

ERRATA SHEET

SUBJECT: Change 1 to FAA Order 7110.65V, Air Traffic Control.

This errata sheet transmits the revised pages to the subject order.

REMOVE PAGE	DATED	INSERT PAGE	DATED
E of C-1 and E of C-2	7/24/14	E of C-1 and E of C-2	7/24/14
Table of Contents i through xx	7/24/14	Table of Contents i through xx	7/24/14
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		Paragraph 2-1-1 ATC Service.	
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		Reformatting created an additional page.	
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		Paragraph 3-7-2 Taxi And Ground Movement Operations.	
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		Paragraph 3-7-5 Precision Approach Critical Area.	
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		Reformatting created an additional page.	
3-9-7 through 3-9-11	7/24/14	3-9-7 through 3-9-10	4/3/14
		Paragraph 3-9-7 Wake Turbulence Separation For Intersection Departures. Incorrect guidance for application to Wake Turbulence For Intersection Departures, previous language restored.	
4-5-3	4/3/14	4-5-3	4/3/14
		Reformatting created an additional page.	
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		Paragraph 4-5-7 Altitude Information.	
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		Paragraph 7-5-3 Separation. Incorrect guidance for application to SVFR Separation, previous language restored.	

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		Paragraph 8-7-3 Longitudinal Separation, Paragraph 8-7-4 Lateral Separation.	
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PCG-1 and PCG-2	7/24/14	PCG-1 and PCG-2	7/24/14
PCG A-11 through PCG A-16	7/24/14	PCG A-11 through PCG A-16	7/24/14
		Adds Definition for Approach Hold Area	
PCG G-1 and PCG G-2	7/24/14	PCG G-1 and PCG G-2	7/24/14
		Gate Hold Procedures, Incorrect guidance application for the definition; previous language restored.	
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Attachment

Explanation of Changes Change 1

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

a. 2-1-1. ATC SERVICE

This change to Paragraph 2-1-1, better reflects the core values of the controller workforce.

b. 2-1-17. RADIO COMMUNICATIONS

This change clarifies the procedures to be used when transferring radio communications between facilities with/without the same name.

**c. 2-1-20. WAKE TURBULENCE
CAUTIONARY ADVISORIES**

Due to wording in Paragraph 2-1-20, that does not convey the intent of the requirement when issuing a WTCA, Terminal Procedures issued GENOT 13/18 (N JO 7110.631) clarifying the requirement/procedure identified in Paragraph 2-1-20a. This change cancels and incorporates N JO 7110.669, Wake Turbulence Cautionary Advisories, effective March 28, 2014.

**d. 3-4-20. RUNWAY STATUS LIGHTS
(RWSL)**

This change adds the requirements associated with N JO 7210.842, Guidance for the Use of Runway Status Lights (RWSL) Light System, into FAA Order JO 7110.65. The new paragraph provides guidance for the operation and periodic check of the RWSL system.

**e. 3-7-2. TAXI AND GROUND
MOVEMENT OPERATIONS**

This change will establish uniform procedures and phraseology for approach hold areas.

**f. 3-7-5. PRECISION APPROACH
CRITICAL AREA**

For those facilities that have had the middle marker decommissioned, this change identifies a distance (1/2 mile) from the approach end of the runway for protection of the Localizer Critical Area. This change also removed MLS from the required phraseology to advise pilots that the ILS Critical Area is not protected.

**g. 3-9-7. WAKE TURBULENCE
SEPARATION FOR INTERSECTION
DEPARTURES**

This paragraph has reverted to previous language.

h. 4-5-7. ALTITUDE INFORMATION

This change adds the option for air traffic controllers to issue time restrictions without reference to the UTC clock for aircraft in radar contact and in direct communication with the issuing controller.

**i. 5-3-1. APPLICATION
5-5-1. APPLICATION**

Guidance is being added to FAA Order JO 7110.65, applicable to aircraft transiting from oceanic airspace on non-radar offshore airspace to a radar coverage area where radar separation is applied.

**j. 5-5-13. GPA 102/103 CORRECTION
FACTOR**

This paragraph has become obsolete and is no longer necessary. This change removes the paragraph from FAA Order JO 7110.65.

**k. 5-9-9. SIMULTANEOUS
INDEPENDENT CLOSE PARALLEL
APPROACHES - HIGH UPDATE RADAR
NOT REQUIRED**

This proposal incorporates the data from the AFS simulation/analysis and will now permit closely spaced parallel approaches at airports with runway centerlines separated by a minimum of 3,600' and the field elevation less than 2,000' MSL.

l. 7-5-3. SEPARATION

This paragraph has reverted to previous language.

m. 7-9-4. SEPARATION

This change would remove the requirement to treat the V-22 Osprey as a fixed-wing aircraft while operating in Class B airspace and consider it at all times to be a helicopter as annotated in Appendix B.

n. 8-4-1. APPLICATION

This change removes the phrase “controlled by Houston ARTCC,” from FAA Order JO 7110.65, Paragraph 8-4-1, to facilitate future expansion of the current Offshore Grid System into the Jacksonville ARTCC Gulf of Mexico Low airspace.

o. 8-5-5. RADAR IDENTIFICATION APPLICATION

Adds Paragraph 8-5-5, Radar Identification Application, to the FAA Order JO 7110.65.

**p. 8-7-3. LONGITUDINAL SEPARATION
8-8-3. LONGITUDINAL SEPARATION**

This change adds a provision for 50 NM longitudinal (D50) separation and 30 NM lateral/30 NM longitudinal (30/30) separation within the New York Oceanic FIR.

**q. 8-7-4. LATERAL SEPARATION
8-8-4. LATERAL SEPARATION**

This change adds a provision for 30 NM lateral separation within the New York Oceanic FIR.

r. 10-5-1. NAVY FLEET SUPPORT MISSIONS

Paragraph 10-5-1, Navy Fleet Support Missions contains outdated and obsolete information, as

determined by the U.S. Navy. Therefore, Paragraph 10-5-1 is deleted.

s. 13-2-2. CONFLICT DETECTION AND RESOLUTION

This change removes Paragraph 8-6-3, Temporary Moving Airspace Reservations listed as a conflict probe limitation in Chapter 13 of the 7110.65.

t. 13-2-4. CONTROLLER PILOT DATA LINK COMMUNICATIONS (CPDLC)

This change corrects the guidance for unanswered CPDLC messages in Chapter 13, Decision Support Tools, Section 2, Ocean21 - Oceanic, Paragraph 13-2-4 to comply with ICAO Global Operational Data Link Document (GOLD), Paragraph 2.2.1.5 which states: “When a clearance is sent to the aircraft, the controller continues to protect the airspace associated with the existing clearance until an appropriate operational response is received from the flight crew. If an expected operational response to a clearance is not received, the controller will initiate action to ensure that the clearance as received by the flight crew.”

u. Entire Publication

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

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Chapter 2. General Control

Section 1. General

2-1-1. ATC SERVICE

The primary purpose of the ATC system is to prevent a collision between aircraft operating in the system and to provide a safe, orderly and expeditious flow of traffic, and to provide support for National Security and Homeland Defense. In addition to its primary function, the ATC system has the capability to provide, with certain limitations, additional services. The ability to provide additional services is limited by many factors, such as the volume of traffic, frequency congestion, quality of radar, controller workload, higher priority duties, and the pure physical inability to scan and detect those situations that fall in this category. It is recognized that these services cannot be provided in cases in which the provision of services is precluded by the above factors. Consistent with the aforementioned conditions, controllers must provide additional service procedures to the extent permitted by higher priority duties and other circumstances. The provision of additional services is not optional on the part of the controller, but rather is required when the work situation permits. Provide air traffic control service in accordance with the procedures and minima in this order except when:

a. A deviation is necessary to conform with ICAO Documents, National Rules of the Air, or special agreements where the U.S. provides air traffic control service in airspace outside the U.S. and its possessions or:

NOTE-

Pilots are required to abide by CFRs or other applicable regulations regardless of the application of any procedure or minima in this order.

b. Other procedures/minima are prescribed in a letter of agreement, FAA directive, or a military document, or:

NOTE-

These procedures may include altitude reservations, air refueling, fighter interceptor operations, law enforcement, etc.

REFERENCE-

FAAO JO 7110.65, Para 1-1-9Procedural Letters of Agreement.

c. A deviation is necessary to assist an aircraft when an emergency has been declared.

REFERENCE-

FAAO JO 7110.65, Para 2-1-6Safety Alert.

FAAO JO 7110.65, Chapter 10 Emergencies.

FAAO JO 7110.65, Para 5-1-8Merging Target Procedures.

2-1-2. DUTY PRIORITY

a. Give first priority to separating aircraft and issuing safety alerts as required in this order. Good judgment must be used in prioritizing all other provisions of this order based on the requirements of the situation at hand.

REFERENCE-

FAAO JO 7110.65, Para 2-1-6Safety Alert.

NOTE-

Because there are many variables involved, it is virtually impossible to develop a standard list of duty priorities that would apply uniformly to every conceivable situation. Each set of circumstances must be evaluated on its own merit, and when more than one action is required, controllers must exercise their best judgment based on the facts and circumstances known to them. That action which is most critical from a safety standpoint is performed first.

b. Provide support to national security and homeland defense activities to include, but not be limited to, reporting of suspicious and/or unusual aircraft/pilot activities.

REFERENCE-

FAAO JO 7610.4 Special Operations.

c. Provide additional services to the extent possible, contingent only upon higher priority duties and other factors including limitations of radar, volume of traffic, frequency congestion, and workload.

2-1-3. PROCEDURAL PREFERENCE

a. Use automation procedures in preference to nonautomation procedures when workload, communications, and equipment capabilities permit.

b. Use radar separation in preference to nonradar separation when it will be to an operational advantage and workload, communications, and equipment permit.

c. Use nonradar separation in preference to radar separation when the situation dictates that an operational advantage will be gained.

NOTE-

One situation may be where vertical separation would preclude excessive vectoring.

2-1-4. OPERATIONAL PRIORITY

Provide air traffic control service to aircraft on a “first come, first served” basis as circumstances permit, except the following:

NOTE-

It is solely the pilot’s prerogative to cancel an IFR flight plan. However, a pilot’s retention of an IFR flight plan does not afford priority over VFR aircraft. For example, this does not preclude the requirement for the pilot of an arriving IFR aircraft to adjust his/her flight path, as necessary, to enter a traffic pattern in sequence with arriving VFR aircraft.

a. An aircraft in distress has the right of way over all other air traffic.

REFERENCE-

14 CFR Section 91.113(c).

b. Provide priority to civilian air ambulance flights (call sign “MEDEVAC”). Use of the MEDEVAC call sign indicates that operational priority is requested. When verbally requested, provide priority to AIR EVAC, HOSP, and scheduled air carrier/air taxi flights. Assist the pilots of MEDEVAC, AIR EVAC, and HOSP aircraft to avoid areas of significant weather and turbulent conditions. When requested by a pilot, provide notifications to expedite ground handling of patients, vital organs, or urgently needed medical materials.

NOTE-

It is recognized that heavy traffic flow may affect the controller’s ability to provide priority handling. However, without compromising safety, good judgment must be used in each situation to facilitate the most expeditious movement of a MEDEVAC aircraft.

c. Provide maximum assistance to SAR aircraft performing a SAR mission.

REFERENCE-

FAAO JO 7110.65, Para 10-1-3 Providing Assistance.

d. Expedite the movement of presidential aircraft and entourage and any rescue support aircraft as well as related control messages when traffic conditions and communications facilities permit.

NOTE-

As used herein the terms presidential aircraft and entourage include aircraft and entourage of the President, Vice President, or other public figures when designated by the White House.

REFERENCE-

FAAO JO 7110.65, Para 2-4-20 Aircraft Identification.

FAAO JO 7110.65, Para 4-3-2 Departure Clearances.

FAAO JO 7210.3, Para 5-1-1 Advance Coordination.

e. Provide special handling, as required to expedite Flight Check aircraft.

NOTE-

It is recognized that unexpected wind conditions, weather, or heavy traffic flows may affect controller’s ability to provide priority or special handling at the specific time requested.

REFERENCE-

FAAO JO 7110.65, Para 9-1-3 Flight Check Aircraft.

f. Expedite movement of NIGHT WATCH aircraft when NAOC (pronounced NA-YOCK) is indicated in the remarks section of the flight plan or in air/ground communications.

NOTE-

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

REFERENCE-

FAAO JO 7610.4, Para 12-1-1 Applications.

g. Provide expeditious handling for any civil or military aircraft using the code name “FLYNET.”

REFERENCE-

FAAO JO 7110.65, Para 9-2-6 FLYNET.

FAAO JO 7610.4, Para 12-4-1 “FLYNET” Flights, Nuclear Emergency Teams.

h. Provide expeditious handling of aircraft using the code name “Garden Plot” only when CARF notifies you that such priority is authorized. Refer any questions regarding flight procedures to CARF for resolution.

NOTE-

Garden Plot flights require priority movement and are coordinated by the military with CARF. State authority will contact the Regional Administrator to arrange for priority of National Guard troop movements within a particular state.

i. Provide special handling for USAF aircraft engaged in aerial sampling missions using the code name “SAMP.”

REFERENCE-

FAAO JO 7110.65, Para 9-2-17 SAMP.

FAAO JO 7210.3, Para 5-3-4, Atmosphere Sampling For Nuclear Contamination.

FAAO JO 7610.4, Para 12-4-3, Atmospheric Sampling For Nuclear Contamination.

EXAMPLE–

“Runway Three–Six Left, taxi via taxiway Alpha, hold short of taxiway Charlie.”

or

“Runway Three–Six Left, taxi via Alpha, hold short of Charlie.”

or

“Runway Three–Six Left, taxi via taxiway Alpha, hold short of Runway Two–Seven Right.”

or

“Runway Three–Six Left, taxi via Charlie, cross Runway Two–Seven Left, hold short of Runway Two–Seven Right.”

or

“Runway Three–Six Left, taxi via Alpha, Charlie, cross Runway One–Zero.”

c. Aircraft/vehicles must receive a clearance for each runway their route crosses. An aircraft/vehicle must have crossed a previous runway before another runway crossing clearance may be issued.

NOTE–

A clearance is required for aircraft/vehicles to operate on any active, inactive, or closed runway except for vehicles operating on closed runways in accordance with a Letter of Agreement (LOA).

EXAMPLE–

“Cross Runway One–Six Left, hold short of Runway One–Six Right.”

d. When an aircraft/vehicle is instructed to “follow” traffic and requires a runway crossing, issue a runway crossing clearance in addition to the follow instructions and/or hold short instructions, as applicable.

EXAMPLE–

“Follow (traffic), cross Runway Two–Seven Right.”

or

“Follow (traffic), cross Runway Two Seven–Right, hold short Runway Two–Seven Left.”

e. At those airports where the taxi distance between runway centerlines is less than 1,000 feet, multiple runway crossings may be issued with a single clearance. The air traffic manager must submit

a request to the appropriate Terminal Services Director of Operations for approval before authorizing multiple runway crossings.

REFERENCE–

FAAO JO 7210.3, Para 10–3–10 Multiple Runway Crossings.

f. Request a read back of runway hold short instructions when it is not received from the pilot/vehicle operator.

PHRASEOLOGY–

READ BACK HOLD INSTRUCTIONS.

EXAMPLE–

1. *“American Four Ninety Two, Runway Three Six Left, taxi via taxiway Charlie, hold short of Runway Two Seven Right.”*

or

“American Four Ninety Two, Runway Three Six Left, taxi via Charlie, hold short of Runway Two Seven Right.”

“American Four Ninety Two, Roger.”

“American Four Ninety Two, read back hold instructions.”

2. *“Cleveland Tower, American Sixty Three is ready for departure.”*

“American Sixty Three, hold short of Runway Two Three Left, traffic one mile final.”

“American Sixty Three, Roger.”

“American Sixty Three, read back hold instructions.”

3. *“OPS Three proceed via taxiway Charlie hold short of Runway Two Seven.”*

or

“OPS Three proceed via Charlie hold short of Runway Two Seven.”

“OPS Three, Roger.”

“OPS Three, read back hold instructions.”

NOTE–

Read back hold instructions phraseology may be initiated for any point on a movement area when the controller believes the read back is necessary.

g. Issue progressive taxi/ground movement instructions when:

1. A pilot/operator requests.

2. The specialist deems it necessary due to traffic or field conditions, e.g., construction or closed taxiways.

3. Necessary during reduced visibility, especially when the taxi route is not visible from the tower.

NOTE-

Progressive instructions may include step-by-step directions and/or directional turns.

REFERENCE-

FAAO JO 7110.65, Para 3-7-4 Runway Proximity.

FAAO JO 7110.65, Para 3-II-1, Taxi and Ground Movement Operation.

h. Issue instructions to expedite a taxiing aircraft or a moving vehicle.

PHRASEOLOGY-

TAXI WITHOUT DELAY (traffic if necessary).

EXIT/PROCEED/CROSS

(runway/taxiway) WITHOUT DELAY.

i. Issue instructions to aircraft/vehicle to hold short of an approach hold area.

PHRASEOLOGY-

HOLD SHORT OF (runway) APPROACH

3-7-3. GROUND OPERATIONS

WAKE TURBULENCE APPLICATION

Avoid clearances which require:

a. Heavy jet aircraft to use greater than normal taxiing power.

b. Small aircraft or helicopters to taxi in close proximity to taxiing or hover-taxi helicopters.

NOTE-

Use caution when taxiing smaller aircraft/helicopters in the vicinity of larger aircraft.

REFERENCE-

AC 90-23, Aircraft Wake Turbulence, Para 10 and Para 11.

3-7-4. RUNWAY PROXIMITY

Hold a taxiing aircraft or vehicle clear of the runway as follows:

a. Instruct aircraft or vehicle to hold short of a specific runway.

b. Instruct aircraft or vehicle to hold at a specified point.

c. Issue traffic information as necessary.

PHRASEOLOGY-

HOLD SHORT OF/AT (runway number or specific point), (traffic or other information).

NOTE-

Establishing hold lines/signs is the responsibility of the airport manager. The standards for surface measurements, markings, and signs are contained in AC 150/5300-13, Airport Design; AC 150/5340-1, Standards for Airport Markings, and AC 150/5340-18, Standards for Airport Sign Systems. The operator is responsible for properly positioning the aircraft, vehicle, or equipment at the appropriate hold line/sign or designated point. The requirements in para 3-1-12 Visually Scanning Runways, remain valid as appropriate.

REFERENCE-

FAAO JO 7110.65, Para 3-7-2 Taxi and Ground Movement Operations.

FAAO JO 7110.65, Para 3-10-10 Altitude Restricted Low Approach.

FAAO JO 7110.65, Para 3-1-5 Vehicles/Equipment/Personnel on Runways.

3-7-5. PRECISION APPROACH CRITICAL AREA

a. ILS critical area dimensions are described in FAA Order 6750.16, Siting Criteria for Instrument Landing Systems. Aircraft and vehicle access to the ILS critical area must be controlled to ensure the integrity of ILS course signals whenever conditions are less than reported ceiling 800 feet or visibility less than 2 miles. Do not authorize vehicles/aircraft to operate in or over the critical area, except as specified in subparagraph a1, whenever an arriving aircraft is inside the ILS outer marker (OM) or the fix used in lieu of the OM unless the arriving aircraft has reported the runway in sight or is circling to land on another runway.

PHRASEOLOGY-

HOLD SHORT OF (runway) ILS CRITICAL AREA.

1. LOCALIZER CRITICAL AREA

(a) Do not authorize vehicle or aircraft operations in or over the area when an arriving aircraft is inside the ILS OM or the fix used in lieu of the OM when conditions are less than reported ceiling 800 feet or visibility less than 2 miles, except:

(1) A preceding arriving aircraft on the same or another runway that passes over or through the area while landing or exiting the runway.

(2) A preceding departing aircraft or missed approach on the same or another runway that passes through or over the area.

(b) In addition to subparagraph a1(a), when conditions are less than reported ceiling 200 feet or RVR 2,000 feet, do not authorize vehicles or aircraft operations in or over the area when an arriving aircraft is inside the middle marker, or in the absence of a middle marker, ½ mile final.

