and/or lighting they desire when submitting FAA Form 7460-1. They should be encouraged to become familiar with the different type of lighting systems available. The sponsor should obtain information about these systems from the manufacturers. The sponsor can then determine which system best meets his/her needs based on purchase, installation, and maintenance costs. The FAA will consider the sponsor's desired marking and/or lighting system when conducting the aeronautical study.

b. If the submission contains errors, discrepancies, or lacks information, Air Traffic shall request resolution by the sponsor and/or the sponsor's representative. If the sponsor does not resolve the issues within 37 days of the written request, Air Traffic may terminate the aeronautical study.

c. If the submission passes verification and there are no unresolved issues, send a receipt letter to the sponsor and initiate evaluation by other divisions by changing the status in the OE/AAA automation program to "WRK."

NOTE-
It is imperative that all data in the automated OE case file is reviewed and verified for accuracy before proceeding to "Division Coordination." Any correction or change to the heights and/or coordinates after the divisions begin evaluation shall require initiating a new aeronautical study.

6-2-3. DIVISION COORDINATION

Each division described in paragraph 5-2-2 shall evaluate all notices of proposed construction or alteration received regardless of whether notice was required under part 77, except as follows:

NOTE-
For the purpose of division coordination, Frequency Management will be considered separately in addition to Airway Facilities (AF). It should also be noted that Frequency Management responds separately.

a. Side Mounted Non-Microwave Antennas - Airports, Flight Standards, Airway Facilities and the military normally are not required to review OE cases that involve the addition of antennas to a previously studied structure that does not increase in overall height of the structure. Frequency Management will continue to evaluate these cases. The FAA must have previously studied the structure and the data of the present case and it must exactly match the data of the previously studied case.

b. Side Mounted Microwave Dishes - Airports, Flight Standards, and the military normally shall not be required to review OE cases that involve the addition of microwave dishes to a structure that does not increase in overall height. Frequency Management will continue to evaluate these cases. The FAA must have previously studied the structure and the data of the present case and it must exactly match the data of the previously studied case.

c. Marking and Lighting Changes - Airports, Flight Standards, Flight Procedures, Frequency Management, Airway Facilities, and the military normally are not required to review OE cases which involve only marking and lighting changes. The FAA must have previously studied the structure and the data of the present case and it must exactly match the data of the prior case.

d. Temporary Structures - Airports, Flight Standards, Frequency Management, and the military normally shall not be required to review OE cases which involve temporary structures of a six month or less duration. All appropriate divisions shall review temporary structures of a longer duration.

e. Flight Procedures normally shall not be required to review OE cases that are beyond 14 nautical miles from the airport reference point of the nearest public-use or military airport and the height of the structure is not more than 200 feet above ground level.

f. Airports normally shall not be required to review OE cases that are beyond three nautical miles from the airport reference point of the nearest public-use or military airport.

g. Flight Standards shall review OE cases that are circularized for public comment.

h. Frequency Management normally shall only be required to review OE cases that involve transmitting frequencies.

6-2-4. ADDITIONAL COORDINATION

Air Traffic may request any division to review an OE case on a case-by-case basis. For instance, Flight Standards should be requested to review a marking and lighting change, the military should be requested to review a temporary structure if the closest airport is a military base, or FM should be requested to review a temporary structure if it radiates a frequency.

Section 3. IDENTIFYING/EVALUATING AERONAUTICAL EFFECT

6-3-1. POLICY

a. The prime objective of the FAA in conducting OE studies is to ensure the safety of air navigation, and the efficient utilization of navigable airspace by aircraft. There are many demands being placed on the use of the navigable airspace. However, when conflicts arise concerning a structure being studied, the FAA emphasizes the need for conserving the navigable airspace for aircraft; preserving the integrity of the national airspace system; and protecting air navigation facilities from either electromagnetic or physical encroachments that would preclude normal operation.

b. In the case of such a conflicting demand for the airspace by a proposed construction or alteration, the first consideration should be given to altering the proposal.

c. In the case of an existing structure, first consideration should be given to adjusting the aviation procedures to accommodate the structure. This does not preclude issuing a "Determination Of Hazard To Air Navigation" on an existing structure, when the needed adjustment of aviation procedures could not be accomplished without a substantial adverse effect on aeronautical operations. In all cases, consideration should be given to all known plans on file received by the end of the public comment period or before issuance of a determination if the case was not circularized.

6-3-2. SCOPE

Part 77 establishes standards for determining obstructions to air navigation. A structure that exceeds one or more of these standards is presumed to be a hazard to air navigation unless the obstruction evaluation study determines otherwise. An obstruction evaluation study shall identify:

a. The effect the proposal would have:

1. On existing and proposed public-use and military airports and/or aeronautical facilities.

2. On existing and proposed visual flight rule (VFR)/instrument flight rule (IFR) aeronautical departures; arrival and en route operations; procedures; and minimum flight altitudes.

3. Regarding physical, electromagnetic, or line-of-sight interference on existing or proposed air navigation, communication, radar, and control systems facilities.

4. On airport capacity, as well as the cumulative impact resulting from the structure when combined with the impact of other existing or proposed structures.

b. Whether marking and/or lighting is necessary.

6-3-3. DETERMINING ADVERSE EFFECT

A structure is considered to have an adverse aeronautical effect if it first exceeds the obstruction standards of part 77, and/or is found to have a physical or electromagnetic radiation effect on the operation of air navigation facilities. A proposed or existing structure, if not amended, altered, or removed, has an adverse effect if it would:

a. Require a change to an existing or planned IFR minimum flight altitude, a published or special instrument procedure, or an IFR departure procedure for a public-use airport.

b. Require a VFR operation, to change its regular flight course or altitude. This does not apply to VFR military training route (VR) operations conducted under part 137, or operations conducted under a waiver or exemption to the CFR.

c. Restrict the clear view of runways, helipads, taxiways, or traffic patterns from the airport traffic control tower cab.

d. Derogate airport capacity/efficiency.

e. Affect future VFR and/or IFR operations as indicated by plans on file.

f. Affect the usable length of an existing or planned runway.

6-3-4. DETERMINING SIGNIFICANT VOLUME OF ACTIVITY

The type of activity must be considered in reaching a decision on the question of what volume of aeronautical activity is "significant." For example, if one or more aeronautical operations per day would be affected, this would indicate regular and continuing activity, thus a significant volume, no matter what the type of operation. However, an affected instrument procedure or minimum altitude may need to be used only an average of once a week to be considered significant if the procedure is one which serves as the primary procedure under certain conditions.

6-3-5. SUBSTANTIAL ADVERSE EFFECT

A proposed structure would have, or an existing structure has, a substantial adverse effect if it causes electromagnetic interference to the operation of an air navigation facility or the signal used by aircraft, or if there is a combination of:

a. Adverse effect as described in paragraph 6-3-3; and

b. A significant volume of aeronautical operations would be affected, as described in paragraph 6-3-4.

6-3-6. RESPONSIBILITY

The FAA's obstruction evaluation program transcends organizational lines. In order to determine the effect of the structure within the required notice period, each office should forward the results of its evaluation within 15 working days to the regional ATD for further processing. Areas of responsibility are delegated as follows:

a. Regional ATD personnel shall:

1. Identify when the structure exceeds Section 77.23 (a)(1) (see FIG 6-3-1 thru FIG 6-3-8) and apply Section 77.23(b) (see FIG 5-2-4).

2. Identify the effect on existing and planned aeronautical operations, air traffic control procedures, and airport traffic patterns; and make recommendations for mitigating adverse effect including marking and lighting recommendations.

3. Identify when the structure would adversely effect published helicopter route operations, as specified in paragraph 6-3-8 subparagraph e., of this order, and forward the case to Flight Standards.

4. Identify whether obstruction marking/lighting is necessary and recommend the appropriate marking and/or lighting.

5. Identify when negotiations are necessary, and conduct negotiations with the sponsor. This may be done in conjunction with assistance from other division personnel when their subject expertise is required (e.g., in cases of electromagnetic interference).

6. Identify when circularization is necessary and conduct the required circularization process.

7. Evaluate all valid aeronautical comments received as a result of the circularization, and those received as a result of the division evaluation.

8. Issue the determination (except as noted in paragraph 7-1-2, subparagraph b).

b. Regional Airports Division personnel shall:

1. Verify that the airport/runway database has been reviewed, is correct, and contains all plans on file pertaining to the OE case.

2. Identify the structure's effect on existing and planned airports, or improvements to airports concerning airport design criteria including potential restrictions/impacts on airport operations; capacity; efficiency and development; and recommendations for eliminating adverse effect. Airports Divisions are not required to perform evaluations on OE cases that are further than 3 NM from the Airport Reference Point (ARP) of a public-use or military airport.

3. Determine the effect on the efficient use of airports and the safety of persons and property on the ground. Airports will resist structures and activities that conflict with an airport's planning, design, and/or recommendations from other divisions.

Chapter 7. DETERMINATIONS

Section 1. ISSUING DETERMINATIONS

7-1-1. POLICY

All known aeronautical facts revealed during the obstruction evaluation shall be considered when issuing an official FAA determination. The determination shall be a composite of all comments and findings received from interested FAA offices. Should there be a disagreement in the findings, the disagreement shall be resolved before issuance of a determination. The basis for all determinations shall be on the aeronautical study findings as to the extent of adverse physical or electromagnetic interference effect upon navigable airspace or air navigation facilities. Evidence of adverse effect alone, either physical or electromagnetic, is not sufficient justification for a determination of hazard. However, a finding of a substantial physical or electromagnetic adverse effect normally requires issuance of a determination of hazard.

