The Gleim FAR/AIM is published annually. Gleim keeps you up-to-date with FAA changes via online and email updates. Changes to the Federal Aviation Regulations (FAR or 14 CFR) can be released by the FAA at any time during the year. The AIM is updated by the FAA twice a year.

The Gleim updates are listed by the FAA release date. The effective date, which is sometimes the same as the release date, is provided as well.
EXPLANATION OF CHANGES

1-1-13. USER REPORTS REQUESTED ON NAVAID OR GLOBAL NAVIGATION SATELLITE SYSTEM (GNSS) PERFORMANCE OR INTERFERENCE –
To better capture failures during outages, this change creates a stronger emphasis on Global Positioning System (GPS) international interference reporting and collection of data.

1-2-4. PILOTS AND AIR TRAFFIC CONTROLLERS RECOGNIZING INTERFERENCE OR SPOOFING –
This change provides information regarding Minimum Operational Network (MON) airports that are being added to the Chart Supplement U.S. in case of GPS interruptions.

3-1-1. GENERAL;
3-4-1. GENERAL;
3-4-3. RESTRICTED AREAS;
3-4-5. MILITARY OPERATIONS AREAS;
3-4-9. OBTAINING SPECIAL USE AIRSPACE STATUS;
3-5-2. MILITARY TRAINING ROUTINES –
These changes clarify that only permanent restricted areas and permanent military operations areas are charted.

4-3-2. AIRPORTS WITH AN OPERATING CONTROL TOWER –
This change removes the word “leg” from “departure leg.” Changing the term “departure leg” to “departure” will correctly align with current language in the Aeronautical Information Publication.

4-3-3. TRAFFIC PATTERNS –
This change restructures the paragraph and adds clarifying information needed to help pilots better understand their responsibilities regarding flying in and around airport traffic patterns. It also adds a reference to AC 90-66, Recommended Standards Traffic Patterns for Aeronautical Operations at Airports without Operating Control Towers, for flight at airports without operating control towers.

5-1-4. FLIGHT PLAN – VFR FLIGHTS;
5-1-6. FLIGHT PLAN – DEFENSE (DVFR) FLIGHTS –
The terms “coastal ADIZ,” “domestic ADIZ,” and “DEWIZ” are obsolete and are no longer a part of the Air Defense Identification Zone (ADIZ) definition, as published in 14 CFR Part 99. Therefore, those terms are being removed.

5-1-8. FLIGHT PLAN (FAA FORM 7233-1) – DOMESTIC IFR FLIGHTS;
5-1-9. INTERNATIONAL FLIGHT PLAN (FAA FORM 7233-4) IFR FLIGHTS –
This change updates references to various advisory circulars.

5-2-2. AUTOMATED PRE-DEPARTURE CLEARANCE PROCEDURES –
This change revises the logon procedure for automated pre-departure clearance procedures via Controller Pilot Data Link Communications-Departure Clearance (CPDLC-DCL).

5-4-13. ILS APPROACHES TO PARALLEL RUNWAYS;
5-4-14. PARALLEL ILS APPROACHES (DEPENDENT);
5-4-15. SIMULTANEOUS (PARALLEL) INDEPENDENT ILS/RNAV/GLS APPROACHES;
5-4-16. SIMULTANEOUS CLOSE PARALLEL ILS PRM/RNAV PRM/GLS PRM APPROACHES AND SIMULTANEOUS OFFSET INSTRUMENT APPROACHES (SOIA) –
This change incorporates updates to the design of simultaneous approaches that have been instituted, including revising the No Transgression Zone relative to simultaneous close parallel approaches. In addition, the use of different types of approaches for simultaneous operations has been made more inclusive. The PRM pilot training video has been replaced with a new slide presentation that contains numerous items not presently addressed in the AIM, including a reformatted Attention All Users Page.

7-1-14. ATC INFILTRATION WEATHER AVOIDANCE ASSISTANCE –
After testing and evaluation, the Weather and Radar Processor (WARP) Program Office, AJM-33, in conjunction with the Weather Engineering Team, AJW-176, discovered that 26 dBZ is the optimum Moderate threshold for the Selectable Mosaic Generator (SMG), as opposed to 30 dBZ. Therefore, this change adjusts the threshold for “LIGHT” to <26 dBZ and “MODERATE” to (26 to 40 dBZ) to comply with those findings.

7-5-13. FLYING IN FLAT LIGHT AND WHITE OUT CONDITIONS –
This change adds Brown Out conditions to the AIM to align with other published guidance.

PILOT/CONTROLLER GLOSSARY –
Terms have been added or modified within the glossary.

ENTIRE PUBLICATION –
Editorial/format changes were made where necessary.
Chapter 1. AIR NAVIGATION

1-1-13. USER REPORTS REQUESTED ON NAVAID OR GLOBAL NAVIGATION SATELLITE SYSTEM (GNSS) PERFORMANCE OR INTERFERENCE: On page 481, revise subparagraphs b. and b.3. to change “can” and “may” to “should” as follows:

b. * * * * * Reports should be made in any of the following ways:

3. Additionally, GNSS problems should be reported by Internet via the GPS Anomaly Reporting Form at http://www.faa.gov/air_traffic/nas/gps_reports/.

1-2-2. REQUIRED NAVIGATION PERFORMANCE (RNP): On page 497, revise the last sentence of subparagraph b.1.(a)(3) to change “progress” to “use” as follows:

b. RNP Operations.

1. * * * *

(a) * * *

(3) Advanced RNP (A-RNP): * * * Its applications in the U.S. are still in use.

1-2-4. PILOTS AND AIR TRAFFIC CONTROLLERS RECOGNIZING INTERFERENCE OR SPOOFING: On page 499, revise subparagraph c. as follows:

c. * * * * * In the aircraft, the pilot may need to change to a position determining method that does not require GPS-derived signals (for example, DME/DME/IRU or VOR). If transitioning to VOR navigation, the pilot should refer to the current Chart Supplement U.S. to identify airports with available conventional approaches associated with the VOR Minimum Operational Network (MON) program. * * * * If the pilot were to choose to continue in visual conditions, the pilot could aid the controller by cancelling his/her IFR flight plan and proceeding visually to the airport to land. ATC would cancel the pilot’s IFR clearance and issue a VFR squawk; freeing up the controller to handle other aircraft.

Chapter 2. AERONAUTICAL LIGHTING AND OTHER AIRPORT VISUAL AIDS

2-3-5. HOLDING POSITION MARKINGS: This paragraph was previously updated in our October 12, 2017, update. On page 515, revise subparagraph a.3. as follows:

a. Runway Holding Position Markings. * * * *

* * * * * 3. Holding Position Markings on Taxiways Located in Runway Approach Areas. * * * * * This marking is collocated with the runway approach/departure area holding position sign. When specifically instructed by ATC, “Hold short of Runway XX approach or Runway XX departure area,” the pilot MUST STOP so that no part of the aircraft extends beyond the holding position marking. * * * * *

Chapter 3. AIRSPACE

3-1-1. GENERAL: On page 519, reformat and expand subparagraph a.2. and NOTE as follows:

a. * * * *

* * * * *

2. Nonregulatory (military operations areas [MOA], warning areas, alert areas, controlled firing areas [CFA], and national security areas [NSA]).

NOTE– Additional information on special use airspace (prohibited areas, restricted areas [permanent or temporary], warning areas, MOAs [permanent or temporary], alert areas, CFAs, and NSAs) may be found in Chapter 3, Airspace, Section 4, Special Use Airspace, paragraphs 3-4-1 through 3-4-8.

* * * * *

3-4-1. GENERAL: On page 527, rephrase and expand subparagraphs a., c., and e. as follows:

a. Special use airspace (SUA) consists of that airspace wherein activities must be confined because of their nature, or wherein limitations are imposed upon aircraft operations that are not a part of those activities, or both. SUA areas are depicted on aeronautical charts, except for controlled firing areas (CFA), temporary military operations areas (MOA), and temporary restricted areas.

b. * * *

c. Warning areas, MOAs, alert areas, CFAs, and national security areas (NSA) are nonregulatory special use airspace.

d. * * *

e. Permanent SUA (except CFAs) is charted on Sectional Aeronautical, VFR Terminal Area, and applicable En Route charts, and include the hours of operation, altitudes, and the controlling agency.

NOTE– For temporary restricted areas and temporary MOAs, pilots should review the Notices to Airman Publication (NTAP), the FAA SUA website, and/or contact the appropriate overlying ATC facility to determine the effect of non-depicted SUA areas along their routes of flight.

3-4-3. RESTRICTED AREAS: On page 528, revise subparagraph c. and add new NOTE as follows:

* * * * *

c. Permanent restricted areas are charted on Sectional Aeronautical, VFR Terminal Area, and the appropriate En Route charts.

NOTE– Temporary restricted areas are not charted.

3-4-5. MILITARY OPERATIONS AREAS: On page 528, revise subparagraph d. and add new NOTE as follows:

* * * * *

d. Permanent MOAs are charted on Sectional Aeronautical, VFR Terminal Area, and the appropriate En Route Low Altitude charts.

NOTE– Temporary MOAs are not charted.
3-4-8. NATIONAL SECURITY AREAS: On page 528, change "National Security Areas" to "NSAs" as follows:

NSAs consist of airspace of defined vertical and lateral dimensions established at locations where there is a requirement for increased security and safety of ground facilities. * * *

On page 528, add new paragraph 3-4-9 as follows:

3-4-9. OBTAINING SPECIAL USE AIRSPACE STATUS

a. Pilots can request the status of SUA by contacting the using or controlling agency. The frequency for the controlling agency is tabulated in the margins of the applicable IFR and VFR charts.

b. Special Use Airspace Information Service (SUAIS) (Alaska Only). The SUAIS is a 24-hour service operated by the military that provides civilian pilots, flying VFR, with information regarding military flight operations in certain MOAs and restricted airspace within central Alaska. The service provides "near real time" information on military flight activity in the interior Alaska MOA and Restricted Area complex. SUAIS also provides information on artillery firing, known helicopter operations, and unmanned aerial vehicle operations. Pilots flying VFR are encouraged to use SUAIS. See the Alaska Chart Supplement for hours of operation, phone numbers, and radio frequencies.

c. Special use airspace scheduling data for preflight planning is available via the FAA SUA website. Pilots may also call Flight Services or access the Direct User Access Terminal System (DUATS) via the Internet for airspace schedule information.

3-5-2. MILITARY TRAINING ROUTES: On page 529, revise subparagraph d.2.(b) as follows:

2. * * *

(b) VFR Sectional Aeronautical Charts. These charts will depict military training activities such as IR and VR information.

Chapter 4. AIR TRAFFIC CONTROL

4-3-2. AIRPORTS WITH AN OPERATING CONTROL TOWER: On page 552, remove the word "leg" from subparagraph c.6. introductory text as follows:

c. * * *

6. Departure. * * *

4-3-3. TRAFFIC PATTERNS: On pages 552-554, revise and expand subparagraph a. into subparagraphs a.-d., revise item 1 in the key for FIG 4-3-2 and FIG 4-3-3, and redesignate old subparagraph b. as e. as follows:

a. It is recommended that aircraft enter the airport traffic pattern at one of the following altitudes listed below. These altitudes should be maintained unless another traffic pattern altitude is published in the Chart Supplement U.S. or unless otherwise required by the applicable distance from cloud criteria (14 CFR Section 91.155). (See FIG 4-3-2 and FIG 4-3-3):

1. Propeller-driven aircraft enter the traffic pattern at 1,000 feet above ground level (AGL).

2. Large and turbine-powered aircraft enter the traffic pattern at an altitude of not less than 1,500 feet AGL or 500 feet above the established pattern altitude.

3. Helicopters operating in the traffic pattern may fly a pattern similar to the fixed-wing aircraft pattern, but at a lower altitude (500 AGL) and closer to the runway. This pattern may be on the opposite side of the runway from fixed-wing traffic when airspeed requires or for practice power-off landings (autorotation) and if local policy permits. Landings not to the runway must avoid the flow of fixed wing traffic.

b. A pilot may vary the size of the traffic pattern depending on the aircraft’s performance characteristics. Pilots of en route aircraft should be constantly alert for aircraft in traffic patterns and avoid these areas whenever possible.

c. Unless otherwise indicated, all turns in the traffic pattern must be made to the left, except for helicopters, as applicable.

d. On Sectional, Aeronautical, and VFR Terminal Area Charts, right traffic patterns are indicated at public-use and joint-use airports with the abbreviation “RP” (for Right Pattern), followed by the appropriate runway number(s) at the bottom of the airport data block.

EXAMPLE–
RP 9, 18, 22R

NOTE–
[1] Pilots are encouraged to use the standard traffic pattern. However, those pilots who choose to execute a straight-in approach, maneuvering for and execution of the approach should not disrupt the flow of arriving and departing traffic. Likewise, pilots operating in the traffic pattern should be alert at all times for aircraft executing straight-in approaches.

REFERENCE–

[2] RP* indicates special conditions exist and refers pilots to the Chart Supplement U.S.

[3] Right traffic patterns are not shown at airports with full-time control towers.

EXAMPLE–
Key to traffic pattern operations
[1] Enter pattern in level flight, abeam the midpoint of the runway, at pattern altitude.

* * * * *

e. Wind conditions affect all airplanes in varying degrees. * * *

* * * * *

4-3-18. TAXIING: On page 562, revise subparagraph a.8. as follows:

a. General. * * *

* * * * *

8. If a pilot is expected to hold short of a runway approach/departure (Runway XX APPCH/Runway XX DEP) hold area or ILS holding position (see FIG 2-3-15, Taxiways Located in Runway Approach Area), ATC will issue instructions.

* * * * *
4-7-1. INTRODUCTION AND GENERAL POLICIES

a. Air traffic control (ATC) may apply 50 nautical mile (NM) lateral separation (i.e., lateral spacing) between airplanes authorized for Required Navigation Performance (RNP) 10 or RNP 4 operating in the Gulf of Mexico. 50 NM lateral separation may be applied in the following airspace:

1. Houston Oceanic Control Area (CTA)/Flight Information Region (FIR).
2. Gulf of Mexico portion of the Miami Oceanic CTA/FIR.
3. Monterrey CTA.
4. Merida High CTA within the Mexico FIR/UTA.

b. Within the Gulf of Mexico airspace described above, pairs of airplanes whose flight plans indicate approval for PBN and either RNP 10 or RNP 4 may be spaced by ATC at lateral intervals of 50 NM. ATC will space any airplane without RNP 10 or RNP 4 capability such that at least 90 NM lateral separation is maintained with other airplanes in the Miami Oceanic CTA, and at least 100 NM separation is maintained in the Houston, Monterrey, and Merida CTAs.

c. The reduced lateral separation allows more airplanes to fly on optimum routes/altitudes over the Gulf of Mexico.

d. 50 NM lateral separation is not applied on routes defined by ground navigation aids or on Gulf RNAV Routes Q100, Q102, or Q105.

e. Information useful for flight planning and operations over the Gulf of Mexico under this 50 NM lateral separation policy, as well as information on how to obtain RNP 10 or RNP 4 authorization, can be found in the West Atlantic Route System, Gulf of Mexico, and Caribbean Resource Guide for U.S. Operators located at www.faa.gov/about/office_org/headquarters_offices/avs/offices/afx/afs400/afs470/media/WATRS.pdf

f. Pilots should use Strategic Lateral Offset Procedures (SLOP) in the course of regular operations within the Gulf of Mexico CTAs. SLOP procedures and limitations are published in the U.S. Aeronautical Information Publication (AIP), ENR Section 7.1, General Procedures; Advisory Circular (AC) 91-70, Oceanic and Remote Continental Airspace Operations; and ICAO Document 4444, Procedures for Air Navigation Services – Air Traffic Management.

