

SUBJ: AIR TRAFFIC CONTROL

- 1. PURPOSE.** This change transmits revised pages to Order JO 7110.65S, Air Traffic Control, and the Briefing Guide.
- 2. DISTRIBUTION.** This change is distributed to select offices in Washington headquarters, regional offices, the William J. Hughes Technical Center, and the Mike Monroney Aeronautical Center; to all air traffic field facilities and international aviation field offices; and to interested aviation public.
- 3. EFFECTIVE DATE.** July 31, 2008.
- 4. EXPLANATION OF CHANGES.** See the Explanation of Changes attachment which has editorial corrections and changes submitted through normal procedures. The Briefing Guide lists only new or modified material, along with background information.
- 5. DISPOSITION OF TRANSMITTAL.** Retain this transmittal until superseded by a new basic order.
- 6. PAGE CONTROL CHART.** See the Page Control Chart attachment.



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Date: APR 28 2008

Air Traffic Control Explanation of Changes

**Direct questions through appropriate facility/service center office staff
to the Office of Primary Interest (OPI)**

a. 1-2-6. ABBREVIATIONS

Adds the following to Table 1-2-1:

Abbreviation	Meaning
CIC	Controller-in-Charge
FLM	Front-Line Manager

b. 3-9-4. TAXI INTO POSITION AND HOLD (TIPH)

This change provides detailed instructions for the facility Standard Operating Procedures directive. This change cancels and incorporates N JO 7110.480, Weather Restrictions for Taxi into Position and Hold (TIPH) and Safety Logic Systems, effective October 29, 2007.

c. 3-10-5. LANDING CLEARANCE

This change provides detailed instructions for the facility Standard Operating Procedures directive. This change cancels and incorporates N JO 7110.479, Landing Clearance, effective October 29, 2007.

d. 9-2-10. LAND-BASED AIR DEFENSE IDENTIFICATION ZONE (ADIZ) ATC PROCEDURES

This change establishes procedures and phraseology for providing security services in areas designated in support of the Department of Homeland Security (DHS), the Department of Defense (DOD), or other Federal security elements for national security. These areas will be established through the regulatory process or by Notices to Airmen (NOTAM) issued by the Administrator under Title 14, Code of Federal Regulations (CFR), Sections 91.139, Emergency air traffic rules, 91.141, Flight restrictions in the proximity of the Presidential and other parties, and 99.7, Special security instructions, and will specify that ATC security services are required. This change cancels and incorporates N JO 7110.477, Procedures for Providing Air Traffic Control (ATC) Security Services within Land-Based Air Defense Identification Zones (ADIZ), effective August 30, 2007.

e. Editorial/format changes were made where necessary. Revision bars were not used because of the insignificant nature of these changes.

PAGE CONTROL CHART**7110.65S CHG 1****July 31, 2008**

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As used in this order, references direct attention to an additional or supporting source of information such as FAA, NWS, and other agencies' orders, directives, notices, CFRs, and Advisory Circulars (ACs).

1-2-5. ANNOTATIONS

Revised, reprinted, or new pages are marked as follows:

a. The change number and the effective date are printed on each revised or additional page.

b. A page that does not require a change is reprinted in its original form.

c. Bold vertical lines in the margin of changed pages indicate the location of substantive revisions to the order. Bold vertical lines adjacent to the title of a chapter, section, or paragraph means that extensive changes have been made to that chapter, section, or paragraph.

d. Paragraphs/sections annotated with *EN ROUTE*, *OCEANIC*, or *TERMINAL* are only to be applied by the designated type facility. When they are not so designated, the paragraphs/sections apply to all types of facilities (en route, oceanic, and terminal).

e. The annotation, *USAF* for the U.S. Air Force, *USN* for the U.S. Navy, and *USA* for the U.S. Army denotes that the procedure immediately following the annotation applies only to the designated service.

REFERENCE-
FAAO JO 7110.65, Para 2-1-12, Military Procedures.

f. **WAKE TURBULENCE APPLICATION** inserted within a paragraph means that the remaining information in the paragraph requires the application of wake turbulence procedures.

g. The annotation *PHRASEOLOGY* denotes the prescribed words and/or phrases to be used in communications.

NOTE-
Controllers may, after first using the prescribed phraseology for a specific procedure, rephrase the message to ensure the content is understood. Good judgment shall be exercised when using nonstandard phraseology.

h. The annotation *EXAMPLE* provides a sample of the way the prescribed phraseology associated with the preceding paragraph(s) will be used. If the preceding paragraph(s) does (do) not include specific prescribed phraseology, the *EXAMPLE* merely denotes suggested words and/or phrases that may be used in communications.

NOTE-
The use of the exact text contained in an example not preceded with specific prescribed phraseology is not mandatory. However, the words and/or phrases are expected, to the extent practical, to approximate those used in the example.

1-2-6. ABBREVIATIONS

As used in this manual, the following abbreviations have the meanings indicated. (See TBL 1-2-1.)

TBL 1-2-1
FAA Order JO 7110.65 Abbreviations

Abbreviation	Meaning
AAR	Airport acceptance rate
AC	Advisory Circular
ACC	Area Control Center
ACD	ARTS Color Display
ACE-IDS	ASOS Controller Equipment- Information Display System
ACL	Aircraft list
ACLS	Automatic Carrier Landing System
ADC	Aerospace Defense Command
ADIZ	Air Defense Identification Zone (to be pronounced "AY DIZ")
ADS	Automatic Dependent Surveillance
ADS-B	Automatic Dependent Surveillance Broadcast
ADS-C	Automatic Dependent Surveillance Contract
AFP	Airspace Flow Program
AFSS	Automated Flight Service Station
AIDC	ATS Interfacility Data Communications
AIM	Aeronautical Information Manual
AIRMET	Airmen's meteorological information
ALERFA	Alert phase code (Alerting Service)
ALNOT	Alert notice
ALS	Approach Light System
ALTRV	Altitude reservation
AMASS	Airport Movement Area Safety System

Abbreviation	Meaning
AMB	Ambiguity-A disparity greater than 2 miles exists between the position declared for a target by ATIS and another facility's computer declared position during interfacility handoff
AMVER	Automated Mutual Assistance Vessel Rescue System
ANG	Air National Guard
APR	ATC preferred route
APREQ	Approval Request
ARINC	Aeronautical Radio Incorporated
ARIP	Air refueling initial point
ARSR	Air route surveillance radar
ARTCC	Air Route Traffic Control Center
ARTS	Automated Radar Terminal System
ASD	Aircraft Situation Display
ASDE	Airport surface detection equipment
ASDE-X	Airport Surface Detection Equipment System - Model X
ASF	Airport Stream Filters
ASOS	Automated Surface Observing System
ASR	Airport surveillance radar
ATC	Air traffic control
ATCAA	ATC assigned airspace
ATCSCC	David J. Hurley Air Traffic Control System Command Center
ATD	Along-Track Distance
ATIS	Automatic Terminal Information Service
ATO	Air Traffic Organization
ATO COO	Air Traffic Organization Chief Operating Officer
ATS	Air Traffic Service
AWOS	Automated Weather Observing System
BASE	Cloud base
CA	Conflict Alert
CARCAH	Chief, Aerial Reconnaissance Coordination, All Hurricanes
CARF	Central Altitude Reservation Function
CARTS	Common ARTS
CAT	Clear air turbulence
CDT	Controlled departure time
CENRAP	Center Radar ARTS Presentation
CEP	Central East Pacific
CERAP	Combined Center/RAPCON
CFR	Code of Federal Regulations
CIC	Controller-in-Charge

Abbreviation	Meaning
CNS	Continuous
CPDLC	Controller Pilot Data Link Communications
CPME	Calibration Performance Monitor Equipment
CTA	Control Area
CTRD	Certified Tower Radar Display
CVFP	Charted Visual Flight Procedure
CWA	Center Weather Advisory
DARC	Direct Access Radar Channel
DETRESFA	Distress Phase code (Alerting Service)
DF	Direction finder
DH	Decision height
DL	Departure List
DME	Distance measuring equipment compatible with TACAN
DOE	Department of Energy
DP	Instrument Departure Procedure
DR	Dead reckoning
DRT	Diversion recovery tool
DSR	Display System Replacement
DTAS	Digital Terminal Automation Systems
DTM	Digital Terrain Map
DVFR	Defense Visual Flight Rules
DVRSN	Diversion
EA	Electronic Attack
EAS	En Route Automation System
EDCT	Expect Departure Clearance Time
EFC	Expect further clearance
ELP	Emergency Landing Pattern
ELT	Emergency locator transmitter
EOS	End Service
EOVM	Emergency obstruction video map
ERIDS	En Route Information Display System
ETA	Estimated time of arrival
ETMS	Enhanced Traffic Management System
FAA	Federal Aviation Administration
FAAO	FAA Order
FANS	Future Air Navigation System
FDIO	Flight Data Input/Output
FDP	Flight data processing
FIR	Flight Information Region
FL	Flight level
FLIP	Flight Information Publication

Abbreviation	Meaning
FLM	Front-Line Manager
FLY	Fly or flying
FMS	Flight Management System
FMSF	Flight Management System Procedure
FSM	Flight Schedule Monitor
FSS	Flight Service Station
GCA	Ground controlled approach
GNSS	Global Navigation Satellite System
GPD	Graphics Plan Display
GPS	Global Positioning System
GS	Ground stop
HAR	High Altitude Redesign
HERT	Host Embedded Route Text
HF/RO	High Frequency/Radio Operator
HIRL	High intensity runway lights
IAFDOF	Inappropriate Altitude for Direction of Flight
ICAO	International Civil Aviation Organization
IDENT	Aircraft identification
IDS	Information Display System
IFR	Instrument flight rules
IFSS	International Flight Service Station
ILS	Instrument Landing System
INCERFA	Uncertainty Phase code (Alerting Service)
INREQ	Information request
INS	Inertial Navigation System
IR	IFR military training route
IRU	Inertial Reference Unit
ITWS	Integrated Terminal Weather System
JATO	Jet assisted takeoff
LAHSO	Land and Hold Short Operations
LOA	Letter of Agreement
LLWAS	Low Level Wind Shear Alert System
LLWAS NE	Low Level Wind Shear Alert System Network Expansion
LLWAS-RS	Low Level Wind Shear Alert System Relocation/Sustainment
LLWS	Low Level Wind Shear
L/MF	Low/medium frequency
LORAN	Long Range Navigation System
Mach	Mach number
MALS	Medium Intensity Approach Light System
MALSR	Medium Approach Light System with runway alignment indicator lights
MAP	Missed approach point

Abbreviation	Meaning
MARSA	Military authority assumes responsibility for separation of aircraft
MCA	Minimum crossing altitude
MCI	Mode C Intruder
MDA	Minimum descent altitude
MDM	Main display monitor
MEA	Minimum en route (IFR) altitude
MEARTS	Micro En Route Automated Radar Tracking System
METAR	Aviation Routine Weather Report
MIA	Minimum IFR altitude
MIAWS	Medium Intensity Airport Weather System
MIRL	Medium intensity runway lights
MLS	Microwave Landing System
MNPS	Minimum Navigation Performance Specification
MNT	Mach Number Technique
MOA	Military operations area
MOCA	Minimum obstruction clearance altitude
MRA	Minimum reception altitude
MSAW	Minimum Safe Altitude Warning
MSL	Mean sea level
MTI	Moving target indicator
MTR	Military training route
MVA	Minimum vectoring altitude
NADIN	National Airspace Data Interchange Network
NAR	National Automation Request
NAS	National Airspace System
NAT	ICAO North Atlantic Region
NBCAP	National Beacon Code Allocation Plan
NDB	Nondirectional radio beacon
NHOP	National Hurricane Operations Plan
NIDS	National Institute for Discovery Sciences
NM	Nautical mile
NOAA	National Oceanic and Atmospheric Administration
NOPAC	North Pacific
NORAD	North American Aerospace Defense Command
NOS	National Ocean Service
NOTAM	Notice to Airmen
NRP	North American Route Program
NRR	Nonrestrictive Route
NRS	Navigation Reference System

Abbreviation	Meaning
NTZ	No transgression zone
NWS	National Weather Service
NWSOP	National Winter Storm Operations Plan
ODALS	Omnidirectional Approach Lighting System
ODP	Obstacle Departure Procedure
OID	Operator Interface Device
ONER	Oceanic Navigational Error Report
OS	Operations Supervisor
OTR	Oceanic transition route
PAPI	Precision Approach Path Indicators
PAR	Precision approach radar
PAR	Preferred arrival route
PBCT	Proposed boundary crossing time
P/CG	Pilot/Controller Glossary
PDAR	Preferential departure arrival route
PDC	Pre-Departure Clearance
PDR	Preferential departure route
PIDP	Programmable indicator data processor
PPI	Plan position indicator
PTP	Point-to-point
PVD	Plan view display
RA	Radar Associate
RAIL	Runway alignment indicator lights
RAPCON . . .	Radar Approach Control Facility (USAF)
RATCF	Radar Air Traffic Control Facility (USN)
RBS	Radar bomb scoring
RCC	Rescue Coordination Center
RCLS	Runway Centerline System
RCR	Runway condition reading
RDP	Radar data processing
RE	Recent (used to qualify weather phenomena such as rain, e.g. recent rain = RERA)
REIL	Runway end identifier lights
RNAV	Area navigation
RNP	Required Navigation Performance
RTQC	Real-Time Quality Control
RVR	Runway visual range
RVSM	Reduced Vertical Separation Minimum
RVV	Runway visibility value
SAA	Special Activity Airspace
SAR	Search and rescue

Abbreviation	Meaning
SATCOM . . .	Satellite Communication
SELCAL	Selective Calling System
SFA	Single frequency approach
SFO	Simulated flameout
SID	Standard Instrument Departure
SIGMET	Significant meteorological information
SPA	Special Posting Area
SPECI	Nonroutine (Special) Aviation Weather Report
STAR	Standard terminal arrival
STARS	Standard Terminal Automation Replacement System
STMC	Supervisory Traffic Management Coordinator
STMCI	Supervisory Traffic Management Coordinator-in-charge
STOL	Short takeoff and landing
SURPIC	Surface Picture
SVFR	Special Visual Flight Rules
TAA	Terminal arrival area
TAS	Terminal Automation Systems
TACAN	TACAN UHF navigational aid (omnidirectional course and distance information)
TAWS	Terrain Awareness Warning System
TCAS	Traffic Alert and Collision Avoidance System
TCDD	Tower cab digital display
TDLS	Terminal Data Link System
TDW	Tower display workstation
TDWR	Terminal Doppler Weather Radar
TDZL	Touchdown Zone Light System
TMC	Traffic Management Coordinator
TMU	Traffic Management Unit
TRACON . . .	Terminal Radar Approach Control
TRSA	Terminal radar service area
UFO	Unidentified flying object
UHF	Ultra high frequency
URET	User request evaluation tool
USA	United States Army
USAF	United States Air Force
USN	United States Navy
UTC	Coordinated universal time
UTM	Unsuccessful transmission message
UUA	Urgent pilot weather report

Abbreviation	Meaning
VFR	Visual flight rules
VHF	Very high frequency
VMC	Visual meteorological conditions
VNAV	Vertical Navigation
VOR	VHF navigational aid (omnidirectional course information)
VOR/DME ..	Collocated VOR and DME navigational aids (VHF course and UHF distance information)
VORTAC ...	Collocated VOR and TACAN navigation aids (VHF and UHF course and UHF distance information)
VR	VFR military training route
VSCS	Voice Switching and Control System
WAAS	Wide Area Augmentation System
WARP	Weather and Radar Processing
WATRS	West Atlantic Route System
WSO	Weather Service Office
WSP	Weather System Processor
WST	Convective SIGMET

j. Provide maximum assistance to expedite the movement of interceptor aircraft on active air defense missions until the unknown aircraft is identified.

k. Expedite movement of Special Air Mission aircraft when SCOOT is indicated in the remarks section of the flight plan or in air/ground communications.

NOTE-

The term “SCOOT” will not be part of the call sign but may be used when the aircraft is airborne to indicate a request for special handling.

REFERENCE-

*FAAO JO 7110.65, Para 9-2-11, Law Enforcement Operations by Civil and Military Organizations.
FAAO JO 7610.4, Para 12-7-1, Applications.*

l. When requested, provide priority handling to TEAL and NOAA mission aircraft.

NOTE-

Priority handling may be requested by the pilot, or via telephone from CARCAH or the 53rd Weather Reconnaissance Squadron (53WRS) operations center personnel, or in the remarks section of the flight plan.

REFERENCE-

FAAO JO 7110.65, Para 9-2-18, Weather Reconnaissance Flights.

m. IFR aircraft shall have priority over SVFR aircraft.

REFERENCE-

FAAO JO 7110.65, Chapter 7, Section 5, Special VFR (SVFR).

n. Providing priority and special handling to expedite the movement of OPEN SKIES observation and demonstration flights.

NOTE-

An OPEN SKIES aircraft has priority over all “regular” air traffic. “Regular” is defined as all aircraft traffic other than:

- 1. Emergencies.*
- 2. Aircraft directly involved in presidential movement.*
- 3. Forces or activities in actual combat.*
- 4. Lifeguard, MED EVAC, AIR EVAC and active SAR missions.*

REFERENCE-

*FAAO JO 7110.65, Para 9-2-21, OPEN SKIES Treaty Aircraft.
FAAO JO 7210.3, Para 5-3-7, OPEN SKIES Treaty Aircraft.
Treaty on OPEN SKIES, Treaty Document, 102-37.*

o. Aircraft operating under the North American Route Program (NRP) and in airspace identified in the High Altitude Redesign (HAR) program, are not subject to route limiting restrictions (e.g., published preferred IFR routes, letter of agreement requirements, standard operating procedures).