2. GLIDESLOPE CRITICAL AREA. Do not authorize vehicles or aircraft operations in or over the area when an arriving aircraft is inside the ILS OM or the fix used in lieu of the OM unless the arriving aircraft has reported the runway in sight or is circling to land on another runway when conditions are less than reported ceiling 800 feet or visibility less than 2 miles.

b. Operators commonly conduct “coupled” or “autoland” approaches to satisfy maintenance, training, or reliability program requirements. Promptly issue an advisory if the critical area will not be protected when an arriving aircraft advises that a “coupled,” “CATIII,” “autoland,” or similar type approach will be conducted and the weather indicates a reported ceiling of 800 feet or more, or the visibility is 2 miles or more.

PHRASEOLOGY–

ILS CRITICAL AREA NOT PROTECTED.

c. The Department of Defense (DOD) is authorized to define criteria for protection of precision approach critical areas at military controlled airports. This protection is provided to all aircraft operating at that military controlled airport. Waiver authority for DOD precision approach critical area criteria rests with the appropriate military authority.

NOTE–

Signs and markings are installed by the airport operator to define the ILS/MLS critical area. No point along the longitudinal axis of the aircraft is permitted past the hold line for holding purposes. The operator is responsible to properly position the aircraft, vehicle, or equipment at the appropriate hold line/sign or designated point. The requirements in para 3–1–12 Visually Scanning Runways, remain valid as appropriate.

REFERENCE–

AC150/5340–1, Standards for Airport Markings.

3–7–6. PRECISION OBSTACLE FREE ZONE (POFZ) AND FINAL APPROACH OBSTACLE CLEARANCE SURFACES (OCS)

a. Ensure the POFZ is clear of traffic (aircraft or vehicles) when an aircraft on a vertically–guided final approach is within 2 miles of the runway threshold and the reported ceiling is below 300 feet or visibility is less than ¾ SM to protect aircraft executing a missed approach.

NOTE–

Only horizontal surfaces (e.g., the wings) can penetrate the POFZ, but not the vertical surfaces (e.g., fuselage or tail). Three hundred feet (300) is used because ATC does not measure ceilings in fifty (50) foot increments.

b. Ensure the final approach OCS (e.g., ILS /LPV W, X, and Y surfaces) are clear of aircraft/vehicles when an aircraft on the vertically–guided approach is within 2 miles of the runway threshold and the reported ceiling is below 800 feet or visibility is less than 2 SM to protect aircraft executing a missed approach.

NOTE–

1. *The POFZ and the close–in portion of the final approach obstacle clearance surfaces protect aircraft executing a missed approach. Their dimensions are described in FAAO 8260.3b, Volume III, Chapter 3, para 3.4, United States Standards for Terminal Instrument Procedures.*

2. *Vehicles that are less than 10 feet in height, necessary for the maintenance of the airport and/or navigation facilities operating outside the movement area, are exempt.*

c. If it is not possible to clear the POFZ or OCS prior to an aircraft reaching a point 2 miles from the runway threshold and the weather is less than described in subparas a or b above, issue traffic to the landing aircraft.

NOTE–

The POFZ and/or OCS must be cleared as soon as practical.

PHRASEOLOGY–

(ACID), IN THE EVENT OF MISSED APPROACH (issue traffic).

TAXIING AIRCRAFT/VEHICLE LEFT/RIGHT OF RUNWAY.

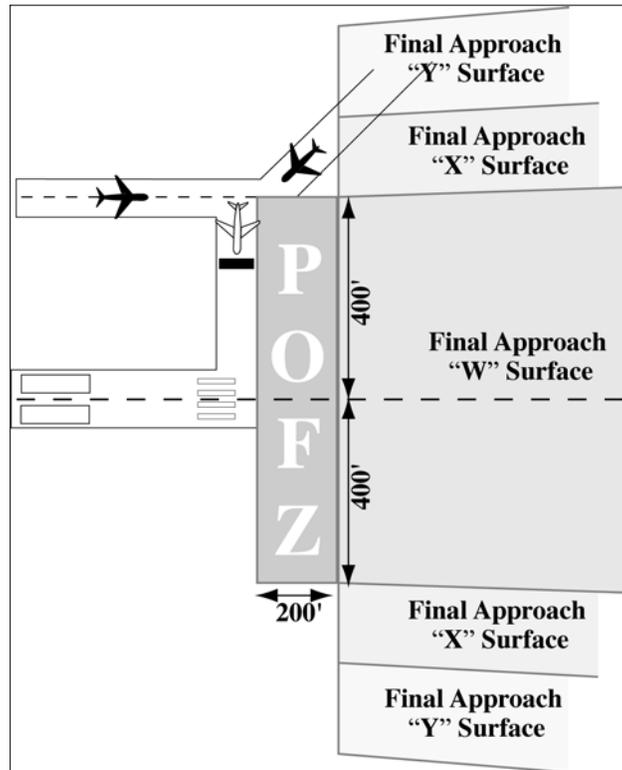
EXAMPLE–

“United 623, in the event of missed approach, taxiing aircraft right of runway.”

“Delta 1058, in the event of missed approach, vehicle left of runway.”

REFERENCE—
FAAO JO 7110.65, Para 3-1-6 Traffic Information.

FIG 3-7-1
Precision Obstacle Free Zone (POFZ)



b. The 3-minute interval is not required when:

1. A pilot has initiated a request to deviate from that interval unless the preceding departing aircraft is a heavy aircraft/B757.

NOTE-

A request for takeoff does not initiate a waiver request; the request for takeoff must be accomplished by a request to deviate from the 3-minute interval.

2. USA NOT APPLICABLE. The intersection is 500 feet or less from the departure point of the preceding aircraft and both aircraft are taking off in the same direction.

3. Successive touch-and-go and stop-and-go operations are conducted with a small aircraft following another small aircraft weighing more than 12,500 lbs. or a large aircraft in the pattern, or a small aircraft weighing more than 12,500 lbs. or a large aircraft departing the same runway, provided the pilot of the small aircraft is maintaining visual separation/spacing behind the preceding large aircraft. Issue a wake turbulence cautionary advisory and the position of the large aircraft.

EXAMPLE-

“Caution wake turbulence, DC-9 on base leg.”

4. Successive touch-and-go and stop-and-go operations are conducted with any aircraft following a heavy aircraft/B757 in the pattern, or heavy aircraft/B757 departing the same runway, provided the pilot of the aircraft is maintaining visual separation/spacing behind the preceding heavy aircraft/B757. Issue a wake turbulence cautionary advisory and the position of the heavy aircraft/B757.

EXAMPLE-

“Caution wake turbulence, heavy Lockheed C5A departing runway two three.”

5. If action is initiated to reduce the separation between successive touch-and-go or stop-and-go operations, apply 3 minutes separation.

c. When applying the provision of subpara b:

1. Issue a wake turbulence advisory before clearing the aircraft for takeoff.

2. Do not clear the intersection departure for an immediate takeoff.

3. Issue a clearance to permit the trailing aircraft to deviate from course enough to avoid the flight path of the preceding large departure when applying subpara b1 or b2.

4. Separation requirements in accordance with para 3-9-6, Same Runway Separation, must also apply.

REFERENCE-

FAAO JO 7110.65, Para 3-9-6 Same Runway Separation.

3-9-8. INTERSECTING RUNWAY SEPARATION

a. Issue traffic information to each aircraft operating on intersecting runways.

b. Separate departing aircraft from an aircraft using an intersecting runway, or nonintersecting runways when the flight paths intersect, by ensuring that the departure does not begin takeoff roll until one of the following exists:

REFERENCE-

FAAO JO 7110.65, Para 2-1-21 Traffic Advisories.

1. The preceding aircraft has departed and passed the intersection, has crossed the departure runway, or is turning to avert any conflict. (See FIG 3-9-5 and FIG 3-9-6.)

FIG 3-9-5

Intersecting Runway Separation

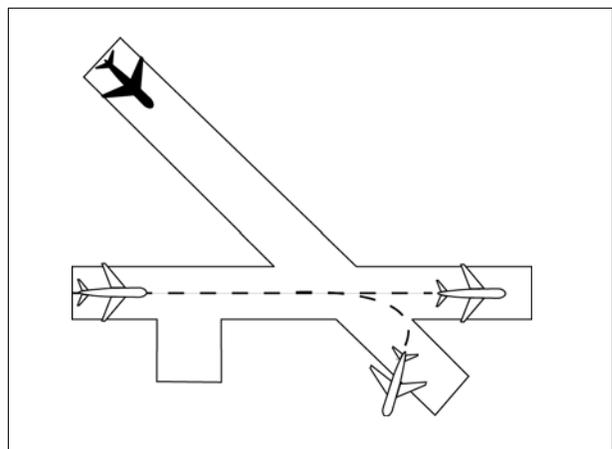
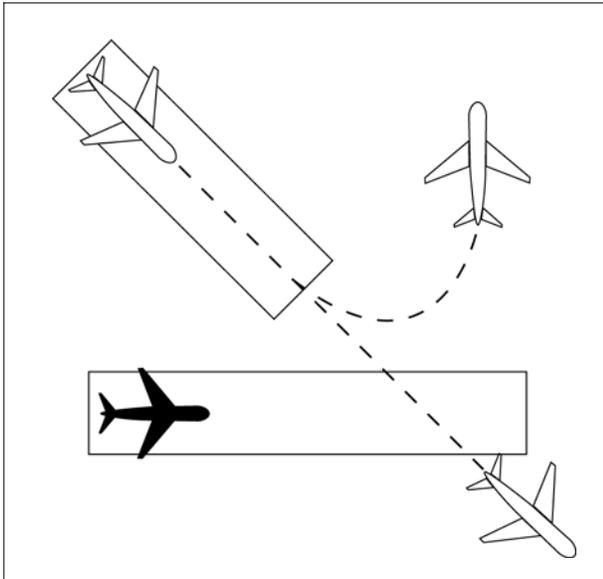


FIG 3-9-6
Intersecting Runway Separation



2. A preceding arriving aircraft is clear of the landing runway, completed the landing roll and will hold short of the intersection, passed the intersection, or has crossed over the departure runway. (See FIG 3-9-7 and FIG 3-9-8.)

REFERENCE-
P/CG Term- Clear of the Runway.

FIG 3-9-7
Intersecting Runway Separation

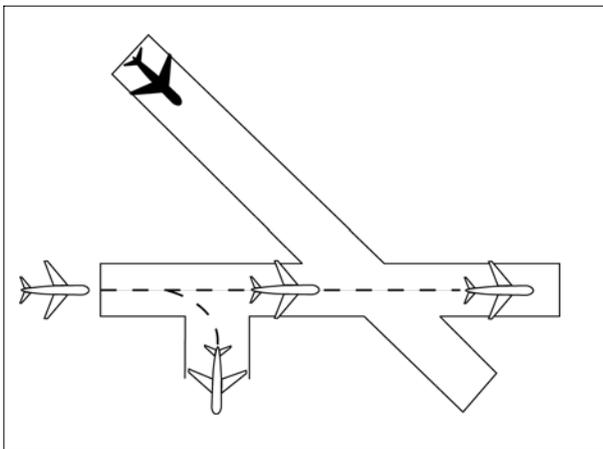
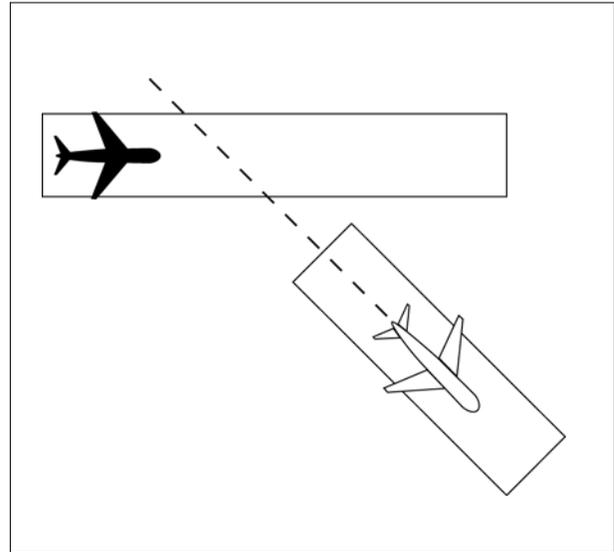


FIG 3-9-8
Intersecting Runway Separation



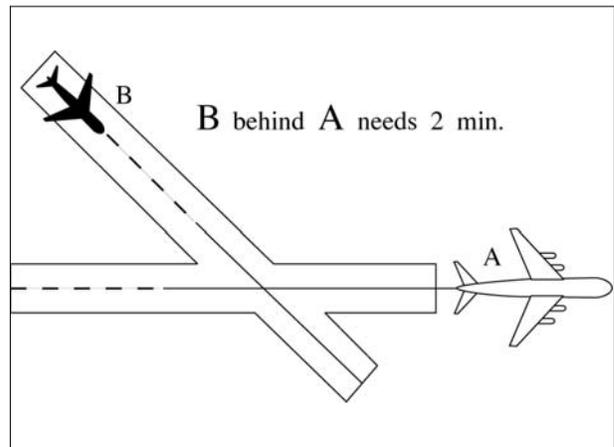
WAKE TURBULENCE APPLICATION

3. Separate IFR/VFR aircraft taking off behind a heavy jet/B757 departure by 2 minutes when departing:

NOTE-
Takeoff clearance to the following aircraft should not be issued until 2 minutes after the heavy jet/B757 begins takeoff roll.

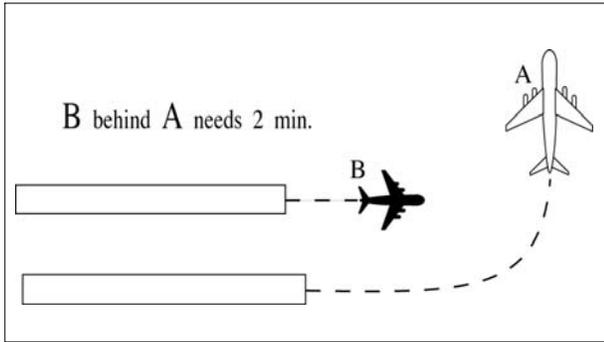
(a) Crossing runways if projected flight paths will cross. (See FIG 3-9-9.)

FIG 3-9-9
Crossing Runways



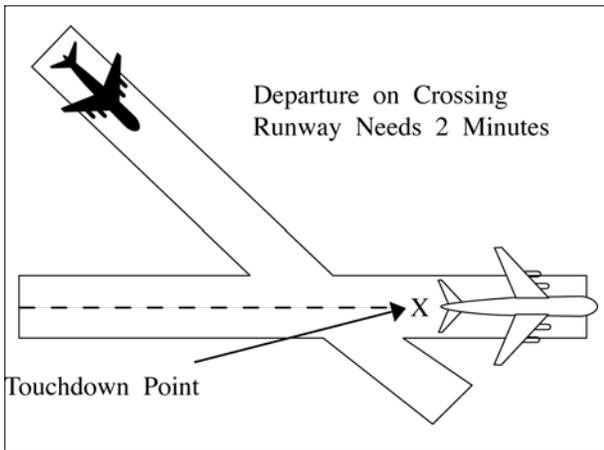
(b) A parallel runway separated by 2,500 feet or more if projected flight paths will cross. (See FIG 3-9-10.)

**FIG 3-9-10
Parallel Runway**



4. Separate IFR/VFR aircraft departing behind a landing heavy jet/B757 on a crossing runway if the departure will fly through the airborne path of the arrival— 2 minutes. (See FIG 3-9-11.)

**FIG 3-9-11
Departure on Crossing Runway**



5. Air traffic controllers must not approve pilot requests to deviate from the required wake turbulence time interval if the preceding aircraft is a heavy jet/B757.

REFERENCE—
FAAO JO 7110.65, Para 5-8-3 Successive or Simultaneous Departures.
FAAO JO 7110.65, Para 5-8-5 Departures and Arrivals on Parallel or Nonintersecting Diverging Runways.

3-9-9. TAKEOFF CLEARANCE

a. When issuing a clearance for takeoff, first state the runway number followed by the takeoff clearance.

PHRASEOLOGY—
RUNWAY (number), CLEARED FOR TAKEOFF.

EXAMPLE—
“RUNWAY TWO SEVEN, CLEARED FOR TAKEOFF.”

NOTE—
Turbine-powered aircraft may be considered ready for takeoff when they reach the runway unless they advise otherwise.

REFERENCE—
FAAO JO 7110.65, Para 4-3-1 Departure Terminology.

b. When clearing an aircraft for takeoff from an intersection, state the runway intersection.

PHRASEOLOGY—
RUNWAY (number) AT (taxiway designator) CLEARED FOR TAKEOFF.

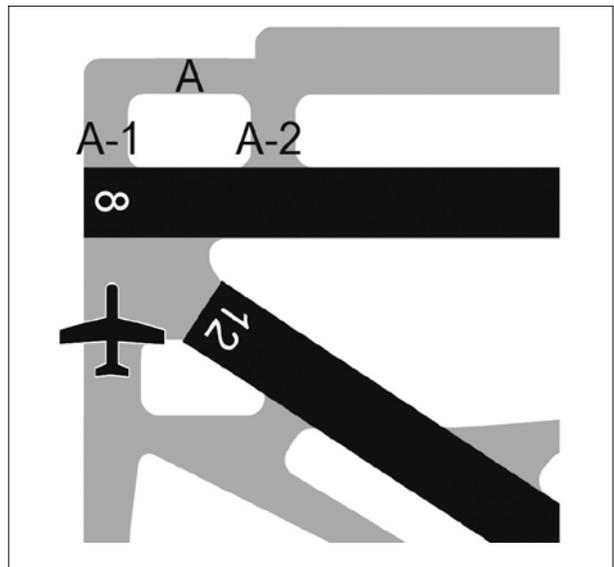
c. When two or more aircraft call the tower ready for departure, one or more at the full length of a runway and one or more at an intersection, state the location of the aircraft at the full length of the runway when clearing that aircraft for takeoff.

PHRASEOLOGY—
RUNWAY (number), FULL LENGTH, CLEARED FOR TAKEOFF.

EXAMPLE—
“American Four Eighty Two, Runway Three Zero full length, cleared for takeoff.”

d. The controller must ensure that all runways along the taxi route that lead to the departure runway are crossed before the takeoff clearance is issued, except as stated in para 3-9-9e.

**FIG 3-9-12
Runway/Taxiway Proximity**



e. At those airports where the airport configuration does not allow for an aircraft to completely cross one

runway and hold short of the departure runway and/or where airports do not have runway hold markings between runways, state the runway to be crossed with the takeoff clearance if the aircraft is not able to complete a runway crossing before reaching its departure runway.

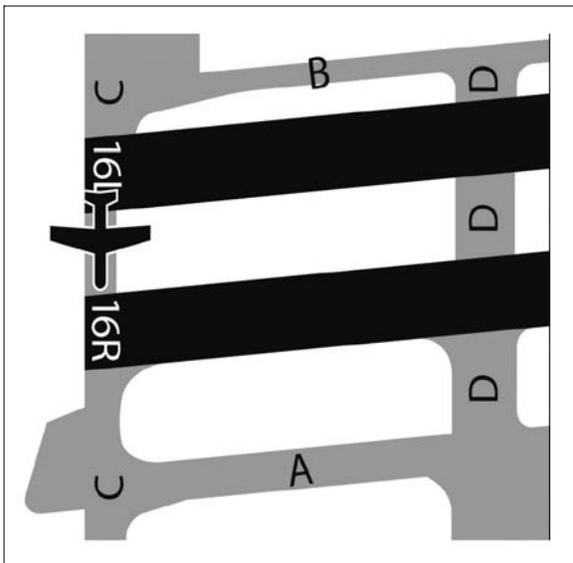
PHRASEOLOGY-

CROSS RUNWAY (number), RUNWAY (number) CLEARED FOR TAKEOFF.

EXAMPLE-

“CROSS RUNWAY TWO FOUR LEFT, RUNWAY TWO FOUR RIGHT, CLEARED FOR TAKEOFF.”

**FIG 3-9-13
Runway/Taxiway Proximity**



REFERENCE-

*FAAO JO 7210.3, Para 10-3-9, Takeoff Clearance.
P/CG Term- Clear of the Runway.*

f. Do not use the term “full length” when the runway length available for departure has been temporarily shortened. On permanently shortened runways, do not use the term “full length” until the Airport/Facility Directory is updated to include the change(s).

NOTE-

The use of the term “full length” could be interpreted by the pilot(s) as the available runway length prior to the runway being shortened.

g. Whenever a runway length has been temporarily or permanently shortened, state the word “shortened” immediately following the runway number as part of the takeoff clearance. This information must be issued in conjunction with the takeoff clearance.