4-7-2. ACCOMMODATING NON-RNP 10 AIRCRAFT

a. Operators not authorized for RNP 10 or RNP 4 may still file for any route and altitude within the Gulf of Mexico CTAs. However, clearance on the operator’s preferred route and/or altitude will be provided as traffic allows for 90 or 100 NM lateral separation between the non-RNP 10 aircraft and any others. Priority will be given to RNP 10 or RNP 4 aircraft.

b. Operators of aircraft not authorized RNP 10 or RNP 4 must include the annotation “RMK/NONRNP10” in Item 18 of their ATC flight plan.

c. Pilots of non-RNP 10 aircraft are to remind ATC of their RNP status; i.e., report “negative RNP 10” upon initial contact with ATC in each Gulf CTA.

d. Operators will likely benefit from the effort they invest to obtain RNP 10 or RNP 4 authorization, provided they are flying aircraft equipped to meet RNP 10 or RNP 4 standards.

4-7-3. OBTAINING RNP 10 OR RNP 4 OPERATIONAL AUTHORIZATION

a. For U.S. operators, AC 90-105, Approval Guidance for RNP Operations and Barometric Vertical Navigation in the U.S. National Airspace System and in Oceanic and Remote Continental Airspace, provides the aircraft and operator qualification criteria for RNP 10 or RNP 4 authorizations. FAA personnel at flight standards district offices (FSDO) and certification management offices (CMO) will use the guidance contained in AC 90-105 to evaluate an operator’s application for RNP 10 or RNP 4 authorization. Authorization to conduct RNP operations in oceanic airspace is provided to all U.S. operators through issuance of Operations Specification (OpSpec), Management Specification (MSpec), or Letter of Authorization (LOA) B036, as applicable to the nature of the operation; for example, Part 121, Part 91, etc. Operators may wish to review FAA Order 8900.1, Flight Standards Information Management System, volume 3, chapter 18, section 4, to understand the specific criteria for issuing OpSpec, MSpec, and/or LOA B036.

b. The operator’s RNP 10 or RNP 4 authorization should include any equipment requirements and RNP 10 time limits (if operating solely inertial-based navigation systems), which must be observed when conducting RNP operations. RNP 4 requires tighter navigation and track maintenance accuracy than RNP 10.

4-7-4. AUTHORITY FOR OPERATIONS WITH A SINGLE LONG-RANGE NAVIGATION SYSTEM

Operators may be authorized to take advantage of 50 NM lateral separation in the Gulf of Mexico CTAs when equipped with only a single long-range navigation system. RNP 10 with a single long-range navigation system is authorized via OpSpec, MSpec, or LOA B054. Operators should contact their FSDO or CMO to obtain information on the specific requirements for obtaining B054. Volume 3, chapter 18, section 4 of FAA Order 8900.1 provides the qualification criteria to be used by FAA aviation safety inspectors in issuing B054.

4-7-5. FLIGHT PLAN REQUIREMENTS

a. In order for an operator with RNP 10 or RNP 4 authorization to obtain 50 NM lateral separation in the Gulf of Mexico CTAs, and therefore obtain preferred routing available to RNP authorized aircraft, the international flight plan form (FAA 7233-4) must be annotated as follows:

1. Item 10a (Equipment) must include the letter “R.”

2. Item 18 must include either “PBN/A1” for RNP 10 authorization or “PBN/L1” for RNP 4 authorization.

b. Indication of RNP 4 authorization implies the aircraft and pilots are also authorized RNP 10.

c. Chapter 5, section 1, of this manual includes information on all flight plan codes. RNP 10 has the same meaning and application as RNAV 10. They share the same code.

4-7-6. CONTINGENCY PROCEDURES

Pilots operating under reduced lateral separation must be particularly familiar with, and prepared to rapidly implement, the standard contingency procedures specifically written for operations when outside ATC surveillance and direct VHF communications (for example, the oceanic environment). Specific procedures have been developed for weather deviations. Operators should ensure all flight crews operating in this type of environment have been provided the standard contingency procedures in a readily accessible format. The margin for error when operating at reduced separation may be incorrect navigation procedures application or standard contingency procedures. These internationally accepted procedures are published in ICAO Document 4444, chapter 15. The procedures are also reprinted in the U.S. Aeronautical Information Publication (AIP), En Route (ENR) Section 7.3, Special Procedures for In-flight Contingencies in Oceanic Airspace; and AC 91-70.
Chapter 5. AIR TRAFFIC PROCедURES

5-1-4. FLIGHT PLAN - VFR FLIGHTS: On page 604, revise subparagraph a. and the REFERENCE as follows:

a. Except for operations in or penetrating an ADIZ, a flight plan is not required for VFR flight.

REFERENCE—
AIM, Chapter 5, Section 6, National Security and Interception Procedures
* * * * *

5-1-6. FLIGHT PLAN - DEFENSE VFR (DVFR) FLIGHTS: On page 606, revise paragraph as follows:

VFR flights (except DOD or law enforcement flights) into an ADIZ are required to file DVFR flight plans for security purposes. Detailed ADIZ procedures are found in Section 6, National Security and Interception Procedures, of this chapter. (See 14 CFR Part 99, Security Control of Air Traffic)

5-1-8. FLIGHT PLAN (FAA FORM 7233-1) – DOMESTIC IFR FLIGHTS: On page 609, revise the NOTE under paragraph d.2.(i) as follows:

* * * *
2. * * *
   (i) * * *

NOTE—
To be approved for use in the National Airspace System, RNAV equipment must meet system availability, accuracy, and airworthiness standards. For additional information and guidance on RNAV equipment requirements, see Advisory Circular (AC) 20-138, Airworthiness Approval of Positioning and Navigation Systems, and AC 90-100, U.S. Terminal and En Route Area Navigation (RNAV) Operations.
* * * *

5-1-9. INTERNATIONAL FLIGHT PLAN (FAA FORM 7233-4 – IFR FLIGHTS (FOR DOMESTIC OR INTERNATIONAL FLIGHTS): On page 614, revise TBL 5-1-4 by adding P-Code information and new NOTE item 7, and, on page 617, revise the AC reference in the NOTE in subparagraph b.8.(d)(1)[d] and add P-Code equipment information in subparagraph b.8.(g) as follows:

Aircraft COM, NAV, and Approach Equipment Qualifiers

<table>
<thead>
<tr>
<th>Equipment Qualifiers</th>
<th>Codes</th>
</tr>
</thead>
<tbody>
<tr>
<td>GBAS landing system</td>
<td>L ILS</td>
</tr>
<tr>
<td>LPV (APV with SBAS)</td>
<td>M1 ATC RTF SATCOM (INMARSAT)</td>
</tr>
<tr>
<td>LORAN C</td>
<td>M2 ATC RTF (MTSAT)</td>
</tr>
<tr>
<td>DME</td>
<td>M3 ATC RTF (Iridium)</td>
</tr>
<tr>
<td>FMC WPR ACARS</td>
<td>O VOR</td>
</tr>
<tr>
<td>D-FIS ACARS</td>
<td>P1 CPDLC RCP 400 (see Note 7.)</td>
</tr>
<tr>
<td>PDC ACARS</td>
<td>P2 CPDLC RCP 240 (see Note 7.)</td>
</tr>
<tr>
<td>ADF</td>
<td>P3 SATVOICE RCP 400 (see Note 7.)</td>
</tr>
<tr>
<td>(GNSS) (see Note 2.)</td>
<td>P4-P9 Reserved for RCP</td>
</tr>
<tr>
<td>HF RTF</td>
<td>R PBN approved (see Note 4.)</td>
</tr>
<tr>
<td>Inertial navigation</td>
<td>T TACAN</td>
</tr>
<tr>
<td>CPDLC ATN VDL Mode 2</td>
<td>U UHF RTF</td>
</tr>
<tr>
<td>CPDLC FANS 1/A HFDL</td>
<td>V VHF RTF</td>
</tr>
<tr>
<td>CPDLC FANS 1/A VDL Mode 4</td>
<td>W RVSM approved</td>
</tr>
<tr>
<td>CPDLC FANS 1/A VDL Mode 2</td>
<td>X MNPS approved/North Atlantic (NAT) High Level Airspace (HLA) approved</td>
</tr>
<tr>
<td>CPDLC FANS 1/A SATCOM (INMARSAT)</td>
<td>Y VHF with 8.33 kHz channel spacing capability</td>
</tr>
<tr>
<td>CPDLC FANS 1/A SATCOM (MTSAT)</td>
<td>Z Other equipment carried or other capabilities (see Note 5.)</td>
</tr>
<tr>
<td>CPDLC FANS 1/A SATCOM (Iridium)</td>
<td></td>
</tr>
</tbody>
</table>

NOTE—
* * * * *
5-4-11. RADAR APPROACHES: On page 661, reformat subparagraphs c.1.-3. as follows:

- c.

1. Precision Approach (PAR). A PAR is one in which a controller provides highly accurate navigational guidance in azimuth and elevation to a pilot.

2. Surveillance Approach (ASR). An ASR is one in which a controller provides navigational guidance in azimuth only.

3. NO-GYRO Approach. This approach is available to a pilot under radar control who experiences circumstances wherein the directional gyro or other stabilized compass is inoperative or inaccurate.

On pages 662-663, revise paragraph title and FIG 5-4-20 (previously FIG 5-4-19), insert new subparagraph b., and revise and redesignate subparagraphs a.-f. as follows:

5-4-13. SIMULTANEOUS APPROACHES TO PARALLEL RUNWAYS

a. ILS/RNAV/GLS approaches to parallel runways are grouped into three classes: Simultaneous Dependent Approaches; Simultaneous Independent Approaches; and Simultaneous Close Parallel PRM Approaches. RNAV approach procedures require that the classification of a parallel runway approach procedure is dependent on adjacent parallel runway centerline separation, ATC procedures, and airport ATC final approach radar monitoring and communications capabilities. At some airports, one or more approach courses may be offset up to 3 degrees. ILS approaches with offset localizer configurations result in loss of Category II/III capabilities and an increase in decision altitude/height (50').

b. Depending on weather conditions, traffic volume, and the specific combination of runways being utilized for arrival operations, a runway may be used for different types of simultaneous operations, including closely spaced dependent or independent approaches. Pilots should ensure that they understand the type of operation that is being conducted, and ask ATC for clarification if necessary.

c. Parallel approach operations demand heightened pilot situational awareness. A thorough Approach Procedure Chart review should be conducted with, as a minimum, emphasis on the following approach chart information: name and number of the approach, localizer frequency, inbound localizer/azimuth course, glideslope/glidedpath intercept altitude, glideslope crossing altitude at the final approach fix, decision height, missed approach instructions, special notes/procedures, and the assigned runway location/proximity to adjacent runways. Pilots are informed by ATC or through the ATIS that simultaneous approaches are in use.

d. The close proximity of adjacent aircraft conducting simultaneous independent approaches, especially simultaneous close parallel PRM approaches mandates strict pilot compliance with all ATC clearances.

e. Strict radio discipline is mandatory during simultaneous independent and simultaneous close parallel PRM approach operations. A stuck microphone may block the issuance of ATC instructions on the tower frequency by the final monitor controller during simultaneous independent and simultaneous close parallel PRM approaches.

f. Use of Traffic Collision Avoidance Systems (TCAS)
5-4-14. SIMULTANEOUS DEPENDENT APPROACHES

a. Simultaneous dependent approaches are an ATC procedure permitting approaches to airports having parallel runway centerlines separated by at least 2,500 feet up to 9,000 feet. Integral parts of a total system are ILS or other system providing approach navigation, radar, communications, ATC procedures, and required airborne equipment. RNAV equipment in the aircraft or GLS equipment on the ground and in the aircraft may replace the required airborne and ground based ILS equipment. Although non-precision minimums may be published, pilots must only use those procedures specifically authorized by chart note. For example, the chart note “LNAV NA during simultaneous operations,” requires vertical guidance. When given a choice, pilots should always fly a precision approach whenever possible.

b. A simultaneous dependent approach differs from a simultaneous independent approach in that, the minimum distance between parallel runway centerlines may be reduced; there is no requirement for radar monitoring or advisories; and a staggered separation of aircraft on the adjacent final course is required.

c. * * *

d. Whenever parallel approaches are in use, pilots are * * *

NOTE--
ATC will not specifically identify these operations as being dependent when advertised on the ATIS.

EXAMPLE--
Simultaneous ILS Runway 19 right and ILS Runway 19 left in use.
e. At certain airports, simultaneous dependent approaches are permitted to runways spaced less than 2,500 feet apart. In this case, ATC will provide no less than the minimum authorized diagonal separation with the leader always arriving on the same runway. The trailing aircraft is permitted reduced diagonal separation, instead of the single runway separation normally utilized for runways spaced less than 2,500 feet apart. For wake turbulence mitigation reasons:

1. Reduced diagonal spacing is only permitted when certain aircraft wake category pairings exist; typically when the leader is either in the large or small wake turbulence category, and

2. All aircraft must descend on the glideslope from the altitude at which they were cleared for the approach during these operations.

When reduced separation is authorized, the IAP briefing strip indicates that simultaneous operations require the use of vertical guidance and that the pilot should maintain last assigned altitude until intercepting the glideslope. No special pilot training is required to participate in these operations.

**NOTE—**
Either simultaneous dependent approaches with reduced separation or SOIA PRM approaches may be conducted to Runways 28R and 28L at KSFO spaced 750 feet apart, depending on weather conditions and traffic volume. Pilots should use caution so as not to confuse these operations. Plan for SOIA procedures only when ATC assigns a PRM approach or the ATIS advertises PRM approaches are in use. KSFO is the only airport where both procedures are presently conducted.

**REFERENCE—**
AIM, Paragraph 5-4-16, Simultaneous Close Parallel PRM Approaches and Simultaneous Offset Instrument Approaches (SOIA)
5-4-15. SIMULTANEOUS INDEPENDENT ILS/RNAV/GLS APPROACHES:

a. System. An approach system permitting simultaneous approaches to parallel runways with centerlines separated by at least 4,300 feet. Separation between 4,300 and 9,000 feet (9,200’ for airports above 5,000’) utilizing NTZ final monitor controllers. Simultaneous independent approaches require NTZ radar monitoring to ensure separation between aircraft on the adjacent parallel approach course. * * * Integral parts of a total system are radar, communications, ATC procedures, and ILS or other required airborne equipment. A chart note identifies that the approach is authorized for simultaneous use.

