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## SUBORBITAL AND SPECIAL ORBITAL PROJECTS DIRECTORATE

# Airfield Operations Manual

May 2014

Signed By
Steven E. Kremer, Chief, Wallops Range

Goddard Space Flight Center Wallops Flight Facility Wallops Island, Virginia 23337

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# Signature Page

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# Forward

This handbook establishes the responsibility and procedures to effectively disseminate requirements, standards, procedures, and guidelines for the operation of the Goddard Space Flight Center Wallops Flight Facility Airfield. This document is not intended to cover every contingency that may arise or every rule of safety and good operating practice. It should be used in conjunction with other governing directives, regulations, and procedures. Deviations from this manual are authorized in emergencies or in situations where flight or ground safety might otherwise be compromised. Written documentation of deviations is required and must be transmitted to the NASA Wallops Chief of Flight Operations no later than 30 calendar days following the incident.

Comments and questions concerning the contents of this manual should be addressed to the Airport Manager, Code 840, Wallops Flight Facility, Wallops Island, VA 23337. This is a controlled document and will be reviewed annually and revised when necessary. When corrections or page changes are entered, the changes will be annotated on the Record of Revisions page. This document is posted at http://sites.wff.nasa.gov/code840/operations.html.

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# Section 1. General Information

## 1.1 General Information

The regulations set forth are issued to promote the safe, orderly, and expeditious movement of air traffic at the National Aeronautics and Space Administration (NASA) GSFC/WFF Airfield and within its designated airport traffic area. To that end, all pilots operating within this area shall adhere to the procedures contained in this document except when to do so would place aircraft and occupants in an unsafe circumstance. Deviation from these procedures shall be accomplished in accordance with the best rules of airmanship. The rules and procedures set forth herein will in no way modify or nullify existing safety regulations or instructions issued by higher authority. It is incumbent upon all pilots to abide by TITLE 14 CFR, Federal Aviation Regulations, Part 91, General Operating and Flight Rules, except when this handbook contains more stringent regulations. All other personnel engaged in support of aircraft operations at the WFF Airfield shall also be bound by the rules and provisions contained herein, as applicable.

## 1.2 Mission

Wallops Flight Facility Airfield is a Federal airfield owned by the National Aeronautics and Space Administration (NASA) and operated by the Chief, Wallops Range Office to meet the needs of NASA, Resident Agencies, and other NASA authorized users.

Use of the airfield is limited to agencies of the Federal government or agencies supporting requirements established by the Federal government. Director of Suborbital Projects and Operations, Goddard Space Flight Center, Wallops Flight Facility in accordance with Title 14 Code of Federal Regulations, Part 1204 may approve any other use.

## 1.3 Responsibilities

### 1.3.1 Chief of Flight Operations

The Center's Chief of Flight Operations is responsible for ensuring compliance with all operating standards established for Wallops Flight Facility Airfield. The Center's Chief of Flight Operations is located in Building D-1 at Wallops Flight Facility Airfield, VA.

### 1.3.2 Chief, Range and Mission Management Office

The Chief, Range and Mission Management Office is responsible for the operation of Wallops Flight Facility Airfield. Coordination shall be effected with other NASA Wallops organizations and Resident Agencies to ensure the airport is maintained in a state of readiness sufficient to meet operational flight requirements, and in accordance with all requirements levied under the authority of the Chief of Flight Operations.

## 1.4 Directives

The airfield is not currently certified (nor currently required to be) under Federal Aviation Regulations, Part 139, Certification and Operations: Land Airports Serving Certain Air Carriers, or FAA Part 107, Airport Security. Wallops Flight Facility Airfield, however, operates generally in accordance with both parts, and improvements are ongoing.

Pilots using the airspace are required to abide by the appropriate portions of FAR Part 91, General Operating and Flight Rules, unless this Airfield Operations Handbook provides more stringent guidelines, in which case the latter would apply.

All existing NASA management instructions pertaining to the operation of airfields will be adhered to or waivers to the controlling documents will be obtained.

Air Traffic Control (ATC) and ATC equipment maintenance services will be provided by the Range and Mission Management Office (Code 840) in accordance with applicable NASA and FAA regulations and directives. Training, personnel administration, safety programs, drug testing programs, staffing standards and other operational matters will be conducted in accordance with NASA regulations and procedures.

## 1.5 References

**a.** NPR 7900.3
**b.** TITLE 14 CODE OF FEDERAL REGULATIONS (CFR), Chapters I and III, Federal Aviation Regulations
**c.** U.S. Navy Document "NAEC Engineering Document 91-7824 Rev G of 14 Jan 93."
**d.** 830-GMM-0001, General Maintenance Manual (GMM)
**e.** 803-WI-8072.1.9, Safety Procedures for Aircraft Operations with Live Ordnance at Wallops Flight Facility Airport
**f.** Wildlife Management Plan
**g.** 840-PLAN-0001, Aircraft Mishap Response Plan
**h.** DOD Low Altitude Instrument Approach Procedures
**i.** FAA AC No. 90-42, Traffic Advisory Practices at Airports Without Operating Control Towers
**j.** Form NASA WI-1539, NOTAMS, WFF Airport
**k.** Form NASA WI-1550, Hazardous Waste Disposal Inventory
**l.** 840-WI-7900.0.1 Wallops Flight Facility Airfield Driver Training Program
**m.** WI Wallops Flight Facility Fuel Facility Operations
**n.** WI Wallops Flight Facility Aircraft Fueling Procedures
**o.** WI Wallops Flight Facility FCLP Procedures

## 1.6 Acronyms and Definitions

| | |
|---|---|
| AGL | Above Ground Level: Used as a reference when conveying or determining the altitude of an aircraft. |
| Aircraft | A machine or device, such as an airplane, a helicopter, a glider, or a dirigible, that is capable of atmospheric flight. |
| Airfield | An area of land or water that is used or intended to be used for the landing and takeoff of aircraft, including buildings and facilities. |
| Airport Operating Area | Movement and non-movement areas inside all fence lines or gates marked with significant signage. |
| Air Traffic | Aircraft operating in the air or on an airport surface, exclusive of loading ramps and parking areas. |
| APU | Auxiliary Power Unit: An aircraft onboard power unit for providing temporary power to onboard systems. |
| Armed Forces | The United States Army, Navy, Air Force, Marine Corps, and Coast Guard, including their regular and reserve components and members. |
| ASOS | Automated Surface Observing System |
| ATA | Air Traffic Area: That air space within 5 statute miles of the geographical center of an airport and below 2,500 feet above ground level. |
| ATC | Air Traffic Control: A service operated by appropriate authority to promote the safe, orderly, and expeditious flow of air traffic. |
| CFR | Crash, Fire, and Rescue: Those vehicles and/or personnel used for crash, fire, and rescue emergencies at the Wallops Flight Facility Airport (or) Code of Federal Regulations |
| Civil Aircraft | Aircraft other than public aircraft. |
| Class D Airspace | For WFF, that airspace that extends from the surface to 2,500 feet (above ground level) within a 4.4 nautical mile radius of the geographical center of the WFF Airport and within 1.8 nautical miles each side of SWL VORTAC 181 degree radial, extending from 4.4 nautical miles to 2.2 nautical miles south of the SWL VORTAC. This Class D Airspace reverts to a classification of Class E Airspace (Uncontrolled Airspace) when the Control Tower is unmanned. |
| CTO | Control Tower Operator: A person trained and certified to control air and ground traffic in an airport environment. |
| DoD | Department of Defense |
| EMT | Emergency Medical Technician: A person trained and certified to provide basic medical services before and during transportation to a hospital. |
| EPU | Emergency Power Unit |
| FAA | Federal Aviation Administration |
| FAR | Federal Aviation Regulations. |
| FMB | Facilities Management Branch: An organization within GSFC that falls under the designation of GSFC Code 200. |
| FOD | Foreign Object Debris |
| FOM | Facilities Operations Manager: A designated individual responsible for monitoring all matters that affect the safety, utilization, and general livability of an assigned building(s) and its surroundings. |

| | |
|---|---|
| FSS | Flight Service Station |
| G Factor | Factor of the force of gravity |
| GPM | Gallons per Minute (pump rate) |
| GPS | Global Positioning System |
| GPU | Ground Power Unit. Ramp and/or hangar equipment used to provide temporary power to aircraft. |
| GSE | Ground Support Equipment |
| GSFC | Goddard Space Flight Center: One of several NASA field centers of which the WFF is a subdivision. |
| IFR Conditions | Instrument Flight Rules. Weather conditions below the minimum for flight under visual flight rules, as applied to Wallops Airport Class D Airspace, i.e., any condition wherein the ceiling is less than 1,000 feet or the visibility is less than 3 miles. |
| Jet A | Kerosene-type jet fuel commonly used in commercial aviation |
| Large Aircraft | Aircraft of more than 12,500 pounds, maximum certified takeoff weight. |
| LEADS | Leading Environmental Analysis and Display System |
| LT | Local Time: At the WFF local time can be either Eastern Standard Time or Daylight Saving Time dependent upon the time of the year. |
| Mission Management Aircraft | Aircraft used primarily for transporting NASA personnel and their staffs. |
| MSL | Mean Sea Level: A reference used to determine the elevation of an airport. |
| NASA | National Aeronautics and Space Administration |
| NOTAM | Notice-To-Airmen: A notice containing information concerning the establishment, condition, and/or change in any facility, service, procedure or hazard in the National Airspace System of which the timely knowledge is essential to personnel concerned with flight operations |
| NWS | National Weather Service |
| Operate | With respect to aircraft, means to use, cause to use, or authorize to use aircraft for air navigation, including the piloting of aircraft, with or without the right of legal control |
| OHR | Operational Hazard Report |
| OSD | Operation and Safety Directive: An approved GSFC Wallops Flight Facility plan for the conduct of a mission/project that assures safe compliance with approved procedures and criteria |
| PAPI | Precision Approach Path Indicator |
| PPR | Prior Permission Request: A prior request for approval necessary to land at the Wallops Flight Facility Airport. |
| Public Aircraft | Aircraft used only in the service of a government or political subdivision. It does not include any government-owned aircraft engaged in carrying persons or property for commercial purposes. (Refer to TITLE 14 CFR, Chapter I for further information.) |
| REIL | Runway End Identification Lights |
| Research Project | A reference to research activities at the Wallops Flight Facility Test Range. |

| | |
|---|---|
| Restricted Area | Airspace designated under TITLE 14 CFR, Part 73, Special use Airspace, within which the flight of aircraft while not wholly prohibited, is subject to restriction. |
| RF | Radio Frequency |
| RSM | Range Services Manager: The assigned primary contact for approved projects or programs at the Wallops Flight Facility. |
| SAR | Search And Rescue |
| SBY | Salisbury, Maryland VORTAC designation |
| Small Aircraft | Aircraft of 12,500 pounds or less, maximum certified take-off weight |
| SWL | Snow Hill, Maryland VORTAC designation |
| TACAN | Tactical Airborne Navigation (or) Tactical Control and Navigation |
| Traffic Pattern | The traffic flow that is prescribed for aircraft landing at, taxiing on, or taking off from an airport |
| UNICOM | Universal Communications: A ground-to-air radio communication station that may provide airport advisory information when the local Control Tower is unmanned. |
| U.S. | United States |
| USDA | United States Department of Agriculture |
| VA | Virginia |
| VFR | Visual Flight Rules: Rules that govern the procedures for conducting flight under visual conditions |
| VOR | Very High Frequency Omnidirectional Range |
| VORTAC | Very High Frequency Omnidirectional Radio Range Tactical Aircraft Control |
| VPDES | Virginia Pollutant Discharge Elimination Systems |
| WAL | Wallops Island VORTAC designation |
| WFF | Wallops Flight Facility: A subdivision of GFSC under which reside several organizational codes |

# Section 2. Airfield Information

## 2.1 Location, Communications, and Layout

### 2.1.1 Location and Description

The WFF Airfield is a NASA facility located approximately 5 miles west of the town of Chincoteague on the Eastern Shore of Virginia (VA). The geographical coordinates of the airport are 37°56′ north latitude, and 75°28′ west longitude. The airfield elevation is 41 feet above Mean Sea Level (MSL). Appendix A shows and overview of the Airfield layout.

### 2.1.2 Communications

ASOS: 119.175 Voice line: 757-824-0820.
TWR: VHF126.5, UHF306.975.
GND: VHF127.875, UHF269.325
CTAF: VHF126.5, UHF306.975
PATUXENT APP/DEP: VHF127.95, UHF314.0
PATUXENT CLNC DEL: VHF121.7

### 2.1.3 Runway Information

Runways and taxiways are inspected daily; upon completion the runway condition shall be reported to the Tower. The WFF Airfield has three runways constructed of concrete and asphalt. (See Fig 1-1 and/or Appendix A)

Runway 10/28 8005 X 200 feet
Runway 04/22 8749 X 150 feet
Runway 17/35 4808 X 150 feet

### 2.1.4 Taxiways

Two taxiways Alpha and Echo parallel runways 10/28 and 04/22 and connect at the ends. Taxiways Bravo, Charlie, Delta, Foxtrot, Gulf, Hotel, India and Juliet connect ramps to the parallel taxiways or the parallel taxiways to the runways. (See Fig 1-1 and/or Appendix A)

### 2.1.5 Controlled Movement Area

All runways and taxiways are designated as a controlled movement area. Wallops Flight Facility Airfield Driver Training as well as two-way radio communications with the ATCT are required for aircraft, vehicle, or personnel access/operations on the movement area.

### 2.1.6 Pavement Wheel Loads

Throughout the airfield the weight bearing capabilities of the WFF Airfield pavement are not consistent because of varied construction materials and thickness. As a result, the maximum allowable gross weight for large aircraft must be evaluated on a case-by-case basis. This evaluation is performed at the Airfield Manager's office in conjunction with Wallops Institutional Engineers.

