

U.S. Department of Energy

Washington, D.C.

ORDER

DOE 5480.13A

2-23-93

SUBJECT: AVIATION SAFETY

1. PURPOSE. To establish aviation safety policy to ensure that Department of Energy (DOE) and DOE contractor aviation operations maintain an operating standard at least equivalent to that maintained by United States air carriers operating under Title 14 Code of Federal Regulations (CFR) Part 135 or 14 CFR Part 121.
2. CANCELLATION. DOE: 5480.13, "AVIATION SAFETY, " dated 11-25-87.
3. SCOPE. The provisions of this Order apply to all Departmental Elements.
4. APPLICATION TO CONTRACTS. The provisions of this Order apply to covered contractors (see "Definitions") to the extent implemented under a contract or other agreement. DOE elements and covered contractors are responsible for assuring charter and lease operations meet the requirements of this Order.
5. REFERENCES.
 - a. 14 CFR, "Federal Aviation Regulations," including, but not limited to, Parts 1, 21, 23, 25, 27, 29, 33, 36, 39, 43, 45, 61, 63, 65, 67, 77, 91, 97, 107, 108, 121, 125, 127, 133, 135, 137, 139, and 145, which contain regulations of the Federal Aviation Administration (FAA) pertaining to aviation.
 - b. 41 CFR 101-37 (Federal Property Management Regulations [FPMR]), "Government Aviation Administration and Coordination," which prescribes policies and procedures for executive agencies governing the effective management and utilization of Government-owned, -leased, -chartered, and -rented aircraft and related support services.
 - c. 41 CFR 109-38.52, "Aircraft, " which establishes basic policies and procedures that apply to the management of aircraft and aircraft services, excluding aircraft owned and operated by other Federal activities for DOE.
 - d. 41 CFR 109-38.54, "Official Use of Motor Vehicles and Aircraft," which supplements FPMR Part 101-38; implements the provisions of statutes concerning the use of Government-owned, -rented, or -leased motor vehicles and aircraft for official purposes; and prescribes policies and procedures governing the use of such vehicles and aircraft acquired for official purposes.

DISTRIBUTION:

INITIATED BY:

All Departmental Elements

Office of Environment,
Safety and Health

- e. 49 **CFR** Subchapter C, Parts 100 through 180, which contains requirements to be observed in preparing hazardous materials for shipment by air, highway, rail, water, or any combination thereof.
- f. 49 **CFR** Part 830, "Notification and Reporting of Aircraft Accidents or Incidents and Overdue Aircraft, and Preservation of Aircraft Wreckage, Mail, Cargo, and Records," which contains **rules** pertaining to aircraft accidents, incidents, and certain other occurrences in the operation of aircraft.
- g. 49 **CFR** Part 831, "Accident/Incident Investigation Procedures," which establishes provisions governing all accident or incident investigations conducted under the authority of Title **VII** of the Federal Aviation Act of 1958 and the Independent Safety Board Act of 1974.
- h. DOE **1500.2A**, TRAVEL POLICY AND PROCEDURES, of 6-7-89, which establishes DOE policy on elective use of private aircraft for official travel by DOE employees, contractors, and subcontractors.
- i. DOE 3790. **1B**, FEDERAL EMPLOYEE OCCUPATIONAL SAFETY AND HEALTH PROGRAM, of 1-7-93, which establishes policy for the Federal Employee Occupational Safety and Health Program of DOE.
- j. DOE **5000.3B**, OCCURRENCE REPORTING AND PROCESSING OF OPERATIONS INFORMATION, of 1-19-93, which establishes policy on reporting occurrences in DOE and contractor operations.
- k. DOE 5480 series, which establish Departmental environmental-, safety-, and health-protection program policies, procedures, and responsibilities.
- l. DOE 5480.11, RADIATION PROTECTION FOR OCCUPATIONAL WORKERS, of 12-21-88, which establishes standards and program requirements for DOE and contractor operations with respect to worker protection.
- m. DOE **5481.1B**, SAFETY ANALYSIS AND REVIEW SYSTEM, of 9-23-86, which establishes uniform requirements for preparation and review of safety analyses of DOE operations.
- n. DOE **5482.1B**, ENVIRONMENT, SAFETY, AND HEALTH APPRAISAL PROGRAM, of 9-23-86, which establishes the environment, safety, and health (**ES&H**) appraisal program of DOE.
- o. DOE 5484.1, ENVIRONMENTAL PROTECTION, SAFETY, AND HEALTH PROTECTION INFORMATION REPORTING REQUIREMENTS, of 2-24-81, which establishes the requirements and procedures for the investigation of occurrences that have environmental- safety-, or **health-** protection significance.

- p. DOE 5500 series, as mandated in **SEN-11-89**, EMERGENCY MANAGEMENT SYSTEM, of 6-29-90, which establish overall policy and requirements for an Emergency Management System.
- q. DOE 5630 series, which establish safeguards and security requirements.
- r. DOE 5632.7, PROTECTIVE FORCES, of 2-9-88, Chapter V, "Security Helicopter Operations," which establishes policies and requirements for training and for managing, organizing, and equipping security helicopter flight operations.
- s. DOE **5700.6C**, QUALITY ASSURANCE, of 8-21-91, which establishes standards to assure quality achievement in DOE programs.
- t. International Civil Aviation Organization Annex 18, "Technical Instructions **for** the Safe Transport of Dangerous Goods by Air," 1991-1992 Edition, which sets forth broad principles governing the international transport of dangerous goods by air.
- u. FAA Advisory Circular (AC) 150 series, "Airports and Heliports," which contain guidance on the design, construction, and maintenance of airports and heliports.
- v. Agreement between the Department and the National Transportation Safety Board (**NTSB**) pertaining to investigation of accidents involving DOE aircraft, dated December **21**, 1987.
- w. Office of Personnel Management (**OPM**) **X-118** Handbook, qualification Standards, which contains standards for the qualification of pilots and other individuals.

