JO-2
Airfield Operations Manual

National Aeronautics and Space Administration
Moffett Field, California 94035-1000

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Flight Operations
Aviation Management Office

MOFFETT FEDERAL AIRFIELD, CA
NASA AMES RESEARCH CENTER

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PREFACE

This document prescribes general instructions pertaining to the operation of all aircraft and airfield activities at Moffett Federal 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. When the need arises, special instructions or waivers will be issued by the Aviation Management Office (Code JO) and any other affected directorate or agency concerned. Such instructions will be supplemental to this manual and will be considered as standard operating procedures. In due course, these memoranda will either be incorporated into this manual or canceled.

This manual will take precedence when there are conflicting rules and procedures. The rules, procedures, and guidelines in this document are to be considered as minimum standards. The Aviation Management Office may review and give permission for deviations from rules and procedures of this manual. 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 Aviation Management Office no later than 30 calendar days following the incident.

Individual tenants are permitted to submit supplements to this manual. The intent of these supplements is to satisfy formal documentation requirements or procedures as required by the tenant's parent organization. These supplements are only binding for the submitting tenant;.

This manual may be revised by new editions or updated by page changes or pen-and-ink corrections. When corrections or page changes are entered, the changes will be annotated on the Record of Revisions page.

Comments and recommendations concerning this manual are encouraged and should be submitted to the Chief, Aviation Management Office (Code JO).

CHAPTER 1

1. GENERAL INFORMATION

1.1 Mission

1.1.1 Moffett Federal Airfield is a Federal airfield owned by the National Aeronautics and Space Administration (NASA) and operated by the Chief, Aviation Management Office to meet the needs of NASA, Resident Agencies, and other NASA Ames Research Center authorized users.

1.1.2 Use of the airfield is limited to agencies of the Federal government or agencies supporting requirements established by the Federal government. The Aviation Management Office in accordance with Title 14 Code of Federal Regulations, Part 1204 may approve any other use.

1.2 Responsibilities

1.2.1 The Chief, Aviation Management Office (Code JO), is responsible for ensuring compliance with all operating standards established for Moffett Federal Airfield. The Aviation Management Office is located in Building 158 at Moffett Federal Airfield, CA (room 214).

1.2.2 Air Traffic Control (ATC) services and ATC and Landing Systems (ATCALS) maintenance are provided by the 129th Rescue Wing (RQW), California Air National Guard (CA ANG), under a Memorandum of Agreement between the National Aeronautics and Space Administration, acting by and through NASA Ames Research Center and the Department of the Air Force, acting by and through the National Guard Bureau. The 129th RQW ATC Manager shall coordinate through the Chief, Aviation Management Office on all operational matters affecting the airfield. The 129th RQW ATC Manager is administratively assigned to the Commander, 129th RQW.

1.2.3 Aircraft Rescue and Fire Fighting (ARFF) services are provided by the Wackenhut Services, Inc. through the NASA Ames Fire Department under a fire protection services contract with NASA Ames Research Center.

1.2.4 Operation of Moffett Federal Airfield is the responsibility of the Chief, Aviation Management Office (Code JO). Coordination shall be effected with other NASA Ames organizations and Resident Agencies to ensure the airfield is maintained in a state of readiness sufficient to meet operational flight requirements.

1.3 Directives

1.3.1 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. Moffett Federal Airfield, however, operates generally in accordance with both Parts, and improvements are ongoing to eventually comply with aforementioned FAA Parts.

1.3.2 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 Manual provides more stringent guidelines, in which case the latter would apply.

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

1.3.4 Air Traffic Control (ATC) and ATC equipment maintenance services will be provided by the 129th RQW in accordance with applicable USAF/ANG 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 USAF/ANG regulations and procedures unless other standards are agreed upon by NASA and the Air National Guard.

1.4 Hours Of Operation

For information on operating beyond normal hours of operations, see section 5.1.4.

1.4.1 Moffett Federal Airfield is available for use by authorized aircraft 24 hours per day. Prior permission is required (PPR) for all operations conducted by units other than those physically located at Moffett Federal Airfield (Resident Agencies).

1.4.2 Moffett tower provides Air Traffic Control services from 0700L to 2300L seven days a week. Base Operations operates from 0630L to 2230L seven days a week. After normal duty hours, Moffett Federal Airfield reverts to an uncontrolled airfield with pilot controlled lighting and automatic weather information (ASOS). Operations may be suspended or curtailed temporarily by the Chief, Aviation Management Office (Code JO), or his representative in consideration of the following:

A. Prevailing Weather

B. Conditions of Landing Area

C. Non-Availability of Aircraft Rescue and Fire Fighting (ARFF) Resources

D. Status of Navigation Aids

E. Airspace Use by Air Force One

1.4.3 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. Air Traffic staff shall maintain, document and disseminate this information in the Tower Operating Instruction. Air Traffic staff shall ensure that pertinent equipment performance issues are passed to the appropriate agencies.

CHAPTER 2

2. FACILITIES

2.1 Airfield Description

2.1.1 Location

Moffett Federal Airfield (NUQ), Moffett Field, California, is located at latitude 37° 25'N, longitude 122° 03'W; on the south shore of San Francisco Bay, 20 nautical miles southeast of San Francisco International Airport (SFO) and 6 nautical miles northwest of San Jose International Airport (SJC).

2.1.2 Field Elevation

The field elevation is 32 feet above mean sea level (MSL) measured at the approach end of Runway 32L.

2.1.3 Runways

There are two parallel runways, 625 feet linear distance between runway centerlines.

A. 32R/14L (Primary Precision Instrument Runway): 9200 feet X 200 feet, concrete. Runway 32R has a 0.3% down gradient. A 1,000-foot overrun, consisting of 137 feet of asphalt and 863 feet of hard-packed earth, is available for runway 32R.

B. 32L/14R (Non-precision Instrument Runway): 8,124 feet X 200 feet, asphalt with concrete ends (1,550 feet south end, 287 feet north end). Runway 32L has a 0.4% down gradient. The proximity of the Bayshore Freeway (Highway 101) and the light rail causes runway 32L to have a displaced landing threshold of 607 feet, resulting in an effective length for 32L of 7517 feet.

C. Arresting Systems are not installed on any runway. Temporary systems to support special operations such as the Blue Angels are occasionally installed. Operations and procedures are developed on a case-by-case basis. NOTAMS and remarks on the ATIS will be used to advise pilots of the presence of temporary systems.

D. Weather conditions are such that runway condition reporting equipment such as Runway Condition Reading (RCR) are not Installed. No snow removal operations occur nor is equipment available.

E. Runways and taxiways are inspected/checked for FOD each morning. At the completion of runway inspections the runway surface condition shall be reported to the Tower.

2.1.4 Taxiways

Two taxiways parallel to the runways and connected with the runway ends are described as the West Parallel (nearest control tower) and East Parallel (nearest Hangar 2). (See Appendix 2, Airfield Diagram). All taxiways are 75 feet wide.

A. Connecting Taxiways: Taxiways which intersect the runways and/or connect with the parallel taxiways:
   a. ALPHA-ALPHA South end of airfield at approach ends of Runways 32L/R.
   b. ALPHA West entrance, abeam control tower. East entrance at East Ramp.
   c. BRAVO West entrance at 211 ramp (Hangars 211, 211 annex, 248, and ARFF). East entrance at the fuel pits.
   d. CHARLIE West entrance 700 feet remaining 32L. East entrance, East Parallel taxiway at 1,800 feet remaining 32R.
   e. DELTA West entrance approach, end 14R. East entrance, East Parallel taxiway at 1,100 feet remaining 32R.

2.1.5 Diagonal Taxiways

The Diagonal between East Parallel and 32R and the diagonal between the West Parallel and 32L are closed to aircraft.

2.1.6 Controlled Movement Area

All runways and taxiways are designated as a controlled movement area. Two-way radio communications are required for aircraft, vehicle, or personnel access/operations on the movement area.

2.1.7 Wheel Load Capacities

Runway, taxiway, and parking apron wheel load capacities for some landing gear configurations are provided in Appendix 5.

2.1.8 Lighting

Airfield lighting is operated from the control tower (during normal operating hours) in accordance with FAA Order 7110.65, Air Traffic Control Handbook. When the control tower is not operational, 32R/14L, 32L/14R approach lights and taxiway lights are pilot remote controlled. Moffett Federal Airfield does not have lighted runway, taxiways, or ILS critical signage.

A. RUNWAYS: Lighting for each runway is separately controlled by the tower. Runway distance remaining markers located on both sides of each runway are internally illuminated for night use. Runway 32R has U.S. Standard “A” Approach Lighting System with Sequenced Flashing Lights (ALSF-1). The approach lights have 5 intensity settings. The approach lights can be pilot activated when the tower is closed by “clicking the mike” 3 times on 119.55 (step 1 is the only available setting).
B. 32R/14L: Equipped with white variable high intensity runway lights (HIRL), centerline lighting, and approach lights/sequenced flashing lights (strobes) extending southeast a distance of 2,500 feet from the landing threshold. This runway is also equipped with pilot-controlled lighting on frequency 119.55. "Clicking the mike" on 119.55 MHz activates the pilot remote controlled lighting.

a. Step 1 – 3 “clicks”
b. Step 3 – 5 “clicks”
c. Step 5 – 7 “clicks”

C. 32L/14R: Equipped with white variable high intensity runway lights (HIRL).

D. TAXIWAYS: All usable taxiways, except Charlie and the south end of the East Parallel taxiway, are equipped with standard fixed intensity blue lights. Taxiway Charlie has no lights. Taxiway lights can be activated when the tower is closed by “clicking the mike” 3 times within 5 seconds on 119.55 MHz.

E. ROTATING BEACON: A standard civil rotating beacon is located on top of Hangar 1, indicating a lighted land airport.

F. PRECISION APPROACH PATH INDICATOR (PAPI): Standard PAPI system installed for Runways 32R and 14L.

G. OBSTRUCTION LIGHTS: Hangars and other prominent permanent obstructions are clearly marked by red obstruction lights.

H. FLOODLIGHTS: Fixed floodlights atop Operations (Bldg. 158) are available to illuminate the adjacent ramp area east of the tower.

I. ARM/DE-ARM AREA: The area in the vicinity of the Runway 14L and far northeast portion of the East Parallel Taxiway (see Airfield Diagram) is designated as the Arm/De-Arm Area. This area is reserved for hung ordinance, hot gun, arm/de-arm operations, and hazardous cargo operations

2.1.9 Windsocks

A. Windsocks are located between the runways near the approach ends and at the fire station (west side, mid-field). These socks indicate direction of the wind for velocities in excess of three knots. Windsocks are lighted for night operations.

B. Wind information for the Automated Airport Observing System (ASOS) and the control tower wind speed indicators are derived from two separate sensor locations on the south end of the airfield.

2.2 Navigational Aids

2.2.1 TACAN

Channel 123X (identifier NUQ). Located at the northern end of the field, 1.7 nautical miles north of the approach end of Runways 32. DME is also available on 117.6 MHz.

2.2.2 Instrument Landing System (ILS)

Frequency 110.35 MHz. Full ILS available for Runway 32R. Front-course localizer for Runway 14L. The 32R and 14L use the same frequency. A tower controlled

interlock switch prevents both localizers from transmitting simultaneously. (See 3.8.6)

2.2.3 Preventative Maintenance (PM) Outages

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

2.3 Radio Frequencies

Use	UHF	VHF
Tower (Primary)	346.25 MHz	119.55 MHz
Tower (Secondary)	340.20 MHz	
Emergency (Guard)	243.00 MHz	121.50 MHz
Ground	336.40 MHz	121.85 MHz
Clearance Delivery	380.80 MHz	
ATIS Broadcast	283.00 MHz	124.175 MHz
ASOS/ATIS		124.175 MHz

Note: When tower is closed ASOS is also transmitted on ATIS frequency.

Common Traffic Advisory (CTAF)	346.25 MHz	119.55 MHz

2.4 Hangar and Service Facilities

2.4.1 Aircraft Parking Area/Hangar Assignment

A. Hangar space and parking for Resident Agency aircraft are coordinated through the Aviation Management Office. Parking and hangar space for transient aircraft is limited and shall also be coordinated through the Aviation Management Office. Resident agencies are responsible for arranging parking and ramp space for aircraft that they are hosting. Coordination with the Aviation Management Office is absolutely required if parking is necessary outside pre-assigned areas. See also 6.10.1 Prior Permission Request Procedures.

B. Flight line fire extinguishers shall be placed within 20 feet of parked aircraft.

2.4.2 Fuel and Lubricants

Available fuels and lubricants are listed in the DOD IFR Supplement. JP-8 refueling is accomplished by truck by the Defense Energy Supply Command (DESC) fueling contractor. Fueling procedures are governed by NAVAIR 00-80T-109, Handbook on Aircraft Refueling. Presently, the fueling contractor can accept only the DOD card or company/cashier's check for fuel purchases.

A. Fuel is normally available on a first-come, first-serve basis. The Aviation Management Office, on a case-by-case basis, will establish priorities. DESC/Maytag contractual limitations could cause transient aircraft to experience refueling delays of up to four hours. Typically, however, delays will not be longer than thirty minutes. Rescue missions, medical evacuation flights, and other special missions will be afforded priority.

Note: See Chapter 8, Section 8.4 for hot refueling procedures.

2.4.3 High-Power Turn-Up Area

The Runway 14 L run-up area is also the high-power run-up area. This area will be used for run-ups (engine power above idle settings) under the following conditions:

A. As deemed necessary by Resident Agencies.

B. Aircraft shall direct their prop wash/jet blast away from aircraft operating areas or as specifically instructed by the tower.

Note: The "hold-short" area for Runway 32R is not designated a high-power turn area due to the proximity to the perimeter road, VTA, and the possible danger to pedestrians and vehicles resulting from prop wash or jet blast.

2.4.4 Compass Rose

An uncalibrated compass rose is available. Use is scheduled by Base Operations, 650-603-9213/4.

2.4.5 Aircraft Wash Rack

Moffett Federal Airfield has two wash racks. One wash rack is located in the corner of the ramp area located northeast of Hangar 3 (439 wash rack). A second wash rack is located on the Hangar 211/248 ramp (248 wash rack). Use is scheduled through NASA Transient Services, 650-604-2731. Report any problems to the Aviation Management Office, 650-604-0931.