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### 2.1.7 Prior Permission Request (PPR) Procedure

All aircraft operators planning to utilize Wallops Flight Facility shall coordinate at least 24 hours in advance and obtain a Prior Permission Request (PPR) number. This number shall be used by WFF operations personnel to record flight information and document support requirements.

NASA, Department of Defense (DOD) and Government operated/leased aircraft through prior approval are authorized to use the WFF Airfield for official project use and for training on a cost reimbursable, and non-interference basis to NASA program activities. Pilot-In-Command shall obtain a PPR by calling WFF ATCT, (757) 824-1688. PPR numbers are approved and issued based on WFF operational requirements once the following information is provided:

- CALL SIGN and TYPE of AIRCRAFT
- Estimated Time of Arrival (ETA) and DATE
- Estimated Time of Departure (ETD) and DATE
- PURPOSE OF FLIGHT & NASA / WFF CONTACT
- CARGO and HAZARDOUS MATERIALS ABOARD
- PILOT or AIRCRAFT OPERATOR, and PHONE NUMBER
- SUPPORT REQUIREMENTS (GROUND POWER, AIRSTART, FUEL)

Non-government, private civil aircraft and aircraft not operated for the benefit of the government (i.e., not leased by the government, etc.) through prior approval are authorized on a non-interference basis and shall satisfy insurance and waive liability requirements, and shall be advised of local airspace procedures by WFF Airfield Operations prior to operation at WFF.

The Hold Harmless Agreement is not valid until accepted and signed by the NASA approving authority. The Hold Harmless Agreement shall normally remain valid for a period of one year from effective date unless revoked, but no longer than the insurance certificate provided by the user. Completed agreements shall be maintained and coordinated by WFF Operations personnel.

PPR numbers are not required for aircraft transitioning WFF airspace or executing a low approach.

### 2.1.8 Special Use Airspace

R6604 is a local restricted airspace that is activated in conjunction with launch and range activities to include UAS operations. The northwest portion of R6604 overlaps WFF Class D airspace. The WFF Control Tower, when manned, is normally the focal point of control for all air traffic transiting that portion of R-6604 extending into the WFF airport traffic area. The point of control for this northwest portion is relinquished to the WFF Range Test Director by the CTO on certain occasions when test range operations dictate a need. During unmanned tower operating hours when R-6604 is active pilots should contact WFF Range Control, Patuxent Approach or Washington Center (ZDC) on appropriate published frequencies for clearance through any portion of this restricted area.

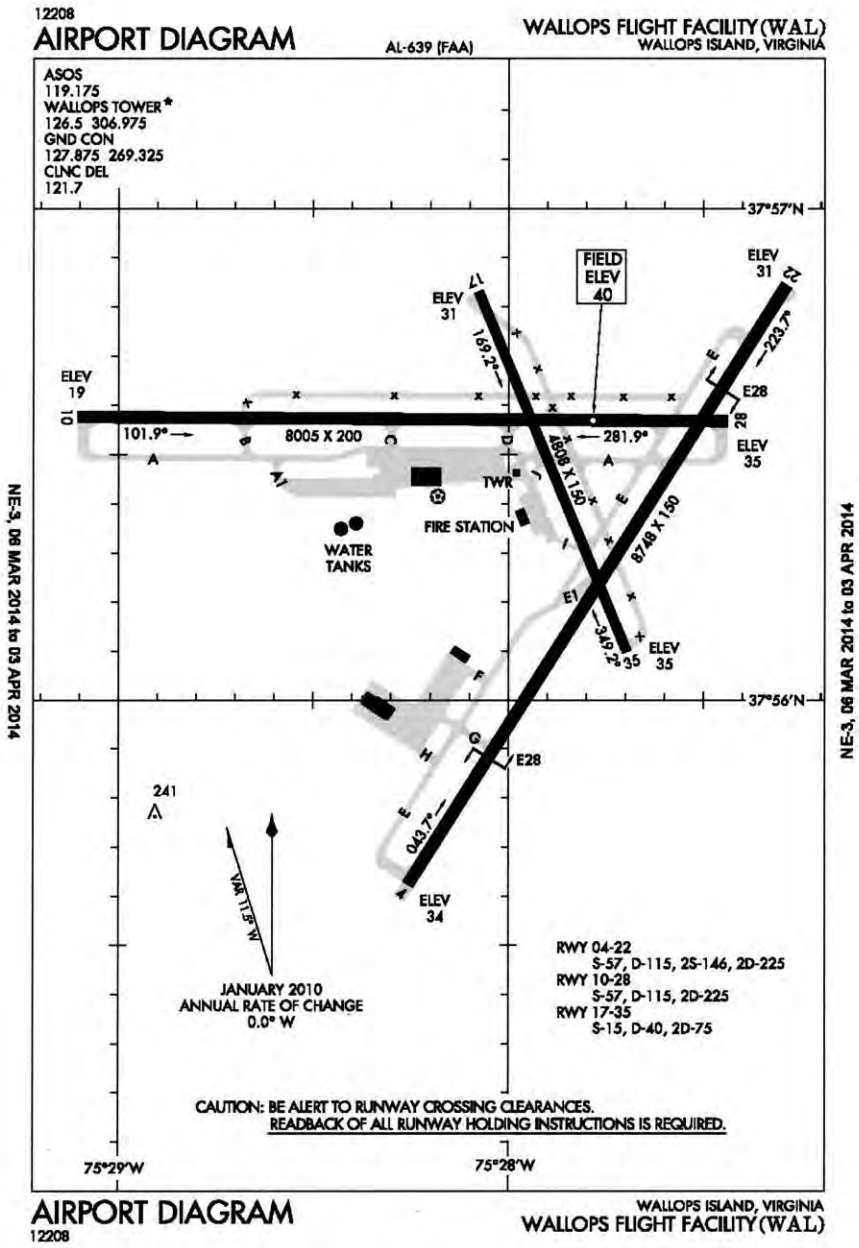



**Figure 2.1: Wallops Airport Diagram**

***(note, please refer to the current FAA/DoD FLIPs for current Airport Diagram)***

### 2.1.9 Arresting Gear

Runway 04-22 is equipped with short and long field arresting gear. The gear is located 1,500 feet from the approach end of runway 22. The arresting gear is the E-28 type, which is owned, annually inspected, and certified by the U.S. Navy; and maintained, tested and operated by WFF in accordance with U. S. Navy Document "NAEC Engineering Document 91-7824 Rev G of 14 Jan 93". This arresting gear is specifically related to WFF support for U.S. Navy programs.

During certain Patuxent River Naval Air Station scheduled test flights, t h e arresting gear is in battery (i.e, arresting cables under tension across the runway). SMALL AIRCRAFT SHOULD AVOID ROLLING ACROSS THE CABLES WHEN THE GEAR IS IN BATTERY.

### 2.1.10 Instrument Approach Procedures

Instrument approaches to WFF shall be made under approved procedures as published in current flight information publications (FLIP). The WFF airfield (KWAL) has seven FAA approved instrument approaches. There are two (2) VOR/DME or TACAN approaches, one to runway 17 utilizing the Snow Hill (SWL) VORTAC and another to runway 10 utilizing the Salisbury VORTAC (SBY). There are also six (6) RNAV GPS approaches; one each for runways 04, 22, 10, 28, 17 and 35.

Missed approach procedures shall be conducted as depicted in flight information publications unless otherwise directed by approach control or WFF CTOs.

All NAVAIDS and instrument approaches are flight checked and maintained by the FAA and published along with any waivers or deviations in FAA/DoD approved approach procedure publications.

## 2.2 Aircraft Parking Areas

### 2.2.1 N-159 Ramp

Generally, all WFF owned or operated aircraft, visiting research aircraft, rocket range support aircraft, transient civilian, and military aircraft shall be marshaled into position when parking on the N-159 ramp during the regular workday. Beyond the regular workday, or when a marshaler is not available, all visiting aircraft are required to remain east of the double red line for any engine operation and refueling. The double red line is located approximately 150 feet east of the N-159 hangar and spans the full North-South length of the ramp.

### 2.2.2 Base of A-1 (Air Traffic Control (ATC) Tower)

The Naval Search and Rescue (SAR) helicopter shall be parked due east of the base of the tower, Building A-1.

### 2.2.3 D-1 Ramp

When Navy FCLP training is in progress they will stage and utilize the D-1 ramp also available for parking of NASA, military, and project aircraft.

## 2.3 Airfield Signs, Marking and Lights

### 2.3.1 Airfield Signs

Airfield signs are classified as mandatory and informational. The signs listed below will only show examples of such signs as currently used at WFF.

**Informational Signs:**
Information and guidance signs provide the aircrew or airfield driver with information such as the direction to a taxiway and what taxiway they are on.

a. **Taxiway Direction Sign** indicates the direction of a specific taxiway. Direction signs are black lettering on a yellow background. (See Appendix C Fig C-11)
b. **Taxiway Location Sign** indicates the taxiway you are on. Location signs are yellow lettering on a black background. (See Appendix C Fig-8)
c. **Runway Exit Signs** are taxiway direction signs located on runways to indicate the location of a specific taxiway at an exit point. (See Appendix C Fig C-7)

**Mandatory Signs:**
Mandatory signs provide information such as runway designations, VFR hold positions and stopping points. Mandatory signs are white lettering on a red background.

a. **Hold Signs .** Hold signs indicate areas where aircraft and vehicles must stop and get instructions from the ATCT. These signs are located where the hold line markings are painted on the surface of the pavement. Operators must not proceed beyond this sign until given permission from the ATCT. (See Appendix C Fig C-9)
b. **Hold Signs collocated with a Location Sign.** This sign array contains both a hold sign, and taxiway location sign. The sign depicted in Appendix C Fig. C-10 is indicating that the aircrew or driver is located on taxiway A and at the intersection of Runway 4/22.

### 2.3.2 Airfield Markings

The markings on the airfield convey information to both aircrew and airfield drivers. All airfield markings are retro reflective and should be easily seen at night when exposed to head lights or landing gear lights. Examples of the markings used at WFF are listed below.

a. **VFR Hold Line.** This marking defines the boundary of the runway safety zone. It consists of two solid yellow lines and two dashed yellow lines. You must have permission from the ATCT to proceed beyond this line. (See Appendix C Fig C-5)
b. **Taxiway/Apron Edge Marking.** This marking defines the boundaries of the load bearing surface. It consists of two continuous solid yellow lines. Aircraft should not be taxied or towed beyond this line. Airfield drivers should be aware that this defines the aircraft movement area. (See Appendix C Fig C-6 )
c. **Other Pavement Markings.** In addition to airfield markings, there are security markings for areas that are restricted. Restricted areas are marked

with a single red line around the area that is restricted.

### 2.3.3 Airfield Lighting Operation

Airfield lighting is operated from the ATCT during normal operating hours (Monday through Friday, 0600-1800 LT) for arriving and departing aircraft in accordance with FAA Order 7110.65, Air Traffic Control Handbook. Wallops Flight Facility is not equipped with pilot remote controlled lighting and is operated upon pilot request during non-tower hours by Wallops UNICOM.

### 2.3.4 Rotating Beacon

A standard civil rotating beacon indicating lighted land airport is located on the D-1 hangar, which is located 300 yards west of the Control Tower.

### 2.3.5 Obstruction Lights

There are numerous towers, antennae, and various other obstructions within the Air Traffic Area (ATA) of the WFF Airport that are clearly marked with red obstruction lights.

### 2.3.6 Taxiway Lights Description

Taxiways A and B, including all runway turn-off exits for parallel runways 10-28 and 04-22, are equipped with blue taxiway lights. The taxiway parallel to the east of runway17-35 is permanently inactive. (See Appendix C Figs. 2, 4)

### 2.3.7 Runway Lights Description

All WFF runways, 10-28, 17-35 and 04-22 are lighted. These runways are equipped with variable high-intensity white runway lights (HIRL) installed the full length of the runways except for Federal Aviation Administration (FAA) required amber colored lights installed along the final 2000 feet. Runways have Runway End Identification Lights (REIL) and Precision Approach Path Indicator (PAPI) lights on the left side of all approach ends. (See Appendix C Figs. 1, 3)

### 2.3.8 Windsocks

Windsocks are located near the approach end of the runways and in the center of the airfield. These socks indicate direction of the wind for velocities in excess of three knots. The windsocks located just north of the approach end of runway 10 and abeam the ATCT are lighted for night operations. Windsocks are inspected daily and replaced as needed.

### 2.3.9 Light Gun Signals

As a backup to normal communications to compensate for a malfunction of radio equipment, the WFF Control Tower is equipped with standard FAA air traffic control directional lights for signaling pilots, when necessary. See Figure 2.2

| Color and type of signal | Aircraft on the ground | Aircraft in flight | Movement of vehicles, equipment, and personnel |
|---|---|---|---|
| Steady green | Cleared for takeoff | Cleared to land | Cleared to cross; proceed; go |
| Flashing green | Cleared to taxi | Return for landing (to be followed by steady green) | Not applicable |
| Steady red | Stop | Give way to other aircraft and continue circling | Stop |
| Flashing red | Taxi clear of landing area or runway in use. | Airport unsafe DO NOT LAND | Clear the taxiway/runway |
| Flashing white | Return to starting point on airport | Not applicable | Return to starting point on airport |
| Alternating Red and Green | General Warning Signal- Exercise Extreme Caution | | |

**Figure 2.2: ATCT Light Gun Signals**

## 2.4 WFF Airport Operations

### 2.4.1 Air Traffic Control Tower (ATCT)

The WFF Control Tower is operated by FAA-certified Control Tower Operators (CTO) IAW FAA regulations and current Letters of Agreement between Wallops Tower and external agencies. WFF ATCT is manned from 0600-1800 LT, daily, Monday through Friday, federal holidays excluded. In order to enhance airfield safety beyond the above routine times, the Airfield Manager may extend tower operation whenever research activity is in progress or when multiple aircraft operations are scheduled in proximity to each other. Any adjustment to tower hours will be published/disseminated via a Notice to Airmen (NOTAM).

