

**DEPARTMENT OF THE INTERIOR
DEPARTMENTAL MANUAL**

**AERIAL CAPTURE, ERADICATION AND TAGGING OF ANIMALS
(ACETA) HANDBOOK**

(351 DM 2 - 351 DM 3)

FOREWORD

This Departmental Manual Handbook, "Aerial Capture, Eradication and Tagging of Animals (ACETA) Handbook," is authorized in 350 DM 2.3. It sets forth the objectives, policies, and standards for ACETA programs for Department of the Interior (DOI) bureaus and offices.

Questions regarding the content of the Handbook may be directed to the Office of Aircraft Services (OAS), P.O. Box 15428, Boise, Idaho 83715-5428. The Handbook is available through the Internet on the OAS web site at: <http://www.oas.gov/>

Director, OAS

Dated: _____

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(351 DM 2 - 351 DM 3)

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Chapter 1 Operations

1.1

1.1 Purpose. This handbook outlines Department of the Interior (DOI) aviation policies, procedures, qualifications, and equipment for Aerial Capture, Eradication and Tagging of Animals (ACETA) as authorized by 351 DM 1. It is not intended that this handbook address issues associated with training of shooters or personnel handling the animals. This Handbook pertains to both commercial and Government operations.

1.2 General. ACETA includes; Aerial Capture (net-gunning, darting, chemical immobilization), Eradication (elimination by use of firearms), Marking (use of paint ball gun or similar device) where a helicopter or airplane is used as a shooting platform.

1.3 Approval. ACETA programs shall provide an ACETA Operations Plan for approval by the Bureau National Aviation Manager and reviewed by OAS. ACETA operations plans must contain at least the elements of 352 DM 1.9 C through I.

1.4 Flight Operations.

1.4.1 Air Carrier Certification. The Contractor shall hold a current Federal Aviation Administration (FAA), Air Carrier Certificate. Furthermore, their Operations Specifications shall authorize operation of the category and class of aircraft and conditions of flight used for ACETA operations, e.g., rotorcraft; VFR day; passengers; and cargo. Aircraft used will be operated and maintained under provisions of 14 CFR Part 135. ACETA operations will include the following:

A. Restrictions While Carrying Weapons . While conducting ACETA operations, the designated gunner may carry aboard the aircraft and operate appropriate weapon(s) for accomplishment of the mission. The weapon shall not be loaded or cocked unless the muzzle is outside of and pointed away from the aircraft.

B. VFR. All flights will be conducted in accordance with day visual flight rules as specified in current FAA regulations.

C. Unsafe Conditions. The pilot will refuse any flight or landing which he/she considers hazardous or unsafe.

D. Flight Plan. An FAA flight plan or agency flight following as specified in the ACETA operations plan will be required.

E. Helicopter Load Calculation. When required by the using bureau, the pilot shall complete form OAS-67, Helicopter Load Calculation, prior to the mission.

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Chapter 1 Operations

1.4.1F

F. Toe-in, Single-skid or Step-out Landings. Helicopter toe-in, single-skid or step-out landing may be necessary for ACETA operations. This operation requires an exception to policy approved by the Director, OAS.

G. Personal Protective Equipment (PPE). All crew members will be required to wear PPE equipment as specified in the Aviation Life Support Equipment (ALSE) Handbook.

H. Safety Harnesses. The gunner shall wear, an OAS approved adjustable full-body harness equipped with a quick-release system, when required in Chapter 4. A safety strap will be attached to the harness and the aircraft, at a location and in a manner approved by OAS. Requirements for specific aircraft types will be established by the OAS Division of Technical Services.

NOTE: The harness is not intended as a substitute for the required use of safety belts and shoulder harness for takeoff and landing.

I. Pilot Materials. The pilot will provide and use the following materials, in current and appropriate form, accessible to the pilot at the pilot station:

- (1). An aircraft checklist, normal and emergency.
- (2). Pertinent aeronautical charts depicting aerial hazards (such as wires and towers) in the area of operation.
- (3). Pilot will perform an aerial reconnaissance of known and unknown hazards prior to commencing ACETA operations.

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Chapter 2 Pilot Requirements

2.1

2.1 General. Pilots used in ACETA operations must meet the minimum requirements set forth in 351 DM 3, this handbook, and any additional requirements identified in the procurement document.

2.2 DOI Pilot Cards. The pilot must have an initial flight evaluation by an OAS approved inspector for ACETA operations. Upon satisfactory completion of the flight evaluation, the pilot will be issued a DOI Pilot Qualification Card in accordance with 351 DM 3. The pilot will carry this card during all ACETA operations. Recurrent flight evaluations are required and will be accomplished in accordance with current DOI policy.