7-1-2. RESPONSIBILITY

a. The regional ATD is responsible for issuing determinations.

b. However, if any division objects to a structure that does not exceed part 77 obstruction standards or have a physical or electromagnetic interference effect upon navigable airspace or air navigation facilities, the objecting division shall be responsible for issuing the determination. Examples would be:

1. Objections identifying potential airport hazards based on airport design criteria such as a structure within the runway protection zone (RPZ).

2. Objections identifying potential airport hazards such as structures which may not be above ground level (e.g., landfills, retention ponds, and waste recycling areas) but may create an environment that attracts birds and other wildlife.

7-1-3. CONFORMANCE TO POLICY

The FAA office that is responsible for issuing determinations shall ensure that each determination issued conforms to established policies, procedures, and guidelines. Exceptional cases may require special handling, but no determination shall be issued which would be contrary to agency policy until the matter has been coordinated with and approved by the Program Director for Air Traffic Airspace Management, ATA-1.

7-1-4. DETERMINATIONS

Determinations issued by the FAA receive widespread public distribution and review. Therefore, it is essential that each determination issued is consistent in form and content to the extent practicable. To facilitate this and to achieve economy in clerical handling, automated correspondence is available through the OE/AAA automation program and shall be used in lieu of previously approved FAA forms. Determinations shall be issued as follows:

a. Issue a "Does Not Exceed" (automated DNE letter) determination if the structure does not exceed obstruction standards, does not have substantial adverse physical or electromagnetic interference effect upon navigable airspace or air navigation facilities, and would not be a hazard to air navigation.

NOTE-
A determination indicating that No Notice is Required (NNR) is no longer authorized.

b. Issue an "Exceeds But Okay" (automated EBO letter) determination if the structure exceeds obstruction standards but does not result in a substantial adverse effect, circularization was not necessary, and meets one of the following conditions:

1. The structure is temporary;
2. The structure is existing; or
3. The structure involves an alteration with no physical increase in height or change of location such as a proposed decrease in height or proposed side mount.

NOTE-
The significant difference between an EBO determination and a "Determination of No Hazard to Air Navigation" (DNH) is that the EBO determination does not allow for petition rights.

c. Issue a "Determination of Presumed Hazard" (automated DPH letter) if the structure exceeds obstruction standards and/or has an adverse effect upon navigable airspace or air

navigation facilities and resolution or further study is necessary to fully determine the extent of the adverse effect. The DPH facilitates negotiation and is useful in preserving navigable airspace. Normally, the FAA should not automatically initiate further study (including circularization) without a request to do so by the sponsor. The intent of the DPH determination is to stand as a final determination if the sponsor does not respond or if negotiation/resolution is not successful. If negotiation is successful, and resolution is achieved, or further study is completed, an appropriate subsequent determination should be issued.

d. Issue a "Determination of No Hazard" (DNH) if the structure exceeds obstruction standards but does not result in a substantial adverse effect.

e. Issue a "Determination of Hazard" (DOH) if the structure would have or has a substantial adverse effect; negotiations with the sponsor have been unsuccessful in eliminating the substantial adverse effect; and the affected aeronautical operations and/or procedures cannot be adjusted to accommodate the structure without resulting in a substantial adverse effect. The obstruction evaluation may or may not have been circularized.

7-1-5. DETERMINATION CONTENT AND OPTIONS

Use the following items, as appropriate, to ensure that the necessary information is included in each determination:

a. All no hazard determinations shall address or include:

1. FULL DESCRIPTION - A full description of the structure, project, etc., including all submitted frequencies and ERP shall be included. Use exact information to clearly identify the nature of the project (e.g., microwave antenna tower; FM, AM, or TV antenna tower; suspension bridge; four-stack power plant; etc.).

2. LATITUDE, LONGITUDE, AND HEIGHT - Specify the latitude, longitude, and height(s) of each structure. When an obstruction evaluation study concerns an array of antennas or other multiple-type structures, specific information on each structure should be included.

3. MARKING AND/OR LIGHTING - A marking and/or lighting recommendation shall be a condition of the determination when aeronautical study discloses that the marking and/or lighting are necessary for aviation safety.

(a) If the OE notice was for an existing structure with no physical alteration to height or location (e.g., a side mount or an editorial correction to coordinates and/or elevations due to more accurate data), and the structure was previously studied, the recommended marking and/or lighting may be in accordance with the prior study.

(b) If the notice is for a new structure, a physical alteration (height/location) to an existing structure, or an existing structure that did not involve a physical alteration but was not previously studied, the recommended marking and/or lighting shall be in accordance with appropriate chapters of the current AC 70/7460-1, Obstruction Marking and Lighting.

(c) If the OE notice was for a change in marking and/or lighting of a prior study whether the structure exists or not yet built, the recommended marking and/or lighting shall be in accordance with appropriate chapters of the current AC 70/7460- 1.

(1) If it is an existing FCC-licensed structure, and the requested marking and/or lighting change is recommended, notify the sponsor to apply to the FCC for permission to make the change. Use the following specific language: "If the structure is subject to the authority of the Federal Communications Commission, a copy of this letter shall be forwarded to them and application should be made to the FCC for permission to change the marking and/or lighting as requested." This language is available in the automated letters.

(2) If the marking and/or lighting change involves high intensity white obstruction lights on an FCC-licensed structure, the sponsor shall be notified that the FCC requires an environmental assessment. Use the following specific language: "FCC licensees are required to file an environmental assessment with the Commission when seeking authorization for the use of the high intensity flashing white lighting system on structures located in residential neighborhoods, as defined by the applicable zoning law."

Section 2. PETITION PROCESSING

9-2-1. ADMINISTRATIVE PROCESSING

Upon receiving a valid petition, ATA-400 shall:

a. Assign an OE docket number to the petition composed of the last two digits of the calendar year in which the assignment is made, the symbol "AWA" to indicate Washington Headquarters, the symbol "OE" to indicate obstruction evaluation, and a serial number. Serial numbers run consecutively within each calendar year.

b. If the petition does not meet the criteria in part 77, notify the petitioner of such.

c. If the petition does meet the criteria in part 77, notify the sponsor, the petitioner, the FAA region concerned, and, if appropriate, the FCC that the determination is not and will not become final pending disposition of the petition.

d. Distribute a copy of a valid petition and the associated determination to the Spectrum Assignment and Engineering Division, ASR-100, Flight Procedures Standards Branch, AFS-410, Design and Operations Criteria Division, AAS-100; and the National Flight Procedures Office, AVN-100 for the examination.

9-2-2. RECOMMENDATIONS

Based upon the results of the examination of the petition and further coordination with ASR-100, AFS-420, AAS-100, AVN-100, and, as appropriate, AGC, ATA-400 shall recommend to ATA-1 whether to grant or day the review and if granted, whether the review should be on the basis of written materials or public hearing, and whether the review should include a public comment period.

9-2-3. DISTRIBUTION OF NOTICES OF GRANT REVIEW

ATA-400 shall distribute ATA-1's decision in writing to the petitioner, the sponsor, interested parties of record, and the FCC, if appropriate. A notice of grant of review shall advise whether the review will be based upon written materials or a public hearing.

9-2-4. REVIEW BASED ON WRITTEN MATERIALS

When a review is granted on the basis of written materials, the notice of review shall describe the specific issues that are to be considered and may solicit written comments from interested parties. The review shall include an analysis of all pertinent information including the Regional ATD manager's recommendation report, the aeronautical study case file, information received from briefings, submissions by interested parties, and other relevant facts obtained from other knowledgeable sources.

9-2-5. REGIONAL PARTICIPATION

When a discretionary review is granted, ATA-400 shall request the Manager of the appropriate regional ATD to submit a written summary report and recommendation in accordance with Section 77.37(c)(1). The summary report and recommendation shall include the following:

a. The original or certified true copy of the aeronautical study case file.

b. A full description of structure/project.

c. The obstruction standards exceeded and to what extent.

d. A narrative summary of the aeronautical study including, as appropriate, information and data of the effect on:

1. Airports.
2. Airport approaches.
3. Runway Protection Zones.
4. Airport traffic patterns.
5. Approach slope ratios.
6. Departure slope ratios.
7. Instrument approach procedures.
8. Instrument departure procedures.
9. Transition procedures.
10. Radar procedures.
11. Airway and approved off-airway routes.

12. VFR.

13. Any related airspace actions.

14. Any other necessary information.

e. A recommendation as to the disposition of the petition (e.g., to affirm, revise, or reverse the determination).

f. Checklist for attachments – Include, as applicable, but do not limit to:

1. FAA Form 7460-1 or other form of notice.

2. Copies of all correspondence sent to the sponsor.

3. Public notice of the aeronautical study.

4. Comments received as a result of circularization for public comment.

5. Notification of informal meetings.

6. Summary of informal meetings.

7. Instrument approach charts.

8. Local airport traffic pattern data.

9. Instrument departure procedures.

10. FAA Form 5010-1, FAA Master Airport Record.

11. FAA Form 8260 series.

12. Letters of agreement.

13. Operations letters.

14. Any other information requested.

9-2-6. FINAL DECISION

Based on a review of written materials received or evidence gathered during a public hearing, ATA-400 shall draft and coordinate a document for ATA-1's signature that will either affirm, reverse, or revise the regional determination.