2.5 Annual Weather Data

Temperature	Mean	58.3F
Humidity	Mean	69.9%
Ceiling	1000' and less	4.7%
	1001' - 2, 000'	6.2%
	2001' - 10, 000'	16.2%
	Above 10,000'	6.9%
	Unlimited	66.0%
Cloud Cover	Clear	29.7%
	Scattered	27.7%
	Broken	20.4%
	Overcast	22.2%
Obstructions to Vision	Haze/Smoke	16.5%
	Fog/Ground fog	7.2%
	No obstruction	76.3%
Visibility	0 - 1/2 mile	0.7%
	5/8 - 3 miles	3.7%
	4 - 6 miles	8.8%
	6+ miles	86.8%
Weather	Rain	4.7%
	Snow	0.0%
	Hail	1.0%
	No precipitation	95.2%
Precipitation	Average yearly	12.99"
	Number of days with +.01"	59
Wind	Prevailing wind	NNW 8.3 kts
Ceiling and Visibility	Equal to or less than 100' and 1/4 mile	0.5%
	Equal to or less than 300' and 1 mile	1.1%
	Equal to or less than 1,000' and 3 miles	7.4%
	Greater than 1,000' and 3 miles	92.6%

2.6 Weather Reporting/ASOS

During tower operating hours the ASOS observation is augmented then transmitted on the ATIS by the tower personnel. When the tower is closed the ASOS generated weather observation is broadcast on the ATIS frequency. ASOS observations can be accessed by landline, 650-604-1529.

2.7 Waivers

As the owner operator of the airfield NASA is responsible for waivers concerning the airfield and its facilities. Instrument Procedures (TERPS) is the responsibility of NASA. Primary point of contact for airspace configuration is the Air Traffic control Unit.

CHAPTER 3

3. AIR TRAFFIC CONTROL

3.1 ATC General

3.1.1 ATC Procedures

Control procedures for the control of Moffett Federal Airfield air traffic are based on current FAA regulations, Air Force regulations, and Letters of Agreement between Moffett Tower and other concerned Air Traffic Control facilities

3.1.2 ATC Personnel

Only those personnel properly qualified in accordance with Air Force, Air National Guard, and FAA regulations will exercise control of air traffic.

3.2 Airspace

3.2.1 Enroute

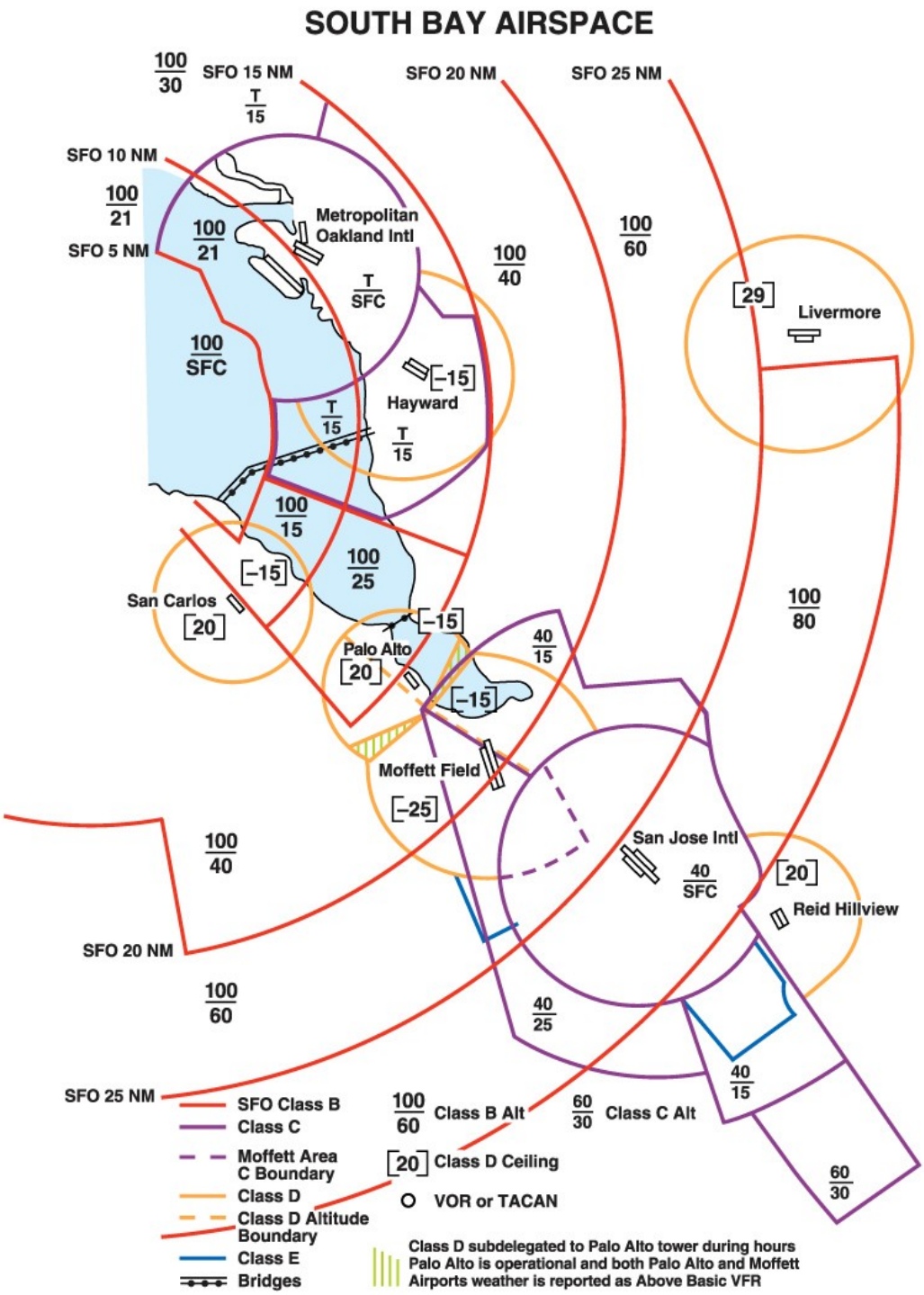
Oakland Air Traffic Control Center (ARTCC) in Fremont provides enroute service above 15,000 feet for instrument traffic in Northern California.

3.2.2 Terminal

NCT, Northern California TRACON (Terminal RAdar Approach CONtrol), controls all instrument traffic below 15,000 feet in the area from Ukiah south to Big Sur West to Clovis, North to Placerville, Northwest to Williams, to Ukiah.

3.2.3 Moffett Federal Airfield Class D Airspace

The Moffett Federal Airfield Class D Airspace is legally described by the FAA as "that airspace extending upward from the surface to but not including 2,500 feet MSL within a 4.3 mile radius of Moffett Federal Airfield, excluding that airspace within the San Jose Class C airspace area and excluding the portion within the Palo Alto of Santa Clara County Airport, CA, Class D airspace area during the specific dates and times it is effective." This Class D airspace area is effective during the specific dates and times established in advance by a Notice to Airmen. The effective date and time will thereafter be continuously published in the Airport/Facility Directory. Moffett Tower has delegated to Palo Alto Tower during the operating hours of Palo Alto Tower, when the reported weather at both facilities is above basic VFR, for the purposes of providing Class D services only, Moffett Federal Airfield Class D airspace that is west of a line that is 3 miles south of the Palo Alto Airport Runway 30 extended centerline."



3.2.4 Local Flying Area

Due to the diversity and mission of airfield tenants there is no specifically defined local flying area. Each unit is required to maintain its own defined Local Flying Area and minimums such as supplemental approach or departure.

3.3 Instrument Departure Procedures

3.3.1 Departure Procedures (DPs)

DPs are the preferred method for IFR departures from Moffett Federal Airfield. NCT provides departure control services to departing IFR aircraft.

A. Woodside departure procedure for departures northwest/west/southwest.

B. Southland departure procedure for departures northeast/east/southeast.

C. Hooks departure procedure for departures southeast (Runway 14 only).

3.3.2 Clearance Request

IFR clearances are not available until 30 minutes before proposed time of departure (ETD). The flight crew should advise Base Operations (650-604-9213 or PTD 251.7), Clearance Delivery (380.8), or Ground Control (121.85, 336.4) if it anticipates a departure delay of more than 45 minutes.

3.4 Instrument Approach Procedures

3.4.1 Instrument Approaches

Instrument approaches to Moffett Federal Airfield shall be made under approved procedures as published in current flight information publications. Published approaches are the ILS/DME Runway 32R, LOC/DME Runway 14L, and TACAN to Runways 32L/R.

3.4.2 Weather Restrictions

The Localizer/Glide Slope Critical Areas will be protected when the weather falls below a reported ceiling of 800 feet or the visibility is less than 2 miles; the tower will restrict aircraft and vehicle operations IAW Air Force regulations.

3.4.3 Protection Of The ILS Critical Areas

Protect the CAT I Localizer Critical Areas as follows:

A. When the weather falls below a reported ceiling if 800ft or the visibility is less then 2 miles, restrict aircraft and vehicle operations in accordance with AFI 13-203.

B. When the weather is below a reported ceiling of 800ft or the visibility is less then 2 miles, restrict aircraft and vehicle operations and protect the CAT I Glide Slope Critical Area.

3.5 Missed Approach Procedures

Missed approach procedures shall be conducted as depicted in flight information publications or as directed by NCT or Moffett Control Tower. Surrounding terrain requires aircraft minimum climb rates as published in appropriate IFR procedures. Pilots

are cautioned to be aware of the large dirigible and blimp hangars located east and west of the runways.

3.6 Overhead Approaches

Overhead approaches may be conducted at Moffett Federal Airfield to any runway.

3.6.1 Procedures For The Overhead Approach Will Be:

A. Four (4) mile initial at 2,000 feet.

B. The direction and point of the break are determined by pilot request or at controller discretion, and will be predicated on known traffic and operational necessity.

C. Any break direction that may penetrate adjacent airspace shall be coordinated prior to the start of the operation.

D. Aircraft must break to a downwind altitude of 1,000 ft in the east traffic pattern or 1,500ft in the west traffic pattern. Aircraft breaking to the east are required to keep the downwind leg within 1.5 miles of runway 32R/14L.

3.6.2 An aircraft on an overhead maneuver is considered to be VFR and the IFR flight plan is cancelled when the aircraft reaches the “initial point” on the initial portion of the maneuver. Standard separation criteria shall be applied.

3.6.3 After the aircraft reports initial, the aircraft will be considered number one for landing on the assigned runway.

3.6.4 Once an aircraft conducting an overhead approach has reported initial, no aircraft will be authorized to depart, perform a touch-and-go, or a low approach. When the overhead approach aircraft has executed “the break,” these operations may resume.

3.6.5 If an aircraft is conducting an approach that will conflict with an overhead approach (for example, in process of executing a touch-and-go) when the overhead approach reports initial, the tower may do any of the following:

A. Instruct the conflicting aircraft to enter the east traffic pattern at 1,000 feet (standard go-around procedure).

B. Instruct the overhead approach to break over the “numbers” into the west traffic pattern at 1,500 feet.

C. Departing aircraft shall be instructed to maintain VFR (as appropriate) straight out or into the east traffic pattern.

D. The tower will resume "normal operations" when the overhead approach aircraft enters the downwind leg.

3.7 Special VFR Operations

3.7.1 After coordination with NCT, Moffett Tower will have authority to conduct Special VFR operations in accordance with the procedures contained in FAA Order 7110.65 within the Moffett Federal Airfield Class D Surface Area from the surface to 1,100 feet MSL.

3.8 Lost Communication Procedures

3.8.1 Clearances will consist of radio transmissions on all published frequencies and light signals from the tower. All "no radio" landings constitute an emergency and priority will be granted.

3.8.2 Runways 32 in use.

A Enter VFR holding at 2,000 feet (or highest altitude below 2,000 feet at which VFR can be maintained), transponder shall be set to 7600. Make one turn.

B Then descend to 1,500 feet for one more turn in holding.

C Then enter the east traffic pattern for landing on Runway 32R.

3.8.3 Runways 14 in use.

A. Enter VFR holding at 1,500 feet (or highest altitude below 1,500 feet at which VFR can be maintained); transponder shall be set to 7600. Make two turns. Watch for traffic landing on San Jose Runways 12, these traffic approaches from the south and turns base for San Jose overhead Moffett Federal Airfield at an altitude of 2,000 feet.

B. Then enter the west traffic pattern for landing on Runway 14L.

3.8.4 Acknowledge tower transmissions or light gun signals by

A. Fixed-wing aircraft

a Between sunrise and sunset:

Move ailerons or rudders while on the ground

Rock wings while in flight

b Between sunset and sunrise:

Flash landing light or searchlight

B. Helicopters

a Between sunrise and sunset:

While hovering, either turn the helicopter toward the tower and flash the landing light or rock the tip path plane.

While in flight, either flash the landing light or rock the tip path plane.

b Between sunset and sunrise:

Flash landing light or searchlight.

3.8.5 Perform the following if additional emergency conditions exist other than radio failure:

Alternate the transponder code (as feasible) between 7600 and 7700. Once overhead turns are complete, leave the transponder set on 7700. If not capable of alternating codes, leave the transponder set to 7700.

3.8.6 When in IFR conditions, comply with procedures contained in the Aeronautical Information Manual (AIM).

Two-Way Radio Communications Failure. Attempt contact on all published frequencies and precede VFR. If unable, continue with approach and landing. If not on final approach or on a vector to the final approach course/fix, continue by the route assignment in the last ATC clearance received, route or airway specified in the vector clearance. If the route has not been assigned, proceed by the advised route to expect. Altitudes should be as assigned in the last ATC clearance received, minimum altitude for IFR operations, or altitude ATC has advised may be expected in a further clearance. Squawk Mode 3/A code 7600. If an "in distress" or "urgency" condition exists, squawk Mode 3/A code 7700. The Moffett Federal Airfield localizers have a safety lockout preventing simultaneous transmissions from each runway end.

3.9 Emergency Procedures

3.9.1 General

A. No rigid rules can be established to cover all types of emergencies, nor is there any substitute for good judgment.

B. Agencies on the Primary Crash Alarm System are: Tower, NASA Base Operations, NASA Dispatch, 129th Operations, and 129th Security. The Fire Station has monitor only capability which is broadcast through out the station via loud speaker system.

3.9.2 Primary Crash Alarm System

The Primary Crash Alarm System (PCAS) 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).

3.9.3 Procedures:

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

B. Minimum information required to activate the PCAS is type of aircraft and nature of emergency. Tower shall obtain and disseminate as much of the following information as possible. The information shall be disseminated with the initial PCAS activation or follow up notification via trunking radio to response vehicles or landline to dispatch as appropriate.

