

**FISH AND WILDLIFE SERVICE
AVIATION**

Aviation

Part 330 Aviation Management

Chapter 4 Aviation Operations and Maintenance

330 FW 4

4.1 What is the purpose of this chapter? This chapter describes how the U.S. Fish and Wildlife Service (Service) conducts aviation operations, including:

- A. Flight planning,
- B. Rules for transporting passengers and cargo,
- C. Aircraft security, and
- D. Aircraft maintenance procedures.

4.2 What is the scope of this chapter? This chapter applies to all Service employees, volunteers, Youth Conservation Corps members and students, and seasonal workers who use, operate, or maintain Service aviation resources.

4.3 What are the authorities for this chapter?

- A. Federal Aviation Regulations (14 CFR Parts 43, 91, and 135).
- B. Office of Management and Budget Circular A-126, Improving the Management and Use of Government Aircraft.
- C. Departmental Manual (DM), Parts 350 through 354.

4.4 Who is responsible for aviation operations?

A. The **Director** ensures that we have the resources in place to operate Service aircraft safely and efficiently to accomplish Service goals.

B. The **Assistant Director – Migratory Birds** is the Service Aviation Executive and is responsible for:

- (1) Advising the Director on Service aviation matters.
- (2) Overseeing the development, implementation, and maintenance of the Service Aviation Management Program.
- (3) Ensuring that the Service's Aviation Management Program meets Departmental requirements.

C. The **Chief – Law Enforcement** ensures that the Law Enforcement Aviation Program meets Service and Departmental requirements.

D. **Regional Directors** ensure that the Regions' Aviation Management Programs meet Service and Departmental requirements.

E. The **Service Aviation Manager:**

- (1) Serves as the primary Service contact and coordinator with the Department for all aviation requirements.
- (2) Revises and updates this chapter, as necessary.
- (3) Serves as a consultant to resolve Servicewide questions or issues on aviation management.

03/24/08

AVIATION

Supersedes 333 FW 1 - 3 and 334 FW 2, 3, and 4; 06/03/93

**FISH AND WILDLIFE SERVICE
AVIATION**

F. Regional Aviation Managers (RAM):

(1) Serve as the Regions' primary contacts with the NBC AM and are the Regions' points of contact for matters related to aviation.

(2) Assess Regional programs to determine if using aircraft could reduce costs or improve the effectiveness of missions and administrative (point-to-point) travel.

G. Project Leaders:

(1) Make sure that flight operations for their area of responsibility follow Service requirements, and

(2) Develop and use current hazard maps, a current Mishap Response Plan, and Flight Following Plans when involved in special use activities.

4.5 What authority does a Service Pilot-in-Command (PIC) have? The PIC of an aircraft used for Service business, regardless of position and grade, is directly responsible for the safety of the aircraft and the people on board.

A. The PIC is the final authority for flight-related operations and decisions.

B. If more than one pilot is on board an aircraft, the pilots must determine which one of them is the PIC for that flight before flight preparations begin.

C. The PIC may deviate from any rule or policy to assure flight safety and to preserve life and equipment during an in-flight emergency. PICs must notify the Federal Aviation Administration (FAA) and the NBC AM, when appropriate, immediately after completing a flight where they had to deviate from rules or policies because of an in-flight emergency.

4.6 What are the PIC's responsibilities before a flight? The PIC must follow all FAA, Departmental, and Service procedures. Some, but not all, of the activities PICs, crew members, or Project Leaders must do before a flight include:

A. Pre-flight Planning. PICs are responsible for pre-flight planning, which includes determining:

(1) Risk. We expect pilots to use risk management techniques as a routine part of their flight planning and operations. Pilots should take steps to reduce risks they identify and make sure the Project Leader is aware of the risks involved. More information about risk management and the risk analysis process are in 330 FW 5, Exhibits 1 and 2.

(2) The route of flight, including the airspace being flown in and out of, and the distance of travel.

(3) Fuel requirements.