1. The addition of “shortened” must be included in the takeoff clearance for the duration of the construction project when the runway is temporarily shortened.

2. The addition of “shortened” must be included in the takeoff clearance until the Airport/Facility Directory is updated to include the change(s) when the runway is permanently shortened.

PHRASEOLOGY-

RUNWAY (number) SHORTENED, CLEARED FOR TAKEOFF.

EXAMPLE-

“Runway Two-Seven shortened, cleared for takeoff.”

PHRASEOLOGY-

RUNWAY (number) AT (taxiway designator) INTERSECTION DEPARTURE SHORTENED, CLEARED FOR TAKEOFF.

EXAMPLE-

“Runway Two-Seven at Juliet, intersection departure shortened, cleared for takeoff.”

REFERENCE-

*FAAO JO 7210.3, Para 10-3-11, Airport Construction
FAAO JO 7210.3, Para 10-3-12, Change in Runway Length Due to Construction*

h. USAF. When an aircraft is cleared for takeoff, inform it of the closest traffic within 6 miles on final approach to the same runway. If the approaching aircraft is on a different frequency, inform it of the departing aircraft.

i. USA/USN/USAF. Issue surface wind and takeoff clearance to aircraft.

PHRASEOLOGY-

RUNWAY (number), WIND (surface wind in direction and velocity). CLEARED FOR TAKEOFF.

3-9-10. CANCELLATION OF TAKEOFF CLEARANCE

Cancel a previously issued clearance for takeoff and inform the pilot of the reason if circumstances require. Once an aircraft has started takeoff roll, cancel the takeoff clearance only for the purpose of safety.

NOTE-

In no case should a takeoff clearance be canceled after an aircraft has started its takeoff roll solely for the purpose of meeting traffic management requirements/EDCT.

PHRASEOLOGY-

CANCEL TAKEOFF CLEARANCE (reason).

b. An aircraft may be cleared to operate on jet routes below the MEA (but not below the prescribed minimum altitude for IFR operations) or above the maximum authorized altitude if, in either case, radar service is provided.

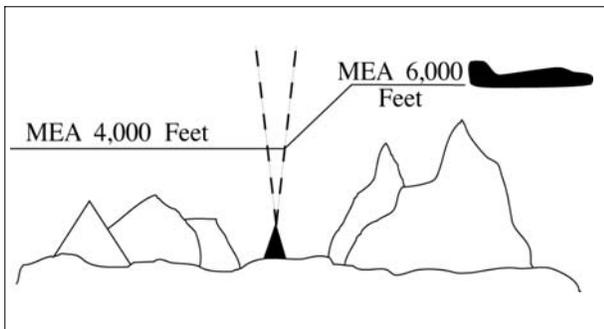
NOTE-

Minimum en route and maximum authorized altitudes for certain jet route segments have been established above the floor of the jet route structure due to limitations on navigational signal coverage.

c. Where a higher altitude is required because of an MEA, the aircraft must be cleared to begin climb to the higher MEA as follows:

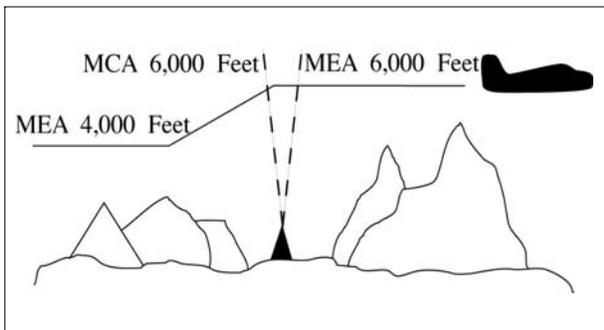
1. If no MCA is specified, prior to or immediately after passing the fix where the higher MEA is designated. (See FIG 4-5-1.)

**FIG 4-5-1
No MCA Specified**



2. If a MCA is specified, prior to the fix so as to cross the fix at or above the MCA. (See FIG 4-5-2.)

**FIG 4-5-2
MCA Specified**



d. GNSS MEAs may be approved on published ATS routes. Air traffic may assign GNSS MEAs to GNSS-equipped aircraft where established.

NOTE-

On high altitude ATS routes, the GNSS MEA is FL180 unless published higher.

e. Where MEAs have not been established, clear an aircraft at or above the minimum altitude for IFR operations prescribed by 14 CFR Section 91.177.

REFERENCE-

FAAO JO 7110.65, Para 4-2-8 IFR-VFR and VFR-IFR Flights.

FAAO JO 7110.65, Para 4-4-1 Route Use.

FAAO JO 7110.65, Chapter 5, Section 6, Para 5-6-1 Application.

FAAO JO 7110.65, Para 7-7-5 Altitude Assignments.

4-5-7. ALTITUDE INFORMATION

Issue altitude instructions as follows:

REFERENCE-

FAAO JO 7110.65, Para 4-2-1 Clearance Items.

a. Altitude to maintain or cruise. When issuing cruise in conjunction with an airport clearance limit and an unpublished route will be used, issue an appropriate crossing altitude to ensure terrain clearance until the aircraft reaches a fix, point, or route where the altitude information is available to the pilot. When issuing a cruise clearance to an airport which does not have a published instrument approach, a cruise clearance without a crossing restriction may be issued.

PHRASEOLOGY-

MAINTAIN/CRUISE (altitude). MAINTAIN (altitude) UNTIL (time, fix, waypoint),

or

(number of miles or minutes) MILES/MINUTES PAST (fix, waypoint).

CROSS (fix, point, waypoint),

or

INTERCEPT (route) AT OR ABOVE (altitude), CRUISE (altitude).

NOTE-

1. The crossing altitude must assure IFR obstruction clearance to the point where the aircraft is established on a segment of a published route or instrument approach procedure.

2. When an aircraft is issued a cruise clearance to an airport which does not have a published instrument approach procedure, it is not possible to satisfy the requirement for a crossing altitude that will ensure terrain clearance until the aircraft reaches a fix, point, or route where altitude information is available to the pilot. Under those conditions, a cruise clearance without a crossing

restriction authorizes a pilot to determine the minimum IFR altitude as prescribed in 14 CFR Section 91.177 and descend to it at pilot discretion if it is lower than the altitude specified in the cruise clearance.

b. Instructions to climb or descend including restrictions, as required. Specify a time restriction reference the UTC clock reading with a time check. If you are relaying through an authorized communications provider, such as ARINC, FSS, etc., advise the radio operator to issue the current time to the aircraft when the clearance is relayed. The requirement to issue a time check must be disregarded if the clearance is issued via Controller Pilot Data Link Communications (CPDLC).

EXCEPTION. If you are in direct, two-way, VHF/UHF voice communication with the pilot and the aircraft is in radar contact, you may specify an elapsed time interval restriction, in full minute increments only, without any reference to the UTC clock. The time restriction begins once the clearance has been acknowledged by the pilot.

EXAMPLE—

1. “United Four Seventeen, climb to reach one three thousand at two two one five.”

“Time two two one one and one-quarter.”

The pilot is expected to be level at 13,000 feet at 2215 UTC.

2. Through Relay—“Speedbid Five, climb to reach flight level three-five zero at one-two-one-five, time” (Issue a time check).

3. In radar contact and in direct controller to pilot, two-way, VHF/UHF voice communication - “United Four Seventeen, descend to reach flight level three five zero within two minutes.” The time restriction begins once the clearance has been acknowledged by the pilot.

4. “United Four Seventeen climb to leave flight level three three zero within two minutes, maintain flight level three five zero.”

REFERENCE—

FAAO JO 7110.65, Para 1-2-1 Word Meanings.

FAAO JO 7110.65, Para 2-4-17 Numbers Usage.

PHRASEOLOGY—

CLIMB/DESCEND AND MAINTAIN (altitude).

If required,

AFTER PASSING (fix, waypoint),

or

AT (time) (time in hours, minutes, and nearest quarter minute).

CLIMB/DESCEND TO REACH (altitude)
AT (time (issue time check) or fix, waypoint),

or

AT (time). CLIMB/DESCEND AND MAINTAIN (altitude)
WHEN ESTABLISHED AT LEAST (number of miles or minutes) MILES/MINUTES PAST (fix, waypoint) ON THE (NAVAID) (specified) RADIAL.

CLIMB/DESCEND TO REACH (altitude) AT (time or fix, waypoint),

or

A POINT (number of miles) MILES (direction) OF (name of DME NAVAID),

or

MAINTAIN (altitude) UNTIL (time (issue time check), fix, waypoint), THEN CLIMB/DESCEND AND MAINTAIN (altitude).

Through relay:

CLIMB TO REACH (altitude) AT (time) (issue a time check).

Or

Using a time interval while in radar contact and in direct controller to pilot, two-way, VHF/UHF voice communication:

CLIMB/DESCEND TO REACH/LEAVE (altitude)
WITHIN (number) MINUTES, MAINTAIN (altitude).

Or

CLIMB/DESCEND TO REACH/LEAVE (altitude) IN (number) MINUTES OR LESS, MAINTAIN (altitude).

c. Specified altitude for crossing a specified fix or waypoint; or, specified altitude for crossing a distance (in miles) and direction from a specified fix or waypoint.

PHRASEOLOGY—

CROSS (fix, waypoint) AT (altitude).

CROSS (fix, waypoint) AT OR ABOVE/BELOW (altitude).

CROSS (number of miles) MILES (direction) OF (name of fix, waypoint) AT (altitude).

CROSS (number of miles) MILES (direction) OF (name of fix, waypoint) AT OR ABOVE/BELOW (altitude).

d. A specified altitude over a specified fix for that portion of a descent clearance where descent at pilot’s

discretion is permissible. At any other time it is practicable, authorize climb/descent at pilot's discretion.

PHRASEOLOGY-

CLIMB/DESCEND AT PILOT'S DISCRETION.

EXAMPLE-

"United Four Seventeen, descend and maintain six thousand."

NOTE-

The pilot is expected to commence descent upon receipt of the clearance and to descend at the suggested rates specified in the AIM, para 4-4-10, Adherence to Clearance, until reaching the assigned altitude of 6,000 feet.

EXAMPLE-

"United Four Seventeen, descend at pilot's discretion, maintain six thousand."

NOTE-

The pilot is authorized to conduct descent within the context of the term "at pilot's discretion" as described in the AIM.

EXAMPLE-

"United Four Seventeen cross Lakeview V-O-R at or above flight level two zero zero, descend and maintain six thousand."

NOTE-

The pilot is authorized to conduct descent "at pilot's discretion" until reaching Lakeview VOR. The pilot must comply with the clearance provision to cross the Lakeview VOR at or above FL 200, and after passing Lakeview VOR, the pilot is expected to descend at the rates specified in the AIM until reaching the assigned altitude of 6,000 feet.

EXAMPLE-

"United Four Seventeen, cross Lakeview V-O-R at and maintain six thousand."

NOTE-

The pilot is authorized to conduct descent "at pilot's discretion," but must comply with the clearance provision to cross Lakeview VOR at 6,000 feet.

EXAMPLE-

"United Four Seventeen, descend now to flight level two seven zero, cross Lakeview V-O-R at or below one zero thousand, descend and maintain six thousand."

NOTE-

The pilot is expected to promptly execute and complete descent to FL 270 upon receipt of the clearance. After reaching FL 270, the pilot is authorized to descend "at pilot's discretion" until reaching Lakeview VOR. The pilot must comply with the clearance provision to cross Lakeview VOR at or below 10,000 feet. After Lakeview VOR, the pilot is expected to descend at the rates specified in the AIM until reaching 6,000 feet.

NOTE-

1. *A descent clearance which specifies a crossing altitude authorizes descent at pilot's discretion for that portion of the flight to which the crossing altitude restriction applies.*

2. *Any other time that authorization to descend at pilot's discretion is intended, it must be specifically stated by the controller.*

3. *The pilot may need to know of any future restrictions that might affect the descent, including those that may be issued in another sector, in order to properly plan a descent at pilot's discretion.*

4. *Controllers need to be aware that the descent rates in the AIM are only suggested and aircraft will not always descend at those rates.*

REFERENCE-

P/CG Term- Pilot's Discretion.

e. *When a portion of a climb/descent may be authorized at the pilot's discretion, specify the altitude the aircraft must climb/descent to followed by the altitude to maintain at the pilot's discretion.*

PHRASEOLOGY-

CLIMB/DESCEND NOW TO (altitude), THEN CLIMB/DESCEND AT PILOT'S DISCRETION MAINTAIN (altitude).

EXAMPLE-

"United Three Ten, descend now to flight level two eight zero, then descend at pilot's discretion maintain flight level two four zero."

NOTE-

1. *The pilot is expected to commence descent upon receipt of the clearance and to descend as prescribed in the AIM, para 4-4-10, Adherence to Clearance, until FL 280. At that point, the pilot is authorized to continue descent to FL 240 within context of the term "at pilot's discretion" as described in the AIM.*

2. *Controllers need to be aware that the descent rates are only suggested and aircraft will not always descend at those rates.*

f. *When the "pilot's discretion" portion of a climb/descent clearance is being canceled by assigning a new altitude, inform the pilot that the new altitude is an "amended altitude."*

EXAMPLE-

"American Eighty Three, amend altitude, descend and maintain Flight Level two six zero."

NOTE-

American Eighty Three, at FL 280, has been cleared to descend at pilot's discretion to FL 240. Subsequently, the altitude assignment is changed to FL 260. Therefore, pilot's discretion is no longer authorized.

g. *Altitude assignments involving more than one altitude.*

PHRASEOLOGY–

MAINTAIN BLOCK (altitude) **THROUGH** (altitude).

h. Instructions to vertically navigate on a STAR/SID with published restrictions.

PHRASEOLOGY–

DESCEND VIA (STAR name and number).

TERMINAL: **DESCEND VIA** (STAR name and number and runway number).

CLIMB VIA (SID name and number).

EXAMPLE–

“Descend via the Eagul Five arrival.”

“Cross Gramm at or above flight level one eight zero, then descend via the Riivr Two arrival.”

TERMINAL: “Descend via the Lendy One Arrival, Runway 22 left.”

“Climb via the Dawgs Four Departure.”

NOTE–

When cleared for STARS that contain published speed restrictions, the pilot must comply with those speed restrictions independent of any descend via clearance.

Clearance to “descend via” authorizes pilots:

1. To descend at pilot discretion to meet published restrictions and laterally navigate on a STAR. Pilots navigating on a STAR must maintain the last assigned altitude until receiving clearance to descend via. Once departing an altitude the pilot may not return to that altitude without an ATC clearance.

2. When cleared to a waypoint depicted on a STAR, to descend from a previously assigned altitude at pilot’s discretion to the altitude depicted for that waypoint. ATC assigned altitudes must ensure obstacle clearance.

3. Once established on the depicted arrival, to descend and to meet all published or assigned altitude and/or speed restrictions. Where speed restrictions are published at the waypoint/fix pilots will begin slowing to comply with the restrictions prior to reaching the waypoint/fix.

NOTE–

When cleared for SIDs that contain published speed restrictions, the pilot must comply with those speed restrictions independent of any “climb via” clearance. Clearance to “climb via” authorizes pilots:

1. When used in the IFR departure clearance, in a PDC, DCL or when subsequently cleared after departure to a waypoint depicted on a SID, to join a procedure after departure or resume a procedure.

2. When vertical navigation is interrupted and an altitude is assigned to maintain which is not contained on the published procedure, to climb from that previously-assigned altitude at pilot’s discretion to the altitude depicted for the next waypoint. ATC must ensure obstacle clearance

until the aircraft is established on the lateral and vertical path of the SID.

3. Once established on the depicted departure, to climb and to meet all published or assigned altitude and speed restrictions.

REFERENCE–

FAAO JO 7110.65, Para 4-4-2, Route Structure Transitions

FAAO JO 7110.65, Para 4-5-6, Minimum En Route Altitudes

FAAO JO 7110.65, Para 5-5-9, Separation From Obstructions
PCG, Climb Via, Descend Via.

NOTE–

Pilots cleared for vertical navigation using the phraseology “descend via” or “climb via” must inform ATC, upon initial contact, of the altitude leaving, the runway transition or landing direction if assigned (STARs), and any assigned restrictions not published on the procedure.

EXAMPLE–

“Delta One Twenty One leaving flight level one niner zero, descending via the Eagul Five arrival runway two-six transition.”

“Delta One Twenty One leaving flight level one niner zero for one two thousand, descending via the Eagul Five arrival, runway two-six transition.”

“JetBlue six zero two leaving flight level two one zero descending via the Ivane Two arrival landing south.”

“Cactus Seven Eleven leaving two thousand climbing via the Laura Two departure.”

“Cactus Seven Eleven leaving two thousand for one-six thousand, climbing via the Laura Two departure.”

REFERENCE–

AIM, Para 5-2-8, Instrument Departure Procedures (DP) – Obstacle Departure Procedures (ODP) and Standard Instrument Departures (SID)

PCG, Top Altitude, Bottom Altitude

AIM, Para 5-4-1, Standard Terminal Arrival (STAR) Procedures.

1. Assign an altitude to cross the waypoint/fix, if no altitude is depicted at the waypoint/fix, for aircraft on a direct routing to a STAR or SID waypoint/fix.

EXAMPLE–

1. “Proceed direct Denis, cross Denis at or above flight level two zero zero, then descend via the Mmell One arrival.”

NOTE–

In Example 1 the aircraft will maintain FL200 or higher until reaching Denis. The pilot will then comply with the Mmell One arrival lateral path and published speed restrictions and will descend at pilot discretion to comply with published altitude restrictions. The aircraft may begin slowing prior to Denis to comply with any published speed restrictions at that waypoint.

EXAMPLE–

2. “Proceed direct Rockr, cross Rockr at or above one-zero thousand, climb via the Bizee Two departure.”

NOTE–

In Example 2 the aircraft will join the Bizee Two departure at Rockr and will then comply with departure published lateral path, published speed and altitude restrictions.

2. A “descend via” clearance must not be used where procedures contain only published “expect” altitude and/or speed restrictions.

NOTE–

Pilots are not expected to comply with published “expect” restrictions in the event of lost communications, unless ATC has specifically advised the pilot to expect these restrictions as part of a further clearance.

3. “Descend via” may be used on procedures that contain both “expect” and required altitude and speed restrictions only if altitude and/or speed restrictions or alternate restrictions are issued for the fix/waypoint associated with all expect restrictions.

4. “Descend via” clearances may also be issued if an aircraft is past all fixes/waypoints that have expect restrictions.

5. If it is necessary to assign a crossing altitude which differs from the STAR or SID altitude, emphasize the change to the pilot.

PHRASEOLOGY–

DESCEND VIA (STAR name and number) ARRIVAL, EXCEPT CROSS (fix, point, waypoint), (revised altitude information).

EXAMPLE–

“United 454 descend via the Haris One Arrival, except cross Haris at or above one six thousand.”

NOTE–

The aircraft should track laterally and vertically on the Haris One Arrival and should descend so as to cross Haris at or above 16,000; remainder of the arrival must be flown as published.

PHRASEOLOGY–

CLIMB VIA SID, EXCEPT CROSS (fix, point, waypoint), (revised altitude information).

CLIMB VIA (SID name and number), EXCEPT CROSS (fix, point, waypoint), (revised altitude information).

EXAMPLE–

1. “Climb via SID except cross Mkala at or above seven thousand.”

NOTE–

In Example 1, the aircraft will comply with the assigned

SID departure lateral path and any published speed and altitude restrictions and climb so as to cross Mkala at or above 7,000; remainder of the departure must be flown as published.

EXAMPLE–

2. (There is a published altitude at Dvine WP): “Proceed direct Dvine, Climb via the Suzan Two departure except cross Mkala at or above seven thousand.”

NOTE–

In Example 2, the aircraft will join the Suzan Two departure at Dvine, at the published altitude, and then comply with the published lateral path and any published speed or altitude restrictions. The aircraft will climb so as to cross Mkala at or above 7,000; remainder of the departure must be flown as published.

6. When an aircraft has been issued an interim altitude and after departure ATC can subsequently clear the aircraft to climb to the original top altitude published in the SID instruct aircraft to “climb via SID.” When issuing a new altitude and compliance with published restrictions is still required instruct aircraft to “climb via SID except maintain (altitude).”

PHRASEOLOGY–

CLIMB VIA SID.

CLIMB VIA SID except maintain (altitude).