9-2-7. DISTRIBUTION OF DECISION

Copies of the final decision shall be distributed by ATA-400 to the petitioner(s), sponsor, interested parties of record, regional ATD, and FCC, if appropriate.

Part 5. SPECIAL USE AIRSPACE

Chapter 21. GENERAL

Section 1. POLICY

21-1-1. PURPOSE

In addition to the policy guidelines and procedures detailed in part 1 of this order, this part prescribes specific policies and procedures for handling special use airspace (SUA) cases.

21-1-2. SCOPE

The primary purpose of the SUA program is to establish/designate airspace in the interest of National Defense, security and/or welfare. Charted SUA identifies to other airspace users where these activities occur.

21-1-3. DEFINITION AND TYPES

a. SUA is airspace of defined dimensions wherein activities must be confined because of their nature, or wherein limitations may be imposed upon aircraft operations that are not a part of those activities.

b. The types of SUA areas are Prohibited Areas, Restricted Areas, Military Operations Areas (MOA), Warning Areas, Alert Areas, Controlled Firing Areas (CFA), and National Security Areas (NSA).

21-1-4. CATEGORIES

There are two categories of SUA: regulatory (rulemaking) and other than regulatory (nonrulemaking). Prohibited Areas and Restricted Areas are rulemaking actions that are implemented by a formal amendment to part 73. MOAs, Warning Areas, Alert Areas, CFAs, and NSAs are nonrulemaking actions.

21-1-5. SUA APPROVAL AUTHORITY

FAA Headquarters is the final approval authority for all permanent and temporary SUA, except CFA's. CFA approval authority is delegated to the regional ATD. The regional ATD shall forward those proposals recommended for approval (except CFA) to FAA Headquarters for a final determination.

NOTE-
Final approval of Warning Areas is shared with other agencies per Executive Order 10854. Warning Area proposals, except controlling or using agency changes, must be coordinated with the Department of State and the Department of Defense for concurrence. ATA-400 is responsible for accomplishing this coordination.

21-1-6. MINIMUM NUMBERS AND VOLUME

The dimensions and times of use of SUA shall be the minimum required for containing the proposed activities, including safety zones required by military authority. When it is determined that a specified SUA area is no longer required, the using agency, or the appropriate military authority, shall inform the regional ATD that action may be initiated to return the airspace to the NAS.

21-1-7. OPTIMUM USE OF AIRSPACE

a. To ensure the optimum use of airspace, using agencies shall, where mission requirements permit, make their assigned SUA available for the activities of other military units on a shared-use basis.

b. SUA should be located to impose minimum impact on nonparticipating aircraft and ATC operations. This should be balanced with consideration of the proponent's requirements. To the extent practical, SUA should be located to avoid airways/jet routes, major terminal areas, and known high volume VFR routes.

c. Consider subdividing large SUA areas, where feasible, in order to facilitate the real-time release of the airspace when activation of the entire area is not required by the user.

NOTE-
Policies concerning airspace utilization for military operations are contained in Order 7610.4, Special Military Operations, Chapter 9.

21-1-8. JOINT-USE POLICY

a. Under the "joint-use" concept, SUA is released to the controlling agency and becomes available for access by nonparticipating aircraft during periods when the airspace is not needed by the using agency for its designated purpose.

b. Restricted areas, warning areas, and MOAs shall be designated as "joint-use" unless it is demonstrated that this would result in derogation to the using agency's mission. For certain SUA areas, joint use may be impractical because of the area's small size, geographic location, or high

level of use in such areas. In these cases, the airspace proposal package must include specific justification of why joint-use is not appropriate.

c. Joint-use does not apply to prohibited areas. Alert areas and CFAs are essentially joint-use because nonparticipating aircraft may transit these areas without limitation.

d. Joint-use procedures shall be specified in a joint use "Letter of Procedure" or "Letter of Agreement" between the using agency and the controlling agency. These letters should include provisions for the real-time activation/deactivation of the airspace, where such capabilities exist. They should also provide for the timely notification to the controlling agency when the scheduled activity has changed, been canceled, or was completed for the day.

e. Using agencies shall ensure that joint-use SUA is returned to the controlling agency during periods when the airspace is not needed nor being used for its designated purpose.

21-1-9. ENVIRONMENTAL ANALYSIS

a. SUA actions, except as listed in paragraph b. below, are subject to environmental impact analysis in accordance with the National Environmental Policy Act of 1969 (NEPA). Guidance for the environmental analysis of SUA proposals is contained in FAA Order 1050.1, Policies for Considering Environmental Impacts, other relevant FAA directives; the FAA/DoD Memorandum of Understanding Concerning Special Use Airspace Environmental Assessment; and other applicable regulations and statutes.

b. Prohibited area and alert area designations are actions that are neither permissive nor enabling. As such, environmental assessments or statements are not required when designating these areas (see FAA Order 1050.1).

21-1-10. CONTROLLING AGENCY

The controlling agency is the FAA ATC facility that exercises control of the airspace when an SUA area is not activated. A military ATC facility may be assigned as the controlling agency, subject to the concurrence of the regional ATD and the concerned ARTCC. A controlling agency shall be designated for each joint-use SUA area.

21-1-11. USING AGENCY

a. The using agency is the military unit or other organization whose activity established the requirement for the SUA. The using agency is responsible for ensuring that:

1. The airspace is used only for its designated purpose.

2. Proper scheduling procedures are established and utilized.

3. The controlling agency is kept informed of changes in scheduled activity, to include the completion of activities for the day.

4. A point of contact is made available to enable the controlling agency to verify schedules, and coordinate access for emergencies, weather diversions, etc.

REFERENCE-
Order 7610.4, Chapter 9, Military Operations Requirements.

b. Restricted area and MOA using agencies are responsible for submitting Restricted Area/MOA Annual Utilization Reports in accordance with Section 7 of this chapter.

c. An ATC facility may be designated as the using agency for joint-use areas when that facility has been granted priority for use of the airspace in a joint-use letter of procedure or letter of agreement.

21-1-12. WAIVERS

The establishment of SUA does not, in itself, waive compliance with any part of the Code of Federal Regulations. DoD has been granted a number of waivers, exemptions, and authorizations to accomplish specific missions. Information about current waivers, exemptions, and authorizations granted for military operations may be obtained from FAA Headquarters, Airspace and Rules Division, ATA-400 or the Office of Rulemaking (ARM).

21-1-13. PUBLIC NOTICE PROCEDURES

Public notice procedures invite the public to comment on the impact of SUA proposals on the safe and efficient use of the navigable airspace. In addition to the public notice procedures described in chapter 2 of this order, SUA proposals are subject to the following:

a. All nonregulatory SUA proposals shall be circularized, and an NPRM shall be issued for all

Chapter 28. NATIONAL SECURITY AREAS

Section 1. GENERAL

28-1-1. DEFINITION

A National Security Area (NSA) consists of airspace of defined vertical and lateral dimensions established at locations where there is a requirement for increased security of ground facilities. Pilots are requested to voluntarily avoid flying through an NSA. When it is necessary to provide a greater level of security, flight in an NSA may be temporarily prohibited pursuant to the provisions of 14 CFR 99.7, Special Security Instructions. Where there is a need to restrict flight operations in an NSA, the required restriction will be issued by ATA-400 and disseminated via NOTAM.

28-1-2. PURPOSE

An NSA is designated to enhance national security and protect national assets.

28-1-3. CRITERIA

An NSA should be considered when a need to protect national assets or a need to protect an area in the interest of national security is identified

28-1-4. DIMENSIONS

There are no standard dimensions for an NSA. The dimensions should be the minimum to promote the protection of the national asset or area identified.

28-1-5. CHARTING

NSAs shall be depicted on aeronautical charts to inform users of the NAS regarding their vertical and lateral dimensions. Additionally, a note shall be depicted on the chart adjacent to the NSA stating the requested avoidance altitude.

28-1-6. EXPIRATION, SUSPENSION, OR REVOCATION

An NSA does not expire. However, an NSA may be suspended or revoked at the discretion of ATA-400.

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Section 2. PROCESSING

28-2-1. NSA PROPOSALS

NSA proposals shall contain all applicable items listed in chapter 21, section 3, of this order. References to environmental analysis, ATCAAs, controlling agency, using agency, and times of use are not required.

28-2-2. SUBMISSION OF PROPOSALS

a. An NSA proposal may be initiated by any agency of the Federal government. Send any NSA proposal to the regional ATD at least 6 months prior to the desired effective date. Such requests shall include sufficient justification for the requested action.

b. Requests should be sent to the regional ATD responsible for the affected area.

28-2-3. REGIONAL PROCESSING

The regional ATD shall evaluate the effect of proposals on aircraft operations in the NAS as specified in chapter 21. The ATD shall then forward their recommendation and justification to ATA-400 for processing.

28-2-4. ATA-400 PROCESSING

Upon receipt of an NSA proposal, ATA-400 shall:

a. Review the proposal for justification and impact on aircraft operations in the NAS.

b. Coordinate the request as appropriate.

c. Approve or disapprove the request.

d. Forward the approved request to ATA-100 for charting.

e. Take action to suspend or revoke the NSA when it is no longer justified.

f. Take appropriate action to inform users of the designation, suspension, or revocation of the NSA.