(4) Weather reports and forecasts at the points of origin and destination.

(5) Runway lengths for expected takeoffs and landings, considering gross weights, winds, and temperatures. Review aircraft performance charts.

(6) Helicopter performance data for expected hovering in and out of ground effect at landing sites.

B. Weight and Balance, and Helicopter Load Calculations.

**FISH AND WILDLIFE SERVICE
AVIATION**

(1) The PIC must complete a weight and balance calculation prior to each helicopter flight. The PIC may use a pre-calculated mission weight and balance if the information is current and the PIC reviews it prior to departure.

(2) A helicopter PIC must also complete a load calculation (Form OAS-67, Helicopter Load Calculation) on the first flight of each day. That load calculation is valid for flights between similar points of elevation, temperature, and fuel loads.

(3) The PIC must complete a new load calculation when there is:

(a) A change in outside air temperature of 41 degrees Fahrenheit/5 degrees Celsius,

(b) A change in landing site or low level operations of 1,000 feet/305 meters, **or**

(c) An increase of cargo or fuel load by 50 pounds/23 kilograms or more.

C. Increased Weight Check. PICs must operate strictly within the limitations of the increased weight pilot operator handbook when they fly aircraft that the Operational Procedures Memorandum Number 06-50 (OPM No. 06-50) says may be flown over their certified gross weight. Only PICs with authorization to use OPM No. 06-50 may fly aircraft in an over-gross-weight configuration.

D. Pre-flight Inspections. PICs must perform a thorough pre-flight inspection on the first flight of the day as listed in the Pilot Operator's Handbook or the Flight Manual. The PIC determines what items to check prior to flights on that day, but the inspection must include safety items.

E. Flight Plans. PICs must complete and file flight plans **on all flights** (OPM-06-2).

(1) A Service flight plan must contain:

(a) The intended route of flight,

(b) Estimated time of arrival,

(c) How the aircraft will be tracked during the flight (see section 4.6F below), and

(d) The planned response procedures if the aircraft experiences a mishap or fails to report.

(2) You must file flight plans with one of the following agencies:

(a) FAA,

(b) International Civil Aviation Organization,

(c) A Regional Director-approved or other bureau-approved flight plan program, or

(d) An NBC AM-approved vendor flight plan program.

F. Flight Following. Flight following is an aviation term that means we report a flight's position throughout the flight. PICs must ensure that they or their air crew members:

(1) Provide the flight following agency position reports at least **once an hour**, under normal

**FISH AND WILDLIFE SERVICE
AVIATION**

circumstances.

(2) Flight follow with at least one the following on **every** flight:

(a) FAA,

(b) International Civil Aviation Organization,

(c) A Regional Director-approved or other bureau-approved flight plan program. A Service flight following program must describe the actions the Service or other officials will take if the aircraft is overdue or missing. The flight following agent must document position reports to assist in locating an overdue or missing aircraft.

(d) NBC AM-approved vendor flight following program. Even if the vendor's position reporting requirements do not require hourly reporting, you must still provide position reports at least once an hour.

G. Manifests. PICs must complete a passenger and crew member manifest and leave a copy of it at the point of departure. The PIC must leave an updated copy of the manifest at subsequent points of departure when practical.

H. Briefings.

(1) Mission Briefing. The PIC, Project Leader, or qualified person the Project Leader designates must brief all crew members about the mission prior to the flight. (See 330 FW 2 for more information about crew members.) Crew members may include observers, net-gunners, and photographers. The mission briefing must include at least the following topics:

(a) Specific mission goals or objectives;

(b) Crew responsibilities in normal and emergency situations;

(c) Weather considerations;

(d) Communications procedures;

(e) Altitudes, maneuvers, and speeds;

(f) Fuel endurance; and

(g) Known or potential flight hazards.