EXAMPLE–

1. (An aircraft was issued the Teddd One departure, “climb via SID” in the IFR departure clearance. An interim altitude of 10,000 was issued instead of the published top altitude of FL 230; after departure ATC is able to issue the published top altitude): “Climb via SID.”

NOTE–

In Example 1, the aircraft will track laterally and vertically on the Teddd One departure and initially climb to 10,000; Once re-issued the “climb via” clearance the interim altitude is cancelled aircraft will continue climb to FL230 while complying with published restrictions.

EXAMPLE–

2. (Using Example 1, after departure ATC is able to issue an altitude higher than the published top altitude): “Climb via SID except maintain flight level two six zero.”

NOTE–

In Example 2, the aircraft will track laterally and vertically on the Teddd One departure and initially climb to 10,000; once issued “climb via” clearance to FL260 the aircraft will continue climb while complying with published restrictions.

7. If it is necessary to assign an interim altitude or assign a bottom or top altitude not contained on a STAR or SID, the provisions of subparagraph 4-5-7h

may be used in conjunction with subparagraph 4-5-7a.

PHRASEOLOGY–

DESCEND VIA THE (STAR name and number) ARRIVAL EXCEPT AFTER (fix) MAINTAIN (revised altitude information).

EXAMPLE–

“United 454 descend via the Eagul Five Arrival, except after Geeno maintain one zero thousand.”

NOTE–

The aircraft should track laterally and vertically on the Eagul Five Arrival and should descend so as to comply with all speed and altitude restrictions until reaching Geeno and then maintain 10,000. Upon reaching 10,000, aircraft should maintain 10,000 until cleared by ATC to continue to descend.

REFERENCE–

*FAAO JO 7110.65, Para 4–7–1, Clearance Information.
AIM, Para 5–4–1, Standard Terminal Arrival (STAR) Procedures.*

PHRASEOLOGY–

CLIMB VIA SID EXCEPT AFTER (waypoint name), MAINTAIN (altitude).

EXAMPLE–

“Climb via SID except after Baret, maintain flight level one niner zero.”

NOTE–

1. *Considering the principle that the last ATC clearance issued has precedence over the previous, the phraseology “maintain (altitude)” alone cancels previously issued altitude restrictions, including SID/STAR altitude restrictions unless they are restated or modified, and authorizes an unrestricted climb or descent. Speed restrictions remain in effect unless the controller explicitly cancels the speed restrictions.*

2. *Restate “climb/descend via” and then use “except” or “except maintain” phraseology to modify published restrictions or assign a new top/bottom altitude. Use “resume” phraseology with “maintain” to rejoin a route and assign a new altitude where compliance with published altitude restrictions is not required.*

REFERENCE–

*FAAO JO 7110.65, Para 4-2-5, Route or Altitude Amendments
FAAO JO 7110.65, Para 5-6-2, Methods
AIM 4-4-10 Adherence to Clearance
AIM, Para 5–2–8. Instrument Departure Procedures (DP) – Obstacle Departure Procedures (ODP) and Standard Instrument Departures (SID).*

i. When a pilot is unable to accept a clearance, issue revised instructions to ensure positive control and standard separation.

NOTE–

1. *14 CFR Section 91.123 states that a pilot is not allowed*

to deviate from an ATC clearance “that has been obtained...unless an amended clearance is obtained” (except when an emergency exists).

2. *A pilot is therefore expected to advise the controller if a clearance cannot be accepted when the clearance is issued. “We will try” and other such acknowledgements do not constitute pilot acceptance of an ATC clearance.*

3. *Controllers are expected to issue ATC clearances which conform with normal aircraft operational capabilities and do not require “last minute” amendments to ensure standard separation.*

4. *“Expedite” is not to be used in lieu of appropriate restrictions to ensure separation.*

REFERENCE–

FAAO JO 7110.65, Para 10–1–3 Providing Assistance.

4–5–8. ANTICIPATED ALTITUDE CHANGES

If practicable, inform an aircraft when to expect climb or descent clearance or to request altitude change from another facility.

PHRASEOLOGY–

EXPECT HIGHER/LOWER IN (number of miles or minutes) MILES/MINUTES,

or

AT (fix). REQUEST ALTITUDE/FLIGHT LEVEL CHANGE FROM (name of facility).

If required,

AT (time, fix, or altitude).

REFERENCE–

FAAO JO 7110.65, Para 2–2–6 IFR Flight Progress Data.

4–5–9. ALTITUDE CONFIRMATION–NONRADAR

a. Request a pilot to confirm assigned altitude on initial contact and when position reports are received unless:

NOTE–

For the purpose of this paragraph, “initial contact” means a pilot’s first radio contact with each sector/position.

1. The pilot states the assigned altitude, or

2. You assign a new altitude to a climbing or descending aircraft, or

3. TERMINAL. The aircraft was transferred to you from another sector/position within your facility (intrafacility).

PHRASEOLOGY–

(In level flight situations),

VERIFY AT (altitude/flight level).

(In climbing/descending situations),

(if aircraft has been assigned an altitude below the lowest useable flight level),

VERIFY ASSIGNED ALTITUDE (altitude).

(If aircraft has been assigned a flight level at or above the lowest useable flight level),

VERIFY ASSIGNED FLIGHT LEVEL (flight level).

b. USA. Reconfirm all pilot altitude read backs.

PHRASEOLOGY–

(If altitude read back is correct),

AFFIRMATIVE (altitude).

(If altitude read back is not correct),

NEGATIVE. CLIMB/DESCEND AND MAINTAIN (altitude),

or

NEGATIVE. MAINTAIN (altitude).

Section 5. Special VFR (SVFR)

7-5-1. AUTHORIZATION

a. SVFR operations in weather conditions less than basic VFR minima are authorized:

REFERENCE-

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

1. At any location not prohibited by 14 CFR Part 91, Appendix D or when an exemption to 14 CFR Part 91 has been granted and an associated LOA established. 14 CFR Part 91 does not prohibit SVFR helicopter operations.

2. Only within the lateral boundaries of Class B, Class C, Class D, or Class E surface areas, below 10,000 feet MSL.

3. Only when requested by the pilot.

4. On the basis of weather conditions reported at the airport of intended landing/departure.

REFERENCE-

FAAO JO 7110.65, Para 7-5-6 Climb to VFR.

FAAO JO 7110.65, Para 7-5-7 Ground Visibility Below One Mile.

5. When weather conditions are not reported at the airport of intended landing/departure and the pilot advises that VFR cannot be maintained and requests SVFR.

PHRASEOLOGY-

CLEARED TO ENTER/OUT OF/THROUGH, (name) SURFACE AREA

and if required,

(direction) OF (name) AIRPORT (specified routing), and

MAINTAIN SPECIAL V-F-R CONDITIONS,

and if required,

AT OR BELOW (altitude below 10,000 feet MSL)

or as applicable under an exemption from 14 CFR Part 91,

CLEARED FOR (coded arrival or departure procedure) ARRIVAL/DEPARTURE, (additional instructions as required).

REFERENCE-

FAAO JO 7110.65, Para 2-4-22 Airspace Classes.

b. SVFR operations may be authorized for aircraft operating in or transiting a Class B, Class C, Class D, or Class E surface area when the primary airport is reporting VFR but the pilot advises that basic VFR cannot be maintained.

NOTE-

The basic requirements for issuance of a SVFR clearance in subpara a apply with the obvious exception that weather conditions at the controlling airport are not required to be less than basic VFR minima.

7-5-2. PRIORITY

a. SVFR flights may be approved only if arriving and departing IFR aircraft are not delayed.

EXAMPLE-

1. *A SVFR aircraft has been cleared to enter a Class B, Class C, Class D, or Class E surface area and subsequently an IFR aircraft is ready to depart or is in position to begin an approach. Less overall delay might accrue to the IFR aircraft if the SVFR aircraft is allowed to proceed to the airport and land, rather than leave, a Class B, Class C, Class D, or Class E surface area or be repositioned to provide IFR priority.*

2. *A SVFR aircraft is number one for takeoff and located in such a position that the number two aircraft, an IFR flight, cannot taxi past to gain access to the runway. Less overall delay might accrue to the IFR aircraft by releasing the SVFR departure rather than by having the aircraft taxi down the runway to a turnoff point so the IFR aircraft could be released first.*

NOTE-

The priority afforded IFR aircraft over SVFR aircraft is not intended to be so rigidly applied that inefficient use of airspace results. The controller has the prerogative of permitting completion of a SVFR operation already in progress when an IFR aircraft becomes a factor if better overall efficiency will result.

b. Inform an aircraft of the anticipated delay when a SVFR clearance cannot be granted because of IFR traffic. Do not issue an EFC or expected departure time.

PHRASEOLOGY-

EXPECT (number) MINUTES DELAY, (additional instructions as necessary).

REFERENCE-

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

FAAO JO 7110.65, Para 5-6-1 Application.

7-5-3. SEPARATION

a. Apply approved separation between:

1. SVFR aircraft.
2. SVFR aircraft and IFR aircraft.

NOTE-

Approved separation between SVFR fixed-wing aircraft, and between SVFR fixed-wing aircraft and IFR fixed-wing aircraft, is prescribed in Chapter 6 and Chapter 7, para 7-5-4 Altitude Assignment. Radar vectors are authorized as prescribed in para 5-6-1 Application, subpara f.

b. Alternate SVFR helicopter separation minima may be established when warranted by the volume and/or complexity of local helicopter operations. Alternate SVFR helicopter separation minima must be established with an LOA with the helicopter operator which must specify, as a minimum, that SVFR helicopters are to maintain visual reference to the surface and adhere to the following aircraft separation minima:

1. Between a SVFR helicopter and an arriving or departing IFR aircraft:

(a) $\frac{1}{2}$ mile. If the IFR aircraft is less than 1 mile from the landing airport.

(b) 1 mile. If the IFR aircraft is 1 mile or more from the airport.

2. 1 mile between SVFR helicopters. This separation may be reduced to 200 feet if:

(a) Both helicopters are departing simultaneously on courses that diverge by at least 30 degrees and:

(1) The tower can determine this separation by reference to surface markings; or

(2) One of the departing helicopters is instructed to remain at least 200 feet from the other.

NOTE-

Radar vectors are authorized as prescribed in para 5-6-1 Application.

REFERENCE-

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

7-5-4. ALTITUDE ASSIGNMENT

Do not assign a fixed altitude when applying vertical separation, but clear the SVFR aircraft at or below an altitude which is at least 500 feet below any conflicting IFR traffic but not below the MSA prescribed in 14 CFR Section 91.119.

PHRASEOLOGY-

MAINTAIN SPECIAL V-F-R CONDITIONS AT OR BELOW (altitude).

NOTE-

1. SVFR aircraft are not assigned fixed altitudes to maintain because of the clearance from clouds requirement.

2. The MSAs are:

(a) Over congested areas, an altitude at least 1,000 feet above the highest obstacle, and

(b) Over other than congested areas, an altitude at least 500 feet above the surface.

(c) Helicopters may be operated at less than the minimum altitudes prescribed in (a) and (b) above.

REFERENCE-

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

FAAO JO 7110.65, Para 5-6-1 Application.

14 CFR Section 91.119, Minimum Safe Altitudes: General.

7-5-5. LOCAL OPERATIONS

a. Authorize local SVFR operations for a specified period (series of landings and takeoffs, etc.) upon request if the aircraft can be recalled when traffic or weather conditions require. Where warranted, LOAs may be consummated.

PHRASEOLOGY-

LOCAL SPECIAL V-F-R OPERATIONS IN THE IMMEDIATE VICINITY OF (name) AIRPORT ARE AUTHORIZED UNTIL (time). MAINTAIN SPECIAL V-F-R CONDITIONS.

REFERENCE-

FAAO JO 7210.3, Para 4-3-2, Appropriate Subjects.

b. Control facilities may also authorize an FSS to transmit SVFR clearances so that only one aircraft at a time operates in the Class B, Class C, Class D, or Class E surface areas unless pilots agree that they will maintain visual separation with other aircraft operating in the Class B, Class C, Class D, or Class E surface areas. Such authorization concerning visual separation by pilots must be contained in a LOA between the control facility and the FSS.

REFERENCE-

FAAO JO 7210.3, Para 4-3-3, Developing LOA.

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

7-5-6. CLIMB TO VFR

Authorize an aircraft to climb to VFR upon request if the only weather limitation is restricted visibility.

PHRASEOLOGY-

CLIMB TO V-F-R WITHIN (name) SURFACE AREA/WITHIN (a specified distance) MILES FROM (airport name) AIRPORT, MAINTAIN SPECIAL V-F-R CONDITIONS UNTIL REACHING V-F-R.

REFERENCE-

FAAO JO 7110.65, Para 2-1-4 Operational Priority.
FAAO JO 7110.65, Para 2-4-22 Airspace Classes.
FAAO JO 7110.65, Para 7-5-1 Authorization.

7-5-7. GROUND VISIBILITY BELOW ONE MILE

14 CFR Part 91 does not prohibit helicopter SVFR flight when the visibility is less than 1 mile. Treat requests for SVFR fixed wing operations as follows when the ground visibility is officially reported at an airport as less than 1 mile:

a. Inform departing aircraft that ground visibility is less than 1 mile and that a clearance cannot be issued.

b. Inform arriving aircraft, operating outside of a Class B, Class C, Class D, or Class E surface area, that ground visibility is less than 1 mile and that, unless an emergency exists, a clearance cannot be issued.

c. Inform arriving aircraft, operating VFR/SVFR within a Class B, Class C, Class D, or Class E surface area, that ground visibility is less than 1 mile and request the pilot to advise intentions.

PHRASEOLOGY-

(Name of airport) VISIBILITY LESS THAN ONE MILE. ADVISE INTENTIONS.

NOTE-

Clear an aircraft to land at an airport with an operating control tower, traffic permitting, if the pilot reports the airport in sight. The pilot is responsible to continue to the airport or exit the surface area. 14 CFR Section 91.157 prohibits VFR aircraft (other than helicopters) from landing at any airport within a surface area when ground visibility is less than 1 mile. A pilot could inadvertently encounter conditions that are below SVFR minimums after entering a surface area due to rapidly changing weather. The pilot is best suited to determine the action to be taken since pilots operating under SVFR between sunrise and sunset are not required to be instrument rated, and the possibility exists that flight visibility may not be the same as ground visibility. 14 CFR Section 91.3 authorizes a pilot

encountering an inflight emergency requiring immediate action to deviate from any rule of 14 CFR Part 91 to the extent required to meet that emergency. Flight into adverse weather conditions may require the pilot to execute the emergency authority granted in 14 CFR Section 91.3 and continue inbound to land.

d. Authorize scheduled air carrier aircraft in the U.S. to conduct operations if ground visibility is not less than $\frac{1}{2}$ statute mile.

NOTE-

14 CFR Part 121 permits landing or takeoff by domestic scheduled air carriers where a local surface restriction to visibility is not less than 1/2 statute mile, provided all turns after takeoff or before landing and all flights beyond 1 statute mile from the airport boundary can be accomplished above or outside the area so restricted. The pilot is solely responsible for determining if the nature of the visibility restriction will permit compliance with the provisions of 14 CFR Part 121.

e. Clear an aircraft to fly through the Class B, Class C, Class D, or Class E surface area if the aircraft reports flight visibility is at least 1 statute mile.

REFERENCE-

FAAO JO 7110.65, Para 2-1-4 Operational Priority.
FAAO JO 7110.65, Para 7-5-1 Authorization.

7-5-8. FLIGHT VISIBILITY BELOW ONE MILE

Treat requests for SVFR fixed-wing operations as follows when weather conditions are not reported at an airport and the pilot advises the flight visibility is less than 1 mile:

NOTE-

14 CFR Part 91 prescribes the visibility for basic VFR and SVFR operations as the official reported ground visibility at airports where provided and landing or takeoff "flight visibility" where there is no official reported ground visibility.

a. Inform departing aircraft that a clearance cannot be issued.

b. Inform arriving aircraft operating outside of a Class B, Class C, Class D or Class E surface area that a clearance cannot be issued unless an emergency exists.

c. Request the intentions of an arriving aircraft operating within a Class B, Class C, Class D, or Class E surface area.

NOTE-

Clear an aircraft to land at an airport with an operating control tower, traffic permitting, if the pilot reports the airport in sight. The pilot is responsible to continue to the airport or exit the surface area. 14 CFR Section 91.157 prohibits VFR aircraft (other than helicopters) from landing at any airport within a surface area when flight visibility is less than 1 mile. A pilot could inadvertently encounter conditions that are below SVFR minimums after entering a surface area due to rapidly changing weather. The pilot is best suited to determine the action to be taken since pilots operating under SVFR between sunrise and

sunset are not required to be instrument rated, and the possibility exists that flight visibility may not be the same as ground visibility. 14 CFR Section 91.3 authorizes a pilot encountering an inflight emergency requiring immediate action to deviate from any rule of 14 CFR Part 91 to the extent required to meet that emergency. Flight into adverse weather conditions may require the pilot to execute the emergency authority granted in 14 CFR Section 91.3 and continue inbound to land.

REFERENCE-

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

Section 9. Class B Service Area– Terminal

7–9–1. APPLICATION

Apply Class B services and procedures within the designated Class B airspace.

a. No person may operate an aircraft within Class B airspace unless:

1. The aircraft has an operable two-way radio capable of communications with ATC on appropriate frequencies for that Class B airspace.

2. The aircraft is equipped with the applicable operating transponder and automatic altitude reporting equipment specified in para (a) of 14 CFR Section 91.215, except as provided in para (d) of that section.

7–9–2. VFR AIRCRAFT IN CLASS B AIRSPACE

a. VFR aircraft must obtain an ATC clearance to operate in Class B airspace.

REFERENCE–

FAAO JO 7110.65, Para 2–1–18 Operational Requests.
FAAO JO 7110.65, Para 2–4–22 Airspace Classes.

PHRASEOLOGY–

CLEARED THROUGH/TO ENTER/OUT OF BRAVO AIRSPACE,

and as appropriate,

VIA (route). MAINTAIN (altitude) WHILE IN BRAVO AIRSPACE.

or

CLEARED AS REQUESTED.

(Additional instructions, as necessary.)

REMAIN OUTSIDE BRAVO AIRSPACE. (When necessary, reason and/or additional instructions.)

NOTE–

1. Assignment of radar headings, routes, or altitudes is based on the provision that a pilot operating in accordance with VFR is expected to advise ATC if compliance will cause violation of any part of the CFR.

2. Separation and sequencing for VFR aircraft is dependent upon radar. Efforts should be made to segregate

VFR traffic from IFR traffic flows when a radar outage occurs.

b. Approve/deny requests from VFR aircraft to operate in Class B airspace based on workload, operational limitations and traffic conditions.

c. Inform the pilot when to expect further clearance when VFR aircraft are held either inside or outside Class B airspace.

d. Inform VFR aircraft when leaving Class B airspace.

PHRASEOLOGY–

LEAVING (name) BRAVO AIRSPACE,

and as appropriate,

RESUME OWN NAVIGATION, REMAIN THIS FREQUENCY FOR TRAFFIC ADVISORIES, RADAR SERVICE TERMINATED, SQUAWK ONE TWO ZERO ZERO.

7–9–3. METHODS

a. To the extent practical, clear large turbine engine-powered airplanes to/from the primary airport using altitudes and routes that avoid VFR corridors and airspace below the Class B airspace floor where VFR aircraft are operating.

NOTE–

Pilots operating in accordance with VFR are expected to advise ATC if compliance with assigned altitudes, headings, or routes will cause violation of any part of the CFR.

b. Vector aircraft to remain in Class B airspace after entry. Inform the aircraft when leaving and reentering Class B airspace if it becomes necessary to extend the flight path outside Class B airspace for spacing.

NOTE–

14 CFR Section 91.131 states that “Unless otherwise authorized by ATC, each person operating a large turbine engine-powered airplane to or from a primary airport for which a Class B airspace area is designated must operate at or above the designated floors of the Class B airspace area while within the lateral limits of that area.” Such authorization should be the exception rather than the rule.

REFERENCE–

FAAO JO 7110.65, Para 5–1–10 Deviation Advisories.

c. Aircraft departing controlled airports within Class B airspace will be provided the same services as those aircraft departing the primary airport.

REFERENCE-

FAAO JO 7110.65, Para 2-1-18 Operational Requests.

