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.
EXEMPLARY CHANGES

1. INSTRUMENT LANDING SYSTEM (ILS); 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. 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. 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.

4. 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.

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).

6. 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. 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This change introduces new GFA products which replace outdated textual area forecasts.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. 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.

Appendix 3. ABBREVIATIONS/ACRONYMS
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>Cutoff Date for Submission</th>
<th>Effective Date of Publication</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic Manual</td>
<td>4/27/17</td>
<td>10/12/17</td>
</tr>
<tr>
<td>Change 1</td>
<td>10/12/17</td>
<td>3/29/18</td>
</tr>
<tr>
<td>Change 2</td>
<td>3/29/18</td>
<td>9/13/18</td>
</tr>
<tr>
<td>Change 3</td>
<td>9/13/18</td>
<td>2/28/19</td>
</tr>
<tr>
<td>Basic Manual</td>
<td>2/28/19</td>
<td>8/15/19</td>
</tr>
</tbody>
</table>

Chapter 1. AIR NAVIGATION

1. 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.

FAR/AIM 2018 Updates
Last Modified: 10/13/17
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 an 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 taxing operations, the pilot MUST STOP prior to the holding position markings unless explicitly authorized 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 2-3-8b2, Runway Approach Area Holding Position Sign, and color FIG 2-3-16.)

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. SFRAs. 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 ATC.

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.)

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

4-1-21. AIRPORT RESERVATION OPERATIONS AND SPECIAL TRAFFIC MANAGEMENT PROGRAMS: On page 545, revise subparagraphs a.-c. as follows:

a. Slot Controlled Airports:

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

NOTE—
The telephone numbers/web address to obtain a STMP slot 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.
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 are 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

![Diagram of Instrument Approach Procedure Stepdown Fixes](image-url)

Visual segment below MDA/DA is clear of obstacles on 34:1 slope. (Absence of shaded area indicates 34:1 is not clear.)

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).
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).

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 on copter approaches to a point in space (PinS) followed by a "proceed visual flight rules (VFR)" visual segment, or on approaches designed 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, wind–cone 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 can 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), 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 EFVS can, however, be integrated with an SVS, also known as a Combined Vision System (CVS). A CVS can be used to conduct EFVS operations if it meets 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, layers, 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:

- d. * * *
  2. * * *
    (i) Automated Lightning Detection and Reporting System (ALDARS) (excluding Alaska and Pacific Island sites).

* * * * *

7-1-14. ATC INFLIGHT 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 (000° - 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:

- b. * * *
- 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, 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,” “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 NAVAID 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/Personal 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/Personal 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)*
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

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;
*
(2) 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; and
(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>

* * * * *