The Air Traffic Control Tower shall develop opening/closing procedures as required to ensure that all equipment that affects aircraft operations is in functioning status and condition. CTOs shall document this information in the Daily Tower Log and ensure that pertinent equipment performance issues are passed to the appropriate agencies.

### 2.4.2 Airfield Inspections

Airport Operations and CFR personnel inspect the WFF runway pavement surfaces daily to detect surface abnormalities such as debris from pavement deterioration and breakup, FOD as a result of maintenance or project activity, dead animals and birds, inoperative vehicular traffic lights, or downed signs, or other abnormalities. Airfield inspection reports are submitted to the Airfield Manager, Airport Operations, CTO Lead, and Facilities Management Branch (FMB) immediately after completion of each inspection. The Airfield Manager and operations personnel also conduct periodic airport inspections.

CFR personnel visually inspect airfield lighting on a weekly basis, including the local area obstruction lights (on towers, antennas, buildings, etc.). An airfield lighting report is submitted to the Airfield Manager, Airport Operations, CTO Lead, and FMB for each inspection. Additionally, light outages that are published on the standard approach plates are reported directly to the Eastern Region Flight Service Station via NOTAM.

WFF Airfield grass height shall be maintained to optimize aircraft safety and minimize FOD and bird activity in accordance with the WFF Wildlife Management Plan. Excessive grass height, especially around all lighting systems shall be reported and noted on the daily lighting inspection report. Plant growth impacting a required line-of-sight, physical security of the airfield, or the integrity of a facility, shall be removed or cut down as it develops.

### 2.4.3 Foreign Object Debris Prevention

The WFF Airfield Foreign Object Debris (FOD) prevention policy encompasses three specific categories for FOD control. The first category involves ensuring that the airfield operating area pavement surfaces are clear of debris that could damage aircraft. This is accomplished by mandatory daily safety inspections, or by reports from CTOs, aircraft pilots, and others. Also, special vacuum sweeping is routinely called for by Airport Operations whenever high performance jet operations, that are normally vulnerable to FOD, are scheduled at the WFF Airfield. The second category is implemented through the WFF Airfield Driver Training, educating airfield users to be aware of and how to eliminate FOD hazards. The third category involves hangar FOD safety programs, including tool control, which are managed by aircraft maintenance organizations and overseen by industrial and aviation safety officials. Transient aircraft maintenance personnel are responsible for ensuring that they present no FOD hazards to their aircraft and surrounding work areas.

### 2.4.4 Wildlife Management Plan

The importance of providing a safe environment for aircraft operations is readily recognized. Wildlife is one of the more serious threats to the safety of aircraft when various species periodically occupy the same airspace and pavement areas as aircraft. In an effort to remedy this problem, WFF has entered into an interagency agreement with the U.S. Department of Agriculture (USDA) to develop a Wildlife Management Plan (830-PLAN-0001). The plan incorporates WFF's previous Wildlife Hazard Control Program and the implementation of a more focused effort provided by the USDA.

### 2.4.5 UNICOM

During periods when the Control Tower is unmanned, Wallops Flight Facility operates as an uncontrolled airfield with ASOS weather information and airfield lighting operated by dispatch personnel providing UNICOM services. Wallops Universal Communications (UNICOM) shall provide any reported traffic, the status of R6604, NOTAM information, any known hazards to navigation in the vicinity of the aerodrome and the ASOS frequency as well as airfield lighting upon pilot request. For pilots, it is important to adhere to the following procedure when operating at the WFF Airfield when the Control Tower is unmanned:

*"Traffic Advisory Practices at Airports without Operating Control Towers, FAA AC No. 90-42F", is in effect during non- tower operating hours. In addition to FAA AC No. 90-42F, WFF policy requires that at all times when the Control Tower is unmanned, PILOTS MUST ADVISE "WALLOPS UNICOM" PRIOR TO ENGINE START, TAXI, TAKEOFF, APPROACH, OR LANDING.*

For information to pilots, it should be noted that Wallops UNICOM is a function provided by Emergency Dispatch personnel located in Building B-129 (Fire Station #1). These personnel, in addition to other duties, monitor the CTAF to provide pilots with essential ground and flight information. As a word of caution, this service is provided from a remote site whereby the runways and taxiways are not visible to the personnel transmitting this advisory information. Therefore, pilots operating on the ground and in the air shall exercise vigilance in preventing a collision with other aircraft or ground vehicles. The responsibility for the avoidance of collision rests with individual pilots, and is especially critical during those hours of operation when the Control Tower is unmanned.

### 2.4.6 Tower/UNICOM Handoff

During Tower-to-UNICOM and UNICOM-to-Tower handoff and CTO-to-CTO handoff, a complete update pertaining to the status of the airfield is required and will be initiated by the closing duty station/person. This update shall include runway, taxiway and/or ramp closures, rehabilitation activities and/or areas, project activities and/or equipment locations and any other pertinent information relating to airfield safety.

### 2.4.7 NOTAM Issuance

NOTAMs normally will be issued by the duty CTO or the Airfield Operations Officer after conferring with the Airfield Manager. The CTOs and UNICOM personnel shall maintain a current log of all NOTAMs related to the WFF airfield.

Also, the CTOs shall document on Form No. NASA WI-1539, NOTAMs, WFF Airfield, all NOTAMs initiated by WFF/FAA personnel that relate to the WFF Airfield. Additionally, these completed forms shall be disseminated within 24 hours to the following personnel: CFR Duty Captain/UNICOM, Airfield Manager, WFF Aviation Safety Officer, AirTech Aviation Safety Officer, Aircraft Operations Schedule Office, and AirTech Contract Maintenance Supervisor.

Authority to issue NOTAMs relating to the WFF Airport is delegated by the Airport Manager.

### 2.4.8 Waivers

As the owner operator of the airfield NASA is responsible for waivers concerning the airfield and its facilities and shall be published or kept on record with Airport Operations.

### 2.4.9 Aviation Safety Board

The Aviation Safety Board will meet quarterly to review pertinent aviation issues. All NASA personnel who utilize or manage projects on the airfield are

encouraged to provide issues to the board. NASA Management participates by providing members from aviation safety, airfield management, and airport operations. Air Traffic Control, CFR, Security and NASA Safety personnel are invited to participate.

The following shall be reviewed at least once annually:

- Airfield/Airport Operations
- ATC/Flying procedures
- Letters of agreement and other operation letters/instructions
- Airfield Construction
- CFR
- Security

### 2.4.10 Outages

There is no schedule of routine preventative PM outages. Any PM that entails maintenance shutdown of ATCALS/Lighting shall be scheduled during periods of weather forecast to remain better than minimums for visual approaches and least traffic activity.

Unscheduled power and communications outages shall be reported to the appropriate authority. These and similar anomalies shall be recorded in the Daily Tower Log.

### 2.4.11 Meteorological Services

Meteorological services to include weather briefings, consultations and the following products are routinely available from 0730 LT through 1630 LT daily, Monday through Friday, legal holidays excluded. Services include monitoring and augmenting the continuously operating National Weather Service (NWS) Automated Surface Observing System (ASOS), which provides weather observation reports of WFF meteorological conditions for worldwide dissemination. Meteorologist augmentation of ASOS data takes place from 0730 LT through 1630 LT daily, Monday through Friday, legal holidays excluded. Weather data, including satellite, radar and regional NWS warning and advisory data is transmitted to the Meteorological Office via satellite downlink to the Leading Environmental Analysis and Display System (LEADS), providing continuous, real-time, worldwide weather information. Other services include pilot weather reports, surface map and upper air analyses, terminal weather forecasts, local weather warnings and advisories, plus numerous other related services. Climatological data is available upon request.

Weather information on the WFF closed circuit television system is as follows:

- Channel 42.1 - Daily live TV weather briefing starting at 1000 LT. Routine display of weather radar and satellite information.
- Channel 7.2 - Observed weather data from Wallops Island and the Main Base with scrolling abbreviated weather forecast, range schedule, and upper level winds.

- Channel 40.1 - National Lightning Detection Network display.

A recorded telephone weather forecast, which is updated at 1000 LT and 1400 LT daily on normal workdays, is available at Extension 2291 or at (757) 824-2291. Real-time ASOS weather observation data is available by dialing (757) 824-0820. Pilots may access this same recording via VHF radio on 119.175 MHz.

Additionally, the Meteorological Office offers printed and faxed 12-hour and 36-hour forecasts at 1000 LT and 1400 LT, respectively, in addition to a Three Day Weather Risk chart available via e-mail at 1500 LT. After normal working hours or at any other time, aviation weather and forecast information may be obtained by calling the Eastern Region Flight Service Station at 1-800-992-7433.

### 2.4.12 Fuel Services

Fuel services are provided IAW WFF Aircraft Fueling Procedures WI during normal duty hours (Monday through Friday, 0800-1600L). After hours fueling is available and shall be requested/scheduled through Airport Operations. The tower will page fuelers or dial x1185 if there is no reply to the page.

Government owned, operated, or leased aircraft, and civilian aircraft engaged in projects may be refueled at WFF. There are four acceptable methods of payment for fuel:

- United States Government Air credit cards
- Visa
- Mastercard
- Funding established in advance that is normally related to existing approved projects and/or programs at WFF

Pilots requiring fuel after hours may establish a schedule through their assigned WFF Project Manager or Airport Operations. To facilitate the procurement of fuel, the person initiating the request should specify the type of aircraft, time, date, location on the airfield, type of fuel required, estimated number of gallons required, requestor's name and related program. Fueling contractors provide standby fuelers via cell or home phone.

An assigned crewmember of the aircraft shall operate the fueling nozzle. Under certain circumstances (on a case by case basis) exceptions can be made for NASA mission management aircraft and certain WFF project aircraft.
In circumstances where single piloted aircraft are involved, an additional person to operate the fuel nozzle may be provided by WFF. Under these conditions, however, the pilot shall be expected to oversee the refueling operation.

### 2.4.13 Oxygen

Both liquid oxygen and gaseous breathing oxygen are available to official business and project-related aircraft.

## 2.5 Hangar and Service Facilities

### 2.5.1 Hangar Space

Hangar space is limited to NASA owned or operated aircraft and to those aircraft involved in research and/or a project at the WFF Airfield. The need or requirement for hangar space must be requested in advance from the assigned Project Manager or Airport Operations.

### 2.5.2 Project Office and Lab Space

Office and lab space is available for approved aircraft projects. These rooms vary in size and are located in the N-159 and/or D-1 hangar facilities. Reservations for this space must be requested in advance from the assigned PM or Airport Operations.

### 2.5.3 Repair Facilities

The WFF Airfield Facility is not equipped to provide other than minor or limited repairs to transient aircraft. Normally, project research entities shall provide their own maintenance personnel when engaged in flight operations at WFF. When necessary, however, limited assistance may be available to personnel and aircraft involved in research at the WFF Airport.

### 2.5.4 Aircraft Washing and Cleaning

Aircraft rinsing or washing must be performed only at the Airfield Environmental Isolation Pit located immediately west of Hangar D-1. Before beginning aircraft washing and cleaning operations, the valve at the oil/water separator system must be positioned for directing the runoff flow to the sewage treatment plant. In this position all wash water will flow via the oil/water separator system. Cleaning agents must meet standards of WFF's Virginia Pollutant Discharge Elimination Systems (VPDES) permit and be approved by the Facilities Management Branch. When aircraft washing and cleaning operations are completed, the valve at the oil/water separator system must be returned to the normal rainwater drain position.

### 2.5.5 Flight Planning Services

A flight planning room is located on the first floor of Hangar N-159 Rooms E117/119. A wall flight planning chart, computer, high- and low-altitude en route charts, FAA flight plans, en route flight information supplements, Airman's Information Manual and selected other items of pilot information are available. Flight plans are filed by phone to Eastern Region Flight Service Station (1-800-992-7433). Also, a conference room with telephone is available for flight briefing/planning at the lower level of the Control Tower, building A-1.

A Visiting Pilot Information Sheet is forwarded with the Prior Permission Required (PPR) package and also available through Airport Operations. This handout is a summary of key information pertinent to aircraft operations in the WFF Airfield air traffic area and vicinity. Included are important telephone numbers and available services.

### 2.5.6 Cafeteria Service

Cafeteria service is available in Building E-2, Monday through Friday, legal holidays excluded. Breakfast is available 0700-0900 LT and lunch is available 1100-1300 LT. There is no dinner service.

### 2.5.7 Medical Facilities

A fully equipped first aid and emergency treatment facility is located in Building F-160. Both a medical doctor and a nurse are on duty during normal working hours Monday through Friday (0800-1630 LT). Additionally, a WFF CFR duty crew, located at Building B-129, is staffed with Emergency Medical Technician (EMT) qualified personnel and is available when needed. The nearest fully equipped hospitals to WFF are Atlantic General Hospital in Berlin, Maryland; Peninsula Regional Medical Center in Salisbury, Maryland; and Riverside Shore Memorial Hospital in Nassawadox, Virginia.

### 2.5.8 Ground Support Equipment

WFF does not operate a transient line service and minimal GSE is available. Projects or transient aircraft should consult with WFF Airport Operations prior to arrival to ensure your needs can be met. Generally, all ground support equipment will be used according to design for the particular aircraft or system and will not be modified for other purposes.

## 2.6 Course Rules

### 2.6.1 VFR Pattern Entry

For aircraft separation, bird avoidance, and noise abatement purposes, pilots shall normally enter the VFR traffic patterns at 1,500 AGL for large or heavy aircraft, 1,000 feet AGL for light aircraft, and 500 feet AGL for helicopters. Pilots requiring traffic pattern altitudes other than these shall request those patterns from the CTO. The standard VFR traffic pattern for WFF Airfield is left closed traffic.