6. **DEFINITIONS**

- a. **Aircraft**. A device that is used or intended to be used for flight in the air.
- b. **Aircraft Accident**. An occurrence associated with the operation of an aircraft, which takes place between the time any individual boards the aircraft with the intention of flight and all such individuals **have** disembarked, and in which any individual suffers death or serious injury or the aircraft receives substantial damage, as described in 49 **CFR** Part 830.
- c. **Aircraft Incident**. An occurrence other than an accident, associated with the operation of an aircraft, which affects or could affect **the** safety of operations, as described in 49 **CFR** Part 830.

- d. **Airplane.** An engine-driven, fixed-wing aircraft heavier than air that is supported in flight by the dynamic reaction of the air against its wings.
- e. **Airport.** An area of land or water, including any buildings and facilities, that is used or intended to be used for the landing and takeoff of aircraft.
- f. **Airstrip.** A runway without a normal air base or airport facilities.
- g. **Aviation Manager.** The DOE individual designated by the Head of the Field Office or PMA to manage aviation operations or to oversee aviation service contracts at sites that do not have DOE-owned aircraft.
- h. **Aviation Operations.** Any operations of aircraft, airports, or heliports or any services that support aviation activities.
- i. **Aviation Safety Officer.** A DOE employee designated by the appropriate authority to perform aviation safety oversight. An Aviation Safety Officer (ASO) shall meet requirements specified by the designating authority and shall have sufficient aviation knowledge, background, and training to competently perform assigned duties. The affected Program Secretarial Officer (PSO), Head of a Field Office, or PMA shall define training and qualification requirements for their respective ASOS.
- j. **Chartered Aircraft.** Aircraft contracted, not to exceed 89 days, for point-to-point service to satisfy a one-time transportation need. Also included are commercial aircraft chartered with a pilot(s) to perform local or special mission flights, such as aerial surveys, photography, and special tours.
- k. **Chief Pilot.** An individual designated to act as Chief Pilot by the Aviation Manager, Director of Operations, or aviation services contractor.
- l. **Civil Aircraft.** Any aircraft other than military or public aircraft.
- m. **Covered Contractor.** DOE management and operations (M&O) contractors and subcontractors who are (a) based at a DOE work site or (b) subject to the **Safety and Health** clause of 48 CFR 970.5204-2.
- n. **Crewmember.** An individual assigned to perform a duty in the aircraft during flight time.
 - (1) **Flight Crewmember is** an individual who holds a valid FAA Airman's Certificate and medical certificate as a prerequisite to performance of the duties of the position during flight, such as a pilot, copilot, flight engineer, or flight navigator.

- (2) Air Crewmember is an additional **crewmember** required for accomplishment of the mission, such as a line patrol observer, photographer, airborne equipment operator, flight mechanic, technical **representative**, or member of a security force. These positions usually do **not require** FAA certificates.
- o. Director of Maintenance. An individual designated to act as the Director of Maintenance by the Aviation Manager or the **aviation** services contractor.
- p. Director of Operations. An individual designated to act as the Director of Operations by the Aviation Manager or the aviation services contractor.
- q. DOE-Use Aircraft. Any aircraft owned by DOE, under DOE's operational control, or engaged exclusively for use by DOE or a covered contractor for DOE **purposes**.
- r. DOE Aviation Operations. Any DOE operation of aircraft, airports, or heliports or any services that support DOE aviation activities.
- s. DOE-Owned Aircraft. An aircraft that is owned exclusively by DOE or leased in lieu of ownership
- t. FAA Airworthiness/DOE Flight Certificates
- (1) FAA Standard Airworthiness Certificate. FAA Form 8100-2 is issued for aircraft that fully conform to the airworthiness requirements in Federal Aviation Regulations Parts 23 through 31, as applicable for aircraft, rotorcraft, and balloons, and which meet the requirements of the type certificate data sheet and are found airworthy.
- (2) FAA Special Airworthiness Certificates. FAA Form 8130-7 is issued for all nonstandard aircraft, as classified under 14 CFR 21.175(b). FAA Form 8130-7 (pink), which indicates that the aircraft **does** not meet the airworthiness requirements of a Standard Airworthiness Certificate, may be issued in the following categories.
- (a) Restricted Category. Aircraft that do not qualify for certification in any other category because of design or intended use or because flight tests have not been conducted to qualify for other categories of operation.
- (b) Experimental Category. Experimental certificates are issued for research and development purposes and to show compliance with Federal Aviation Regulations. This category includes flight and ground testing of new aircraft designs, equipment installations, operating techniques, and uses.