(2) Passenger and Crew Safety Briefing. The PIC or another qualified person must brief passengers and crew members about safety prior to each flight. You do not need to repeat the briefing when the same passengers and crew are onboard during multiple short flights for one operation, unless new passengers or crew board the aircraft. The safety briefing must include at least the following information:

(a) Smoking is **not** allowed on board the aircraft at any time.

(b) Safety belts must be fastened while on board the aircraft. Give instructions on how to use the safety belts, if necessary.

(c) Location of emergency exits and how to operate them.

**FISH AND WILDLIFE SERVICE
AVIATION**

Aviation

Part 330 Aviation Management

Chapter 4 Aviation Operations and Maintenance

330 FW 4

- (d) Location of fire extinguishers.
- (e) Location of survival equipment and the emergency locator transmitter.
- (f) Fuel and electrical shut-off switches or handles.
- (g) Location of oxygen masks and how to use them, if applicable.
- (h) Location of personal protective equipment (PPE), first aid kits, and life support equipment and how and when to use them.

(3) Special Use Activities Crew Members Briefing. The PIC must brief all crew members on special use activities missions (see 330 FW 3 for a definition of special use activities). The briefing must include:

- (a) The overall objective of the flight,
- (b) Any limitations involved (for example, areas where you cannot fly, a boundary you cannot fly past, etc.),
- (c) Anticipated hazards, and
- (d) What PPE must be worn and carried on the aircraft.

(4) Passenger Briefing Card. The PIC must ensure that the aircraft has a passenger briefing card on board. The card provides information on survival equipment, location and operation of the emergency locator transmitter, and other items of information specific to the type of aircraft. You can get copies of the passenger briefing cards from NBC AM.

I. Checklists. The PIC must use required checklists for all phases of flight. Refer to the DM and the Operational Procedures Memorandum series for specific guidance on using checklists.

4.7 Are there special planning considerations when conducting Aerial Capture, Eradication, and Tagging of Animals (ACETA) operations? Yes. ACETA operations are among the most complex and high risk of all natural resource aviation activities. The PIC and the Project Leader must carefully plan and manage ACETA operations to ensure safety. The Project Leader must complete an ACETA plan, and NBC AM must approve it before a refuge or program can conduct ACETA operations (see Exhibit 1).

4.8 May a Service pilot use an autopilot? Yes. We encourage pilots to use an autopilot if one is installed. Using an autopilot reduces pilot fatigue.

A. You must **not** use an autopilot below 500 feet above ground level (AGL), except during an instrument approach.

B. You must **not** use an autopilot below approach minimums during an instrument approach.

4.9 What survival equipment must Service aircraft carry?

A. Pilots must ensure that fire extinguishers and first-aid kits are on all Service flights.

B. We require survival kits for special use activities flights, and we recommend them for flights in Alaska and Canada. The PIC should make sure that there is adequate survival equipment on board the aircraft that is appropriate for the route, environmental conditions, and number of crew members and passengers.

**FISH AND WILDLIFE SERVICE
AVIATION**

351 DM 2 lists required equipment.

4.10 What are the requirements for low level flights? Pilots must comply with the low level flight requirements in 14 CFR Part 91 unless you have received an exemption from the FAA for the State(s) where you are flying. There is no Department or Servicewide exemption for low level flights. Pilots and everyone else on board must wear PPE as required in the Aviation Life Support Equipment Handbook.

4.11 What protective equipment does the Service require people to wear on special use activities flights below 500 feet AGL?

A. Everyone on board must wear the following PPE on special use flights below 500 feet AGL:

- (1)** Fire retardant (NOMEX) clothing/flight suits,
- (2)** Flight helmet (except in a multiengine aircraft),
- (3)** Leather boots extending above the ankles, and
- (4)** Leather or the combination of leather and NOMEX gloves.

B. People on board may wear special footwear for cold weather (snow boots) and over water (waders or top siders) flight operations.

C. The Aviation Life Support Equipment Handbook provides detailed information about PPE.

4.12 What are the requirements for flying at night? We define night as 30 minutes after sunset to 30 minutes before sunrise. Pilots must comply with the requirements in 14 CFR Part 91 and 351 DM 1 to operate a Service aircraft at night.