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Part 6. MISCELLANEOUS PROCEDURES

Chapter 29. OUTDOOR LASER OPERATIONS

Section 1. GENERAL

29-1-1. PURPOSE

This chapter prescribes policy, responsibilities, and guidelines for processing outdoor laser operation requests and determining the potential effect of outdoor laser activities on users of the NAS.

29-1-2. AUTHORITY

a. Title 49 of the U.S. Code (49 U.S.C.) Section 40103 gives the Administrator the authority to regulate, control, develop plans for, and formulate policies with respect to the use of the navigable airspace.

b. Regulatory authority for laser light products has been delegated to the Food and Drug Administration (FDA). Product regulations are detailed in 21 CFR part 1010, Performance Standards for Electronic Products, and part 1040, Performance Standards for Light Emitting Products.

29-1-3. POLICY

a. Determinations shall be based on the findings of an aeronautical review.

b. Regional offices shall conduct an aeronautical review of all laser operations to be performed in the NAS to ensure that these types of operations will not have a detrimental effect on aircraft operations. Requests should be evaluated by the region having jurisdiction over the airspace and coordinated, if necessary, with the affected facility.

c. Full consideration shall be given to national defense requirements, commercial uses, and general aviation operations that have the public right of "freedom of transit" through the NAS.

d. Accordingly, while a sincere effort shall be made to negotiate equitable solutions to conflicts over the use for non-aviation purposes, preservation of the navigable airspace for aviation must receive primary emphasis.

29-1-4. RESPONSIBILITIES

a. The regional ATD or designee is responsible for evaluating and determining the effect of outdoor laser operations on users of the navigable airspace.

b. Flight Standards (AFS) is responsible for providing information regarding activities that have the potential effect placed upon the pilot in the performance of his duties.

c. Aviation Medicine is responsible for providing information regarding the potential effects of laser lights on pilot vision.

29-1-5. DEFINITIONS

a. Afterimage - A reverse contrast shadow image left in the visual field after an exposure to a bright light that may be distracting and disruptive, and may persist for several minutes.

b. Center for Devices and Radiological Health (CDRH) - An office of the FDA concerned with enforcing compliance with the Federal requirements for laser products including laser light shows.

c. Demonstration - Any laser product designed or intended for purposes of visual display of laser beams, for artistic composition, entertainment, and/or advertising display (Reference 21 CFR 1040.10(b) 13).

d. Divergence - The increase in diameter of the laser beam with distance from the exit aperture (sometimes referred to as beam spread).

e. Flashblindness – Generally, a temporary visual interference effect that persists after the source of illumination has ceased.

f. Flight Safe Level - An estimate of the maximum exposure of radiant light energy emission (irradiance value) allowed to illuminate an aircraft within specific flight zones.

g. Flight Zones - Airspace areas specifically intended to mitigate the potential hazardous effect of laser emissions. There are several

types of flight free zones which may not be contiguous or concentric. See FIG 29-1-1. FIG 29-1-2, and FIG 29-1-3.

h. Flight Zone Exposure Distance - The maximum distance from the laser system beyond which the laser beams irradiance level does not exceed a specific level:

1. Laser Free Zone - 50nW/cm²;

2. Critical Zone - 5μW/cm²;

3. Sensitive Zone - 100μW/cm².

i. Irradiance – Irradiance is a means of expressing the intensity of the beam. Generally, the power per unit area expressed in watts per centimeter squared.

j. Joule (J) – The international system unit of energy. One joule equals one watt times one second.

k. Laser - An acronym for light amplification by stimulated emission of radiation. A laser is a device that produces an intense, directional, coherent beam of visible or invisible light.

1. Continuous Wave (CW) The output of a laser which is operated in a continuous duration rather than a pulsed mode.

2. Repetitive Pulsed (RP) A laser with multiple pulses of radiant energy occurring in a sequence.

l. Laser Manufacturer – A term that refers to persons who make laser products, including those who are engaged in the business of design, assembly, or presentation of a laser light show.

m. Laser Operator - A knowledgeable person present during laser operation who has been given authority to operate the laser system in compliance with applicable safety standards, subject to recommendations of the laser safety officer.

n. Laser Safety Officer (LSO) - Anyone who has authority to monitor and enforce the control of laser hazards and affect the knowledgeable evaluation and control of laser hazards.

o. Laser Safety Observer - Anyone who is responsible for monitoring the safe operation of a laser and can affect termination of the laser emission in the event an unsafe condition is imminent.

p. Local Laser Working Group (LLWG) - A group that, when necessary, is convened to assist the regional ATD in evaluating the potential effect of laser emissions on aircraft operators in the local vicinity of the proposed laser activity.

q. Maximum Permissible Exposure (MPE) - The level of laser radiation to which a person may be exposed without hazardous effect or adverse biological change in the eye or skin. In general, MPE is expressed as mW/cm² or mJ/cm².

r. Milliradian (mrad) - A measure of angle used for beam divergence.

s. Nominal Ocular Hazard Distance (NOHD) - The maximum distance from the laser system beyond which the laser-beam irradiance does not exceed the MPE for that laser.

t. Radiant Exposure - A means of expressing the intensity of the beam. This is generally expressed as J/cm².

u. Reflected Beams -

1. Diffuse - Change of the spatial distribution of a beam of radiation when it is reflected in many directions by a surface or by a medium. Some examples of this are flat finish paints or rough surfaces.

2. Specular - A mirror-like reflection that usually maintains the directional characteristics of the beam.

v. Terminated Beam - An output from the laser projector that enters navigable airspace that is confined by an object that blocks the beam or prohibits the continuation of the beam at levels above the applicable flight safe level.

w. Unterminated Beam - A laser beam that is directed or reflected into the navigable airspace.

x. Variance - Permission from FDA for a laser manufacturer and/or operator to deviate from one or more requirements of 21 CFR 1040 when alternate steps are taken to provide equivalent level of safety.

y. Watt - A unit of measurement associated with power output. Often the wattage of a laser system is prefixed with milli (mW), micro (μW), or nano (nW). One watt is one joule per second.