2.3 Pilot Experience Requirements. In addition to other minimum pilot qualification criteria prescribed in 351 DM 3, pilots engaged in ACETA operations shall meet the following:

A. Airplane.

(1) 10 hours PIC in make, model in last 12 months;

(2) 200 hours PIC in category in low-level operations to include 10 hours PIC over typical terrain within the last 12 months;

(3) 50 hours experience as pilot in aerial eradication operations, or 200 hours experience in agriculture application type flying.

B. Helicopter.

(1) 10 hours PIC in make, model and series in last 12 months;

(2) 200 hours PIC in category in low-level operations, including 10 hours over typical terrain within the last 12 months;

(3) 50 hours experience as PIC helicopter in aerial eradication, aerial live capture, darting, or tagging/marking operations in which the helicopter was consistently flown and maneuvered close to the surface, or 200 hours experience in helicopter agriculture application type flying.

2.4 Flight Crew Duty Time Limitations.

A. Refer to 351 DM 3.5 for limitations.

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Chapter 3 ACETA Personnel Requirements

3.1

3.1 General. DOI employees shall be trained and qualified in accordance with this handbook and Bureau policy.

3.2 Requests. Requests for ACETA aviation safety training shall be made through the Bureau National Aviation Manager and forwarded to the appropriate OAS Area or Regional office.

3.3 Training. Aviation safety training and qualification shall be conducted by OAS Training Specialists, or OAS approved trainers.

A. Additional Training.

(1) ACETA operations that have been granted an exception for the use of helicopter toe-in, single skid, or step-out landings will be trained by OAS in established helicopter exiting and entering procedures.

(2) ACETA has been identified as a unique program. Personnel shall have additional training as stated in 352 DM 1.9B.

(3) Non-aviation training and qualification for ACETA operations will be conducted by Bureau designated ACETA specialists.

3.4 Documentation. Training, qualification and proficiency of ACETA personnel will be documented by the user bureau.

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Chapter 4 Aircraft Requirements

4.1

4.1 General. Aircraft used in ACETA operations must meet the minimum requirements set forth in 351 DM 2, this handbook, and any additional requirements identified in the procurement document.

4.2 Airplanes. Airplanes provided for any ACETA operation will have the following basic configuration and equipment:

- A. High Wing.
- B. Two-Place, Tandem Seating.
- C. Tail Wheel Landing Gear.
- D. Shoulder Harness/Lap Belt.

(1) Double-strap shoulder harness for pilot and gunner with inertia reel for gunner. Seat belts and shoulder harness will fasten with one, single-point, metal-to-metal, quick release system.

E. Windows Left side window capable of being opened in flight to provide adequate angle of fire for gunner.

F. Flight Controls

(1) Rear flight control stick shall be removed. Adequate covering of control mechanism and under seat area will be provided to protect controls from ejected shells, etc.

(2) Protection for rear throttle quadrant to prevent interference by the gunner.

D. VFR Equipment. Equipment and instruments for VFR day in accordance with 14 CFR 91 and 135.

E. Fire Extinguisher. The fire extinguisher as required by 14 CFR 135 shall be a hand held bottle, minimum 1.5 pound capacity, containing Class B and C extinguishing agents, securely mounted, and accessible to the flight crew.

F. First-Aid/Survival Kits. First-aid kit and survival kit are required in accordance with ALSE Handbook.

G. Emergency Locator Transmitter (ELT). Details are contained in the ASLE Handbook.

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Chapter 4 Aircraft Requirements

4.1H

H. High Visibility Markings.

(1) Paint on outer two inches of rear face of propeller with a contrasting color.

(2) Leading and trailing edges of wing strut on shooting side (tape may be used).

4.3 Airplane Performance. Airplanes provided for ACETA operations will have the following minimum engine configuration.

A. Single Engine, Minimum 150-Horsepower.

4.4 Helicopters. Helicopters provided for any ACETA operation will have the following basic configuration and equipment:

A. Free Air Temperature Gauge.

B. Shoulder Harness/Lap Belt.

(1) Front Seat Occupants. Double-strap shoulder harness with self-locking inertia or locking reel and lap belt for pilot and aircrew member. Shoulder straps and lap belts will fasten with metal-to-metal, single-point, quick-release mechanism. When the gunner is shooting from the front seat, a rotary-type buckle, similar to Pacific Scientific "Saf-T-Matic", will be required on helicopters not equipped with an approved shooting window or door.