- (3) Multiple Airworthiness Certificate. An aircraft may be issued a Standard Airworthiness Certificate and a Special Airworthiness Certificate in the restricted category if it can be shown that the aircraft meets the requirements for each category when configured for that category.
- (4) DOE Flight Certificate. Criteria for the use of the DOE Flight Certificate [see attached certificate] are **provided** in this Order. **This certificate** shall be used when DOE aircraft are operated outside the limits of their issued FAA Airworthiness Certificate. The certificate may be used temporarily when the nature of operations make the use of a Standard or Special Airworthiness Certificate impossible. This provision may not be interpreted as a mechanism for the surrender of any DOE aircraft's FAA Standard Airworthiness Certificate.
- u. Ground Crew. All personnel assigned to aviation operations other than **crewmembers** and administrative personnel.
- v. Helicopter. Aircraft that depend principally on engine-driven rotors for horizontal motion.
- w. Helipad. A surface used for parking helicopters. It may be located inside or outside of the final approach and takeoff area. The final approach and takeoff area is the area over which the final phase of the approach maneuver to hover or landing is completed and from which the takeoff maneuver is commenced.
- x. Helistop. An area used or intended to be used for the landing and takeoff of helicopters engaged in dropping-off or picking-up passengers or cargo.
- y. Heliport. An identifiable area on land or water or on structures, including any building or facilities thereon, which is used or intended to be used for the landing and takeoff of helicopters.
- z. Leased or Contract Aircraft. Non-DOE-owned aircraft obtained under a specific aviation services contract or lease agreement for use under DOE operational control for 90 consecutive days or more.
- aa. Passenger. Any individual aboard an aircraft who does not perform the function of an air crewmember or a flight **crewmember**.
- bb. Pilot-in-Command (PIC). The pilot responsible for the operation and safety of an aircraft during flight time.
- cc. Private/Personal Aircraft. Any aircraft owned by an individual, partnership, or flying club, when used by the pilot/owner for personal transport.

- dd. Program Secretarial Officer (PSO). A senior outlay program official, **including** the Assistant Secretaries for Conservation and Renewable Energy; **Defense** Programs; Environmental Restoration and Waste Management; Fossil Energy; and Nuclear Energy; and the Directors of Energy Research; Civilian Radioactive Waste Management.
- ee. Power Marketing Administration (PMA). The DOE **PMAs** are the Alaska Power Administration; the Bonneville Power Administration; the Southeastern **Power** Administration; Southwestern Power Administration; and Western Area Power Administration.
- ff. Public Aircraft. An aircraft used only in the service of a government or a political subdivision. It does not include any Government-owned aircraft engaged in carrying individuals or property for commercial purposes.
- gg. Staff Secretarial Officer (SSO). The DOE **SSOs** include, but are not **limited** to the Assistant **Secretary** for Environment, Safety and Health; the Inspector General; the **Director** of Administration and Management; Director of Procurement Assistance and Program Management; and the Director of Security Affairs.

7. RESPONSIBILITIES AND AUTHORITIES.

- a. Assistant Secretary for Environment, Safety and Health (EH-1). EH-1 shall:
 - (1) Be responsible for the Office of Aviation Operations **Policy**. **EH-1** will **ensure** that safety and operations concerns are prudently balanced.
 - (2) **Be responsible** for the Chairmanship of the Aviation Management **Board**.
 - (3) Develop aviation safety policies for DOE.
 - (4) Perform aviation safety oversight as directed by DOE **policy**.
 - (5) Serve as a central point of contact for aviation safety policy and provide interpretation of aviation safety requirements for DOE.
 - (6) Conduct or participate in aviation functional safety appraisals through agreements with PSOs.
 - (7) Monitor DOE aviation accident investigations.
 - (8) Coordinate with other Government agencies concerning aviation safety and aircraft operations.

- (9) Concur in the safety aspects of the purchase and long-term leases (1 year or more) of DOE aircraft.

b. Program Secretarial Officers. PSOs shall:

- (1) Be responsible for the safety of aviation operations within their organizations.
- (2) Oversee the development of standards for aviation facilities and operations at locations where they have lead responsibility. Oversee the development and coordination of standards with the appropriate DOE organization at locations where they do not have lead responsibility.
- (3) Establish clear lines of responsibility for aviation safety overview and audit within their organizations.
- (4) Provide functional oversight and appraisals of aviation operations within their organizations.
- (5) PSO's with DOE owned aircraft shall make provisions to ensure there is an Aviation Safety Officer(s) either at headquarters or in the field. An effort should be made to place the Aviation Safety Officer as geographically close to the aviation organization as possible.

c. Director of Administration and Management (AD-1). AD-1 shall be responsible for overview of the safety of Federal employees in accordance with DOE 3790.1B.

d. Director of Security Affairs (SA-1) SA-1 shall:

- (1) Develop and establish, in conjunction with cognizant PSOs and EH-1, security policy for DOE Protective Force Aviation activities.
- (2) Establish, in conjunction with cognizant PSOs and EH-1, specifications for standardized security helicopters.

e. Heads of Field Offices and PMAs. The Heads of Field Offices and PMAs shall:

- (1) Be responsible for aviation safety and operations within their respective organizations.
- (2) Ensure the application of Headquarters aviation safety policy as well as their respective aviation safety policies to their aviation operations through appraisals or other recognized methods.

- (3) Follow procedures for the notification, reporting, and **investigation** of aircraft incidents and accidents in accordance with current DOE 5484.1, DOE **5000.3B**, and **NTSB** regulations.
- (4) Determine when mission requirements and time constraints require temporary operation of a DOE aircraft with a DOE flight certificate rather than an FAA airworthiness certificate. If mission requirements extend beyond 180 days, or are of a recurring nature necessitating frequent DOE flight certificates, the Field Office shall provide appropriate safety documentation to the **PSO** and obtain **PSO** approval for continued use of the DOE flight certificate.
- (5) Ensure that covered contracts for aviation services contain provisions for compliance with this Order and that annual reviews of covered contractors and leases are conducted to evaluate the degree of compliance with this Order.
- (6) Designate an Aviation Manager.
- (7) Designate an individual responsible for aviation safety.
- f. Pilot-in-Command (PIC). The Pilot-in-Command of a DOE aircraft shall be directly responsible and the final authority for the safe operation of that aircraft.
8. AIRCRAFT ACCIDENTS AND INCIDENTS. The responsible DOE Element or contractor shall investigate all type A and B aircraft accidents and incidents according to DOE 5484.1 and DOE **5000.3B**, and shall:
 - a. Appoint to **the** accident investigation board at least one individual who has aviation experience as a pilot, aviation operations manager, or Aviation **Safety** Officer or who has similar aviation experience.
 - b. Use the **NTSB** to investigate all aircraft accidents involving fatalities and consider using the **NTSB** in the investigation of all other aircraft accidents, in accordance with the **NTSB** and DOE Letter of Agreement, dated December 21, 1987.
9. AVIATION MANUALS.