   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

C. ARFF can request additional information from ATC through direct tower communications.

D. Use plain language when referring to specific locations on the airfield. Use location points, like such as "Runway 32 Right between Alpha and Bravo, or Runway 14 Left, high power run up area". ARFF will not respond to a crash outside the Ames/Moffett Complex unless the crash is close to the airfield or if ARFF is requested as a mutual aid resource.

E. When an aircraft emergency is declared, once authorized by the control tower, ARFF vehicles have clearance on all taxiways (NASA/ARC Fire Department vehicles will be responding with ARFF). One of the trunking radios will be tuned to the Fire Ops Net. The radio shall remain tuned to the Fire Ops Net until the Incident Commander (IC) advises that net monitoring may be terminated. The ARFF IC shall identify him/herself at the beginning of every response.

F. When the aircraft lands, after approval from the control tower, the ARFF and fire vehicles have clearance onto any movement area, including runways.

G. Obtain approval from the ARFF IC prior to resuming any ground movement or any other aircraft operations (to include arrivals and departures).

H. When an emergency is declared, the tower will instruct all aircraft taxiing on or near the affected area to hold position (if feasible) and to shut down (as appropriate).

I. All aircraft in the VFR traffic pattern will be instructed to either enter the holding pattern or to depart the area, as appropriate.

J. Allow arrivals or departures in critical phases of flight to complete their operations; all other arrivals and departures will be suspended for the duration of the emergency.

K. Exceptions shall be considered and coordinated with the IC on a case-by-case basis. It is critical to maintain timely and accurate coordination with the Fire Department during aircraft emergency operations.

L. ARFF will conduct an inspection of any runway or movement area involved in an emergency prior to resuming normal operations on the affected area.

M. Upon release of the affected area by ARFF IC, Aviation Management or Base Operations will conduct an inspection of all movement areas in the area of the emergency.

N. The tower will ensure that the ARFF IC has secured the emergency and that the inspections have been completed prior to resumption of operations.

O. If the Primary Crash Alarm System (PCAS) is out of service, the trunking radio crash net shall become the secondary crash alarm system. When PCAS fails, the tower shall switch to Dispatch Net to announce the failure and notify of switch to the trunking radio tower net. After this notification, further coordination with the Tower will occur on the trunking radio net. The crash net is reserved for fire station internal and ARFF vehicle-tower communications.

P. If both the primary and secondary systems were to become non-operational, dial 911 on any base telephone to reach NASA Dispatch.

3.9.4 Landings

A pilot declaring an emergency may be cleared to land on any available runway/taxiway. The airfield may or may not be closed depending on the nature of the emergency, volume of traffic, and position of emergency aircraft. This determination will be made by the Aviation Management Office or its designated representative. The ARFF IC determines the requirement for airfield/runway closure and will notify the control tower accordingly. Emergency situations involving IFR aircraft will be coordinated thoroughly with NCT and/or Oakland Center.

3.9.5 Fire Truck Transit of Airfield Controlled Movement Areas

In addition to responding to aircraft and airfield emergencies, NASA/ARC Fire Department provides emergency response to NASA property surrounding the airfield Controlled Movement Area (para 2.1.6). Response to an off-airfield emergency which requires transit of the Controlled Movement Area shall be as follows:

A The IC, or fire officer in the lead vehicle in the absence of the IC, will notify the tower on the Tower Net that the Fire Department is responding to an alarm and advise the tower to monitor the Fire Ops Net. Obtain a radio check on the Fire Ops Net by asking the IC to state the location and nature of the emergency.

B The IC or fire officer in the lead vehicle will advise the tower of his/her position by using taxiway designators or location names, such as the West Parallel at Bravo or West Parallel at the ARFF station. Phrases such as "inbound or outbound" should be avoided. The IC or fire officer in the lead vehicle will state the route to the alarm, crossing points of runways, and number of vehicles responding. Although in position to cross first, the IC or fire officer in lead vehicle will be the last vehicle to cross a runway. The last vehicle to cross the runway will notify the tower when all responding vehicles are clear of the runways. After this notification, any subsequent requests to cross runways will follow normal procedures.

C When in receipt of response notification, give priority to the responding vehicles. Only aircraft in critical phases of flight will be allowed to continue with their operations.

D Tower shall monitor the Fire Ops Net until "released" by the IC.

3.10 Hung Ordinance, Hot Armament, or Malfunctioning System Procedures

3.10.1 Aircraft shall be considered an Emergency and shall advise the Tower. Procedures contained in paragraph 3.9, Emergency Procedures, shall apply.

3.10.2 The designated area to perform appropriate response is the Arm/De-Arm Area (North End of the East Parallel Taxiway).

3.10.3 Aircraft landing after planned Flare/Chaff expenditures shall:

A. Advise the Tower.

B. **NOT** be considered an emergency, unless an irregularity is suspected.

C. Proceed to the Arm/De-Arm Area for inspection by their unit for Hung Ordinance.

3.11 Hot Brakes

3.11.1 Treat hot brakes as an aircraft emergency.

3.11.2 ARFF will respond and stand by until the brakes have cooled.

3.11.3 If hot brakes are known or suspected, the aircraft shall turn off the runway and stop on a taxiway.

3.11.4 The aircraft will be towed to parking spot.

3.12 Aircraft Abandonment/ External Stores Jettison

3.12.1 There are no provisions for aircraft abandonment/jettison operations within Moffett Federal Airfield Class D airspace.

3.12.2 Designation of an area to abandon aircraft/fuel or stores jettisoning is the responsibility of the individual agency and NCT.

3.12.3 The agency owner or PIC will make the decision to abandon aircraft/jettison fuel or stores.

3.12.4 All resident flying agencies shall submit aircraft abandonment/jettison plans to the Aviation Management Office.

3.13 Suspect NAVAID Performance

3.13.1 In the event the performance of a NAVAID is suspect, remove the NAVAID from service immediately. Ensure a NOTAM is issued stating that the NAVAID is out of service until further notice; do not state the reason.

A. The Air Traffic Manager (ATM) and Chief of Maintenance will determine if equipment performance and alignments are within specifications. The OG/CC shall make the determination whether or not to withdraw a facility from service.

B. A facility that remains in operation must receive an immediate and comprehensive ground check. A suspect facility may be returned to service only after a successful flight inspection.

C. Records shall be retained, original records removed and stored. Release information IAW Air Force Regulations. Names will not be released to outside agencies, including the FAA, without approval of HQ USAF/A30.

3.14 Emergency Locator Response

3.14.1 Due to the amount, close proximity, and type of adjacent FAA Air Traffic Control Facilities Moffett Tower has a reduced level of response to Emergency Locator Transmitter (ELT) signals.

3.14.2 Tower response plan is to not immediately activate the Primary Crash Alarm (PCAS) when an ELT Is activated.

3.14.3 When an ELT is activated for the three sweeps during the first five minutes of each hour, it is a test and shall be ignored.

3.14.4 When an ELT is activated and the source is not apparent, the tower shall comply with the following checklist to begin initial response.

A. Check adjacent facilities to verify if ELT is received off the airfield.

B. Check with aircraft (If feasible) to verify receipt of ELT.

C. Contact Coast Guard Air Rescue at (415) 876-2929. Ask for the Officer of the Day; request a position of the activated ELT.

D. For ELTs positioned off the Airfield contact the Oakland Center Area Manage and report the ELT.

E. For ELTs on the airfield and are an apparent non-emergency activation, begin procedures to locate and shut off the ELT.

F. Treat ELTs positioned on the airfield, which may be an emergency as an actual emergency.

3.15 Airfield Operations Board (AOB)

3.15.1 The Airfield Operations Board will meet once quarterly to review pertinent aviation issues. In order to facilitate subject matter and record keeping the 129 RQW (OG/CC) chairs the meeting. Participation is not required for non-Air Force activities. Each Moffett Federal Airfield tenant organization is encouraged to provide issues to the board. Each tenant should include representatives from STAN/EVAL, and flight safety. NASA Aviation Management participates by providing members from aviation safety, airfield management, and base operations. 129th has appointed members from Wing STAN/EVAL Flight Safety, Air Traffic Control, ATC Maintenance, and adjunct FAA facilities are invited to participate. Airfield Civil Engineering representatives (NASA contractor staff) will be present at AOB meetings when civil engineering issues cannot be handled through the normal daily process. Note that communications issues are represented by ATCALS maintenance staff. Also included are Airspace Managers, as appropriate.

3.15.2 The following shall be reviewed at least once annually:

A. Letters of agreement and other operation letters/instructions

B. TERPS

C. Air Installation Compatible Use Zone (AICUZ)

D. Airspace

E. ATC/Flying procedures

F. Parking plan

G. NOTAM Circuit

H. AWDS/ASOS reliability

I. MACA (Mid-Air Collision Avoidance) Semiannually.

J. Airfield Waivers

K. Local Aircraft priorities

3.16 Runway Selection

Tower shall select the runway most aligned with the wind, when the wind speed is 5 knots or more. When the wind speed is less than 5 knots, tower may use the runway that is most operationally advantageous, or requested by the pilot, but not contrary to noise abatement procedures.

3.17 Tower Wind Limitations/Evacuation Procedures

3.17.1 During high wind conditions, when the wind reaches 50kts tower windows will be taped in an "X" pattern. If the wind reaches 60kts or more, the tower will be evacuated.

3.17.2 Due to external limiting factors, a specific requirement for an Alternative Air Traffic Control Facility has not been established.

3.17.3 ATC personnel may, after coordination with their MAJCOM, give advisories, from the primary location (Base Operations) or the secondary location (NASA Dispatch), whichever is most appropriate.

3.17.4 When the ATC or Advisory function has been relocated, aircraft operations are restricted to mission essential arrivals and departures only, no pattern work or practice approaches.

CHAPTER 4

4. AIRCRAFT SECURITY PROCEDURES

4.1 General Security Procedures

4.1.1 All residents and nonresidents are required to secure their aircraft to keep unauthorized personnel from access.

4.1.2 All residents are responsible for the security of their designated areas; this includes access into resident hangars and resident ramp areas. After coordination with the Aviation Management Office, residents can maintain supplemental security areas within their designated area. Permission to enter a resident area, except in case of emergency, is controlled by the resident agency. Permission for a transient (sponsored by a resident) to enter the resident area must be communicated to Base Operations and Air Traffic Control through a Prior Permission Request. Refer to para 6.10.1 for PPR instructions.

4.1.3 All incidents such as theft, damage, unauthorized use, or unauthorized movement shall be reported immediately to Protective Services and the Aviation Management Office.

4.1.4 Bomb threat, hostage, hijack, or terrorist procedures are covered in the Accident/Incident Plan.

A. Handle the unlawful seizure of a military or civil contract aircraft IAW Air Force Regulations and FAAO 7110.65.

B. The agency responsible for the aircraft or the NASA Aviation Management Office will notify the National Military Command Center (NMCC) through MAJCOM Operations Center. The NMCC will notify the Department of State (DOS), FAA, and the FBI.

C. The tower shall activate the Primary Crash Alarm System) (PCAS). Ames Emergency Dispatch shall be kept informed of the aircraft's position via landline or trunking radio.

D. The tower shall notify appropriate authority as follows:

a. Agency Responsible for the aircraft
b. NASA Dispatch
c. TRACON Supervisor
d. Air Traffic Manager
e. Chief Air Traffic Controller

E. In the event the agency responsible for the aircraft cannot be reached, the FBI will be contacted at 408-998-5633. They will be advised of the situation and what notifications have been made.

CHAPTER 5

5. COURSE RULES

5.1 General

5.1.1 Policy

Moffett Federal Airfield course rules are designed to promote safety in air operations and meet resident agency training requirements. The mixture of reciprocating engine, fixed wing aircraft, jet-powered fixed wing aircraft, and helicopters, all with noise abatement procedures, results in complex traffic patterns. Pilots operating from units located at Moffett Federal Airfield shall be familiar and knowledgeable with course rules and procedures contained within this manual.

5.1.2 Course Rules Brief

Prior to any flight operations, except one-time arrivals and departures, all pilots will attend, at NASA Aviation Management's discretion, an annual course rules briefing on local area operating procedures. The Aviation Management Office will also coordinate briefings on request.

5.1.3 Positive Control

Positive control of air traffic is exercised in accordance with applicable procedures contained in Federal Air Regulations (FARs), Air National Guard, and U.S. Air Force Regulations. No aircraft will be permitted to taxi, takeoff, or land at Moffett Federal Airfield during tower operating hours without a clearance from the control tower. Aircraft operating within the Class D airspace will comply with the rules contained in this manual unless otherwise authorized by the control tower. The maximum speed within the Class D airspace will be as specified in FAR 91.117.

5.1.4 Operations Outside Control Tower Operating Hours

Moffett Tower and Base Operations are open daily during the hours of 0700L to 2300L and 0630L to 2230L, respectively. Outside of these hours, the airfield functions as an uncontrolled airport with pilot controlled lighting. The following procedures apply to normal operations:

A. Aircraft arrivals and departures necessary to meet operational commitments may be approved outside of normal control tower operating hours. Mandatory approval authority for operations when control tower is closed is the Aviation Management Office. This authority is delegated to Base Operations when an Aviation Management Office representative is not available. Units/aircrew requiring operating when the control tower is closed should contact Base Operations at 650-603-9213/9214 for approval as soon as possible prior to the event. Base Operations will notify the affected aircrews of any conflicting events.

B. Base Operations shall notify NASA Security Dispatch of approved operations. Base Operations will notify affected aircrew of any conflicting events.

C. Requests for ATC services outside normal hours of operations shall be made to the NASA Aviation Management Office. In order to minimize staffing issues, requests shall be made at least two working days in advance (three working days if a holiday is involved) whenever possible.

D. Unforeseen circumstances may cause a "real time" request to extend the current operating tower shift. . The approval authority for extending control tower operating hours is the ATC watch supervisor on duty.

5.1.5 Priority

A. There are no specific local aircraft priorities, operations shall adhere to prescribed priorites as documented in FAA Order 7110.65, Air Traffic Control.

B. Local NOTAMs for special operations such as para drops and UAS (Unmanned Aircraft System) operations may be issued by the NASA Base Operations. NOTAMed operations shall have precedence over non-NOTAMed operations such as VFR pattern work. However, NOTAMed activites can be temporarily suspended for departures and landings as coordinated by the Air Traffic Controller.

5.2 Crash Rescue Manual Requirements

5.2.1 General Requirements

A. All resident aircraft operators will have a current approved Crash and Rescue Manual on file with ARFF, Protective Services, and the Aviation Manager's Office for each type of aircraft that is in operation at Moffett Federal Airfield.