REFERENCE-

*FAAO JO 7110.65, Para 2-3-2, En Route Data Entries.
FAAO JO 7110.65, Para 2-2-15, North American Route Program (NRP) Information.
FAAO JO 7110.65, Para 4-2-5, Route or Altitude Amendments.
FAAO JO 7210.3, Chapter 17, Section 15, North American Route Program.*

p. If able, provide priority handling to diverted flights. Priority handling may be requested via use of “DVRSN” in the remarks section of the flight plan or by the flight being placed on the Diversion Recovery Tool (DRT).

REFERENCE-

FAAO JO 7210.3, Para 17-4-5, Diversion Recovery.

2-1-5. EXPEDITIOUS COMPLIANCE

a. Use the word “immediately” only when expeditious compliance is required to avoid an imminent situation.

b. Use the word “expedite” only when prompt compliance is required to avoid the development of an imminent situation. If an “expedite” climb or descent clearance is issued by ATC, and subsequently the altitude to maintain is changed or restated without an expedite instruction, the expedite instruction is canceled.

c. In either case, if time permits, include the reason for this action.

2-1-6. SAFETY ALERT

Issue a safety alert to an aircraft if you are aware the aircraft is in a position/altitude which, in your judgment, places it in unsafe proximity to terrain, obstructions, or other aircraft. Once the pilot informs you action is being taken to resolve the situation, you may discontinue the issuance of further alerts. Do not assume that because someone else has responsibility for the aircraft that the unsafe situation has been observed and the safety alert issued; inform the appropriate controller.

NOTE-

1. *The issuance of a safety alert is a first priority (see para 2-1-2, Duty Priority) once the controller observes and recognizes a situation of unsafe aircraft proximity to terrain, obstacles, or other aircraft. Conditions, such as workload, traffic volume, the quality/limitations of the radar system, and the available lead time to react are factors in determining whether it is reasonable for the controller to observe and recognize such situations. While a controller cannot see immediately the development of every situation where a safety alert must be issued, the*

controller must remain vigilant for such situations and issue a safety alert when the situation is recognized.

2. *Recognition of situations of unsafe proximity may result from MSAW/E-MSAW/LAAS, automatic altitude readouts, Conflict/Mode C Intruder Alert, observations on a PAR scope, or pilot reports.*

3. *Once the alert is issued, it is solely the pilot's prerogative to determine what course of action, if any, will be taken.*

a. *Terrain/Obstruction Alert. Immediately issue/initiate an alert to an aircraft if you are aware the aircraft is at an altitude which, in your judgment, places it in unsafe proximity to terrain/obstructions. Issue the alert as follows:*

PHRASEOLOGY-

LOW ALTITUDE ALERT (call sign),

CHECK YOUR ALTITUDE IMMEDIATELY.

THE (as appropriate) MEA/MVA/MOCA/MIA IN YOUR AREA IS (altitude),

or if an aircraft is past the final approach fix (nonprecision approach),

or the outer marker,

or the fix used in lieu of the outer marker (precision approach),

and, if known, issue

THE (as appropriate) MDA/DH IS (altitude).

b. *Aircraft Conflict/Mode C Intruder Alert. Immediately issue/initiate an alert to an aircraft if you are aware of another aircraft at an altitude which you believe places them in unsafe proximity. If feasible, offer the pilot an alternate course of action.*

c. *When an alternate course of action is given, end the transmission with the word "immediately."*

PHRASEOLOGY-

TRAFFIC ALERT (call sign) (position of aircraft) ADVISE YOU TURN LEFT/RIGHT (heading),

and/or

CLIMB/DESCEND (specific altitude if appropriate) IMMEDIATELY.

REFERENCE-

FAAO JO 7110.65, Para 5-14-1, Conflict Alert (CA) and Mode C Intruder (MCI) Alert.

FAAO JO 7110.65, Para 5-14-2, En Route Minimum Safe Altitude Warning (E-MSAW).

FAAO JO 7110.65, Para 5-15-6, CA/MCI.

FAAO JO 7110.65, Para 5-2-23, Altitude Filters.

2-1-7. INFLIGHT EQUIPMENT MALFUNCTIONS

a. *When a pilot reports an inflight equipment malfunction, determine the nature and extent of any special handling desired.*

NOTE-

Inflight equipment malfunctions include partial or complete failure of equipment, which may affect either safety, separation standards, and/or the ability of the flight to proceed under IFR, or in Reduced Vertical Separation Minimum (RVSM) airspace, in the ATC system. Controllers may expect reports from pilots regarding VOR, TACAN, ADF, GPS, RVSM capability, or low frequency navigation receivers, impairment of air-ground communications capability, or other equipment deemed appropriate by the pilot (e.g., airborne weather radar). Pilots should communicate the nature and extent of any assistance desired from ATC.

b. *Provide the maximum assistance possible consistent with equipment, workload, and any special handling requested.*

c. *Relay to other controllers or facilities who will subsequently handle the aircraft, all pertinent details concerning the aircraft and any special handling required or being provided.*

2-1-8. MINIMUM FUEL

If an aircraft declares a state of "minimum fuel," inform any facility to whom control jurisdiction is transferred of the minimum fuel problem and be alert for any occurrence which might delay the aircraft en route.

NOTE-

Use of the term "minimum fuel" indicates recognition by a pilot that his/her fuel supply has reached a state where, upon reaching destination, he/she cannot accept any undue delay. This is not an emergency situation but merely an advisory that indicates an emergency situation is possible should any undue delay occur. A minimum fuel advisory does not imply a need for traffic priority. Common sense and good judgment will determine the extent of assistance to be given in minimum fuel situations. If, at any time, the remaining usable fuel supply suggests the need for traffic priority to ensure a safe landing, the pilot should declare an emergency and report fuel remaining in minutes.

(d) Correction messages.

2-2-15. NORTH AMERICAN ROUTE PROGRAM (NRP) INFORMATION

a. "NRP" shall be retained in the remarks section of the flight plan if the aircraft is moved due to weather, traffic, or other tactical reasons.

NOTE-

Every effort should be made to ensure the aircraft is returned to the original filed flight plan/altitude as soon as conditions warrant.

b. If the route of flight is altered due to a pilot request, "NRP" shall be removed from the remarks section of the flight plan.

c. "NRP" shall not be entered in the remarks section of a flight plan, unless prior coordination is accomplished with the ATCSCC or as prescribed by international NRP flight operations procedures.

d. The en route facility within which an international flight entering the conterminous U.S. requests to participate in the NRP shall enter "NRP" in the remarks section of the flight plan.

REFERENCE-

FAAO JO 7110.65, Para 2-1-4, Operational Priority.

FAAO JO 7110.65, Para 2-3-2, En Route Data Entries.

FAAO JO 7110.65, Para 4-2-5, Route or Altitude Amendments.

FAAO JO 7210.3, Chapter 17, Section 15, North American Route Program.

d. Air traffic managers at automated terminal radar facilities may waive the requirement to use flight progress strips provided:

1. Backup systems such as multiple radar sites/systems or single site radars with CENRAP are utilized.

2. Local procedures are documented in a facility directive. These procedures should include but not be limited to:

- (a) Departure areas and/or procedures.
- (b) Arrival procedures.
- (c) Overflight handling procedures.
- (d) Transition from radar to nonradar.
- (e) Transition from ARTS to non-ARTS.
- (f) Transition from ASR to CENRAP.
- (g) Transition to or from ESL.

3. No misunderstanding will occur as a result of no strip usage.

4. Unused flight progress strips, facility developed forms and/or blank notepads shall be provided for controller use.

5. Facilities shall revert to flight progress strip usage if backup systems referred to in subpara d1 are not available.

e. Air traffic managers at FDIO locations may authorize reduced lateral spacing between fields so as to print all FDIO data to the left of the strip perforation. When using FAA Form 7230-7.2, all items will retain the same relationship to each other as they do when the full length strip (FAA Form 7230-7.1) is used.

2-3-5. AIRCRAFT IDENTITY

Indicate aircraft identity by one of the following using combinations not to exceed seven alphanumeric characters:

a. Civil aircraft, including air-carrier aircraft letter-digit registration number including the letter "T" prefix for air taxi aircraft, the letter "L" for lifeguard aircraft, 3-letter aircraft company designation or specified in FAAO JO 7340.2, Contractions, followed by the trip or flight number. Use the

operating air carrier's company name in identifying equipment interchange flights.

EXAMPLE-
 "N12345."
 "TN5552Q."
 "AA1192."
 "LN751B."

NOTE-
 The letter "L" is not to be used for air carrier/air taxi lifeguard aircraft.

b. Military Aircraft.

1. Prefixes indicating branch of service and/or type of mission followed by the last 5 digits of the serial number (the last 4 digits for CFC and CTG). (See TBL 2-3-6 and TBL 2-3-7.)

2. Pronounceable words of 3, 4, 5, and 6 letters followed by a 4-, 3-, 2-, or 1-digit number.

EXAMPLE-
 "SAMP Three One Six."

3. Assigned double-letter 2-digit flight number.

4. Navy or Marine fleet and training command aircraft, one of the following:

(a) The service prefix and 2 letters (use phonetic alphabet equivalent) followed by 2 or 3 digits.

**TBL 2-3-6
 Branch of Service Prefix**

Prefix	Branch
A	U.S. Air Force
C	U.S. Coast Guard
G	Air or Army National Guard
R	U.S. Army
VM	U.S. Marine Corps
VV	U.S. Navy
CFC	Canadian Forces
CTG	Canadian Coast Guard

**TBL 2-3-7
 Military Mission Prefix**

Prefix	Mission
E	Medical Air Evacuation
F	Flight Check
L	LOGAIR (USAF Contract)
RCH	AMC (Air Mobility Command)
S	Special Air Mission

(b) The service prefix and a digit and a letter (use phonetic alphabet equivalent) followed by 2 or 3 digits.

c. Special-use. Approved special-use identifiers.

2-3-6. AIRCRAFT TYPE

Use the approved codes listed in Appendix A through Appendix C to indicate aircraft type.

2-3-7. USAF/USN UNDERGRADUATE PILOTS

To identify aircraft piloted by solo USAF/USN undergraduate student pilots (who may occasionally request revised clearances because they normally are restricted to flight in VFR conditions), the aircraft identification in the flight plan shall include the letter “Z” as a suffix. Do not use this suffix, however, in ground-to-air communication.

NOTE-

USAF solo students who have passed an instrument certification check may penetrate cloud layers in climb or descent only. Requests for revised clearances to avoid clouds in level flight can still be expected. This does not change the requirement to use the letter “Z” as a suffix to the aircraft identification.

REFERENCE-

*FAAO JO 7110.65, Para 2-4-20, Aircraft Identification.
FAAO JO 7610.4, Chapter 12, Section 10, USAF Undergraduate Flying Training (UFT)/Pilot Instructor Training (PIT)/Introduction To Fighter Fundamentals.*

2-3-8. AIRCRAFT EQUIPMENT SUFFIX

a. Indicate, for both VFR and IFR operations, the aircraft’s radar transponder, DME, or navigation capability by adding the appropriate symbol, preceded by a slant. (See TBL 2-3-8.)

b. When forwarding this information, state the aircraft type followed by the word “slant” and the appropriate phonetic letter equivalent of the suffix.

EXAMPLE-

“Cessna Three-ten slant Tango.”

“A-Ten slant November.”

“F-Sixteen slant Papa.”

“Seven-sixty-seven slant Golf.”

c. Utilize aircraft equipment suffix /H to indicate “RVSM-capable, no transponder.”

NOTE-

/H is for ATC use only. Users are not authorized to file this suffix.

2-3-9. CLEARANCE STATUS

Use an appropriate clearance symbol followed by a dash (-) and other pertinent information to clearly show the clearance status of an aircraft. To indicate delay status use:

a. The symbol “H” at the clearance limit when holding instructions have been included in the aircraft’s original clearance. Show detailed holding information following the dash when holding differs from the established pattern for the fix; i.e., turns, leg lengths, etc.

b. The symbols “F” or “O” to indicate the clearance limit when a delay is not anticipated.

2-3-10. CONTROL SYMBOLOGY

Use authorized control and clearance symbols or abbreviations for recording clearances, reports, and instructions. Control status of aircraft must always be current. You may use:

a. Plain language markings when it will aid in understanding information.

b. Locally approved identifiers. Use these only within your facility and not on teletypewriter or interphone circuits.

c. Plain sheets of paper or locally prepared forms to record information when flight progress strips are not used. (See TBL 2-3-9 and TBL 2-3-10.)

d. Control Information Symbols.
(See FIG 2-3-7 and FIG 2-3-8.)

REFERENCE-

FAAO JO 7110.65, Para 4-5-3, Exceptions.

Section 9. Departure Procedures and Separation

3-9-1. DEPARTURE INFORMATION

Provide current departure information, as appropriate, to departing aircraft.

a. Departure information contained in the ATIS broadcast may be omitted if the pilot states the appropriate ATIS code.

b. Issue departure information by including the following:

1. Runway in use. (May be omitted if pilot states “have the numbers.”)

2. Surface wind from direct readout dial, wind shear detection system, or automated weather observing system information display. (May be omitted if pilot states “have the numbers.”)

3. Altimeter setting. (May be omitted if pilot states “have the numbers.”)

REFERENCE-
FAAO JO 7110.65, Para 2-7-1, Current Settings.

c. Time, when requested.

d. Issue the official ceiling and visibility, when available, to a departing aircraft before takeoff as follows:

1. To a VFR aircraft when weather is below VFR conditions.

2. To an IFR aircraft when weather is below VFR conditions or highest takeoff minima, whichever is greater.

NOTE-
Standard takeoff minimums are published in 14 CFR Section 91.175(f). Takeoff minima other than standard are prescribed for specific airports/runways and published in a tabular form supplement to the FAA instrument approach procedures charts and appropriate FAA Forms 8260.

e. Taxi information, as necessary. You need not issue taxi route information unless the pilot specifically requests it.

f. **USAF NOT APPLICABLE.** An advisory to “check density altitude” when appropriate.

REFERENCE-
FAAO JO 7210.3, Para 2-10-6, Broadcast Density Altitude Advisory.

g. Issue braking action for the runway in use as received from pilots or the airport management when Braking Action Advisories are in effect.

REFERENCE-
FAAO JO 7110.65, Para 2-7-2, Altimeter Setting Issuance Below Lowest Usable FL.
FAAO JO 7110.65, Para 3-1-8, Low Level Wind Shear/Microburst Advisories.
FAAO JO 7110.65, Para 3-3-5, Braking Action Advisories.
P/CG Term- Braking Action Advisories.

3-9-2. DEPARTURE DELAY INFORMATION

USA/USAF/USN NOT APPLICABLE

When gate-hold procedures are in effect, issue the following departure delay information as appropriate:

REFERENCE-
FAAO JO 7210.3, Para 10-4-3, Gate Hold Procedures.

a. Advise departing aircraft the time at which the pilot can expect to receive engine startup advisory.

PHRASEOLOGY-
GATE HOLD PROCEDURES ARE IN EFFECT. ALL AIRCRAFT CONTACT (position) ON (frequency) FOR ENGINE START TIME. EXPECT ENGINE START/TAXI (time).

b. Advise departing aircraft when to start engines and/or to advise when ready to taxi.

PHRASEOLOGY-
START ENGINES, ADVISE WHEN READY TO TAXI,

or

ADVISE WHEN READY TO TAXI.

c. If the pilot requests to hold in a delay absorbing area, the request shall be approved if space and traffic conditions permit.

d. Advise all aircraft on GC/FD frequency upon termination of gate hold procedures.

PHRASEOLOGY-
GATE HOLD PROCEDURES NO LONGER IN EFFECT.

3-9-3. DEPARTURE CONTROL INSTRUCTIONS

Inform departing IFR, SVFR, VFR aircraft receiving radar service, and TRSA VFR aircraft of the following:

a. Before takeoff.

1. Issue the appropriate departure control frequency and beacon code. The departure control frequency may be omitted if a SID has been or will be assigned and the departure control frequency is published on the SID.

PHRASEOLOGY-

DEPARTURE FREQUENCY (frequency), SQUAWK (code).

2. Inform all departing IFR military turboprop/turbojet aircraft (except transport and cargo types) to change to departure control frequency. If the local controller has departure frequency override, transmit urgent instructions on this frequency. If the override capability does not exist, transmit urgent instructions on the emergency frequency.

PHRASEOLOGY-

CHANGE TO DEPARTURE.

3. **USAF.** USAF control towers are authorized to inform all departing IFR military transport/cargo type aircraft operating in formation flight to change to departure control frequency before takeoff.

b. After takeoff.

1. When the aircraft is about 1/2 mile beyond the runway end, instruct civil aircraft, and military transport, and cargo types to contact departure control, provided further communication with you is not required.

2. Do not request departing military turboprop/turbojet aircraft (except transport and cargo types) to make radio frequency or radar beacon changes before the aircraft reaches 2,500 feet above the surface.

REFERENCE-

FAAO JO 7110.65, Para 7-2-1, Visual Separation.

3-9-4. TAXI INTO POSITION AND HOLD (TIPH)

a. The intent of TIPH is to position aircraft for an imminent departure. Authorize an aircraft to taxi into position and hold, except as restricted in subpara g, when takeoff clearance cannot be issued because of

traffic. Issue traffic information to any aircraft so authorized. Traffic information may be omitted when the traffic is another aircraft which has landed on or is taking off the same runway and is clearly visible to the holding aircraft. Do not use conditional phrases such as “behind landing traffic” or “after the departing aircraft.”

b. USN NOT APPLICABLE. First state the runway number followed by the taxi into position clearance when more than one runway is active.

PHRASEOLOGY-

RUNWAY (number), POSITION AND HOLD.

Or, when only one runway is active:

POSITION AND HOLD.

c. Do not issue a clearance to an aircraft requesting a full-stop, touch-and-go, stop-and-go, option, or unrestricted low approach on the same runway with an aircraft that is holding in position, taxiing into position or has been cleared to taxi into position and hold until the aircraft in position starts takeoff roll. Do not clear an aircraft to TIPH if an aircraft has been cleared to land, touch-and-go, stop-and-go, option or unrestricted low approach on the same runway.