### 2.6.2 Pilot Requests for Off-Duty Runway

In the event that a landing is requested for an off-duty runway, the traffic pattern shall be a standard left-hand pattern, unless modified by the CTO.

### 2.6.3 Wave-Offs

In the event of a wave-off where a pilot desires to remain in the landing pattern, pilots shall normally fly aircraft straight out to an altitude of at least 500 feet above the airfield on the assigned runway heading and turn downwind when traffic permits. For an aircraft waving off and departing the airfield traffic area, the wave-off and departure pattern is depicted in Figure 3-1 or as directed by the CTO.

### 2.6.4 Research Aircraft Patterns

Aircraft at the Wallops Flight Facility engaged in research, systems checkout and evaluation, or other mission-specific activities, shall be flown at altitudes, patterns, and speeds according to an approved Operation and Safety Directive (OSD) and as coordinated with the CTO. Even though research operations shall normally have priority over other traffic, research

pilots are required to maintain a continuous communication link with the WFF Control Tower.

### 2.6.5 Practice Landing Pattern

Pilot training in the form of practice landings and approaches must be pre-coordinated with the tower and will be approved on a non- interference basis with project operations. Traffic patterns shall be as described in this chapter unless modified by the CTO. Also, R-6604 activity may require pattern modifications.

Unless otherwise directed all aircraft shall maintain runway heading to an altitude of not less than 500 feet before commencing turn to pattern altitude.

### 2.6.6 Helicopter Operations and Maneuvers in the Airport Traffic Area

Research projects involving helicopter flights shall be conducted in accordance with approved OSDs. All routine helicopter flight operations, including take-offs, landings, hovering, air taxiing and ground taxiing shall normally be conducted over hard-surfaced areas. Touch-and-go practice landings will be dictated by other air traffic activity and as approved by the CTO. Landing practice may be approved on an off-duty runway whenever the tail wind does not exceed 5 knots. Helicopters, other than those on floats and skids, shall ground taxi in and out of congested line areas instead of air taxiing. While air taxiing, helicopters shall avoid other aircraft, vehicles, and obstructions laterally by 200 feet, and when airborne, shall avoid flying over parked aircraft and vehicles, or passing within 200 feet of buildings or fixed obstacles. Helicopters shall avoid overflight of other airborne aircraft, and avoid take-offs and landings through the same airspace below and behind other airborne traffic for 1 to 2 minutes.

### 2.6.7 Special VFR Operations

After coordination with Patuxent Approach Control, WFF Tower will have authority to conduct Special VFR operations in accordance with the procedures contained in FAA Order 7110.65 within the WFF Airfield Class D Surface Area from the surface to 2,500 feet MSL.

### 2.6.8 Practice Auto-rotations

Practice auto-rotations must be approved by the duty CTO and shall be subject to the following restrictions:

**a.** Practice auto-rotations shall be made over hard surface areas and where specified.
**b.** Procedures shall be performed according to procedures outlined in the appropriate flight manual.
**c.** A CFR vehicle must be on standby during practice auto-rotations.
**d.** Practice auto-rotations shall not be allowed during periods when turbulent and variable wind conditions prevail, or when the pilot is aware that the reported wind creates a hazardous situation for this type of operation.

### 2.6.9 UAS Operations

UAS (Unmanned Aircraft System) operations occur at WFF airfield and shall be NOTAMed. UAS and aircraft operations are mutually exclusive. Priorities

are IAW FAA Order 7110.65. UAS procedures are IAW NASA NPR 7900 Chapter 5.

**2.6.10 Field Carrier Landing Practice (FCLP) Operations**

WFF Airfield is outfitted with a simulated carrier deck on runway 10/28 solely for E-2/C-2 FCLP Training. Pilots in the vicinity of WFF should exercise caution at times of FCLP training evolutions as the pattern altitude is other than standard. WFF ATCT is the ultimate authority for Class D airspace during periods of FCLP training and shall coordinate other arrivals, departures and overflights IAW FAA Order 7110.65 and NASA safety directives.

**2.6.11 Aircraft Emergencies**

Manned aircraft declaring an emergency shall take priority over any other aircraft operation at WFF and handled by WFF ATCT IAW FAA Order 7110.65. Unmanned aircraft emergencies will be accommodated in accordance with existing safety policy.

WFF ATCT personnel shall initiate assistance and notifications via the Crash Phone as soon as enough information has been received on which to act. This information shall also be documented in the daily log.

Minimum information required to activate the Crash Phone is type of aircraft and the nature of emergency. CTO shall obtain and disseminate as much of the following information as possible.

**a.** Aircraft call sign
**b.** Type of aircraft
**c.** Nature of emergency
**d.** ETA
**e.** Pilot's intentions
**f.** Appropriate runway or location
**g.** Total Number of souls on board
**h.** Fuel on board
**i.** Pounds of fuel and any hazardous cargo on board

The Crash Phone will be activated under the following conditions:

**a.** Aircraft declares an emergency
**b.** A MAYDAY or PAN-PAN call is received
**c.** Aircraft declares a forced landing
**d.** Aircraft accident occurs or is suspected
**e.** A flight control problem of any type
**f.** A hydraulics malfunction of any type
**g.** An engine-out landing for multi-engine aircraft
**h.** Any time fire or smoke is reported or suspected on an aircraft
**i.** A leak of any flammable or hazardous material
**j.** Any condition which causes overheating of engines or fluids
**k.** Hot brakes are reported or observed
**l.** No radio conditions, unless nonverbal communications verify emergency conditions do not exist (for example, the tower instructs aircraft to flash

landing light if no emergency exists, and the aircraft flashes a landing light).

Anytime there may be doubt that a situation constitutes an emergency, it should be handled as though it is an emergency.

If the primary Crash Phone is out of service, the trunking radio shall become the secondary crash alarm system. When the Crash Phone fails, the tower shall announce on the Tower net all pertinent emergency information.

All emergency coordination and lines of authority on the airfield during an emergency shall be IAW WFF Airfield Mishap Response Plan.

## 2.7 Taxi Instructions

### 2.7.1 Taxi Procedures During Control Tower Operating Hours

All aircraft shall obtain taxi clearance from the WFF CTO for taxiing during normal Control Tower operating hours.

### 2.7.2 Taxi Procedures When Control Tower Is Unmanned

After normal tower operating hours, pilots shall obtain local weather information via the ASOS on 119.175 and contact Wallops UNICOM prior to engine start for any reported traffic, the status of R6604, NOTAM information, any known hazards to navigation in the vicinity of the aerodrome and airfield lighting. Runway selection and taxing procedures shall be IAW FAA and DoD regulations governing uncontrolled airfields.

## 2.8 Take-Off and Departure Instructions

**a.** Normally, take-offs shall not be permitted at the WFF Airfield unless the aircraft has a functioning two-way radio. Any deviation from this requirement shall require prior arrangement between the pilot and the CTO or Airfield Manager. A take-off without two-way radio communications may be authorized to permit the pilot of a visiting aircraft to proceed to a home base or other base for corrective maintenance.

**b.** Take-offs that adversely affect active research projects shall generally be denied to any aircraft other than official NASA- owned aircraft engaged in project support or other similar flights.

**c.** High performance climbs and dives are not authorized unless previously scheduled or included in the operational phase of a research project operating under an approved OSD.

**d.** Mid-field or intersection take-offs may be permitted upon pilot's request.

**e.** Take-offs when the Control Tower is unmanned shall be announced on Wallops UNICOM (126.5) as previously explained.

**f.** Helicopter take-offs shall be controlled as directed by the CTO during hours of normal tower operations and coordinated with Wallops UNICOM during all other hours for scheduled flights. The normal helicopter departure pattern will be conducted so as not to affect or interfere with fixed-wing aircraft. Also, helicopters will not normally cross the runway in use. Unless otherwise specified, helicopters will depart the WFF airfield traffic area at an altitude of no less than 300 and no more than 500 feet. Additionally, helicopters shall maneuver to

bypass the housing area in the southwest quadrant of the Wallops Facility.

**g.** It is recommended that all aircraft, but mandatory for heavy multi-engine aircraft, depart on runway headings at a minimum of 1000 feet before commencing a turn. An exception will apply when an aircraft is engaged in research and operating under an approved OSD. Also, high-powered, steeply banked, low-altitude turns shall not be permitted unless included in an OSD or under emergency conditions.

## 2.9 Landing Instructions

### 2.9.1 Initial Radio Contact

Pilots shall call the WFF CTO (Wallops Tower) for landing instructions before entering the airfield traffic area during the hours when the Control Tower is manned. During periods when the Control Tower is unmanned, pilots shall contact Wallops UNICOM for landing information IAW FAA AC 90-42F.

### 2.9.2 Traffic Pattern Air Speed

Maximum air speed within the airport traffic area is 200 knots for turbine-powered and reciprocating engine aircraft, except as provided in TITLE 14 CFR 91.117 and as pertains to the minimum safe air speed for particular aircraft operations. Maximum air speeds for research aircraft shall be as established and published in individual OSDs, if greater than the above listed air speeds.

### 2.9.3 Formation Landings

Formation landings are prohibited except in the case of chase aircraft engaged in research operations and documented in applicable OSDs.

## 2.10 Training

### 2.10.1 Approval

Touch and go landing practice may be granted to individual military aircraft by PPR approval on a day-to-day non-interference basis during normal Control Tower operating hours. Wholesale organizational use of WFF airfield for regular touch and go practice must be coordinated and approved in advance by the RMMO. NASA owned or operated aircraft may be cleared for landing practice by the CTO as conditions permit. Landing practice will not normally be authorized while a research project operation is in progress at either the airfield or within the airfield traffic area. An appropriate CFR vehicle shall be on standby at the appropriate location during practice landing activities.

### 2.10.2 Instrument Approaches

During normal tower operating hours, aircraft may be cleared for practice instrument approaches, including low passes over the airport, and simulated missed approaches, through clearance from the CTO when traffic conditions permit.

### 2.10.3 Simulated Emergencies

Any planned training or practice involving simulated engine failures during take-offs and landings, shall be conducted with a qualified aircraft commander,

instructor pilot, or proficiency flight examiner occupying one of the pilots' seats and actively supervising the operation. Additionally, all such practice and training shall require prior approval by the ASO, the Chief of Code 840 and the CTO, in addition to PPR approval.

## 2.11 Simultaneous Runway Use

Under certain conditions and when requested by a pilot and cleared by the CTO IAW FAA Order 7110.65, aircraft operations may be performed on two different runways simultaneously. During periods of simultaneous operations, pilots shall be especially alert to the CTO's instructions concerning other traffic. With respect to off-duty runway use, no pilot shall use an off-duty runway when the crosswind component exceeds the maximum allowable component for the type aircraft involved, or when there is a tailwind that exceeds 10 knots. As usual an aircraft operating under an approved OSD would be allowed an exception.

## 2.12 Night Operations

Both the Wallops CTO and UNICOM locations are equipped with airport lighting controls. Airfield lighting may be provided upon pilot request for other than nighttime operations.

With certain requested exceptions, appropriate lighting is routinely provided for all nighttime operations. Exceptions would be conducted in accordance with an appropriately documented OSD directly related to a research operation and would require the Control Tower to be manned.

Because of inherent wildlife hazards nighttime touch-and-go training is not normally permitted at the WFF Airfield. Exceptions must be via special approval after an appropriate safety review or documented in an approved OSD, and with the Control Tower manned.

## 2.13 Aerobatic Flight

Aerobatic flying is not normally authorized within the WFF airfield traffic area. Any "G" factor (factor of the force of gravity) that exceeds 2 Gs, angle of bank in excess of 60 degrees, or pitch angle greater than 30 degrees is considered acrobatic flight. This restriction does not apply to research type flights whereby specified maneuvers are documented in an approved OSD, or to an officially approved flight demonstration.

## 2.14 Fuel Dumping

Fuel dumping shall not be conducted in the Wallops airfield traffic area.

## 2.15 Towing

Tow drops will not be permitted except as documented under an approved OSD and RMMO approval.

# Section 3. Flight Line Operations – Safety Procedures

## 3.1 General Information

The following subsections contain procedures and guidelines that apply to the overall WFF Airfield. However, for specific circumstances, when operating at the N-159 ramp or hangar, it is advisable to consult Section Three of 830-AMPM-0001, Aircraft Maintenance Program Manual, which may contain minor variations specific to the N-159 area.

## 3.2 Ground Vehicular Traffic / Airfield Operational Areas

That portion of the WFF Airfield that includes hangars, aircraft parking areas, taxiways, runways, etc., is designated a "Restricted Area". Only those vehicles necessary to support aircraft/project operations and to provide required security patrol and field maintenance are authorized access to the Restricted Area. All other government, company, or private vehicles are not permitted in hangars or on aircraft parking areas, taxiways, or runways without specific permission from the Airfield Manager.

All personnel that access the airfield Restricted Area shall receive a mandatory Airfield Access & Drivers Training course prior to operating any vehicle or accessing the airfield Restricted Area (runways, taxiways, hangars, and ramps). Contact Airport Operations at Building A-1, Room 301 (Ext.2049) for scheduling.

Ground vehicles using the designated roadway-runway crossing point at Runway 17-35 must comply with roadway signs, the associated traffic control lights, and otherwise remain clear of the airport operating area.

Ground vehicles operating on the airfield are required to have an operational lighted beacon on their vehicle and establish and maintain radio contact with Wallops Tower or with Wallops UNICOM when the tower is unmanned. Clearance from the tower or approval from UNICOM is required to access the airfield, move about the airfield, and to depart the airfield. Also, while personnel and/or vehicles are within the airfield operating area, personnel are required to maintain proximity to the vehicular or handheld radio at all times. When stopped on any runway the vehicle engine "should remain running", if possible, to ensure an immediate exit from the runway and/or airfield in the event of an emergency.