These requirements apply to DOE organizations and covered contractors conducting DOE aviation operations involving DOE-owned aircraft or DOE aircraft which **have** been leased in lieu of ownership.

 - a. Aviation manuals addressing 14 **CFR** Part 121 or 135 operations, as a minimum, shall contain the subjects required by 14 **CFR** Parts 121.135 and 121.369 or 14 **CFR** Parts 135.23 and 135.427. Each **manual** shall have separate sections for "Operations," "Training," and "Maintenance."

- b. 14 **CFR** Part 139.205 shall be used as a guide for the preparation of airport operations and airport maintenance manuals.
- c. Organizations conducting special types of operations, such as described in 14 **CFR** Part 133, 137, or 145, shall prepare and keep appropriate manuals and shall document training and other requirements as appropriate.
- d. Manuals shall contain sufficient detail to provide the necessary guidance to enable each employee to carry out assigned duties and responsibilities, in accordance with the policies of DOE and its field organizations.
- e. The format of the manual used by the Interagency Committee for Aviation Policy or of any manual that satisfies the above requirements constitutes an acceptable format.
- f. The manual shall contain the following documents and analyses as appendices:
 - (1) Documentation demonstrating compliance or noncompliance with 14 **CFR** Parts 121, 133, 135, 137, 139, or 145, as applicable.
 - (2) Documentation supporting exemptions referenced in the Compliance Statements.
 - (3) Documentation supporting exemptions to this Order but not related to 14 **CFR** Parts 121, 133, 135, 137, 139, or 145.
- g. The Heads of the Field Offices and PMAs or their designees shall endorse (i.e., accept, approve, review, or concur) the aviation operations manual(s) and subsequent changes to the manual(s) and shall document such endorsement.

10. DOE AIRCRAFT OPERATIONS (DOE-OWNED AIRCRAFT)

These requirements apply to DOE organizations and covered contractors conducting DOE aviation operations involving aircraft that are owned exclusively by DOE or leased in lieu of ownership. Aircraft are considered to be leased in lieu of ownership if DOE or covered contractor pilots are used to fly the aircraft.

DOE public aircraft are not required by the FAA to hold an Air Carrier or Commercial Operator certificate. However, consistent with the "Purpose" statement of this Order, DOE has elected to apply the operation and maintenance standards contained in 14 **CFR** Parts 121, 133, 135, 139, and 145 to Departmental operations.

- a. When practical, the flight crew shall file a visual flight rules (**VFR**) or instrument flight rules (**IFR**) flight plan for each flight.
- b. When **VFR** or **IFR** flight plans are not practical, the flight crew shall ensure that responsible DOE or covered contractor personnel are aware of the planned route of flight, the estimated time of arrival (ETA), and the number and identity of individuals on board the aircraft. The flight crew shall update the ETA if they expect to arrive more than 30 minutes after the planned ETA. The flight crew of a security helicopter operating within the boundary of a site shall update their ETA if they expect to arrive more than 15 minutes after their planned ETA. The flight crew shall notify the responsible personnel when the aircraft has landed. If the flight crew has not made notification of their landing within the appropriate amount of time following the planned **ETA**, the responsible personnel shall initiate a search for the aircraft.
- c. All pilots shall hold, at a minimum, a commercial pilot certificate with the appropriate category class, and type ratings for the flight operation to be performed and shall at least meet the minimum requirements for a Federal pilot, as outlined in the **OPM X-118 Handbook, Qualification Standards**.
- d. All DOE aircraft shall be operated, inspected, and maintained in accordance with the manufacturer's recommended maintenance schedule and with either 14 **CFR** Part 121 or 14 **CFR** Part 135.
- e. DOE is unable to comply with some of the requirements of 14 **CFR** Part 135 or 14 **CFR** Part 121 for technical and practical reasons. DOE public aircraft operations are not eligible for Air Carrier or Commercial Operator certificates. As a result, the following provisions do not apply to DOE public aircraft operations:
 - (a) 14 **CFR** Parts 135.1, 135.2, 135.3, 135.5, 135.7, 135.9, 135.11, 135.13, 135.15, 135.17, 135.27, 135.29, 135.31, 135.33, 135.35, and 135.43.
 - (b) 14 **CFR** Parts 121.1, 121.3, 121.5, 121.7, 121.13, 121 Subpart B, 121.45, 121.47, 121.48, 121.49, 121.51, 121.53, 121.55, 121.57, 121.71, 121.73, 121.77, and 121 Subpart E.
- f. Some DOE missions require routine operations outside the provisions of 14 **CFR** Part 135 or 14 **CFR** Part 121 (e.g., night vision goggle operations; aerial gunnery operations). The responsible PSO or designee may grant initial authorization, with **EH-1** concurrence, for such routine operations. In addition, **SA-1** concurrence is required for aircraft used for aviation missions of Protective Forces (e.g., security helicopters). Once initial authorization for these type operations is granted by the appropriate authorities, no further

authorization will be required for conducting the same type operations.