7-9-4. SEPARATION

a. Standard IFR services to IFR aircraft.

b. VFR fixed-wing aircraft must be separated from VFR/IFR aircraft/ helicopter/rotorcraft that weigh more than 19,000 pounds and turbojets by no less than:

1. 1 1/2 miles separation, or
2. 500 feet vertical separation, or

NOTE-

Apply the provisions of paragraph 5-5-4 Minima, when wake turbulence separation is required.

3. Visual separation, as specified in paragraph 7-2-1, Visual Separation, paragraph 7-4-2, Vectors for Visual Approach, and paragraph 7-6-7, Sequencing.

NOTE-

Issue wake turbulence cautionary advisories in accordance with paragraph 2-1-20 Wake Turbulence Cautionary Advisories.

c. For the application of Class Bravo airspace separation requirements, the V-22 Osprey must be treated as a helicopter/rotorcraft.

d. VFR aircraft must be separated from all VFR/IFR aircraft which weigh 19,000 pounds or less by a minimum of:

1. Target resolution, or

NOTE-

When ISR is being displayed, target resolution is prohibited.

2. 500 feet vertical separation, or

NOTE-

1. Apply the provisions of para 5-5-4 Minima, when wake turbulence separation is required.

2. Aircraft weighing 19,000 pounds or less include all aircraft in SRS Categories I and II plus G73, STAR, S601, BE30, SW3, B190 and C212.

3. Visual separation, as specified in para 7-2-1, Visual Separation, para 7-4-2, Vectors for Visual Approach, and para 7-6-7, Sequencing.

NOTE-

Issue wake turbulence cautionary advisories in accordance with para 2-1-20 Wake Turbulence Cautionary Advisories.

REFERENCE-

P/CG Term- Lateral Separation.

P/CG Term- Radar Separation.

P/CG Term- Target Resolution.

P/CG Term- Visual Separation.

7-9-5. TRAFFIC ADVISORIES

a. Provide mandatory traffic advisories and safety alerts, between all aircraft.

b. Apply merging target procedures in accordance with para 5-1-8, Merging Target Procedures.

7-9-6. HELICOPTER TRAFFIC

VFR helicopters need not be separated from VFR or IFR helicopters. Traffic advisories and safety alerts must be issued as appropriate.

7-9-7. ALTITUDE ASSIGNMENTS

a. Altitude information contained in a clearance, instruction, or advisory to VFR aircraft must meet MVA, MSA, or minimum IFR altitude criteria.

b. Issue altitude assignments, if required, consistent with the provisions of 14 CFR Section 91.119.

NOTE-

The MSAs are:

1. Over congested areas, an altitude at least 1,000 feet above the highest obstacle,
2. Over other than congested areas, an altitude at least 500 feet above the surface.

REFERENCE-

FAAO JO 7110.65, Para 4-5-2 Flight Direction.

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

FAAO JO 7110.65, Para 4-5-6 Minimum En Route Altitudes.

c. Aircraft assigned altitudes which are contrary to 14 CFR Section 91.159 must be advised to resume altitudes appropriate for the direction of flight when the altitude assignment is no longer required or when leaving Class B airspace.

PHRASEOLOGY-

RESUME APPROPRIATE VFR ALTITUDES.

7-9-8. APPROACH INTERVAL

The tower must specify the approach interval.

Section 4. Lateral Separation

8-4-1. APPLICATION

Separate aircraft by assigning different flight paths whose widths or protected airspace do not overlap.

Within that portion of the Gulf of Mexico Low Offshore airspace, use 12 NM between aircraft whose flight paths are defined by published Grid System waypoints.

NOTE-

1. The Grid System is defined as those waypoints contained within the Gulf of Mexico Low Offshore airspace and published on the IFR Vertical Flight Reference Chart.

2. Lateral separation minima is contained in:
 Section 7, North Atlantic ICAO Region.
 Section 8, Caribbean ICAO Region.
 Section 9, Pacific ICAO Region.
 Section 10, North American ICAO Region—Arctic CTA.

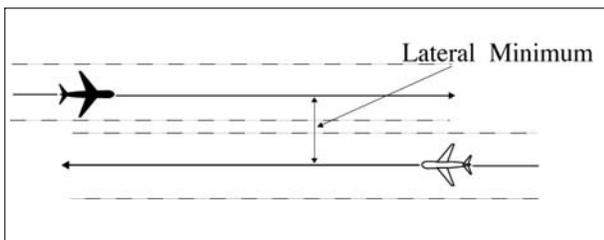
8-4-2. SEPARATION METHODS

Lateral separation exists for:

a. Nonintersecting flight paths:

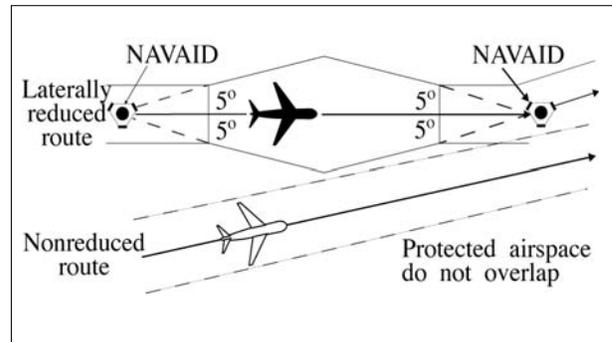
1. When the required distance is maintained between the flight paths; or (See FIG 8-4-1.)

FIG 8-4-1
Separation Methods



2. When reduced route protected airspace is applicable, and the protected airspace of the flight paths do not overlap; or (See FIG 8-4-2.)

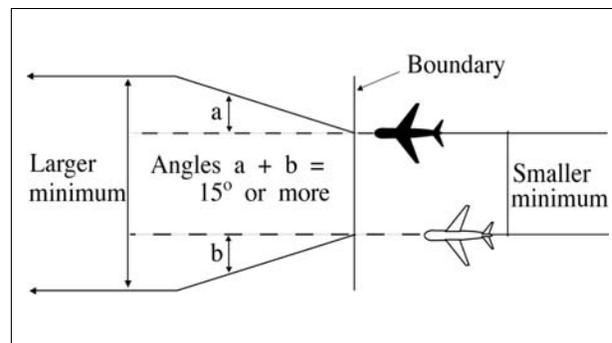
FIG 8-4-2
Separation Methods



3. When aircraft are crossing an oceanic boundary and are entering an airspace with a larger lateral minimum than the airspace being exited; and

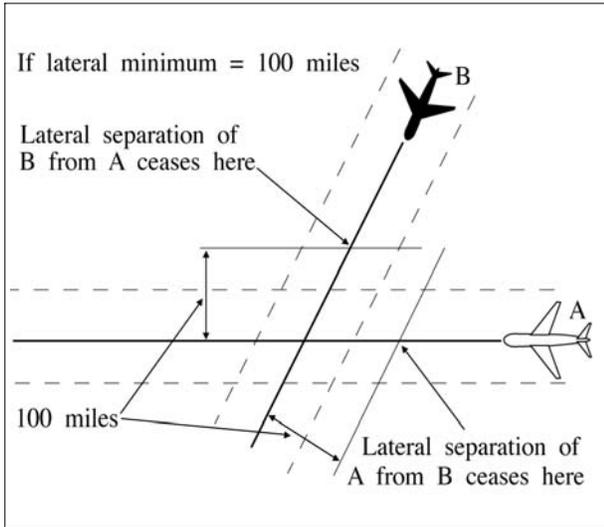
- (a) The smaller separation exists at the boundary; and
 (b) Flight paths diverge by 15° or more until the larger minimum is established. (See FIG 8-4-3.)

FIG 8-4-3
Separation Methods



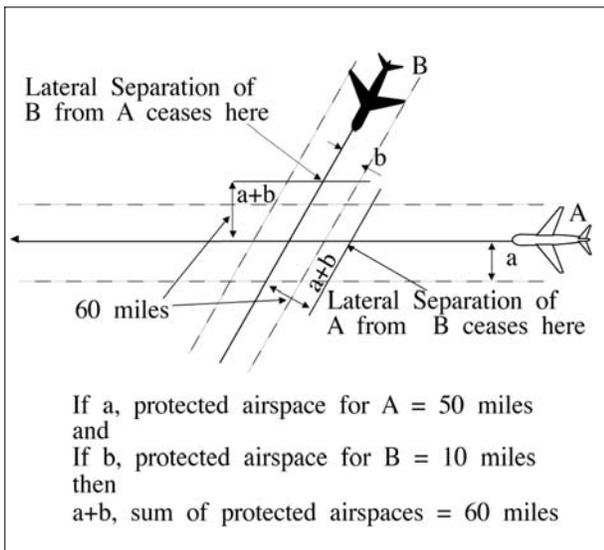
b. Intersecting flight paths with constant and same width protected airspace when either aircraft is at or beyond a distance equal to the applicable lateral separation minimum measured perpendicular to the flight path of the other aircraft. (See FIG 8-4-4.)

FIG 8-4-4
Separation Methods



c. Intersecting flight paths with constant but different width protected airspace when either aircraft is at or beyond a distance equal to the sum of the protected airspace of both flight paths measured perpendicular to the flight path of the other aircraft. (See FIG 8-4-5.)

FIG 8-4-5
Separation Methods

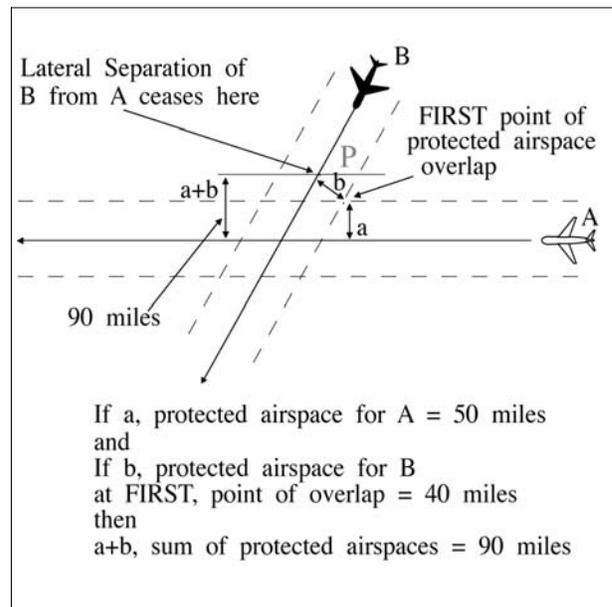


d. Intersecting flight paths with variable width protected airspace when either aircraft is at or beyond a distance equal to the sum of the protected airspace of both flight paths measured perpendicular to the flight path of the other aircraft. Measure protected airspace for each aircraft perpendicular to its flight path at the first point or the last point, as applicable, of protected airspace overlap.

NOTE-

In FIG 8-4-5, the protected airspace for westbound flight A is distance "a" (50 miles), and for southwestbound flight B, distance "b" (10 miles). Therefore, the sum of distances "a" and "b"; i.e., the protected airspace of Aircrafts A and B, establishes the lateral separation minimum (60 miles) applicable for either flight relevant to the other.

FIG 8-4-6
Separation Methods



NOTE-

(See FIG 8-4-6.) At the first point of protected airspace overlap, the protected airspace for westbound flight A is distance "a" (50 miles), and for southbound flight B, distance "b" (40 miles). The sum of distances "a" and "b" (90 miles) establishes the lateral separation minimum applicable in this example for either flight as it approaches the intersection. For example, Aircraft B should be vertically separated from Aircraft A by the time it reaches point "p."

Section 7. North Atlantic ICAO Region

8-7-1. APPLICATION

Provide air traffic control services in the North Atlantic ICAO Region with the procedures and minima contained in this section except when noted otherwise.

8-7-2. VERTICAL SEPARATION

Provide vertical separation in accordance with Chapter 4, IFR, Section 5, Altitude Assignment and Verification.

8-7-3. LONGITUDINAL SEPARATION

In accordance with Chapter 8, Offshore/Oceanic Procedures, Section 3, Longitudinal Separation, apply the following:

a. Supersonic flight:

1. *10 minutes* provided that:

(a) both aircraft are in level flight at the same Mach number or the aircraft are of the same type and are both operating in cruise climb, and one of the following;

(1) The aircraft concerned have reported over a common point; or,

(2) If the aircraft have not reported over a common point, the appropriate time interval being applied between aircraft exists and will exist at the common point; or,

(3) If a common point does not exist, the appropriate time interval being applied between aircraft exists and will exist at significant points along each track.

2. *15 minutes* between aircraft in supersonic flight not covered in subpara a1 above.

b. Turbojet operations (*subsonic flight*):

1. Apply the prescribed minima in accordance with para 8-3-3, Mach Number Technique; or

2. Where tracks diverge from the common point and the following aircraft is maintaining a greater Mach Number than the preceding aircraft:

(a) At least *10 minutes* longitudinal separation exists at the point where the tracks diverge; and

(b) At least *5 minutes* longitudinal separation will exist where minimum lateral separation is achieved (*whichever is estimated to occur first*);

(1) At or before the next significant point (normally within ten degrees of longitude along track(s)), or

(2) Within 90 minutes of the time the following aircraft passes the common point, or

(3) Within 600 NM of the common point.

3. Apply *15 minutes* between all other turbojet aircraft.

c. Nonturbojet operations:

1. Apply *20 minutes* between aircraft operating in the West Atlantic Route System (WATRS), or

2. Apply *30 minutes* between aircraft operating outside of the WATRS.

NOTE-

The WATRS area is defined as beginning at a point 27°00'N/77°00'W direct to 20°00'N/67°00'W direct to 18°00'N/62°00'W direct to 18°00'N/60°00'W direct to 38°30'N/60°00'W direct to 38°30'N/69°15'W, thence counterclockwise along the New York Oceanic CTA/FIR boundary to the Miami Oceanic CTA/FIR boundary, thence southbound along the Miami Oceanic CTA/FIR boundary to the point of beginning.

d. Minima based on distance using Automatic Dependent Surveillance – Contract (ADS-C):

1. Apply the minima as specified in TBL 8-7-1 between aircraft on the same track within airspace designated for Required Navigation Performance (RNP), provided:

(a) Direct controller/pilot communication via voice or Controller Pilot Data Link Communications (CPDLC) is established, and

(b) The required ADS-C periodic reports are maintained and monitored by an automated flight data processor (for example, Ocean21).

FIG 8-7-1
ADS-C Criteria

Minima	RNP	Maximum ADS-C Periodic Reporting Interval
50 NM	10	27 minutes
50 NM	4	32 minutes
30 NM	4	10 minutes

2. Aircraft on reciprocal tracks may be cleared to climb or descend to or through the altitude(s) occupied by another aircraft provided:

(a) An ADS-C position report on at least one of the aircraft has been received beyond the passing point, and

(b) The aircraft have passed each other by the applicable separation minimum.

NOTE-

Ocean21 has been designed to check for the above criteria prior to allowing the minima to be provided.

3. When an ADS-C periodic or waypoint change event report is overdue by 3 minutes, the controller must take action to obtain an ADS-C report.

4. If no report is received within 6 minutes of the time the original report was due, the controller must take action to apply another form of separation.

8-7-4. LATERAL SEPARATION

In accordance with Chapter 8, Offshore/Oceanic Procedures, Section 4, Lateral Separation, apply the following:

a. 30 NM to RNP-4 approved aircraft operating within airspace designated for RNP-4 when direct controller/pilot communications, via voice or Controller Pilot Data Link Communications (CPDLC), and the required ADS-C contracts are maintained and monitored by an automated flight data processor (e.g., Ocean21).

b. 50 NM between Required Navigation Performance (RNP 4 or RNP 10) approved aircraft which:

1. Operate on routes or in areas within WATRS, the San Juan CTA/FIR or the Atlantic portion of the Miami Oceanic CTA/FIR; or

2. Operate in the New York Oceanic CTA/FIR outside of WATRS.

NOTE-

This reduced lateral separation must not be used if track-keeping capability of the aircraft has been reduced for any reason.

c. 60 NM or 1 degree latitude between:

1. Supersonic aircraft operating above FL 275.

2. Aircraft which meet the MNPS and which:

(a) Operate within MNPS airspace; or

(b) Are in transit to or from MNPS airspace;

or

(c) Operate for part of their flight within, above, or below MNPS airspace.

NOTE-

This reduced lateral separation must not be used if track-keeping capability of the aircraft has been reduced for any reason.

d. 90 NM or 1 and 1/2 degrees latitude between aircraft not approved for RNP 4 or RNP 10 and which:

1. Operate on routes or in areas within WATRS, the San Juan CTA/FIR or the Atlantic portion of the Miami CTA/FIR;

2. Operate between points in the U.S. or Canada, and Bermuda;

3. Operate west of 55° West between the U.S., Canada, or Bermuda and points in the Caribbean ICAO Region.

e. 120 NM or 2 degrees latitude between aircraft not covered by subparas a, c or d above.

NOTE-

Tracks may be spaced with reference to their difference in latitude, provided that in any interval of 10 degrees of longitude the change in latitude of at least one of the tracks does not exceed 3 degrees when operating south of 58° North.

8-7-5. PROCEDURES FOR WEATHER DEVIATIONS IN NORTH ATLANTIC (NAT) AIRSPACE

Aircraft must request an ATC clearance to deviate. Since aircraft will not fly into known areas of weather, weather deviation requests should take priority over routine requests. If there is no traffic in the horizontal dimension, ATC must issue clearance to deviate from track; or if there is conflicting traffic in the horizontal dimension, ATC separates aircraft

by establishing vertical separation. If there is conflicting traffic and ATC is unable to establish the required separation, ATC must:

- a. Advise the pilot unable to issue clearance for requested deviation;
- b. Advise the pilot of conflicting traffic; and
- c. Request pilot's intentions.

PHRASEOLOGY-

UNABLE (requested deviation), TRAFFIC IS (call sign, position, altitude, direction), ADVISE INTENTIONS.

NOTE-

- 1. The pilot will advise ATC of intentions by the most expeditious means available.***
- 2. In the event that pilot/controller communications cannot be established or a revised ATC clearance is not available, pilots will follow the procedures outlined in the Regional Supplementary Procedures, ICAO Doc. 7030.***

Section 8. Caribbean ICAO Region

8-8-1. APPLICATION

Provide air traffic control services in the Caribbean ICAO Region with the procedures and minima contained in this section except when noted otherwise.

8-8-2. VERTICAL SEPARATION

Provide vertical separation in accordance with Chapter 4, IFR, Section 5, Altitude Assignment and Verification.

8-8-3. LONGITUDINAL SEPARATION

Provide longitudinal separation between aircraft as follows:

a. Supersonic flight:

1. *10 minutes* provided both aircraft are in level flight at the same Mach number or the aircraft are of the same type and are both operating in cruise climb, and one of the following;

(a) Both aircraft have reported over a common point; or,

(b) If both aircraft have not reported over a common point, the appropriate time interval being applied between aircraft exists and will exist at the common point; or,

(c) If a common point does not exist, the appropriate time interval being applied between aircraft exists and will exist at significant points along each track.

2. *15 minutes* between all other aircraft.

b. Turbojet operations at or above FL 200 in the Miami Oceanic, Houston Oceanic and San Juan CTAs/FIRs and all altitudes in the West Atlantic Route System (WATRS) and New York Oceanic CTA/FIR (*subsonic flight*):

1. Apply the prescribed minima in accordance with para 8-3-3, Mach Number Technique; or

2. In the New York CTA/FIR, where tracks diverge from the common point and the following aircraft is maintaining a greater Mach number than the preceding aircraft:

(a) At least *10 minutes* longitudinal separation exists at the point where the tracks diverge; and

(b) At least *5 minutes* longitudinal separation will exist where minimum lateral separation is achieved (*whichever is estimated to occur first*);

(1) At or before the next significant point (normally within ten degrees of longitude along track(s)), or

(2) Within *90 minutes* of the time the following aircraft passes the common point, or

(3) Within *600 NM* of the common point; or

3. Apply *15 minutes* between all other turbojet aircraft.

c. Turbojet operations below FL 200 (*subsonic flight*):

Apply *20 minutes* between turbojet aircraft operating below FL 200 in the San Juan Oceanic (*outside the WATRS area*), Miami Oceanic and Houston Oceanic CTAs/FIRs.

d. Nonturbojet operations.

