

## **Appendix H**

### **Low-Altitude G159 Operations Manual**

# Appendix H

## Low-Altitude G159 Operations Manual

### Company Organization

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### Pilots

Robert V. Hannigan  
Certificate No. 1836840  
Grade Class: ATP Typed G159, DC3

Anthony B. Robinson  
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Jonathan D. Hone  
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Grade Class: ATP Typed G159

Edward W. Svancara  
Certificate No. 519725675  
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### Operations Manual Distribution and Revision

Manual distributed to all PNNL flight personnel.

A manual distribution list and a revision page are at the front of this manual.

### Area of Operations

1. Continental United States
  - a. If it is necessary to conduct research flights below 2000 ft above ground level (AGL), the Pilot in Command (PIC) shall maintain obstacle maps that are updated prior to each flight. The maps indicate the height AGL of all existing obstacles to flight in the area of operation. If the use of a waiver or permission to operate in a *Prohibited* or *Restricted Area* is required (Attachment A-1), it will be noted in the *Remarks* section of the flight plan.

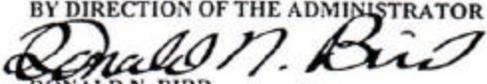
## 2. Multi-engine Aircraft

- a. If the aircraft is operated at heights that will allow it to climb with the critical engine inoperative and consistent with terrain, but not less than 50 ft per minute, specific routes and altitudes need not be required. FAA waivers may authorize day and night VFR.

### **Low-level Flight Operations Procedures**

1. No person may be carried in the aircraft unless that person is necessary to accomplish the work activity.
2. Rule 1 does not apply to flights to and from the work area. All such flights shall be made in accordance with all provisions of the Federal Aviation Regulations.
3. Intentional flight at less than 500 ft directly over persons on the surface is prohibited. In addition, the aircraft may not be flown on a path that would require excessive maneuvering to avoid persons on the surface in the event of an emergency.
4. No flight is permitted closer than 500 ft to any vessel, vehicle, or building on the surface, unless the pilot takes reasonable action to determine these locations are not occupied at the time of operation. No area will be over flown at less than 1000 ft over the congested areas of a city, town, or settlement or any open-air assembly of persons.
5. Pilots shall familiarize themselves with obstructions or hazards in the immediate area of operation with particular reference to approaches and departures to or from adjacent airports.
6. Prior to conducting operations within five miles of any airport, the pilot shall comply with the following:
  - a. Tower controlled airport - Obtain Air Traffic Controller (ATC) clearance from the appropriate air traffic control tower.
  - b. Any other airport - Announce arrival/departure on appropriate Common Traffic Advisory Frequency (CTAF) as outlined in AC90-42F, and continuously monitor the CTAF.
  - c. All airports - Obtain permission from the air traffic control tower or an authorized official of the airport for any deviation from the normal traffic patterns.
7. Operations will be conducted only during daylight hours except as provided in procedure 11.
8. Operations will be conducted only during VFR conditions; however, at no time are operations conducted with less than three miles flight visibility.

9. It is prohibited to harass, or molest any domestic fowl, migratory waterfowl, domestic animal, or wildlife.
10. PNNL shall establish and maintain at the home base a current list of pilots and aircraft authorized under the terms of this certificate, including a statement signed by each pilot indicating an understanding of the operations authorized in this waiver and all its special provisions.
11. In the case of night operations over an area designated as mountainous in FAR Part 95, the minimum altitude is 1000 ft above the highest obstacle within a horizontal distance of five statute miles from the course to be flown.
12. Initial Pilot Checkout. The manual must provide that each pilot is qualified for low-level procedures and have a logbook endorsement of such by the chief pilot. Although the endorsement must be by the Chief Pilot, another qualified pilot may conduct the initial checkout. In addition to low-level procedure qualification, each pilot must satisfactorily demonstrate knowledge in the following:
  - a. Low-level flying procedure familiarization
  - b. Aircraft performance and limitations
  - c. Emergency preparedness
  - d. Operations Manual
  - e. Terms and conditions of the FAA waiver
13. Accident Notification. See Flight Operations Manual.

U.S. DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION <b>CERTIFICATE OF WAIVER OR AUTHORIZATION</b>	
ISSUED TO	<b>BATTELLE NORTHWEST LABORATORIES</b>
ADDRESS	<b>P. O. Box 999, 902 Battelle Boulevard Richland, WA 99352</b>
This certificate is issued for the operations specifically described hereinafter. No person shall conduct any operation pursuant to the authority of this certificate except in accordance with the standard and special provisions contained in this certificate, and such other requirements of the Federal Aviation Regulations not specifically waived by this certificate.	
<b>OPERATIONS AUTHORIZED</b>  Activities: Air Sampling Research  Area of Operation: Continental United States  Operations outside the area served by the office issuing this waiver may be conducted without obtaining an additional certificate of waiver, provided the operations are coordinated in advance with the appropriate flight standards district office(s) and all special provisions imposed by that office are complied with.	
<b>LIST OF WAIVED REGULATIONS BY SECTION AND TITLE</b>  <p style="text-align: center;"><b>91.119(b), 91.119(c)</b></p>	
<b>STANDARD PROVISIONS</b>	
<ol style="list-style-type: none"> <li>1. A copy of the application made for this certificate shall be attached to and become a part hereof.</li> <li>2. This certificate shall be presented for inspection upon the request of any authorized representative of the Administrator of the Federal Aviation Administration, or of any State or municipal official charged with the duty of enforcing local laws or regulations.</li> <li>3. The holder of this certificate shall be responsible for the strict observance of the terms and provisions contained herein.</li> <li>4. This certificate is nontransferable.</li> </ol>	
NOTE— This certificate constitutes a waiver of those Federal rules or regulations specifically referred to above. It does not constitute a waiver of any State law or local ordinance.	
<b>SPECIAL PROVISIONS</b>	
Special Provisions Nos. 1 to 19, inclusive, are set forth on the attached pages.	
This certificate is effective from June 1, 2000 to May 31, 2002 inclusive, and is subject to cancellation at any time upon notice by the Administrator or his authorized representative.	
<b>NORTHWEST MOUNTAIN REGION JUNE 1, 2000</b>	BY DIRECTION OF THE ADMINISTRATOR  DONALD N. BIRD ACTING MANAGER, GEG FSDO