PHRASEOLOGY-

RUNWAY (number), CONTINUE, TRAFFIC HOLDING IN POSITION,

or

(when only one runway is active): CONTINUE, TRAFFIC HOLDING IN POSITION.

EXAMPLE-

“American 528, runway two three, continue, traffic holding in position.”

or

(when only one runway is active): “American 528, continue, traffic holding in position.”

1. Landing clearance must be withheld if the safety logic system is inoperative or in limited configuration or conditions are less than reported ceiling 800 feet or visibility less than 2 miles.

2. Facilities without the safety logic system and facilities with the safety logic system in limited configuration must withhold landing clearance until the aircraft in position starts takeoff roll.

REFERENCE-

FAAO JO 7110.65, Para 3-10-5, Landing Clearance.

“Read back hold short instructions.”

2. “Runway three six cleared to land, hold short of runway three three, traffic, (type aircraft) departing runway three three.”

“Traffic, (type aircraft) landing runway three six will hold short of the intersection, runway three three cleared for takeoff.”

4. Issue the measured distance from the landing threshold to the hold short point rounded “down” to the nearest 50-foot increment if requested by either aircraft.

EXAMPLE-

“Five thousand fifty feet available.”

5. The conditions in subparas b2, 3, and 4 shall be met in sufficient time for the pilots to take other action, if desired, and no later than the time landing clearance is issued.

6. Land and Hold Short runways must be free of any contamination as described in the current LAHSO directive, with no reports that braking action is less than good.

7. There is no tailwind for the landing aircraft restricted to hold short of the intersection. The wind may be described as “calm” when appropriate.

REFERENCE-

FAAO JO 7110.65, Para 2-6-5, Calm Wind Conditions.

8. The aircraft required landing distances are listed in the current LAHSO directive.

9. STOL aircraft operations are in accordance with a letter of agreement with the aircraft operator/pilot or the pilot confirms that it is a STOL aircraft.

WAKE TURBULENCE APPLICATION

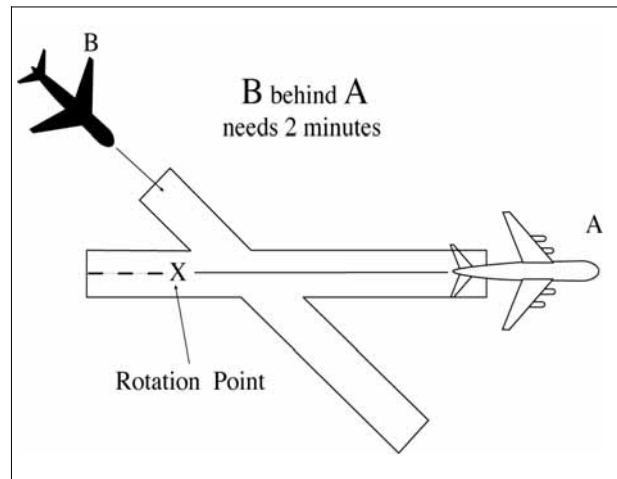
c. Separate IFR/VFR aircraft landing behind a departing heavy jet/B757 on a crossing runway if the arrival will fly through the airborne path of the departure- 2 minutes or the appropriate radar separation minima. (See FIG 3-10-10.)

d. Issue wake turbulence cautionary advisories, the position, altitude if known, and direction of flight of the heavy jet/B757 to:

REFERENCE-

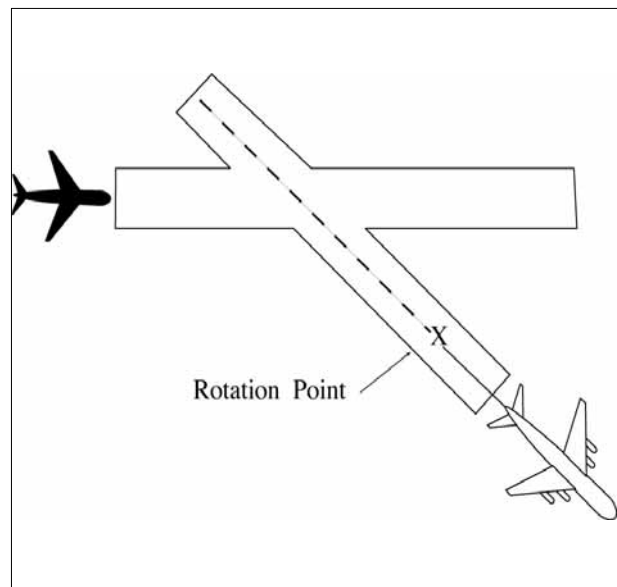
AC 90-23, Aircraft Wake Turbulence, Para 12, Pilot Responsibility.

**FIG 3-10-10
Intersecting Runway Separation**



1. IFR/VFR aircraft landing on crossing runways behind a departing heavy jet/B757; if the arrival flight path will cross the takeoff path behind the heavy jet/B757 and behind the heavy jet/B757 rotation point. (See FIG 3-10-11.)

**FIG 3-10-11
Intersecting Runway Separation**

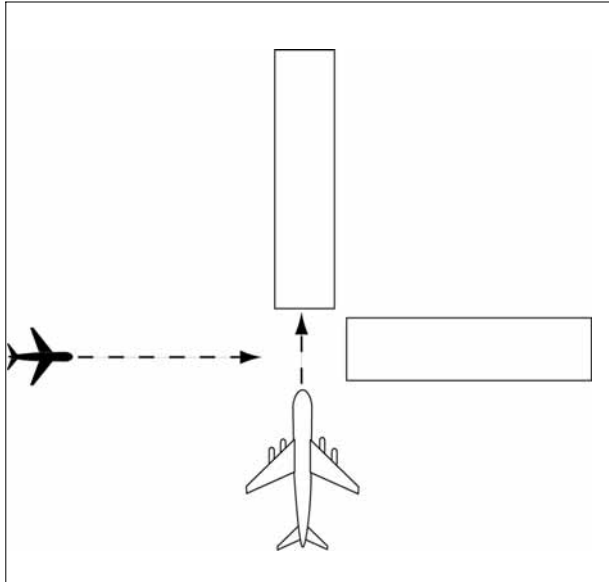


EXAMPLE-

“Runway niner cleared to land. Caution wake turbulence, heavy C-One Forty One departing runway one five.”

2. VFR aircraft landing on a crossing runway behind an arriving heavy jet/B757 if the arrival flight path will cross. (See FIG 3-10-12.)

**FIG 3-10-12
Intersecting Runway Separation**



EXAMPLE-
“Runway niner cleared to land. Caution wake turbulence, Boeing Seven Fifty Seven landing runway three six.”

REFERENCE-
FAAO JO 7110.65, Para 7-4-4, Approaches to Multiple Runways.

3-10-5. LANDING CLEARANCE

a. Issue landing clearance. Restate the landing runway whenever more than one runway is active, or an instrument approach is being conducted to a closed runway.

PHRASEOLOGY-
CLEARED TO LAND,

or

RUNWAY (designator) CLEARED TO LAND.

b. Do not clear an aircraft for a full-stop, touch-and-go, stop-and-go, option, or unrestricted low approach when a departing aircraft has been instructed to taxi into position and hold, is taxiing into position, or is holding in position on the same runway. The landing clearance may be issued once the aircraft in position has started takeoff roll.

c. “USN NOT APPLICABLE.” Inform the closest aircraft that is requesting a full-stop, touch-and-go, stop-and-go, option, or unrestricted low approaches when there is traffic authorized to taxi into position and hold on the same runway.

EXAMPLE-
“Delta One, continue, traffic holding in position.”

or

“Delta One, runway one eight, continue, traffic holding in position.”

d. During same runway operations, while TIPH is being applied, landing clearance must be withheld if the safety logic system to that runway is inoperative or in limited configuration or conditions are less than reported ceiling 800 feet or visibility less than 2 miles.

EXAMPLE-
If the safety logic system is operating in full core alert runway configuration:

“Delta One, cleared to land. Traffic holding in position.”

or

“Delta One, runway one eight, cleared to land. Traffic holding in position.”

e. USA/USN. Issue surface wind when clearing an aircraft to land, touch-and-go, stop-and-go, low approach, or the option. Restate the landing runway whenever there is a possibility of a conflict with another aircraft which is using or is planning to use another runway.

PHRASEOLOGY-
WIND (surface wind direction and velocity), CLEARED TO LAND,

or

WIND (surface wind direction and velocity), RUNWAY (designator) CLEARED TO LAND.

NOTE-
A clearance to land means that appropriate separation on the landing runway will be ensured. A landing clearance does not relieve the pilot from compliance with any previously issued restriction.

Section 2. Clearances

4-2-1. CLEARANCE ITEMS

Issue the following clearance items, as appropriate, in the order listed below:

- a. Aircraft identification.
- b. Clearance limit.
- c. Standard Instrument Departure (SID).
- d. Route of flight including PDR/PDAR/PAR when applied.
- e. Altitude data in the order flown.
- f. Mach number, if applicable.
- g. *USAF*. When issuing a clearance to an airborne aircraft containing an altitude assignment, do not include more than one of the following in the same transmission:
 1. Frequency change.
 2. Transponder change.
 3. Heading.
 4. Altimeter setting.
 5. Traffic information containing an altitude.
- h. Holding instructions.
- i. Any special information.
- j. Frequency and beacon code information.

REFERENCE-
FAAO JO 7110.65, Para 4-2-8, IFR-VFR and VFR-IFR Flights.
FAAO JO 7110.65, Para 4-5-7, Altitude Information.

4-2-2. CLEARANCE PREFIX

a. Prefix a clearance, information, or a request for information which will be relayed to an aircraft through a non-ATC facility by stating “A-T-C clears,” “A-T-C advises,” or “A-T-C requests.”

b. Flight service stations shall prefix a clearance with the appropriate phrase: “ATC clears,” “ATC advises,” etc.

4-2-3. DELIVERY INSTRUCTIONS

Issue specific clearance delivery instructions, if appropriate.

4-2-4. CLEARANCE RELAY

Relay clearances verbatim.

REFERENCE-
FAAO JO 7110.65, Para 10-4-4, Communications Failure.

4-2-5. ROUTE OR ALTITUDE AMENDMENTS

a. Amend route of flight in a previously issued clearance by one of the following:

1. State which portion of the route is being amended and then state the amendment.

PHRASEOLOGY-
CHANGE (portion of route) TO READ (new portion of route).

2. State the amendment to the route and then state that the rest of the route is unchanged.

PHRASEOLOGY-
(Amendment to route), REST OF ROUTE UNCHANGED.

3. Issue a clearance “direct” to a point on the previously issued route.

PHRASEOLOGY-
CLEARED DIRECT (fix).

NOTE-
Clearances authorizing “direct” to a point on a previously issued route do not require the phrase “rest of route unchanged.” However, it must be understood where the previously cleared route is resumed. When necessary, “rest of route unchanged” may be used to clarify routing.

4. Issue the entire route by stating the amendment.

EXAMPLE-
(Cessna 21A has been cleared to the Airville Airport via V41 Delta VOR V174 Alfa VOR, direct Airville Airport, maintain 9000. After takeoff, the aircraft is rerouted via V41 Frank intersection, V71 Delta VOR, V174 Alfa VOR. The controller issues one of the following as an amended clearance):

1. *“Cessna Two One Alfa change Victor Forty-One Delta to read Victor Forty-One Frank, Victor Seventy-One Delta.”*

2. *“Cessna Two One Alfa cleared via Victor Forty-One Frank, Victor Seventy-One Delta, rest of route unchanged.”*

3. “Cessna Two One Alfa cleared via Victor Forty-One Frank, Victor Seventy-One Delta, Victor One Seventy-Four Alfa V-O-R, direct Airville airport, maintain Niner Thousand.”

b. When route or altitude in a previously issued clearance is amended, restate all applicable altitude restrictions.

EXAMPLE-

(A departing aircraft is cleared to cross Ollis intersection at or above 3,000; Gordonsville VOR at or above 12,000; maintain FL 200. Shortly after departure the altitude to be maintained is changed to FL 240. Because altitude restrictions remain in effect, the controller issues an amended clearance as follows):

“Amend altitude. Cross Ollis intersection at or above Three Thousand; cross Gordonsville V-O-R at or above One Two Thousand; maintain Flight Level Two Four Zero.”

(Shortly after departure, altitude restrictions are no longer applicable, the controller issues an amended clearance as follows):

“Climb and maintain Flight Level Two Four Zero.”

NOTE-

Restating previously issued altitude to “maintain” is an amended clearance. If altitude to “maintain” is changed or restated, whether prior to departure or while airborne, and previously issued altitude restrictions are omitted, altitude restrictions are canceled, including SID/FMSP/STAR altitude restrictions if any.

c. Issue an amended clearance if a speed restriction is declined because it cannot be complied with concurrently with a previously issued altitude restriction.

EXAMPLE-

(An aircraft is cleared to cross Gordonsville VOR at 11,000. Shortly thereafter he/she is cleared to reduce his/her airspeed to 300 knots. The pilot informs the controller he/she is unable to comply with both clearances simultaneously. The controller issues an amended clearance as follows):

“Cross Gordonsville VOR at One One Thousand. Then, reduce speed to Three Zero Zero.”

NOTE-

The phrase “do the best you can” or comparable phrases are not valid substitutes for an amended clearance with altitude or speed restrictions.

REFERENCE-

*FAAO JO 7110.65, Para 2-1-18, Operational Requests.
FAAO JO 7110.65, Section 6, Vectoring, Para 5-6-2, Methods.
FAAO JO 7110.65, Section 7, Speed Adjustment, Para 5-7-2, Methods.*

d. Air traffic control specialists should avoid route and/or altitude changes for aircraft participating in the North American Route Program (NRP) and that are displaying “NRP” in the remarks section of their flight plan. Specialists at facilities actively participating in the High Altitude Redesign (HAR) program should avoid route and/or altitude changes for aircraft participating in full HAR and high altitude Point-to-point (PTP), and that are displaying “HAR,” or “PTP” in the remarks section of their flight plan.

NOTE-

Air traffic control specialists retain the latitude necessary to tactically resolve conflicts. Every effort should be made to ensure the aircraft is returned to the original filed flight plan/altitude as soon as conditions warrant.

REFERENCE-

*FAAO JO 7110.65, Para 2-1-4, Operational Priority.
FAAO JO 7110.65, Para 2-2-15, North American Route Program (NRP) Information.
FAAO JO 7110.65, Para 2-3-2, En Route Data Entries.
FAAO JO 7210.3, Chapter 17, Section 15, North American Route Program.*

4-2-6. THROUGH CLEARANCES

You may clear an aircraft through intermediate stops.

PHRASEOLOGY-

CLEARED THROUGH (airport) TO (fix).

4-2-7. ALTRV CLEARANCE

Use the phrase “via approved altitude reservation flight plan,” if the aircraft will operate in an approved ALTRV.

PHRASEOLOGY-

VIA APPROVED ALTITUDE RESERVATION (mission name) FLIGHT PLAN.

NOTE-

An ALTRV normally includes the departure, climb, cruise, and arrival phases of flight up to and including holding pattern or point/time at which ATC provides separation between aircraft.

REFERENCE-

FAAO JO 7110.65, Para 4-3-3, Abbreviated Departure Clearance.

Section 6. Basic Radar Service to VFR Aircraft- Terminal

7-6-1. APPLICATION

a. Basic radar services for VFR aircraft shall include:

1. Safety alerts.
2. Traffic advisories.
3. Limited radar vectoring when requested by the pilot.
4. Sequencing at locations where procedures have been established for this purpose and/or when covered by a LOA.

b. Apply the procedures contained in para 7-1-3, Approach Control Service for VFR Arriving Aircraft, when arriving VFR aircraft are handled by approach control and provide vectoring service in accordance with Chapter 5, Radar, Section 7, Speed Adjustment, in addition to the radar services prescribed in para 5-6-1, Application, and para 5-6-2, Methods.

REFERENCE-

FAAO JO 7110.65, Para 2-1-16, Surface Areas.

FAAO JO 7110.65, Para 7-6-1, Application.

FAAO JO 7210.3, Chapter 11, Section 1, Terminal VFR Radar Services.

■ AIM, Para 4-1-18, Terminal Radar Services for VFR Aircraft.

7-6-2. SERVICE AVAILABILITY

a. Inform aircraft on initial contact whenever this service cannot be provided because of radar outage and apply para 7-1-3, Approach Control Service for VFR Arriving Aircraft.

b. Provide the service, to the extent possible using an available frequency, if an aircraft desires the service but cannot communicate on the appropriate frequencies. Aircraft which do not desire radar service may be fitted into the landing sequence by the tower. Coordination of these aircraft shall be accomplished with the approach control unless a facility directive/LOA prescribes otherwise. Nonparticipating aircraft shall, to the extent possible, be given the same landing sequence they would have received had they been sequenced by radar vectors.

c. Radar sequencing to the primary airport, when local procedures have been developed, shall be provided unless the pilot states that the service is not

requested. Arriving aircraft are assumed to want radar service unless the pilot states "Negative radar service," or makes a similar comment.

7-6-3. INITIAL CONTACT

An aircraft sighted by the local controller at the time of first radio contact may be positioned in the landing sequence after coordination with approach control.

7-6-4. IDENTIFICATION

Identify the aircraft before taking action to position it in the approach sequence.

7-6-5. HOLDING

Hold VFR aircraft over the initial reporting fix or a fix near the airport when holding is required to establish an approach sequence.

REFERENCE-

FAAO JO 7110.65, Para 7-1-4, Visual Holding of VFR Aircraft.

7-6-6. APPROACH SEQUENCE

Do not assign landing sequence numbers, when establishing aircraft in the approach sequence, unless this responsibility has been delegated in a LOA or facility directive.

NOTE-

The landing sequence is ordinarily established by the tower.