B. The Crash and Rescue Manual will contain as minimum the following:

a. Photo/diagrams with simple legends showing the location of fuel cells, oil reservoirs, oxygen, battery, compressed gasses, hazardous material, ordnance, pyrotechnics, and armament.

b. Photo/diagrams with simple instructions showing fire-fighting panels and techniques.

c. Photo/diagrams with simple instructions showing dangerous areas, such as hot exhaust, propellers, rotors, and engine intakes.

d. Photo/diagrams with simple instructions showing normal and emergency exits, doors, and panels.

e. Photo/diagrams with simple instructions showing normal and emergency crew and passenger rescue.

f. Photo/diagrams with simple instructions showing normal and emergency engine shutdown and fuel and electrical shut-off.

5.3 Accident/Incident Response

The Aviation Management Office's manual JO-1, titled Accident/Incident Response Plan, documents the details of the response required at Moffett Federal Airfield. Only its basic points are detailed here.

5.3.1 Aircraft Accidents, Incidents, or Emergency Landings of Resident Agencies

A. All resident aircraft operators will immediately notify Base Operations in the event of an aviation related accident, incident, or emergency landing involving potential or actual injury, loss of property or loss of life that occurs on NASA Ames property or within Moffett's Class D airspace. . Base Operations will work with the reporting agency to determine the appropriate follow-on actions.

B. Base Operations will use the Accident/Incident Response Plan for directions in the event of an accident, incident, or emergency landing.

C. In the event of an aviation related accident, incident, or emergency landing, on NASA-Ames property or within Moffett's Class D airspace, all resident aircraft operators will file an Accident/Incident Report with the Aviation Management Office.

5.3.2 Accident/Incident Response Plan

A. All resident aircraft operators will be familiar with the Moffett Federal Airfield's Accident/Incident Response Plan.

B. The Aviation Management Office Accident/Incident Response Plan will take precedence over any conflicting response plan.

C. All resident aircraft operators will have a current approved aircraft accident/incident plan on file with ARFF, Protective Services, and the Aviation Manager's Office.

5.3.3 Nonresident Agencies Requirements

A. All nonresident aircraft operators will immediately notify Base Operations in the event of an accident or incident at Moffett Federal Airfield.

B. Base Operations will use the Accident/Incident Response Plan for directions in the event of an accident or incident.

C. All nonresident aircraft operators will file an Aviation Incident Report with the Aviation Management Office in the event of an accident, incident, or emergency landing at Moffett Federal Airfield.

5.4 Airfield Utilization

5.4.1 Any operation or activity to utilize the airfield by nonresident organizations must present a request to the Aviation Management Office.

5.4.2 Resident organizations, visiting personnel, or visiting contractor personnel must receive approval from the Aviation Management Office prior to using the airfield for other than routine normal operations. If an organization wants to use any part of the airfield, they must submit a written request (E-mail preferred) to the Aviation Management Office. The request must contain who, what, when, why, and sufficient details to describe their operation. Any personnel or organization that does not receive prior approval will be denied access to the airfield.

5.4.3 Organizations, visiting personnel, and visiting contractor personnel shall report to the Aviation Management Office prior to entering any area of the Moffett Federal Airfield. Visitors on official business will receive approval to enter and/or operate within Moffett Federal Airfield. On a case-by-case basis determined by the Aviation Management Office, resident organizations and contractors that are part of normal airfield operations can be exempted to this paragraph.

5.4.4 Scheduling the airfield surface area for any personnel or vehicular action and/or training requires an E-mail request submitted to the Aviation Management Office denoting the dates, time of use, name of the user, POC, and the tarmac area wishing to be utilized.

A. On the day of use, the user and/or sponsor is required to make contact in person with Moffett Federal Airfield Base Operations prior to entry into any part of the airfield. The purpose is to alert Base Operations and Air Traffic Control of the intended usage. Base Operations will then notify the tower that airfield areas will be closed.

B. The sponsoring organization must provide the user with a trunking radio and the user must monitor the trunking radio at all times. If a trunking radio is not available, a cellular telephone must be available (and monitored) and that phone number must be provided to Base Operations prior to entry/setup in the requested area.

C. The user and/or sponsor is responsible for the placement of cones or any other training devices and their subsequent removal upon completion. All cones and devices must be removed prior to sunset, unless special approval is given by the Aviation Management Office. Active taxiways will not be blocked unless prior coordination has been accomplished with the Aviation Management Office.

D. After the completion of training or exercise, all cones/debris or any other training devices removed, the user/sponsor must again check in person with Base Operations. They must report to Base Operations any damage to the tarmac, fence, lights, or other property.

5.4.5 UAS (Unmanned Aircraft System) operations occur at Moffett Field. UAS and aircraft operations are mutually exclusive. Priorities are addressed in paragraph 5.1.5 UAS procedures are contained in Chapter 5 of the NASA Flight Operations Manual.

5.5 Vehicular Traffic

5.5.1 Vehicles In The Airfield Restricted Area

That portion of the Moffett Federal Airfield that includes hangars, aircraft parking areas, taxiways, runways, etc., is designated a "Restricted Area". Only those vehicles necessary to support aircraft 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 Aviation Management Office. Restricted areas such as the 129th CA ANG have additional secure restricted areas for parking of their unit aircraft and are patrolled by their security police.

5.5.2 Ramp & Hangar Safety Training

All personnel that access the airfield Restricted Area shall receive a mandatory airfield Ramp & Hangar Safety Training prior to accessing the airfield Restricted Area (runways, taxiways, hangars, and ramps). NASA Code JO has overall responsibility for the vehicle/pedestrian operations on the airfield. Contact the Aviation Management Office at Building 158, for scheduling.

5.5.3 Airfield Access/Driver Training

All personnel that access the airfield Restricted Area shall receive a mandatory Airfield Access & Drivers Training prior to operating any vehicle or accessing the airfield Restricted Area (runways, taxiways, hangars, and ramps). Contact the Aviation Management Office at Building 158, for scheduling.

5.5.4 Speed Limits

The maximum speed limits for all vehicles authorized in the aircraft movement area (except vehicles responding to an emergency) is 30 miles per hour on taxiways and runways; 15 miles per hour on ramps and sideline driving areas; and 5 miles per hour within 50 feet of an aircraft and inside hangars. Vehicles will operate more slowly when conditions dictate.

5.5.5 Runway Authorization Procedures

Only personnel that have completed Airfield Access/Drivers Training are authorized to operate on or cross runways or taxiways. Vehicles shall not operate on or cross any runway or taxiway without specific radio clearance from the control tower. Authorized communication methods are trunking radio, ground or local control frequencies.

In the event of a failure of communications, vehicles or personnel will be given a visual signal to clear the movement area immediately, by the most direct route possible. The signal will be a light gun from the ATC Tower. In the event you lose radio contact with the control tower, flash your headlights at the control tower and wait for a signal from the light gun.

- Steady Green Light -- Clear to Cross 
- Steady Red Light -- STOP, Do Not Move 
- Flashing Red Light -- Clear Runway Immediately 
- Flashing White Light -- Return to Starting Point 
- Alternating Red & Green Lights -- General Warning, Exercise Extreme Caution 

5.5.6 Use Of Vehicle Lights

During the hours of darkness, vehicles operating within the restricted area shall have head and taillights on. The headlights shall be on the low-beam position. When the driver of any vehicle sees that his/her headlights are pointed toward an aircraft that is taxiing, taking off, or landing, the driver shall stop the vehicle clear of the path of the aircraft and turn off the headlights, while leaving the parking lights and all other lights on. When the aircraft has passed or is otherwise clear of the vehicle and the glare of the headlights, the driver will turn the headlights back on and proceed in accordance with control tower clearance. During light or darkness hours, when so equipped, vehicles will use yellow beacon or emergency four-way flashers while on the aircraft movement area.

5.5.7 Red/Yellow Flashing/Rotating Light Requirement

Emergency vehicles equipped with a red flashing light shall operate the light at all times when proceeding to or when at the scene of an emergency. All vehicles equipped with yellow flashing or rotating lights shall turn on these lights when operating in the aircraft movement area. Vehicles that do not have yellow flashing or rotating lights will use emergency flashers.

5.5.8 Radio-Equipped Vehicles

All operators of radio-equipped vehicles must contact the control tower and receive appropriate clearance prior to operating on the runways or adjacent taxiways, and will remain under the direct control of the tower at all times while on the runways and taxiways. Do not enter a taxiway or runway unless you have positive permission from the control tower. When operating outside of the runways and taxiways, you must monitor the tower ground radio.

5.5.9 Non-Radio-Equipped Vehicles

Operators of non-radio-equipped vehicles on official business shall visit, telephone, or e-mail the Aviation Management Office and provide details of the nature of their business on the aircraft movement area. The Aviation Management Office will determine, based on the nature and location of the services to be performed, if a radio-equipped escort is required. In all cases, an escort will be required if runways

or taxiways are to be crossed. If the Aviation Management Office determines the escort is unnecessary, they will give pertinent instructions to the intended operations. Operators such as airfield maintenance workers and local police agencies for example, those needing access to the movement areas, will establish face-to-face communications with Base Operations personnel for coordination and escort prior to being given access to the aircraft movement area.

5.5.10 Emergency Vehicles

Emergency vehicles are those vehicles involved in responding to an emergency, including ARFF, fire-fighting, rescue, emergency medical, hazardous materials emergency response, law enforcement, and security vehicles. ARFF, fire-fighting, rescue, emergency medical, and hazardous materials emergency response vehicles proceed as directed by the NASA/Ames Fire Department IC. . Each driver will be responsible for the safety of his/her vehicle. When not responding to an emergency, these vehicles will conform to the speed limits set forth in aforementioned paragraph 5.5.4, Speed Limits.

5.5.11 Emergency Evacuation

A. When working at sites in close proximity to the runways, personnel will monitor the trunking radio on the tower net at all times.

B. In the event of a situation which requires the evacuation alarm via the trunking radio on the tower net, the evacuation alarm shall begin with the phrase “EMERGENCY EVACUATION, EMERGENCY EVACUATION (additional instructions or information)”. When the emergency is terminated, notify maintenance personnel they may return to the work site.

C. The tower will conduct periodic tests of this procedure. The phrase “This is a drill” shall be added to the alarm phrase.

5.5.12 Tow Vehicles

Tow vehicles are allowed on the parking ramp for normal operations. Tow vehicles will be allowed on the taxiways or runways only when actually towing aircraft or proceeding to or from an aircraft requiring towing. The aircraft will be towed at a maximum speed of 5 miles per hour. Towed aircraft shall be moved in accordance with current applicable safety procedures. When towing aircraft on taxiways or runways, call the control tower for towing instructions and clearance before entering a taxiway or runway. A radio-equipped vehicle may be required to act as escort. Under no circumstances will an aircraft be towed onto a taxiway or runway without 2-way radio communication with the control tower. When aircraft are towed in close proximity to other aircraft or other obstacles, wing walkers shall be used. When aircraft are towed at night, an operating wing-tip light or wing walker with flashlight shall be provided at each wing tip.

5.5.13 Starting Units

Starting units are allowed on the ramps for normal operations. They are allowed on taxiways only when being towed directly to or from an aircraft requiring servicing.

5.5.14 Airfield Maintenance Vehicles

Airfield maintenance vehicles such as sweepers, mowers, and electrician are necessary for the supervision and upkeep of the landing areas and equipment. When airfield maintenance vehicles are operating on or near the movement area the tower shall include an advisory on the ATIS.

5.5.15 Radio Procedures

A. Standard radio phraseology shall be used at all times. Phraseology is provided during the airfield driver training courses. If there is any confusion about control tower instructions, the vehicle should hold position until absolutely certain of the instructions.

B. The tower shall avoid using terms such as “go ahead” or “cleared” when communicating with vehicles. Such terms mean have an understood meaning for air traffic (go ahead with transmission), but could be misinterpreted by non-pilots (go ahead and enter the active runway).

C. The vehicle operator MUST acknowledge all radio transmissions from the control tower.

D. The Tower Net is designated solely for transmission to and from the Air Traffic Control Tower and shall not be used to communicate between vehicles. The Tower Net shall be monitored at all times while in the Controlled Movement Area.

E. If it is necessary to for a vehicle operator in the Controlled Movement Area to temporarily go off the Tower Net to use another net, such as Base Operations Net, the user shall request authorization from the Tower prior to changing nets. Upon returning to the Tower Net, the user shall report “back on the net” to the Tower.

5.5.16 Radio Call Signs

The nature of the radio system used on the airfield results in extensive use of portable radios. Each radio is issued a call sign. Each call sigh shall consist of a word number combination. The radio call sign must be used when identifying yourself; not the call sign of the vehicle or person.

Agency	Call Sign
Tower ATCALS & Base Operations	Hotel-
Airfield Management	NASA-
ARFF	Chief- or Crash-
NASA Contractor	Whiskey-

Personnel with temporary access using radios loaned from base ops shall use a word and number combination which describes the agency/operations involved i.e. Stanford-1.

5.5.17 Personnel In Aircraft Movement Area

Without specific permission from the Aviation Management Office, personnel will not be allowed on an active runway or taxiway while aircraft are operating. Personnel must be at least 150 feet from the edge of the runway or behind the hold short line, unless they have permission from the Aviation Management Office.

5.6 Hangar Doors

Hangar doors will be operated only by qualified trained personnel and registered at Base Operations.

5.7 Smoking

Smoking is prohibited on the airfield except in designated areas.

5.8 Hats/Covers

Hats/Covers shall be removed while within 250 feet of an operating aircraft. This rule is designed to protect aircraft from Foreign Object Damage (FOD) and to keep personnel from running into propellers, rotors, or jet engines.

5.9 Construction Areas

5.9.1 General

A. Eye/ear protection, hard hats, steel-toe shoes/boots, and other applicable safety equipment are required in all construction areas.

B. Construction contractors are responsible for knowing and complying with all applicable elements of the OSHA construction standard. Notable OSHA regulations related to the construction work include standards for asbestos, 29 CFR 1926.1101, and lead, 29 CFR 1926.62. Construction unique requirements are addressed in the contractor's project safety plan. Construction project review and oversight in the airfield Restricted Area, are provided by the Aviation Management Office.

5.10 N211 Ramp Operations

5.10.1 Aircraft Exhaust Abatement

The building adjacent to the N211 aircraft ramp have numerous air intakes in the vicinity of the ramp. As a result, the starting and running of engines on the N211 ramp is, as a minimum restricted to the eastern portion of the ramp. This minimum is indicated by a red line painted across the ramp. See Appendix 1 for a diagram of the ramp. In some cases, depending on the prevailing winds and the polluting capability of the particular aircraft, it may be necessary to move to the eastern edge of the ramp or out onto the West Ramp.