Multiple Runway
Laser Free Zone

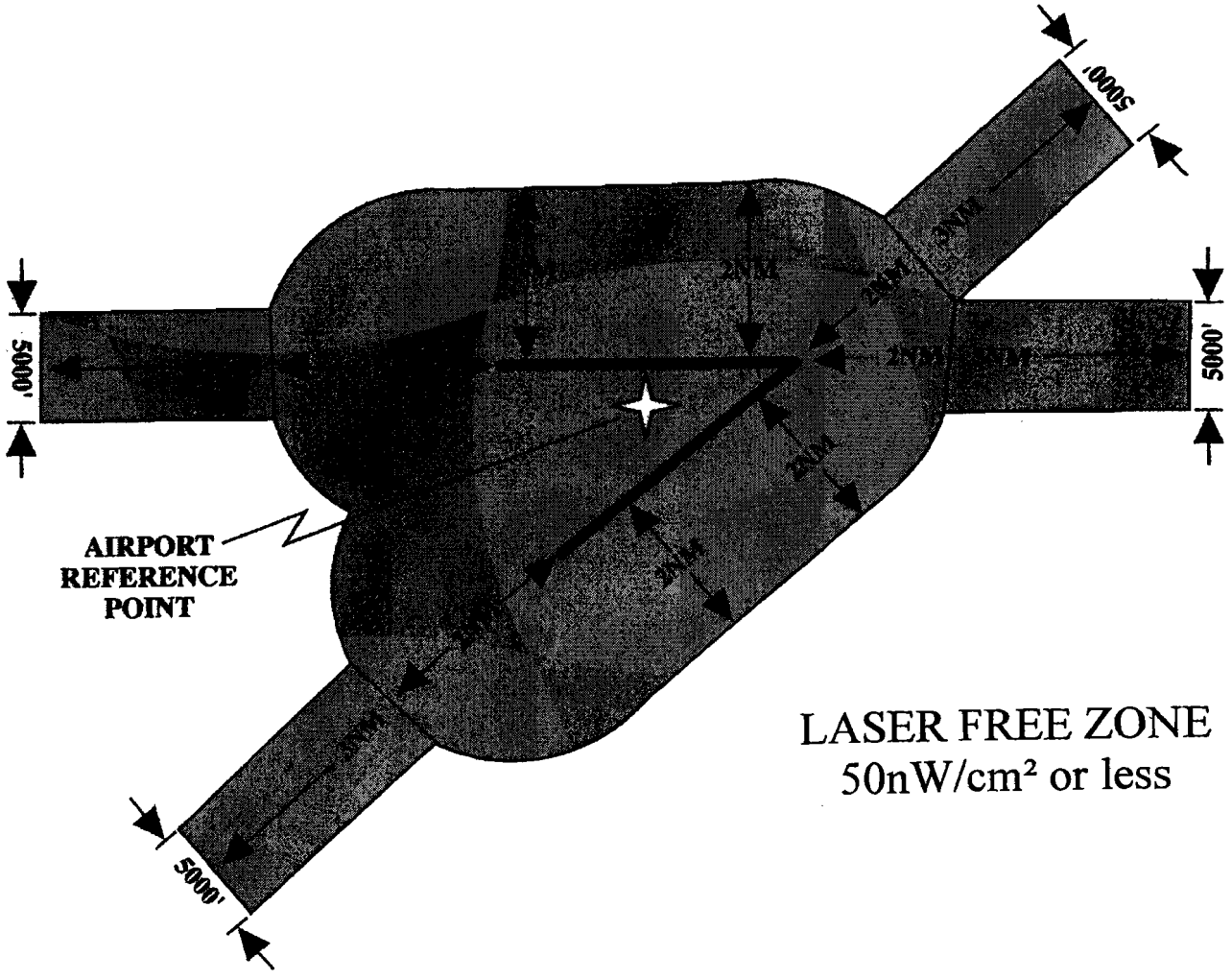
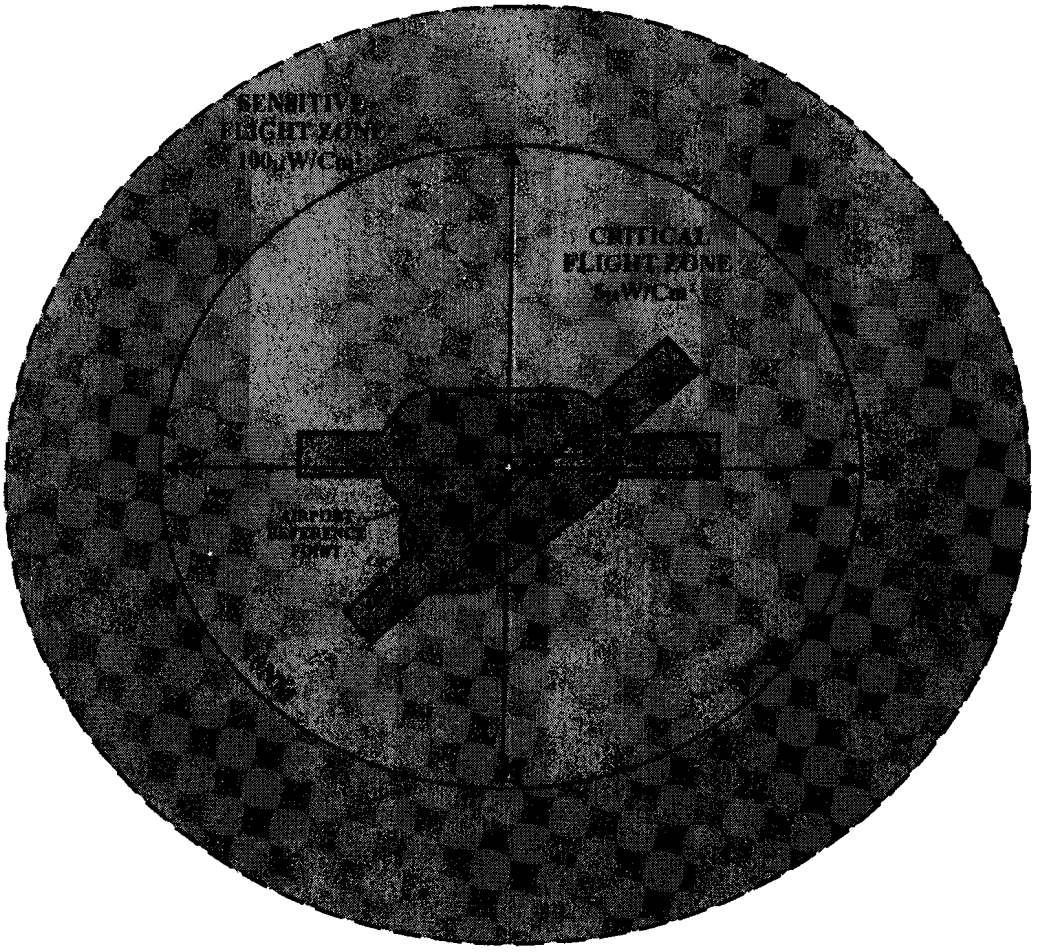


FIG 29-1-1

AIRSPACE FLIGHT ZONES



1. Laser Free Zone (LFZ): Airspace in the immediate proximity of the airport, up to and including 2,000 feet AGL, extending 2 NM in all directions measured from the runway centerline. Additionally, the LFZ includes a 3 NM extension, 2,500 feet each side of the extended runway centerline, up to 2,000 feet AGL of each useable runway surface. The level of laser light is restricted to a level that should not cause any visual disruption.

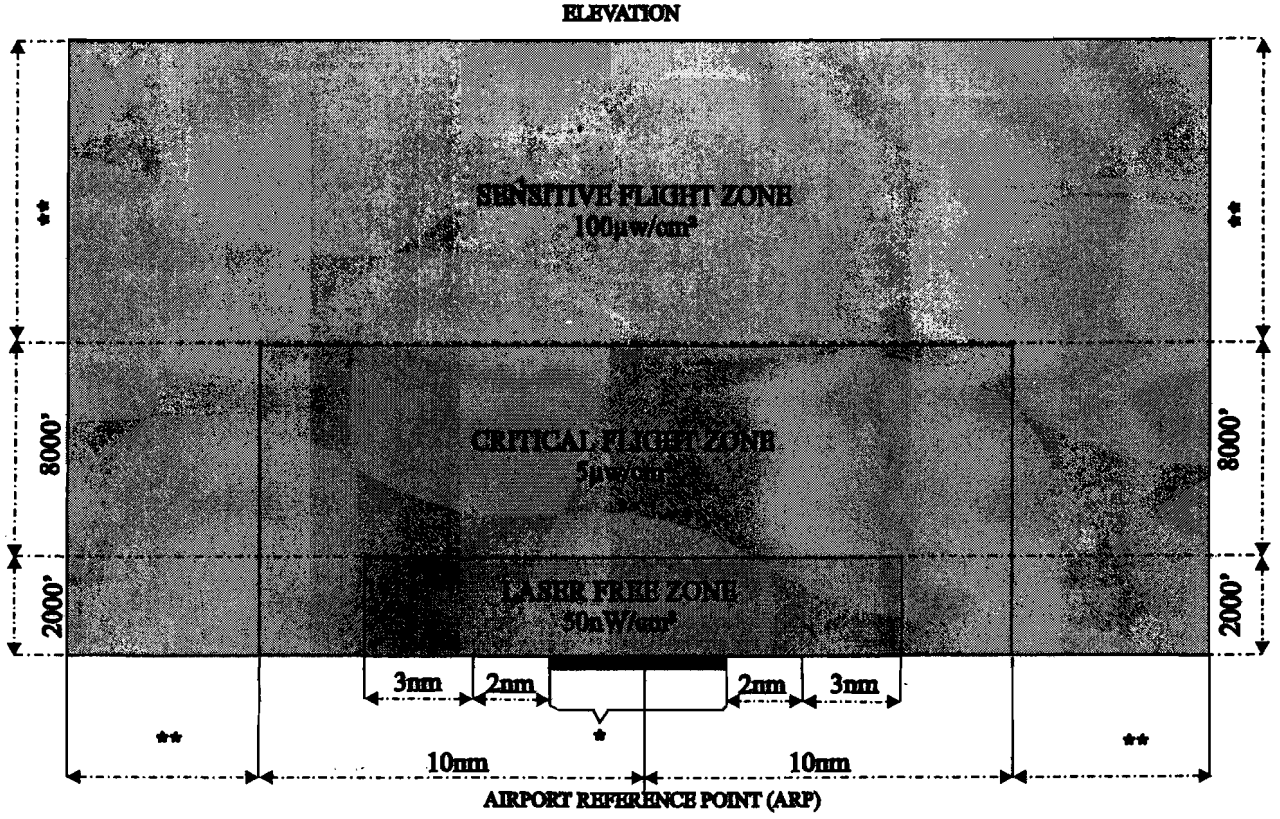
2. Critical Flight Zone (CFZ): Airspace within a 10 NM radius of the Airport Reference Point (ARP), up to and including 10,000 feet AGL, where the level of laser light is restricted to avoid glare effects, afterimage, or flashblindness.

3. Sensitive Flight Zone (SFZ): Airspace outside the Critical Flight Zone(s) that authorities (e.g., FAA, local departments of aviation, military, etc.) have identified that must be protected from flashblindness or afterimage effects.

4. Normal Flight Zone (NFZ): Airspace not defined by the Laser Free, Critical, or Sensitive Flight Zones.

FIG 29-1-2

AIRSPACE FLIGHT ZONES



* *Runway length varies per airport. AGL is based on published airport elevation.*
** *To be determined by regional evaluation and/or local airport operations.*

FIG 29-1-3

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Section 2. EVALUATING AERONAUTICAL EFFECT

29-2-1. AERONAUTICAL REVIEW

a. At a minimum the following items shall be studied as part of any aeronautical review:

1. Location of the proposed operation.

2. Aircraft operations affected by the proposed operation.

3. Air traffic flows in the proposed area of the operation.

4. ATC facility having control over the affected airspace.

5. As part of the review, plot any effected airports "LFZ, CFZ, and SFZ." In addition, evaluate any control measures which may mitigate the effects.

NOTE-
The LFZ, CFZ, and SFZ need only be considered for visible laser systems.

6. The irradiance levels listed below shall be adhered to when evaluating laser activities in close proximity to an airport. In addition, laser light shall not be allowed to enter these zones if irradiance values exceed these limits.

(a) A laser-free zone is equal to or less than 50 nW/cm^2.

(b) A critical flight zone is equal to or less than 5 $\mu W/cm^2$.

(c) A sensitive flight zone is equal to or less than 100 $\mu W/cm^2$.

(d) A normal flight zone is equal to or less than the MPE.