- g. Programs that provide initial, transition, upgrade, and recurrence training for flight crews, air crews, and ground crews shall be reviewed and approved by the PSO or designee (as appropriate). If the training program is approved as a part of the aviation operations manual approval process, no separate approval is required. As a minimum, training programs shall meet 14 CFR Part 135 or 14 CFR Part 121 requirements.
- h. All DOE and covered contractor aviation organizations, except those involved in **powerline** and pipeline patrols, that conduct operations less than 500 feet above ground level (**AGL**), shall have obstacle maps that are updated at least every 30 days. The maps **shall** indicate height **AGL** of all new and existing obstacles to flight on (1) the DOE reservation on which they operate; or (2) along commonly used flight paths, if the aircraft's enroute altitude is less than 500 feet **AGL**.
- i. DOE and covered contractor organizations that conduct **powerline** or pipeline patrols less than 500 feet **AGL** shall use a system of warning signs and marker balls, supplemented with a current VFR sectional map, to alert pilots to hazards within **powerline** or pipeline rights of way.
- j. DOE and covered contractor organizations should maintain a reference **library** of FAA Advisory Circulars (AC). ACS should be used to the extent possible in aircraft and facility operations.
- k. All DOE and covered contractor operations conducted under **IFR** shall be conducted in multiengine aircraft certified for instrument flight and shall be crewed by two current, instrument-rated pilots. Aircraft shall have dual flight instrumentation or instrumentation that is easily visible to both pilots.
- 1. **Night Operations - General.** The following additional requirements shall be met for operations later than 1 hour after official sunset until 1 hour before official sunrise or, in Alaska, for operations during the period when a prominent unlighted object cannot be seen from a distance of 3 statute miles or the sun is more than 6 degrees below the horizon.
 - (1) Multiengine aircraft shall be used.
 - (2) **Flight** crews shall include a minimum of two current, qualified pilots who meet minimum requirements for recency of experience in night and instrument operations. As a minimum, both pilots shall **hold** current commercial certificates and instrument ratings.
 - (3) Helicopters shall have at least one radar altimeter with aural and visual warning systems. The radar altimeter display and the visual warning system(s) shall be situated such that at least one radar altimeter display and one visual warning system are clearly

visible to both the pilot and the copilot. Radar altimeters installed in aircraft involved in night **vision** goggle (NVG) operations shall have digital displays.

- (4) The ~~following~~ minimum altitudes for unaided night flight must be maintained **except** during takeoff, departure, **approach**, and landing.
- (a) Helicopters, VFR. Aircraft shall maintain an altitude not less than 500 feet AGL and at least 200 feet above obstacles that are within 1,000 feet horizontally of the route of flight.
 - (b) Airplanes, VFR. The minimum operating altitude shall be the maximum elevation figure within the **VFR** sectional chart quadrangle in which the aircraft is operating or the minimum **enroute** altitude (MEA) specified by the **Enroute** Low Altitude Chart, whichever more accurately applies to the intended route of flight.
 - (c) All Aircraft, IFR. The minimum operating altitude shall be the MEA or the altitude specified by the FAA Air Traffic Controller.
- (5) Single-pilot, single-engine aircraft operations during the period from 1 hour after official sunset until 1 hour before official sunrise will be authorized for emergency operations only and are subject to the following:
- (a) The flight crew shall obtain approval for the initiation of emergency flights during this time period from the Head of ~~the~~ Field Office, the PMA, the PSO, or their designee.
 - (b) In circumstances in which the loss of life is highly probable and immediate action is required, the **PIC** may initiate the flight.
 - (c) If a single-pilot, single-engine aircraft is inadvertently stranded and cannot return to base prior to 1 hour after sunset, oral approval for continued operation shall be obtained from the Chief Pilot, Aviation Manager, or designee. Individuals designated to approve continued operation shall be listed in the organization's aviation operations manual.
 - (d) ~~The~~ Aviation Manager may authorize a limited number of **VFR night** operations to allow the organization's pilots to **maintain** night currency.

- (e) The Aviation Manager shall keep a log recording the dates and return times of all flights operating later than 1 hour after official sunset and 1 hour before official sunrise.
 - (f) Enhanced position-reporting and flight-following procedures shall be used.
 - (g) **Under** no circumstances may a flight be initiated under instrument conditions, under forecast **enrouteIMC** conditions, or if the pilot has not been properly trained and/or is not current in night operations.
- m. **Night Vision Goggle (NVG) Safety Requirements.** Certain DOE missions may require the use of NVG devices. The following minimum requirements shall be met for NVG operations:
- (1) Flight crews shall consist of at least two pilots. Both pilots shall be instrument rated, current, and meet the minimum requirements for recency of experience in night and instrument operations.
 - (2) The minimum **enroute** altitude shall be at least 300 feet AGL and at least 200 feet above obstacles that are within 1,000 feet horizontally of the route of flight, whichever is higher. Exceptions to this are:
 - (a) response to emergency situations;
 - (b) takeoff, departure, approach, or landing; or
 - (c) during training in an area approved in accordance with subparagraph (3) below.
 - (3) Qualification training and low-level proficiency training shall be conducted within well-marked training areas. The training areas shall be approved prior to use by the DOE Field Office ASO, the contractor aviation manager/director flight operations, and the PSO or designee.
 - (4) Qualification training and proficiency flights shall be conducted with two pilots on board the aircraft. The **PIC** for qualification training shall be an FAA Certified Flight Instructor (**CFI**) with the appropriate ratings, who is designated an **NVG** trainer and qualified as a flight instructor by the organization conducting the training. No passengers may be carried during training or proficiency flights. No air **crewmembers** may be carried during training or proficiency flights, unless specifically required for tactical training or proficiency purposes.