It is the responsibility of the aircraft operator to assess the prevailing winds and the polluting capability of their particular aircraft to determine the location for engine

running that will minimize exhaust ingestion into the building ventilation systems. The ventilation intakes for the sensitive buildings are shown in Appendix 1.

5.11 Noise Abatement

5.11.1 General

The high population density in the Moffett Federal Airfield area makes this airport particularly vulnerable to aircraft noise complaints. NASA Aviation Management Office maintains a noise complaint hotline of (650) 604-2940. Good community relations depend on the degree of cooperation exercised by every pilot in effectively carrying out an airport noise abatement program. Engine power changes and flight maneuvers that may create a noise nuisance, even though not constituting a flight violation, are to be avoided. Strict adherence to the noise abatement procedures in this section is required.

5.11.2 Noise Abatement Procedures Use

A. Touch-and-go or landing practice, including low approaches below 1,500 feet, will not be authorized for transient aircraft between the hours of 2100 and 0700 (local) seven days a week.

B. Jet departures on runway 14 will not be authorized prior to 1200 (local) on Sunday unless operational commitment dictates otherwise. The aircraft operator must obtain prior permission from the Aviation Management Office.

C. High-power engine turn-ups will not be permitted between the hours of 2300 and 0700 (local) or prior to 1200 (local) on Sunday unless the turn-up is considered absolutely essential to meet operational commitments. Written documentation of such operational commitment may be required by the Aviation Management Office in order to satisfy noise complainants.

D. High-performance aircraft (fighter type) holding overhead Moffett Federal Airfield at 2,000 feet MSL or below should, unless operational needs dictate otherwise, hold landing gear and flaps retracted.

5.11.3 Preferential Runway Use

A. In order to lessen the noise impact on the surrounding communities, the following runway use is preferred during nighttime between 2300 and 0700 local time, wind, weather, and traffic conditions permitting:

   a Arriving traffic must use Runway 14L/R (if IFR, request Runway 14 from Norcal Approach Control well before arrival to assist them in traffic sequencing). Runway 14L is PAPI equipped.

   b Departing traffic must use Runway 32L/R.

B. Heavy aircraft are requested to use Runways 32L/14R to the maximum extent practicable.

5.12 Taxi Instructions

5.12.1 Clearance

A. Prior to taxiing, authorization to taxi shall be obtained from Ground Control (336.4/121.85 MHz). IFR aircraft should request ATC clearance prior to taxi from Ground Control or Clearance Delivery. High performance jet aircraft with concerns about fuel remaining at their destination may, prior to engine start, contact ground control to coordinate a “controlled IFR release time”.

B. Movement of aircraft, either under their own power or towed, within ramp areas is the responsibility of the pilot, taxi signalman, and parent organization.

C. Movement of aircraft or vehicles on the Movement Area is prohibited without control tower approval.

D. Normal taxi route shall be via the East or West Parallel to the Intersection of full length of the runway assigned.

E. Heavy Jet aircraft shall request taxi routes to allow for the minimum amount of thrust stream turbulence on ramp areas and movement area intersections.

Note: The Movement Area is defined as all runways and taxiways. The Movement Area does not include ramps and parking aprons.

5.12.2 Initial Contact

A. Pilots should listen to ATIS (124.175/283.0 MHz) prior to engine start and advise Ground Control (336.4/121.85 MHz) on initial contact that they have "Information (alphabetical code word)". When requesting taxi clearance provide the following:

a. Aircraft radio call
b. Location on airport
c. ATIS code word
d. Type of flight

Note: Aircraft unable to monitor the ATIS broadcast or unable to contact Ground Control, shall contact Moffett Tower (346.25/119.55 MHz) for airport information and/or taxi clearance.

5.12.3 Right Of Way

Aircraft entering taxiways should give way to aircraft established on taxiways. All other aircraft should adhere to right-of-way rules in FAR Part 91. Emergency vehicles proceeding to an emergency or accident have the right of way over aircraft and vehicles operating on the airfield.

5.12.4 Overtaking And Passing

Taxiing aircraft will not overtake or pass another aircraft on a taxiway except with approval from the control tower.

5.12.5 Emergency

When an emergency is in progress, taxiing aircraft shall stop and hold their position until authorization to continue taxing is received from the control tower.

5.12.6 Engine Turn-Up

Large aircraft engine turn-ups will be conducted only in approved turn-up areas to minimize traffic congestion and hazards to personnel. Jet aircraft are required to turn-up on the concrete portion of taxiways with the exhaust directed toward a concrete surface to preclude erosion of asphalt and unimproved surface areas. Base Operations/ATC Tower may authorize additional engine run-up areas.

5.13 Departure Instructions

5.13.1 General

When ready for departure, pilots of departing aircraft shall contact Moffett Tower (346.25/119.55 MHz). When Moffett Tower is closed, pilots should broadcast intentions on the CTAF and use departure control frequency assigned by NCT.

5.13.2 Clearance

Every aircraft must receive takeoff clearance from the control tower. Pilots shall acknowledge all "hold short" or "position and hold" instructions. When cleared for takeoff, aircraft are expected to depart without delay.

5.13.3 Delayed Takeoff

If a delay is authorized or required prior to takeoff, notify the tower on initial contact in order to provide time for pattern adjustments or clearance amendments. Practice aborted takeoffs require prior tower authorization.

5.13.4 Intersection Takeoffs (Appendix 5)

Intersection takeoffs may be initiated by the control tower or requested by the pilot. Pilots have the option of refusing an intersection takeoff. Measured distances from the appropriate intersection to the runway end will be issued upon request and to all transient aircraft. Usable runway remaining for given runway/ intersection combinations is as follows:

A. Runway 32L: ALPHA – 6,000 feet/BRAVO – 3,000 feet
B. Runway 32R: ALPHA - 7,100 feet/BRAVO - 4,100 feet
C. Runway 14L: DELTA - 8100 feet/CHARLIE - 7,400 feet/BRAVO - 5,100 feet
D. Runway 14R: CHARLIE – 7,400 feet/BRAVO – 5,100 feet

5.13.5 Formation/Section Takeoffs

Formation/section takeoffs will NOT normally be approved if section consists of more than two aircraft.

5.13.6 VFR Departure

Pilots will commence takeoff roll when cleared and shall remain on tower frequency until clear of the Class D airspace or otherwise directed by the control tower.

5.13.7 IFR Departure

Separation minima specified by the NCT/Moffett Federal Airfield Joint Letter of Agreement and other governing directives will be applied to all IFR departures. Takeoff clearance may include amendments to departure instructions (such as heading/altitude) and time or position to expect further clearance or other amendments to previously issued departure instructions.

5.14 Arrival Instructions

5.14.1 ATIS

Pilots of arriving aircraft shall monitor the Moffett Federal Airfield ATIS broadcast (283.0 MHz) prior to initial call for landing instructions or instrument approaches. On initial contact with either Moffett Tower or Norcal Approach, pilots of arriving aircraft shall acknowledge receipt of the current airport information by stating the appropriate ATIS code, such as "Information ALPHA received."

5.14.2 Class D Airspace

Moffett Tower has jurisdiction over all aircraft in the Moffett Federal Airfield Class D airspace. No aircraft shall operate within this airspace without authorization from Moffett Tower. Because the airspace delegated to Moffett Federal Airfield, Palo Alto Airport, and San Jose Airport abut, there may be aircraft in the Moffett Federal Airfield Class D airspace which Moffett Tower is aware of, but does not maintain radio contact. Aircrew must be alert for this traffic. Moffett Tower will provide traffic advisories on all known traffic, controller workload permitting.

5.14.3 Radio Contact Area

Arriving VFR aircraft shall establish radio contact with Moffett Tower (346.25/119.55 MHz) prior to entering the Moffett Federal Airfield Class D surface area. Practice instrument approaches inbound to Moffett Federal Airfield shall comply with instructions received from Norcal Approach.

5.14.4 Formation/Section Arrivals

Except in a bona fide emergency, section or other formation approaches are normally NOT authorized. Flight leaders shall request individual handling from Norcal Approach on initial contact.

5.14.5 Reduced Same Runway Separation (RSRS)

RSRS is not authorized at Moffett Federal Airfield.

5.14.6 Crossing Restriction

Aircraft are required to cross Highway 101 (south field boundary) at or above 75 feet AGL due to proximity of the freeway and light rail to the landing threshold.

5.14.7 Landing Rollout

After landing, aircraft will clear the runway in a safe and expeditious manner and shall contact ground control when clear unless otherwise directed by the control tower.

5.14.8 Helicopter Procedures

Helicopters landing at Moffett Federal Airfield shall enter the traffic pattern as directed by Moffett Tower. To prevent soil erosion and FOD damage, helicopters will remain over hard-surfaced areas when operating at or below 200 feet AGL within the confines of Moffett Federal Airfield. Helicopters that need to operate over other than hard-surfaced areas need to get prior permission from the Aviation Management office.

5.14.9 Touch-And-Go Landings

Touch-and-go landings for locally based aircraft will normally be approved, traffic and field conditions permitting. Transient aircraft conducting more than 3 touch-and-go/low approaches require specific approval (normally included with PPR).

5.14.10 Standard Go-Around/Breakout/VFR Missed Approach

All ATC directed go-arounds (wave-offs) are MANDATORY. In the absence of specific instructions, execute the standard go-around: climb straight ahead and enter the east pattern at an altitude of 1,000 feet.

5.14.11 Standard Climb-Out

The standard climb-out for VFR Runway 32/14 departures is to climb straight ahead, when feasible make a right turn to proceed Northbound/Southbound, remain clear of San Jose Class C.

5.14.12 Runway Assignment Read back

Pilots shall acknowledge landing clearance by a read back of runway assignment.

5.14.13 Section Landings

Section landings are NOT normally authorized. Aviation Management Office must approve of all section landings.

5.14.14 Simulated Flameout Approaches (SFOs)

SFOs are not authorized.

5.14.15 Opposite Direction

Operations opposite to the direction of traffic flow are not authorized. Should opposite direction operations be established, procedures needed to support operations will be formulated.

5.14.16 Air Evac

It is the responsibility of the operating agency to coordinate through Airfield Management/Base Operations any requests to support arriving Air Evac aircraft. Requests for special handling from ATC shall be in accordance with existing Air Force and FAA regulations.

5.14.17 Standard Climbout Instructions

A. Runways 32 in use, Right 45 departure, maintain clear of the San Jose Class C.

B. Runways 14 in use, Right 45 departure, caution numerous aircraft inbound from the south, arriving San Jose, crossing Moffett Federal Airfield beginning descent from 2000.

5.15 Traffic Patterns (See Appendix 3)

5.15.1 Runway 32L/R - Left Traffic/Downwind 1,500 feet

5.15.2 Runway 32L/R - Right Traffic/Downwind 1,000 feet

5.15.3 Runway 14L/R - Right Traffic/Downwind 1,500 feet

5.15.4 Runway 14L/R - Left Traffic/Downwind 1,000 feet

5.15.5 Overhead approach - Initial is 4 NM at 2,000 feet; break point and direction are determined by pilot request, controller discretion, known traffic, and operational necessity. Break to a downwind altitude of 1,000 feet in the east traffic pattern or 1,500 feet in the west traffic pattern. Aircraft breaking to the east are required to keep the downwind leg within 1.5 miles of runway 32R/14L to avoid San Jose Class C airspace. ATC Operating Instructions (OIs) are designed to eliminate conflict between overhead approaches and other VFR and IFR traffic. These OIs provide for the following:

A. Aircraft reporting initial is usually number 1 for the approach.

B. If a traffic conflict exists, conflicting aircraft will either be issued a go-around or the aircraft entering the overhead approach will be instructed to depart and re-enter the pattern.

5.15.6 Helicopter pattern altitudes will be as directed by the control tower.

5.15.7 VFR Holding Pattern (see Appendix 4)

A. Runway 32, left traffic, 2,000 feet

B. Runway 14, right traffic, 1,500 feet

5.15.8 VFR Weather Minimums

Weather must be: visibility of at least 3 miles and/or a ceiling reported not less than 500 feet above pattern altitude.

5.16 FOD Reporting

5.16.1 Aircraft flight crews and personnel operating on the Controlled Movement Area and Ramp Areas shall report FOD to the tower.

5.16.2 Tower personnel shall ensure that airfield management is informed of the FOD. The affected area shall be closed to aircraft operations until NASA Airfield Management inspects and determines status of the area.

5.17 Objects Falling From Aircraft

5.17.1 General

A. Pilots will not intentionally drop any object from an aircraft in other than authorized training areas. If a known probability of dropping exists (such as an insecure tow, loose wing tank, loose cowling, etc.), pilots will avoid flying over populated areas and land as soon as practicable.

B. When an object falls from an aircraft, other than pre-planned drops in authorized areas, an immediate report shall be made to the Aviation Management Office. The report shall include:

a. Type aircraft
b. Location of drop
c. Maneuver involved at the time of the drop
d. Possibility of damage to property
e. Location of property damage
f. Possibility of injury to personnel

5.18 Parachute Operations

5.18.1 The 129th RQW conducts routine parachute-training operations at Moffett Federal Airfield. The operations are coordinated in advance and NOTAMs are issued. The drop zone is east of Runway 32R, west of the East Parallel Taxiway, north of Taxiway Bravo, and south of Taxiway Charlie. The control tower will provide

instructions to both the jump aircraft and non-participants to preclude any interference. Drop Zone (DZ) operations require 24-hour advance notice to Base Operations.

5.19 NVD (Night Vision Device) Procedures

5.19.1 All Moffett Federal Airfield runways, taxiways, and traffic patterns may be utilized for NVD operations. No more than 2 aircraft/aircraft formations at any given time may conduct NVD operations.

Non-participating (unaided) aircraft will not be allowed to mix with NVD participating (aided) aircraft in the traffic patterns. An aided or unaided condition shall not be the basis for aircraft priority. Emergency and Life Flight aircraft have priority over all other aircraft, participating or not.

Organizations shall ensure aircrews are qualified to conduct Night Vision Device (NVD) operations. Authorizations and waivers shall be in place to support/authorize NVD operations. Organizations planning NVD operations shall establish of letter of procedure with the ATC unit. At a minimum the letter shall address:

A. Scheduling
B. Coordination for issuance of a local Notice to Airman (NOTAM)
C. Deactivation/activation of airfield lighting and any other lighting not controlled by ATC (i.e. obstruction lighting)
D. Communications
E. Procedures to initiate/terminate NVD operations
F. Aircraft lighting to ensure safety of flight
G. Weather restrictions
H. Operations when San Jose is landing Runways 12
I. Vehicle lighting and operation requirements

The Automated Terminal Information Service (ATIS) broadcast shall contain an advisory that NVD operations are being performed in the Moffett Federal Airfield Class D airspace.