FAA Form 7711-1 (7-74)

DISTRIBUTION: Applicant, GEG FSDO, ANM-200, ACE-200, AEA-200, AGL-200, ANE-200, ASO-200, ASW-200, AWP-200

COORDINATION: All FSDO's In the Continental United States

### *Special Provisions*

1. *Minimum Altitude over congested areas, FAR 91.119(b)*: No community will be overflown below 500 feet or at less than 1,000 feet over the congested area of a city.
2. Multiengine aircraft are limited to weights that will allow climb with the critical engine inoperative consistent with terrain but not less than 50 feet per minute. If this is not possible, the multiengine aircraft will be regarded in the same manner as single-engine aircraft, and must always be in compliance with 91.119(a) without excessive maneuvering.
3. All flights conducted under the terms of this waiver are to be conducted during daytime hours only Visual Flight Rules (VFR). At no time are operations to be conducted with less than three miles visibility.
4. No person may be carried within the aircraft unless necessary to the accomplishment of the work activity.
5. Operations under this waiver are limited to the pilots listed on FAA Form 7711-2 or the accepted operations manual. Any accepted manual becomes a part of these special provisions; therefore, failure to comply with the provisions of the manual shall be considered a violation of the terms of the waiver and may constitute justification for cancellation of the waiver.
6. In the event of an emergency requiring immediate action (e.g., the known or suspected rupture of a gas pipeline, flood, storm, etc.), the waiver holder may use pilot personnel without compliance with either the initial or annual check requirements (see accepted operations manual). However, within 7 days of the time this emergency authorization is exercised, the waiver holder will notify the FSDO responsible for issuing the waiver of such action.
7. Except when necessary to safeguard human life, no operation will be conducted in closer proximity to persons on the surface than authorized by this waiver.
8. Flights to and from the work area shall be made in accordance with all provisions of FAR 91.119.
9. Airports With A Control Tower. Prior to conducting operations in Class D Airspace, the pilot shall use whatever communication means necessary to obtain permission from the control tower to operate within that airspace.
10. Airports Without A Control Tower. Prior to conducting operations within five miles of an airport without a control tower, the pilot will advise the Flight Service Station, if located on the airport, or UNICOM of his intended flight path and altitude.
11. Air traffic services shall be notified prior to any flight in Class B, C or D Airspace. Operations that are conducted above 10,000 feet MSL inside a Class B Airspace veil (30 mile radius) or in/above any Class C Airspace must have a transponder with Mode C.

12. Nothing in this Waiver shall constitute authority to conduct flights in a manner which may create a hazard to persons or property in the air or on the surface, or to operate contrary to any other Federal Aviation Regulation not specifically waived here.
13. The holder of this Certificate of Waiver shall establish and maintain at his home base a current list of aircraft and pilots to be used under the terms of this Waiver, and the certification statements of each pilot who flies under this waiver.
14. A copy of this waiver and special provisions shall be carried in each aircraft.
15. The holder of this certificate of authorization shall notify the Flight Service Station serving the area of operations of the date, time, place, areas, altitudes, nature and duration of the operations, and request that a notice to airmen be accomplished at least 1 hour prior to beginning the operation, and notify within 30 minutes of completion.
16. No pilot shall be used under the terms of this Certificate of Waiver until he has certified in writing to the holder of this Waiver that he has read and understands the Special Provisions of this Waiver and any applicable operations manual.
17. Intentional flight at less than 500 feet directly over persons on the surface is prohibited. The aircraft may not be flown along a path that would require excessive maneuvering to avoid persons on the surface in the event of an emergency.
18. For initial pilot checkout, the manual must provide that each pilot be qualified in low level procedures and that his/her logbook is endorsed as such by the Chief Pilot. A qualified pilot may be designated to give the initial checkout. In addition to low level procedures qualifications, each pilot must satisfactorily demonstrate knowledge in the following:
  - A. Route familiarization
  - B. Aircraft performance and limitations
  - C. Emergency procedures
  - D. Company Operations Manual
  - E. Terms and conditions of this waiver.
19. The Chief Pilot will examine each pilot at least once each 12 calendar months. The examination will consist of an oral and practical test that covers the subject areas for the initial checkout.

ISSUED TO: Battelle Northwest Laboratories  
DATE ISSUED: June 1, 2000  
VALID: June 1, 2000 Through May 31, 2002  
ISSUED BY: GEG FSDO