Handheld trunking radios and amber rooftop beacons are available for check out at building B-129 from the duty dispatcher. The amber beacon shall be placed on the vehicle's rooftop and remain operational while on the airfield.

Operators of ground vehicles and personnel on foot have the direct responsibility to remain vigilant and clear of research vehicles and aircraft operations.

Personnel on foot or riding bicycles, and have no official purpose for accessing the airfield, must remain clear of the airport operating area at all times.

## 3.3 Hazardous Cargo

Hazardous cargo such as rockets, their components and other dangerous cargo, must be loaded and off-loaded in the designated Hazardous Cargo Loading Area and handled in accordance with existing WFF instructions and regulations. Under certain conditions when approved by appropriate WFF safety officials, loading and off-loading of rocket components may be allowed in certain other specified areas. Only personnel qualified and authorized to handle dangerous materials shall engage in any part or phase of transporting, loading, unloading, or handling hazardous cargo.

This Hazardous Cargo Loading Area is located on the concrete area immediately adjacent to the West side of the Runway 17 approach (see Figure 3-1.)

## 3.4 Electromagnetic Radiation Hazards for Pyrotechnics

The Wallops Frequency Manger must approve all RF emitters prior to activation. The Frequency Manager is responsible for reviewing all transmitting systems relative to interference to existing systems at WFF. Also, the Frequency Manager routes all pertinent data to the Safety Office, Code 803, whose personnel evaluate the potential hazards and impose restrictions to protect personnel, ordnance, and Wallops facilities.

## 3.5 Hydrazine Fuel

Certain military aircraft use hydrazine to drive their Emergency Power Units (EPUs). Occasionally these aircraft visit the Wallops airfield for project work or emergency landings than can require the response of trained CFR personnel. Wallops CFR personnel are trained in procedures for responding to the presence of hypergolic chemicals, such as hydrazine. Procedures include the use of detection equipment for determining the presence of hydrazine, area security, containment, and arrangement for proper disposition of spills.

## 3.6 Aircraft Carrying Combat Type Ordnance

Aircraft carrying combat ordnance will be permitted to land and directed to park at the Hazardous Cargo Loading Area at WFF under two conditions: (1) if the operation is covered by an approved OSD; or (2) if the pilot has declared an in-flight emergency. In either case, the safety procedures as outlined in 803-WI-8072.1.9, Aircraft Operations with Live Ordnance at Wallops Flight Facility Airfield, shall be fully implemented.

UNCONTROLLED WHEN PRINTED, CHECK WITH DOCUMENTATION FACILIATOR TO VERIFY THAT THIS IS THE CORRECT VERISON PRIOR TO USE. THE DOCUMENT CONTROL INFORMATION AND REPOSITORY ARE LOCATED AT https://roms.wff.nasa.gov/

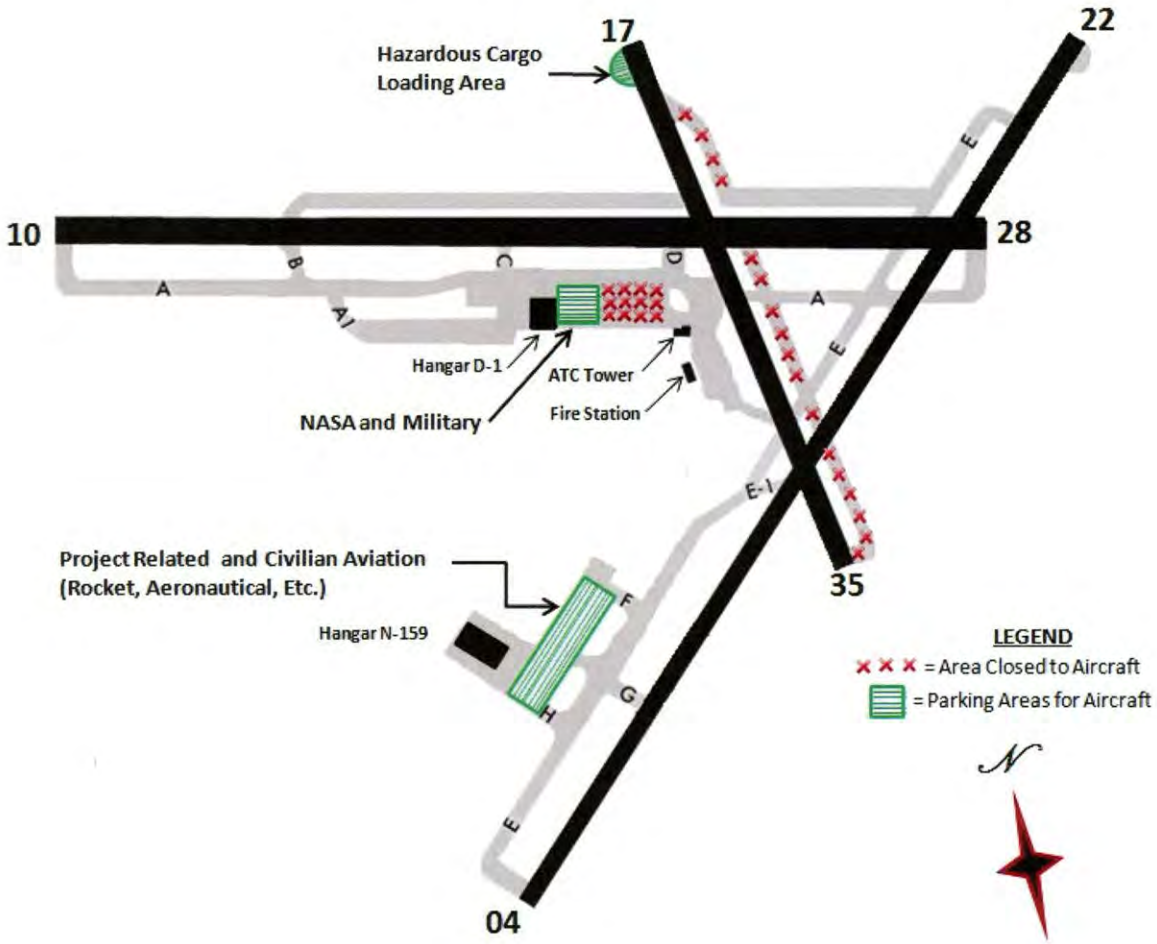



**Figure 3.1: Aircraft Parking Areas**
Diagram information is uncontrolled when viewed and/or printed in anything other than normal color

## 3.7 Hazard, Accident, Incident, Mishap Reporting

Pilots, crewmembers, ground support personnel, CFR and CTOs are encouraged to submit an Operational Hazard Report (OHR) on any unsafe flight-related condition or practice noted within the WFF Airfield vicinity (see Figure 3-2). These reports should be made in writing to the Airfield Manager and Aviation Safety Officer for investigation and follow-up action as necessary.

### OPERATIONAL HAZARD REPORT

If you have encountered an aviation situation you deem hazardous, please describe it below. Your information will be investigated and addressed at a future safety meeting for corrective action. Your name is optional but useful to the safety officer if there are any questions.

☐ WFF AIRPORT
☐ OTHER: _____

ASSETS INVOLVED, etc.

☐ Aircraft: _____
☐ Vehicle: _____
☐ Pedestrian, etc.: _____
☐ Other: _____

HAZARD:
Time and Date: _____ ; Weather: _____
Description: _____

Issued By: _____ ; Position: _____
(print)

Telephone: _____ ; Date: _____

cc: Control Tower, CFR, Safety Office, Aviation Safety Office and Airport Management Office

**Figure 3.2: Operational Hazard Report**

## 3.8 Personnel Authorized to Taxi Aircraft

Only qualified personnel in type (or those under the supervision of an instructor pilot in type) shall be authorized to taxi aircraft. All taxiing shall be done according to the approved taxi checklist and taxi procedures contained in the appropriate Pilot's Handbook of Operating Instruction or flight manuals. Wing walkers shall be used during taxi operations when in proximity to other parked aircraft, vehicles, buildings, or other obstructions. Taxi speeds shall be maintained within safe operating limits.

## 3.9 Aircraft Towing

Aircraft towing shall follow the guidelines and procedures established in the appropriate flight manual, pilot's handbook, or technical orders for the particular type of aircraft concerned. The following general standards should be applied:

**a.** A qualified supervisor shall be in charge of each towing operation. Aircraft will not be moved unless a qualified pilot or qualified maintenance person is in the cockpit for the specific purpose of operating the wheel brakes and any other controls necessary for ground operations. Aircraft will not be towed without landing gear pins installed, as applicable.

**b.** An aircraft window shall be open if available on the pilot's side during the period of the towing operation to allow for conveying instructions, etc., between the cockpit operator and the supervisor.

**c.** The person in the cockpit shall not release or set the aircraft brakes until instructed by the towing supervisor.

**d.** Wing walkers shall be employed when towing in proximity to other aircraft or obstructions.

**e.** When backing an aircraft in congested or confined areas, the supervisor will be positioned in view of the tug operator and cockpit operator.

**f.** Standard international aircraft marshaling signals shall be applied for towing operations. The maximum allowable towing speed is five miles per hour.

## 3.10 GSE and Service Vehicles / Flight Lines and Parking Ramps

Ground Support Equipment (GSE) and service vehicles are a necessary and integral part of all aircraft servicing operations. Since these vehicles are required to work in the proximity of parked aircraft and confined spaces, each person must exercise caution when operating this equipment. The following requirements are listed to emphasize the responsibility of the individual operators who are related to the operation, care, supervision, or servicing of this equipment:

**a.** Only qualified personnel shall operate ground support equipment.

**b.** Operators of aircraft support vehicles will routinely perform vehicle inspections for defects that could affect safety. Defects should be immediately reported for correction. Crew leaders will not assign nor require personnel to operate any vehicle that has an unsafe condition.

**c.** Operators will not leave a vehicle with the engine running unless necessary to maintain power for communications equipment, etc. Proper parking procedures will be used such as parking brakes engaged and gear selectors placed in the "park" position.

**d.** Only qualified flight line equipment operators possessing a valid state vehicle operator's permits are authorized to operate government self-propelled vehicles within the flight line area.

**e.** When emergency vehicles are observed approaching from any direction, it is required that other vehicles cautiously stop and avoid obstructing the path of the emergency vehicles, and remain clear of the emergency area.

**f.** Vehicle operators shall drive at speeds that are reasonable and proper and not exceed the established flight line speed limit of 20 mph.

**g.** Operators of vehicles shall not operate a vehicle in the reverse direction while in the immediate vicinity of an aircraft unless for the specific purpose of loading or unloading cargo or attaching a tow bar to a vehicle. When backing large vehicles in the direction of an aircraft, the driver shall not begin a backing motion without the help of an assistant for signaling the closing distance between the vehicle and the aircraft.

**h.** Operators will not park vehicles in front of aircraft prior to engine start-up or leave vehicles in a location where damage might result from jet engine blast effects.

**i.** Proper and adequate headlights, taillights, and stoplights will be used on all vehicles during the hours of darkness. Vehicle operators will be especially alert for personnel on foot throughout the flight line area.

**j.** Personnel will not ride on top of any loads of material being transported by vehicles, nor will any person board or exit a vehicle while it is in motion.

**k.** Equipment, including cranes, forklifts, power units, servicing equipment, etc., will be positioned to ensure that accidental contact with aircraft is avoided. Equipment in the proximity of aircraft will be chocked to prevent inadvertent movement.

**l.** Power units shall be disconnected from aircraft and the cables properly stowed before movement of either the aircraft or power unit. When the need for a power unit has been satisfied, it shall be returned immediately to the designated parking area.

## 3.11 Smoking on Flight Lines, Parking Ramps, or Hangar Areas

Smoking is prohibited on the airfield except in designated areas.

## 3.12 Oxygen Service (Liquid and Gaseous)

Only trained and qualified personnel who have been certified shall be authorized to handle or transfer liquid or gaseous oxygen. The following precautions shall be implemented during servicing activities with oxygen:

**a.** Aircraft shall not be serviced with oxygen within 50 feet of hangars, structures, or any source of ignition such as hot exhausts, sparks, flames, lighted cigarettes, or ground support equipment operations.

**b.** The aircraft and oxygen cart must be connected to a certified common ground.

**c.** Check that external electrical power is disconnected and the battery switch is in the "OFF" position on the aircraft.

**d.** Aircraft shall not be serviced with fuel or oil during an oxygen servicing operation.

**e.** Other maintenance shall not be performed on the aircraft during oxygen servicing operations.

**f.** Personnel shall wear a face shield, full-length apron, hat, and leather or insulated gloves when handling liquid oxygen. If boots are worn, pants legs should be worn outside of the boots. Drip pans or other suitable containers will be positioned under the overflow vents to prevent liquid oxygen from contacting the pavement.

**g.** Personnel should not handle tubes, fittings, or overflow containers carrying liquid oxygen with bare hands. If skin should freeze to liquid oxygen equipment, separate hand or other body part from oxygen carrying element immediately.

**h.** Prevent all petroleum products (oil, grease, fuel, etc.) from contacting oxygen equipment.

## 3.13 Fire Precautions for Flight Lines and Hangar Areas

The following guidelines apply for fire protection on flight lines and hangar areas:

**a.** The fire department will be notified by the most expeditious means available for all fires occurring on the flight lines or in hangar areas, regardless of size of fire.

**b.** Before starting engines pilots shall notify Wallops Tower/Wallops UNICOM on VHF/UHF tower frequency so as to facilitate a call for assistance should an aircraft fire occur during the engine starting procedure. In the event of an engine fire aircraft radios shall not be turned off until after the engine(s) are shut down.

**c.** Flight line crew and maintenance personnel shall have, as a minimum, a 50-pound fire extinguisher bottle readily available for immediate use during engine starts. In addition, the services of a firefighting vehicle shall be used for maintenance and operational conditions when additional protection is advisable.

**d.** Areas providing access to fire extinguishers and fire equipment will be kept clear of other equipment, material, or obstructions.