When simultaneous operations are in use, it will be advertised on the ATIS. When advised that simultaneous approaches are in use, pilots must advise approach control immediately of malfunctioning or inoperative receivers, or if a simultaneous approach is not desired. Although non-precision minimums may be published, pilots must only use those procedures specifically authorized by chart note. For example, the chart note “LNAV NA during simultaneous operations,” requires vertical guidance. When given a choice, pilots should always fly a precision approach whenever possible.

NOTE—* * * * * * *

EXAMPLE—Simultaneous ILS Runway 24 left and ILS Runway 24 right approaches in use.

b. Radar Services. These services are provided for each simultaneous independent approach.

1. During turn on to parallel final approach, aircraft are normally provided 3 miles radar separation or a minimum of 1,000 feet vertical separation. The assigned altitude must be maintained until intercepting the glidepath, unless cleared otherwise by ATC. Aircraft will not be vectored to intercept the final approach course at an angle greater than thirty degrees.

NOTE—Some simultaneous operations permit the aircraft to track an RNAV course beginning on downwind and continuing in a turn to intercept the final approach course. In this case, separation with the aircraft on the adjacent final approach course is provided by the monitor controller with reference to an NTZ.

* * * * * * *

6. Radar monitoring will automatically be terminated when visual separation is applied, the aircraft reports the approach lights or runway in sight, or the aircraft is 1 NM or less from the runway threshold. Final monitor controllers will not advise pilots when radar monitoring is terminated.

* * * * * * *

Simultaneous Independent ILS/RNAV/GLS Approaches

RUNWAY CENTERLINES SPACED AT LEAST 4300’.
FINAL MONITOR CONTROLLERS AND NTZ REQUIRED UP TO 9000’, 9200’, ABOVE 5000’ ELEVATION.

AIRCRAFT MAY BE VECTORED TO EITHER 14L OR 14R FINAL APPROACH COURSE FROM OUTER FIX

INTERSECTION OR WAYPOINT ESTABLISHED WHERE 3200’ ALTIMETER INTERCEPTS GLIDE SLOPE OR VERTICAL PATH.

RADAR MONITORING PROVIDED TO ENSURE SEPARATION BETWEEN AIRCRAFT ON PARALLEL FINAL APPROACH COURSES. DESCENT BEGINS AT INTERSECTION OR WAYPOINT

INTERCEPT GLIDE SLOPE OR VERTICAL PATH AT 2200’

FIG 5-4-22
On pages 665-670, revise paragraph title and reorganize, update, and expand, including adding new FIG 5-4-24 (renumber subsequent figures accordingly), as follows.

NOTE: Old subparagraph b. is now new subparagraph g. Old subparagraph c. is now new subparagraph b. Old subparagraph d. is now new subparagraph f. Old subparagraph e. is now included in new subparagraph g.7.

5-4-16. SIMULTANEOUS CLOSE PARALLEL PRM APPROACHES AND SIMULTANEOUS OFFSET INSTRUMENT APPROACHES (SOIA)

a. System.

1. The NTZ monitoring system (final monitor aid) consists of a high resolution ATC radar display with automated tracking software which provides monitor controllers with aircraft identification, position, speed, and a ten-second projected position, as well as visual and aural NTZ penetration alerts. A PRM high update rate surveillance sensor is a component of this system only for specific runway spacing. Additional procedures for simultaneous independent approaches are described in Paragraph 5-4-15, Simultaneous Independent ILS/RNAV/GLS Approaches.

2. Simultaneous Close Parallel PRM approaches, whether conducted utilizing a high update rate PRM surveillance sensor or not, must meet all of the following requirements: pilot training, PRM in the approach title, NTZ monitoring utilizing a final monitor aid, radar display, publication of an AAUP, and use of a secondary PRM communications frequency. PRM approaches are depicted on a separate IAP titled (Procedure type) PRM Rwy XXX (Simultaneous Close Parallel or Close Parallel).

NOTE—

EXAMPLE—
Simultaneous ILS PRM Runway 33 left and ILS PRM Runway 33 right approaches in use.

(a) The pilot may request to conduct a different type of PRM approach to the same runway other than the one that is presently being used; for example, RNAV instead of ILS. However, pilots must always obtain ATC approval to conduct a different type of approach. Also, in the event of the loss of ground-based NAVAIDS, the ATIS may advertise other types of PRM approaches to the affected runway or runways.

(b) The Attention All Users Page (AAUP) will address procedures for conducting PRM approaches.
b. Requirements and Procedures. Besides system requirements and pilot procedures as identified in subparagraph a1 above, all pilots must have completed special training before accepting a clearance to conduct a PRM approach.

1. Pilot Training Requirement. Pilots must complete special pilot training, as outlined below, before accepting a clearance for a simultaneous close parallel PRM approach.

(a) ** Training includes the requirement for pilots to view the FAA training slide presentation, “Precision Runway Monitor (PRM) Pilot Procedures.” Refer to https://www.faa.gov/training/testing/training/prm/ or search key words “FAA PRM” for additional information and to view or download the slide presentation.

(b) For operations under Part 91:

(1) ** In addition, pilots operating transport category aircraft must view the slide presentation, “Precision Runway Monitor (PRM) Pilot Procedures.” Refer to https://www.faa.gov/training/testing/training/prm/ or search key words “FAA PRM” for additional information and to view or download the slide presentation.

(2) ** The FAA strongly recommends that pilots not involved in transport category aircraft operations view the FAA training slide presentation, “Precision Runway Monitor (PRM) Pilot Procedures.” Refer to https://www.faa.gov/training/testing/training/prm/ or search key words “FAA PRM” for additional information and to view or download the slide presentation.

NOTE—Depending on weather conditions, traffic volume, and the specific combination of runways being utilized for arrival operations, a runway may be used for different types of simultaneous operations, including closely spaced dependent or independent approaches. Use PRM procedures only when the ATIS advertises their use. For other types of simultaneous approaches, see paragraphs 5-4-14 and 5-4-15.

c. ATC Directed Breakout. An ATC directed “breakout” is defined as a vector off the final approach course of a threatened aircraft in response to another aircraft penetrating the NTZ.

d. Dual Communications. The aircraft flying the PRM approach must have the capability of enabling the pilot/s to listen to two communications frequencies simultaneously. To avoid blocked transmissions, each runway will have two frequencies, a primary and a PRM monitor frequency. The tower controller will transmit on both frequencies. The monitor controller’s transmissions, if needed, will override both frequencies. Pilots will only transmit on the tower controller’s frequency, but will listen to both frequencies. Select the PRM monitor frequency audio only when instructed by ATC to contact the tower. The volume levels should be set about the same on both radios so that the pilots will be able to hear transmissions on the PRM frequency if the tower is blocked. Site-specific procedures take precedence over the general information presented in this paragraph. Refer to the AAUP for applicable procedures at specific airports.

e. Radar Services.

1. During turn on to parallel final approach, **. The assigned altitude must be maintained until intercepting the glide-slope/glidepath, unless cleared otherwise by ATC. Aircraft will not be vectored to intercept the final approach course at an angle greater than thirty degrees.

2. The final monitor controller will have the capability of overriding the tower controller on the tower frequency as well as transmitting on the PRM frequency.

3. Pilots will be instructed to contact the tower **

4. To ensure separation is maintained, and in order to avoid an imminent situation during PRM approaches, pilots must immediately comply with PRM monitor controller instructions.

5. Aircraft observed to overshoot the turn or to **

6. If a deviating aircraft fails to respond to such **

PHRASEOLOGY—

7. Radar monitoring will automatically be terminated when visual separation is applied, or the aircraft reports the approach lights or runway in sight or within 1 NM of the runway threshold. Final monitor controllers will not advise pilots when radar monitoring is terminated.

f. Attention All Users Page (AAUP). At airports that conduct PRM operations, the AAUP informs pilots under the “General” section of information relative to all the PRM approaches published at a specific airport, and this section must be briefed in its entirety. Under the “Runway Specific” section, only items relative to the runway to be used for landing need be briefed. (See FIG 5-4-24.) A single AAUP is utilized for multiple PRM approach charts at the same airport, which are listed on the AAUP. The requirement for informing ATC if the pilot is unable to accept a PRM clearance is also presented. The “General” section of AAUP addresses the following:

1. Review of the procedure for executing a climbing or descending breakout;

2. Breakout phraseology beginning with the words, “Traffic Alert;”

3. Descending on the glideslope/glidepath meets all crossing restrictions;

4. Briefing the PRM approach also satisfies the non-PRM approach briefing of the same type of approach to the same runway; and

5. Description of the dual communications procedure.

The “Runway Specific” section of the AAUP addresses those issues which only apply to certain runway ends that utilize PRM approaches. There may be no Runway Specific procedures, a single item applicable to only one runway end, or multiple items for a single or multiple runway end/s. Examples of SOIA runway specific procedures are as follows:
3. Controllers monitor the SOIA PRM approaches in exactly the same manner as is done for other PRM approaches. The procedures and system requirements for SOIA PRM approaches are identical with those used for simultaneous close parallel PRM approaches until near the offset PRM approach missed approach point (MAP), where visual acquisition of the straight-in aircraft by the aircraft conducting the offset PRM approach occurs. Since SOIA PRM approaches are identical to other PRM approaches (except for the visual segment in the offset approach), an understanding of the procedures for conducting PRM approaches is essential before conducting a SOIA PRM operation.

4. In SOIA, the approach course separation (instead of the runway separation) meets established close parallel approach criteria. (See FIG 5-4-25 for the generic SOIA approach geometry.) A visual segment of the offset PRM approach is established between the offset MAP and the runway threshold. Aircraft transition in visual conditions from the offset course, beginning at the offset MAP, to align with the runway and can be stabilized by 500 feet above ground level (AGL) on the extended runway centerline. A cloud ceiling for the approach is established so that the aircraft conducting the offset approach has nominally at least 30 seconds or more to acquire the leading straight-in aircraft prior to reaching the offset MAP. If visual acquisition is not accomplished prior to crossing the offset MAP, a missed approach must be executed.

5. Flight Management System (FMS) coding of the offset RNAV PRM and GLS PRM approaches in a SOIA operation is different than other RNAV and GLS approach coding in that it does not match the initial missed approach procedure published on the charted IAP. In the SOIA design of the offset approach, lateral course guidance terminates at the fictitious threshold point (FTP), which is an extension of the final approach course beyond the offset MAP to a point near the runway threshold. The FTP is designated in the approach coding as the MAP so that vertical guidance is available to the pilot to the runway threshold, just as vertical guidance is provided by the offset LDA glideslope. No matter what type of offset approach is being conducted, reliance on lateral guidance is discontinued at the charted MAP and replaced by visual maneuvering to accomplish runway alignment.

(a) As a result of this approach coding, when executing a missed approach at and after passing the charted offset MAP, a heading must initially be flown (either hand-flown or using autopilot “heading mode”) before engaging LNAV. If the pilot engages LNAV immediately, the aircraft may continue to track toward the FTP instead of commencing a turn toward the missed approach holding fix. Notes on the charted IAP and in the AAUP make specific reference to this procedure.

(b) Some FMSs do not code waypoints inside of the FAF as part of the approach. Therefore, the depicted MAP on the charted IAP may not be included in the offset approach coding. Pilots utilizing those FMSs may identify the location of the waypoint by noting its distance from the FTP as published on the charted IAP. In those same FMSs, the straight-in SOIA approach will not display a waypoint inside the PFAF. The same procedures may be utilized to identify an uncoded waypoint. In this case, the location is determined by noting its distance from the runway waypoint or using an authorized distance as published on the charted IAP.

(c) Because the FTP is coded as the MAP, the FMS map display will depict the initial missed approach course as beginning at the FTP. This depiction does not match the charted initial missed approach procedure on the IAP. Pilots are reminded that charted IAP guidance is to be followed, not the map display. Once the aircraft completes the initial turn when commencing a missed approach, the remainder of the procedure coding is standard and can be utilized as with any other IAP.
6. SOIA PRM approaches utilize the same dual communications procedures as do other PRM approaches.

**NOTE**

At KSFO, pilots conducting SOIA operations select the monitor frequency audio when communicating with the final radar controller, not the tower controller as is customary. In this special case, the monitor controller’s transmissions, if required, override the final controller’s frequency. This procedure is addressed on the AAUP.

(a) SOIA utilizes the same AAUP format as do other PRM approaches. The minimum weather conditions that are required are listed. Because of the more complex nature of instructions for conducting SOIA approaches, the “Runway Specific” items are more numerous and lengthy.

(b) Examples of SOIA offset runway specific notes:

(1) Aircraft must remain on the offset course until passing the offset MAP prior to maneuvering to align with the centerline of the offset approach runway.

(2) Pilots are authorized to continue past the offset MAP to align with runway centerline when:

[a] the straight-in approach traffic is in sight and is expected to remain in sight,

[b] ATC has been advised that “traffic is in sight.” (ATC is not required to acknowledge this transmission),

[c] the runway environment is in sight. Otherwise, a missed approach must be executed. Between the offset MAP and the runway threshold, pilots conducting the offset PRM approach must not pass the straight-in aircraft and are responsible for separating themselves visually from traffic conducting the straight-in PRM approach to the adjacent runway, which means maneuvering the aircraft as necessary to avoid that traffic until landing, and providing wake turbulence avoidance, if applicable. Pilots maintaining visual separation should advise ATC, as soon as practical, if visual contact with the aircraft conducting the straight-in PRM approach is lost and execute a missed approach unless otherwise instructed by ATC.

(c) Examples of SOIA straight-in runway specific notes:

(1) To facilitate the offset aircraft in providing wake mitigation, pilots should descend on, not above, the glideslope/glidepath.

(2) Conducting the straight-in approach, pilots should be aware that the aircraft conducting the offset approach will be approaching from the right/left rear and will be operating in close proximity to the straight-in aircraft.

7. Recap.

The following are differences between widely spaced simultaneous approaches (at least 4,300 feet between the runway centerlines) and Simultaneous PRM close parallel approaches which are of importance to the pilot:

(a) **Runway Spacing.** Prior to PRM simultaneous close parallel approaches, most ATC-directed breakouts were the result of two aircraft in-trail on the same final approach course getting too close together. * * * With PRM closely spaced approaches, two aircraft could be alongside each other, navigating on courses that are separated by less than 4,300 feet and as close as 3,000 feet. * * * * It is important that, when a pilot receives breakout instructions, the assumption is made that a blundering aircraft is about to (or has penetrated the NTZ) and is heading toward his/her approach course. The pilot must initiate a breakout as soon as safety allows. While conducting PRM approaches, pilots must maintain an increased sense of awareness in order to immediately react to an ATC (breakout) instruction and maneuver (as instructed by ATC) away from a blundering aircraft.

(b) **Communications.** Dual VHF communications procedures should be carefully followed. One of the assumptions made that permits the safe conduct of PRM approaches is that there will be no blocked communications.