5.20 Photography

5.20.1 Any photography on or over the airfield requires prior approval from the Aviation Management Office.

5.21 Supervisor Of Flying

Supervisor Of Flying (SOF) or similar duties shall not be normally performed in the ATC Tower. During emergency or other unique situations, the ATC watch supervisor on duty may, at his/her discretion, authorize a representative from the agency responsible for the aircraft involved to be present in the tower.

5.22 Braking Action Reporting

5.22.1 Whenever weather conditions are conducive to deteriorating or rapidly changing runway conditions the Tower shall solicit Braking Action reports from aircraft.

5.22.2 The ATIS broadcast shall include the statement "Braking Action Advisories are in effect."

5.22.3 When Braking Action Advisories are in effect the Tower shall:

A. Issue the latest braking action report for the runway in use.

B. Describe the Braking Action using the terms "good", "medium", "poor" or "nil".

C. Relay Braking Action Conditions to Base Operations

D. Immediately close the active runway up receipt of a nil condition report and relay the PIREP to Base Operations.

E. Upon receipt, relay all "poor" condition reports to Base Operations

5.22.4 Upon receipt of a PIREP of "nil" the runway shall be closed immediately and will remain closed until airfield management is satisfied that the nil condition no longer exists.

5.22.5 When PIREPs indicate good or medium braking action, two consecutive braking action reports of poor will be interpreted as evidence of deteriorating conditions. Airfield Management shall conduct a runway assessment to determine feasibility of continued operations. Runway conditions shall continue to be closely monitored for any changes in braking action conditions.

CHAPTER 6

6. BASE OPERATIONS

6.1 Flight Planning Procedures

6.1.1 Flight Planning Office

The Flight Planning Office, located in Bldg. 158, room 107, is open between 0630L and 2230L seven days per week to assist flight crew in their pre-flight activities. A Low Altitude Wall Planning Chart is available for the CONUS. Complete worldwide High and Low charts are also available for flight planning. Carry-out charts for visiting flight crew are not available. DOD FLIP planning and aeronautical information manuals may be provided on request.

6.1.2 Flight Plans

Pilots are encouraged to file flight plans through Base Operations. Pilots may hand-deliver or transmit flight plans to Base Operations via FAX, 650-603-9860, sufficiently in advance of planned departure time to allow for processing and to avoid delays (normally ninety minutes). Flight plans may alternately be filed through Oakland Automated Flight Service Station, 1-800-992-7433.

6.1.3 Flight Information (FLIP) Accounts

It is the responsibility of each tenant to maintain their own source of FLIPs. Procedure to recommend changes is to forward the change to the NASA Airfield Management Office for review and comment or inclusion in to the appropriate publication.

6.2 NOTAMs

6.2.1 Local NOTAMs for Moffett Federal Airfield are originated by the Aviation Management Office.

6.2.2 Flight crew may obtain worldwide NOTAMs from the US NOTAM Service via a computer located in the flight planning room of Base Operations. Complete instructions on obtaining NOTAMs are readily available. Base Operations telephone number is (650) 603-9213/4, DSN 359-9213/14. Base Operations Pilot to Dispatcher (PTD) frequency is 251.7 MHz.

6.3 Transient Aircraft

6.3.1 All transient aircraft remaining overnight and/or requiring services, such as fuel and liquid oxygen are required to be hosted by a Resident Agency of Moffett Federal Airfield. A PPR number will not be issued unless such hosting has been arranged and confirmed prior to arrival. Repeated infractions of the PPR requirements may be cause for denial of future landing privileges. Moffett Federal

Airfield has limited transient services available during normal duty hours (0700L - 1400L). Some limited service may also be provided after 1400L with prior coordination. All parking requests for specific areas of the tarmac must be coordinated through the Aviation Management Office, 650-603-0931, 0685.

6.4 Customs, Agriculture, and Immigrations

6.4.1 Arrangements for customs, immigrations, and agriculture inspections that may be required, as well as the arrangement for disposal of all foreign garbage and waste, are the sole responsibilities of the flight crew and/or the hosting Resident Agency (RA). Workload permitting, Base Operations personnel, on prior request from flight crew or RA, may assist in coordinating the aforementioned arrangements. Any agricultural waste/garbage requiring disposal will be retained at Base Operations while the responsible persons make arrangements for pick-up/transportation of said waste. The responsible persons shall not allow such waste to be dumped into normal waste disposal areas.

6.4.2 U.S. Customs can be reached at 408-291-7388, Department of Agriculture at (408) 291-7253, and U.S. Immigrations at 650-876-2876.

6.4.3 Any hazardous material will be handled in accordance with Chapter 7 of this manual.

6.5 Weather Services

6.5.1 Current weather observations for Moffett Federal Airfield are available 24 hours a day, either from Moffett Tower during normal duty hours (0700 - 2300L), or broadcast on the ASOS/ATIS Interface on 283.0 MHz and 124.175 MHz or the ASOS broadcast phone, 650-604-1529. ASOS weather information is transmitted for inclusion within the National Weather Service database.

6.6 Aircraft Services Including Fuel

6.6.1 Limited transient maintenance service is provided by the Aviation Management Office. Hosting Resident Agencies may provide supplemental services.

6.6.2 Aircraft jet fuel (JP-8) is available through the Defense Fuels Supply Center (DFSC) contractor at 650-603-8787. Fueling is the responsibility of the aircraft operator. Fuel is available at the fuel pits or by truck. Aircraft marshalling in the fuel pits is mandatory and must be provided by NASA (or its designated representative), the flight crew, or the hosting agency. Fuel requirements should be pre-arranged through the hosting Resident Agency. Delays should be expected.

6.7 Messing/Berthing

6.7.1 Messing and berthing requirements will be arranged through the hosting Resident Agency.

6.8 Transportation

6.8.1 Ground transportation requirements will be arranged through the hosting Resident Agency or Base Operations.

6.9 Distinguished Visitors (DVs)

6.9.1 Distinguished Visitor visits will be coordinated through the NASA External Affairs Office at 650-604-4190 or Base Operations at 650-603-9213.

6.10 Prior Permission Required (PPR) Procedures

6.10.1 Moffett Federal Airfield is a restricted, official business-only airfield. All aircraft not based at Moffett Federal Airfield (transient aircraft) require prior permission for use of the airfield. Resident agencies can coordinate the submission of the PPR for aircraft that they will host. At a minimum, the following information shall be provided to NASA Base Operations:

A. Date and time of arrival

B. Aircraft type and call sign.

C. Purpose of visit

D. Planned operations while at Moffett

E. Parking area requested. Note that Base Operations and Air Traffic Control will only authorize parking in common areas. The only exception to this policy is when a resident agency explicitly requests (in the PPR submission) that the aircraft they are hosting be directed into that resident's area.

F. Date and time of departure

6.10.2 Aircraft, whether or not based at Moffett Federal Airfield, are required to coordinate any flight operation outside Moffett Tower normal operating hours.

6.10.3 Permission to use the airfield will be coordinated through Base Operations. A minimum of 48 hours notice is required. Shorter notifications will be considered on a case-by-case basis. Phone Commercial: 650-603-9213/9214, DSN: 359-9213.

6.10.4 Permission to utilize/test radio and radio frequency (RF) type devices not normally associated with standard communications to ATC must first be coordinated and

approved by the Ames Spectrum Manager, 650-604-0988, and the Aviation Manager's Office, phone: 650-604-0685.

6.10.5 Unscheduled Aircraft Arrivals shall be reported to Base Operations as soon as possible. Federally owned or sponsored aircraft will be handled on a case-by-case basis. Unscheduled or non-PPR civilian aircraft will be reported to NASA security. The aircraft will be impounded until proper coordination/ procedures can be affected to allow the aircraft to depart.

6.10.6 Civilian Aircraft Operations at Moffett Federal Airfield are only authorized by PPR. Use of NAVAIDS by civilian aircraft must be in connection with a PPR.

CHAPTER 7

7. AIRCRAFT RESCUE AND FIRE FIGHTING PROCEDURES

7.1 General

7.1.1 Aircraft Rescue and Fire Fighting (ARFF) operational requirements are contained in the Fire Protection Service Statement of Work.

7.1.2 Aircraft or vehicle movement will not be allowed in the vicinity of any emergency unless authorized by the ARFF Incident Commander on the scene.

7.1.3 If an aircraft requests a fly-by for the determination of position of questionable landing gear, the on duty Fire Battalion Chief/Shift Supervisor shall be notified in order to dispatch an ARFF vehicle to assist in the visual inspection of the aircraft.

7.1.4 ARFF operational priorities are established in Chapter 3, Section 3.9 of this document.

7.1.5 The Base Operations shall be notified by the fire department when staffing and/or vehicle constraints cause the airfield fire protection available to fall below accepted levels. Base Operations shall notify ATC Tower and Aviation Management Office. Aircraft will be notified and air operations shall be suspended until further guidance is received from the Aviation Management 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.

7.1.6 If any aircraft on landing or departure suspects a landing gear problem or that some object may have fallen from an aircraft, a runway inspection will be conducted to ensure no FOD hazard exists.

CHAPTER 8

8. HAZARDOUS MATERIALS, FUELS, OR ORDNANCE HANDLING PROCEDURES

8.1 Aircraft With Unsecured Hazardous Materials, Fuels, Or Ordnance

8.1.1 General

A. In the event an operating aircraft has hazardous materials, fuel, or ordnance that is not secured, or any other problem, ATCT must be notified immediately. ATCT must be advised of the following:
   a. Aircraft call sign
   b. Type of aircraft
   c. Nature of emergency
   d. ETA
   e. Location
   f. Total Number of souls on board
   g. Any other pertinent information

B. ATCT will direct the aircraft to the Hot Spot.

C. ATCT will notify NASA Dispatch of the circumstances.

D. NASA Dispatch will call the appropriate emergency team to mobilize.

8.2 Hazardous Materials

8.2.1 General

A. Operations which include the use or storage of hazardous materials must be conducted in accordance with the policies set forth in the Moffett Operations Policy Manual and must conform to Ames procedures as established in the Ames Environmental Management Manual. Such operations must also be conducted in compliance with all local, state, and Federal laws and regulations including, but not limited to:

   a. City of Sunnyvale Sanitary Sewer Ordinance
   b. Santa Clara County Hazardous Materials Storage Ordinance
   c. Santa Clara County Toxic Gas Ordinance
   d. Bay Area Air Quality Management District Rules and Regulations
   e. California Health and Safety Code, Division 20
   f. Clean Water Act (and amendments)
   g. Comprehensive Environmental Response, Compensation, and Liability Act
   h. Superfund Amendments and Re-authorization Act

j. Executive Order 12856
k. Toxic Substance Control Act
l. Code of Federal Regulations 29

B. Any hazardous waste generated from operations must be managed in accordance with the Moffett Operations Policy Manual, the Ames hazardous waste management procedures, and the Ames Environmental Management Manual and must comply with all local, state and Federal regulations governing hazardous waste management. These laws and regulations include:

a. Title 22 California Code of Regulations
b. Hazardous Waste Reduction Act (SB14)
c. Resources Conservation and Recovery Act and the Hazardous and Solid Waste Amendments
d. Title 40 Code of Federal Regulations

8.3 Fuels Procedures

8.3.1 Hazardous Weather

Fueling is not authorized when lightning is observed within 5 miles of the airfield. Reports of lightning within 5 miles will be passed to Base Operations, who will, in turn, notify the fuel farm and Resident Agency duty offices.

8.3.2 Fueling Within 50 Feet Of A Hanger Or Building

A. Fueling or defueling of an aircraft within 50 feet of a hanger or building is not allowed without prior permission from NASA Aviation Management Office and coordination with NASA Fire Marshal and ARFF before any fueling operation. All requests must be submitted to the Aviation Management Office a minimum of 72 hours in advance.

B. During fueling or defueling of an aircraft within 50 feet of a building or hanger, an ARFF vehicle will be stationed at the aircraft. ARFF will inspect the grounds and stand by until the operation is completed. In the event the ARFF is called to an emergency, the ARFF vehicle will sound its siren (short burst). Fueling/defueling will immediately stop and secure fueling operations. The fueling crew will signal the ARFF vehicle when fueling operations are secure. The ARFF vehicle will then respond to the emergency.

8.4 Hot Refueling Procedures

8.4.1 Hot refueling is authorized for Resident Agency aircraft; however, prior coordination with the Aviation Management Office and ARFF is mandatory before any hot refuel operation. All requests must be submitted to the Aviation Management Office a minimum of 72 hours in advance.

8.4.2 Hot refueling is defined as an aircraft engine operating or when the aircraft APU is within 50 feet of the aircraft fueling point is operating.

8.4.3 During hot refueling, an ARFF vehicle will be stationed at the aircraft. ARFF will inspect the grounds and stand by until the operation is completed. In the event the ARFF is called to an emergency, the ARFF vehicle will sound its siren (short burst). Refueling will immediately stop and secure fueling operations. The fueling crew will signal the ARFF vehicle when fueling operations are secure. The ARFF vehicle will then respond to the emergency.

8.5 Ordnance Procedures

8.5.1 Resident Agencies will handle ordnance in conformance to individual service directives. These directives must be on file and approved by the Aviation Management Office.

CHAPTER 9

9. WILDLIFE HAZARDS

9.1 General

9.1.1 Several wildlife hazards exist on and in the vicinity of the airfield. Because of the proximity of the San Francisco Bay and associated protection areas, the predominant hazard is bird activity at the airfield. The 129th RQW, California National Guard Safety Office, and the NASA Aviation Management Office have developed JO-7, the Wildlife Hazard Management Plan, which governs wildlife management at Moffett Federal Airfield. Copies are available from the Aviation Management Office.

9.1.2 Resident Agencies are expected to comply with their existing service directives regarding operations during periods of bird activity. The Aviation Management Office will adhere to the directives written in the Wildlife Hazard Management Plan, which may impact airport operations.

9.2 Bird Watch Conditions

9.2.1 During normal operating hours one of the following Bird Watch Conditions (BWC) shall exist. The ATIS shall contain an advisory when a Moderate or Severe condition exists. Default condition is Low; the absence of a declared condition on the ATIS indicates a Low condition. When the Tower is closed, the ATIS shall indicate that the Bird Watch Condition is not available. It is the responsibility of the aircraft owner/operator to determine the course of action to take with respect to the information provided by the declared Bird Watch Condition.