- (5) **NVGs** shall be used and maintained, at a minimum, in accordance with the standard specified in DOE 5632.7 Chapter 5.

11. CHARTERED AND LEASED AVIATION OPERATIONS.

This section applies to charter and lease agreements between aviation services contractors and DOE or covered contractors. This section does not apply to aircraft which are leased in lieu of ownership. Aircraft are considered **to** be leased in lieu of ownership if DOE or covered contractor pilots are used **to** fly the aircraft. Operations involving aircraft which are leased in lieu of ownership are covered in the section of this Order titled "**DOE Aircraft** Operations (DOE-Owned Aircraft). "

- a. The aviation services contractors or subcontractors shall hold Air Carrier, Commercial Operator, or other appropriate certificates under 14 CFR Parts 121, 125, 127, 133, 135, 137, or 145, as applicable for the types of operations being conducted. The specifications and ownership of the prospective aircraft shall be listed on the Operating Specifications.
- b. DOE and covered contractor organizations shall make a reasonable effort to ensure that:
 - (1) The **organization** responsible for chartering or leasing an aircraft has a copy of the aviation services contractor's FAA Operating Specification(s) on file .
 - (2) All aircraft are equipped in accordance with applicable Federal Aviation Regulations, manufacturer/FAA minimum equipment lists, and air **carrier/commerc** al operator operating specifications.
 - (3) The installation of any additional equipment is accomplished in accordance with Federal Aviation Regulations.
 - (4) All aircraft are **mainta**ined in accordance with applicable Federal Aviation Regulations, manufacturers' overhaul and-maintenance manuals and bulletins, and air carrier/commercial operator operating specifications.
 - (5) Minimum pilot in command qualifications are an FAA Commercial Pilot Certificate with the appropriate category and class rating, a second-class medical certificate, 1,200 hours in category, 100 hours **PIC** in category during the previous 12 months, and 25 hours **PIC** in make and model of aircraft. Pilots should be named in the operating specifications of the aviation services contractor and certified for the specific types of operations to be conducted.

- (6) When practical, a VFR or IFR flight plan is filed for each flight.
- (7) When VFR or IFR flight plans are not practical, the flight crew ensures that the responsible DOE or contractor personnel are aware of the planned route of flight, the ETA, and the number and identity of individuals on board the aircraft. The flight crew's ETA is to be updated periodically if the expected time of arrival is more than 30 minutes after the planned ETA. The flight crew of a security helicopter operating within the boundary of a site will update the ETA if they expect to arrive more than 15 minutes after the planned ETA. The flight crew will notify the responsible personnel when the aircraft has landed. If the flight crew has not made notification of their landing within the appropriate amount of time following the ETA, the responsible personnel will initiate a search for the aircraft.
- (8) Organizations that conduct operations below 500 feet AGL (except those involved in powerline and pipeline patrols), have obstacle maps that are updated at least every 30 days. The maps will indicate the height AGL of all new and existing obstacles to flight on (1) the DOE reservation on which they operate; or (2) along commonly used flight paths, if the aircraft's enroute altitude is to be 500 feet AGL or less.
- (9) Organizations conducting powerline or pipeline patrols below 500 feet AGL have a system of warning signs and marker balls, supplemented with a current VFR sectional map, to alert pilots to hazards within powerline or pipeline rights of way.
- (10) All IFR operations are conducted in multiengine aircraft certified for instrument flight and crewed by two current, instrument-rated pilots.
- (11) Night Operations - General. The following additional requirements are to be met for operations later than 1 hour after official sunset until 1 hour before official sunrise or, in Alaska, for operations during the period when a prominent unlighted object cannot be seen from a distance of 3 statute miles or the sun is more than 6 degrees below the horizon.
 - (a) Multiengine aircraft will be used.
 - (b) Flight crews include at least two current, qualified pilots who meet minimum requirements for recency of experience in night and instrument operations. As a minimum, both pilots hold current commercial certificates and instrument ratings.
 - (c) Helicopters are to have at least one radar altimeter with aural and visual warning systems. The radar altimeter

display and the visual warning system(s) are situated such that at least one radar altimeter display and one visual warning system are clearly visible to both the pilot and the copilot. Radar altimeters installed in aircraft involved in NVG operations are to have digital displays.

- (d) The following minimum altitudes for unaided night flight must be maintained except during takeoff, departure, approach, and landing.

- 1 Helicopters, VFR.** Aircraft are to maintain an altitude at least 500 feet AGL and at least 200 feet above obstacles that are within 1,000 feet horizontally of the route of flight.
- 2 Airplanes, VFR.** The minimum operating altitude is the maximum elevation figure within the **VFR** sectional chart quadrangle in which the aircraft is operating or the MEA specified by the Enroute Low Altitude Chart, whichever more accurately applies to the intended route of flight.
- 3 All Aircraft, IFR.** The minimum operating altitude is the MEA or the altitude specified by the FAA Air Traffic Controller.

12. MILITARY AND/OR GOVERNMENT (NON-DOE) AIRCRAFT AND AIRCRAFT OPERATIONS.

These requirements apply to DOE organizations and covered contractors conducting aviation operations involving military and/or Government aircraft.