7-6-7. SEQUENCING

a. Establish radar contact before instructing a VFR aircraft to enter the traffic pattern at a specified point or vectoring the aircraft to a position in the approach sequence. Inform the pilot of the aircraft to follow when the integrity of the approach sequence is dependent on following a preceding aircraft. Ensure visual contact is established with the aircraft to follow and provide instruction to follow that aircraft.

PHRASEOLOGY-

FOLLOW (description) (position, if necessary).

b. Direct a VFR aircraft to a point near the airport to hold when a position is not available in the approach sequence for the runway in use. The aircraft

may be vectored to another runway after coordination with the tower.

c. Apply the following procedures to a VFR aircraft being radar sequenced:

1. The provisions of para 5-5-4, Minima, subparagraph e and f.

2. When parallel runways are less than 2,500 feet apart, do not permit a heavy jet/B757 to overtake any aircraft nor a large aircraft to overtake a small aircraft established on final within the facility's area of responsibility.

7-6-8. CONTROL TRANSFER

a. Inform the tower of the aircraft's position and then instruct the pilot to contact the tower.

b. The aircraft may be instructed to contact the tower prior to the tower being advised of the aircraft's position provided:

1. The tower advises the aircraft is in sight, and
2. Space is available in the landing sequence.

c. Instruct the pilot to contact the tower at the appropriate point when the approach control ARTS/STARS track data is being displayed on the tower's BRITE/DBRITE/TDW display, the aircraft is tagged by ARTS/STARS, and a facility directive specifies change of communications and control jurisdiction points.

NOTE-

The point at which an aircraft is instructed to contact the tower is determined by prior coordination between the tower and approach control and will vary, depending on the runway in use, weather, etc. The transfer of communications ordinarily occurs at least 5 miles from the runway. The point for the transfer of communications should be a sufficient distance from the airport to permit the tower to properly sequence the aircraft, but not at a distance that could derogate the provision of radar traffic information service.

7-6-9. ABANDONED APPROACH

Instruct the aircraft to change to approach control for sequencing when an aircraft, under tower control, abandons the approach and coordination with approach control reveals no immediate space in the approach sequence.

7-6-10. VFR DEPARTURE INFORMATION

Inform departing VFR aircraft who request radar traffic advisories when to contact departure control and the frequency to use. Provide traffic advisories in accordance with para 2-1-21, Traffic Advisories, after the departure is radar identified.

NOTE-

Departing aircraft desiring traffic information are expected to request the service and to state their proposed direction of flight upon initial contact with ground control.

7-6-11. TERMINATION OF SERVICE

Basic radar services should be provided to the extent possible, workload permitting. Terminate radar service to aircraft landing at airports other than those where sequencing service is provided at a sufficient distance from the airport to permit the pilot to change to the appropriate frequency for traffic and airport information.

PHRASEOLOGY-

RADAR SERVICE TERMINATED, SQUAWK ONE TWO ZERO ZERO,

or

SQUAWK VFR,

then

CHANGE TO ADVISORY FREQUENCY APPROVED,

or

CONTACT (frequency identification),

or

FREQUENCY CHANGE APPROVED.

c. If the provisions of subpara a above cannot be accomplished, MTRs may be designated for MARSAs operations. To preclude an inadvertent compromise of MARSAs standards by ATC, appropriate MARSAs application for such routes shall be covered in a letter of agreement with the military scheduling activity. Establish separation between aircraft as soon as practicable after operation on the designated MARSAs route is ended.

NOTE-

For designated MARSAs routes, the military assumes responsibility for separation for MTR aircraft that have passed the primary/alternate entry fix until separation is established by ATC after operations on the MARSAs route are completed.

d. The lateral airspace to be protected along an MTR is the designated width of the route.

e. Prior to an aircraft entering an MTR, request the pilot's estimate for the route's exit/alternate exit fix, the pilot's requested altitude after exiting and, if applicable, the number of reentries on a Strategic Training Range (STR).

PHRASEOLOGY-

(Call sign) CONFIRM YOUR EXIT FIX ESTIMATE AND REQUESTED ALTITUDE AFTER EXIT,

and if applicable,

THE NUMBER OF REENTRIES.

f. Forward estimates for exit/alternate exit fixes, requested altitude after exit, and, if applicable, the number of reentries on the STR.

g. Apply the procedures of para 6-1-2, Nonreceipt of Position Report, based upon the pilot's estimate for the route exit fix.

h. Clearance may be issued to amend or restrict operations on a route for ATC considerations. Where a route has been designated MARSAs in accordance with subpara c, ATC shall not amend or restrict operations in such a manner as to compromise MARSAs provisions.

NOTE-

When MARSAs is provided through route scheduling and circumstances prevent the pilot from entering the route within established time limits, it shall be the responsibility of the pilot to inform the ATC facility and advise his/her intentions.

i. If an aircraft on an IR experiences a two-way radio communications failure and you are unable to determine if the aircraft is proceeding VFR in accordance with 14 CFR Section 91.185(b) or the aircraft has not been positively radar identified:

1. Provide separation to the destination airport based on the aircraft complying with the following:

(a) Maintain to the exit/alternate exit fix the higher of the following altitudes:

(1) The minimum IFR altitude for each of the remaining route segment(s) remaining on the route.

(2) The highest altitude assigned in the last ATC clearance.

(b) Depart the exit/alternate exit fix at the appropriate altitude specified in subpara (a) above, then climb/descend to the altitude filed in the flight plan for the remainder of the flight, or

NOTE-

In the event of a two-way communications failure, ATC will be based on the following anticipated pilot action at the exit fix. Unless otherwise covered in a letter of agreement, and if the pilot is unable to comply with the VFR provisions of 14 CFR Section 91.185/FLIP IFR Supplement, the pilot will exercise his/her emergency authority, squawk transponder Code 7700, depart the exit/alternate exit fix and climb/descend (continuing to squawk 7700) to the altitude filed in the flight plan. Subsequent transponder operations will be in accordance with para 10-4-4, Communications Failure. Air traffic controller action from the exit fix is as prescribed in para 10-1-1, Emergency Determinations.

(c) Proceed in accordance with the lost communication procedure contained in letters of agreement.

2. Continue to monitor the last ATC assigned discrete code.

NOTE-

Pilots who experience a two-way radio failure will adjust their transponder to Code 7700 during climb/descent to altitude filed for the next leg of the flight plan; then change to Code 7600 for a period of 15 minutes. At the end of each 15-minute period, he/she will squawk 7700 for a period of 1 minute; all other times he/she will squawk 7600.

j. Impose delays, if needed, to eliminate conflict with nonparticipating IFR aircraft when necessary to preclude denial of IR usage. Advise the pilot of the expected length and reason for delay.

9-2-8. INTERCEPTOR OPERATIONS

Provide maximum assistance to expedite the movement of interceptor aircraft on active air defense (scrambles) missions until the unknown aircraft is identified in accordance with the policies and procedures published in FAAO JO 7610.4, Special Operations.

NOTE-

The FAA and the military have mutually agreed to the implementation of policies and procedures for control of air defense interceptor operations. Effective coordination and cooperation between FAA and the military at all levels are essential if policy objectives are to be met.

- a. The ADCF initiating the SCRAMBLE shall identify the mission as an active air defense mission.
- b. ATC services shall be used for active air defense missions insofar as the circumstances and situation permits.
- c. Upon request, the ATC facility shall expedite transfer of the control jurisdiction of the interceptors to the requesting ADCF.

9-2-9. SPECIAL INTEREST SITES

- a. Relay immediately to supervisory/CIC personnel any reports or information regarding unusual aircraft activities in the vicinity of special interest sites such as nuclear power plants, power plants, dams, refineries, etc. Supervisory/CIC personnel may also receive reports/information from the Nuclear Regulatory Commission or other sources.
- b. Supervisory/CIC personnel shall immediately notify local law enforcement authorities of these reports/information as well as notifying the overlying air traffic facility of any of these reports and the action taken.
- c. ARTCCs shall promptly advise the ATCSCC of any actions taken in accordance with this paragraph.

9-2-10. LAND-BASED AIR DEFENSE IDENTIFICATION ZONE (ADIZ)/AIR TRAFFIC CONTROL (ATC) SECURITY SERVICES

TERMINAL

Provide ATC security services at locations where procedures are required for the tracking of aircraft in security services airspace. ATC security services are designed to support the national security mission of

the FAA and other agencies. Two-way radio communications, flight planning, and operational transponder on an assigned code are required for operations within the designated area.

- a. When the assigned code is observed, advise the aircraft to proceed on course/as requested but to remain outside of Class B, C, and/or D airspace as appropriate.

PHRASEOLOGY-

(ACID) TRANSPONDER OBSERVED PROCEED ON COURSE/AS REQUESTED; REMAIN OUTSIDE (class) AIRSPACE.

1. Maintain continuous security tracking of VFR aircraft operating within the designated area to assist security forces in situational awareness. Immediately report all instances of loss of radio communication or the inability to conduct security tracking of an aircraft to the FLM/CIC and await instructions.
2. The provision of basic separation services to aircraft, i.e., IFR, SVFR, Class B, Class C, TRSA, is not applicable to ATC security tracking.

3. Aircraft with operating transponders, but without operating Mode C (altitude) require specific authorization from ATC in order to operate within the ADIZ. ATC must coordinate with the Domestic Events Network (DEN) prior to approval.

4. Aircraft flying too low for radar coverage shall be instructed to report landing or exiting the ADIZ. Maintain flight progress strips on such aircraft until pilot reports landing or exiting the ADIZ. If a flight progress strip does not exist for the aircraft, record the call sign, transponder code, entry point (e.g., north, northeast, east), and time of entry into the ADIZ.

PHRASEOLOGY-

(Call sign), REPORT LANDING OR LEAVING THE ADIZ.

5. United States Military, law enforcement, and aeromedical flights are exempt from filing flight plans.

- b. Establishing Two-Way Communications.

1. Pilots must establish two-way radio communications with ATC prior to entering the security service area. Responding to a radio call with, "(a/c call sign) standby," establishes radio communications and the pilot may enter the area, provided all other security requirements have been satisfied.

2. Aircraft requesting security services should not normally be held. However, if holding is necessary or workload/traffic conditions prevent immediate provision of ATC security services, inform the pilot to remain outside the designated area until conditions permit the provision of ATC security services. Inform the pilot of the expected length of delay.

PHRASEOLOGY-

(A/C call sign) REMAIN OUTSIDE OF THE (location) AND STANDBY. EXPECT (time) MINUTES DELAY.

c. Termination of Service.

1. If the aircraft is not landing within the designated area, provide security services until the aircraft exits the area and then advise the aircraft to squawk VFR and that frequency change is approved.

PHRASEOLOGY-

SQUAWK VFR, FREQUENCY CHANGE APPROVED.

or

CONTACT (facility identification).

2. When an aircraft is landing at an airport inside the area, instruct the pilot to remain on the assigned transponder code until after landing.

PHRASEOLOGY-

(ACID) REMAIN ON YOUR ASSIGNED TRANSPONDER CODE UNTIL YOU LAND, FREQUENCY CHANGE APPROVED.

3. Using approved handoff functionality, transfer the data blocks of all security tracked aircraft that will enter another sector/position for coordination of aircraft information/location. Upon acceptance of the transferred information, instruct the pilot to contact the next sector/positions' frequency.

9-2-11. LAW ENFORCEMENT OPERATIONS BY CIVIL AND MILITARY ORGANIZATIONS

a. Law enforcement alerts.

1. Aircraft lookouts shall not be distributed outside the FAA.

REFERENCE-

*FAAO 1600.29, Law Enforcement Alert Message System.
FAAO JO 7210.3, Para 2-7-7, Cooperation With Law Enforcement Agencies.*

2. Stolen aircraft alerts, including stolen aircraft summaries, may be distributed outside the FAA to: airport offices, air carriers, fixed base operators, and law enforcement agencies.

3. Upon receipt of knowledge concerning an aircraft for which a current law enforcement alert message is held, do the following:

(a) Forward any information on the aircraft to El Paso Intelligence Center (EPIC) and the requester when specified in the message.

(b) Immediately notify the cognizant Transportation Security Administration office by the most rapid means.

(c) **DO NOT TAKE ANY OTHER ACTION AFFECTING THE AIRCRAFT, CARGO, CREW, OR PASSENGERS NOT NORMALLY RELATED TO JOB RESPONSIBILITIES.**

b. Special law enforcement operations.

1. Special law enforcement operations include inflight identification, surveillance, interdiction and pursuit activities performed in accordance with official civil and/or military mission responsibilities.

2. To facilitate accomplishment of these special missions, exemptions from specified parts of Title 14 of the Code of Federal Regulations have been granted to designated departments and agencies. However, it is each organization's responsibility to apprise ATC of their intent to operate under an authorized exemption before initiating actual operations.

REFERENCE-

FAAO JO 7210.3, Para 18-3-1, Authorizations and Exemptions from Title 14, Code of Federal Regulations (14 CFR).

3. Additionally, some departments and agencies that perform special missions have been assigned coded identifiers to permit them to apprise ATC of ongoing mission activities and solicit special air traffic assistance.

REFERENCE-

FAAO 7110.67, Special Aircraft Operations by Law Enforcement/Military Organizations.

NOTE-

As specified in para 2-1-4, Operational Priority, priority of handling for aircraft operating with coded identifiers will be the same as that afforded to SAR aircraft performing a SAR mission.

c. Assistance to law enforcement aircraft operations.

1. Provide the maximum assistance possible to law enforcement aircraft, when requested, in helping them locate suspect aircraft.

2. Communicate with law enforcement aircraft, when possible and if requested, on a frequency not paired with your normal communications frequencies.

3. Do not allow assistance to law enforcement aircraft to violate any required separation minima.

4. Do not assist VFR law enforcement aircraft in any way that will create a situation which, in your judgment, places the aircraft in unsafe proximity to terrain or other aircraft.

9-2-12. MILITARY AERIAL REFUELING

Authorize aircraft to conduct aerial refueling along published or special tracks at their flight plan altitude, unless otherwise requested.

PHRASEOLOGY-
CLEARED TO CONDUCT REFUELING ALONG (number) TRACK,

or

FROM (fix) TO (fix),

and

MAINTAIN REFUELING LEVEL (altitude),

or

MAINTAIN (altitude),

or

COMMENCING AT (altitude), DESCENDING TO (altitude).

NOTE-

1. During aerial refueling, tanker aircraft are responsible for receiver aircraft communication with ATC and for their navigation along the track.

2. Aerial refueling airspace is not sterilized airspace and other aircraft may transit this airspace provided vertical or lateral separation is provided from refueling aircraft.

3. MARSAs begins between the tanker and receiver when the tanker and receiver(s) have entered the air refueling airspace and the tanker advises ATC that he/she is accepting MARSAs.

4. MARSAs ends between the tanker and receiver when the tanker advises ATC that the tanker and receiver aircraft are vertically positioned within the air refueling airspace and ATC advises MARSAs is terminated.

REFERENCE-

FAAO JO 7110.65, Para 2-1-11, Use of MARSAs.

FAAO JO 7110.65, Para 5-5-8, Additional Separation for Formation Flights.

FAAO JO 7610.4, Chapter 10, Aerial Refueling.

a. Provide radar assistance to the rendezvous for participating aircraft:

1. When requested, and

2. By providing vertical separation prior to MARSAs declaration.

b. Do not request receiver aircraft that have been cleared to conduct air refueling and have departed the ARIP to:

1. Make code changes when less than 5 miles from the tanker.

2. Squawk standby when less than 1 mile or more than 3 miles from the tanker.

NOTE-

Requests for receiver aircraft to make code changes during air refueling diverts the receiver pilot's attention during a critical phase of flight.

c. When issuing an initial air refueling clearance, you may request a receiver to squawk standby when the receiver reaches a point 3 miles from the tanker.

NOTE-

1. Receiver aircraft will squawk normal when separation from the tanker is greater than 3 miles.

2. Once rendezvous is completed, heading and altitude assignments may be made with the tanker concurrence with MARSAs remaining in effect.

3. Upon rendezvous completion, the tanker shall keep receiver aircraft within 3 miles of the tanker until MARSAs is terminated.

d. After MARSAs has been declared, you should avoid issuing course or altitude changes prior to rendezvous.

NOTE-

Altitude or course changes issued will automatically void MARSAs.

e. Do not use the altitude vacated during the refueling operation until the refueling aircraft has reported reaching the next IFR altitude.

REFERENCE-

FAAO JO 7110.65, Para 6-6-2, Exceptions.

f. Approve requests by the tanker pilot for vectors or alternative routes or altitudes as follows:

1. Furnish vectors or alternative altitudes at any time.

2. Furnish nonradar routes only after the refueling aircraft have passed the ARCP.

NOTE-

1. To meet a training requirement that aerial refueling be accomplished in a nonradar environment, the military has requested that vectors be furnished only upon request.

2. The tanker commander is responsible for coordinating all inflight requests with other aircraft in the refueling mission before submission of such requests to the center.

3. Normally, aircraft conducting aerial refueling operations will utilize at least three consecutive altitudes.

g. Unless a vector or alternative route has been furnished, clear the aircraft to depart the refueling track at a navigational reference point or egress fix.

h. Request an aircraft to report the ARIP, ARCP, or egress fix as necessary.

**PHRASEOLOGY-
REPORT:**

A-R-I-P,

or

A-R-C-P,

or

EGRESS FIX.

i. Expect the following procedures in addition to those required by the appropriate parts of Title 14 of the Code of Federal Regulations in the event of two-way communications failure:

1. The tanker will depart the track from the highest altitude in the block.

2. The receiver will depart the track from the lowest altitude in the block.

3. Aircraft will squawk 7600 for at least 2 minutes prior to departing the track.

REFERENCE-

FAAO JO 7110.65, Para 9-2-13, Military Operations Above FL 600.