4.13 Are there limits on how many hours Service flight crew members may fly, and how they compute their time?

A. Yes. There are limitations on the amount of time flight crew members may fly and perform other duties. 351 DM 3 lists these limitations.

B. All flight crew members must compute and record flight time. Follow the requirements in 351 DM 1.

4.14 What are the requirements for flights operating under Instrument Flight Rules (IFR)? You must comply with the requirements in 351 DM 1 when you fly in IFR conditions. (See 330 FW 3 for a definition of IFR and Visual Flight Rules (VFR)).

4.15 When must Service flight crew members use supplemental oxygen? The flight crew:

A. Must use supplemental oxygen in an unpressurized aircraft when flying above 12,500 feet mean sea level up to and including 14,000 feet above mean sea level for more than 30 minutes.

B. Must use continuous supplemental oxygen on all flights above 14,000 feet mean sea level.

C. Should consider personal health and physical conditioning when between 10,000 feet and 12,500 feet above mean sea level because they may need to use supplemental oxygen.

**FISH AND WILDLIFE SERVICE
AVIATION**

4.16 Are there special requirements for flying over water? Yes. For extended over-water operations, Service aircraft must comply with 14 CFR 135.167, 351 DM 2, and the Aviation Life Support Equipment Handbook. For extended over-water operations in single-engine airplanes flown beyond power-off gliding distance of land:

- A. The aircraft must be float-equipped.
- B. Flight crew members and passengers must wear personal flotation devices. Personal flotation devices also must be readily available to crew members and passengers on multi-engine aircraft.

4.17 What are the requirements for flying Service aviation missions in foreign airspace?

- A. Pilots must file an IFR or VFR flight plan when flying between the United States and Mexico or Canada.
- B. Pilots flying Service aircraft in foreign countries must ensure the program responsible for the operation has diplomatic clearance.
- C. Pilots must comply with the requirements stipulated in the diplomatic clearance and with Departmental and Service requirements.

4.18 What is the Service policy for carrying hazardous cargo on Service aviation missions? Service aircraft may only carry hazardous materials when other means of transport are either impossible or impractical because of time, cost, or safety.

- A. Only crew members essential to mission accomplishment may fly on an aircraft carrying hazardous materials.
- B. The Department has specific requirements for carrying hazardous materials on aircraft. You must refer to the Interagency Aviation Transport of Hazardous Materials Handbook/Guide for procedures and legal requirements. The handbook is on the [NBC AM Web site](#).
- C. Contact your RAM, Regional Safety Manager, or NBC AM for assistance prior to transporting hazardous cargo.

4.19 What are the Service requirements for transporting external loads? Only Service aircraft designed and equipped to carry external loads may transport them. The pilots and the aircraft must be FAA-certified to transport external loads, and NBC AM reviews and approves them annually.

4.20 What are the Service requirements for aircraft security? The PIC is responsible for the following security requirements for his/her aircraft:

- A. Assist vendor aircraft pilots with their aircraft security responsibilities whenever possible.
- B. When operating away from home base, put the aircraft in a hanger overnight, if possible.
- C. If a hanger is not available, tie down the aircraft with permanent-type tie downs. Use screw-in type tie downs if permanent-type tie downs are not available. Screw-in type tie downs should be sufficient to keep the aircraft in place in up to a 30-knot wind. The PIC should carry screw-in type tie downs in the aircraft if they might be needed.
- D. Park the aircraft in a secure area whenever possible.

**FISH AND WILDLIFE SERVICE
AVIATION**

Aviation

Part 330 Aviation Management

Chapter 4 Aviation Operations and Maintenance

330 FW 4

E. Remove any portable items of value such as headphones, GPS devices, and computers. You should store valuable items in a secure place.