9.2.2 **Bird Watch Condition SEVERE.** Heavy concentration of birds on or immediately above the active runway or other specific locations that represent an immediate hazard to safe flying operations. Aircrews must thoroughly evaluate mission need before operating in areas under condition SEVERE.

9.2.3 **Bird Watch Condition MODERATE.** Concentrations of birds observable in locations that represent a probable hazard to safe flying operations. This condition requires increased vigilance by all agencies and extreme caution by aircrews.

9.2.4 **Bird Watch Condition LOW.** Normal bird activity on and above the airfield with a low probability of hazard. Base or default condition under which normal operations occur. Potential for increased activity exists.

9.3 Wildlife Activity Procedures

Wildlife Management practices are described in detail in JO-7 WHMP

9.3.1 Observed wildlife activity shall be reported to Base Operations, or designated authorized agent, through ATC.

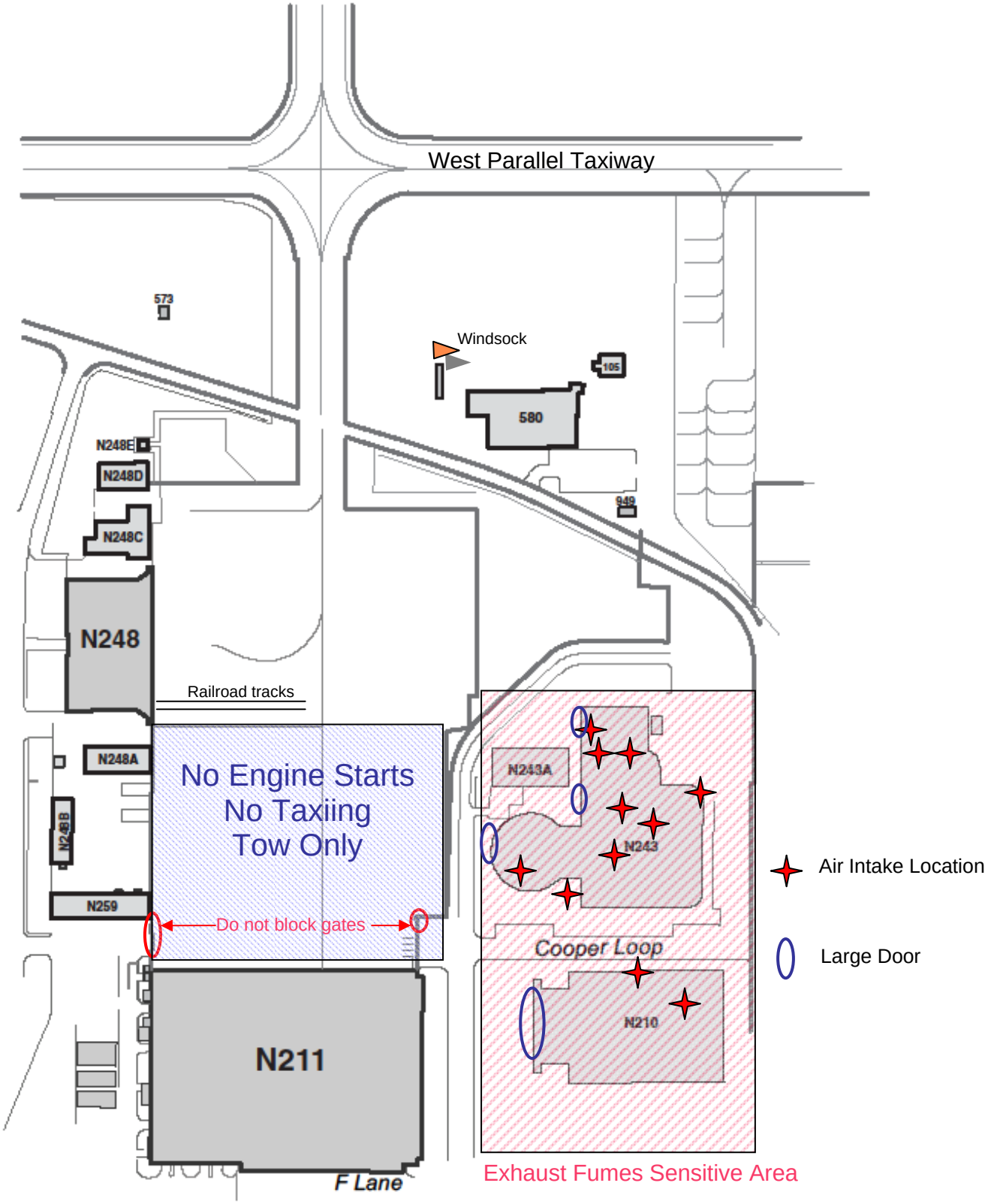
9.3.2 The base or default Bird Watch Condition during normal operating hours is LOW. Outside normal operating hours or when the Tower is closed a BWC declaration is not available.

9.3.3 The Tower shall append the ATIS Broadcast to include an advisory of a declared Bird Watch Condition of Moderate or Severe. Absence of a BWC advisory on the ATIS Broadcast constitutes a LOW BWC.

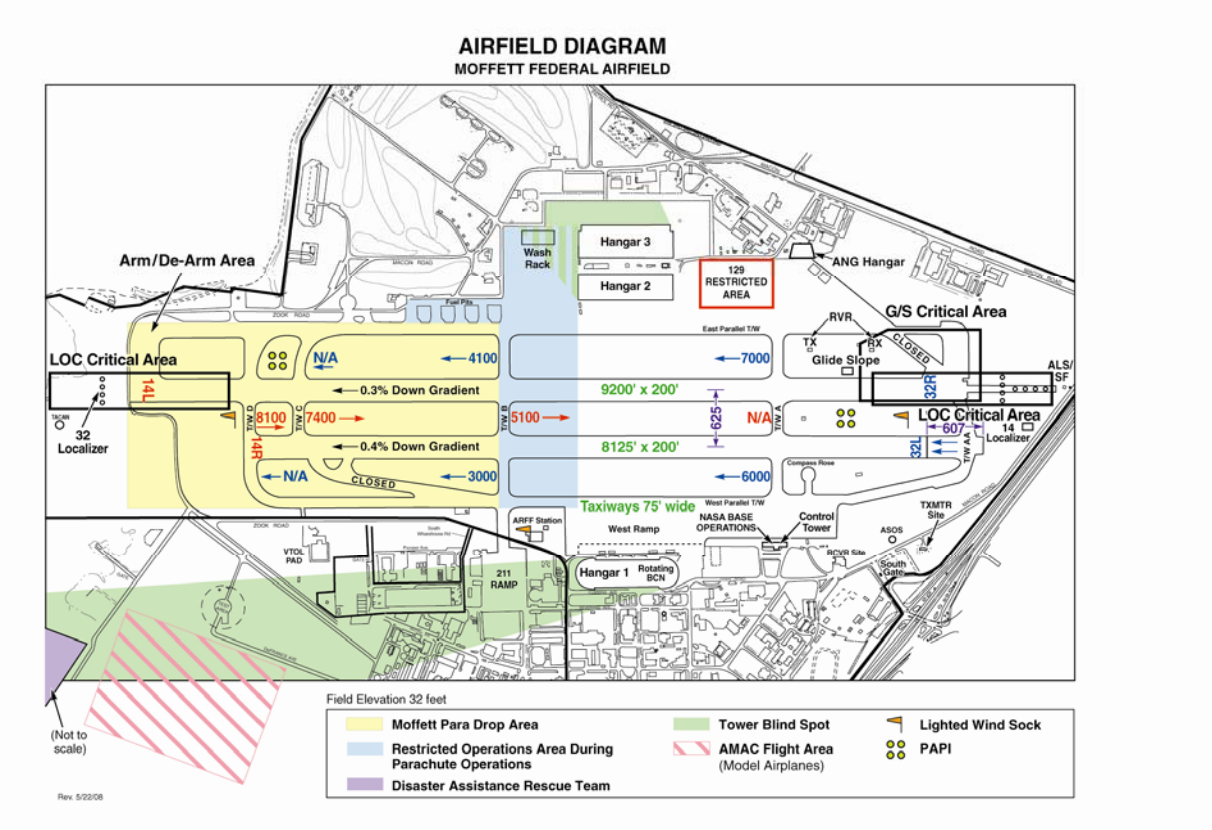
9.3.4 When the Tower is closed the ATIS Broadcast will be appended in include an advisory that a declared BWC is not available.

9.3.5 All other procedures implemented by the Tower shall be IAW FAA Order 7110.65 (Air Traffic Control) and Air Force Instruction 13-203.

Appendix 1
N211 Ramp Diagram



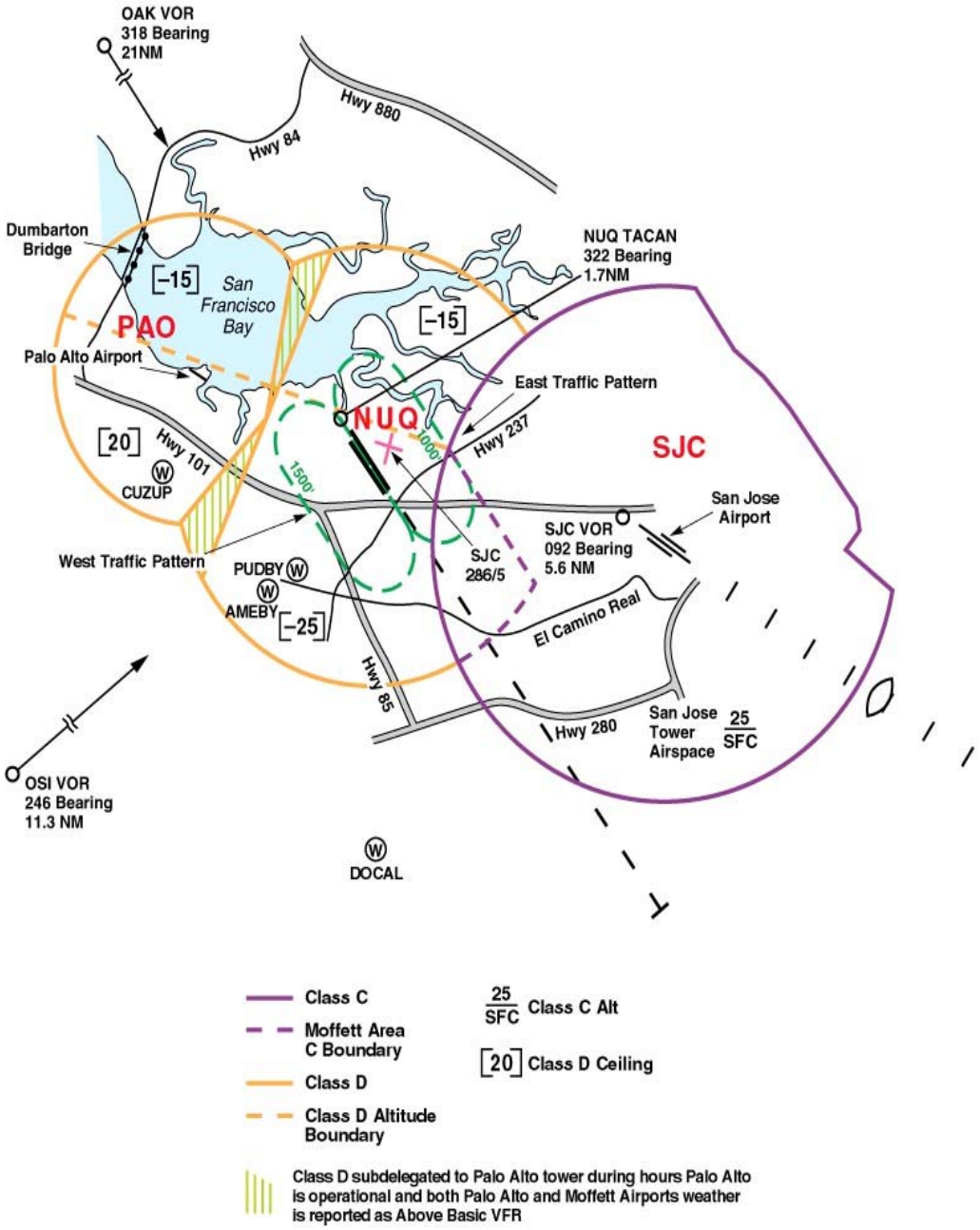
Appendix 2
Moffett Federal Airfield Diagram



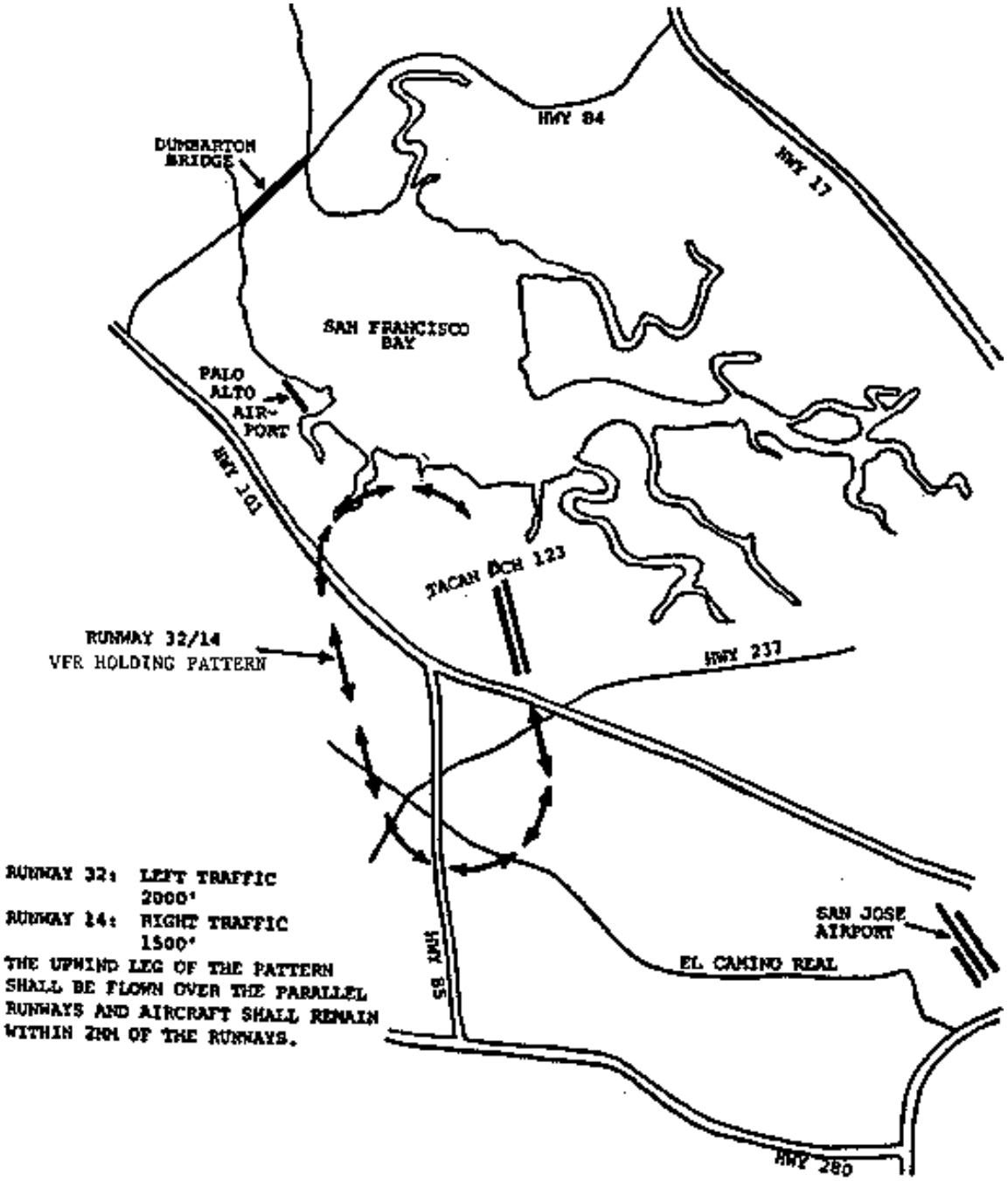
RUNWAY	ELEVATION (Approach End)	GRADIENT
32R	29.1	-0.3%
32L	34.1	-0.4%
14L	3.1	+0.3%
14R	1.8	+0.4%