**9-2-13. MILITARY OPERATIONS ABOVE
FL 600**

Control aircraft operating above FL 600 using the following procedures:

a. Flight plans involving supersonic flight are required 16 hours in advance of proposed departure times for processing and approval by the ARTCCs concerned. The originating ARTCC, where the flight plan is first filed, may waive the 16-hour advance filing requirement.

b. The route of flight shall be defined by at least one high altitude fix within each ARTCC area without regard to the distance between fixes. Additionally, the entry and exit points of turns of 90 degrees or more will be designated.

c. Elapsed times from takeoff to the first fix in each ARTCC area shall be included in the route of flight.

d. The ARTCC which originates the flight plan shall forward departure times to all ARTCCs responsible for processing the flight plan.

e. Approval of the flight plan indicates approval of both route and flight levels (if stated) including operations below FL 600 (aerial refueling).

PHRASEOLOGY-

CLEARED AS FILED VIA ROUTE AND FLIGHT LEVELS.

REFERENCE-

FAAO JO 7110.65, Para 9-2-12, Military Aerial Refueling.

f. Separation. Use the following as minima in lieu of the corresponding type of separation prescribed in:

NOTE-

The primary method described to provide separation between two supersonic aircraft is to descend the aircraft at the lower FL and provide vertical separation since the aircraft at the higher FL may not be able to climb rapidly enough to establish the required separation. Another aspect which should be considered is that supersonic aircraft during turns, either programmed or as the result of vectors, will lose a few thousand feet. Vectoring supersonic aircraft seriously affects the range and mission objectives. Radar separation is the preferred method of separating a subsonic aircraft both from another subsonic aircraft or from a supersonic aircraft.

1. Para 4-5-1, Vertical Separation Minima: 5,000 feet.

NOTE-

1. The security requirements of the military services preclude the transmission of actual altitude information on the air/ground or landline circuits. A classified document detailing the plan for ascertaining altitude codes for the day should be readily available to the controllers at their positions of operation.

2. Pilots will report their altitude, using the coded plan, and intended flight profile on initial contact with each ARTCC.

2. Para 6-5-4, Minima Along Other Than Established Airways or Routes: Protect the airspace 25 miles either side of the route centerline. For turns by supersonic aircraft, protect the airspace 75 miles on the overflown side and 25 miles on the other side. For turns by subsonic aircraft, protect the airspace 34 miles on the overflown side and 25 miles on the other side.

REFERENCE-

FAAO JO 7110.65, Para 4-3-3, Abbreviated Departure Clearance.

9-2-14. MILITARY SPECIAL USE FREQUENCIES

a. Assign special use frequency to:

NOTE-

Special use frequencies are assigned to ARTCCs in such a manner that adjacent ARTCCs will not have the same frequency. They are to be used within the ARTCC area jurisdiction from the established FL base of the high altitude sectors and above. Each high altitude sector should have the capability to use the special use frequency on a shared basis.

1. USAF, U.S. Navy, and Air National Guard (ANG) single-pilot jet aircraft formations operating at night or in instrument weather conditions. Formations of five or more USAF aircraft deploying either to a continental U.S. staging base or nonstop to an overseas location are authorized to use special use frequencies at any time. Normally these deployments will be conducted within an altitude reservation.

2. U-2 and B-57 (pressure suit flights) aircraft at all altitudes/FLs except where terminal operations require the assignment of other frequencies.

NOTE-

Aerial refueling operations may require that aircraft leave the special use frequency for communications with the tanker. This will occur when the receiver is approximately 200 miles from the ARCP. The tanker aircraft will remain on the ARTCC assigned frequency and will relay clearances to the receiver as required. An alternate means of communications between the tanker and receiver is HF radio.

3. All aircraft during supersonic flight.

NOTE-

Pilots are expected to request assignment of the special use frequency in the remarks section of the flight plan or before entering supersonic flight. B-57 aircraft engaged in pressure suit operations will use the static call sign KITE and flights will normally be conducted from Dover, Eielson, Ellington, Hickman, Howard, Kirtland, and McClellan Air Force Bases.

4. E-3A AWACS mission crews when operations are being conducted as an MRU in accordance with appropriate letters of agreement.

b. The special use frequency may be assigned as "backup" for the high-altitude sector when direct communications are essential because of a potential emergency control situation.

c. Do not assign the special use frequency to the aircraft in subpara a1 above, when they will operate in airspace assigned for special military operations.

9-2-15. AVOIDANCE OF AREAS OF NUCLEAR RADIATION

a. Advise pilots whenever their proposed flight path will traverse a reported or forecasted area of hazardous radiation and reroute the aircraft when requested by the pilot.

REFERENCE-

FAAO JO 7610.4, Para 4-4-4, Avoidance of Hazardous Radiation Areas.

b. Inform pilots when an airfield of intended landing lies within a reported or forecasted area of hazardous radiation and request the pilot to advise his/her intentions.

9-2-16. SAMP

Provide special handling to U.S. Government and military aircraft engaged in aerial sampling missions (atmosphere sampling for nuclear, chemical, or hazardous material contamination). Honor inflight clearance requests for altitude and route changes to the maximum extent possible. Other IFR aircraft may

be recleared so that requests by SAMPLER aircraft are honored. Separation standards as outlined in this order shall be applied in all cases.

REFERENCE-

FAAO JO 7110.65, Para 2-1-4, Operational Priority.
FAAO JO 7110.65, Para 2-4-20, Aircraft Identification.
FAAO JO 7610.4, Para 4-4-4, Avoidance of Hazardous Radiation Areas.

9-2-17. AWACS/NORAD SPECIAL FLIGHTS

Do not delay E-3 AWACS aircraft identified as "AWACS/NORAD Special" flights. The following control actions are acceptable while expediting these aircraft to the destination orbit.

- a. En route altitude changes +/- 2,000 feet from the requested flight level.
- b. Radar vectors or minor route changes that do not impede progress towards the destination orbit.

NOTE-

NORAD has a requirement to position E-3 AWACS aircraft at selected locations on a time-critical basis. To the extent possible these flights will utilize routes to the destination orbit that have been precoordinated with the impacted ATC facilities. To identify these flights, the words "AWACS/NORAD SPECIAL" will be included as the first item in the remarks section of the flight plan.

9-2-18. WEATHER RECONNAISSANCE FLIGHTS

TEAL and NOAA mission aircraft fly reconnaissance flights to gather meteorological data on winter storms, (NWSOP missions), hurricanes and tropical cyclones (NHOP missions). The routes and timing of these flights are determined by movement of the storm areas and not by traffic flows.

a. When a dropsonde release time is received from a TEAL or NOAA mission aircraft, workload and priorities permitting, controllers shall advise the mission aircraft of any traffic estimated to pass through the area of the drop at altitudes below that of the mission aircraft. This traffic advisory shall include:

1. Altitude.
2. Direction of flight.
3. ETA at the point closest to drop area (or at the fix/intersection where drop will occur).

NOTE-

A dropsonde is a 14-inch long cardboard cylinder about 2.75 inches in diameter, that weighs approximately 14 ounces (400 grams), and has a parachute attached. When released from the aircraft it will fall at a rate of approximately 2,500 feet per minute. Controllers should recognize that a dropsonde released at FL 310 will be a factor for traffic at FL 210 four minutes later. It is the aircraft commanders responsibility to delay release of dropsondes if traffic is a factor. Aircraft commanders will delay release of dropsondes based solely upon traffic as issued by ATC.

b. When advised that an airborne TEAL or NOAA aircraft is requesting a clearance via CARCAH, issue the clearance in accordance with Chapter 4, IFR, Section 2, Clearances.

REFERENCE-

FAAO JO 7110.65, Para 4-2-1, Clearance Items.
FAAO JO 7110.65, Para 4-2-2, Clearance Prefix.
FAAO JO 7110.65, Para 4-2-3, Delivery Instructions.

c. If a TEAL or NOAA mission aircraft must be contacted but is out of VHF, UHF, and HF radio range, advise the supervisory traffic management coordinator-in-charge.

REFERENCE-

FAAO JO 7210.3, Para 5-3-6, Weather Reconnaissance Flights.
FAAO JO 7110.65, Para 2-1-4, Operational Priority.

9-2-19. EVASIVE ACTION MANEUVER

Approve a pilot request to conduct an evasive action maneuver only on the basis of a permissible traffic situation. Specify the following items, as necessary, when issuing approval:

NOTE-

The "evasive action" maneuver is performed by a bomber/fighter bomber aircraft at or above FL 250 along a 60 NM long segment of the flight plan route overlying a RBS or other site and includes:

1. Flying a zigzag pattern on both the left and right side of the flight plan route centerline. Altitude deviations are made in conjunction with the lateral maneuvering.
2. Lateral deviations from the route centerline will not normally exceed 12 miles. Altitude variations shall not exceed plus or minus 1,000 feet of the assigned flight level; i.e., confined within a 2,000 foot block.

a. Specific route segment on which the maneuver will take place.

b. Distance of maximum route deviation from the centerline in miles.

c. Altitude.

PHRASEOLOGY-
CLEARED TO CONDUCT EVASIVE ACTION
MANEUVER FROM (fix) TO (fix),

and

(number of miles) **EITHER SIDE OF CENTERLINE,**

and

MAINTAIN (altitude) THROUGH (altitude),

and

COMPLETE MANEUVER AT (fix) AT (altitude).

9-2-20. NONSTANDARD FORMATION/ CELL OPERATIONS

Occasionally the military is required to operate in a nonstandard cell formation and controllers should be knowledgeable of the various tactics employed and the procedures used.

REFERENCE-
 FAAO JO 7610.4, Chapter 12, Section 12, Formation Flight.

a. Formation leaders are responsible for obtaining ATC approval to conduct nonstandard formation/cell operations.

b. When nonstandard formation/cell operations have been approved, controllers shall assign sufficient altitudes to allow intra-cell vertical spacing of 500 feet between each aircraft in the formation.

c. Control nonstandard formation/cell operations on the basis that MARSAs is applicable between the participating aircraft until they establish approved separation which is acknowledged by ATC.

d. Apply standard separation criteria between the approved nonstandard formation/cell envelope and nonparticipating aircraft.

e. Clear aircraft operating in a nonstandard formation/cell to the breakup fix as the clearance limit. Forward data pertaining to route or altitude beyond the breakup point to the center concerned as a part of the routine flight plan information.

f. **EN ROUTE.** If the breakup occurs in your area, issue appropriate clearances to authorize transition from formation to individual routes or altitudes. If a breakup cannot be approved, issue an appropriate clearance for the flight to continue as a formation.

9-2-21. OPEN SKIES TREATY AIRCRAFT

a. OPEN SKIES aircraft will be identified by the call sign "OSY" (OPEN SKIES) followed by two digits and a one-letter mission suffix.

EXAMPLE-
OSY12D

Mission suffixes:

*F = Observation Flights (Priority).

*D = Demonstration Flights (Priority).

*T = Transit Flights (Nonpriority).

NOTE-

1. Observation/Demonstration flights are conducted under rigid guidelines outlined in the Treaty of OPEN SKIES that govern sensor usage, maximum flight distances, altitudes and priorities.

2. Transit flights are for the sole purpose of moving an OPEN SKIES aircraft from airport to airport in preparation for an actual OPEN SKIES "F" or "D" mission.

b. Provide priority and special handling to expedite the movement of an OPEN SKIES observation or demonstration flight.

REFERENCE-
 FAAO JO 7110.65, Para 2-1-4, Operational Priority, subpara n.
 FAAO JO 7210.3, Para 5-3-7, OPEN SKIES Treaty Aircraft.
 Treaty on OPEN SKIES, Treaty Document, 102-37.

c. OPEN SKIES aircraft, while maintaining compliance with ATC procedures, shall have priority over activities in Special Use Airspace (SUA) and shall be allowed to transit such airspace as filed after appropriate and timely coordination has been accomplished between the using agency and controlling agency.

1. OPEN SKIES Treaty flights transiting SUA will be handled in the following manner:

(a) The ATC facility controlling the OPEN SKIES flight shall advise the using/scheduling agency or appropriate ATC facility when the OPEN SKIES aircraft is fifteen (15) minutes from the SUA boundary; and

(1) For SUA that has an ATC facility providing services to the area, provide standard separation. If the ATC facility is unable to provide standard separation from the activities in the SUA, the using agency must confirm that all operations in the SUA have ceased.

(2) For SUA not associated with an ATC facility, the using/scheduling agency must return the SUA to the controlling agency and confirm that all operations in the SUA have ceased.

(b) If the controlling facility/using agency is unable to confirm that all conflicting activities in the SUA have ceased, the OPEN SKIES aircraft shall not be permitted access to the SUA.

2. Return SUA to the using agency, if appropriate, within fifteen (15) minutes after the OPEN SKIES aircraft clears the SUA.

d. Clear the aircraft according to the filed flight plan.

1. Do not ask the pilot to deviate from the planned action or route of flight except to preclude an emergency situation or other higher priority aircraft.

2. Do not impose air traffic control delays except to preclude emergency situations or other higher priority aircraft.

NOTE-

If for reasons of flight safety the route or altitude must be changed, return the aircraft to the filed flight plan route as soon as practical.

PILOT/CONTROLLER GLOSSARY

PURPOSE

a. This Glossary was compiled to promote a common understanding of the terms used in the Air Traffic Control system. It includes those terms which are intended for pilot/controller communications. Those terms most frequently used in pilot/controller communications are printed in *bold italics*. The definitions are primarily defined in an operational sense applicable to both users and operators of the National Airspace System. Use of the Glossary will preclude any misunderstandings concerning the system's design, function, and purpose.

b. Because of the international nature of flying, terms used in the Lexicon, published by the International Civil Aviation Organization (ICAO), are included when they differ from FAA definitions. These terms are followed by "[ICAO]." For the reader's convenience, there are also cross references to related terms in other parts of the Glossary and to other documents, such as the Code of Federal Regulations (CFR) and the Aeronautical Information Manual (AIM).

c. This Glossary will be revised, as necessary, to maintain a common understanding of the system.

EXPLANATION OF CHANGES

a. Terms Added:

AUTOMATIC FLIGHT INFORMATION SERVICE (AFIS) - ALASKA FSSs ONLY

b. Editorial/format changes were made where necessary. Revision bars were not used due to the insignificant nature of the changes.

landmark, a certain point of a Federal airway in mountainous terrain, or an obstruction.

(See AIRPORT ROTATING BEACON.)

(Refer to AIM.)

AERONAUTICAL CHART- A map used in air navigation containing all or part of the following: topographic features, hazards and obstructions, navigation aids, navigation routes, designated airspace, and airports. Commonly used aeronautical charts are:

a. Sectional Aeronautical Charts (1:500,000)- Designed for visual navigation of slow or medium speed aircraft. Topographic information on these charts features the portrayal of relief and a judicious selection of visual check points for VFR flight. Aeronautical information includes visual and radio aids to navigation, airports, controlled airspace, restricted areas, obstructions, and related data.

b. VFR Terminal Area Charts (1:250,000)- Depict Class B airspace which provides for the control or segregation of all the aircraft within Class B airspace. The chart depicts topographic information and aeronautical information which includes visual and radio aids to navigation, airports, controlled airspace, restricted areas, obstructions, and related data.

c. World Aeronautical Charts (WAC) (1:1,000,000)- Provide a standard series of aeronautical charts covering land areas of the world at a size and scale convenient for navigation by moderate speed aircraft. Topographic information includes cities and towns, principal roads, railroads, distinctive landmarks, drainage, and relief. Aeronautical information includes visual and radio aids to navigation, airports, airways, restricted areas, obstructions, and other pertinent data.

d. En Route Low Altitude Charts- Provide aeronautical information for en route instrument navigation (IFR) in the low altitude stratum. Information includes the portrayal of airways, limits of controlled airspace, position identification and frequencies of radio aids, selected airports, minimum en route and minimum obstruction clearance altitudes, airway distances, reporting points, restricted areas, and related data. Area charts, which are a part of this series, furnish terminal data at a larger scale in congested areas.

e. En Route High Altitude Charts- Provide aeronautical information for en route instrument

navigation (IFR) in the high altitude stratum. Information includes the portrayal of jet routes, identification and frequencies of radio aids, selected airports, distances, time zones, special use airspace, and related information.

f. Instrument Approach Procedures (IAP) Charts- Portray the aeronautical data which is required to execute an instrument approach to an airport. These charts depict the procedures, including all related data, and the airport diagram. Each procedure is designated for use with a specific type of electronic navigation system including NDB, TACAN, VOR, ILS/MLS, and RNAV. These charts are identified by the type of navigational aid(s) which provide final approach guidance.

g. Instrument Departure Procedure (DP) Charts- Designed to expedite clearance delivery and to facilitate transition between takeoff and en route operations. Each DP is presented as a separate chart and may serve a single airport or more than one airport in a given geographical location.

h. Standard Terminal Arrival (STAR) Charts- Designed to expedite air traffic control arrival procedures and to facilitate transition between en route and instrument approach operations. Each STAR procedure is presented as a separate chart and may serve a single airport or more than one airport in a given geographical location.

i. Airport Taxi Charts- Designed to expedite the efficient and safe flow of ground traffic at an airport. These charts are identified by the official airport name; e.g., Ronald Reagan Washington National Airport.

(See ICAO term AERONAUTICAL CHART.)

AERONAUTICAL CHART [ICAO]- A representation of a portion of the earth, its culture and relief, specifically designated to meet the requirements of air navigation.

AERONAUTICAL INFORMATION MANUAL (AIM)- A primary FAA publication whose purpose is to instruct airmen about operating in the National Airspace System of the U.S. It provides basic flight information, ATC Procedures and general instructional information concerning health, medical facts, factors affecting flight safety, accident and hazard reporting, and types of aeronautical charts and their use.

AERONAUTICAL INFORMATION PUBLICATION (AIP) [ICAO]- A publication issued by or with

the authority of a State and containing aeronautical information of a lasting character essential to air navigation.

A/FD-

(See AIRPORT/FACILITY DIRECTORY.)

AFFIRMATIVE- Yes.