F. Always lock the aircraft when you are not in the immediate area using the dual-lock method described in section 4.21 below and 352 DM 10, Appendix B.

G. Always check the aircraft for evidence of tampering or vandalism when you conduct your pre-flight inspections.

4.21 When does the Service use a dual-lock method of securing the aircraft? We use a dual-lock method whenever the pilot or crew is not in the immediate area to protect aircraft from being stolen or misused. We consider an aircraft with a keyed ignition and throttle lock or an aircraft with keyed ignition locked in a hanger to be protected by the dual lock method. Do not leave the keys in the ignition when you lock an aircraft in a hanger. If an aircraft's home base is a Refuge or the take off and landing area are on Service-owned property, we must comply with the security requirements for airport facilities in 352 DM 10.

4.22 How does the Service maintain aircraft? Service aircraft must be airworthy and have a clean appearance. Pilots assigned to aircraft are responsible for making sure they remain airworthy for the duration of the mission.

A. We maintain our aircraft by:

(1) Maintenance Program. We follow an FAA or manufacturer-approved maintenance program for all Service aircraft. Specific guidance on aircraft maintenance is in 350 DM 2. The only exception to this requirement is if an aircraft needs maintenance when a pilot is flying outside the United States. If possible, the pilot should contact NBC AM or the Service Aviation Manager before having maintenance performed outside of the country.

(2) Maintenance Records. Pilots must keep maintenance records, log books, and other maintenance documents up-to-date. NBC AM must be kept informed about and have access to maintenance histories. NBC AM inspects aircraft and issues a DOI Aircraft Data Card approximately every 12 months, and at least every 18 months.

(3) Qualified Mechanics. A qualified, FAA-certified aircraft mechanic must perform or directly supervise all maintenance of Service aircraft. Pilots may perform preventive maintenance described in 14 CFR Part 43. Only people qualified under the requirements of 14 CFR Part 43 may release an aircraft back into service after maintenance.

B. You must coordinate with the Service Aviation Manager or RAM and NBC AM if you want to modify Service aircraft. All modifications must meet the requirements of a Supplemental Type Certificate or an FAA Field Approval, FAA Form 337.

4.23 May a Service employee (pilot, Project Leader) buy aviation-related services or parts without consulting NBC AM? You must buy aviation-related services (such as the purchase of aircraft components, parts, accessories, and maintenance services) through the NBC AM procurement system.

A. 353 DM 1 describes the services and parts NBC AM buys.

B. NBC AM issues credit cards to pilots who are assigned an aircraft to buy aviation-related services that cost less than \$3,000. The pilot does not need to notify NBC AM about such purchases because the invoice for the card goes directly to NBC AM.

C. Pilots do not need to go through NBC AM to buy such items as wing covers, portable heaters, or pilot

FISH AND WILDLIFE SERVICE
AVIATION

Aviation

Part 330 Aviation Management

Chapter 4 Aviation Operations and Maintenance

330 FW 4

C. Pilots do not need to go through NBC AM to buy such items as wing covers, portable heaters, or pilot personal equipment (headsets, helmets, map holders, etc.).

4.24 What Service maintenance standards must privately-owned aircraft meet when used for Government travel?

A. If **not** carrying passengers, privately-owned aircraft must meet the maintenance standards in 14 CFR Part 91.

B. If carrying passengers, the aircraft must meet the maintenance standards in 14 CFR Part 135.

C. You must also comply with the maintenance inspection procedures in 351 DM 2. NBC AM must inspect the aircraft and give you a DOI Aircraft Data Card approximately every 12 months, and at least every 18 months, while used for Service travel.

4.25 Are there requirements for attaching special equipment to Service aircraft? Yes. Any special equipment attached to Service aircraft must meet both FAA and NBC AM installation and related standards, specifications, and attachment procedures. Examples of special equipment that may be attached to Service aircraft include telemetry antennas, cameras or camera ports, and geophysical measuring devices.



DEPUTY DIRECTOR

Date: March 24, 2008