1. Apply *20 minutes* between aircraft operating in the WATRS; or

2. Apply *20 minutes* between aircraft operating below FL 200 in the Miami Oceanic, Houston Oceanic and San Juan CTAs/FIRs; or

3. Apply *30 minutes* between aircraft operating outside of the WATRS in the New York CTA/FIR.

NOTE-

The WATRS area is defined as beginning at a point 27°00'N/77°00'W direct to 20°00'N/67°00'W direct to 18°00'N/62°00'W direct to 18°00'N/60°00'W direct to 38°30'N/60°00'W direct to 38°30'N/69°15'W, thence counterclockwise along the New York Oceanic CTA/FIR boundary to the Miami Oceanic CTA/FIR boundary, thence southbound along the Miami Oceanic CTA/FIR boundary to the point of beginning.

e. Minima based on distance using Automatic Dependent Surveillance – Contract (ADS-C):

1. Apply the minima as specified in TBL 8-8-1 between aircraft on the same track within airspace designated for Required Navigation Performance (RNP), provided:

(a) Direct controller/pilot communication via voice or Controller Pilot Data Link Communications (CPDLC) is established, and

(b) The required ADS-C periodic reports are maintained and monitored by an automated flight data processor (for example, Ocean21).

FIG 8-8-1
ADS-C Criteria

Minima	RNP	Maximum ADS-C Periodic Reporting Interval
50 NM	10	27 minutes
50 NM	4	32 minutes
30 NM	4	10 minutes

2. Aircraft on reciprocal tracks may be cleared to climb or descend to or through the altitude(s) occupied by another aircraft provided:

(a) An ADS-C position report on at least one of the aircraft has been received beyond the passing point, and

(b) The aircraft have passed each other by the applicable separation minimum.

NOTE-

Ocean21 has been designed to check for the above criteria prior to allowing the minima to be provided.

3. When an ADS-C periodic or waypoint change event report is overdue by 3 minutes, the controller must take action to obtain an ADS-C report.

4. If no report is received within 6 minutes of the time the original report was due, the controller must take action to apply another form of separation.

8-8-4. LATERAL SEPARATION

In accordance with Chapter 8, Offshore/Oceanic Procedures, Section 4, Lateral Separation, apply the following:

a. 30 NM to RNP-4 approved aircraft operating within airspace designated for RNP-4 when direct controller/pilot communications, via voice or Controller Pilot Data Link Communications (CPDLC), and the required ADS-C contracts are maintained and monitored by an automated flight data processor (e.g., Ocean21).

b. 50 NM between Required Navigation Performance (RNP 4 or RNP 10) approved aircraft which:

1. Operate on routes or in areas within WATRS, the San Juan CTA/FIR or the Atlantic portion of the Miami Oceanic CTA/FIR; or

2. Operate in the New York Oceanic CTA/FIR outside of WATRS; or

3. Operate in the Houston Oceanic CTA/FIR or the Gulf of Mexico portion of the Miami CTA/FIR.

NOTE-

This reduced lateral separation must not be used if track-keeping capability of the aircraft has been reduced for any reason.

c. 60 NM between:

1. Supersonic aircraft operating above FL 275 within the New York oceanic CTA/FIR.

2. Supersonic aircraft operating at or above FL 450 not covered in subpara 1 above.

3. Aircraft which meet the MNPS and which:

(a) Operate within MNPS airspace; or

(b) Are in transit to or from MNPS airspace;

or

(c) Operate for part of their flight within, above, or below MNPS airspace.

NOTE-

This reduced lateral separation must not be used if track-keeping capability of the aircraft has been reduced for any reason.

d. 90 NM between aircraft not approved for RNP 4 or RNP 10 and which:

1. Operate within WATRS; or

2. Operate west of 55° West between the U.S., Canada, or Bermuda and points in the Caribbean ICAO Region.

e. 100 NM between aircraft operating west of 55° West not covered by subparas a, c or d above.

f. 120 NM between aircraft operating east of 55° West.

8-8-5. VFR CLIMB AND DESCENT

a. In the Houston, Miami, and San Juan CTAs, IFR flights may be cleared to climb and descend in VFR conditions only:

1. When requested by the pilot; and

2. Between sunrise and sunset.

b. Apply the following when the flight is cleared:

1. If there is a possibility that VFR conditions may become impractical, issue alternative instructions.

2. Issue traffic information to aircraft that are not separated in accordance with the minima in this section.

Section 5. Miscellaneous Operations

■ 10-5-1. EXPLOSIVE CARGO

TERMINAL

When you receive information that an emergency landing will be made with explosive cargo aboard, inform the pilot of the safest or least congested airport areas. Relay the explosive cargo information to:

- a. The emergency equipment crew.
- b. The airport management.
- c. The appropriate military agencies, when requested by the pilot.

Section 6. Oceanic Emergency Procedures

10-6-1. APPLICATION

The procedures in this section are to be used solely in oceanic airspace.

10-6-2. PHASES OF EMERGENCY

Emergency phases are described as follows:

a. Uncertainty phase (INCERFA). When there is concern about the safety of an aircraft or its occupants, an INCERFA exists:

1. When communication from an aircraft has not been received within 30 minutes after the time a communication should have been received or after the time an unsuccessful attempt to establish communication with such aircraft was first made, whichever is earlier; or

2. When an aircraft fails to arrive within 30 minutes after the time of arrival last estimated by the pilot or by the ATC units, whichever is later.

b. Alert phase (ALERFA). When there is apprehension about the safety of an aircraft and its occupants, an ALERFA exists:

1. Following the uncertainty phase when subsequent attempts to establish communications with the aircraft, or inquiries to other relevant sources have failed to reveal any information about the aircraft; or

2. When information has been received which indicates that the operating efficiency of the aircraft has been impaired but not to the extent that a forced landing is likely; or

3. When communication from an aircraft has not been received within 60 minutes after the time a communication should have been received or after the time an unsuccessful attempt to establish communication with such aircraft was first made, whichever is earlier.

c. Distress phase (DETRESFA). When there is reasonable certainty that the aircraft and its occupants are threatened by grave and imminent danger, a DETRESFA exists:

1. Following the alert phase when further attempts to establish communications with the aircraft and more widespread inquiries are unsuccessful; or

2. When the fuel on board is considered to be exhausted or to be insufficient for the aircraft to reach safety; or

3. When information is received which indicates that the operating efficiency of the aircraft has been impaired to the extent that a forced landing is likely; or

4. When information is received or it is reasonably certain that the aircraft is about to make or has made a forced landing.

10-6-3. ALERTING SERVICE AND SPECIAL ASSISTANCE

a. Provide alerting service to:

1. All aircraft receiving ATC service;

2. All other aircraft which have filed a flight plan or which are otherwise known to the ATC unit; and

3. Any aircraft known or believed to be the subject of unlawful interference.

b. When alerting service is required, the responsibility for coordinating such service must, unless otherwise established by letter of agreement, rest with the facility serving the FIR or CTA:

1. Within which the aircraft was flying at the time of last air-ground radio contact; or

2. Which the aircraft was about to enter if the last air-ground contact was established at or close to the boundary; or

3. Within which the point of destination is located if the aircraft:

(a) Was not equipped with suitable two-way radio communications equipment; or

(b) Was not under obligation to transmit position reports.

REFERENCE-

FAAO JO 7110.65, Chapter 8, Section 2, Coordination.

c. The responsible Area Control Center (ACC) must serve as the control point for:

1. Collecting all information relevant to a state of emergency of an aircraft;
2. Forwarding that information to the appropriate RCC; and
3. Coordinating with other facilities concerned.

d. The responsibility of the ACC to provide alerting service for military aircraft may be waived upon a written or recorded request from a military agency. In this case, the military request must state that the military agency assumes full responsibility for their aircraft while the aircraft are operating in the oceanic airspace.

e. Responsibility to provide alerting service for flight operations conducted under the “due regard” or “operational” prerogative of military aircraft is assumed by the military. When “due regard” operations are scheduled to end with aircraft filed under ICAO procedures, the ACC may, if specified in a letter of agreement, assume responsibility for alerting service at proposed time filed.

f. In the event of INCERFA, ALERFA, or DETRESFA, notify the following:

1. When practicable, the aircraft operator.
2. The appropriate RCC.
3. Aeronautical stations having en route communications guard responsibilities at the point of departure, along or adjacent to the route of flight, and at the destination.
4. ACCs having jurisdiction over the proposed route of flight from the last reported position to the destination airport.

g. INCERFA, ALERFA, and DETRESFA messages must include the following information, if available, in the order listed:

1. INCERFA, ALERFA, or DETRESFA according to the phase of the emergency.
2. Agency and person originating the message.
3. Nature of the emergency.
4. Significant flight plan information.

5. The air traffic unit which made the last radio contact, the time, and the frequency used.

6. The aircraft’s last position report, how it was received, and what facility received it.

7. Color and distinctive marks of aircraft.

8. Any action taken by reporting office.

9. Other pertinent remarks.

h. An INCERFA phase ends with the receipt of any information or position report on the aircraft. Cancel the INCERFA by a message addressed to the same stations as the INCERFA message.

1. An ALERFA ends when:

(a) Evidence exists that would ease apprehension about the safety of the aircraft and its occupants; or

(b) The concerned aircraft lands. Cancel the ALERFA message by a message addressed to the same stations as the ALERFA message.

2. A DETRESFA ends when the:

(a) Aircraft successfully lands; or

(b) RCC advises of a successful rescue; or

(c) RCC advises of termination of SAR activities. Cancel the DETRESFA by a message addressed to the same stations as the DETRESFA message.

i. A separate chronological record should be kept on each ALERFA and DETRESFA together with a chart which displays the projected route of the aircraft, position reports received, route of interceptor aircraft, and other pertinent information.

10-6-4. INFLIGHT CONTINGENCIES

a. If an aircraft over water requests weather, sea conditions, ditching information, and/or assistance from surface vessels, or if the controller feels that this information may be necessary for aircraft safety, it should be requested from the RCC. Also, an appropriate AMVER SURPIC should be asked for if requested by the aircraft or deemed beneficial by control personnel.

NOTE-

The AMVER Center can deliver, in a matter of minutes, a SURPIC of vessels in the area of a SAR incident, including their predicted positions and their characteristics.

b. In all cases of aircraft ditching, the airspace required for SAR operations must be determined by the RCC. The ACC must block that airspace until the RCC advises the airspace is no longer required. An International Notice to Airmen (NOTAM) must be issued describing the airspace affected.

c. The following actions will be taken in the event an aircraft must make an emergency descent:

1. In the event an aircraft requests an emergency descent:

(a) Issue a clearance to the requested altitude if approved separation can be provided.

(b) Advise the aircraft of the traffic, and request its intentions if traffic prevents an unrestricted descent.

PHRASEOLOGY–

ATC ADVISES (aircraft identification) UNABLE TO APPROVE UNRESTRICTED DESCENT.

TRAFFIC (traffic information).

REQUEST INTENTIONS.

2. In the event an aircraft is making or will make an emergency descent without a clearance:

(a) Advise other aircraft of the emergency descent.

PHRASEOLOGY–

ATC ADVISES (aircraft identification/all aircraft) BE ALERT FOR EMERGENCY DESCENT IN THE VICINITY OF (latitude/longitude) FROM (altitude/FL) TO (altitude/FL).

(b) Advise other aircraft when the emergency descent is complete.

PHRASEOLOGY–

(Aircraft identification/all aircraft) EMERGENCY DESCENT AT (location) COMPLETED.

3. Upon notification that an aircraft is making an emergency descent through other traffic, take action immediately to safeguard all aircraft concerned.

4. When appropriate, broadcast by ATC communications, by radio navigation aids, and/or through aeronautical communication stations/services an emergency message to all aircraft in the vicinity of the descending aircraft. Include the following information:

(a) Location of emergency descent.

(b) Direction of flight.

(c) Type aircraft.

(d) Route if appropriate.

(e) Altitude vacated.

(f) Other information.

EXAMPLE–

“Attention all aircraft in the vicinity of Trout, a northbound D–C Ten on A–T–S Route Alfa Seven Hundred is making an emergency descent from flight level three three zero.” (Repeat as you deem appropriate.)

5. If traffic conditions permit, provide traffic information to the affected aircraft.

6. Immediately after an emergency broadcast or traffic information has been made, issue appropriate clearances or instructions, as necessary, to all aircraft involved.

10–6–5. SERVICES TO RESCUE AIRCRAFT

a. Provide standard IFR separation between the SAR and the aircraft in distress, except when visual or radar contact has been established by the search and rescue aircraft and the pilots of both aircraft concur, IFR separation may be discontinued.

b. Clear the SAR aircraft to a fixed clearance limit rather than to the aircraft in distress, which is a moving fix. Issue route clearances that are consistent with that of the distressed aircraft.

c. Advise the rescue aircraft, as soon as practicable, of any factors that could adversely affect its mission; e.g., unfavorable weather conditions, anticipated problems, the possibility of not being able to approve an IFR descent through en route traffic, etc.

d. Advise the appropriate rescue agency of all pertinent information as it develops.

e. Forward immediately any information about the action being taken by the RCC, other organizations, or aircraft to the aircraft concerned.

f. Advise the aircraft operator of the current status of the SAR operation as soon as practicable.

g. Since prompt, correct, and complete information is the key to successful rescue operations, ensure that this information is swiftly and smoothly supplied to those organizations actively engaged in rescue operations.

Section 7. Ground Missile Emergencies

10-7-1. INFORMATION RELAY

When you receive information concerning a ground missile emergency, notify other concerned facilities and take action to have alerting advisories issued by:

a. EN ROUTE. Air carrier company radio stations for each VFR company aircraft which is or will be operating in the vicinity of the emergency.

b. EN ROUTE. FSSs adjacent to the emergency location.

c. TERMINAL. Relay all information concerning a ground missile emergency to the ARTCC within whose area the emergency exists and disseminate as a NOTAM.

REFERENCE-
P/CG Term- Notice to Airmen.

10-7-2. IFR AND SVFR MINIMA

Reroute IFR and SVFR aircraft as necessary to avoid the emergency location by one of the following minima, or by greater minima when suggested by the notifying official:

a. Lateral separation- *1 mile* between the emergency location and either of the following:

1. An aircraft under radar control and the emergency location which can be accurately determined by reference to the radar scope.

2. The airspace to be protected for the route being flown.

b. Vertical separation- *6,000 feet* above the surface over the emergency location.

10-7-3. VFR MINIMA

Advise all known VFR aircraft which are, or will be, operating in the vicinity of a ground missile emergency, to avoid the emergency location by 1 mile laterally or 6,000 feet vertically, or by a greater distance or altitude, when suggested by the notifying official.

10-7-4. SMOKE COLUMN AVOIDANCE

Advise all aircraft to avoid any observed smoke columns in the vicinity of a ground missile emergency.

10-7-5. EXTENDED NOTIFICATION

EN ROUTE

When reports indicate that an emergency will exist for an extended period of time, a Notice to Airmen may be issued.

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

d. Terms Added:

APPROACH HOLD AREA
 ATTENTION ALL USERS PAGE (AAUP)
 RUNWAY ENTRANCE LIGHTS (REL)
 RUNWAY STATUS LIGHTS (RWSL)
 SIMULTANEOUS CLOSE PARALLEL APPROACHES
 SIMULTANEOUS (CONVERGING) DEPENDENT APPROACHES
 SIMULTANEOUS (CONVERGING) INDEPENDENT APPROACHES
 SIMULTANEOUS (PARALLEL) DEPENDENT APPROACHES
 TAKE-OFF HOLD LIGHTS (THL)

e. Terms Deleted:

AZIMUTH (MLS)
 PARALLEL MLS APPROACHES (See PARALLEL ILS APPROACHES)
 SIMULTANEOUS MLS APPROACHES (See SIMLUTANEOUS ILS APPROACHES)

f. Terms Modified:

AERONAUTICAL CHART
 AREA NAVIGATION (RNAV) GLOBAL POSITIONING SYSTEM (GPS) PRECISION
 RUNWAY MONITOR (PRM) APPROACH
 AUTOLAND APPROACH
 BREAKOUT
 CLOSE PARALLEL RUNWAYS
 COUPLED APPROACH
 DECISION ALTITUDE/DECISION HEIGHT [ICAO Annex 6]
 DECISION HEIGHT
 FINAL APPROACH FIX
 FINAL MONITOR AID (FMA)
 FINAL MONITOR CONTROLLER

GENERAL AVIATION
GLIDESLOPE INTERCEPT ALTITUDE
ILS PRM APPROACH
LOCALIZER OFFSET
LOCALIZER TYPE DIRECTIONAL AID
LOCALIZER TYPE DIRECTIONAL AID (LDA) PRECISION RUNWAY MONITOR (PRM)
APPROACH
MLS CATEGORIES
NO TRANSGRESSION ZONE (NTZ)
NONRADAR
PRECISION APPROACH PROCEDURE
PRECISION RUNWAY MONITOR (PRM) SYSTEM
PRM
RADAR SERVICE
SIMULTANEOUS OFFSET INSTRUMENT APPROACH (SOIA)
THRESHOLD CROSSING HEIGHT

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

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 HOLD AREA– The locations on taxiways in the approach or departure areas of a runway designated to protect landing or departing aircraft. These locations are identified by signs and markings.

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 (RNAV)– A method of navigation which permits aircraft operation on any desired flight path within the coverage of ground– or space–based navigation aids or within the limits of the capability of self-contained aids, or a combination of these.

Note: Area navigation includes performance–based navigation as well as other operations that do not meet the definition of performance–based navigation.

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.

AREA NAVIGATION (RNAV) GLOBAL POSITIONING SYSTEM (GPS) PRECISION RUNWAY MONITORING (PRM) APPROACH – A GPS approach, which requires vertical guidance, used in lieu of an ILS PRM approach to conduct approaches to parallel runways whose extended centerlines are separated by less than 4,300 feet and at least 3,000 feet, where simultaneous close parallel approaches are permitted. Also used in lieu of an ILS PRM and/or LDA PRM approach to conduct Simultaneous Offset Instrument Approach (SOIA) operations.

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.

ATC SECURITY SERVICES – Communications and security tracking provided by an ATC facility in support of the DHS, the DOD, or other Federal security elements in the interest of national security. Such security services are only applicable within designated areas. ATC security services do not include ATC basic radar services or flight following.

ATC SECURITY SERVICES POSITION – The position responsible for providing ATC security services as defined. This position does not provide ATC, IFR separation, or VFR flight following services, but is responsible for providing security services in an area comprising airspace assigned to one or more ATC operating sectors. This position may be combined with control positions.

ATC SECURITY TRACKING – The continuous tracking of aircraft movement by an ATC facility in support of the DHS, the DOD, or other security elements for national security using radar (i.e., radar tracking) or other means (e.g., manual tracking) without providing basic radar services (including traffic advisories) or other ATC services not defined in this section.

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 channeling 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.

ATTENTION ALL USERS PAGE (AAUP)– The AAUP provides the pilot with additional information relative to conducting a specific operation, for example, PRM approaches and RNAV departures.

AUTOLAND APPROACH–An autoland system aids by providing control of aircraft systems during a precision instrument approach to at least decision altitude and possibly all the way to touchdown, as well as in some cases, through the landing rollout. The autoland system is a sub-system of the autopilot system from which control surface management occurs. The aircraft autopilot sends instructions to the autoland system and monitors the autoland system performance and integrity during its execution.

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 IIIE; 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/AWSS/AWOS 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**.)

G

GATE HOLD PROCEDURES– Procedures at selected airports to hold aircraft at the gate or other ground location whenever departure delays exceed or are anticipated to exceed 15 minutes. The sequence for departure will be maintained in accordance with initial call-up unless modified by flow control restrictions. Pilots should monitor the ground control/clearance delivery frequency for engine start/taxi advisories or new proposed start/taxi time if the delay changes.

GBT–

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

GCA–

(See **GROUND CONTROLLED APPROACH**.)

GDP–

(See **GROUND DELAY PROGRAM**.)

GENERAL AVIATION– That portion of civil aviation that does not include scheduled or unscheduled air carriers or commercial space operations.

(See ICAO term **GENERAL AVIATION**.)

GENERAL AVIATION [ICAO]– All civil aviation operations other than scheduled air services and nonscheduled air transport operations for remuneration or hire.

GEO MAP– The digitized map markings associated with the ASR-9 Radar System.

GLIDEPATH–

(See **GLIDESLOPE**.)

GLIDEPATH [ICAO]– A descent profile determined for vertical guidance during a final approach.

GLIDEPATH INTERCEPT ALTITUDE–

(See **GLIDESLOPE INTERCEPT ALTITUDE**.)