EXCEPTION-
"When control measures (i.e. visual observers) mitigate any issues raised by the aeronautical review, irradiance levels may exceed these numbers."

b. Consult FDA/CDRH personnel for technical advice. (e.g. rp calculations)

c. Scientific/research (SR) lasers in accordance with 21 CFR Section 1010.5 may be exempt from Title 49 and, in addition, may not be able to comply with the above procedures. Regardless of whether or not a proponent is exempt from the provisions, when a proposal is received follow the above procedures.

29-2-2. LOCAL LASER WORKING GROUP (LLWG)

When necessary, the ATD may convene a LLWG to assist in evaluating proposed local laser activities when it is determined such a need exists.

a. The ATD shall forward information on a proposed outdoor laser activity to the local AT facility.

b. The local AT facility shall act as the focal point for the LLWG. Other participants may include, but not limited to, representatives from the center, "non-federal" towers, airport management, airspace users, city/county/state officials, other government agencies, military representatives, qualified subject experts, laser manufacturers, etc.

c. The LLWG shall resolve issues regarding local laser operations and forward recommendations to the ATD office as soon as practicable.

29-2-3. LASER SYSTEM POWER RANGE TABLE

The laser system power range tables (TBL 29-2-1 and TBL 29-2-2) shall only be applied to continuous wave laser systems. Proponents are required to resolve RP laser system calculations with the FDA, laser manufacture, or by submitting a completed Laser Configuration Worksheet prior to requesting determination by the FAA.

a. TBL 29-2-1 specifies the minimum distance from the laser source (for 1 mrad divergence) which should be protected horizontally from the laser source.

b. TBL 29-2-2 specifies the minimum distance from the laser source (for 1 mrad divergence) which should be protected vertically from the laser source.

c. The minimum altitude may be determined by multiplying the laser distance from TBL 29-2-1 by the sine of the angle of elevation

of the laser beam from TBL 29-2-2. For example, Altitude = Laser Distance x Sine = (maximum elevation angle).

d. The minimum horizontal distance may be determined by multiplying the laser distance from TBL 29-2-1 by the cosine of the angle of elevation of the laser beam from TBL 29-2-2. For example, Horizontal Distance = Laser Distance x Cosine = (minimum elevation angle).

e. Do not reduce calculated distances for techniques incorporated by the manufacturer unless validated by FDA/CDRH.

f. All distances shall be rounded up to the next 100-foot increment. See example problems 1, 2, and 3 that follow the Laser System Power Range Table, TBL 29-2-1.

29-2-4. CONTROL MEASURES

Physical, procedural, and automated control measures that ensure aircraft operations will not be exposed to levels of illumination greater than the respective maximum irradiance levels established by the MPE, LFZ, CFZ, and SFZ.

a. Physical beam stops at the system location or at a distance used to prevent laser light from being directed into protected volumes of airspace.

b. Adjusting the beam divergence and output power emitted through the system aperture to meet appropriate irradiance $\mu W/cm^2$ distance.

c. Beams can be directed in a specific area. Directions should be specified by giving bearing in the azimuth scale 0-360 degrees and elevation in degrees ranging from 0-90 degrees, where zero degrees is horizontal and 90 degrees is vertical, bearings shall be given in both true and magnetic north.

d. Manual operation of a shutter or beam termination system can be used in conjunction with airspace observers. Observers shall be able to see the full airspace area surrounding the beam's paths to a distance appropriate to the affected airspace.

e. Scanning of a laser system that are designed to automatically shift the direction of the laser emission can be used. However, scanning safeguards must have safeguards acceptable by the FDA and the FAA. The FDA recommendation must be included in the proposal to the FAA.

NOTE-
Scanning may reduce the level of illumination; however, it may also increase the potential frequency of an illumination.

f. Automated systems designed for use to detect aircraft and automatically terminate, redirect the beam, or shutter the system, must be acceptable to the FAA before the device may be accepted as a control measures which satisfies as an equivalent level of safety.

LASER SYSTEM POWER RANGE TABLE

CW Laser Beam Divergence: 1 Milliradian

*** NOT TO BE USED WITH RP SYSTEMS**

Output	NOHD	SFZ	CFZ
Power	2.6mW/cm²	100μW/cm²	5μW/cm²
Watts	(.0026)	(.0001)	(.000005)
1	726	3703	18600
2	1027	5237	23200
3	1253	6414	28700
4	1452	7406	33100
5	1623	8280	36000
6	1778	9070	40800
7	1921	9787	43800
8	2054	10474	46800
9	2178	11109	48700
10	2296	11710	52400
11	2408	12281	54800
12	2515	12827	57400
13	2618	13351	59700
14	2717	13855	62000
15	2814	14322	64100
16	2904	14812	66200
17	2993	15288	68300
18	3080	15710	70300
19	3165	16141	72200
20	3247	16580	74100
25	3630	18515	82801
30	3977	20282	90704
35	4295	21907	97971
40	4592	23220	104736

Output	NOHD	SFZ	CFZ
Power	2.6mW/cm²	100μW/cm²	5μW/cm²
Watts	(.0026)	(.0001)	(.000005)
45	4870	24840	111089
50	5132	26148	117098
55	5384	27462	122814
60	5624	28683	128275
65	5853	29854	133523
70	6074	30881	138553
75	6288	32088	143215
80	6494	33120	148118
85	6694	32140	152877
90	6888	35129	157104
95	7076	36092	161409
100	7260	37030	165802
105	7440	37944	168691
110	7616	38837	173885
115	7790	39710	177588
120	7962	40684	181408
125	8117	41390	185102
130	8278	42210	188767
135	8436	43014	192363
140	8590	43803	195893
145	8743	44578	199360
150	8892	45090	202769
155	9039	45365	205120
160	9184	46927	209419

NOTE-

① To determine nominal hazard zone distance (NHZD) for lasers having divergence values other than 1.0 mrad use the formula - NOHD @ 1.0 mrad ÷ mrad = NHZ.

EXAMPLE-

Power 40W, Divergence 7 mrad

NOHD 40W @ 1.0 mrad = 4,592

4,592 ÷ 7 = 656 NOHD. Rounded up to nearest hundred feet = 700 feet.

(A beam divergence of .7 would make this calculation 7,000 feet)

The proponent validates repetitive pulsed information with the FDA or submits a completed laser configuration worksheet.

TBL 29-2-1

COSINE VALUES

* NOT TO BE USED WITH RP SYSTEMS

Elevation Angle	Sine (minimum)	Cosine (maximum)
0	.0000	1.0000
5	.0872	.9962
10	.1737	.9848
15	.2588	.9659
20	.3220	.9397
25	.4226	.9063
30	.5000	.8660
35	.5736	.8192
40	.6428	.7660

Elevation Angle	Sine (minimum)	Cosine (maximum)
45	.7071	.7071
50	.7660	.6428
55	.8192	.5736
60	.8660	.5000
65	.9063	.4226
70	.9397	.3420
75	.9659	.2588
80	.9848	.1737
85	.9962	.0872
90	1.0000	.0000

Laser Problem Solutions

Example Problem 1:

Laser output power = 15 watts

Laser beam divergence = 1.0 mrad

Find: Laser distance:

1. Find Table 29-2-2 [1] at 15 watts in the Laser Output Power column.
2. Proceed horizontally and read: NOHD of 2,814 feet, CFZ of 64,100 feet, SFZ 14,322 feet.

Answer: (with rounded up distances): NOHD 2,900 feet, CFZ 64,100, SFZ 14,400 feet.

Example Problem 2

Laser output = 18 watts

Laser beam divergence = 1.0 mrad

Maximum elevation angle 60°

Minimum elevation angle 20°

Find -Horizontal and vertical distances to be protected:

1. Laser distance (from TBL 29-2-1) = 3,080 feet.
2. Sine of 60° maximum elevation angle (from TBL 29-2-2) = 0.8660.
3. Find altitude by multiplying 3,080 feet by 0.8660 = 2,667 feet.
4. Cosine of 20° minimum elevation angle (from TBL 29-2-2) = 0.9397
5. Find horizontal distance by multiplying 3,080 feet by 0.9397 = 2,894 feet.

ANSWER: Minimum required protected airspace is 2,900 feet horizontally and 2,700 feet vertically from the laser source.

Example Problem 3

Power = 25 watts

Laser Output NOHD at 1 mrad = 3,630 feet.

Beam Divergence = .7 mrad

Find: Laser NHZ

1. Apply Formula
2. 3630 feet. ÷ .7 = 5185 feet. Formula

Answer: NHZ 5200 feet

TBL 29-2-2

Section 3. AERONAUTICAL DETERMINATIONS

29-3-1. FINDINGS

a. All outdoor laser operation determinations shall be issued in writing.

b. Determinations rendered shall either be objectionable or non-objectionable. A non-objectionable letter of determination (LOD) issued by the FAA is not permission nor an endorsement of the outdoor laser operation.

c. Determinations may be telephoned to the proponent and to the CDRH; however, each must be followed up with a written response.

d. Send a copy of LODs to the military liaison offices, affected ATC facilities, (when convened, the local laser group), and the CDRH in Rockville, Maryland.

e. Forward a copy of objectionable LODs to ATA-400.

29-3-2. CONTENT OF DETERMINATIONS

a. As a minimum, letters of non-objection determinations shall:

1. Include a listing of any provisions, conditions, or limitations.

2. Inform the proponent not to incorporate change(s) into the proposed activity once a non-objection LOD has been issued unless the ATD approves and submits the change-approval in writing.

3. Stipulate a requirement that proponents shall notify the FAA designated representative of:

(a) Any changes to show "start/stop" times or cancellation 24 hours in advance.