AFIS-

(See AUTOMATIC FLIGHT INFORMATION SERVICE - ALASKA FSSs ONLY.)

AFP-

(See AIRSPACE FLOW PROGRAM.)

AIM-

(See AERONAUTICAL INFORMATION MANUAL.)

AIP [ICAO]-

(See ICAO term AERONAUTICAL INFORMATION PUBLICATION.)

AIR CARRIER DISTRICT OFFICE- An FAA field office serving an assigned geographical area, staffed with Flight Standards personnel serving the aviation industry and the general public on matters related to the certification and operation of scheduled air carriers and other large aircraft operations.

AIR DEFENSE EMERGENCY- A military emergency condition declared by a designated authority. This condition exists when an attack upon the continental U.S., Alaska, Canada, or U.S. installations in Greenland by hostile aircraft or missiles is considered probable, is imminent, or is taking place.

(Refer to AIM.)

AIR DEFENSE IDENTIFICATION ZONE (ADIZ)- The area of airspace over land or water, extending upward from the surface, within which the ready identification, the location, and the control of aircraft are required in the interest of national security.

a. Domestic Air Defense Identification Zone. An ADIZ within the United States along an international boundary of the United States.

b. Coastal Air Defense Identification Zone. An ADIZ over the coastal waters of the United States.

c. Distant Early Warning Identification Zone (DEWIZ). An ADIZ over the coastal waters of the State of Alaska.

d. Land-Based Air Defense Identification Zone. An ADIZ over U.S. metropolitan areas, which is activated and deactivated as needed, with dimensions, activation dates and other relevant information disseminated via NOTAM.

Note: ADIZ locations and operating and flight plan requirements for civil aircraft operations are specified in 14 CFR Part 99.

(Refer to AIM.)

AIR NAVIGATION FACILITY- Any facility used in, available for use in, or designed for use in, aid of air navigation, including landing areas, lights, any apparatus or equipment for disseminating weather information, for signaling, for radio-directional finding, or for radio or other electrical communication, and any other structure or mechanism having a similar purpose for guiding or controlling flight in the air or the landing and takeoff of aircraft.

(See NAVIGATIONAL AID.)

AIR ROUTE SURVEILLANCE RADAR- Air route traffic control center (ARTCC) radar used primarily to detect and display an aircraft's position while en route between terminal areas. The ARSR enables controllers to provide radar air traffic control service when aircraft are within the ARSR coverage. In some instances, ARSR may enable an ARTCC to provide terminal radar services similar to but usually more limited than those provided by a radar approach control.

AIR ROUTE TRAFFIC CONTROL CENTER- A facility established to provide air traffic control service to aircraft operating on IFR flight plans within controlled airspace and principally during the en route phase of flight. When equipment capabilities and controller workload permit, certain advisory/assistance services may be provided to VFR aircraft.

(See EN ROUTE AIR TRAFFIC CONTROL SERVICES.)

(Refer to AIM.)

AIR TAXI- Used to describe a helicopter/VTOL aircraft movement conducted above the surface but normally not above 100 feet AGL. The aircraft may proceed either via hover taxi or flight at speeds more than 20 knots. The pilot is solely responsible for selecting a safe airspeed/altitude for the operation being conducted.

(See HOVER TAXI.)

(Refer to AIM.)

AIR TRAFFIC– Aircraft operating in the air or on an airport surface, exclusive of loading ramps and parking areas.

(See ICAO term AIR TRAFFIC.)

AIR TRAFFIC [ICAO]– All aircraft in flight or operating on the maneuvering area of an aerodrome.

AIR TRAFFIC CLEARANCE– An authorization by air traffic control for the purpose of preventing collision between known aircraft, for an aircraft to proceed under specified traffic conditions within controlled airspace. The pilot-in-command of an aircraft may not deviate from the provisions of a visual flight rules (VFR) or instrument flight rules (IFR) air traffic clearance except in an emergency or unless an amended clearance has been obtained. Additionally, the pilot may request a different clearance from that which has been issued by air traffic control (ATC) if information available to the pilot makes another course of action more practicable or if aircraft equipment limitations or company procedures forbid compliance with the clearance issued. Pilots may also request clarification or amendment, as appropriate, any time a clearance is not fully understood, or considered unacceptable because of safety of flight. Controllers should, in such instances and to the extent of operational practicality and safety, honor the pilot's request. 14 CFR Part 91.3(a) states: "The pilot in command of an aircraft is directly responsible for, and is the final authority as to, the operation of that aircraft." **THE PILOT IS RESPONSIBLE TO REQUEST AN AMENDED CLEARANCE** if ATC issues a clearance that would cause a pilot to deviate from a rule or regulation, or in the pilot's opinion, would place the aircraft in jeopardy.

(See ATC INSTRUCTIONS.)

(See ICAO term AIR TRAFFIC CONTROL CLEARANCE.)

AIR TRAFFIC CONTROL– A service operated by appropriate authority to promote the safe, orderly and expeditious flow of air traffic.

(See ICAO term AIR TRAFFIC CONTROL SERVICE.)

AIR TRAFFIC CONTROL CLEARANCE [ICAO]– Authorization for an aircraft to proceed under conditions specified by an air traffic control unit.

Note 1: For convenience, the term air traffic control clearance is frequently abbreviated to clearance when used in appropriate contexts.

Note 2: The abbreviated term clearance may be prefixed by the words taxi, takeoff, departure, en route, approach or landing to indicate the particular portion of flight to which the air traffic control clearance relates.

AIR TRAFFIC CONTROL SERVICE–

(See AIR TRAFFIC CONTROL.)

AIR TRAFFIC CONTROL SERVICE [ICAO]– A service provided for the purpose of:

a. Preventing collisions:

1. Between aircraft; and

2. On the maneuvering area between aircraft and obstructions.

b. Expediting and maintaining an orderly flow of air traffic.

AIR TRAFFIC CONTROL SPECIALIST– A person authorized to provide air traffic control service.

(See AIR TRAFFIC CONTROL.)

(See FLIGHT SERVICE STATION.)

(See ICAO term CONTROLLER.)

AIR TRAFFIC CONTROL SYSTEM COMMAND CENTER (ATCSCC) – An Air Traffic Tactical Operations facility responsible for monitoring and managing the flow of air traffic throughout the NAS, producing a safe, orderly, and expeditious flow of traffic while minimizing delays. The following functions are located at the ATCSCC:

a. Central Altitude Reservation Function (CARF). Responsible for coordinating, planning, and approving special user requirements under the Altitude Reservation (ALTRV) concept.

(See ALTITUDE RESERVATION.)

b. Airport Reservation Office (ARO). Responsible for approving IFR flights at designated high density traffic airports (John F. Kennedy, LaGuardia, and Ronald Reagan Washington National) during specified hours.

(Refer to 14 CFR Part 93.)

(Refer to AIRPORT/FACILITY DIRECTORY.)

c. U.S. Notice to Airmen (NOTAM) Office. Responsible for collecting, maintaining, and distributing NOTAMs for the U.S. civilian and military, as well as international aviation communities.

(See NOTICE TO AIRMEN.)

d. Weather Unit. Monitor all aspects of weather for the U.S. that might affect aviation including cloud cover, visibility, winds, precipitation, thunderstorms, icing, turbulence, and more. Provide forecasts based on observations and on discussions with meteorologists from various National Weather Service offices, FAA facilities, airlines, and private weather services.

AIR TRAFFIC SERVICE- A generic term meaning:

- a. Flight Information Service.**
- b. Alerting Service.**
- c. Air Traffic Advisory Service.**
- d. Air Traffic Control Service:**
 - 1. Area Control Service,**
 - 2. Approach Control Service, or**
 - 3. Airport Control Service.**

AIR TRAFFIC SERVICE (ATS) ROUTES - The term "ATS Route" is a generic term that includes "VOR Federal airways," "colored Federal airways," "jet routes," and "RNAV routes." The term "ATS route" does not replace these more familiar route names, but serves only as an overall title when listing the types of routes that comprise the United States route structure.

AIRBORNE DELAY- Amount of delay to be encountered in airborne holding.

AIRCRAFT- Device(s) that are used or intended to be used for flight in the air, and when used in air traffic control terminology, may include the flight crew.

(See ICAO term AIRCRAFT.)

AIRCRAFT [ICAO]- Any machine that can derive support in the atmosphere from the reactions of the air other than the reactions of the air against the earth's surface.

AIRCRAFT APPROACH CATEGORY- A grouping of aircraft based on a speed of 1.3 times the stall speed in the landing configuration at maximum gross landing weight. An aircraft must fit in only one category. If it is necessary to maneuver at speeds in excess of the upper limit of a speed range for a category, the minimums for the category for that speed must be used. For example, an aircraft which

falls in Category A, but is circling to land at a speed in excess of 91 knots, must use the approach Category B minimums when circling to land. The categories are as follows:

- a. Category A-** Speed less than 91 knots.
- b. Category B-** Speed 91 knots or more but less than 121 knots.
- c. Category C-** Speed 121 knots or more but less than 141 knots.
- d. Category D-** Speed 141 knots or more but less than 166 knots.
- e. Category E-** Speed 166 knots or more.
(Refer to 14 CFR Part 97.)

AIRCRAFT CLASSES- For the purposes of Wake Turbulence Separation Minima, ATC classifies aircraft as Heavy, Large, and Small as follows:

- a. Heavy-** Aircraft capable of takeoff weights of more than 255,000 pounds whether or not they are operating at this weight during a particular phase of flight.
- b. Large-** Aircraft of more than 41,000 pounds, maximum certificated takeoff weight, up to 255,000 pounds.
- c. Small-** Aircraft of 41,000 pounds or less maximum certificated takeoff weight.
(Refer to AIM.)

AIRCRAFT CONFLICT- Predicted conflict, within URET, of two aircraft, or between aircraft and airspace. A Red alert is used for conflicts when the predicted minimum separation is 5 nautical miles or less. A Yellow alert is used when the predicted minimum separation is between 5 and approximately 12 nautical miles. A Blue alert is used for conflicts between an aircraft and predefined airspace.

(See USER REQUEST EVALUATION TOOL.)

AIRCRAFT LIST (ACL)- A view available with URET that lists aircraft currently in or predicted to be in a particular sector's airspace. The view contains textual flight data information in line format and may be sorted into various orders based on the specific needs of the sector team.

(See USER REQUEST EVALUATION TOOL.)

AIRCRAFT SURGE LAUNCH AND RECOVERY- Procedures used at USAF bases to provide increased launch and recovery rates in instrument flight rules conditions. ASLAR is based on:

a. Reduced separation between aircraft which is based on time or distance. Standard arrival separation applies between participants including multiple flights until the DRAG point. The DRAG point is a published location on an ASLAR approach where aircraft landing second in a formation slows to a predetermined airspeed. The DRAG point is the reference point at which MARSAs applies as expanding elements effect separation within a flight or between subsequent participating flights.

b. ASLAR procedures shall be covered in a Letter of Agreement between the responsible USAF military ATC facility and the concerned Federal Aviation Administration facility. Initial Approach Fix spacing requirements are normally addressed as a minimum.

AIRMEN'S METEOROLOGICAL INFORMATION-

(See AIRMET.)

AIRMET- In-flight weather advisories issued only to amend the area forecast concerning weather phenomena which are of operational interest to all aircraft and potentially hazardous to aircraft having limited capability because of lack of equipment, instrumentation, or pilot qualifications. AIRMETs concern weather of less severity than that covered by SIGMETs or Convective SIGMETs. AIRMETs cover moderate icing, moderate turbulence, sustained winds of 30 knots or more at the surface, widespread areas of ceilings less than 1,000 feet and/or visibility less than 3 miles, and extensive mountain obscurement.

(See AWW.)

(See CONVECTIVE SIGMET.)

(See CWA.)

(See SIGMET.)

(Refer to AIM.)

AIRPORT- An area on land or water that is used or intended to be used for the landing and takeoff of aircraft and includes its buildings and facilities, if any.

AIRPORT ADVISORY AREA- The area within ten miles of an airport without a control tower or where the tower is not in operation, and on which a Flight Service Station is located.

(See LOCAL AIRPORT ADVISORY.)

(Refer to AIM.)

AIRPORT ARRIVAL RATE (AAR)- A dynamic input parameter specifying the number of arriving aircraft which an airport or airspace can accept from the ARTCC per hour. The AAR is used to calculate the desired interval between successive arrival aircraft.

AIRPORT DEPARTURE RATE (ADR)- A dynamic parameter specifying the number of aircraft which can depart an airport and the airspace can accept per hour.

AIRPORT ELEVATION- The highest point of an airport's usable runways measured in feet from mean sea level.

(See TOUCHDOWN ZONE ELEVATION.)

(See ICAO term AERODROME ELEVATION.)

AIRPORT/FACILITY DIRECTORY- A publication designed primarily as a pilot's operational manual containing all airports, seaplane bases, and heliports open to the public including communications data, navigational facilities, and certain special notices and procedures. This publication is issued in seven volumes according to geographical area.

AIRPORT LIGHTING- Various lighting aids that may be installed on an airport. Types of airport lighting include:

a. **Approach Light System (ALS)-** An airport lighting facility which provides visual guidance to landing aircraft by radiating light beams in a directional pattern by which the pilot aligns the aircraft with the extended centerline of the runway on his/her final approach for landing. Condenser-Discharge Sequential Flashing Lights/Sequenced Flashing Lights may be installed in conjunction with the ALS at some airports. Types of Approach Light Systems are:

1. **ALSF-1-** Approach Light System with Sequenced Flashing Lights in ILS Cat-I configuration.

2. **ALSF-2-** Approach Light System with Sequenced Flashing Lights in ILS Cat-II configuration. The ALSF-2 may operate as an SSALR when weather conditions permit.

3. **SSALF-** Simplified Short Approach Light System with Sequenced Flashing Lights.

4. **SSALR-** Simplified Short Approach Light System with Runway Alignment Indicator Lights.

5. **MALSF-** Medium Intensity Approach Light System with Sequenced Flashing Lights.

6. MALSR- Medium Intensity Approach Light System with Runway Alignment Indicator Lights.

7. LDIN- Lead-in-light system- Consists of one or more series of flashing lights installed at or near ground level that provides positive visual guidance along an approach path, either curving or straight, where special problems exist with hazardous terrain, obstructions, or noise abatement procedures.

8. RAIL- Runway Alignment Indicator Lights- Sequenced Flashing Lights which are installed only in combination with other light systems.

9. ODALS- Omnidirectional Approach Lighting System consists of seven omnidirectional flashing lights located in the approach area of a nonprecision runway. Five lights are located on the runway centerline extended with the first light located 300 feet from the threshold and extending at equal intervals up to 1,500 feet from the threshold. The other two lights are located, one on each side of the runway threshold, at a lateral distance of 40 feet from the runway edge, or 75 feet from the runway edge when installed on a runway equipped with a VASI.

(Refer to FAAO JO 6850.2, VISUAL GUIDANCE LIGHTING SYSTEMS.)

b. Runway Lights/Runway Edge Lights- Lights having a prescribed angle of emission used to define the lateral limits of a runway. Runway lights are uniformly spaced at intervals of approximately 200 feet, and the intensity may be controlled or preset.

c. Touchdown Zone Lighting- Two rows of transverse light bars located symmetrically about the runway centerline normally at 100 foot intervals. The basic system extends 3,000 feet along the runway.

d. Runway Centerline Lighting- Flush centerline lights spaced at 50-foot intervals beginning 75 feet from the landing threshold and extending to within 75 feet of the opposite end of the runway.

e. Threshold Lights- Fixed green lights arranged symmetrically left and right of the runway centerline, identifying the runway threshold.

f. Runway End Identifier Lights (REIL)- Two synchronized flashing lights, one on each side of the runway threshold, which provide rapid and positive identification of the approach end of a particular runway.

g. Visual Approach Slope Indicator (VASI)- An airport lighting facility providing vertical visual

approach slope guidance to aircraft during approach to landing by radiating a directional pattern of high intensity red and white focused light beams which indicate to the pilot that he/she is “on path” if he/she sees red/white, “above path” if white/white, and “below path” if red/red. Some airports serving large aircraft have three-bar VASIs which provide two visual glide paths to the same runway.

h. Precision Approach Path Indicator (PAPI)- An airport lighting facility, similar to VASI, providing vertical approach slope guidance to aircraft during approach to landing. PAPIs consist of a single row of either two or four lights, normally installed on the left side of the runway, and have an effective visual range of about 5 miles during the day and up to 20 miles at night. PAPIs radiate a directional pattern of high intensity red and white focused light beams which indicate that the pilot is “on path” if the pilot sees an equal number of white lights and red lights, with white to the left of the red; “above path” if the pilot sees more white than red lights; and “below path” if the pilot sees more red than white lights.

i. Boundary Lights- Lights defining the perimeter of an airport or landing area.

(Refer to AIM.)

AIRPORT MARKING AIDS- Markings used on runway and taxiway surfaces to identify a specific runway, a runway threshold, a centerline, a hold line, etc. A runway should be marked in accordance with its present usage such as:

- a. Visual.**
 - b. Nonprecision instrument.**
 - c. Precision instrument.**
- (Refer to AIM.)

AIRPORT REFERENCE POINT (ARP)- The approximate geometric center of all usable runway surfaces.

AIRPORT RESERVATION OFFICE- Office responsible for monitoring the operation of the high density rule. Receives and processes requests for IFR-operations at high density traffic airports.

AIRPORT ROTATING BEACON- A visual NAVAID operated at many airports. At civil airports, alternating white and green flashes indicate the location of the airport. At military airports, the beacons flash alternately white and green, but are

differentiated from civil beacons by dualpeaked (two quick) white flashes between the green flashes.

(See INSTRUMENT FLIGHT RULES.)

(See SPECIAL VFR OPERATIONS.)

(See ICAO term AERODROME BEACON.)

(Refer to AIM.)