(c) **Hand-flown Breakouts.** The use of the autopilot is encouraged while flying a PRM approach, but the autopilot must be disengaged in the rare event that a breakout is issued. * * * *

(d) **TCAS.** * * * *

* * * * * * * * * *

5-4-17. SIMULTANEOUS CONVERGING INSTRUMENT APPROACHES: On page 670, revise subparagraph d. to change “progress” to “use” as follows:

* * * * * * * *

_d. Whenever simultaneous converging approaches are in use, aircraft will be informed by the controller as soon as feasible after initial contact or via ATIS.* * * *

Chapter 7. SAFETY OF FLIGHT

7-1-14. **ATC INFLIGHT WEATHER AVOIDANCE ASSISTANCE:**

On page 729, revise subparagraphs a.2.(a)-(b) as follows.

* * * * * * * *

2. * * * *

(a) “LIGHT” (< 26 dBZ)

(b) “MODERATE” (26 to 40 dBZ)

* * * * * * * *

7-5-8. SEAPLANE SAFETY: On page 763, revise subparagraph f. to change “Printing” to “Publishing” as follows:

* * * * * * * *

_f. * * * * The USCG Navigation Rules International-Inland (COMDTINSTM 16672.2B) is available for a fee from the Government Publishing Office by facsimile request to (202) 512-2250, and can be ordered using Mastercard or Visa._
7-5-13. FLYING IN FLAT LIGHT, BROWN OUT CONDITIONS, AND WHITE OUT CONDITIONS

b. Brown Out. A brownout (or brown-out) is an in-flight visibility restriction due to dust or sand in the air. In a brownout, the pilot cannot see nearby objects which provide the outside visual references necessary to control the aircraft near the ground. This can cause spatial disorientation and loss of situational awareness leading to an accident.

1. The following factors will affect the probability and severity of brownout: rotor disk loading, rotor configuration, soil composition, wind, approach speed, and approach angle.

2. The brownout phenomenon causes accidents during helicopter landing and take-off operations in dust, fine dirt, sand, or arid desert terrain. Intense, blinding dust clouds stirred up by the helicopter rotor downwash during near-ground flight causes significant flight safety risks from aircraft and ground obstacle collisions, and dynamic rollover due to sloped and uneven terrain.

3. This is a dangerous phenomenon experienced by many helicopters when making landing approaches in dusty environments, whereby sand or dust particles become swept up in the rotor outwash and obscure the pilot's vision of the terrain. This is particularly dangerous because the pilot needs those visual cues from their surroundings in order to make a safe landing.

4. Blowing sand and dust can cause an illusion of a tilted horizon. A pilot not using the flight instruments for reference may instinctively try to level the aircraft with respect to the false horizon, resulting in an accident. Helicopter rotor wash also causes sand to blow around outside the cockpit windows, possibly leading the pilot to experience an illusion where the helicopter appears to be turning when it is actually in a level hover. This can also cause the pilot to make incorrect control inputs which can quickly lead to disaster when hovering near the ground. In night landings, aircraft lighting can enhance the visual illusions by illuminating the brownout cloud.

PILOT/CONTROLLER GLOSSARY

On pages 808-810, 813, 817, 824, 832, 836, 841, 849, 855, and 858, add or revise the following:

AERONAUTICAL CHART -

a. Aeronautical information includes visual and radio aids to navigation, airports, controlled airspace, permanent special use airspace (SUAs), obstructions, and related data.

b. The chart depicts topographic information and aeronautical information which includes visual and radio aids to navigation, airports, controlled airspace, permanent SUA, obstructions, and related data.

c. Information includes the portrayal of airways, limits of controlled airspace, position identification and frequencies of radio aids, selected airports, minimum en route and minimum obstruction clearance altitudes, airway distances, reporting points, permanent SUA, and related data. Area charts, which are a part of this series, furnish terminal data at a larger scale in congested areas.

AIR DEFENSE IDENTIFICATION ZONE (ADIZ) - An area of airspace over land or water in which the ready identification, location, and control of all aircraft (except for Defense and law enforcement aircraft) is required in the interest of national security.

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

AIRMEN'S METEOROLOGICAL INFORMATION (AIRMET) - In-flight weather advisories issued only to amend the Aviation Surface Forecast, Aviation Cloud Forecast, or area forecast concerning weather phenomena which are of operational interest to all aircraft and potentially hazardous to aircraft having limited capability because of lack of equipment, instrumentation, or pilot qualifications. AIRMETs concern weather of less severity than that covered by SIGMETs or Convective SIGMETs.

APPROACH/DEPARTURE 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.

CHOP - A form of turbulence.

a. Light Chop - Turbulence that causes slight, rapid and somewhat rhythmic bumpiness without appreciable changes in altitude or attitude.

b. Moderate Chop - Turbulence similar to Light Chop but of greater intensity. It causes rapid bumps or jolts without appreciable changes in aircraft altitude or attitude. (See TURBULENCE.)

FALLEN HERO - Remains of fallen members of the United States military are often returned home by aircraft. These flights may be identified with the phrase “FALLEN HERO” added to the remarks section of the flight plan, or they may be transmitted via air/ground communications. If able, these flights will receive priority handling.
LAND-BASED AIR DEFENSE IDENTIFICATION ZONE (ADIZ) - An ADIZ over U.S. metropolitan areas, which is activated and deactivated as needed, with dimensions, activation dates, and other relevant information disseminated via NOTAM. (See AIR DEFENSE IDENTIFICATION ZONE.)

MOUNTAIN WAVE - Mountain waves occur when air is being blown over a mountain range or even the ridge of a sharp bluff area. As the air hits the upwind side of the range, it starts to climb, thus creating what is generally a smooth updraft which turns into a turbulent downdraft as the air passes the crest of the ridge. Mountain Wave can cause significant fluctuations in airspeed and altitude with or without associated turbulence. (Refer to AIM.)

PRECIPITATION RADAR WEATHER DESCRIPTIONS -

a. LIGHT (< 26 dBZ)
b. MODERATE (26 to 40 dBZ)

SPECIAL USE AIRSPACE -

a. Military Operations Area (MOA) - Permanent and temporary MOAs are airspace established outside of Class A airspace area to separate or segregate certain nonhazardous military activities from IFR traffic and to identify for VFR traffic where these activities are conducted. Permanent MOAs are depicted on Sectional Aeronautical, VFR Terminal Area, and applicable En Route Low Altitude Charts.

Note: Temporary MOAs are not charted.
(Refer to AIM.)

d. Restricted Area - Permanent and temporary restricted areas are airspace designated under 14 CFR Part 73, within which the flight of aircraft, while not wholly prohibited, is subject to restriction. Most restricted areas are designated joint use and IFR/VFR operations in the area may be authorized by the controlling ATC facility when it is not being utilized by the using agency. Permanent restricted areas are depicted on Sectional Aeronautical, VFR Terminal Area, and applicable En Route charts. Where joint use is authorized, the name of the ATC controlling facility is also shown.

Note: Temporary restricted areas are not charted.

TURBULENCE - An atmospheric phenomenon that causes changes in aircraft altitude, attitude, and or airspeed with aircraft reaction depending on intensity. Pilots report turbulence intensity according to aircraft’s reaction as follows:

a. Light - Causes slight, erratic changes in altitude and or attitude (pitch, roll, or yaw).
b. Moderate - Similar to Light but of greater intensity. Changes in altitude and or attitude occur but the aircraft remains in positive control at all times. It usually causes variations in indicated airspeed.
c. Severe - Causes large, abrupt changes in altitude and or attitude. It usually causes large variations in indicated airspeed. Aircraft may be momentarily out of control.
e. Extreme - The aircraft is violently tossed about and is practically impossible to control. It may cause structural damage. (See ChOP.)
(Refer to AIM.)

WEATHER ADVISORY - In aviation weather forecast practice, an expression of hazardous weather conditions not predicted in the Aviation Surface Forecast, Aviation Cloud Forecast, or area forecast, as they affect the operation of air traffic and as prepared by the NWS.

TURBULENCE - An atmospheric phenomenon that causes changes in aircraft altitude, attitude, and or airspeed with aircraft reaction depending on intensity. Pilots report turbulence intensity according to aircraft’s reaction as follows:

a. Light - Causes slight, erratic changes in altitude and or attitude (pitch, roll, or yaw).
b. Moderate - Similar to Light but of greater intensity. Changes in altitude and or attitude occur but the aircraft remains in positive control at all times. It usually causes variations in indicated airspeed.
c. Severe - Causes large, abrupt changes in altitude and or attitude. It usually causes large variations in indicated airspeed. Aircraft may be momentarily out of control.
e. Extreme - The aircraft is violently tossed about and is practically impossible to control. It may cause structural damage. (See ChOP.)
(Refer to AIM.)
GLEIM FAR/AIM 2018 UPDATES

March 5, 2018

Effective March 5, 2018

PART 1—DEFINITIONS AND ABBREVIATIONS

Sec. 1.2 Abbreviations and symbols. On page 26, remove the listing for "CHDO."

PART 43—MAINTENANCE, PREVENTIVE MAINTENANCE, REBUILDING, AND ALTERATION

Appendix B to Part 43—Recording of Major Repairs and Major Alterations. On page 36, revise paragraphs (c)(2) and (d)(3) by removing "AFS-750," and "AFS-751," respectively.

PART 61—CERTIFICATION: PILOTS, FLIGHT INSTRUCTORS, AND GROUND INSTRUCTORS

Secs. 61.55 and 61.77. Replace the words "an FAA Flight Standards District Office" with "a Flight Standards office" in the following places:
- Sec. 61.55(d)(3)-(4) & (6) and (e)(3)-(4) & (6) on pages 61-62
- Sec. 61.77(b) introductory text on page 76

Secs. 61.64 and 61.77. Replace the words "FAA Flight Standards District Office" with "Flight Standards office" in the following places:
- Sec. 61.64(g)(4) on page 68
- Sec. 61.77(b)(5) on page 76

Sec. 61.85 Application. On page 77, revise paragraph (b) by replacing the words "District Office" with "office."

SFAR No. 100-2 – Relief for U.S. Military and Civilian Personnel Who Are Assigned Outside the United States in Support of U.S. Armed Forces Operations. On page 116, in paragraph 1. introductory text, replace the words "District Offices with "offices" and in paragraph 3. introductory text, replace the words "District Office" with "office."

PART 91—GENERAL OPERATING AND FLIGHT RULES

Sec. 91.23 Truth-in-leasing clause requirement in leases and conditional sales contracts. On page 135, paragraph (a)(3), replace the words "nearest FAA Flight Standards district office" with "responsible Flight Standards office" and, on page 136, paragraph (c)(3) introductory text, replace the words "FAA Flight Standards district office nearest the airport where the flight will originate" with "responsible Flight Standards office."

Sec. 91.146 Passenger-carrying flights for the benefit of a charitable, nonprofit, or community event. On page 144, paragraph (e) introductory text, replace the words "FAA Flight Standards District Office with jurisdiction over the geographical area" with "responsible Flight Standards office for the area."

Sec. 91.147 Passenger-carrying flights for compensation or hire. On page 144, paragraph (b), replace the words "Flight Standards District Office nearest to its principal place of business" with "responsible Flight Standards office."

Sec. 91.203 Civil aircraft: Certifications required. On page 154, paragraph (a)(1), replace the words "an FAA Flight Standards district office" with "the responsible Flight Standards office."

Sec. 91.213 Inoperative instruments and equipment. On page 156, paragraph (a)(2), replace the words "FAA Flight Standards district office having jurisdiction over the area in which the operator is located" with "responsible Flight Standards office."

Secs. 91.317, 91.415, 91.1017, and 91.1431. Replace the word "Director" with "Executive Director" in the following places:
- Sec. 91.317(c) on page 162
- Sec. 91.415(c) on page 166
- Sec. 91.1017(d)(2) on page 185
- Sec. 91.1431(c) on page 204

Sec. 91.409 Inspections. On page 165, revise as follows:

Paragraph (d) introductory text, replace the words "an FAA Flight Standards district office having jurisdiction over the area in which the applicant is located" with "a Flight Standards office."

Undesignated paragraph following paragraph (d)(4), replace the words "local FAA Flight Standards district office" with "responsible Flight Standards office."

Paragraph (g) introductory text, replace the words "local FAA Flight Standards district office having jurisdiction over the area in which the aircraft is based" with "responsible Flight Standards office."

Sec. 91.715 Special flight authorizations for foreign civil aircraft. On page 176, revise paragraph (a) as follows:

(a) Foreign civil aircraft may be operated without airworthiness certificates required under Sec. 91.203 if a special flight authorization for that operation is issued under this section. Application for a special flight authorization must be made to the appropriate Flight Standards Division Manager, or Aircraft Certification Service Division Director. However, in the case of an aircraft to be operated in the U.S. for the purpose of demonstration at an airshow, the application may be made to the appropriate Flight Standards Division Manager or Aircraft Certification Service Division Director responsible for the airshow location.

Secs. 91.1015, 91.1017, 91.1053, 91.1109, 91.1415, 91.1417, and 91.1507. In addition to any above revisions, replace the words "District Office" with "office" in the following places:
- Sec. 91.1015(d) on page 184
- Sec. 91.1017(b)(1)-(2), (b)(3) introductory text, (b)(4) introductory text, (b)(4)(i), (c)(2), (c)(3) introductory text, (c)(4), (d) introductory text, (d)(3), and (e) on page 185
- Sec. 91.1053(b) on page 191
- Sec. 91.1109(b) introductory text on page 201
- Sec. 91.1415(d) on page 202
- Sec. 91.1417 introductory text on page 203

Sec. 91.1501 Purpose and definition. On page 205, remove and reserve paragraph (b).

* * * * *
Sec. 91.1505 Repairs assessment for pressurized fuselages.

On page 205, revise paragraph (a) introductory text as follows:

(a) No person may operate an Airbus Model A300 (excluding the 
-600 series), British Aerospace Model BAC 1-11, Boeing Model 
707, 720, 727, 737 or 747, McDonnell Douglas Model DC-8, DC-9/ 
MD-80 or DC-10, Fokker Model F28, or Lockheed Model L-1011 
airplane beyond applicable flight cycle implementation time 
specified below, or May 25, 2001, whichever occurs later, unless 
repair assessment guidelines applicable to the fuselage pressure 
boundary (fuselage skin, door skin, and bulkhead webs) are 
incorporated into its inspection program. The repair assessment 
guidelines must be approved by the responsible Aircraft Certification 
Service office for the type certificate for the affected airplane.

*        *        *        *        *

Sec. 91.1507 Fuel tank system inspection program. On 
page 205, revise paragraphs (b) and (d) by replacing the words 
“FAA Oversight Office” with “responsible Aircraft Certification 
Service office” and paragraph (f) by replacing the words “Flight 
Standards District Office (FSDO)” with “Flight Standards office.”

Sec. 91.1603 Special Federal Aviation Regulation No. 112-- 
Prohibition Against Certain Flights in the Tripoli (HLLL) 
Flight Information Region (FIR). On page 206, paragraph (d), 
replace the words “nearest FAA Flight Standards District Office” 
with “responsible Flight Standards office.”