(b) The laser light activity 30 minutes before start time.

4. Include a statement advising the proponent that the determination is based on FAA requirements only and final approval must also be obtained from the appropriate authority.

5. Specify that the FAA determination does not relieve the sponsor or operator of compliance responsibilities related to laws, ordinances or regulation of any federal, state, or local government.

6. The name and telephone number of the ATC facility to be notified and other information as deemed appropriate.

7. Indicate NOTAM requirements.

b. An objectionable LOD shall inform the proponent:

1. That a determination of objection is being issued.

2. Why the proposal does not satisfy FAA requirements.

3. That supplementary information may be submitted for reconsideration.

c. If negotiations to resolve any objectionable effects have not been successful, the determination of objection shall stand.

29-3-3. PUBLICATION OF LASER OPERATIONS IN THE NAS

a. When a determination by the ATD of non-objection is issued consider the time of duration (in days) of the laser activity.

b. The ATD shall review laser operations for continued publication bi-annually.

c. ATD shall forward to ATA-100 information for publication as follows:

1. Class II Publications – Temporary laser operations at a specific location that will exceed 56 days but less than 180 days.

NOTE-
Publication in the Class II publication is dependent on established cutoff dates.

2. Appropriate aeronautical charts - Laser operations at a specific location that will exceed 180 days or are considered permanent.

3. Publish in the Airport Facility Directory - Laser operations at a specific location that will exceed 180 days.

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Section 4. NOTICES TO AIRMEN

29-4-1. ISSUANCE OF NOTICES TO AIRMEN (NOTAM)

a. To enhance safety of flight, the appropriate regional ATD shall prepare the NOTAM and notify the United States NOTAM Office Facility via telephone (703) 904-4557, or fax (703) 904-4437 within seven days of a proposed laser activity to alert pilots of such activities.

b. The NOTAM will emphasize the potential hazardous effects and other related phenomena that may be encountered by laser light emissions. Include facility to notify, and any other information deemed appropriate.

c. The regional ATD may further delegate notification responsibility to the respective Flight Service Station, and/or Air Traffic Facility.

d. When deemed appropriate The ATD may direct the proponent to activate or cancel the FDC NOTAM, specific to the laser activity. The ATD shall explain the responsibility of the proponent concerning appropriate NOTAM actions.

e. The ATD is responsible for canceling the NOTAM except as noted above in paragraph 29-4-1 c. and d.

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Chapter 30. HIGH INTENSITY LIGHT OPERATIONS

Section 1. GENERAL

30-1-1. PURPOSE

This chapter prescribes policy and guidelines for determining the potential effect of high intensity light activities on users of the NAS.

30-1-2. POLICY

Consideration shall be given to commercial, general aviation requirements as well as to the public right of "freedom of transit" through the airspace. Accordingly, while a sincere effort shall be made to negotiate equitable solutions to conflicts over the use of the NAS for non-aviation purposes, aviation must receive primary emphasis.

30-1-3. AUTHORITY

The provisions of 49 U.S.C. Sub Title VII, grants the Administrator the authority for aviation safety. That authority has been delegated to Air Traffic and Flight Standards with the associated responsibilities to evaluate activities that can potentially affect aviation safety in the NAS.

30-1-4. DEFINITIONS

The terms used in this chapter are defined below:

a. High Intensity Light (HIL) - A lighting system other than laser light designed to penetrate the navigable airspace.

b. HIL Manufacturer - A term that refers to persons who manufactures high intensity light emitting products. This includes those who are engaged in the business of design, assembly, or presentation of a HIL activity.

c. HIL Operator - A knowledgeable person present during HIL operation who is responsible for ensuring compliance with applicable safety standards; monitoring the safe operation of a HIL operation; and can effect termination of the HIL promulgation in the event an unsafe condition becomes apparent.

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Section 2. AERONAUTICAL REVIEW/DETERMINATIONS

30-2-1. EVALUATION OF AFFECTED AIRSPACE AREAS

The following guidelines should be used in evaluating proposals received for HIL activities in the NAS. Refer to airspace zones described in Chapter 29 to assist in evaluating those areas in close proximity to an airport. Reduction in the size of a specific zone may be considered when the aeronautical study to assure users of the NAS will not be effected.

30-2-2. AERONAUTICAL STUDY

a. Determination of the potential overall airspace effected by HIL operations shall be conducted by the regional ATD. The aeronautical study, as a minimum, should include the following, as appropriate:

1. Quantities of traffic effected.

2. Location(s) of aviation activity that may be affected, including areas where low-level air traffic operations may occur (e.g. helicopter operations, Flights for Life).

3. Control jurisdiction (e.g., ATC facility).

4. Coordination with Flight Standards, and local officials, as necessary (e.g., FAA Air Traffic facilities, appropriate military representatives, and airport managers).

b. Observers, when required, shall be able to see the full airspace area surrounding the HIL beam's paths to a distance appropriate to the affected airspace.

c. Require the control measures that ensure aircraft will not be exposed to HIL illumination that has the potential to effect a pilot in the performance of their respective duties.

30-2-3. CONTENT OF DETERMINATION

a. After completing an aeronautical study, the ATD shall prepare a Letter of Determination (LOD). Follow the guidelines published in paragraph 29-3-2 to formulate the content of the LOD. Forward a copy of the determination to the proponent of the activity, and when deemed necessary, to all affected ATC facilities, airport managers, and military liaison offices.

b. At the discretion of the ATD, issue a NOTAM to alert pilots of known HIL activity. The regional ATD may delegate notification responsibility to the respective flight service stations, other air traffic facilities, or require the proponents to activate or cancel the local NOTAM involving the HIL operation through that appropriate facility.

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Chapter 31. ROCKET AND LAUNCH-VEHICLE OPERATIONS

Section 1. General

31-1-1. PURPOSE

This chapter provides guidance, policies, and procedures for processing requests for rocket and launch vehicle operations in the NAS.

31-1-2. AUTHORITY

a. Public Law (PL) 98-575 - Congress enacted PL 98-575, Commercial Space Launch Act of 1984, codified at 49 USC subtitle IX, Chapter 701, with its purpose to:

1. Promote economic growth and entrepreneurial activity through utilization of the space environment for peaceful purposes;

2. Encourage the U.S. private sector to provide launch vehicles and associated launch services by simplifying and expediting the issuance or transfer of launch licenses and by facilitating and encouraging the utilization of Government-developed space technology; and

3. Designate an executive department to oversee and coordinate the conduct of launch operations, to issue and transfer launch licenses authorizing such activities, and to ensure that public health and safety, foreign policy, and national security interests of the United States are satisfied.

b. Part 101 prescribes rules governing the operation in the United States of moored balloons, kites, unmanned rockets, and unmanned free balloons.

c. Part 400 establishes procedures and requirements regarding the authorization and supervision of all space launch activities conducted from within U.S. territory or by U.S. citizens. The part 400 regulations, however, do not apply to amateur rocket activities or to space launch activities carried out by the U.S. Government on behalf of the U.S. Government.

31-1-3. POLICY

It is AAT policy that all rocket launch vehicle proposals that seek a waiver of part 101 requirements, and that are expected to reach an altitude higher than 25,000 feet above ground level, and those rockets/launch-vehicles that are categorized as "amateur" or licenseable under part 400 shall be forwarded to ATA-400 for headquarters review. ATA-400 will coordinate the proposals with AST and submit a waiver recommendation to the concerned regional ATD.

31-1-4. RESPONSIBILITY

a. AAT continues to have the waiver authority for certain categories of amateur rockets, and is responsible for integrating all rocket and launch-vehicle operations into the NAS. Additionally, AST is responsible for issuing licenses for non-Federal government space launches, launch sites, space reentry, reentry sites and their associated operations. Therefore, communication and coordination between AST and AAT is paramount. Since the AST line of business is not currently represented at the regional headquarters level, the required AST coordination must occur at the FAA Headquarters level.

b. ATA-400 is Air Traffic's point of contact for such activities and is directly responsible for coordinating certain proposals regarding airspace operations and procedures with AST.

c. The Licensing and Safety Division, AST-200, within the Office of Commercial Space Transportation is responsible for the licensing of launch sites and those launch vehicle operations that fall under part 400. Additionally, any required waivers and/or exemptions to part 400 will also be issued by AST-200.

31-1-5. ENVIRONMENTAL IMPACT ANALYSIS

a. Launch site and reentry actions are subject to NEPA Order 1050.1, Policies and Procedures for Considering Environmental Impacts, and other applicable regulations, public laws, and statutes.

b. All NEPA requirements associated with licensed commercial space transportation activities will be addressed by AST as part of the site licensing process.

31-1-6. DEFINITIONS

As used in this chapter, the following terms are defined below:

a. Unmanned rockets - Those rocket operations conducted by private citizens or model rocket clubs for the sole purpose of pursuing and enjoying a hobby. These types of rockets are categorized as either small or large based on their characteristics as described below.

1. Small model/amateur rockets - Rockets are generally small in size, and have a short propellant burn time (less than 15 seconds). Usually, these rockets have trajectories and flight paths that can be easily monitored by the operator and/or spotters to ensure the safety provisions contained in Section 101.23 are met.