Appendix 3
Traffic Patterns

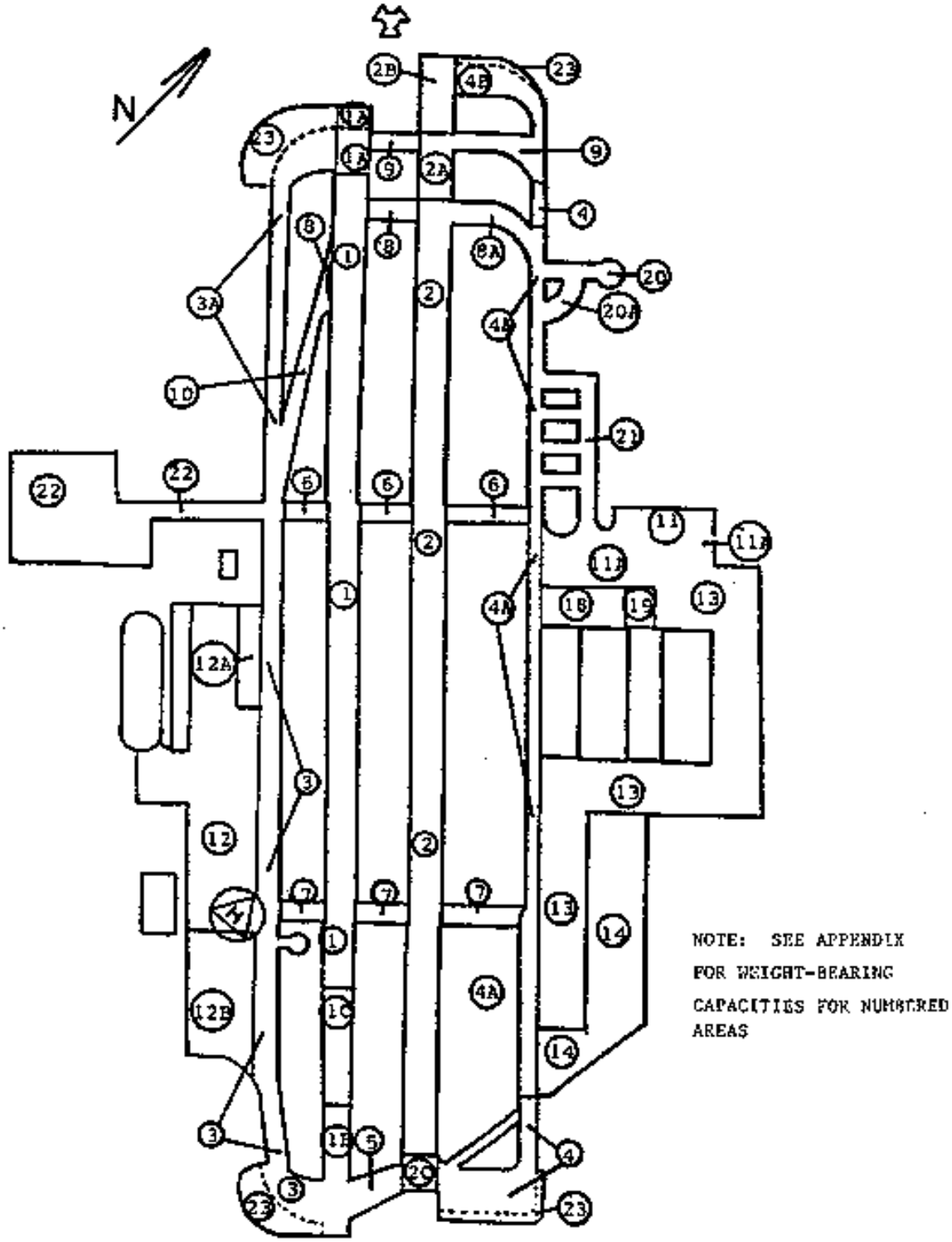
MOFFETT AIRFIELD VFR TRAFFIC PATTERNS



Appendix 4
VFR Holding Pattern



Appendix 5
Runway/Taxiway Weight-Bearing Information



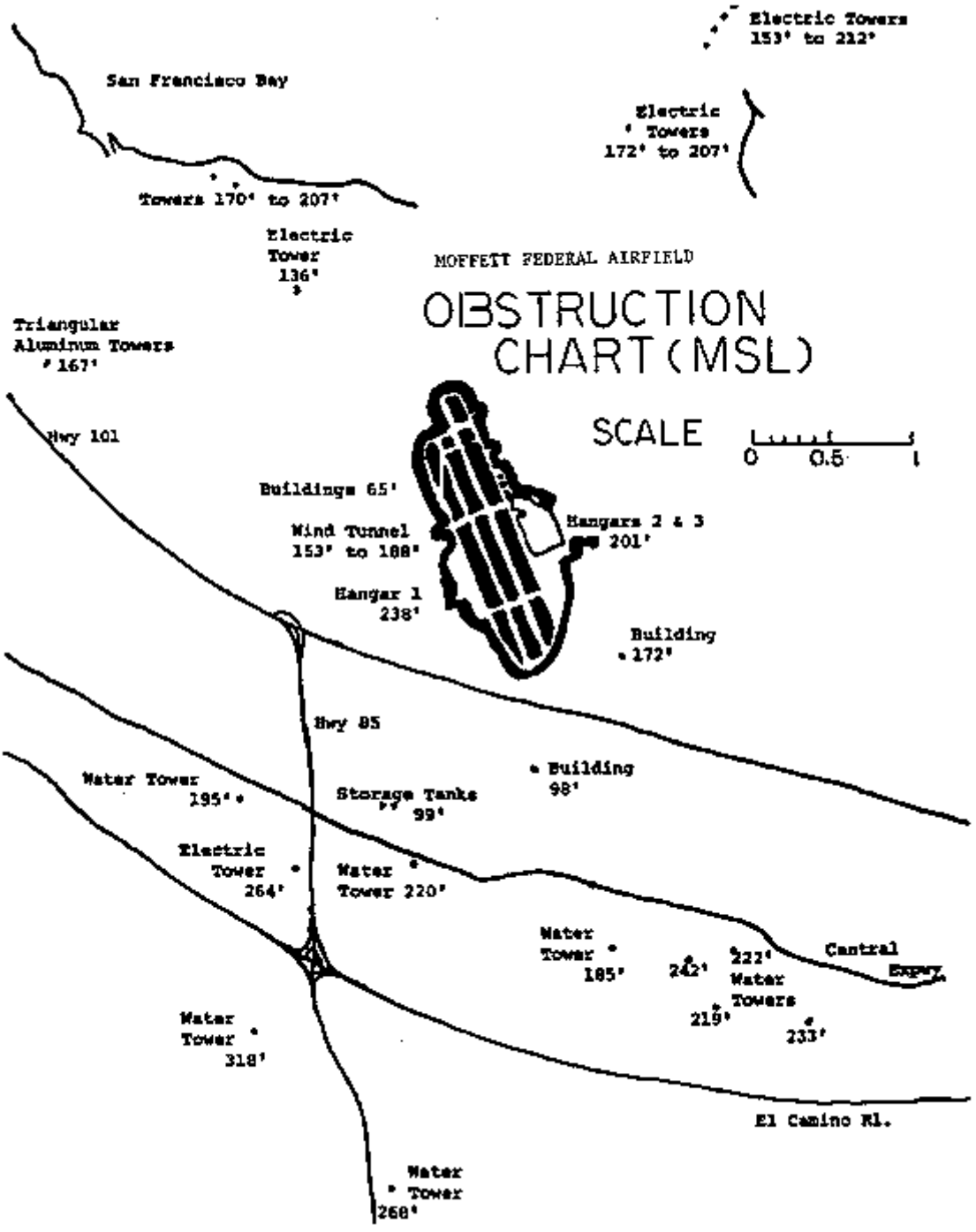
Runway/Taxiway Weight Bearing Table

(In Thousands of Pounds)

	Single Wheel		Dual Wheel	Dual Tandem	P3 Loading
AREA	400 PSI	150 PSI	150 PSI	150 PSI	Data
1	82	82	142	300	130
1A	82	102	170	308	155
1B	58	84	153	313	137
1C	76	94	161	310	145
2	51	64	110	253	91
2A	97	122	192	355	176
2B	93	118	178	332	160
2C	107	136	209	367	189
3	58	73	136	304	118
3A	82	102	170	308	155
4	93	117	191	349	175
4A	65	80	149	305	135
4B	93	118	178	332	160
5	107	136	209	367	189
6	50	62	108	247	89
7	53	66	110	250	95
8	108	137	210	369	190
8A	35	43	75	196	65
9	83	104	172	313	158
10	48	60	104	238	87
11	78	97	180	310	141

	Single Wheel		Dual Wheel	Dual Tandem	P3 Loading
AREA	400 PSI	150 PSI	150 PSI	150 PSI	Data
11A	102	128	208	384	175
12	84	107	166	308	150
12A	57	71	133	300	116
12B	83	104	177	341	145
13	36	45	78	208	64
14	84	106	160	299	144
15	82	101	173	333	143
16	93	117	191	349	175
17A	97	122	192	355	175
17B	112	142	210	371	204
18	100	126	206	376	188
19	50	62	108	247	89
20	97	122	192	355	175
20A	112	142	210	371	204
21	100	126	206	376	188
22	50	62	108	247	89
23	EROSION CONTROL ONLY, NOT FOR AIRCRAFT USE				

Appendix 6
Obstruction Chart



Appendix 7
Abbreviations and Acronyms

AGL	Altitude above Ground Level
AICUZ	Air Installation Compatible Use Zone
ALSF-1	Approach Lighting System with Sequenced Flashing Lights
AMSL	Altitude above Mean Sea Level
ANG	Air National Guard
AOB	Airfield Operations Board
ARC	Ames Research Center
ARFF	Aircraft Rescue and Fire Fighting
ARTCC	Oakland Air Traffic Control Center
ASOS	Automated Airport Observing System
ATA	Airport Traffic Area or Actual Time of Arrival
ATC	Air Traffic Control
ATCT	Air Traffic Control Tower
ATCALS	Air Traffic Control and Landing System
ATIS	Automatic Terminal Information Service
ATM	Air Traffic Manager
AWDS	Automated Weather Distribution System
CA ANG	California Air National Guard
CAT I	CAT = Category, I = Equipment capability as defined by FAAO 7110.65)
CFR	Code of Federal Regulations
CONUS	Continental United States
CTAF	Common Traffic Advisory
DESC	Defense Energy Supply Command
DFSC	Defense Fuels Supply Center
DME	Distance Measuring Equipment
DOD	Department of Defense
DOS	Department of State
DP	Departure Procedures
DSN	Defense Switching Network
DV	Distinguished Visitors

DZ	Drop Zone
ELT	Emergency Location Transmitter
ETD	Estimated Time of Departure
FAA	Federal Aviation Administration
FAAO	FAA Order
FAR	Federal Air Regulation
FBI	Federal Bureau of Investigation
FLIP	Flight Information Publication
FOD	Foreign Object Damage
HIRL	High Intensity Runway Lights
HQ	Head Quarters
IAW	In Accordance With
IC	Incident Commander
IFR	Instrument Flight Rules
ILS	Instrument Landing System
LOC	Localizer
MACA	Mid-Air Collision Avoidance
MAJCOM	Major Command
MHz	Megahertz
MSL	Mean Sea Level
NASA	National Aeronautics and Space Administration
NAVAID	Navigational Aid
NAVAIR	Naval Air Systems Command
NCT	Northern California Terminal Radar Approach Control
NMCC	National Military Command Center
NOTAM	Notice to Airman
NOTAMs	Notice to Airman (plural)
NUQ	Identifier for Moffett Federal Airfield
OG/CC	Operations Group Commander
OI	Operating Instructions
OSHA	Occupational Safety and Health Administration
PAPI	Precision Approach Path Indicator
PCAS	Primary Crash Alarm System
PIC	Pilot In Command
PM	Preventative Maintenance

POC	Point of Contact
PPR	Prior Permission Required
PSI	Per Square Inch
PTD	Pilot to Dispatcher
RA	Resident Agency
RCR	Runway Condition Reading
RF	Radio Frequency
RQW	129th Rescue Wing
RSRS	Reduced Same Runway Separation
SFO	San Francisco International Airport
SJC	San Jose International Airport
STAN/EVAL	Standardization Evaluation
TACAN	Tactical Air Navigation
TERPS	Terminal Instrument Procedures
TRACON	Terminal RAdar Approach CONtrol
UAS	Unmanned Aircraft System
UHF	Ultra High Frequency
USAF	United States Air Force
USAF/A30	USAF Air Staff Operations
VFR	Visual flight Rules
VHF	Very High Frequency
VTA	Valley Transportation Authority