Secs. 91.1607, 91.1611, and 91.1613. Replace the words 
“nearest FAA Flight Standards District Office (FSDO)” with 
“responsible Flight Standards office” in the following places:

Sec. 91.1607(d) on page 207
Sec. 91.1611(d) on page 208
Sec. 91.1613(d) on page 208

Appendix A to Part 91—Category II Operations: Manual, 
Instruments, and Maintenance. On page 213, section 1(a) introductory text, replace the words “Flight Standards District Office having jurisdiction of the area in which the applicant is located” with “responsible Flight Standards office.”

SFAR No. 50-2 -- Special Flight Rules in the Vicinity of the 
Grand Canyon National Park, AZ. On pages 221-222, revise 
section 3(a)(2), (b), and (c)(2); section 4 introductory text; and 
section 5 introductory text by replacing the words “Flight Standards District Office” with “responsible Flight Standards office.”

SFAR No. 79 -- Prohibition Against Certain Flights Within the 
Flight Information Region (FIR) of the Democratic People’s 
Republic of Korea (DPRK). On page 223, section 4, replace the 
words “nearest FAA Flight Standards District Office” with 
“responsible Flight Standards office.”

SFAR No. 104 -- Prohibition Against Certain Flights by Syrian 
Air Carriers to the United States. On page 224, section 4, 
replace the words “nearest FAA Flight Standards District Office” with “responsible Flight Standards office.”

PART 97—STANDARD INSTRUMENT PROCEDURES

Sec. 97.20 General. On page 226, revise paragraph (c) as 
follows:

*        *        *        *        *

(c) Standard instrument approach procedures and takeoff mini-
mums and obstacle departure procedures (ODPs) are depicted 
on aeronautical charts published by the FAA. These charts are available from the FAA at https://www.faa.gov/air_traffic/flight_info/aeronav/digital_products/

PART 107—SMALL UNMANNED AIRCRAFT SYSTEMS

Sec. 107.63 Issuance of a remote pilot certificate with a 
small UAS rating. On page 238, paragraph (b)(1), replace the 
words “a Flight Standards District Office” with “the responsible 
Flight Standards office.”

PART 110—GENERAL REQUIREMENTS

Sec. 110.2 Definitions. On page 241, remove the definition for 
“Certificate-holding district office.”

PART 119—CERTIFICATION: AIR CARRIERS AND 
COMMERCIAL OPERATORS

Sec. 119.1 Applicability. On page 250, paragraph (e)(7)(iv), 
replace the words “FAA Flight Standards District Office 
responsible for the geographic area concerned” with “responsible 
Flight Standards office.”

Sec. 119.36 Additional certificate application requirements for 
commercial operators. On page 252, paragraph (a), replace 
the words “Flight Standards District Office in whose area the 
applicant proposes to establish or has established his or her 
principal base of operations” with “responsible Flight Standards 
office.”

Secs. 119.37, 119.41, 119.47, 119.51, 119.57, 119.61, 119.65, 
and 119.69. Replace all references to “certificate-holding district 
office” with “responsible Flight Standards office” in the following places:

Sec. 119.37(e) on page 253
Sec. 119.41(a)(2), (c)(1) and (2), and (d) on page 253
Sec. 119.47(b) on page 253
Sec. 119.51(b)(1)-2), (b)(3) introductory text, (b)(4) introductory text, (b)(4)(i), (c)(2), (c)(3) introductory text, (c)(4), (d) introductory text, (d)(3), and (e) on page 255
Sec. 119.57(b)(2)(ii) on page 256
Sec. 119.61(c) on page 257
Sec. 119.65(e)(3) on page 257
Sec. 119.69(e)(3) on page 258

Secs. 119.41 and 119.51. In addition to any above revisions, 
replace the word “Director” with “Executive Director” in the 
following places:

Sec. 119.41(d)(2) on page 253
Sec. 119.51(d)(2) on page 255
PART 133—ROTORCRAFT EXTERNAL-LOAD OPERATIONS

Sec. 133.15 Application for certificate issuance or renewal. On page 281, replace the words “an FAA Flight Standards District Office” with “a Flight Standards office” and replace the words “district office that has jurisdiction over” with “responsible Flight Standards office for.”

Sec. 133.21 Personnel. On page 282, paragraph (c), replace the words “FAA certificate-holding office” with “responsible Flight Standards office.”

Sec. 133.25 Amendment of certificate. On page 282, revise as follows:

In paragraph (a):
- Replace the words “FAA Flight Standards District Office having jurisdiction over” with “responsible Flight Standards office for”
- Replace the words “Flight Standards District Office nearest” with “responsible Flight Standards office for”
- Remove the comma after “Secs. 133.19”
- Replace the words “Flight Standards District Office” with “responsible Flight Standards office.”

In paragraph (b), replace the words “certificate-holding FAA Flight Standards District Office” with “responsible Flight Standards office.”

Sec. 133.27 Availability, transfer, and surrender of certificate. On page 282, paragraph (c), replace the words “FAA Flight Standards District Office having jurisdiction over the area in which his home base of operations is located” with “responsible Flight Standards office.”

Sec. 133.31 Emergency operations. On page 282, paragraph (b), replace the words “certificate-holding FAA Flight Standards District Office” with “responsible Flight Standards office.”

Sec. 133.33 Operating rules. On page 283, paragraph (d)(1), replace the words “FAA Flight Standards District Office having jurisdiction over” with “responsible Flight Standards office for” and replace the words “that district office” with “that office.”

Secs. 133.91, 133.129, 133.179, 133.213, 133.273, 133.417, and 133.431. Replace the words “certificate-holding district office” with “responsible Flight Standards office” in the following places:

- Sec. 133.91(e) on page 294
- Sec. 133.129(n)(2) on page 300
- Sec. 133.179(a)(2) on page 312
- Sec. 133.213(b) on page 313
- Sec. 133.273(c)(2) on page 320
- Sec. 133.417 introductory text on page 335
- Sec. 133.431(c) on page 337

Secs. 133.129 and 133.158. In addition to any above revisions, replace the word “Director” with “Executive Director” in the following places:

- Sec. 133.129(p) on page 300
- Sec. 133.158(b) introductory text and (b)(2) on page 306

Sec. 135.160 Radio altimeters for rotorcraft operations. On page 306, paragraph (b), replace the words “nearest Flight Standards District Office” with “responsible Flight Standards office.”

Sec. 135.170 Materials for compartment interiors. On page 309, paragraph (b)(1)(vii), replace the words “Manager of the Transport Airplane Directorate, Aircraft Certification Service, Federal Aviation Administration,” with “Director of the division of the Aircraft Certification Service responsible for the airworthiness rules.”

Sec. 135.243 Pilot in command qualifications. On page 316, revise paragraph (d)(3) introductory text by replacing the words “district office” with “office” and paragraph (d)(7) by replacing the words “certificate-holding FAA Flight Standards district office” with “responsible Flight Standards office.”

Sec. 135.426 Contract maintenance. On page 336, paragraph (h), replace the words “FAA Certificate Holding District Office” with “responsible Flight Standards office.”

Appendix G to Part 135—Extended Operations (ETOPS). On page 365, revise as follows:

- In section G135.2.8(h) introductory text, replace the words “certificate holding district office (CHDO)” with “responsible Flight Standards office.”
- In section G135.2.8(i) introductory text, (i)(2), and (o), replace the acronym “CHDO” with “responsible Flight Standards office.”
PART 137—AGRICULTURAL AIRCRAFT OPERATIONS

Sec. 137.1 Applicability. On page 371, paragraph (c), replace the words "nearest FAA Flight Standards District Office" with "responsible Flight Standards office."

Sec. 137.15 Application for certificate. On page 371, replace the words "FAA Flight Standards District Office that has jurisdiction over" with "responsible Flight Standards office for." 

Sec. 137.17 Amendment of certificate. On page 372, revise as follows:

In paragraph (b), replace the words "FAA Flight Standards District Office having jurisdiction over" with "responsible Flight Standards office for."

In paragraph (c), replace the words "Flight Standards District Office" with "responsible Flight Standards office."

In paragraph (d), replace the word "Director" with "Executive Director."

Sec. 137.51 Operation over congested areas: General. On page 374, paragraph (b)(3), replace the words "FAA Flight Standards District Office having jurisdiction over" with "responsible Flight Standards office for."

Sec. 137.77 Termination of operations. On page 375, replace the words "FAA Flight Standards District Office last having jurisdiction over his operation" with "responsible Flight Standards office." 

PART 141—PILOT SCHOOLS

Secs. 141.25, 141.53, and 141.91. Replace the words "FAA Flight Standards District Office having jurisdiction over" with "responsible Flight Standards office for" in the following places:

Sec. 141.25(d) introductory text on page 379
Sec. 141.53(b)(1) on page 383
Sec. 141.91(d) on page 387

Sec. 141.37 Check instructor qualifications. On page 382, paragraph (b)(2), replace the words "FAA Flight Standards District Office having jurisdiction over the school" with "responsible Flight Standards office."

Sec. 141.67 Limitations and reports. On page 385, paragraph (d)(2), replace the words "an FAA Flight Standards District Office" with "the responsible Flight Standards office."

Sec. 141.87 Change of chief instructor. On page 386, paragraph (a), replace the words "Flight Standards District Office that has jurisdiction over the area" with "responsible Flight Standards office."

PART 142—TRAINING CENTERS

Sec. 142.11 Application for issuance or amendment. On page 414, paragraph (a)(2), replace the words "FAA Flight Standards District Office that has jurisdiction over" with "responsible Flight Standards office for."
January 10, 2018

Effective January 10, 2018

PART 135—OPERATING REQUIREMENTS:
COMMUTER AND ON-DEMAND OPERATIONS AND
RULES GOVERNING PERSONS ON BOARD SUCH
AIRCRAFT

Sec. 135.168. Emergency equipment: Overwater rotorcraft
operations. On page 308, revise paragraph (b) introductory text
and remove and reserve paragraph (c) as follows:

* * * * *

(b) Required equipment. Except when authorized by the certifi-
cate holder’s operations specifications, or when necessary only
for takeoff or landing, no person may operate a rotorcraft beyond
autorotational distance from the shoreline unless it carries:

* * * * *

(c) [Reserved]

* * * * *
December 14, 2017

Effective December 14, 2017

PART 91—GENERAL OPERATING AND FLIGHT RULES

Sec. 91.1611 Special Federal Aviation Regulation No. 115—Prohibition Against Certain Flights in Specified Areas of the Sanaa (OYSC) Flight Information Region (FIR). On page 208, revise paragraphs (b) and (c) to reduce the the amount of airspace in the FIR and paragraph (e) to extend the expiration date as follows:

(b) Flight prohibition. Except as provided in paragraphs (c) and (d) of this section, no person described in paragraph (a) of this section may conduct flight operations in the Sanaa (OYSC) Flight Information Region (FIR), except that airspace east of a line drawn direct from KAPET (163322N 0530614E) to NODMA (152603N 0533359E), southeast of a line drawn direct from NODMA to ORBAT (140638N 0503924E) then from ORBAT to PAKER (115500N 0463500E), south of a line drawn direct from PAKER to PARIM (123142N 0432712E), and west of a line drawn direct from PARIM to RIBOK (154700N 0415230E). Use of jet route UT702 is authorized; however, use of jet route UN303 is not authorized.

(c) Permitted operations. This section does not prohibit persons described in paragraph (a) of this section from conducting flight operations in the Sanaa (OYSC) FIR in that airspace west of a line drawn direct from KAPET (163322N 0530614E) to NODMA (152603N 0533359E), northwest of a line drawn direct from NODMA to ORBAT (140638N 0503924E) then from ORBAT to PAKER (115500N 0463500E), north of a line drawn direct from PAKER to PARIM (123142N 0432712E), and east of a line drawn direct from PARIM to RIBOK (154700N 0415230E), provided that such flight operations are conducted under a contract, grant, or cooperative agreement with a department, agency, or instrumentality of the U.S. government (or under a subcontract between the prime contractor of the department, agency, or instrumentality, and the person subject to paragraph (a)), with the approval of the FAA, or under an exemption issued by the FAA. The FAA will process requests for approval or exemption in a timely manner, with the order of preference being: First, for those operations in support of U.S. government-sponsored activities; second, for those operations in support of government-sponsored activities of a foreign country with the support of a U.S. government department, agency, or instrumentality; and third, for all other operations.

(e) Expiration. This SFAR will remain in effect until January 7, 2020. The FAA may amend, rescind, or extend this SFAR as necessary.
December 13, 2017

Effective December 13, 2017

PART 91—GENERAL OPERATING AND FLIGHT RULES

Sec. 91.1613 Special Federal Aviation Regulation No. 107--Prohibition Against Certain Flights in the Territory and Airspace of Somalia. On page 208, revise paragraph (e) to extend the expiration date as follows:

* * * * *

(e) Expiration. This SFAR will remain in effect until January 7, 2020. The FAA may amend, rescind, or extend this SFAR as necessary.
EXPLANATION OF CHANGES

1-1.9. INSTRUMENT LANDING SYSTEM (ILS); 5-4.20. APPROACH AND LANDING MINIMUMS – This change updates guidance to improve clarity and to be consistent with information contained in FAA Order JO 7110.65, Air Traffic Control, Paragraph 3-7-5, Precision Approach Critical Area.

2-3.5. HOLDING POSITION MARKINGS – This change, created in response to the Runway Safety Council #34 Call to Action, emphasizes the need for pilots to stop at holding position markings and updates the language throughout the paragraph. As such, several instances of “should” and “supposed to” are replaced by the word “must” with regard to the requirement for aircraft to stop at holding position markings.

3-5.7. SPECIAL AIR TRAFFIC RULES (SATR) AND SPECIAL FLIGHT RULES AREA (SFRA); Appendix 3. ABBREVIATIONS/ACRONYMS – This change introduces SATR, references 14 CFR 93, and explains SFRAs. It provides information needed to help pilots better understand their responsibilities regarding SATR and SFRA.

3-5.8. WEATHER RECONNAISSANCE AREA (WRA); Appendix 3. ABBREVIATIONS/ACRONYMS – This change introduces, defines, and explains WRAs to better inform air traffic control and pilots of WRAs in general and weather reconnaissance/research aircraft operations.

4-1.21. AIRPORT RESERVATION OPERATIONS AND SPECIAL TRAFFIC MANAGEMENT PROGRAMS – This change updates guidance to be consistent with FAA Order JO 7210.3, Paragraph 17-13-4, Airport Reservation Office. This change states that standby lists are not maintained; and that flights with declared emergencies do not require reservations. It also updates contact information.

5-4.5. INSTRUMENT APPROACH PROCEDURE (IAP) CHARTS – This change clarifies the use of stepdown fixes on approaches. This change also aligns our guidance with that issued by the International Civil Aviation Organization (ICAO).

5-4.22. USE OF ENHANCED FLIGHT VISION SYSTEMS (EFVS) ON INSTRUMENT APPROACHES – This change reflects the expansion of EFVS operations explained in the December 2016 EFVS Rule. It also adds figures that depict the two types of EFVS operations.