GLIDESLOPE– Provides vertical guidance for aircraft during approach and landing. The glideslope/glidepath is based on the following:

a. Electronic components emitting signals which provide vertical guidance by reference to airborne instruments during instrument approaches such as ILS/MLS, or

b. Visual ground aids, such as VASI, which provide vertical guidance for a VFR approach or for the visual portion of an instrument approach and landing.

c. **PAR**. Used by ATC to inform an aircraft making a PAR approach of its vertical position (elevation) relative to the descent profile.

(See ICAO term **GLIDEPATH**.)

GLIDESLOPE INTERCEPT ALTITUDE– The published minimum altitude to intercept the glideslope in the intermediate segment of an instrument approach. Government charts use the lightning bolt symbol to identify this intercept point. This intersection is called the Precise Final Approach fix (PFAF). ATC directs a higher altitude, the resultant intercept becomes the PFAF.

(See **FINAL APPROACH FIX**.)

(See **SEGMENTS OF AN INSTRUMENT APPROACH PROCEDURE**.)

GLOBAL NAVIGATION SATELLITE SYSTEM (GNSS) [ICAO]– GNSS refers collectively to the worldwide positioning, navigation, and timing determination capability available from one or more satellite constellation in conjunction with a network of ground stations.

GLOBAL NAVIGATION SATELLITE SYSTEM MINIMUM EN ROUTE IFR ALTITUDE (GNSS MEA)– The minimum en route IFR altitude on a published ATS route or route segment which assures acceptable Global Navigation Satellite System reception and meets obstacle clearance requirements. (Refer to 14 CFR Part 91.) (Refer to 14 CFR Part 95.)

GLOBAL POSITIONING SYSTEM (GPS)– GPS refers to the worldwide positioning, navigation and timing determination capability available from the U.S. satellite constellation. The service provided by GPS for civil use is defined in the GPS Standard Positioning System Performance Standard. GPS is composed of space, control, and user elements.

GNSS [ICAO]–

(See **GLOBAL NAVIGATION SATELLITE SYSTEM**.)

GNSS MEA-

(See GLOBAL NAVIGATION SATELLITE SYSTEM MINIMUM EN ROUTE IFR ALTITUDE.)

GO AHEAD- Proceed with your message. Not to be used for any other purpose.

GO AROUND- Instructions for a pilot to abandon his/her approach to landing. Additional instructions may follow. Unless otherwise advised by ATC, a VFR aircraft or an aircraft conducting visual approach should overfly the runway while climbing to traffic pattern altitude and enter the traffic pattern via the crosswind leg. A pilot on an IFR flight plan making an instrument approach should execute the published missed approach procedure or proceed as instructed by ATC; e.g., "Go around" (additional instructions if required).

(See LOW APPROACH.)

(See MISSED APPROACH.)

GPD-

(See GRAPHIC PLAN DISPLAY.)

GPS-

(See GLOBAL POSITIONING SYSTEM.)

GRAPHIC PLAN DISPLAY (GPD)- A view available with URET that provides a graphic display of aircraft, traffic, and notification of predicted conflicts. Graphic routes for Current Plans and Trial Plans are displayed upon controller request.

(See USER REQUEST EVALUATION TOOL.)

GROSS NAVIGATION ERROR (GNE) - A lateral deviation from a cleared track, normally in excess of 25 Nautical Miles (NM). More stringent standards (for example, 10NM in some parts of the North Atlantic region) may be used in certain regions to support reductions in lateral separation.

GROUND-BASED TRANSCEIVER (GBT)- The ground-based transmitter/receiver (transceiver) receives automatic dependent surveillance-broadcast messages, which are forwarded to an air traffic control facility for processing and display with other radar targets on the plan position indicator (radar display).

(See AUTOMATIC DEPENDENT SURVEILLANCE-BROADCAST.)

GROUND CLUTTER- A pattern produced on the radar scope by ground returns which may degrade other radar returns in the affected area. The effect of

ground clutter is minimized by the use of moving target indicator (MTI) circuits in the radar equipment resulting in a radar presentation which displays only targets which are in motion.

(See CLUTTER.)

GROUND COMMUNICATION OUTLET (GCO)- An unstaffed, remotely controlled, ground/ground communications facility. Pilots at uncontrolled airports may contact ATC and FSS via VHF to a telephone connection to obtain an instrument clearance or close a VFR or IFR flight plan. They may also get an updated weather briefing prior to takeoff. Pilots will use four "key clicks" on the VHF radio to contact the appropriate ATC facility or six "key clicks" to contact the FSS. The GCO system is intended to be used only on the ground.

GROUND CONTROLLED APPROACH- A radar approach system operated from the ground by air traffic control personnel transmitting instructions to the pilot by radio. The approach may be conducted with surveillance radar (ASR) only or with both surveillance and precision approach radar (PAR). Usage of the term "GCA" by pilots is discouraged except when referring to a GCA facility. Pilots should specifically request a "PAR" approach when a precision radar approach is desired or request an "ASR" or "surveillance" approach when a nonprecision radar approach is desired.

(See RADAR APPROACH.)

GROUND DELAY PROGRAM (GDP)- A traffic management process administered by the ATCSCC; when aircraft are held on the ground. The purpose of the program is to support the TM mission and limit airborne holding. It is a flexible program and may be implemented in various forms depending upon the needs of the AT system. Ground delay programs provide for equitable assignment of delays to all system users.

GROUND SPEED- The speed of an aircraft relative to the surface of the earth.

GROUND STOP (GS)- The GS is a process that requires aircraft that meet a specific criteria to remain on the ground. The criteria may be airport specific, airspace specific, or equipment specific; for example, all departures to San Francisco, or all departures entering Yorktown sector, or all Category I and II aircraft going to Charlotte. GSs normally occur with little or no warning.

GROUND VISIBILITY–
(See VISIBILITY.)

GS–
(See GROUND STOP.)

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BRIEFING GUIDE

**U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION**

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1. PARAGRAPH NUMBER AND TITLE: 2-1-1. ATC SERVICE

2. BACKGROUND: One of the hallmark core values of the air traffic control system is to provide a safe, orderly, and expeditious flow of traffic. The workforce has requested the change to the classification of ATC Service within this paragraph to reflect the core values of the controller.

3. CHANGE:

OLD

2-1-1. ATC SERVICE

The primary purpose of the ATC system is to prevent a collision between aircraft operating in the system and to organize and expedite the flow of traffic, and to provide support for National Security and Homeland Defense. In addition to its primary function, the ATC system has the capability to provide (with certain limitations) additional services. The ability to provide additional services is limited by many factors, such as the volume of traffic, frequency congestion, quality of radar, controller workload, higher priority duties, and the pure physical inability to scan and detect those situations that fall in this category. It is recognized that these services cannot be provided in cases in which the provision of services is precluded by the above factors. Consistent with the aforementioned conditions, controllers must provide additional service procedures to the extent permitted by higher priority duties and other circumstances. The provision of additional services is not optional on the part of the controller, but rather is required when the work situation permits. Provide air traffic control service in accordance with the procedures and minima in this order except when:

NEW

2-1-1. ATC SERVICE

The primary purpose of the ATC system is to prevent a collision between aircraft operating in the system and to **provide a safe, orderly and expeditious** flow of traffic, and to provide support for National Security and Homeland Defense. In addition to its primary function, the ATC system has the capability to **provide**, with certain limitations, additional services. The ability to provide additional services is limited by many factors, such as the volume of traffic, frequency congestion, quality of radar, controller workload, higher priority duties, and the pure physical inability to scan and detect those situations that fall in this category. It is recognized that these services cannot be provided in cases in which the provision of services is precluded by the above factors. Consistent with the aforementioned conditions, controllers must provide additional service procedures to the extent permitted by higher priority duties and other circumstances. The provision of additional services is not optional on the part of the controller, but rather is required when the work situation permits. Provide air traffic control service in accordance with the procedures and minima in this order except when:

1. PARAGRAPH NUMBER AND TITLE: 2-1-17. RADIO COMMUNICATIONS

2. BACKGROUND: Effective communication is a principal tenet of ATC. When transferring radio communications within a facility, or from one facility to another facility, issuance of the facility name is not required in up/down facilities. However, for those facilities that are not co-located or do not share the same name (for example, IAD ATCT and PCT TRACON), the name of the facility is required to be issued unless otherwise described in a facility directive.

3. CHANGE:

OLD

2-1-17. RADIO COMMUNICATIONS

Title through **b**

NEW

2-1-17. RADIO COMMUNICATIONS

No Change

1. The facility name or location name and terminal function to be contacted. *TERMINAL*: Omit the location name when transferring communications to another controller within your facility; except when instructing the aircraft to change frequency for final approach guidance include the name of the facility.

Add

1. The facility name or location name and terminal function to be contacted. *TERMINAL*: Omit the location name when transferring communications to another controller within your facility, **or, when the tower and TRACON share the same name (for example, Phoenix Tower and Phoenix TRACON).**

EXCEPTION. Controllers must include the name of the facility when instructing an aircraft to change frequency for final approach guidance.

1. PARAGRAPH NUMBER AND TITLE: 2-1-20. WAKE TURBULENCE CAUTIONARY ADVISORIES

2. BACKGROUND: In 2013, Terminal Procedures was informed of a discrepancy concerning the application of Wake Turbulence Cautionary Advisories (WTCA) when IFR aircraft accept a visual approach clearance or visual separation and Heavy or B757 aircraft are involved. More specifically, controllers were issuing a WTCA when a Heavy or B757 was the trailing aircraft. This is an incorrect application of the procedure.

3. CHANGE:

OLD

2-1-20. WAKE TURBULENCE CAUTIONARY ADVISORIES

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

NEW

2-1-20. WAKE TURBULENCE CAUTIONARY ADVISORIES

a. Issue wake turbulence cautionary advisories, **including** the position, altitude if known, and direction of flight **to aircraft operating behind Heavy or B757 aircraft** to:

1. PARAGRAPH NUMBER AND TITLE: 3-4-20. RUNWAY STATUS LIGHTS (RWSL)

2. BACKGROUND: Through a collaborated effort to reduce runway incursions, the FAA tested and installed runway status lights (RWSL) at selected airports throughout the United States. This system consists of runway entrance lights (REL) and take-off hold lights (THL) which provide pilots with an increased situational awareness of when it is safe to enter/depart the runway.

3. CHANGE:

OLD

Add

Add

Add

Add

NEW

3-4-20. RUNWAY STATUS LIGHTS (RWSL)

TERMINAL

RWSL is equipped with automatic intensity settings and must be operated on a continuous basis except under the following conditions:

a. If a pilot or vehicle report indicates any portion of the RWSL system is on and is not able to accept an ATC clearance; then

- Add **1. ATC must visually scan the entire runway. If the runway is observed to be clear and the lights are still illuminated, then the lights must be turned off and clearance re-issued.**
- Add **2. If a portion of the runway is not visible from the tower, ATC must visually scan the ASDE-X. If the runway is observed to be clear and the lights are still illuminated, then the lights must be turned off and clearance re-issued.**
- Add **b. When the RWSL Operational Status displays “Lost Comm with System,” consider the RWSL system out of service until checked and confirmed to be operational by technical operations personnel.**
- Add **c. Once RWSL systems are turned off, they must remain off until returned to service by technical operations personnel.**
- Add **d. Upon pilot request, adjust the light intensity.**

1. PARAGRAPH NUMBER AND TITLE: 3-7-2. TAXI AND GROUND MOVEMENT OPERATIONS

2. BACKGROUND: In order to ensure that approach hold areas are consistently identified and appropriate facility-level procedures are implemented for current approach hold applications, the Office of Runway Safety is proposing this DCP for FAA Order JO 7210.3, Facility Operations and Administration, Paragraph 2-1-20.

3. CHANGE:

<u>OLD</u>	<u>NEW</u>
3-7-2. TAXI AND GROUND MOVEMENT OPERATIONS	3-7-2. TAXI AND GROUND MOVEMENTS OPERATIONS
Title through h	No Change
Add	<u>i. Issue instructions to aircraft/vehicle to hold short of an approach hold area.</u>
Add	<i>PHRASEOLOGY-</i> <i>HOLD SHORT OF (runway) APPROACH</i>

1. PARAGRAPH NUMBER AND TITLE: 3-7-5. PRECISION APPROACH CRITICAL AREA

2. BACKGROUND: Numerous questions have been asked with regard to protection of the localizer critical area when it refers to a middle marker. At multiple locations the middle marker has been decommissioned. In an effort to provide guidance for these locations, a distance from the runway end is being added/substituted to represent the approximate distance where the middle marker was previously located. In addition, operators regularly conduct “AUTOLAND” or “COUPLED” approaches to satisfy maintenance, training, or reliability requirements when weather conditions are better than the required minimum specified for protecting the critical area (ceiling less than 800 feet or visibility less than 2 miles). Airline representatives requested, through the Air Traffic Procedures Advisory Committee (ATPAC), that the critical areas be protected for all aircraft conducting “autoland” approaches regardless of the weather. ATPAC and Terminal Procedures did not concur and informed

the airline representatives that procedures and phraseology already exists for controllers to an advise pilots conducting “autoland” and “coupled” approaches that the critical area is not protected.

3. CHANGE:

OLD

3-7-5. PRECISION APPROACH CRITICAL AREA

a. ILS critical area dimensions are described in FAAO 6750.16, Siting Criteria for Instrument Landing Systems. Aircraft and vehicle access to the ILS/MLS critical area must be controlled to ensure the integrity of ILS/MLS course signals whenever conditions are less than reported ceiling 800 feet or visibility less than 2 miles. Do not authorize vehicles/aircraft to operate in or over the critical area, except as specified in subpara a1, whenever an arriving aircraft is inside the ILS outer marker (OM) or the fix used in lieu of the OM unless the arriving aircraft has reported the runway in sight or is circling to land on another runway.

PHRASEOLOGY-

HOLD SHORT OF (runway) ILS/MLS CRITICAL AREA.

1. LOCALIZER CRITICAL AREA

a1 through a1(a)(2)

(b) In addition to subpara a1(a), do not authorize vehicles or aircraft operations in or over the area when an arriving aircraft is inside the middle marker when conditions are less than reported ceiling 200 feet or RVR 2,000 feet.

a2

b. Air carriers commonly conduct “coupled” or “autoland” operations to satisfy maintenance, training, or reliability program requirements. Promptly issue an advisory if the critical area will not be protected when an arriving aircraft advises that a “coupled,” “CATIII,” “autoland,” or similar type approach will be conducted and the weather is reported ceiling of 800 feet or more, and the visibility is 2 miles or more.

PHRASEOLOGY-

ILS/MLS CRITICAL AREA NOT PROTECTED.

NEW

3-7-5. PRECISION APPROACH CRITICAL AREA

a. ILS critical area dimensions are described in FAA **Order** 6750.16, Siting Criteria for Instrument Landing Systems. Aircraft and vehicle access to the ILS critical area must be controlled to ensure the integrity of ILS course signals whenever conditions are less than reported ceiling 800 feet or visibility less than 2 miles. Do not authorize vehicles/aircraft to operate in or over the critical area, except as specified in **subparagraph** a1, whenever an arriving aircraft is inside the ILS outer marker (OM) or the fix used in lieu of the OM unless the arriving aircraft has reported the runway in sight or is circling to land on another runway.

PHRASEOLOGY-

HOLD SHORT OF (runway) ILS CRITICAL AREA.

1. LOCALIZER CRITICAL AREA

No Change

(b) In addition to **subparagraph** a1(a), **when conditions are less than reported ceiling 200 feet or RVR 2,000 feet,** do not authorize vehicles or aircraft operations in or over the area when an arriving aircraft is inside the middle marker, **or in the absence of a middle marker, 1/2 mile final.**

No Change

b. **Operators** commonly conduct “coupled” or “autoland” **approaches** to satisfy maintenance, training, or reliability program requirements. Promptly issue an advisory if the critical area will not be protected when an arriving aircraft advises that a “coupled,” “CATIII,” “autoland,” or similar type approach will be conducted and the weather **indicates a** reported ceiling of 800 feet or more, **or** the visibility is 2 miles or more.

PHRASEOLOGY-

ILS CRITICAL AREA NOT PROTECTED.

1. PARAGRAPH NUMBER AND TITLE: 4-5-7. ALTITUDE INFORMATION

2. BACKGROUND: Current regulations require the issuance of a time check under most conditions when issuing restrictions based on a Coordinated Universal Time (UTC) clock. The proposed change allows the use of a clearance based on a time interval (in whole minutes) that a radar controller can use to expedite a climb or descent where a standard rate may not be appropriate. As the proposed change is not based on UTC, but a time interval, the issuance of a time check is not needed. The proposed change is not meant to be used in lieu of a clearance based on UTC to ensure any time-based separation minima.

3. CHANGE:

<u>OLD</u>	<u>NEW</u>
4-5-7 ALTITUDE INFORMATION	4-5-7 ALTITUDE INFORMATION
Title thru b	No Change
Add	<u>EXCEPTION. If you are in direct, two-way, VHF/UHF voice communication with the pilot and the aircraft is in radar contact, you may specify an elapsed time interval restriction, in full minute increments only, without any reference to the UTC clock. The time restriction begins once the clearance has been acknowledged by the pilot.</u>
EXAMPLE-	EXAMPLE-
1. "United Four Seventeen, climb to reach one three thousand at two two one five." "Time two two one one and one-quarter." The pilot is expected to be level at 13,000 feet at 2215 UTC.	1. "United Four Seventeen, climb to reach one three thousand at two two one five." "Time two two one one and one-quarter." The pilot is expected to be level at 13,000 feet at 2215 UTC.
2. Through Relay- "Speedbird Five, climb to reach flight level three-five zero at one-two-one-five, time" (Issue a time check).	2. Through Relay- "Speedbird Five, climb to reach flight level three-five zero at one-two-one-five, time" (Issue a time check).
Add	<u>3. In radar contact and in direct controller to pilot, two-way, VHF/UHF voice communication - "United Four Seventeen, descend to reach flight level three five zero within two minutes." The time restriction begins once the clearance has been acknowledged by the pilot.</u>
Add	<u>4. "United Four Seventeen climb to leave flight level three three zero within two minutes, maintain flight level three five zero."</u>
REFERENCE- FAAO JO 7110.65, Para 1-2-1, Word Meanings. FAAO JO 7110.65, Para 2-4-17, Numbers Usage.	No Change

PHRASEOLOGY–*CLIMB/DESCEND AND MAINTAIN (altitude).**If required,**AFTER PASSING (fix, waypoint),**or**AT (time) (time in hours, minutes, and nearest quarter minute).**CLIMB/DESCEND TO REACH (altitude)**AT (time (issue time check) or fix, waypoint),**or**AT (time). CLIMB/DESCEND AND MAINTAIN (altitude) WHEN ESTABLISHED AT LEAST (number of miles or minutes) MILES/MINUTES PAST (fix, waypoint) ON THE (NAVAID) (specified) RADIAL.**CLIMB/DESCEND TO REACH (altitude) AT (time or fix, waypoint),**or**A POINT (number of miles) MILES (direction) OF (name of DME NAVAID),**or**MAINTAIN (altitude) UNTIL (time (issue time check), fix, waypoint), THEN CLIMB/DESCEND AND MAINTAIN(altitude).**Through relay:**CLIMB TO REACH (altitude) AT (time) (issue a time check).*

Add

PHRASEOLOGY–*CLIMB/DESCEND AND MAINTAIN (altitude).**If required,**AFTER PASSING (fix, waypoint),**or**AT (time) (time in hours, minutes, and nearest quarter minute).**CLIMB/DESCEND TO REACH (altitude)**AT (time (issue time check) or fix, waypoint),**or**AT (time). CLIMB/DESCEND AND MAINTAIN (altitude) WHEN ESTABLISHED AT LEAST (number of miles or minutes) MILES/MINUTES PAST (fix, waypoint) ON THE (NAVAID) (specified) RADIAL.**CLIMB/DESCEND TO REACH (altitude) AT (time or fix, waypoint),**or**A POINT (number of miles) MILES (direction) OF (name of DME NAVAID),**or**MAINTAIN (altitude) UNTIL (time (issue time check), fix, waypoint), THEN CLIMB/DESCEND AND MAINTAIN(altitude).**Through relay:**CLIMB TO REACH (altitude) AT (time) (issue a time check).**or**Using a time interval while in radar contact and in direct controller to pilot, two-way, VHF/UHF voice communication:**CLIMB/DESCEND TO REACH/LEAVE (altitude) WITHIN (number) MINUTES, MAINTAIN (altitude).**or**CLIMB/DESCEND TO REACH/LEAVE (altitude) IN (number) MINUTES OR LESS, MAINTAIN (altitude).***1. PARAGRAPH NUMBER AND TITLE:**

5-3-1. APPLICATION

5-5-1. APPLICATION

2. BACKGROUND: Paragraphs 5-3-1 and 5-5-1 currently require controllers to establish and maintain radar identification of aircraft involved before providing radar service, except as provided in specific instances. This change adds a reference to new Paragraph 8-5-5 that allows when radar separation may be provided. This guidance implements the provisions of International Civil Aviation Organization (ICAO) Procedures for Air Navigation Services-Air traffic Management (PANS-ATM) Doc 4444, Paragraph 8.7.2.8.