- a. Military and/or Government aircraft owned or operated by DOE organizations or covered contractors shall be maintained and inspected in accordance with recommended military and/or Government requirements and schedules if comparable to DOE standards.
- b. Military and/or Government aircraft operated by non-DOE entities on DOE property shall be exempt from the provisions of this Order.
- c. DOE or covered contractor proposals for operation of surplus or bailment aircraft of the Armed Forces that do not have a civilian counterpart, and for which a type certificate has never been issued, shall **be** approved by the PSO or-designee.

13. HAZARDOUS CARGO CARRYING OPERATIONS.

- a. Hazardous material shall be transported by air in accordance with the applicable requirements of 49 **CFR** Subchapter C, Parts 100 through 180

or the **International** Civil Aviation Organizations Technical Instruction.

- b. DOE aircraft operating under exemptions to 49 CFR Subchapter C may be used to carry "**mission essential**" personnel only. The Heads of a Field Offices and PMAs, or their designees shall determine which personnel are considered "mission essential."
- c. Special safety requirements necessary for air shipments of hazardous material shall comply with applicable national standards and regulations. Special requirements shall be included in the required flight operations manual.

14. **AIRWORTHINESS CERTIFICATES.**

These requirements apply to DOE organizations and covered contractors conducting DOE aviation operations involving DOE aircraft.

All aircraft owned or operated by DOE that are eligible for an FAA Standard or Special Airworthiness Certificate shall have such a certificate in the transport, normal, restricted, or experimental category, as appropriate. Additionally, all aircraft with or without airworthiness certification shall be maintained in accordance with the applicable Federal Aviation Regulations. **Uncertificated** aircraft shall be maintained to the recommended military or manufacturer's maintenance procedures. Exceptions to this policy are as follows:

- a. Aircraft for which standard type certificates have been issued, but which have been altered in such a manner as to preclude certification in the standard category, shall, if possible, be certificated in the restricted category.
- b. Aircraft that are modified such that their issued Standard Airworthiness Certificates or Special Airworthiness Certificates are not valid shall carry DOE Flight Certificates (see attachment). The process for obtaining a DOE Flight Certificate is as follows:
 - (1) Aircraft shall have a valid Airworthiness Certificate prior to the proposed aircraft modification.
 - (2) The modification shall be analyzed and approved initially by an FAA Designated Engineering Representative (**DER**) or a Designated Airworthiness Representative (DAR) and documented in the aircraft's maintenance logbook.
 - (3) The DOE Flight Certificate shall be signed by the Head of the Field Office or designee and by the DOE Field Office ASO. If the mission requirements extend beyond 180 days, or if frequent issuance of DOE flight certificates is required, the Field Office shall provide appropriate safety documentation to the PSO and

shall obtain the **PSO's** approval for continued use of the DOE Flight Certificate.

- (4) **When** the modification has initially been approved, return to the approved configuration shall be accomplished via a logbook entry and approval by the Chief of Maintenance or designee.
- c. Any aircraft that had an Airworthiness Certificate shall be recertified **to** that Airworthiness Certificate at the completion of a special **mission** requirement that superseded such certification.
- d. Use of any aircraft that is permanently unable to qualify for a valid Airworthiness Certificate shall be approved in accordance with the procedures in the "Airworthiness Certificates" section of this Order, and prior notification shall be given to the Assistant Secretary for Environment, Safety and Health or designee.

15. DOE-OWNED OR ~~LEASED~~ HELICOPTERS - MINIMUM EQUIPMENT.

These requirements apply to DOE organizations and covered contractors conducting DOE aviation operations involving DOE owned or leased helicopters.

The following equipment, if available and certified for the aircraft model in use, shall be required on DOE-owned or -leased (90 consecutive days or more) helicopters.

- a. wire strike protection system
- b. crash resistant fuel system (new purchases and leased aircraft)
- c. shoulder restraint for each seat (new purchases and leased aircraft)
- d. cockpit voice recorder (if required by 14 **CFR** Part 135.151)
- e. digital flight data recorder (if required by 14 **CFR** Part 135.152)
- f. energy attenuating seats (new purchases)

16. DOE AIRPORTS AND HELIPORTS.

This paragraph is to be applied to DOE organizations and covered contractors conducting DOE aviation operations.

- a. Current facility or operations manuals shall be maintained by responsible organizations, contractors, or subcontractors governing

the management and use of airports, heliports, or airstrips under their control.

- b. FAA Advisory Circular 150/5390-2 shall be used as a guide for the planning and operation of DOE heliports and helipads.
- c. 14 **CFR** Part 139 shall be used as a guide for the planning and operation of DOE airports and air strips used for fixed-wing aircraft, including large aircraft and aircraft involved in the transport of passengers and classified or hazardous cargo.
- d. Because of the varied and unique DOE mission requirements, the adequacy of specific airport design and operational factors shall be determined through the **onsite** appraisal process by the DOE Field Office **ASO**. Specific design and operational factors shall be included in the applicable airport operations manual to ensure that aviation operations are conducted in a manner consistent with applicable Federal, State, and local aviation safety regulations.
- e. In **granting** permission for the use of DOE aviation and airport facilities-and services to private or other Government aircraft operators, the DOE Field Office **ASO** shall assure that such operations do not compromise the safety of DOE employees, contractor personnel, and facilities; the related general environment and general public; or the intent of this Order.

17. SURVEILLANCE.

These requirements apply to DOE organizations and covered contractors conducting DOE aviation operations involving DOE aircraft.