2. Large model/amateur rockets - Rockets that are normally larger, and have greater propellant burn times (egual to or greater than 15 seconds). These rockets will most always enter controlled airspace requiring a waiver to part 101.

b. Other unmanned rockets - Those rockets or missiles that use more than 125 grams of propellant, or weigh more than 1,500 grams, including the propellant, must comply with all the requirements of part 101, Subpart C - Unmanned Rockets, and may require a license (or exemption) to operate under part 400 depending on other rocket characteristics.

c. Launch Vehicles - Launch vehicles built to operate, or place any payload, in outer space, low earth orbit, or a sub-orbital trajectory (equal to or greater than 15 seconds). Part 400 requires that operations of launch vehicles be licensed by AST.

Section 2. PROCESSING OF PROPOSALS

31-2-1. REGIONAL REVIEW

a. The regional office responsible for the launch's geographical area shall manage proposals for unmanned rocket and space launch activities. When a proposal overlaps regional office geographical jurisdictions, the affected ATD shall coordinate to determine which office will serve as the lead region for processing the proposal. Coordination between regions is also required when the affected geographical area and the ATC controlling agency are under the jurisdiction of different regional offices.

b. Concerned regions shall coordinate with the responsible military representative and ensure that all affected ATC facilities review the proposal and provide input to the aeronautical review, as required.

c. If the proposal requires FAA headquarters review, the package shall include documentation of regional coordination, affected ATC facility comments, and any other information pertinent to the case.

d. As part of the rocket/launch-vehicle operation review process performed by the concerned regional ATD, or those facilities delegated waiver authority, coordination shall be effected with the Central Altitude Reservation Function (CARF), an element of the Air Traffic Control System Command Center (ATCSCC). This coordination is to ensure that any system impact(s) that may result from the requested operation are identified and resolved before a rocket/launch-vehicle operation waiver approval is finalized.

31-2-2. AERONAUTICAL REVIEW

The following information should be used as a guide for the conduct of an aeronautical review of rocket and launch-vehicle operations.

a. An aeronautical review of any rocket or launch-vehicle operation shall be conducted to determine if there are aeronautical impacts to be considered or resolved.

b. Rocket and launch-vehicle operations shall be categorized based on their operational characteristics and purpose of flight. These characteristics include, but are not limited to, size, total weight, propulsion, rocket motor design, and hardware design materials. The characteristics of the rocket/launch-vehicle will determine which parts of 14 CFR provisions will govern it.

c. The criteria for parts 101 and 400 rockets/launch-vehicles are described below.

1. Uses 4 ounces or less of slow-burning propellant.

2. Is made of paper, wood, or breakable plastic, containing no substantial metal parts - an amount necessary for structural integrity.

3. Weighs 16 ounces or less including the propellant.

4. Is operated in a manner that does not create a hazard to persons, property, or other aircraft.

d. If any of the above criteria are exceeded, then part 101 applies and subpart C, Unmanned Rockets, must be adhered to. Rockets will remain captured under part 101 until one of the criteria listed for part 400 is triggered.

e. Part 400 - Any rocket or launch vehicle that meets any of the following criteria will be reviewed by AST under part 400 provisions. Such provisions are that the rocket:

1. Motor(s) exceed total impulse of 200,000 pound-seconds;

2. Motor(s) have a total burning time or operating time of 15 seconds or more; or

3. Has a ballistic coefficient (gross weight in pounds divided by the frontal area of the rocket vehicle) of 12 pounds or more per square inch.

NOTE-

Part 101 rocket launch proposals that are a part of a competition for prize money will be reviewed by AST. Those proposals shall be sent to ATA-400 for processing.

Part 400 rockets/launch-vehicles will also exceed the criteria addressed in paragraph a., part 101 rockets. Therefore, waivers to part 101 will also be required.

31-2-3. HEADQUARTERS REVIEW

a. It is AAT policy that proposals for rockets that are expected to reach altitudes higher than 25,000 feet above ground level and rockets/launch-vehicles categorized as "amateur" or licensable under part 400, be forwarded to ATA-400 for FAA headquarters review. ATA-400 will coordinate the proposal with AST-200, and submit a waiver recommendation to the regional ATD.

b. The package submission to FAA headquarters should include the following (as applicable):

1. A transmittal memorandum containing a brief overview of the proposal and the region's recommendation for headquarters action;

2. A summary of any amendments made to the original proposal in response to negotiations to mitigate impacts, etc.;

3. A sectional aeronautical chart depicting the final boundaries of the proposed airspace area;

4. A copy of the proponent's launch request correspondence and proposal package;

5. A copy of the aeronautical review and the ATD recommendation;

6. Copies of pertinent correspondence from other FAA offices (e.g., Flight Standards, Airports, adjacent regional ATD, affected ATC facilities); and

7. Any other information that should be considered by FAA headquarters in making a final determination on the proposal (e.g., rocket/launch-vehicle propulsion, physical dimensions and weight, total impulse and burn time of the motor(s), launch site location, planned flight path/trajectory, including staging and impact locations).

c. ATA-400 will coordinate the proposal with AST-200.

d. Upon completion of the AST-200 review, the proponent's package, including the part 400 waivers, exemptions, and/or licenses (if applicable), shall be returned to ATA-400 for distribution to the regional ATD. For the proposals that have received favorable determinations by FAA headquarters, the ATD shall, in turn, issue the part 101 waiver and forward the completed package to the proponent.

31-2-4. CONTROLLING AGENCY

The FAA ATC facility having control jurisdiction over the airspace where the rocket/launch-vehicle is projected to enter shall be designated as the controlling agency. The controlling agency will be responsible for ensuring that any temporary airspace (e.g., TFRs, ALTRVs) is activated when the launch operations are imminent, including any applicable downrange and terminal airspace.

31-2-5. SUITABLE AIRSPACE FOR LAUNCH OPERATIONS

Amateur rocket launches that will not enter controlled airspace do not require prior notice to the FAA. However, those proponents must ensure the safety of persons and property on the ground and of aircraft flying nearby. Conversely, rockets and launch-vehicles that will enter controlled airspace must be integrated with other users of the NAS and be segregated from nonparticipating aircraft to ensure safety. This shall be accomplished by requirements to the waivers to part 101.

a. Amateur rockets may not require sterile airspace. In these cases, the proponent and/or the ATD must:

1. Ensure that the activity is confined within the launch site area.

2. Cease activity immediately upon observation or notification that a nonparticipating aircraft is approaching the area. Surveillance by ground observers shall be continuously maintained immediately prior to and during the time that the activity is in progress to ensure adequate coverage of the required area. If required by the ATD, observers shall have real-time communication capability (radio, cellular phones, etc.) with the FAA facility to ensure a cease-fire can occur immediately. The activity may resume only after the nonparticipating aircraft are clear of the area and will not interfere with launch operations.

3. Ensure that adequate safety precautions are in place for each launch site. Specific precautionary measures established to protect nonparticipating aircraft, persons, and property will depend on various factors such as the type of activity, terrain, launch site dimensions, etc.

b. Existing SUA may be used only if permission has been granted by the using agency or controlling agency, as appropriate. The responsibility is on the proponent to obtain the required permission.

c. Temporary flight restrictions (TFR) for space flight operations (SFO) as described in Section 91.143 may be used to provide protection from potentially hazardous situations for nonparticipating aircraft and rocket/space launch operations.

d. An altitude reservation (ALTRV) may be used but only to sterilize Class A airspace within which it operates. ALTRVs do not sterilize airspace below Class A airspace.

e. When sterile airspace is required for rocket and launch-vehicle launch operations, the dimensions and times of use of that airspace shall be the minimum required to contain the proposed activities, including required safety zones. When it is determined that the airspace is no longer required, the regional ATD, using agency, or the appropriate military authority providing SUA shall initiate action to release that airspace to the NAS.

f. Launch sites should be located in areas that will minimize the impact on nonparticipating aircraft and ATC operations. To the extent practical, plan launch sites, and rocket/launch-vehicle trajectories to avoid airways/jet routes, major terminal areas, and known high-volume VFR routes.

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Section 3. DETERMINATIONS

31-3-1. REGIONAL DETERMINATIONS

a. The regional ATD (or designated representative) has the authority, in accordance with FAA Order 1100.5, FAA Organization - Field, to grant individual waivers to part 101. FAA Form 7711-1 waivers shall contain, as a minimum:

1. The section of part 101 that is being waived;

2. The name, address, telephone number of the applicant;

3. Activities (e.g., types of rockets) approved for launch;

4. The location of the approved launch site in coordinates;

5. Approved dates and times of launch operations;

6. Advance notification requirements to the appropriate FAA facilities and, if desired, cancellation and termination notification;

7. Approved projected altitudes of the rocket(s);

8. Other provisions in part 101 may be included at the discretion of the ATD; and

9. Any other requirements deemed necessary for local operations.

b. The regional ATD may suspend or revoke a waiver whenever a question arises about the safety of the operation, compliance with safety precautions or conditions of approval, or if unforeseen impact on aeronautical operations occurs.

31-3-2. NOTAM

a. NOTAMs issued for space launch and reentry operations, 14 CFR Section 91.143, will be processed as usual.

b. The NOTAM shall include the launch site description, effective dates and times, and a chart depicting the area boundaries. It should also include a brief narrative describing the launch scenario, activities, numbers and types of rockets/launch-vehicles involved, and the availability of in-flight activity status information for nonparticipating pilots. Information regarding ALTRVs used in conjunction with TFRs may also be addressed.

c. If a launch site will be used on a routine, basis, the regional ATD may consider charting the TFR on the applicable sectional aeronautical chart.

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