7-1.4. GRAPHICAL FORECASTS FOR AVIATION (GFA) – This change introduces new GFA products which replace outdated textual area forecasts. These products are expected to maximize operational benefits to users and enhance the safety of the National Airspace System.

7-1.11. WEATHER OBSERVING PROGRAMS; 7-1.30. INTERNATIONAL CIVIL AVIATION ORGANIZATION (ICAO) WEATHER FORMATS; Appendix 3. ABBREVIATIONS/ACRONYMS – This change informs pilots of Automated Lightning Detection and Reporting System (ALDARS) reporting capabilities so they are able to properly interpret the weather observations, that include thunderstorms (TS) and cloud-to-ground lightning, detected by ALDARS. Specifically, the following codes should be used: “TS” when cloud-to-ground lightning is detected within 5 NM of the Airport Reference Point (ARP); “VCTS” when cloud-to-lightning is between 5-10 NM of the ARP; and “LTG DSNT” in Remarks when cloud-to-ground lightning is detected between 10-30 NM of the ARP.

7-1.13. ATC INFLIGHT WEATHER AVOIDANCE ASSISTANCE – This change deletes the reference to composite airspace, and specifically to North Pacific (NOPAC) and Central East Pacific (CEPAC) routes. Weather deviations on those routes will be flown the same way as all other operations in oceanic airspace. The AIM will now be in congruence with the Aeronautical Information Publication, ICAO Doc 4444, and the Alaska and Pacific Chart Supplements.

Pilot/Controller Glossary Terms have been added or modified within the glossary.

ENTIRE PUBLICATION. – Editorial/format changes were made where necessary.

On page 459, revise the dates for the Publication Schedule as follows:

<table>
<thead>
<tr>
<th>Basic or Change</th>
<th>Publication Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Cutoff Date for Submission</td>
</tr>
<tr>
<td>Basic Manual</td>
<td>4/27/17</td>
</tr>
<tr>
<td>Change 1</td>
<td>10/12/17</td>
</tr>
<tr>
<td>Change 2</td>
<td>3/29/18</td>
</tr>
<tr>
<td>Change 3</td>
<td>9/13/18</td>
</tr>
<tr>
<td>Basic Manual</td>
<td>2/28/19</td>
</tr>
</tbody>
</table>

Chapter 1. AIR NAVIGATION

1-1.3. VHF OMNI-DIRECTIONAL RANGE (VOR): On page 474, revise subparagraph f.1. as follows:

* * * *

f. * * * *

1. Distance to a MON airport. The VOR MON will ensure that regardless of an aircraft’s position in the contiguous United States (CONUS), a MON airport (equipped with legacy ILS or VOR approaches) will be within 100 nautical miles. These airports are referred to as “MON airports” and will have an ILS approach or a VOR approach if an ILS is not available. VORs to support these approaches will be retained in the VOR MON. MON airports are charted on low-altitude en route charts and are contained in the Chart Supplement U.S. and other appropriate publications.

* * * *
1-1-9. INSTRUMENT LANDING SYSTEM (ILS): On page 479, revise subparagraph k.2.(a) as follows:

(a) Weather Conditions. Official weather observation is a ceiling of less than 800 feet and/or visibility 2 miles.

(1) Localizer Critical Area. Except for aircraft that land, exit a runway, depart, or execute a missed approach, vehicles and aircraft are not authorized in or over the critical area when an arriving aircraft is inside the outer marker (OM) or the fix used in lieu of the OM. Additionally, whenever the official weather observation is a ceiling of less than 200 feet or RVR less than 2,000 feet, do not authorize vehicles or aircraft operations in or over the area when an arriving aircraft is inside the MM, or in the absence of a MM, 1/2 mile final.

Chapter 2. AIRPORT PAVEMENT MARKING AIDS AND SIGNS

2-3-2. AIRPORT PAVEMENT MARKINGS: On page 510, revise subparagraph a. as follows:

a. General. For the purpose of this section, the airport pavement markings have been grouped into four areas:

2-3-5. HOLDING POSITION MARKINGS: On pages 514-515, revise subparagraphs a.-c. as follows:

a. Runway Holding Position Markings. For runways, these markings indicate where aircraft MUST STOP when approaching a runway. They consist of four yellow lines, two solid and two dashed, spaced six or twelve inches apart, and extending across the width of the taxiway or runway. The solid lines are always on the side where the aircraft must hold. There are three locations where runway holding position markings are encountered.

1. Runway Holding Position Markings on Taxiways. These markings identify the locations on a taxiway where aircraft MUST STOP when a clearance has not been issued to proceed onto the runway. Generally, runway holding position markings also identify the boundary of the runway safety area (RSA) for aircraft exiting the runway. Runway holding position markings are shown in FIG 2-3-13 and FIG 2-3-16. When instructed by ATC, “Hold short of Runway XX,” the pilot MUST STOP so that no part of the aircraft extends beyond the runway holding position marking. When approaching runways at airports with operating control tower, pilots must not cross the runway holding position marking without ATC clearance. Pilots approaching runways at airports without an operating control tower must ensure adequate separation from other aircraft, vehicles, and pedestrians prior to crossing the holding position markings. An aircraft exiting a runway is not clear of the runway until all parts of the aircraft have crossed the applicable holding position marking.

NOTE—Runway holding position markings identify the beginning of an RSA, and a pilot MUST STOP to get clearance before crossing (at airports with operating control towers).

REFERENCE—AIM, Paragraph 4-3-20, Exiting the Runway After Landing

2. Runway Holding Position Markings on Runways. These markings identify the locations on runways where aircraft MUST STOP. These markings are located on runways used by ATC for Land And Hold Short Operations (for example, see FIG 4-3-8) and Taxiing operations. For taxiing operations, the pilot MUST STOP prior to the holding position markings unless explicitly authorized to cross by ATC. A sign with a white inscription on a red background is located adjacent to these holding position markings. (See FIG 2-3-14.) The holding position markings are placed on runways prior to the intersection with another runway, or some designated point. Pilots receiving and accepting instructions “Cleared to land Runway XX, hold short of Runway YY” from ATC must either exit Runway XX prior to the holding position markings, or stop at the holding position markings prior to Runway YY. Otherwise, pilots are authorized to use the entire landing length of the runway and disregard the holding position markings.

3. Holding Position Markings on Taxiways Located in Runway Approach Areas. * * * When specifically instructed by ATC “Hold short of Runway XX approach area,” the pilot MUST STOP so no part of the aircraft extends beyond the holding position marking. (See subparagraph 2-3-2b, Runway Approach Area Holding Position Sign, and color FIG 2-3-15.)

b. Holding Position Markings for Instrument Landing System (ILS). * * * A sign with an inscription in white on a red background is located adjacent to these hold position markings. When instructed by ATC to hold short of the ILS critical area, pilots MUST STOP so that no part of the aircraft extends beyond the holding position marking. When approaching the holding position marking, pilots must not cross the marking without ATC clearance. The ILS critical area is not clear until all parts of the aircraft have crossed the applicable holding position marking.

REFERENCE—AIM, Paragraph 1-1-9, Instrument Landing System (ILS).

c. Holding Position Markings for Intersecting Taxiways. Holding position markings for intersecting taxiways consist of a single dashed line extending across the width of the taxiway as shown. (See FIG 2-3-17.) They are located on taxiways where ATC holds aircraft short of a taxiway intersection. When instructed by ATC, “Hold short of Taxiway XX,” the pilot MUST STOP so that no part of the aircraft extends beyond the holding position marking. When the marking is not present, the pilot MUST STOP the aircraft at a point which provides adequate clearance from an aircraft on the intersecting taxiway.

2-3-8. MANDATORY INSTRUCTION SIGNS: On page 517, revise the NOTE and add REFERENCE as follows:

b. * * *

4. * * *

NOTE—Holding position signs provide the pilot with a visual cue as to the location of the holding position marking.

REFERENCE—AIM Paragraph 2-3-5, Holding Position Markings
Chapter 3. AIRSPACE

On page 533, add new paragraph 3-5-7 as follows:

3-5-7. SPECIAL AIR TRAFFIC RULES (SATR) AND SPECIAL FLIGHT RULES AREA (SFRA)

a. Background. The Code of Federal Regulations (CFR) prescribes special air traffic rules for aircraft operating within the boundaries of certain designated airspace. These areas are listed in 14 CFR Part 93 and can be found throughout the NAS. Procedures, nature of operations, configuration, size, and density of traffic vary among the identified areas.

b. SFRA. Airspace of defined dimensions, above land areas or territorial waters, within which the flight of aircraft is subject to the rules set forth in 14 CFR Part 93, unless otherwise authorized by air traffic control. Not all areas listed in 14 CFR Part 93 are designated SFRA, but special air traffic rules apply to all areas described in 14 CFR Part 93.

REFERENCE–
14 CFR Part 93, Special Air Traffic Rules
FAA Order JO 7110.65, Para 9-2-10, Special Air Traffic Rules (SATR) and Special Flight Rules Area (SFRA)
PCG – Special Air Traffic Rules (SATR)

c. Participation. Each person operating an aircraft to, from, or within airspace designated as a SATR area or SFRA must adhere to the special air traffic rules set forth in 14 CFR Part 93, as applicable, unless otherwise authorized by ATC.

d. Charts. SFRAs are depicted on VFR sectional, terminal area, and helicopter route charts. (See FIG 3-5-4.)

SFRA Boundary

![FIG 3-5-4](image)

e. Additional information and resources regarding SFRA, including procedures for flight in individual areas, may be found on the FAA Safety website at www.faasafety.gov.

On page 534, add new paragraph 3-5-8 as follows:

3-5-8. WEATHER RECONNAISSANCE AREA (WRA)

a. General. Hurricane Hunters from the United States Air Force Reserve 53rd Weather Reconnaissance Squadron (WRS) and the National Oceanic and Atmospheric Administration (NOAA) Aircraft Operations Center (AOC) operate weather reconnaissance/research aircraft missions, in support of the National Hurricane Operations Plan (NHOP), to gather meteorological data on hurricanes and tropical cyclones. 53rd WRS and NOAA AOC aircraft normally conduct these missions in airspace identified in a published WRA Notice to Airmen (NOTAM).

b. WRAs. Airspace with defined dimensions and published by a NOTAM, which is established to support weather reconnaissance/research flights. ATC services are not provided within WRAs. Only participating weather reconnaissance/research aircraft from the 53rd WRS and NOAA AOC are permitted to operate within a WRA. A WRA may only be established in airspace within U.S. Flight Information Regions (FIR) outside of U.S. territorial airspace.

c. A published WRA NOTAM describes the airspace dimensions of the WRA and the expected activities within the WRA. WRAs may border adjacent foreign FIRs, but are wholly contained within U.S. FIRs. As ATC services are not provided within a WRA, non-participating aircraft should avoid WRAs, and IFR aircraft should expect to be rerouted to avoid WRAs.

Chapter 4. AIR TRAFFIC CONTROL

4-1. AIRPORT RESERVATION OPERATIONS AND SPECIAL TRAFFIC MANAGEMENT PROGRAMS: On page 545, revise subparagraphs a.-c. as follows:

a. Slot Controlled Airports:

1. * * * relevant information will be maintained on the FAA website listed below.

2. * * * Standby lists are not maintained. Flights with declared emergencies do not require reservations. Refer to the website or touch-tone phone interface for * * *

NOTE–
The web interface/telephone numbers to obtain a reservation for unscheduled operations at a slot controlled airport are:


3. For more detailed information on operations and reservation procedures at a Slot Controlled Airport, please see 14 CFR Part 93, Subpart K - High Density Traffic Airports.

b. Special Traffic Management Programs (STMP):

1. Special procedures may be established when a location requires special traffic handling to accommodate above normal traffic demand (for example, the Indianapolis 500, Super Bowl, etc.) or reduced airport capacity (for example, airport runway/taxiway closures for airport construction). * * *

2. * * *

NOTE–
The telephone numbers/web address to obtain a STMP slot are:


c. Users may contact the ARO at (540) 422-4246 if they * * *

* * *

FAR/AIM 2018 Updates

Last Modified: 03/23/18
Chapter 5. AIR TRAFFIC PROCEDURES

5-2-8. INSTRUMENT DEPARTURE PROCEDURES (DP) - OBSTACLE DEPARTURE PROCEDURES (ODP) AND STANDARD INSTRUMENT DEPARTURES (SID): On page 625, revise subparagraph b.2. as follows:

* * * *

b. * *

* * * *

2. * * *(More detailed information on this subject is available in Advisory Circular AC 120-91, Airport Obstacle Analysis, and in the "Departure Procedures" section of chapter 2 in the Instrument Procedures Handbook, FAA-H-8083-16.)

* * * *

5-4-5. INSTRUMENT APPROACH PROCEDURE (IAP) CHARTS: On page 642, add new subparagraph b.5. and FIG 5-4-1 as follows. Renumber subsequent figures accordingly.

* * * *

b. * *

5. Altitude restrictions depicted at stepdown fixes within the final approach segment are applicable only when flying a Non-Precision Approach to a straight-in or circling line of minima identified as a MDA(H). Stepdown fix altitude restrictions within the final approach segment do not apply to pilots using Precision Approach (ILS) or Approach with Vertical Guidance (LPV, LNAV/ VNAV) lines of minima identified as a DA(H), since obstacle clearance on these approaches is based on the aircraft following the applicable vertical guidance. Pilots are responsible for adherence to stepdown fix altitude restrictions when outside the final approach segment (i.e., initial or intermediate segment), regardless of which type of procedure the pilot is flying. (See FIG 5-4-1.)

* * * *

5-4-20. APPROACH AND LANDING MINIMUMS: On page 673, revise subparagraph b.2. as follows:

* * * *

b. * *

2. Precision Obstacle Free Zone (POFZ). * * * The POFZ must be clear when an aircraft on a vertically guided final approach is within 2 nautical miles of the runway threshold and the official weather observation is a ceiling below 250 feet or visibility less than 3/4 statute mile (SM) (or runway visual range below 4,000 feet).

* * * *

Instrument Approach Procedure Stepdown Fixes

FIG 5-4-1
5-4-22. USE OF ENHANCED FLIGHT VISION SYSTEMS (EFVS) ON INSTRUMENT APPROACHES: On pages 675-676, revise and expand the paragraph, add FIGs 5-4-33 and 5-4-34, and renumber subsequent figures accordingly:

a. Introduction. An EFVS uses a head-up display (HUD), or an equivalent display that is a head-up presentation, to combine flight information, flight symbology, navigation guidance, and a real-time image of the external scene to the pilot on one display. Imaging sensors, which may be based on forward-looking infrared (FLIR), millimeter wave radiometry, millimeter wave radar, low-level light intensification, or other real-time imaging technologies produce a real-time image of the outside scene. During an instrument approach, an EFVS can enable a pilot to see the approach lights, visual references associated with the runway environment, and other objects or features that might not be visible using natural vision alone. Combining the flight information, navigation guidance, and sensor imagery on a HUD (or equivalent display) allows the pilot to continue looking forward along the flightpath throughout the entire approach, landing, and rollout. An EFVS operation is an operation in which visibility conditions require an EFVS to be used in lieu of natural vision to perform an approach or landing, determine enhanced flight visibility, identify required visual references, or conduct a rollout. There are two types of EFVS operations:

1. EFVS operations to touchdown and rollout.
2. EFVS operations to 100 feet above the touchdown zone elevation (TDZE).

b. EFVS Operations to Touchdown and Rollout. An EFVS operation to touchdown and rollout is an operation in which the pilot uses the enhanced vision imagery provided by an EFVS in lieu of natural vision to descend below DA or DH to touchdown and rollout. (See FIG 5-4-33.) These operations may be conducted only on Standard Instrument Approach procedures (SIAP) or special IAPs that have a DA or DH (for example, precision or APV approach). An EFVS operation to touchdown and rollout may not be conducted on an approach that has circling minimums. The regulations for EFVS operations to touchdown and rollout can be found in 14 CFR Sec. 91.176(a).