- a. Continuing surveillance of all aviation operations and activities shall be conducted by the responsible DOE officials in accordance with DOE 5482. 1B, "Environment, Safety, and Health Appraisal Program," or DOE **3790.1B**, "Federal Employee Occupational Safety and **Health** Program," as applicable.
- b. All DOE and contractor aviation accidents and incidents, together with the corrective and follow up actions taken, shall be reported in accordance with DOE 5484.1, "Environmental Protection, Safety, and Health Protection Information Reporting Requirements," and DOE **5000.3B**, "Occurrence Report and Processing of Operations Information."

18. AVIATION SAFETY REVIEW AND DOCUMENTATION REQUIREMENTS.

This paragraph is to be applied to DOE and covered contractors conducting aviation operations.

- a. **PSOs** shall use **EH-1-approved** guidance for aviation safety documentation in lieu of complying with DOE 5481 .1B.

- b. Guidance for **aviation** safety documentation that is approved by **EH-1** must, as a minimum, include the following:
 - (1) description of the aviation mission(s) to be performed;
 - (2) analysis of the hazards associated with those missions;
 - (3) description of the precautions and actions taken to mitigate hazards;
 - (4) description of deviations from the Federal Aviation Regulations and the reasons for the deviations; and
 - (5) signed safety documentation verifying that the responsible official is cognizant of the risks incurred and that those risks are accepted by the official.
- c. Operations **having** hazards of a **type** and **magnitude routinely encountered** and/& accepted **by the public** do not **require** additional safety documentation if the **PSOs** provide a **description** of the operations **to EH-1**.

19. **IMPLEMENTATION PLAN.**

DOE Field Office responsible for DOE or covered contractor aviation operations **or** assets shall submit an implementation plan within 180 days of the effective **date** of this Order. Implementation plans shall:

- a. Identify proposed organizational and operational changes that may be required as a result of implementing this revised Order;
- b. Describe the process that will be used to adopt the changes mandated by this **Order**;
- c. Specify the completion date for all changes. (After the completion date, full compliance shall be mandatory.);
- d. Provide the organization's aviation compliance statements.
- e. Specify the provisions of this Order from which the aviation organization requests an exemption;
- f. Contain the Following elements when exemption requests are submitted as a part of the implementation plan:
 - (1) A **detai**led description of, and justification of the need for, the proposed exemption;

- (2) A description of the increased risks that are likely to result from operating under the exemption, as well as a description of the procedures used to mitigate these risks;
- (3) The proposed duration for which the exemption **will** be required;
- (4) A statement detailing why the aviation organization believes the proposal, including any safety control measures specified by the aviation organization, achieves a level of safety that is at least equal to that specified in the Order;
- (5) Any additional information that the aviation organization believes is relevant to the exemption request; and
- (6) Approval by the following authorities:
 - (a) **PSO(s)** responsible for the aviation assets or designee(s);
 - (b) Assistant Secretary for Environment, Safety and Health; and
 - (c) Director of Security Affairs for implementation plans regarding security aircraft.
 - (d) Heads of the Field Organizations and **PMAs**

20. **EXEMPTIONS.**

These requirements apply to DOE organizations and covered contractors conducting DOE aviation operations.

- a. Heads of Field Offices and **PMAs** requesting exemptions from this Order shall include the following provisions in their exemption request:
 - (1) A detailed description of the proposal, including appropriate plans, procedures, test results, previous exemptions, or approvals, as applicable;
 - (2) A list of modified specifications or procedures, **if** any, and a detailed description of the modifications with any supporting information;
 - (3) A description of the increased risks that are likely to result if the exemption is granted. The request **shall** specify the safety control measures considered necessary or appropriate to compensate for those increased risks;
 - (4) A description of the proposed duration or the proposed schedule of events for which the exemption is sought;

- (5) A statement about why the proposal, including any safety control measures that are specified, will achieve a level of safety that is at least equal to that specified in the regulation from which the exemption is sought; and
 - (6) Any additional information relevant to the **applicant's** request.
- b. Exemptions **shall** be approved by the following authorities:
 - (1) **PSO(s)** responsible for the aviation assets or designee(s);
 - (2) Assistant Secretary for Environment, Safety and Health; and
 - (3) Director of Security Affairs for exemptions affecting security aircraft policy.
 - (4) Head of the Field Organization or **PMA**
- c. Exemptions may be terminated through agreement of the following authorities:
 - (1) **PSO(s)** responsible for the aviation assets or designee(s);
 - (2) **Assistant** Secretary for Environment, Safety and Health; and
 - (3) Director of Security Affairs for exemptions affecting security aircraft policy.
 - (4) Heads **of** the Field Organization or **PMA**
- d. Interim exemptions may be granted by the Heads of the Field Offices and **PMAs** after the applicant has submitted a formal exemption request. Interim exemptions are valid for a maximum of 180 days and shall be accompanied by written documentation. If the formal exemption has not been approved or rejected at the expiration of the **180-day** period, one additional interim exemption may be issued.

BY ORDER OF THE SECRETARY OF ENERGY:



LINDA G. SVE
Acting Director of Organization
and Management



United States of America
Department of Energy

FLIGHT CERTIFICATE

Nationality and Registration Marks	Manufacturer and Model	Aircraft Serial No.
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AUTHORITY AND BASIS FOR ISSUANCE

This Aircraft is Operated **by** DOE as a Public Aircraft in Accordance with **DOE** Policy.

The Basis for Issuance of this Flight Certificate is the Following Aircraft Modification **(s)**.

Dated _____ INFORMATION ON FILE WITH _____

Date of Issuance	Field Office Manager _____ Date _____
	Aviation Safety Officer _____ Date _____