**e.** Fuel spills shall be immediately reported to the CFR, who will take immediate action to collect or neutralize the spills. If a spill does occur, maintenance operations will cease and the area will be cleared of personnel.

**f.** An adequate number of fire extinguishers will be located throughout the flight line area. Extinguishers will be sealed and routinely inspected. Primary inspection responsibility lies with the CFR organization. Personnel will not break fire extinguisher seals unless there is a need to use the extinguisher for fire extinguishing purposes. In the event a fire extinguisher is partially or completely discharged or damaged, the CFR department will be notified immediately and the extinguisher will be recharged, repaired, or replaced. Under no circumstances will the contents of an extinguisher be partially used and put back in service.

**g.** Drip pans or other approved means to catch oil or fuel spillage will be used in the hangar.

**h.** Proper and expeditious removal of trash, debris, contaminated oils, fuel, and other fluids from the hangar is required.

**i.** Proper bonding of aircraft and fuel trucks is required to ensure safe dissipation of electrostatic potential prior to and during fueling and defueling operations. Proper grounding is also required for aircraft parked inside the hangar.

**j.** Proper placement of power units (maximum distance from aircraft consistent with cable length) and fire extinguishers relative to aircraft location is required.

**k.** A "Hot Work Permit" is required for welding torch or arc cutting operations in

or around the flight lines, hangar, and on aircraft.

**l.** Aircraft fueling will not normally be conducted within 50 feet of hangars and other buildings. Aircraft will not be fueled, defueled, serviced with oxygen, or undergo fuel transfer inside hangars. If it becomes necessary to conduct any of the above mentioned activities in a hangar, the activity shall not begin until specific approval is obtained from both the WFF Aviation Safety Officer and Chief, Safety Office through which safety procedures will be established to cover the specific activity. The movement of fuel by the internal aircraft fuel system is not considered a fueling operation.

## 3.14 CFR Standby for Runway and Flight Line Operations

In addition to the criteria established in governing documents and plans, the following documents are authoritative: 803-PLAN-0001, the Aircraft Mishap Response Plan, and 840-Plan-0001, the Range Mishap Response Plan. In addition, the following guidelines regarding CFR standby shall be observed at the Wallops Airfield:

The CFR standby point shall be Station 1 (Building B-129) with sufficient personnel and equipment necessary to comply with the National Fire Protection Association recommendations for the particular aircraft operating at WFF Airfield.

When line service standby is required, line crew personnel shall have, as a minimum, a 50-pound halon fire extinguisher readily available for immediate use for engine starts. Additionally, the services of a CFR vehicle will be provided when requested by the aircraft commander, crewman, or other responsible personnel for engine starts, fueling/defueling operations, etc.

CTO shall be notified by the fire department when staffing and/or vehicle constraints cause the airfield fire protection available to fall below accepted levels. Aircraft will be notified and air operations shall be suspended until further guidance is received from the Airport Manager's Office or other authority. This does not prevent aircraft in an emergency situation from landing or emergency response aircraft from departing. Such aircraft will be notified of the condition, and the pilot-in-command will be the sole authority for determining if the operation can be conducted.

## 3.15 Jacking of Aircraft

Crew chiefs will brief jacking crews before commencing jacking operations. All instructions pertaining to proper and safe procedures will be fully explained and appropriate aircraft handbooks will be referred to for the type aircraft to be jacked. In addition, the following guidelines shall be applied:

**a.** Jacks and other equipment must be serviceable and available in proper numbers. Faulty equipment will be "red tagged" and removed from service.

**b.** Ramp or hangar area must be cleared of equipment and material not needed in the jacking operations, and vehicular traffic will be restricted. For emergency reasons aircraft shall not be jacked in a location whereby an obstruction is created between other aircraft and hangar doors.

**c.** For aircraft jacking and heavy equipment using outriggers, pads will be appropriately used to protect painted hangar floor surfaces.

**d.** The supervisor/crew chief will ensure that each member of the jacking crew is qualified and that he is assigned his specific locations and duties.

**e.** Jacking crews will always include a responsible supervisor/crew chief and a sufficient number of qualified crewmembers to perform the operation safely.

**f.** The supervisor/crew chief will ensure that the area around the aircraft is cordoned off and appropriate warning signs posted, that adequate safe procedures exist, and that proper checklists are used for all specific jacking activities.

**g.** Jacking of aircraft is permitted outside the hangar when necessary, e.g., deflated or blown tires, or under certain conditions whereby hangar space is not readily available. Under these conditions, the same procedures as indicated in f. above shall apply, but only if the wind conditions are less than 10 mph.

## 3.16 Fueling / Defueling, Safety Precautions and Procedures

During aircraft fueling and defueling at the WFF Airfield, the following guidelines shall apply:

**a.** Prior to fueling or defueling, aircraft shall be bonded with the servicing vehicle. Three-way grounding is not required at the WFF Airfield but may be used when requested.

**b.** Refueling supervisors, ground power unit operators, and other equipment specialists will be qualified and meet requirements outlined in applicable regulations.

**c.** Ground power units and other special equipment from which any type of spark, heat, or flame may be emitted will be positioned with consideration for direction of wind, slope of ramp, and location of fuel vents on aircraft. Ground Power Units (GPUs) will be placed at the maximum distance permitted by the length of their power cables and at an angle providing the greatest distance from the aircraft. Only approved power cables with adequate length will be used during fueling and defueling operations.

**d.** Fueling or defueling operations will not be conducted within a radius of 100 feet of operating aircraft.

**e.** Aircraft will not be fueled or defueled inside hangars or within 50 feet of hangars, measured from the fueling/defueling point and/or vents. Under certain conditions, the Aviation Safety Officer or his designated representative may approve a lesser distance.

**f.** Fueling or defueling operations will be immediately discontinued upon detection of any fuel leakage or seepage of fuel from equipment until necessary repairs are made and fuel spills collected. In the event of a major fuel spill all personnel will depart the area. A guard shall be posted in the vicinity of any major spill to prevent personnel from entering the area until cleanup has been completed. Operations will not be resumed until approved by the WFF Fire Chief. In no instance will any electrical or automotive equipment at the scene resume operations until it has been determined that no further hazard from such spillage exists.

**g.** Fuel hoses will be periodically inspected and must be in acceptable condition for fueling aircraft.

**h.** Aircraft will be properly chocked according to applicable directives.

**i.** Fueling operations shall be suspended and fuel hoses disconnected whenever an

electrical storm is within 10 miles of the airfield, during a fire in the vicinity of a nearby aircraft mishap, or aircraft emergency. Additionally, fuel trucks will depart the ramp area.

**j.** A certified 50-pound halon fire extinguisher (minimum size) will be strategically located near aircraft being serviced.

**k.** Maintenance will not be performed on an aircraft while the aircraft is being fueled or defueled, nor will any servicing be performed concurrently, e.g., alcohol, anti-detonation injection, oxygen, or hydraulic fluid.

**l.** Personnel in the area of aircraft being fueled shall adhere to the "No Smoking" rule and shall not carry matches or mechanical lighters near the operation. Personnel shall exercise care not to create any friction or static sparks when handling tools and metal equipment or by wearing metal shoe taps or nylon clothing that produce charges of static electricity.

**m.** Fuel trucks shall be kept as far from the aircraft as fuel hose length permits. Trucks should be parked in the best position to be driven or towed away from the aircraft vicinity in case of an emergency.

**n.** Fuel nozzles will always be manually controlled and never locked or chocked in an open position.

**o.** Caution will be exercised when topping off fuel tanks to prevent overflow.

## 3.17 Hangar Deck Operations and Responsibilities

### 3.17.1 Requests for Hangar Space

Visiting experimenters with research or special project aircraft shall request hangar or office/shop space via their respective PM or Airport Operations. Special requests for using N-159 hangar will be considered, however, negotiations of availability, reimbursable cost, etc., are required before occupancy can take place. The Airfield Manager and the RMMO are the final approving agents for such requests.

### 3.17.2 APU or GPU Operation Inside Hangar

Aircraft or internal combustion GPUs shall not be operated inside the hangar except under unusual or demanding conditions, and then only by the specific approval of the Aviation Safety Officer.

### 3.17.3 Hangar and Flight Line Upkeep and Cleanliness

Normal hangar deck cleanliness, i.e., dust, dirt, litter, and other ordinary accumulation of trash of this type, shall be cleaned and disposed of daily at the expense of the user in accordance with the approval to occupy airport facilities. Accumulation of oil, grease, liquids, oily rags, mechanical parts or material, etc., shall be disposed of before the end of each workday or before close of business. Drip pans shall be used and kept clean, and excess oil and grease on the flight line shall be cleaned up and disposed of in the appropriate manner according to section 4.22.5 below. Equipment, tools, parts, work stands, and benches shall not be left unattended on the flight line nor stowed in a disorderly, unsightly, or unsecured condition.

### 3.17.4 Disposal or Storage of Flammables

Highly flammable materials will not be stored inside the hangar or shop space, but shall be stored only in a designated storage area. This includes

such items as oils, cleaning solvents, paint remover or thinner, water/methanol, aviation fuel, or any other highly flammable or dangerous material. For disposal of these items see section 4.22.6 below.

### 3.17.5 Use of Grease Solvents or Liquid Sprays Inside Hangar

Under certain conditions limited use of Varsol or similar fluids for engine cleaning purposes may be used inside the hangar. As a general rule, however, this type of aircraft and engine maintenance is normally performed outside the hangar area in a pre-designated location, and only under exceptional cases will it be permitted within the hangar deck area. Spray painting of aircraft in hangars shall be generally limited to minor touchup jobs, as approved by the FOMs.

### 3.17.6 Storage, Handling, Preservation, and Disposal of Hazardous Materials

The Environmental Office manages any hazardous wastes and used oils generated at the Wallops Flight Facility. To discuss proper waste disposal procedures or arrange for a waste pickup, contact the hazardous waste line at extension 1718. For emergencies, call the Fire Department at extension 1333 (see Figure 3-3). For other environmental issues, call extension 1885, and an environmental representative will direct your call. Some guidelines for proper waste disposal are listed below.

**Containers.** Generating activities must ensure that wastes are properly contained. Containers must be in good condition, suitable for the waste type, closed tightly, upright, and sturdy. The original container should be used if possible. Three inches of headspace should be left in each container.

**Labels.** Each waste container must be labeled with the identity or name of the chemical, including contaminants, the generator, and the building number where the waste was generated. If the container holds a hazardous waste, the words "Hazardous Waste" should also be included on the label. A full hazardous waste container must be dated and picked up by the Environmental Office within 3 days. Used oil containers must be labeled with the word "used" rather than "waste."

**Inventory Form.** A completed Hazardous Waste Disposal Inventory form (NASA WI-1550) must accompany each properly containerized and labeled container. These forms are available from the Environmental Office or at http://www.wff.nasa.gov/~code205/formspage.htm.All containers awaiting disposal should be under the control of the generator, stored away from flame or other incompatible chemicals, and within secondary containment.

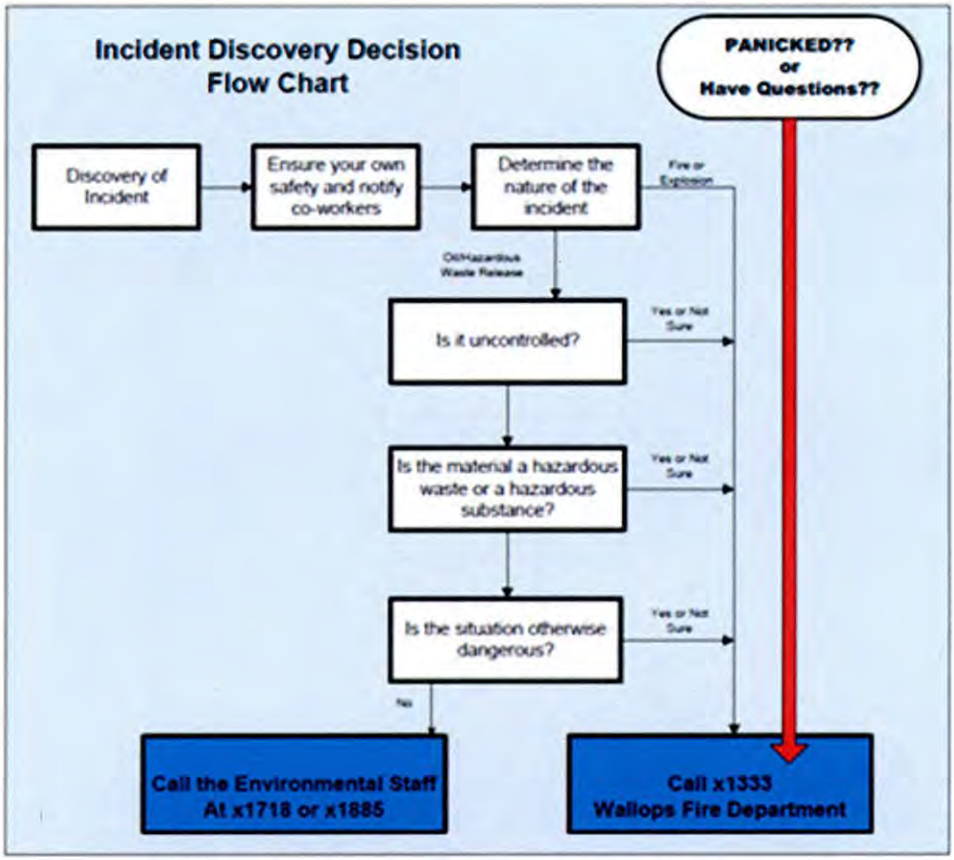



**Figure 3.3: WFF Environmental Contingency Plan**

## 3.18 Engine Operations on Flight Lines and Ramps

In addition to precautions and guidelines as may be already established in aircraft flight manuals or technical orders for individual aircraft types, the following precautions are reemphasized and shall be observed for all engine operations at the WFF Airfield:

**a.** Engine run-up operations are not permitted in proximity to buildings. However, with clearance from the Control Tower, engine run-up operations may be conducted on remote taxiways or inactive runways. When selecting a run-up area, consideration must be given to the effects of exhaust fumes, exhaust blast, and noise on other aircraft, personnel, buildings, vehicles, and equipment.