AIRPORT STREAM FILTER (ASF)- An on/off filter that allows the conflict notification function to be inhibited for arrival streams into single or multiple airports to prevent nuisance alerts.

AIRPORT SURFACE DETECTION EQUIPMENT (ASDE)- Surveillance equipment specifically designed to detect aircraft, vehicular traffic, and other objects, on the surface of an airport, and to present the image on a tower display. Used to augment visual observation by tower personnel of aircraft and/or vehicular movements on runways and taxiways. There are three ASDE systems deployed in the NAS:

a. ASDE-3- a Surface Movement Radar.

b. ASDE-X- a system that uses a X-band Surface Movement Radar and multilateration. Data from these two sources are fused and presented on a digital display.

c. ASDE-3X- an ASDE-X system that uses the ASDE-3 Surface Movement Radar.

AIRPORT SURVEILLANCE RADAR- Approach control radar used to detect and display an aircraft's position in the terminal area. ASR provides range and azimuth information but does not provide elevation data. Coverage of the ASR can extend up to 60 miles.

AIRPORT TAXI CHARTS-

(See AERONAUTICAL CHART.)

AIRPORT TRAFFIC CONTROL SERVICE- A service provided by a control tower for aircraft operating on the movement area and in the vicinity of an airport.

(See MOVEMENT AREA.)

(See TOWER.)

(See ICAO term AERODROME CONTROL SERVICE.)

AIRPORT TRAFFIC CONTROL TOWER-

(See TOWER.)

AIRSPACE CONFLICT- Predicted conflict of an aircraft and active Special Activity Airspace (SAA).

AIRSPACE FLOW PROGRAM (AFP)- AFP is a Traffic Management (TM) process administered by

the Air Traffic Control System Command Center (ATCSCC) where aircraft are assigned an Expect Departure Clearance Time (EDCT) in order to manage capacity and demand for a specific area of the National Airspace System (NAS). The purpose of the program is to mitigate the effects of en route constraints. It is a flexible program and may be implemented in various forms depending upon the needs of the air traffic system.

AIRSPACE HIERARCHY- Within the airspace classes, there is a hierarchy and, in the event of an overlap of airspace: Class A preempts Class B, Class B preempts Class C, Class C preempts Class D, Class D preempts Class E, and Class E preempts Class G.

AIRSPEED- The speed of an aircraft relative to its surrounding air mass. The unqualified term "airspeed" means one of the following:

a. Indicated Airspeed- The speed shown on the aircraft airspeed indicator. This is the speed used in pilot/controller communications under the general term "airspeed."

(Refer to 14 CFR Part 1.)

b. True Airspeed- The airspeed of an aircraft relative to undisturbed air. Used primarily in flight planning and en route portion of flight. When used in pilot/controller communications, it is referred to as "true airspeed" and not shortened to "airspeed."

AIRSTART- The starting of an aircraft engine while the aircraft is airborne, preceded by engine shutdown during training flights or by actual engine failure.

AIRWAY- A Class E airspace area established in the form of a corridor, the centerline of which is defined by radio navigational aids.

(See FEDERAL AIRWAYS.)

(See ICAO term AIRWAY.)

(Refer to 14 CFR Part 71.)

(Refer to AIM.)

AIRWAY [ICAO]- A control area or portion thereof established in the form of corridor equipped with radio navigational aids.

AIRWAY BEACON- Used to mark airway segments in remote mountain areas. The light flashes Morse Code to identify the beacon site.

(Refer to AIM.)

AIT-

(See AUTOMATED INFORMATION TRANSFER.)

ALERFA (Alert Phase) [ICAO]- A situation wherein apprehension exists as to the safety of an aircraft and its occupants.

ALERT- A notification to a position that there is an aircraft-to-aircraft or aircraft-to-airspace conflict, as detected by Automated Problem Detection (APD).

ALERT AREA-

(See SPECIAL USE AIRSPACE.)

ALERT NOTICE- A request originated by a flight service station (FSS) or an air route traffic control center (ARTCC) for an extensive communication search for overdue, unreported, or missing aircraft.

ALERTING SERVICE- A service provided to notify appropriate organizations regarding aircraft in need of search and rescue aid and assist such organizations as required.

ALNOT-

(See ALERT NOTICE.)

ALONG-TRACK DISTANCE (ATD)- The distance measured from a point-in-space by systems using area navigation reference capabilities that are not subject to slant range errors.

ALPHANUMERIC DISPLAY- Letters and numerals used to show identification, altitude, beacon code, and other information concerning a target on a radar display.

(See AUTOMATED RADAR TERMINAL SYSTEMS.)

ALTERNATE AERODROME [ICAO]- An aerodrome to which an aircraft may proceed when it becomes either impossible or inadvisable to proceed to or to land at the aerodrome of intended landing.

Note: The aerodrome from which a flight departs may also be an en-route or a destination alternate aerodrome for the flight.

ALTERNATE AIRPORT- An airport at which an aircraft may land if a landing at the intended airport becomes inadvisable.

(See ICAO term ALTERNATE AERODROME.)

ALTIMETER SETTING- The barometric pressure reading used to adjust a pressure altimeter for variations in existing atmospheric pressure or to the standard altimeter setting (29.92).

(Refer to 14 CFR Part 91.)

(Refer to AIM.)

ALTITUDE- The height of a level, point, or object measured in feet Above Ground Level (AGL) or from Mean Sea Level (MSL).

(See FLIGHT LEVEL.)

a. **MSL Altitude-** Altitude expressed in feet measured from mean sea level.

b. **AGL Altitude-** Altitude expressed in feet measured above ground level.

c. **Indicated Altitude-** The altitude as shown by an altimeter. On a pressure or barometric altimeter it is altitude as shown uncorrected for instrument error and uncompensated for variation from standard atmospheric conditions.

(See ICAO term ALTITUDE.)

ALTITUDE [ICAO]- The vertical distance of a level, a point or an object considered as a point, measured from mean sea level (MSL).

ALTITUDE READOUT- An aircraft's altitude, transmitted via the Mode C transponder feature, that is visually displayed in 100-foot increments on a radar scope having readout capability.

(See ALPHANUMERIC DISPLAY.)

(See AUTOMATED RADAR TERMINAL SYSTEMS.)

(Refer to AIM.)

ALTITUDE RESERVATION- Airspace utilization under prescribed conditions normally employed for the mass movement of aircraft or other special user requirements which cannot otherwise be accomplished. ALTRVs are approved by the appropriate FAA facility.

(See AIR TRAFFIC CONTROL SYSTEM COMMAND CENTER.)

ALTITUDE RESTRICTION- An altitude or altitudes, stated in the order flown, which are to be maintained until reaching a specific point or time. Altitude restrictions may be issued by ATC due to traffic, terrain, or other airspace considerations.

ALTITUDE RESTRICTIONS ARE CANCELED-

Adherence to previously imposed altitude restrictions is no longer required during a climb or descent.

ALTRV-

(See ALTITUDE RESERVATION.)

AMVER-

(See AUTOMATED MUTUAL-ASSISTANCE VESSEL RESCUE SYSTEM.)

APB-

(See AUTOMATED PROBLEM DETECTION BOUNDARY.)

APD-

(See AUTOMATED PROBLEM DETECTION.)

APDIA-

(See AUTOMATED PROBLEM DETECTION INHIBITED AREA.)

APPROACH CLEARANCE- Authorization by ATC for a pilot to conduct an instrument approach. The type of instrument approach for which a clearance and other pertinent information is provided in the approach clearance when required.

(See CLEARED APPROACH.)

(See INSTRUMENT APPROACH PROCEDURE.)

(Refer to AIM.)

(Refer to 14 CFR Part 91.)

APPROACH CONTROL FACILITY- A terminal ATC facility that provides approach control service in a terminal area.

(See APPROACH CONTROL SERVICE.)

(See RADAR APPROACH CONTROL FACILITY.)

APPROACH CONTROL SERVICE- Air traffic control service provided by an approach control facility for arriving and departing VFR/IFR aircraft and, on occasion, en route aircraft. At some airports not served by an approach control facility, the ARTCC provides limited approach control service.

(See ICAO term APPROACH CONTROL SERVICE.)

(Refer to AIM.)

APPROACH CONTROL SERVICE [ICAO]- Air traffic control service for arriving or departing controlled flights.

APPROACH GATE- An imaginary point used within ATC as a basis for vectoring aircraft to the final approach course. The gate will be established along the final approach course 1 mile from the final approach fix on the side away from the airport and will be no closer than 5 miles from the landing threshold.

APPROACH LIGHT SYSTEM-

(See AIRPORT LIGHTING.)

APPROACH SEQUENCE- The order in which aircraft are positioned while on approach or awaiting approach clearance.

(See LANDING SEQUENCE.)

(See ICAO term APPROACH SEQUENCE.)

APPROACH SEQUENCE [ICAO]- The order in which two or more aircraft are cleared to approach to land at the aerodrome.

APPROACH SPEED- The recommended speed contained in aircraft manuals used by pilots when making an approach to landing. This speed will vary for different segments of an approach as well as for aircraft weight and configuration.

APPROPRIATE ATS AUTHORITY [ICAO]- The relevant authority designated by the State responsible for providing air traffic services in the airspace concerned. In the United States, the “appropriate ATS authority” is the Program Director for Air Traffic Planning and Procedures, ATP-1.

APPROPRIATE AUTHORITY-

a. Regarding flight over the high seas: the relevant authority is the State of Registry.

b. Regarding flight over other than the high seas: the relevant authority is the State having sovereignty over the territory being overflown.

APPROPRIATE OBSTACLE CLEARANCE MINIMUM ALTITUDE- Any of the following:

(See MINIMUM EN ROUTE IFR ALTITUDE.)

(See MINIMUM IFR ALTITUDE.)

(See MINIMUM OBSTRUCTION CLEARANCE ALTITUDE.)

(See MINIMUM VECTORING ALTITUDE.)

APPROPRIATE TERRAIN CLEARANCE MINIMUM ALTITUDE- Any of the following:

(See MINIMUM EN ROUTE IFR ALTITUDE.)

(See MINIMUM IFR ALTITUDE.)

(See MINIMUM OBSTRUCTION CLEARANCE ALTITUDE.)

(See MINIMUM VECTORING ALTITUDE.)

APRON- A defined area on an airport or heliport intended to accommodate aircraft for purposes of loading or unloading passengers or cargo, refueling, parking, or maintenance. With regard to seaplanes, a ramp is used for access to the apron from the water.

(See ICAO term APRON.)

APRON [ICAO]- A defined area, on a land aerodrome, intended to accommodate aircraft for purposes of loading or unloading passengers, mail or cargo, refueling, parking or maintenance.

ARC- The track over the ground of an aircraft flying at a constant distance from a navigational aid by reference to distance measuring equipment (DME).

AREA CONTROL CENTER [ICAO]- An air traffic control facility primarily responsible for ATC services being provided IFR aircraft during the en route phase of flight. The U.S. equivalent facility is an air route traffic control center (ARTCC).

AREA NAVIGATION- Area Navigation (RNAV) provides enhanced navigational capability to the pilot. RNAV equipment can compute the airplane position, actual track and ground speed and then provide meaningful information relative to a route of flight selected by the pilot. Typical equipment will provide the pilot with distance, time, bearing and crosstrack error relative to the selected "TO" or "active" waypoint and the selected route. Several distinctly different navigational systems with different navigational performance characteristics are capable of providing area navigational functions. Present day RNAV includes INS, LORAN, VOR/DME, and GPS systems. Modern multi-sensor systems can integrate one or more of the above systems to provide a more accurate and reliable navigational system. Due to the different levels of performance, area navigational capabilities can satisfy different levels of required navigational performance (RNP). The major types of equipment are:

a. VORTAC referenced or Course Line Computer (CLC) systems, which account for the greatest number of RNAV units in use. To function, the CLC must be within the service range of a VORTAC.

b. OMEGA/VLF, although two separate systems, can be considered as one operationally. A long-range navigation system based upon Very Low Frequency radio signals transmitted from a total of 17 stations worldwide.

c. Inertial (INS) systems, which are totally self-contained and require no information from external references. They provide aircraft position and navigation information in response to signals resulting from inertial effects on components within the system.

d. MLS Area Navigation (MLS/RNAV), which provides area navigation with reference to an MLS ground facility.

e. LORAN-C is a long-range radio navigation system that uses ground waves transmitted at low frequency to provide user position information at ranges of up to 600 to 1,200 nautical miles at both en route and approach altitudes. The usable signal

coverage areas are determined by the signal-to-noise ratio, the envelope-to-cycle difference, and the geometric relationship between the positions of the user and the transmitting stations.

f. GPS is a space-base radio positioning, navigation, and time-transfer system. The system provides highly accurate position and velocity information, and precise time, on a continuous global basis, to an unlimited number of properly equipped users. The system is unaffected by weather, and provides a worldwide common grid reference system.

(See ICAO term AREA NAVIGATION.)

AREA NAVIGATION [ICAO]- A method of navigation which permits aircraft operation on any desired flight path within the coverage of station-referenced navigation aids or within the limits of the capability of self-contained aids, or a combination of these.

AREA NAVIGATION (RNAV) APPROACH CONFIGURATION:

a. STANDARD T- An RNAV approach whose design allows direct flight to any one of three initial approach fixes (IAF) and eliminates the need for procedure turns. The standard design is to align the procedure on the extended centerline with the missed approach point (MAP) at the runway threshold, the final approach fix (FAF), and the initial approach/intermediate fix (IAF/IF). The other two IAFs will be established perpendicular to the IF.

b. MODIFIED T- An RNAV approach design for single or multiple runways where terrain or operational constraints do not allow for the standard T. The "T" may be modified by increasing or decreasing the angle from the corner IAF(s) to the IF or by eliminating one or both corner IAFs.

c. STANDARD I- An RNAV approach design for a single runway with both corner IAFs eliminated. Course reversal or radar vectoring may be required at busy terminals with multiple runways.

d. TERMINAL ARRIVAL AREA (TAA)- The TAA is controlled airspace established in conjunction with the Standard or Modified T and I RNAV approach configurations. In the standard TAA, there are three areas: straight-in, left base, and right base. The arc boundaries of the three areas of the TAA are published portions of the approach and allow aircraft to transition from the en route structure direct to the nearest IAF. TAAs will also eliminate or reduce

feeder routes, departure extensions, and procedure turns or course reversal.

1. STRAIGHT-IN AREA- A 30NM arc centered on the IF bounded by a straight line extending through the IF perpendicular to the intermediate course.

2. LEFT BASE AREA- A 30NM arc centered on the right corner IAF. The area shares a boundary with the straight-in area except that it extends out for 30NM from the IAF and is bounded on the other side by a line extending from the IF through the FAF to the arc.

3. RIGHT BASE AREA- A 30NM arc centered on the left corner IAF. The area shares a boundary with the straight-in area except that it extends out for 30NM from the IAF and is bounded on the other side by a line extending from the IF through the FAF to the arc.

ARINC- An acronym for Aeronautical Radio, Inc., a corporation largely owned by a group of airlines. ARINC is licensed by the FCC as an aeronautical station and contracted by the FAA to provide communications support for air traffic control and meteorological services in portions of international airspace.

ARMY AVIATION FLIGHT INFORMATION BULLETIN- A bulletin that provides air operation data covering Army, National Guard, and Army Reserve aviation activities.

ARO-
(See AIRPORT RESERVATION OFFICE.)

ARRESTING SYSTEM- A safety device consisting of two major components, namely, engaging or catching devices and energy absorption devices for the purpose of arresting both tailhook and/or nontailhook-equipped aircraft. It is used to prevent aircraft from overrunning runways when the aircraft cannot be stopped after landing or during aborted takeoff. Arresting systems have various names; e.g., arresting gear, hook device, wire barrier cable.

(See ABORT.)
(Refer to AIM.)

ARRIVAL AIRCRAFT INTERVAL- An internally generated program in hundredths of minutes based upon the AAR. AAI is the desired optimum interval between successive arrival aircraft over the vertex.

ARRIVAL CENTER- The ARTCC having jurisdiction for the impacted airport.

ARRIVAL DELAY- A parameter which specifies a period of time in which no aircraft will be metered for arrival at the specified airport.

ARRIVAL SECTOR- An operational control sector containing one or more meter fixes.

ARRIVAL SECTOR ADVISORY LIST- An ordered list of data on arrivals displayed at the PVD/MDM of the sector which controls the meter fix.

ARRIVAL SEQUENCING PROGRAM- The automated program designed to assist in sequencing aircraft destined for the same airport.

ARRIVAL TIME- The time an aircraft touches down on arrival.

ARSR-
(See AIR ROUTE SURVEILLANCE RADAR.)

ARTCC-
(See AIR ROUTE TRAFFIC CONTROL CENTER.)

ARTS-
(See AUTOMATED RADAR TERMINAL SYSTEMS.)

ASDA-
(See ACCELERATE-STOP DISTANCE AVAILABLE.)

ASDA [ICAO]-
(See ICAO Term ACCELERATE-STOP DISTANCE AVAILABLE.)

ASDE-
(See AIRPORT SURFACE DETECTION EQUIPMENT.)

ASF-
(See AIRPORT STREAM FILTER.)

ASLAR-
(See AIRCRAFT SURGE LAUNCH AND RECOVERY.)

ASP-
(See ARRIVAL SEQUENCING PROGRAM.)

ASR-
(See AIRPORT SURVEILLANCE RADAR.)

ASR APPROACH-
(See SURVEILLANCE APPROACH.)

ASSOCIATED- A radar target displaying a data block with flight identification and altitude information.

(See UNASSOCIATED.)

ATC-

(See AIR TRAFFIC CONTROL.)

ATC ADVISES- Used to prefix a message of noncontrol information when it is relayed to an aircraft by other than an air traffic controller.

(See ADVISORY.)

ATC ASSIGNED AIRSPACE- Airspace of defined vertical/lateral limits, assigned by ATC, for the purpose of providing air traffic segregation between the specified activities being conducted within the assigned airspace and other IFR air traffic.