[Photo provided by Google Earth]
c. EFVS Operations to 100 Feet Above the TDZE. An EFVS operation to 100 feet above the TDZE is an operation in which the pilot uses the enhanced vision imagery provided by an EFVS in lieu of natural vision to descend below DA/DH or MDA down to 100 feet above the TDZE. (See FIG 5-4-34.) Natural vision must be used to descend below 100 feet above the TDZE to touchdown. These operations may be conducted on SIAPs or special IAPs that have a DA/DH or MDA. An EFVS operation to 100 feet above the TDZE may not be conducted on an approach that has circling minimums. The regulations for EFVS operations to 100 feet above the TDZE can be found in 14 CFR Sec. 91.176(b).

EFVS Operation to 100 ft Above the TDZE
[Photo provided by Google Earth]

d. EFVS Equipment Requirements. An EFVS that is installed on a U.S.-registered aircraft and is used to conduct EFVS operations must conform to an FAA-type design approval (i.e., a type certificate (TC), amended TC, or supplemental type certificate (STC)). A foreign-registered aircraft used to conduct EFVS operations that does not have an FAA-type design approval must be equipped with an EFVS that has been approved by either the State of the Operator or the State of Registry to meet the requirements of ICAO Annex 6. Equipment requirements for an EFVS operation to touchdown and rollout can be found in 14 CFR Sec. 91.176(a)(1), and the equipment requirements for an EFVS operation to 100 feet above the TDZE can be found in 14 CFR Sec. 91.176(b)(1). An operator can determine the eligibility of their aircraft to conduct EFVS operations by referring to the Airplane Flight Manual, Airplane Flight Manual Supplement, Rotorcraft Flight Manual, or Rotorcraft Flight Manual Supplement as applicable.

e. Operating Requirements. Any operator who conducts EFVS operations to touchdown and rollout must have an OpSpec, MSpec, or LOA that specifically authorizes those operations. An operator’s authorization to conduct EFVS operations to touchdown and rollout specifies a visibility minimum for the operation. Parts 91K, 121, 125, 129, and 135 operators who conduct EFVS operations to 100 feet above the TDZE must have an OpSpec, MSpec, or LOA that specifically authorizes the operation. Part 91 operators (other than 91K operators) are not required to have an LOA to conduct EFVS operations to 100 feet in the United States. Any operator conducting an EFVS operation during an authorized Category II or III operation must have an OpSpec, MSpec, or LOA authorizing EFVS operations during Category II or Category III operations.
f. Currently, EFVS operations in rotorcraft can only be conducted on IAPs that are flown to a runway. Instrument approach criteria, procedures, and appropriate visual references have not yet been developed for straight-in landing operations below DA/DH or MDA under IFR to heliports or platforms. An EFVS cannot be used in lieu of natural vision to descend below published minimums or coter regions to a point in space (PinS) followed by a “proceed visual flight rules (VFR)” visual segment, or on approaches designated to a specific landing site using a “proceed visually” visual segment.

g. A pilot who conducts EFVS operations must receive ground and flight training specific to the EFVS operation to be conducted. The training must be obtained from an authorized training provider under a training program approved by the FAA. Additionally, recent flight experience and proficiency or competency check requirements apply to EFVS operations. These requirements are addressed in 14 CFR Secs. 61.66, 91.1065, 121.441, Appendix F to Part 121, 125.287, and 135.293.

h. Enhanced Flight Visibility and Visual Reference Requirements. To descend below DA/DH or MDA during EFVS operations under 14 CFR Sec. 91.176(a) or (b), a pilot must make a determination that the enhanced flight visibility observed by using an EFVS is not less than what is prescribed by the IAP being flown. In addition, the visual references required in 14 CFR Sec. 91.176(a) or (b) must be distinctly visible and identifiable to the pilot using the EFVS. The determination of enhanced flight visibility is a separate action from that of identifying required visual references, and is different from ground-reported visibility. Even though the reported visibility or the visibility observed using natural vision may be less, as long as the EFVS provides the required enhanced flight visibility and a pilot meets all of the other requirements, the pilot can continue descending below DA/DH or MDA using the EFVS. Suitable enhanced flight visibility is necessary to ensure the aircraft is in a position to continue the approach and land. It is important to understand that using an EFVS does not result in obtaining lower minima with respect to the visibility or the DA/DH or MDA specified in the IAP. An EFVS simply provides another means of operating in the visual segment of an IAP. The DA/DH or MDA and the visibility value specified in the IAP to be flown do not change.

i. Flight Planning and Beginning or Continuing an Approach Under IFR. 14 CFR Parts 121, 125, and 135 prohibit dispatching a flight, releasing a flight, taking off under IFR, or beginning or continuing an approach when weather conditions are less than the authorized minimums. A Part 121, 125, or 135 operator’s OpSpec or LOA for EFVS operations authorizes a visibility for dispatching or releasing a flight and for beginning or continuing an approach. These operational minimums are based on the demonstrated performance of the EFVS. Once a pilot reaches DA/DH or MDA, the pilot conducts the EFVS operation in accordance with 14 CFR Sec. 91.176(a) or (b) and their authorization to conduct EFVS operations.

j. Missed Approach Considerations. A missed approach after passing the DA/DH, or beyond the missed approach point (MAP), involves additional risk until established on the published missed approach segment. Initiating a go-around after passing the published MAP may result in loss of obstacle clearance. As with any approach, pilot planning should include contingencies between the published MAP and touchdown with reference to obstacle clearance, aircraft performance, and alternate escape plans.

k. Light Emitting Diode (LED) Airport Lighting Impact on EFVS Operations. Incandescent lamps have been replaced with LEDs at some airports in threshold lights, taxiway edge lights, taxiway centerline lights, low intensity runway edge lights, windcone lights, beacons, and some obstruction lighting. Additionally, there are plans to replace incandescent lamps with LEDs in approach lighting systems. Pilots should be aware that LED lights cannot be sensed by infrared-based EFVSs. Further, the FAA does not currently collect or disseminate information about where LED lighting is installed.

l. Other Vision Systems. An Enhanced Vision System (EVS) does not meet the requirements of an EFVS. An EVS may present the sensor image on a head-down display and may not be able to present the image and flight symbology in the same scale and alignment as the outside view. An EVS can also use a HUD as its display element, yet still not meet the regulatory requirements for an EFVS. While an EVS that uses a head-down display or HUD may provide situation awareness to the pilot, it does not meet the operating requirements for an EFVS. Consequently, a pilot cannot use an EVS in lieu of natural vision to descend below DA/DH or MDA. Unlike an EFVS, a Synthetic Vision System (SVS) or Synthetic Vision Guidance System (SVGS) does not provide a real-time sensor image of the outside scene and also does not meet the equipment requirements for EFVS operations. A pilot cannot use a synthetic vision image on a head-up or a head-down display in lieu of natural vision to descend below DA/DH or MDA. An EVS can, however, be integrated with a SVS, also known as a Combined Vision System (CVS). A CVS can be used to conduct EFVS operations if all of the requirements for an EFVS are satisfied and the SVS image does not interfere with the pilot’s ability to see the external scene, to identify the required visual references, or to see the sensor image.


5-5.16. RNAV AND RNP OPERATIONS: On page 683, revise the note in subparagraph a.11. as follows:

a. * * * *
* * * * *

NOTE–

[1] Pilots must be aware of how their navigation system operates, along with any AFM limitations, and confirm that the aircraft’s lateral deviation display (or map display if being used as an allowed alternate means) is suitable for the accuracy of the segment being flown. Automatic scaling and alerting changes are appropriate for some operations. For example, TSO-C129 systems change within 30 miles of destination and within 2 miles of FAF to support approach operations. For some navigation systems and operations, manual selection of scaling will be necessary.

[2] Pilots flying FMS equipped aircraft with barometric vertical navigation (Baro-VNAV) may descend when the aircraft is established on-course following FMS leg transition to the next segment. Leg transition normally occurs at the turn bisector for a fly-by-waypoint (reference paragraph 1-2-1 for more on waypoints). When using full automation, pilots should monitor the aircraft to ensure the aircraft is turning at appropriate lead times and descending once established on-course.

[3] Pilots flying TSO-C129 navigation system equipped aircraft without full automation should use normal lead points to begin the turn. Pilots may descend when established on-course on the next segment of the approach.
Chapter 7. SAFETY OF FLIGHT

On page 711, add new paragraph 7-1-4, add new FIGs 7-1-2 and 7-1-3, and renumber subsequent paragraphs and figures accordingly:

7-1-4. GRAPHICAL FORECASTS FOR AVIATION (GFA)

a. The GFA website is intended to provide the necessary aviation weather information to give users a complete picture of the weather that may affect flight in the continental United States (CONUS). The website includes observational data, forecasts, and warnings that can be viewed from 14 hours in the past to 15 hours in the future, including thunderstorms, clouds, flight category, precipitation, icing, turbulence, and wind. Hourly model data and forecasts, including information on clouds, flight category, precipitation, icing, turbulence, wind, and graphical output from the National Weather Service’s (NWS) National Digital Forecast Data (NDFD) are available. Wind, icing, and turbulence forecasts are available in 3,000 ft increments from the surface up to 30,000 ft MSL, and in 6,000 ft increments from 30,000 ft MSL to 48,000 ft MSL. Turbulence forecasts are also broken into low (below 18,000 ft MSL) and high (at or above 18,000 ft MSL) graphics. A maximum icing graphic and maximum wind velocity graphic (regardless of altitude) are also available. Built with modern geospatial information tools, users can pan and zoom to focus on areas of greatest interest. Target users are commercial and general aviation pilots, operators, briefers, and dispatchers.

b. Weather Products.

1. The Aviation Forecasts include gridded displays of various weather parameters as well as NWS textual weather observations, forecasts, and warnings. Icing, turbulence, and wind gridded products are three-dimensional. Other gridded products are two-dimensional and may represent a “composite” of a three-dimensional weather phenomenon or a surface weather variable, such as horizontal visibility. The following are examples of aviation forecasts depicted on the GFA:

   (a) Terminal Aerodrome Forecast (TAF)
   (b) Ceiling & Visibility (CIG/VIS)
   (c) Clouds
   (d) Precipitation / Weather (PCPN/WX)
   (e) Thunderstorm (TS)
   (f) Winds
   (g) Turbulence
   (h) Ice

2. Observations & Warnings (Obs/Warn). The Obs/Warn option provides an option to display weather data for the current time and the previous 14 hours (rounded to the nearest hour). Users may advance through time using the arrow buttons or by clicking on the desired hour. Provided below are the Obs/Warn product tabs available on the GFA website:

   (a) METAR
   (b) Precipitation/Weather (PCPN/WX)
   (c) Ceiling & Visibility (CIG/VIS)
   (d) Pilot Reports (PIREP)
   (e) Radar & Satellite (RAD/SAT)

3. The GFA will be continuously updated and available online at http://new.aviationweather.gov/areafcst. Upon clicking the link above, select INFO on the top right corner of the map display. The next screen presents the option of selecting Overview, Products, and Tutorial. Simply select the tab of interest to explore the enhanced digital and graphical weather products designed to replace the legacy FA. Users should also refer to AC 00-45, Aviation Weather Services, for more detailed information on the GFA.

4. GFA Static Images. Some users with limited internet connectivity may access static images via the Aviation Weather Center (AWC) at: http://www.aviationweather.gov/gfa/plot. There are two static graphical images available, titled Aviation Cloud Forecast and Aviation Surface Forecast. The Aviation Cloud Forecast provides cloud coverage, bases, and tops with Airmet Sierra for mountain obscuration and Airmet Zulu for icing overlaid. The Aviation Surface Forecast provides visibility, weather phenomena, and winds (including wind gusts) with Airmet Sierra for instrument flight rules conditions and Airmet Tango for sustained surface winds of 30 knots or more overlaid. These images are presented on ten separate maps providing forecast views for the entire CONUS on one and nine regional views which provide more detail for the user. They are updated every 3 hours and provide forecast snapshots for 3, 6, 9, 12, 15, and 18 hours into the future. (See FIG 7-1-2 and FIG 7-1-3.)
7-1-12. WEATHER OBSERVING PROGRAMS: On page 722, renumber paragraph 7-1-11 as 7-1-12 and, on page 724, add new subparagraph d.2.(i) as follows:

* * * * *

2. * * *

(i) Automated Lightning Detection and Reporting System (ALDARS) (excluding Alaska and Pacific Island sites).

* * * * *

7-1-14. ATC INFIGHT WEATHER AVOIDANCE ASSISTANCE: On page 729, renumber paragraph 7-1-13 as 7-1-14 and, on page 730, and revise subparagraph c.5.(e) and TBL 7-1-5 as follows:

* * * * *

c. * * *

5. * * *

(e) Deviations of less than 10 NM should REMAIN at ASSIGNED altitude. Otherwise, when the aircraft is approximately 10 NM from track, initiate an altitude change based on the following criteria:

<table>
<thead>
<tr>
<th>Route Centerline/Track</th>
<th>Deviations &gt;10 NM</th>
<th>Altitude Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>EAST (00° - 179° magnetic)</td>
<td>LEFT</td>
<td>DESCEND 300 ft</td>
</tr>
<tr>
<td></td>
<td>RIGHT</td>
<td>CLIMB 300 ft</td>
</tr>
<tr>
<td>WEST (180° - 359° magnetic)</td>
<td>LEFT</td>
<td>CLIMB 300 ft</td>
</tr>
<tr>
<td></td>
<td>RIGHT</td>
<td>DESCEND 300 ft</td>
</tr>
</tbody>
</table>

Pilot Memory Slogan: “East right up, West right down.”

TBL 7-1-5

7-1-31. INTERNATIONAL CIVIL AVIATION ORGANIZATION (ICAO) WEATHER FORMATS: On page 746, renumber paragraph 7-1-30 as 7-1-31 and, on page 749, revise subparagraph b.12.(b)(10) as follows:

* * * * *

12. * * *

(b) * * *

(10) Lightning. When lightning is observed at a manual location, the frequency and location is reported. When cloud-to-ground lightning is detected by an automated lightning detection system, such as ALDARS:

[a] Within 5 nautical miles (NM) of the Airport Reference Point (ARP), it will be reported as “TS” in the body of the report with no remark;

[b] Between 5 and 10 NM of the ARP, it will be reported as “VCTS” in the body of the report with no remark;

[c] Beyond 10 but less than 30 NM of the ARP, it will be reported in remarks as “DSNT” followed by the direction from the ARP.