**b.** A qualified person who is authorized to start and operate engines must occupy the pilot's seat and maintain radio communications with the Control Tower/Wallops UNICOM during run-ups.

**c.** Radio communications between a ground crew observer and the person occupying the pilot's seat is recommended during engine run- ups. If radio communication is not available, a ground observer shall be appropriately located to provide conventional hand signals to the person operating the engine(s).

**d.** The person who starts, operates, and tests aircraft engines will occupy the cockpit throughout the run-up period to engine shut down.

**e.** Persons, vehicles, and other aircraft will be prohibited from passing immediately behind or in front of a jet engine in operation.
**f.** Access doors and cowling subject to damage from jet blasts will be secured or removed before ground testing engines.
**g.** Maintenance will not be performed at the inlet ducts of operating jet engines.
**h.** Approved noise suppression devices to protect hearing shall be used by personnel working in areas where noise hazards exist such as engine run-ups.

## 3.19 Ejection Seats and Canopies

Canopies and ejection seats can be accidentally discharged by heat from fire or movement of the actuating mechanism. Caution will be exercised when performing maintenance on or near this equipment. To prevent accidental ejection of seats or canopies during ground support work, the following safety precautions will be observed:

**a.** Safety pins will be installed following flight after the aircraft is parked and engine shut down, or immediately after completing any maintenance that requires removal of the safety pins.
**b.** When any activity is performed near the ejection seat catapult or canopy controls, care must be taken to prevent accidental arming and firing.
**c.** Only certified personnel will remove and install a canopy ejection discharge mechanism.
**d.** Before a required disassembly, ensure that all safety pins are in place and that all electrical connectors have been disconnected from power sources.
**e.** In addition to the above safety items, appropriate technical orders or manuals on the specific type of ejection seat system will be consulted before making any adjustment, assembly, disassembly, or removal.

## 3.20 Chocks, Tie Downs, and Flight Line Security

Aircraft parked on ramps and flight lines shall be chocked when unattended. Mooring and tie down of aircraft will be performed in accordance with the instructions and guidelines set forth in the applicable flight manual or technical order pertaining to individual types of aircraft. During periods of high winds or when high winds are forecast, crew leaders will ensure that their respective aircraft are properly tied down. Crew leaders shall remain cognizant of the forecasted meteorological conditions to determine the need for any additional flight line precautions or added measures that might be required. In addition to appropriately securing aircraft during adverse meteorological conditions, crew leaders shall further ensure the secure status of all special equipment, material, work stands, etc. located on the flight line.

## 3.21 Facility Design and Modification

All new construction, rehabilitation, or modification of airport related facilities (i.e., runways, taxiways, ramps, hangars, project rooms or Control Tower building) with the Airfield Manager and with the Chief of RMMO or his delegate. Additionally, the Aviation Safety Officer will review design specifications and plans. These reviews will ensure proper integration of long-range facility and operational schedules to

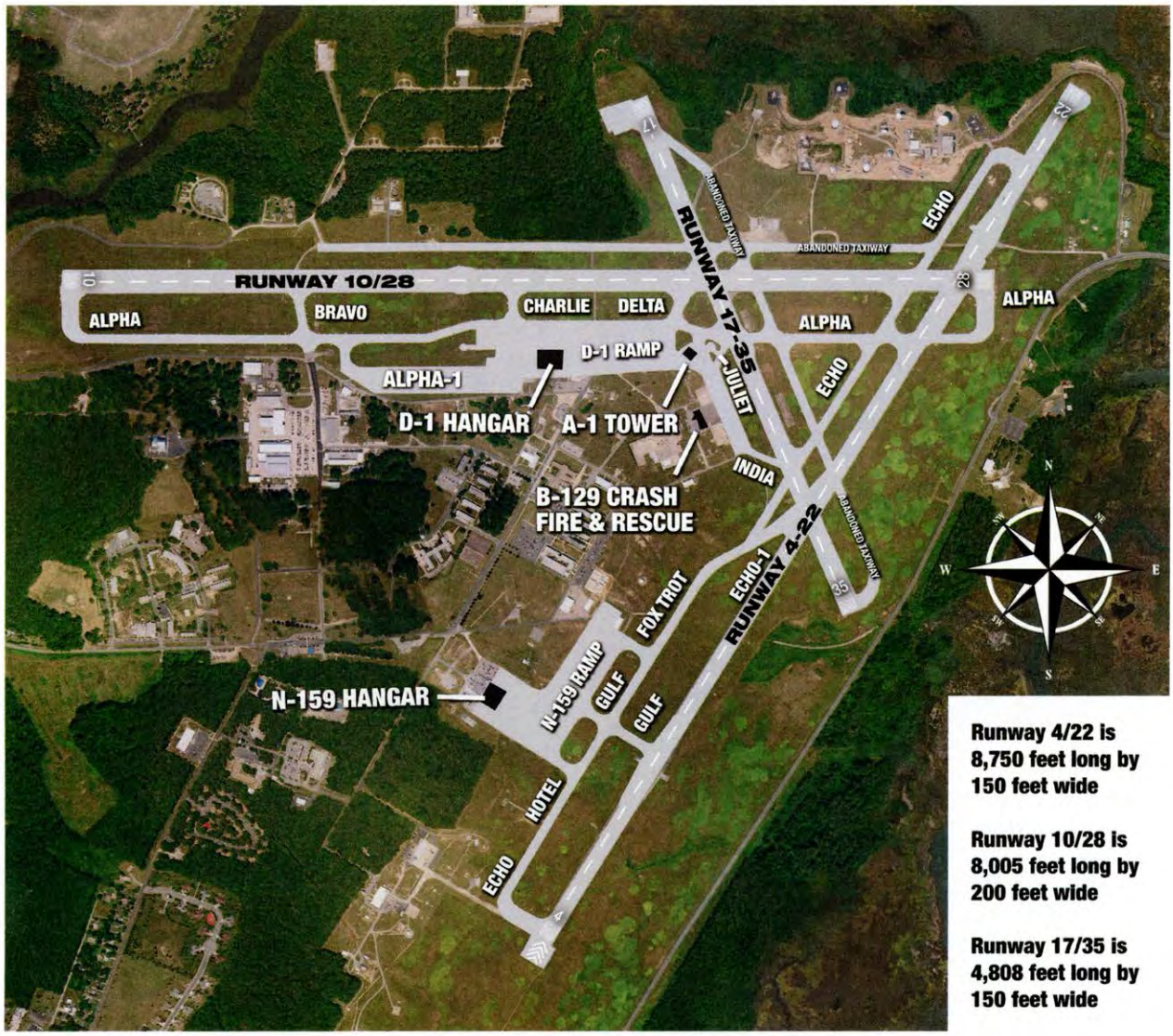
minimize conflicts that would adversely affect the plans and productivity of the different organizations at WFF.

## 3.22 Airfield Snow Removal (See Appendix B)

Snow removal operations will be implemented by request through the Airfield Manager. The requester must provide an active WFF funding account number before a removal operation may begin. The requester must designate the specific runways, taxiways, and/or ramps that are to be cleared. Appendix B depicts the most likely scenarios that will be used for opening the airport after closure as a result of snow accumulation. Variations of these scenarios may be implemented in order to respond to special requests.

Because of the detrimental effect to aircraft components, under no circumstances shall sand, dirt, or non-FAA approved chemicals be used for enhancing traction or for accelerating the melting of ice or snow from any of the airport operational surfaces.

# Appendix A: Airfield Layout

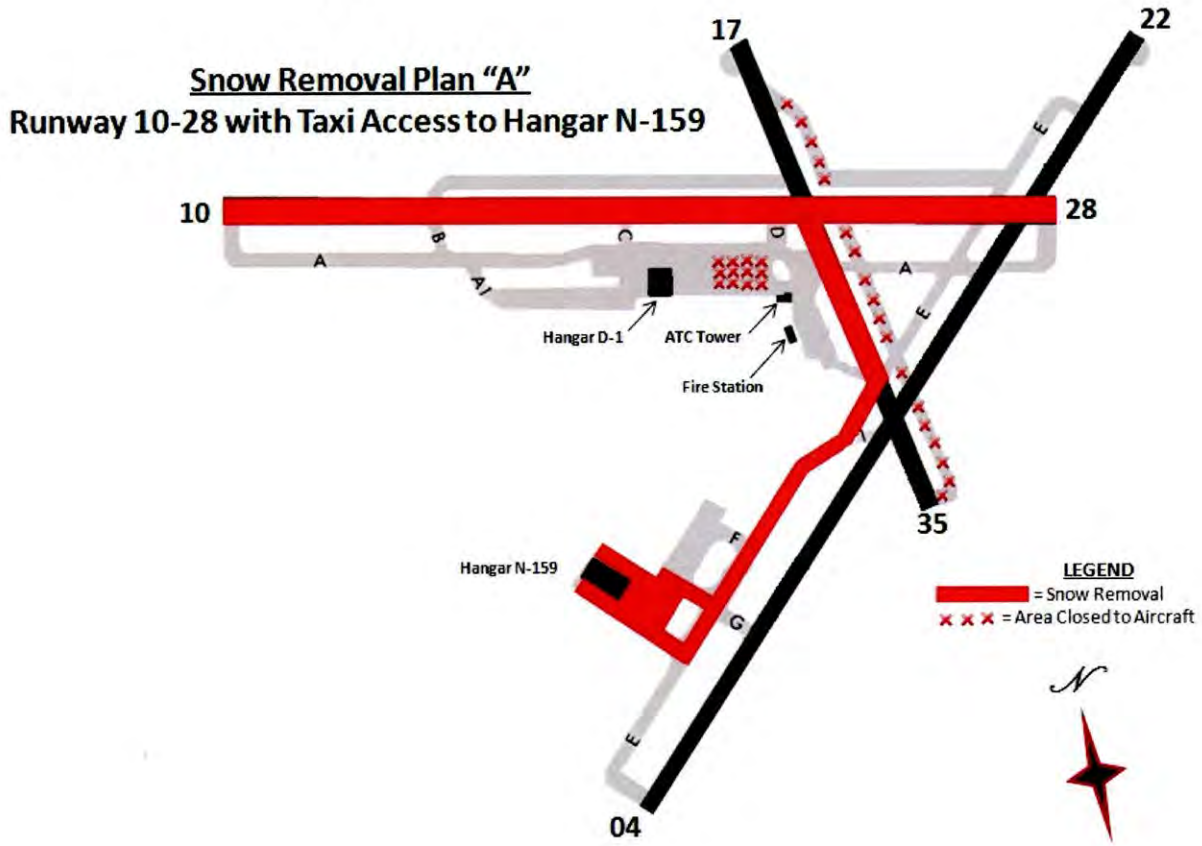



**Runway 4/22 is 8,750 feet long by 150 feet wide**

**Runway 10/28 is 8,005 feet long by 200 feet wide**

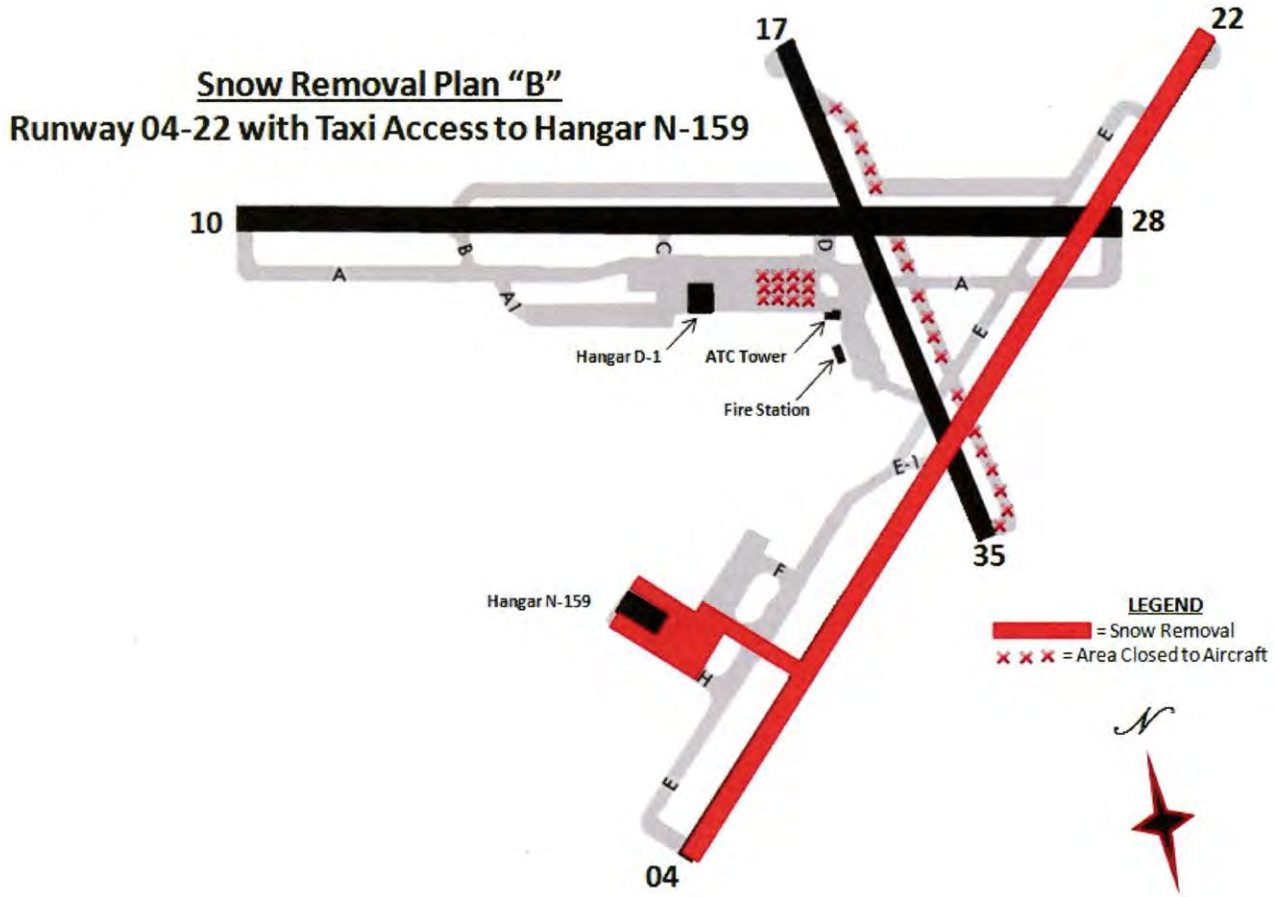
**Runway 17/35 is 4,808 feet long by 150 feet wide**