3. CHANGE:

OLD

5-3-1 APPLICATION
 Before you provide radar service, establish and maintain radar identification on the aircraft involved, except as provided in para 5-5-1, Application, subparas b2 and 3.

*REFERENCE–
 FAAO JO 7110.65, Para 3-1-9, Use of Tower Radar Displays.*

NEW

5-3-1 APPLICATION
 Before you provide radar service, establish and maintain radar identification of the aircraft involved, except as provided in **Paragraph** 5-5-1, Application, **subparagraphs** b2, **b3 and in Paragraph 8-5-5, Radar Identification Application.**

*REFERENCE–
 FAAO JO 7110.65, Para 3-1-9, Use of Tower Radar Displays.
 FAAO JO 7110.65, Para 5-1-1, Presentation and Equipment Performance.*

OLD

5-5-1. APPLICATION
 Title through **b3**
 Add

Add

NEW

5-5-1. APPLICATION
 No Change

4. A radar-identified aircraft and one not radar-identified that is in transit from oceanic airspace or non-radar offshore airspace into an area of known radar coverage where radar separation is applied as specified in Paragraph 8-5-5, Radar Identification Application, until the transiting aircraft is radar-identified or the controller establishes other approved separation in the event of a delay or inability to establish radar identification of the transiting aircraft.

*REFERENCE–
 FAA Order JO 7110.65, Para 2-2-6, IFR Flight Progress Data. FAA Order JO 7110.65, Para 5-1-1, Presentation and Equipment Performance.
 FAA Order JO 7110.65, Para 5-3-1, Application.
 FAA Order JO 7110.65, Para 8-1-8, Use of Control Estimates.
 FAA Order JO 7110.65, Para 8-5-5, Radar Separation.*

1. PARAGRAPH NUMBER AND TITLE: 5-5-13. GPA 102/103 CORRECTION FACTOR

2. BACKGROUND: According to subject matter experts within the Terminal Surveillance Group and En Route NAS Engineering, the need to continue publishing this GPA 102/103 modification procedure is not necessary. This modification was removed in the late 1970’s and early 1980’s when Long Range Radars were modified to provide digitized target reports.

3. CHANGE:

OLD

5-5-13. GPA 102/103 CORRECTION FACTOR
When using a radar display whose primary radar video is processed by the GPA 102/103 modification to a joint-use radar system, apply the following correction factors to the applicable minima:

NEW

5-5-13. GPA 102/103 CORRECTION FACTOR
 Delete

a. If less than 40 miles from the antenna– add 1 mile.

Delete

b. If 40 miles or more but not over 200 miles from the antenna– add 3 miles.

Delete

1. PARAGRAPH NUMBER AND TITLE: 5-9-9. SIMULTANEOUS INDEPENDENT CLOSE PARALLEL APPROACHES - HIGH UPDATE RADAR NOT REQUIRED

2. BACKGROUND: Effective August 19, 2013, AFS report (DOT-FAA-AFS-450-69) limited closely spaced parallel approaches to those airports with runway centerlines separated by a minimum of 3,600’, and field elevation less than 1,000’ MSL. Following the implementation of this procedure, further fast-time simulation and analysis of the operation was conducted by AFS personnel to determine if the field elevation requirement could be amended and/or raised to allow this type of operation at more airports than originally specified.

3. CHANGE:

OLD

NEW

5-9-9. SIMULTANEOUS INDEPENDENT CLOSE PARALLEL APPROACHES - HIGH UPDATE RADAR NOT REQUIRED

5-9-9. SIMULTANEOUS INDEPENDENT CLOSE PARALLEL APPROACHES - HIGH UPDATE RADAR NOT REQUIRED

Title through b1

No Change

2. Parallel runway centerlines are separated by a minimum of 3,600 feet or more, and the airport elevation is less than 1,02.00 feet MSL.

2. Parallel runway centerlines are separated by a minimum of 3,600 feet or more, and the airport elevation is less than 2,000 feet MSL.

1. PARAGRAPH NUMBER AND TITLE: 7-9-4. SEPARATION

2. BACKGROUND: The requirement for the V-22 Osprey to be considered a fixed-wing aircraft while operating in Class B airspace was based on the need to avoid misinterpretation by controllers as to the application of separation standards for a Fixed-Wing or Helicopter/Rotorcraft. At the time of that decision, no safety-related studies had been completed concerning the flying characteristics of the V-22 Osprey. The V-22 Osprey is currently identified in JO 7110.65V, Appendix B. Aircraft Information, Helicopters/Rotorcrafts.

3. CHANGE:

OLD

NEW

7-9-4. SEPARATION

7-9-4. SEPARATION

Title thru a

No Change

b. VFR aircraft must be separated from VFR/IFR aircraft that weigh more than 19,000 pounds and turbojets by no less than:

b. VFR **fixed-wing** aircraft must be separated from VFR/IFR aircraft/**helicopter/rotorcraft** that weigh more than 19,000 pounds and turbojets by no less than:

- 1. 1 1/2 miles separation, or
- 2. 500 feet vertical separation, or

- 1. 1 1/2 miles separation, or
- 2. 500 feet vertical separation, or

NOTE–

Apply the provisions of para 5-5-4 Minima, when wake turbulence separation is required.

NOTE–

Apply the provisions of paragraph 5-5-4 Minima, when wake turbulence separation is required.

3. Visual separation, as specified in para 7-2-1, Visual Separation, para 7-4-2, Vectors for Visual Approach, and para 7-6-7, Sequencing.

NOTE-

Issue wake turbulence cautionary advisories in accordance with para 2-1-20 Wake Turbulence Cautionary Advisories.

c. For the application of Class Bravo airspace separation requirements, the V-22 Osprey must be treated as a fixed-wing aircraft. It is an SRS Category II aircraft but weighs more than 19,000 pounds. The V-22 Osprey must be separated from VFR/IFR aircraft by minimum identified in subparagraph b above.

3. Visual separation, as specified in **paragraph** 7-2-1, Visual Separation, **paragraph** 7-4-2, Vectors for Visual Approach, and **paragraph** 7-6-7, Sequencing.

NOTE-

*Issue wake turbulence cautionary advisories in accordance with **paragraph** 2-1-20 Wake Turbulence Cautionary Advisories.*

c. For the application of Class Bravo airspace separation requirements, the V-22 Osprey must be treated as a **helicopter/rotorcraft.**

1. PARAGRAPH NUMBER AND TITLE: 8-4-1. APPLICATION

2. BACKGROUND: The Operations Support Group (OSG) conducted an analysis of the proposed change and concluded that it will not have any effect on the intent or application of the current required separation standards. Further, the OSG envisions the change will enhance the FAA's ability to provide additional IFR services to the offshore industry. Therefore, Houston ARTCC is proposing a change to FAA JO 7110.65, Paragraph 8-4-1. In particular, removing the phrase "controlled by Houston ARTCC" from the second paragraph in order to facilitate future expansion of the current Offshore Grid System into the Jacksonville ARTCC Gulf of Mexico Low airspace.

3. CHANGE:

OLD

8-4-1. APPLICATION

Separate aircraft by assigning different flight paths whose widths or protected airspace do not overlap.

Within that portion of the Gulf of Mexico Low Offshore airspace controlled by Houston ARTCC, use 12 NM between aircraft whose flight paths are defined by published Grid System waypoints.

NOTE-

1. *The Grid System is defined as those waypoints contained within the Gulf of Mexico Low Offshore airspace and published on the IFR Vertical Flight Reference Chart.*

2. *Lateral separation minima is contained in:*

Section 7, North Atlantic ICAO Region.

Section 8, Caribbean ICAO Region.

Section 9, Pacific ICAO Region.

Section 10, North American ICAO Region—Arctic CTA.

NEW

8-4-1. APPLICATION

Separate aircraft by assigning different flight paths whose widths or protected airspace do not overlap.

Within that portion of the Gulf of Mexico Low Offshore airspace, use 12 NM between aircraft whose flight paths are defined by published Grid System waypoints.

No Change

1. PARAGRAPH NUMBER AND TITLE: 8-5-5. RADAR IDENTIFICATION APPLICATION

2. BACKGROUND: Existing International Civil Aviation Organization (ICAO) guidance provides that air traffic services providers may authorize the application of radar separation between a radar-identified aircraft and another aircraft, not yet radar-identified, that will be transitioning from an area without radar coverage to an area within which radar coverage is adequate and radar services are provided.

3. CHANGE:

<u>OLD</u>	<u>NEW</u>
Add	<u>8-5-5, RADAR IDENTIFICATION APPLICATION</u>
Add	<u>Radar separation standards may be applied between radar identified aircraft and another aircraft not yet identified that is in transit from oceanic airspace or non-radar offshore airspace into an area of known radar coverage where radar separation is applied provided:</u>
Add	<u>a. Direct radio communications is maintained with one of the aircraft involved and there is an ability to communicate with the other;</u>
Add	<u>b. The transiting aircraft is RNAV equipped;</u>
Add	<u>c. The performance of the radar/system is adequate;</u>
Add	<i>REFERENCE – FAA Order JO 7110.65, Para 5-1-1, Presentation and Equipment Performance</i>
Add	<u>d. Flight data on the aircraft that has not been radar identified indicate that it is equipped with a standard transponder and there is no known information that the transponder is not operating;</u>
Add	<u>e. Radar separation standards are maintained between the radar identified aircraft and any other observed targets until the transitioning aircraft is radar identified or non-radar separation is established;</u>
Add	<u>f. The facility has identified areas of known radar coverage, incorporated those areas into facility standard operating procedures (SOP), and provided training to the controllers.</u>
Add	<u>g. This procedure is also applicable to aircraft in transit from oceanic airspace into Guam Control Area (CTA), San Juan CTA and Honolulu CTA radar coverage areas.</u>

Add

h. EXCEPTION: This procedure is not authorized if there is insufficient time for the controller to establish other approved separation in the event of a delay or inability to establish radar identification of the transiting aircraft taking into consideration factors such as aircraft performance characteristics, type, and speed; weather, traffic conditions; workload; frequency congestion; etc.

Add

*REFERENCE–
FAA Order JO 7110.65, Para 2-2-6, IFR Flight Progress Data, Subpara 2-2-6.b.
FAA Order JO 7110.65, Para 8-1-8, use of Control Estimates*

1. PARAGRAPH NUMBER AND TITLE:

- 8-7-3. LONGITUDINAL SEPARATION
- 8-8-3. LONGITUDINAL SEPARATION

2. BACKGROUND: There is a need to add a provision to FAA Order JO 7110.65 for 50 nautical mile (NM) longitudinal (D50) separation and 30 NM lateral/30 NM longitudinal (30/30) separation within the New York Oceanic Flight Information Region (FIR).

3. CHANGE:

<u>OLD</u>	<u>NEW</u>
<p>8-7-3. LONGITUDINAL SEPARATION</p> <p>Title through c</p> <p>Add</p> <p>Add</p> <p>Add</p> <p>Add</p>	<p>8-7-3. LONGITUDINAL SEPARATION</p> <p>No Change</p> <p><u>d. Minima based on distance using Automatic Dependent Surveillance – Contract (ADS-C):</u></p> <p><u>1. Apply the minima as specified in TBL 8-7-1 between aircraft on the same track within airspace designated for Required Navigation Performance (RNP), provided:</u></p> <p><u>(a) Direct controller/pilot communication via voice or Controller Pilot Data Link Communications (CPDLC) is established, and</u></p> <p><u>(b) The required ADS-C periodic reports are maintained and monitored by an automated flight data processor (for example, Ocean21).</u></p>

Add

TBL 8-7-1
ADS-C Criteria

<u>Minima</u>	<u>RNP</u>	<u>Maximum ADS-C Periodic Reporting Interval</u>
<u>50 NM</u>	<u>10</u>	<u>27 minutes</u>
<u>50 NM</u>	<u>4</u>	<u>32 minutes</u>
<u>30 NM</u>	<u>4</u>	<u>10 minutes</u>

- Add **2. Aircraft on reciprocal tracks may be cleared to climb or descend to or through the altitude(s) occupied by another aircraft provided:**
- Add **(a) An ADS-C position report on at least one of the aircraft has been received beyond the passing point, and**
- Add **(b) The aircraft have passed each other by the applicable separation minimum.**
- Add *NOTE-
Ocean21 has been designed to check for the above criteria prior to allowing the minima to be provided.*
- Add **3. When an ADS-C periodic or waypoint change event report is overdue by 3 minutes, the controller must take action to obtain an ADS-C report.**
- Add **4. If no report is received within 6 minutes of the time the original report was due, the controller must take action to apply another form of separation.**

OLD

8-8-3. LONGITUDINAL SEPARATION

Title through d *NOTE*

Add

Add

Add

Add

NEW

8-8-3. LONGITUDINAL SEPARATION

No Change

e. Minima based on distance using Automatic Dependent Surveillance – Contract (ADS-C):

1. Apply the minima as specified in TBL 8-8-1 between aircraft on the same track within airspace designated for Required Navigation Performance (RNP), provided:

(a) Direct controller/pilot communication via voice or Controller Pilot Data Link Communications (CPDLC) is established, and

(b) The required ADS-C periodic reports are maintained and monitored by an automated flight data processor (for example, Ocean21).

Add

TBL 8-8-1
ADS-C Criteria

<u>Minima</u>	<u>RNP</u>	<u>Maximum ADS-C Periodic Reporting Interval</u>
<u>50 NM</u>	<u>10</u>	<u>27 minutes</u>
<u>50 NM</u>	<u>4</u>	<u>32 minutes</u>
<u>30 NM</u>	<u>4</u>	<u>10 minutes</u>

- Add **2. Aircraft on reciprocal tracks may be cleared to climb or descend to or through the altitude(s) occupied by another aircraft provided:**
- Add **(a) An ADS-C position report on at least one of the aircraft has been received beyond the passing point, and**
- Add **(b) The aircraft have passed each other by the applicable separation minimum.**
- Add ***NOTE–
Ocean21 has been designed to check for the above criteria prior to allowing the minima to be provided.***
- Add **3. When an ADS-C periodic or waypoint change event report is overdue by 3 minutes, the controller must take action to obtain an ADS-C report.**
- Add **4. If no report is received within 6 minutes of the time the original report was due, the controller must take action to apply another form of separation.**

1. PARAGRAPH NUMBER AND TITLE:

- 8-7-4. LATERAL SEPARATION
- 8-8-4. LATERAL SEPARATION

2. BACKGROUND: Due to changes in separation requirements, a provision to FAA Order JO 7110.65 is necessary to reflect a standard of 30 NM lateral separation within the New York Oceanic Flight Information Region (FIR).

3. CHANGE:

<u>OLD</u>	<u>NEW</u>
<p>8-7-4. LATERAL SEPARATION In accordance with Chapter 8, Offshore/Oceanic Procedures, Section 4, Lateral Separation, apply the following:</p> <ul style="list-style-type: none"> a. <u>50 NM between Required Navigation Performance (RNP 4 or RNP 10) approved aircraft which:</u> 	<p>8-7-4. LATERAL SEPARATION No Change</p> <ul style="list-style-type: none"> a. <u>30 NM to RNP-4 approved aircraft operating within airspace designated for RNP-4 when direct controller/pilot communications, via voice or Controller Pilot Data Link Communications (CPDLC), and the required ADS-C contracts are maintained and monitored by an automated flight data processor (e.g., Ocean21).</u>
a through d	ReNUMBER b through e

OLD

8-8-4. LATERAL SEPARATION

In accordance with Chapter 8, Offshore/Oceanic Procedures, Section 4, Lateral Separation, apply the following:

a. 50 NM between Required Navigation Performance (RNP 4 RNP 10 approved aircraft which:

a through e

NEW

8-8-4. LATERAL SEPARATION

No Change

a. 30 NM to RNP-4 approved aircraft operating within airspace designated for RNP-4 when direct controller/pilot communications, via voice or Controller Pilot Data Link Communications (CPDLC), and the required ADS-C contracts are maintained and monitored by an automated flight data processor (e.g., Ocean21).

Renumber b through f

1. PARAGRAPH NUMBER AND TITLE: 10-5-1. NAVY FLEET SUPPORT MISSIONS

2. BACKGROUND: The U.S. Navy was queried as to the accuracy of Paragraph 10-5-1, Navy Fleet Support Missions. Upon review, the U.S. Navy determined that all paragraphs in ATO Orders referencing Navy Fleet Support Missions are outdated and obsolete. Therefore, Paragraph 10-5-1 is being deleted.

3. CHANGE:

OLD

10-5-1. NAVY FLEET SUPPORT MISSIONS

When you receive information concerning an emergency to a U.S. Navy “Special Flight Number” aircraft, do the following:

a. Handle Navy Fleet Support Mission aircraft as follows:

1. EN ROUTE. Relay immediately, via collect telephone call, all pertinent information to Fleet Operations Control at Norfolk, Virginia, telephone 804-444-6602.

2. TERMINAL. Inform the nearest center of all the pertinent information.

b. Relay the words “Special Flight Number” followed by the number given as part of the routine IFR flight information.

c. Honor pilot requests for changes to route, altitude, and destination, whenever possible.

10-5-2 EXPLOSIVE CARGO

NEW

Delete

Delete

Delete

Delete

Delete

Delete

Delete

Renumber 10-5-1. EXPLOSIVE CARGO

1. PARAGRAPH NUMBER AND TITLE: 13-2-2. CONFLICT DETECTION AND RESOLUTION

2. BACKGROUND: Chapter 13, Section 2, of the 7110.65 contains a list of Conflict Probe limitations pertaining to the Ocean21 operating system including “Paragraph 8-6-3 - Temporary Moving Airspace Reservations.” Ocean21 functionality supports the application of lateral, longitudinal, and vertical separation to temporary moving airspace reservations.

3. CHANGE:

<u>OLD</u>	<u>NEW</u>
<p>13-2-2. CONFLICT DETECTION AND RESOLUTION</p> <p style="text-align: center;">Title through a8(a)(8)</p> <p><u>(9) Para 8-6-3-Temporary Moving Airspace Reservations</u></p> <p><u>(10) Para 8-8-5-VFR Climb and Descent</u></p>	<p>13-2-2. CONFLICT DETECTION AND RESOLUTION</p> <p style="text-align: center;">No Change</p> <p style="text-align: center;">Delete</p> <p><u>(9) Para 8–8–5 VFR Climb and Descent</u></p>

1. PARAGRAPH NUMBER AND TITLE: 13-2-4. CONTROLLER PILOT DATA LINK COMMUNICATIONS (CPDLC)

2. BACKGROUND: Guidance concerning unanswered CPDLC messages in FAA Order 7110.65 Paragraph 13-2-4 advises controllers to assume all unanswered CPDLC messages have not been delivered. This guidance is not in compliance with guidance prescribed in the ICAO Global Operational Data Link Document (GOLD).

3. CHANGE:

<u>OLD</u>	<u>NEW</u>
<p>13-2-4. CONTROLLER PILOT DATA LINK COMMUNICATIONS (CPDLC)</p> <p style="text-align: center;">Title through b4</p> <p>5. <u>Assume that all unanswered CPDLC messages have not been delivered.</u> On initial voice contact with aircraft preface the message with the following:</p>	<p>13-2-4. CONTROLLER PILOT DATA LINK COMMUNICATIONS (CPDLC)</p> <p style="text-align: center;">No Change</p> <p>5. <u>When there is uncertainty that a clearance was delivered to an aircraft via CPDLC, the controller must continue to protect the airspace associated with the clearance until an appropriate operational response is received from the flight crew. If an expected operational response to a clearance is not received, the controller will initiate appropriate action to ensure that the clearance was received by the flight crew.</u> On initial voice contact with aircraft preface the message with the following:</p>
<p>PHRASEOLOGY– (Call Sign) CPDLC Failure, (message).</p>	<p style="text-align: center;">No Change</p>