EXAMPLE—

LTG DSNT W or LTG DSNT ALQDS

* * * * *

7-4-3. REPORTING BIRD STRIKES: On page 758, revise as follows:

Pilots are urged to report any bird or other wildlife strike using FAA Form 5200-7, Bird/Other Wildlife Strike Report (Appendix 1). Additional forms are available at any FSS; at any FAA Regional Office or at https://www.faa.gov/airports/airport_safety/wildlife/. The data derived from these reports are used to develop standards to cope with this potential hazard to aircraft and for documentation of necessary habitat control on airports.

Appendix 3. ABBREVIATIONS/ACRONYMS


PILOT/CONTROLLER GLOSSARY

On pages 816, 823-824, 839, 841, 843, 846, 849, and 858 add or revise the following:

* * * * *

BRAKING ACTION (GOOD, GOOD TO MEDIUM, MEDIUM, MEDIUM TO POOR, POOR, OR NIL) - A report of conditions on the airport movement area providing a pilot with a degree/quality of braking to expect. Braking action is reported in terms of good, to medium, medium, to poor, or nil. (See RUNWAY CONDITION READING.)

(See RUNWAY CONDITION REPORT.)

(See RUNWAY CONDITION CODES.)

BRAKING ACTION ADVISORIES - When tower controllers receive runway braking action reports which include the terms “medium,” “poor,” “or nil,” or whenever weather conditions are conducive to deteriorating or rapidly changing runway braking conditions, the tower will include on the ATIS broadcast the statement, “Braking Action Advisories are in Effect.” During the time braking action advisories are in effect, ATC will issue the most current braking action report for the runway in use to each arriving and departing aircraft. Pilots should be prepared for deteriorating braking conditions and should request current runway condition information if not issued by controllers. Pilots should also be prepared to provide a descriptive runway condition report to controllers after landing.

* * * * *

ENHANCED FLIGHT VISION SYSTEM (EFVS) - An EFVS is an installed aircraft system which uses an electronic means to provide a display of the forward external scene topography (the natural or man-made features of a place or region especially in a way to show their relative positions and elevation) through the use of imaging sensors, including but not limited to forward-looking infrared, millimeter wave radiometry, millimeter wave radar, or low-light level image intensification. An EFVS includes the display element, sensors, computers and power supplies, indications, and controls. An operator’s authorization to conduct an EFVS operation may have provisions which allow pilots to conduct IAPs when the reported weather is below minimums prescribed on the IAP to be flown.

* * * * *

ESTABLISHED - To be stable or fixed at an altitude or on a course, route, route segment, heading, instrument approach or departure procedure, etc.
OBSTACLE FREE ZONE - The OFZ is a three dimensional volume of airspace which protects for the transition of aircraft to and from the runway. The OFZ clearing standard precludes taxiing and parked airplanes and object penetrations, except for frangible NAV AID locations that are fixed by function. Additionally, vehicles, equipment, and personnel may be authorized by air traffic control to enter the area using the provisions of FAA Order JO 7110.65, Para 3-1-5, Vehicles/Equipment/Personnel Near/On Runways. The runway OFZ and when applicable, the inner-approach OFZ, and the inner-transitional OFZ, comprise the OFZ.

- c. Inner-transitional OFZ. (Refer to AC 150/5300-13, Chapter 3)
  (Refer to FAA Order JO 7110.65, Para 3-1-5, Vehicles/Equipment/Personnel Near/On Runways.)

PRECIPITATION RADAR WEATHER DESCRIPTIONS - *

- a. LIGHT (< 26 dBZ)
- b. MODERATE (26 to 40 dBZ)
- c. HEAVY (> 40 to 50 dBZ)
- d. EXTREME (> 50 dBZ)
(Refer to AC 00-45, Aviation Weather Services.)

RADAR IDENTIFICATION - * *
(See RADAR CONTACT.)
(See RADAR SERVICE.)
(See ICAO term RADAR IDENTIFICATION.) - DELETED

RUNWAY CONDITION CODES (RwyCC) - Numerical readings, provided by airport operators, that indicate runway surface contamination (for example, slush, ice, rain, etc.). These values range from “1” (poor) to “6” (dry) and must be included on the ATIS when the reportable condition is less than 6 in any one or more of the three runway zones (touchdown, midpoint, rollout).

RUNWAY CONDITION REPORT (RwyCR) - A data collection worksheet used by airport operators that correlates the runway percentage of coverage along with the depth and type of contaminant for the purpose of creating a FICON NOTAM.
(See RUNWAY CONDITION CODES)

RwyCC - (See RUNWAY CONDITION CODES)
RwyCR - (See RUNWAY CONDITION REPORT)

SPECIAL AIR TRAFFIC RULES (SATR) - Rules that govern procedures for conducting flights in certain areas listed in 14 CFR Part 93. The term “SATR” is used in the United States to describe the rules for operations in specific areas designated in the Code of Federal Regulations.
(Refer to 14 CFR Part 93)

WEATHER RECONNAISSANCE AREA (WRA) - A WRS is airspace with defined dimensions and published by Notice to Airmen, which is established to support weather reconnaissance/research flights. Air traffic control services are not provided within WRAs. Only participating weather reconnaissance/research aircraft from the 53rd Weather Reconnaissance Squadron and National Oceanic and Atmospheric Administration Aircraft Operations Center are permitted to operate within a WRA. A WRA may only be established in airspace within U.S. Flight Information Regions outside of U.S. territorial airspace.
PART 91—GENERAL OPERATING AND FLIGHT RULES

Special Federal Aviation Regulation No. 114, 14 CFR 91.1609, (SFAR 114) was first published by the FAA on December 30, 2014. Although an extension of SFAR No. 114, 14 CFR 91.1609, was published on December 27, 2016, the prohibition itself was inadvertently removed from the Code of Federal Regulations due to incorrect amendatory instructions regarding dates in the original SFAR No. 114, 14 CFR 91.1609. On January 4, 2017, the FAA issued NOTAM KICZ A0001/17 to continue the prohibition of certain flight operations in the Damascus (OSTT) FIR due to the continuing hazards to U.S. civil aviation operations therein. This FAA update reissues SFAR No. 114, 14 CFR 91.1609, in its entirety, and extends the rule’s expiration date until December 30, 2018, with an effective date of August 28, 2017.

On page 207, the FAA revised the text as follows:

Sec. 91.1609 Special Federal Aviation Regulation No. 114--Prohibition Against Certain Flights in the Damascus (OSTT) Flight Information Region (FIR).

(a) Applicability. This section applies to the following persons:
   (1) All U.S. air carriers and U.S. commercial operators;
   (2) All persons exercising the privileges of an airman certificate issued by the FAA, except such persons operating U.S.-registered aircraft for a foreign air carrier; and
   (3) All operators of civil aircraft registered in the United States, except where the operator of such aircraft is a foreign air carrier.

(b) Flight prohibition. No person may conduct flight operations in the Damascus (OSTT) Flight Information Region (FIR), except as provided in paragraphs (c) and (d) of this section.

(c) Permitted operations. This section does not prohibit persons described in paragraph (a) from conducting flight operations in the Damascus (OSTT) FIR, provided that such flight operations are conducted under a contract, grant, or cooperative agreement with a department, agency, or instrumentality of the U.S. government (or under a subcontract between the prime contractor of the department, agency, or instrumentality, and the person described in paragraph (a)), with the approval of the FAA, or under an exemption issued by the FAA. The FAA will process requests for approval or exemption in a timely manner, with the order of preference being: first, for those operations in support of U.S. government-sponsored activities; second, for those operations in support of government-sponsored activities of a foreign country with the support of a U.S. government department, agency, or instrumentality; and third, for all other operations.

(d) Emergency situations. In an emergency that requires immediate decision and action for the safety of the flight, the pilot in command of an aircraft may deviate from this section to the extent required by that emergency. Except for U.S. air carriers and commercial operators that are subject to the requirements of part 119, 121, 125, or 135 of this chapter, each person who deviates from this section must, within 10 days of the deviation, excluding Saturdays, Sundays, and Federal holidays, submit to the nearest FAA Flight Standards District Office (FSDO) a complete report of the operations of the aircraft involved in the deviation, including a description of the deviation and the reasons for it.

(e) Expiration. This SFAR will remain in effect until December 30, 2018. The FAA may amend, rescind, or extend this SFAR No. 114, Sec. 91.1609, as necessary.
GLEIM FAR/AIM 2018 UPDATES

August 24, 2017

Effective September 15, 2017

PART 71—DESIGNATION OF CLASS A, B, C, D, AND E AIRSPACE AREAS; AIR TRAFFIC SERVICE ROUTES; AND REPORTING POINTS

Sec. 71.1 Applicability. On page 127, revise date and policy references as follows:

A listing for Class A, B, C, D, and E airspace areas; air traffic service routes; and reporting points can be found in FAA Order 7400.11B, Airspace Designations and Reporting Points, dated August 3, 2017. This incorporation by reference was approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. The approval to incorporate by reference FAA Order 7400.11B is effective September 15, 2017, through September 15, 2018. During the incorporation by reference period, proposed changes to the listings of Class A, B, C, D, and E airspace areas; air traffic service routes; and reporting points will be published in full text as proposed rule documents in the Federal Register. Amendments to the listings of Class A, B, C, D, and E airspace areas; air traffic service routes; and reporting points will be published in full text as final rules in the Federal Register. Periodically, the final rule amendments will be integrated into a revised edition of the Order and submitted to the Director of the Federal Register for approval for incorporation by reference in this section. Copies of FAA Order 7400.11B may be obtained from Airspace Policy Group, Federal Aviation Administration, 800 Independence Avenue SW., Washington, DC 20591, (202) 267-8783. An electronic version of the Order is available on the FAA Web site at http://www.faa.gov/air_traffic/publications. Copies of FAA Order 7400.11B may be inspected in Docket No. FAA-2017-0798 Amendment No. 71-49 on http://www.regulations.gov. A copy of FAA Order 7400.11B may be inspected at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call (202) 741-6030, or go to: http://www.archives.gov/federal-register/cfr/ibr-locations.html.

Secs. 71.5, 71.15, 71.31, 71.33, 71.41, 71.51, 71.61, 71.71, 71.901. On pages 127 and 128, replace the words “FAA Order 7400.11A” with “FAA Order 7400.11B.”
GLEIM FAR/AIM 2018 UPDATES

August 22, 2017

Effective October 23, 2017

PART 91—GENERAL OPERATING AND FLIGHT RULES

Sec. 91.703 Operations of civil aircraft of U.S. registry outside of the United States. On page 175, revise paragraphs (a)(1), (a)(3), (a)(4), and (b) as follows:

(a) * * * *
   (1) When over the high seas, comply with Annex 2 (Rules of the Air) to the Convention on International Civil Aviation and with Secs. 91.117(c), 91.127, 91.129, and 91.131;
   * * * * * * * * *
   (3) Except for Secs. 91.117(a), 91.307(b), 91.309, 91.323, and 91.711, comply with this part so far as it is not inconsistent with applicable regulations of the foreign country where the aircraft is operated or Annex 2 of the Convention on International Civil Aviation;
   * * * * * * * * *
   (4) When operating within airspace designated as Reduced Vertical Separation Minimum (RVSM) airspace, comply with Sec. 91.706.
   * * * * * * * * *

(b) Annex 2 to the Convention on International Civil Aviation, Rules of the Air, Tenth Edition—July 2005, with Amendments through Amendment 45, applicable November 10, 2016, is incorporated by reference into this section with the approval of the Director of the Federal Register under 5 U.S.C. 552(a) and 1 CFR part 51. To enforce any edition other than that specified in this section, the FAA must publish a document in the Federal Register and the material must be available to the public. All approved material is available for inspection at U.S. Department of Transportation, Docket Operations, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590 and is available from the International Civil Aviation Organization (ICAO), Marketing and Customer Relations Unit, 999 Robert Bourassa Boulevard, Montreal, Quebec H3C 5H7, Canada; http://store1.icao.int/; or by contacting the ICAO Marketing and Customer Relations Unit by telephone at 514-954-8022 or by email at sales@icao.int. For questions about ICAO Annex 2, contact the FAA's Office of International Affairs at (202) 267-1000. It is also available for inspection at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.

Sec. 91.705 Operations within airspace designated as Minimum Navigation Performance Specification Airspace. On page 175, remove and reserve this section.

Sec. 91.905 List of rules subject to waivers. On page 182, remove “91.705 Operations within the North Atlantic Minimum Navigation Performance Specifications Airspace” from the list.

Sec. 91.1027 Recordkeeping. On page 187, revise paragraph (a)(2) by removing “MNPS” as follows:

(a) * * * *
   (2) A current list of the aircraft used or available for use in operations under this subpart, the operations for which each is equipped (for example, RNP5/10, RVSM).
   * * * * * * * * *


Appendix G to Part 91—Operations in Reduced Vertical Separation Minimum (RVSM) Airspace. On page 221, revise paragraph (a)(2) of Section 8 as follows:

Section 8. Airspace Designation

(a) * * * *

(2) RVSM may be effective in the High Level Airspace (HLA) within the NAT. The HLA within the NAT is defined by the volume of airspace between FL 285 and FL 420 (inclusive) extending between latitude 27 degrees north and the North Pole, bounded in the east by the eastern boundaries of control areas Santa Maria Oceanic, Shanwick Oceanic, and Reykjavik Oceanic and in the west by the western boundaries of control areas Reykjavik Oceanic, Gander Oceanic, and New York Oceanic, excluding the areas west of 60 degrees west and south of 38 degrees 30 minutes north.
   * * * * * * * * *
GLEIM FAR/AIM 2018 UPDATES

July 25, 2017

Effective July 25, 2017

PART 1—DEFINITIONS AND ABBREVIATIONS

Sec. 1.1 General definitions. On page 23, revise the definition of "Long-range navigation system (LRNS)" to remove references to obsolete systems as follows:

* * * * *

Long-range navigation system (LRNS). An electronic navigation unit that is approved for use under instrument flight rules as a primary means of navigation, and has at least one source of navigational input, such as inertial navigation system or global positioning system.

* * * * *

Sec. 1.2 Abbreviations and symbols. On page 26, remove the listing for "CONSOL or CONSOLAN."

PART 135—OPERATING REQUIREMENTS: COMMUTER AND ON DEMAND OPERATIONS AND RULES GOVERNING PERSONS ON BOARD SUCH AIRCRAFT

Appendix F to Part 135--Airplane Flight Recorder Specification. On page 360, revise entry 60 in the table to remove references to obsolete systems as follows:

<table>
<thead>
<tr>
<th>Parameters</th>
<th>Range</th>
<th>Accuracy (sensor input)</th>
<th>Seconds per sampling interval</th>
<th>Resolution</th>
<th>Remarks</th>
</tr>
</thead>
</table>