# Appendix B: Snow Removal Plans




**Snow Removal Plan A**

Diagram information is uncontrolled when viewed and/or printed in anything other than normal color




**Snow Removal Plan B**

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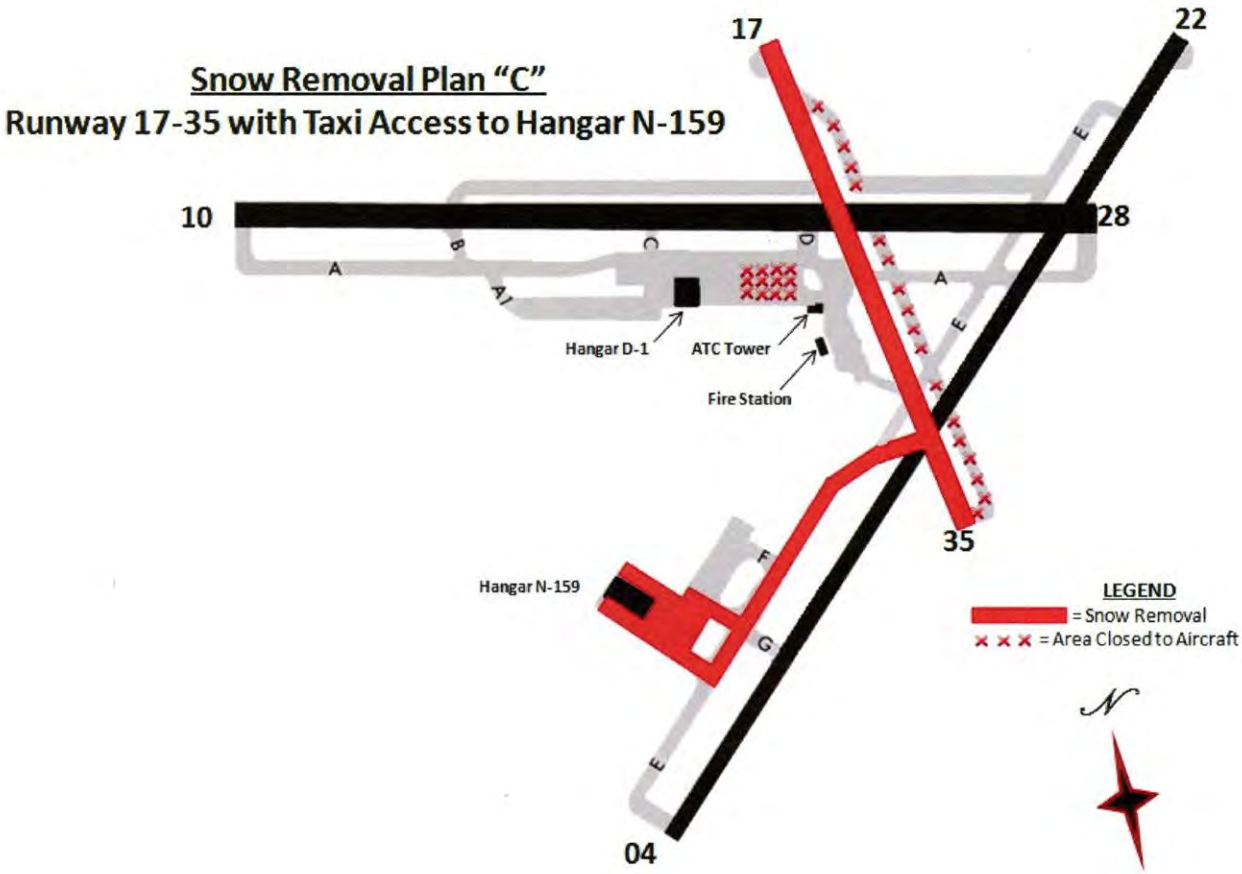


**Snow Removal Plan C**

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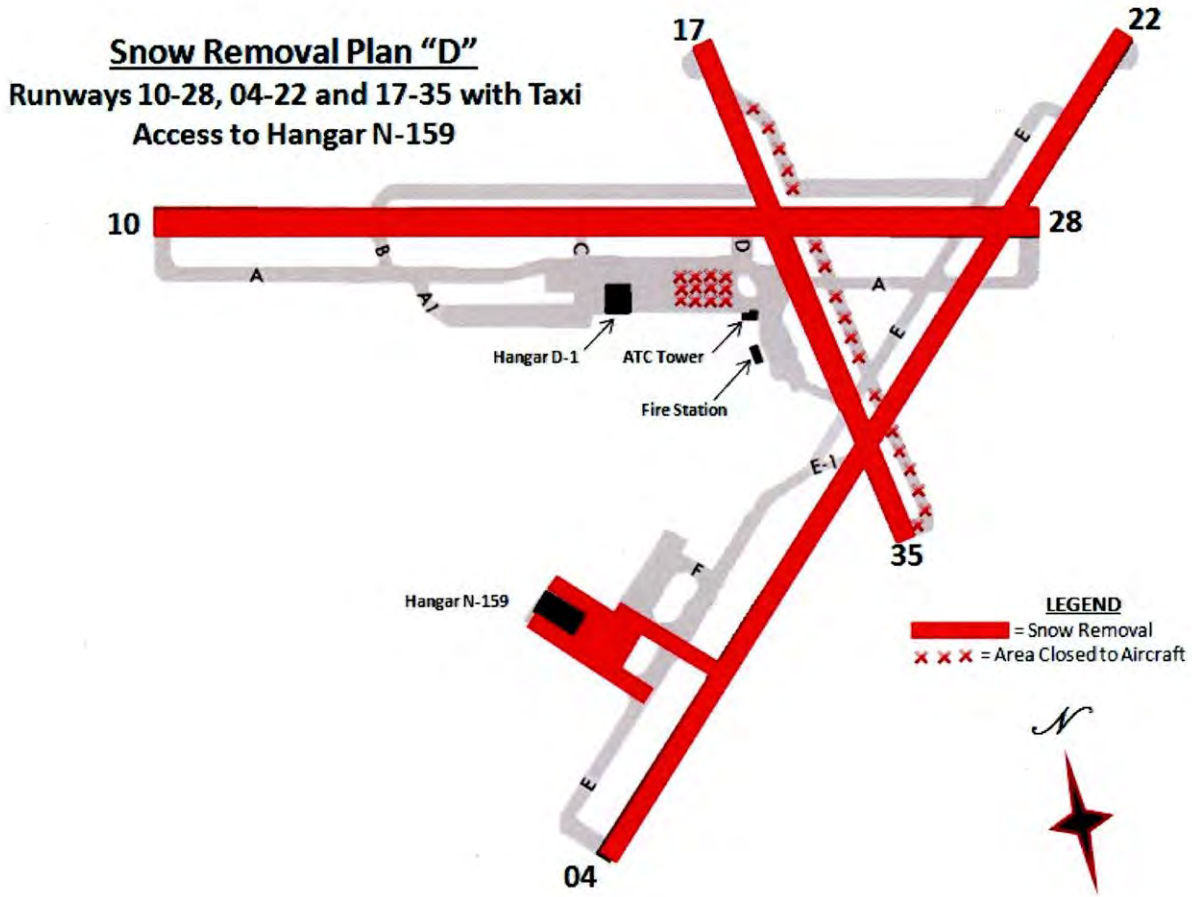


**Snow Removal Plan D**

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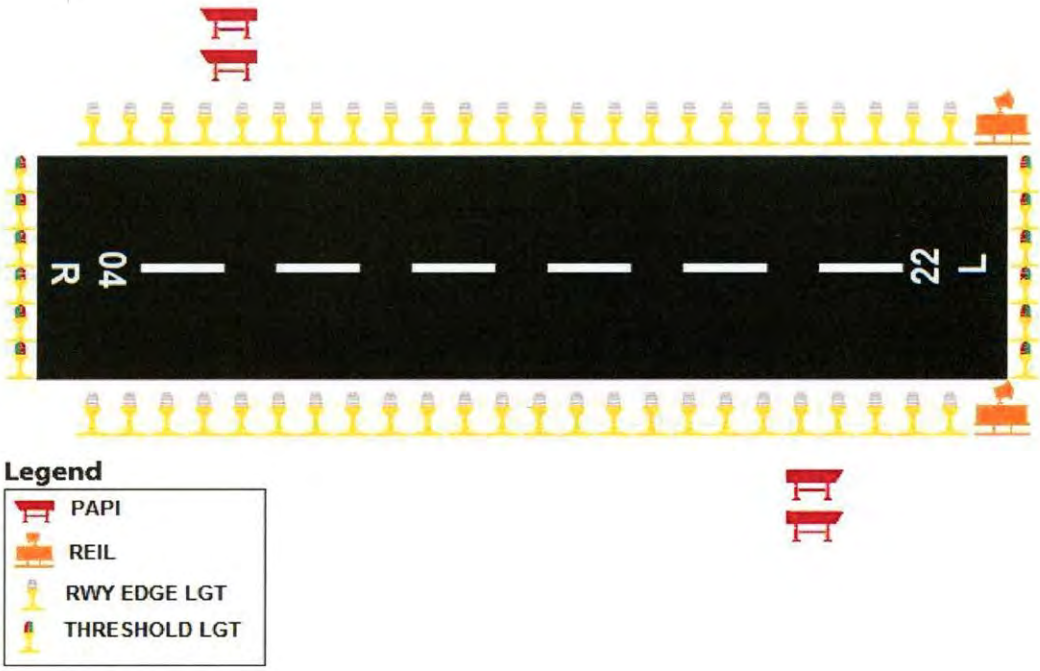
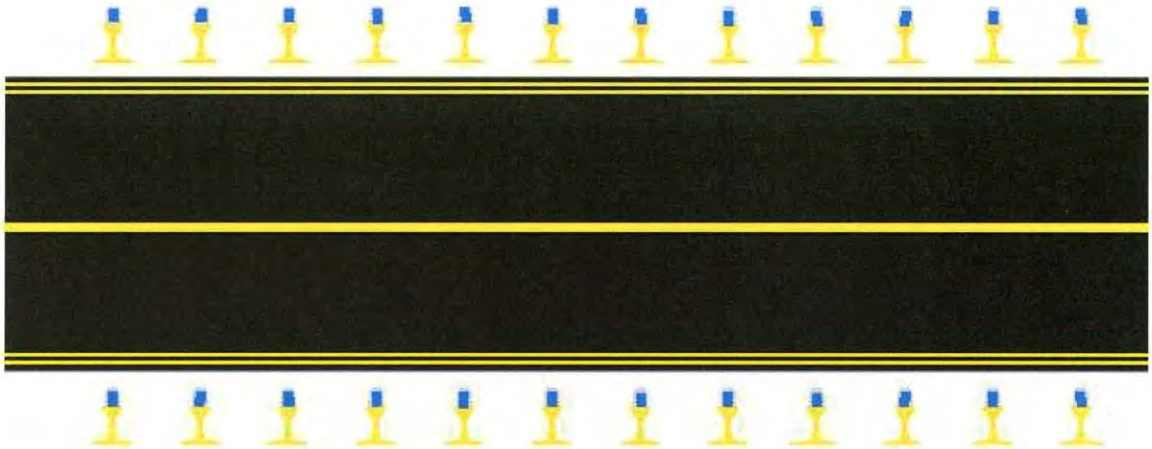
# Appendix C: Airfield Signs, Marking and Lighting

**Runway Light Fig C-1**

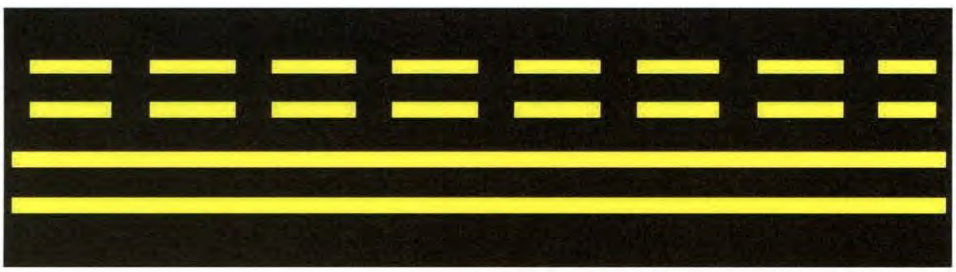
**Taxiway Light Fig C-2**




**Runway Lighting Configuration Fig C-3**



**Taxiway Lighting Configuration Fig C-4**



**VFR Hold Line Marking Fig C-5**

**Taxiway/Apron Edge Marking Fig C-6**

**Runway Exit Sign Figure C-7**

**Location Sign Figure C-8**

**Hold Sign (at runway) Figure C-9**

**Hold Sign with location Figure C-10**

**Taxiway Directional Sign Figure C-11**

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