(2) Rear Seat Occupants With Standard or Shooting Door Installed. Lap belts will fasten with metal-to-metal mechanism.

(3) Rear Seat Occupants Without Door. Helicopters shall have lap belts which fasten with a metal-to-metal mechanism. The gunners safety harness as identified in Chapter 1.4H, shall be attached to the aircraft in a manner approved by OAS.

D. VFR Equipment. Equipment and instruments for VFR day in accordance with 14 CFR 91 and 135.

E. Fire Extinguisher. The fire extinguisher as required by 14 CFR 135 shall be a hand held bottle, minimum 1.5 pound capacity, containing Class B and C extinguishing agents, securely mounted, and accessible to the flight crew.

F. First-Aid/Survival Kits. First-aid kit and survival kit are required in accordance with ALSE Handbook.

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Chapter 4 Aircraft Requirements

4.3G

G. Emergency Locator Transmitter (ELT). Details are contained in the ASLE Handbook.

H. Access Step. Helicopters with high-skid landing gear installed will have personnel access steps to each door. External cargo racks may be used for step.

I. Door Removal. Helicopters not equipped with an approved shooting door, or window, shall be certified for flight with the door removed. The aircraft external registration number shall be displayed in such a manner as not to be compromised by this requirement.

J. Tundra/Snow Pads. Tundra/snow pads are required if landings in deep snow or soft terrain are anticipated.

K. Flight Hour Meter. Details are contained in 351 DM 2.2G.

4.5 Helicopter Performance. Helicopters provided for any ACETA operation will have the following minimum engine configurations:

A. Sea Level to 4,000 Feet Density Altitude (DA). Minimum performance for a reciprocating engine will be 205 horsepower, for nonturbocharged.

B. Above 4,000 to 7,000 Feet (DA). Minimum performance for a reciprocating 305-horsepower nonturbocharged, or 220-horsepower turbocharged, or turbine engine of at least 317 shaft horsepower.

C. Above 7,000 Feet (DA). Minimum performance for a reciprocating engine will be 270 horsepower with turbocharger or turbine engine of at least 400-shaft horsepower.

NOTE: Special OAS approval for aircraft other than above may be requested where justified and warranted.

4.6 Certification. All aircraft used for ACETA operations will have a Standard Airworthiness Certificate. The installation of any special equipment called for by this operation must be FAA-approved, except where so stated. All aircraft must be inspected by OAS prior to use. Upon satisfactory completion of the aircraft inspection by OAS, an Aircraft Data Card will be issued which will be carried in the aircraft at all times and made available upon request.

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Chapter 5 Avionics Requirements

5.1

5.1 Transceiver. One VHF-AM aeronautical transceiver, operating in the 118.000 to 135.975 MHz band, with a minimum of 720 channels in no greater than 25 kHz increments, and a minimum of 5 watts carrier output power, shall be installed in the aircraft.

5.2 Interphone. An interphone system shall be provided for the pilot and gunner. The system shall be equipped and designed for operation with 600-ohm earphones and carbon-equivalent, noise-canceling, boom-type microphones. Individual audio level controls shall be provided for pilot and gunner adjustment of earphone audio to a comfortable level. Interphone sidetone audio shall be provided for the earphones corresponding with the microphone in use. Microphone operation shall be via push-to-talk (PTT) switches, with the gunner's PTT switch mounted on the cord to the earphone/microphone connector. The gunner's PTT switch shall provide both momentary ("keyed") and locking ("hot mic") microphone activation. **NOTE:** In fixed-wing aircraft ONLY, voice-activated (VOX) interphone systems may be provided to satisfy the above "hot mic" requirement.

A. Helicopters. After 12/31/99, U-92A/U (single female) type helmet jack will be required in all helicopters. Conversion of Government owned helmets to U-174/U (single male) type plugs is ongoing. Until the above date, the Vendor shall provide jack adapter(s) which permit utilization of both U-75/U (triple male) and U-174/U (single male) type plugs at each required position.;

B. Airplanes shall be equipped with JJ-033/JJ-034 jacks to accommodate PJ-068/PJ-055 plugs.

5.3 Audio Control.

A. Pilot. An audio control system with controls for selection of multiple receiver audio outputs and transmitter microphone/PTT audio inputs shall be provided for the pilot. The pilot's radio transmit and interphone PTT switches shall be mounted on the flight controls. All transceivers installed in the aircraft shall be interfaced through this system to preclude in-flight connection/disconnection of transceivers and/or the use of radio-integral or hand-held microphones.