(See SPECIAL USE AIRSPACE.)

ATC CLEARANCE-

(See AIR TRAFFIC CLEARANCE.)

ATC CLEARS- Used to prefix an ATC clearance when it is relayed to an aircraft by other than an air traffic controller.

ATC INSTRUCTIONS- Directives issued by air traffic control for the purpose of requiring a pilot to take specific actions; e.g., "Turn left heading two five zero," "Go around," "Clear the runway."

(Refer to 14 CFR Part 91.)

ATC PREFERRED ROUTE NOTIFICATION- URET notification to the appropriate controller of the need to determine if an ATC preferred route needs to be applied, based on destination airport.

(See ROUTE ACTION NOTIFICATION.)

(See USER REQUEST EVALUATION TOOL.)

ATC PREFERRED ROUTES- Preferred routes that are not automatically applied by Host.

ATC REQUESTS- Used to prefix an ATC request when it is relayed to an aircraft by other than an air traffic controller.

ATCAA-

(See ATC ASSIGNED AIRSPACE.)

ATCRBS-

(See RADAR.)

ATCSCC-

(See AIR TRAFFIC CONTROL SYSTEM COMMAND CENTER.)

ATCT-

(See TOWER.)

ATD-

(See ALONG-TRACK DISTANCE.)

ATIS-

(See AUTOMATIC TERMINAL INFORMATION SERVICE.)

ATIS [ICAO]-

(See ICAO Term AUTOMATIC TERMINAL INFORMATION SERVICE.)

ATS ROUTE [ICAO]- A specified route designed for channelling the flow of traffic as necessary for the provision of air traffic services.

Note: The term "ATS Route" is used to mean variously, airway, advisory route, controlled or uncontrolled route, arrival or departure, etc.

AUTOLAND APPROACH- An autoland approach is a precision instrument approach to touchdown and, in some cases, through the landing rollout. An autoland approach is performed by the aircraft autopilot which is receiving position information and/or steering commands from onboard navigation equipment.

Note: Autoland and coupled approaches are flown in VFR and IFR. It is common for carriers to require their crews to fly coupled approaches and autoland approaches (if certified) when the weather conditions are less than approximately 4,000 RVR.

(See COUPLED APPROACH.)

AUTOMATED INFORMATION TRANSFER- A precoordinated process, specifically defined in facility directives, during which a transfer of altitude control and/or radar identification is accomplished without verbal coordination between controllers using information communicated in a full data block.

AUTOMATED MUTUAL-ASSISTANCE VESSEL RESCUE SYSTEM- A facility which can deliver, in a matter of minutes, a surface picture (SURPIC) of vessels in the area of a potential or actual search and rescue incident, including their predicted positions and their characteristics.

(See FAAO JO 7110.65, Para 10-6-4, INFLIGHT CONTINGENCIES.)

AUTOMATED PROBLEM DETECTION (APD)- An Automation Processing capability that compares trajectories in order to predict conflicts.

AUTOMATED PROBLEM DETECTION BOUNDARY (APB)- The adapted distance beyond a facilities boundary defining the airspace within which URET performs conflict detection.

(See **USER REQUEST EVALUATION TOOL**.)

AUTOMATED PROBLEM DETECTION INHIBITED AREA (APDIA)- Airspace surrounding a terminal area within which APD is inhibited for all flights within that airspace.

AUTOMATED RADAR TERMINAL SYSTEMS (ARTS)- A generic term for several tracking systems included in the Terminal Automation Systems (TAS). ARTS plus a suffix roman numeral denotes a major modification to that system.

a. ARTS IIIA. The Radar Tracking and Beacon Tracking Level (RT&BTL) of the modular, programmable automated radar terminal system. ARTS IIIA detects, tracks, and predicts primary as well as secondary radar-derived aircraft targets. This more sophisticated computer-driven system upgrades the existing ARTS III system by providing improved tracking, continuous data recording, and fail-soft capabilities.

b. Common ARTS. Includes ARTS IIE, ARTS IIIIE; and ARTS IIIIE with ACD (see DTAS) which combines functionalities of the previous ARTS systems.

c. Programmable Indicator Data Processor (PIDP). The PIDP is a modification to the AN/TPX-42 interrogator system currently installed in fixed RAPCONs. The PIDP detects, tracks, and predicts secondary radar aircraft targets. These are displayed by means of computer-generated symbols and alphanumeric characters depicting flight identification, aircraft altitude, ground speed, and flight plan data. Although primary radar targets are not tracked, they are displayed coincident with the secondary radar targets as well as with the other symbols and alphanumerics. The system has the capability of interfacing with ARTCCs.

AUTOMATED WEATHER SYSTEM- Any of the automated weather sensor platforms that collect weather data at airports and disseminate the weather information via radio and/or landline. The systems currently consist of the Automated Surface Observing System (ASOS), Automated Weather Sensor System (AWSS) and Automated Weather Observation System (AWOS).

AUTOMATED UNICOM- Provides completely automated weather, radio check capability and airport advisory information on an Automated UNICOM system. These systems offer a variety of features, typically selectable by microphone clicks, on the UNICOM frequency. Availability will be published in the Airport/Facility Directory and approach charts.

AUTOMATIC ALTITUDE REPORT-
(See **ALTITUDE READOUT**.)

AUTOMATIC ALTITUDE REPORTING- That function of a transponder which responds to Mode C interrogations by transmitting the aircraft's altitude in 100-foot increments.

AUTOMATIC CARRIER LANDING SYSTEM- U.S. Navy final approach equipment consisting of precision tracking radar coupled to a computer data link to provide continuous information to the aircraft, monitoring capability to the pilot, and a backup approach system.

AUTOMATIC DEPENDENT SURVEILLANCE (ADS) [ICAO]- A surveillance technique in which aircraft automatically provide, via a data link, data derived from on-board navigation and position fixing systems, including aircraft identification, four dimensional position and additional data as appropriate.

AUTOMATIC DEPENDENT SURVEILLANCE-BROADCAST (ADS-B)- A surveillance system in which an aircraft or vehicle to be detected is fitted with cooperative equipment in the form of a data link transmitter. The aircraft or vehicle periodically broadcasts its GPS-derived position and other information such as velocity over the data link, which is received by a ground-based transmitter/receiver (transceiver) for processing and display at an air traffic control facility.

(See **GLOBAL POSITIONING SYSTEM**.)

(See **GROUND-BASED TRANSCEIVER**.)

AUTOMATIC DEPENDENT SURVEILLANCE-CONTRACT (ADS-C)- A data link position reporting system, controlled by a ground station, that establishes contracts with an aircraft's avionics that occur automatically whenever specific events occur, or specific time intervals are reached.

AUTOMATIC DIRECTION FINDER- An aircraft radio navigation system which senses and indicates the direction to a L/MF nondirectional radio beacon (NDB) ground transmitter. Direction is indicated to

the pilot as a magnetic bearing or as a relative bearing to the longitudinal axis of the aircraft depending on the type of indicator installed in the aircraft. In certain applications, such as military, ADF operations may be based on airborne and ground transmitters in the VHF/UHF frequency spectrum.

(See BEARING.)

(See NONDIRECTIONAL BEACON.)

AUTOMATIC FLIGHT INFORMATION SERVICE (AFIS) - ALASKA FSSs ONLY- The continuous broadcast of recorded non-control information at airports in Alaska where a FSS provides local airport advisory service. The AFIS broadcast automates the repetitive transmission of essential but routine information such as weather, wind, altimeter, favored runway, breaking action, airport NOTAMS, and other applicable information. The information is continuously broadcast over a discrete VHF radio frequency (usually the ASOS frequency.)

AUTOMATIC TERMINAL INFORMATION SERVICE- The continuous broadcast of recorded noncontrol information in selected terminal areas. Its purpose is to improve controller effectiveness and to relieve frequency congestion by automating the repetitive transmission of essential but routine information; e.g., "Los Angeles information Alfa. One three zero zero Coordinated Universal Time. Weather, measured ceiling two thousand overcast, visibility three, haze, smoke, temperature seven one, dew point five seven, wind two five zero at five, altimeter two niner niner six. I-L-S Runway Two Five Left approach in use, Runway Two Five Right closed, advise you have Alfa."

(See ICAO term AUTOMATIC TERMINAL INFORMATION SERVICE.)

(Refer to AIM.)

AUTOMATIC TERMINAL INFORMATION SERVICE [ICAO]- The provision of current, routine information to arriving and departing aircraft by means of continuous and repetitive broadcasts throughout the day or a specified portion of the day.

AUTOROTATION- A rotorcraft flight condition in which the lifting rotor is driven entirely by action of the air when the rotorcraft is in motion.

a. Autorotative Landing/Touchdown Autorotation. Used by a pilot to indicate that the landing will be made without applying power to the rotor.

b. Low Level Autorotation. Commences at an altitude well below the traffic pattern, usually below 100 feet AGL and is used primarily for tactical military training.

c. 180 degrees Autorotation. Initiated from a downwind heading and is commenced well inside the normal traffic pattern. "Go around" may not be possible during the latter part of this maneuver.

AVAILABLE LANDING DISTANCE (ALD)- The portion of a runway available for landing and roll-out for aircraft cleared for LAHSO. This distance is measured from the landing threshold to the hold-short point.

AVIATION WEATHER SERVICE- A service provided by the National Weather Service (NWS) and FAA which collects and disseminates pertinent weather information for pilots, aircraft operators, and ATC. Available aviation weather reports and forecasts are displayed at each NWS office and FAA FSS.

(See EN ROUTE FLIGHT ADVISORY SERVICE.)

(See TRANSCRIBED WEATHER BROADCAST.)

(See WEATHER ADVISORY.)

(Refer to AIM.)

AWW-

(See SEVERE WEATHER FORECAST ALERTS.)

AZIMUTH (MLS)- A magnetic bearing extending from an MLS navigation facility.

Note: Azimuth bearings are described as magnetic and are referred to as "azimuth" in radio telephone communications.

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BRIEFING GUIDE

U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

Initiated By: AJR-0
Vice President, System Operations Services

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1. PARAGRAPH NUMBER AND TITLE: 1-2-6. ABBREVIATIONS

2. BACKGROUND: The acronyms FLM/CIC are used in Paragraph 9-2-10 but are not spelled out. These acronyms are not in TBL 1-2-1 thus causing confusion.

3. CHANGE:

OLD
TBL 1-2-1
FAA Order 7110.65 Abbreviations

NEW
TBL 1-2-1
FAA Order 7110.65 Abbreviations

Abbreviation	Meaning
Add	Add
Add	Add

Abbreviation	Meaning
<u>CIC</u>	<u>Controller-in-Charge</u>
<u>FLM</u>	<u>Front-Line Manager</u>

1. PARAGRAPH NUMBER AND TITLE: 3-9-4. TAXI INTO POSITION AND HOLD (TIPH)

2. BACKGROUND: The use of safety logic systems as a sole source for issuing landing clearances in conjunction with TIPH was reviewed by the Air Traffic Safety Oversight Service. It was determined that safety logic systems, as a sole source for preventing runway collisions or incursions, removed the pilot from the safety equation. The conclusion of this review resulted in the stipulation of ceiling and visibility restrictions which allow the pilot to perform a critical role in runway safety by direct observation of the landing environment and thereby providing an extra layer of safety to this critical phase of flight.

3. CHANGE:

OLD

3-9-4. TAXI INTO POSITION AND HOLD (TIPH)

NEW

3-9-4. TAXI INTO POSITION AND HOLD (TIPH)

a through ***cEXAMPLE***

No Change

1. Landing clearance need not be withheld if the safety logic system is operating in full core alert runway configuration.

1. Landing clearance must be withheld if the safety logic system is inoperative or in limited configuration or conditions are less than reported ceiling 800 feet or visibility less than 2 miles.

1. PARAGRAPH NUMBER AND TITLE: 3-10-5. LANDING CLEARANCE

2. BACKGROUND: The use of safety logic systems as a sole source for multiple landing clearances was reviewed by the Air Traffic Safety Oversight Service. It was determined that safety logic systems, as a sole source for preventing runway collisions or incursions, removed the pilot from the safety equation. The conclusion of this review resulted in the stipulation of ceiling and visibility restrictions which allow the pilot to perform a critical role in runway safety by direct observation of the landing environment and thereby providing an extra layer of safety to this critical phase of flight.

3. CHANGE:

OLD

3-10-5. LANDING CLEARANCE
a through c *EXAMPLE*

d. During same runway operations, while TIPH is being applied, landing clearance need not be withheld if the safety logic system to that runway is in full core alert runway configuration.

NEW

3-10-5. LANDING CLEARANCE
No Change

d. During same runway operations, while TIPH is being applied, landing clearance must be withheld if the safety logic system to that runway is inoperative or in limited configuration or conditions are less than reported ceiling 800 feet or visibility less than 2 miles.

1. PARAGRAPH NUMBER AND TITLE: 9-2-10. LAND-BASED AIR DEFENSE IDENTIFICATION ZONE (ADIZ) ATC PROCEDURES

2. BACKGROUND: For several years, the Air Traffic Organization has supported national defense initiatives in the Washington, DC, Metropolitan Area Air Defense Identification Zone (DC ADIZ). In accordance with national directives, this change prescribes standardized procedures for handling aircraft in all locations where security services are required and establishes approved communication for security tracking of aircraft in security services airspace.

3. CHANGE:

OLD

9-2-10. LAND-BASED AIR DEFENSE IDENTIFICATION ZONE (ADIZ) ATC PROCEDURES
TERMINAL

Add

a. Verify, by direct observation or pilot confirmation, IFR and VFR flight operations entering, exiting, or transitioning the ADIZ meet all of the following minimum conditions:

Add

1. Two-way radio communications are maintained at all times prior to entering and throughout transition of the ADIZ. Aircraft operating in an airport traffic pattern or landing at nontowered airports are exempt from the ATC communication requirement, provided they monitor the airport common traffic advisory frequency.

NEW

9-2-10. LAND-BASED AIR DEFENSE IDENTIFICATION ZONE (ADIZ) AIR TRAFFIC CONTROL (ATC) SECURITY SERVICES
No Change

Provide ATC security services at locations where procedures are required for the tracking of aircraft in security services airspace. ATC security services are designed to support the national security mission of the FAA and other agencies. Two-way radio communications, flight planning, and operational transponder on an assigned code are required for operations within the designated area.

a. When the assigned code is observed, advise the aircraft to proceed on course/as requested but to remain outside of Class B, C, and/or D airspace as appropriate.

PHRASEOLOGY-
(ACID) TRANSPONDER OBSERVED PROCEED ON COURSE/AS REQUESTED; REMAIN OUTSIDE (CLASS) AIRSPACE.

1. Maintain continuous security tracking of VFR aircraft operating within the designated area to assist security forces in situational awareness. Immediately report all instances of loss of radio communication or the inability to conduct security tracking of an aircraft to the FLM/CIC and await instructions.

2. Aircraft is equipped with an operating transponder with automatic altitude reporting capability. Aircraft is squawking an ATC assigned discrete beacon code, with altitude, at all times. Do not allow an aircraft to cancel its flight plan and/or squawk VFR while in the ADIZ.

No Change

3. Aircraft with operating transponders, but without operating Mode C (altitude) require specific authorization from ATC in order to operate within the ADIZ. ATC must coordinate with the Domestic Events Network (DEN) prior to approval.

No Change

4. Aircraft flying too low for radar coverage shall be instructed to report landing or exiting the ADIZ. Maintain flight progress strips on such aircraft until pilot reports landing or exiting the ADIZ. If a flight progress strip does not exist for the aircraft, record the call sign, transponder code, entry point (e.g., north, northeast, east), and time of entry into the ADIZ.

PHRASEOLOGY-

(Call sign), REPORT LANDING OR LEAVING THE ADIZ.

No Change

5. United States Military, law enforcement, and aeromedical flights are exempt from filing flight plans.

No Change

b. Pilots unable to comply with the requirements of subpara a, above, shall be instructed to remain clear of or exit the ADIZ as appropriate. When equipment failure involving transponder or Mode C is experienced, and the aircraft is operating within the ADIZ, the pilot may be permitted to land. An operation such as this may be permissible when it is more expedient than exiting the ADIZ and no additional security risk is evident.

b. Establishing Two-Way Communications.

NOTE-

Specific operations may be exempted, waived, or verbally granted by the appropriate authority establishing the ADIZ.

Delete

Add

1. Pilots must establish two-way radio communications with ATC prior to entering the security service area. Responding to a radio call with, “(a/c call sign) standby,” establishes radio communications and the pilot may enter the area, provided all other security requirements have been satisfied.

Add

2. Aircraft requesting security services should not normally be held. However, if holding is necessary or workload/traffic conditions prevent immediate provision of ATC security services, inform the pilot to remain outside the designated area until conditions permit the provision of ATC security services. Inform the pilot of the expected length of delay.

Add

PHRASEOLOGY-
(A/C CALL SIGN) REMAIN OUTSIDE OF THE (location) AND STANDBY. EXPECT (time) MINUTES DELAY.

Add

c. Termination of Service.

Add

1. If the aircraft is not landing within the designated area, provide security services until the aircraft exits the area and then advise the aircraft to squawk VFR and that frequency change is approved.

Add

**PHRASEOLOGY-
SQUAWK VFR, FREQUENCY CHANGE APPROVED.**

or

CONTACT (facility identification).

Add

2. When an aircraft is landing at an airport inside the area, instruct the pilot to remain on the assigned transponder code until after landing.

Add

**PHRASEOLOGY-
(ACID) REMAIN ON YOUR ASSIGNED TRANSPONDER CODE UNTIL YOU LAND, FREQUENCY CHANGE APPROVED.**

Add

3. Using approved handoff functionality, transfer the data blocks of all security tracked aircraft that will enter another sector/position for coordination of aircraft information/location. Upon acceptance of the transferred information, instruct the pilot to contact the next sector/positions' frequency.