U.S. Department of Transportation
Federal Aviation Administration

Advisory Circular

Subject: Foreign Terminal Instrument Procedures (FTIP) Acceptance/Review

Date: 4/18/13 **AC No:** 120-105A

Initiated by: AFS-410 **Change:**

1. PURPOSE. This advisory circular (AC) establishes guidelines for U.S. operators to use when reviewing Foreign Terminal Instrument Procedures (FTIP). Occasionally, the author uses the word "must" or similar language when he deems the desired actions critical. The Federal Aviation Administration (FAA) does not intend for the use of such language to add to, interpret, or relieve a duty imposed by Title 14 of the Code of Federal Regulations (14 CFR).

2. CANCELLATION. This AC cancels AC 120-105, Foreign Terminal Instrument Procedures (FTIP) Acceptance/Review, dated November 19, 2010.

3. DEFINITIONS.

a. FTIP. FTIPs include instrument approach and departure procedures developed and published for use in foreign nations.

b. Criteria. Approved criteria for procedure development are:

(1) The current edition of FAA Order 8260.3, United States Standard for Terminal Instrument Procedures;

(2) Criteria prescribed by the International Civil Aviation Organization (ICAO) Doc 8168, Procedures for Air Navigation Services;

(3) Military Instrument Procedures Standardization (MIPS), a combination of Procedures for Air Navigation Services Aircraft Operations (PANS-OPS) and the North Atlantic Treaty Organization (NATO) Allied Air Traffic Control Publication (AATCP-1C); or

(4) Other special criteria approved by headquarters (HQ), Flight Technologies and Procedures Division (AFS-400).

NOTE: The visibility, Runway Visual Range (RVR), or converted meteorological visibility (CMV) is based on FAA Order 8260.3 or the applicable European Union (EU) or European Aviation Safety Agency (EASA) regulation or ICAO Doc 9365, Manual of All Weather Operations, Third Edition. The decision altitude (DA)/minimum descent altitude (MDA) must not be below 200 feet above threshold (HATh) unless authorized by operations specifications (OpSpec)/management specifications (MSpecs).

c. Controlling Region. The controlling region is an FAA regional office with an assigned international responsibility for the surveillance and inspection of foreign airports, as well as associated FTIPs. The Flight Standards Service (AFS) Division, Next Generation Air Transportation System (NextGen) Branch, is the program focal point within the controlling region. When appropriate, the controlling region will notify AFS-400 and appropriate lines of business (LOB) for evaluation of procedure criteria design and flight inspection. Specific region responsibilities are:

(1) Alaskan Region (AAL-200) - The Yukon Territories, Northwest Territories, British Columbia north of 52 degrees north latitude, Nunavut west of 100 degrees west longitude, and the Russian Federation and Commonwealth of Independent States.

(2) Northwest Mountain Region (ANM-200) - Alberta, Saskatchewan, and British Columbia south of 52 degrees north latitude.

(3) Eastern Region (AEA-200) - East of 100 degrees west longitude and Europe, Africa, Middle East, and India, except for the Russian Federation and Commonwealth of Independent States.

(4) Southern Region (ASO-200) - The Caribbean and South America.

(5) Southwest Region (ASW-200) - Mexico and Central America.

(6) Western-Pacific Region (AWP-200) - Asia, the Pacific Basin, Australia, and New Zealand.

d. Certificate Management Office (CMO)/Certificate Management Unit (CMU)/Certificate Management Team (CMT). The FAA Flight Standards office responsible for issuing an air carrier's certificate, approving OpSpec, and regular inspection and surveillance of the certificate holder.

e. Certificate-Holding Region. The FAA region associated with the CMO/CMU/CMT responsible for a particular certificate.

> **NOTE: The CMO/CMU/CMT for a certificate holder may not be in the same controlling region that has responsibility for the country in which the certificate holder will operate. Therefore, the applicable controlling region (as defined above) is responsible for providing the status of a country under their responsibility.**

f. Certificate Holder/Operator. A U.S operator, operating under 14 CFR part 91 subpart K (part 91K), 121, 125, or 135, who holds either an air carrier certificate or an operating certificate. FTIP review actions performed by a contractor/consultant while employed by an operator are considered to be actions of the operator.

g. ICAO Member State. A state identified by ICAO as a "contracting State." This information is available from the ICAO Web site at: http://www.icao.int.

h. International Field Office (IFO)/International Field Unit (IFU). An AFS office that authorizes operations to the United States by foreign air carriers and conducts surveillance of foreign air carriers under 14 CFR part 129.

i. Atmospheric Pressure at Aerodrome Elevation (QFE). Altimeter Setting referenced to airport field elevation.

j. Barometric Pressure for Standard Altimeter Setting (QNH). Altimeter Setting referenced to airport ambient local pressure.

k. Special Administrative Region (SAR). A location that is not a contracting State, but has its own Aeronautical Information Publication (AIP) and can be afforded the same accreditation status, as would an ICAO member nation. An example of a SAR location is Hong Kong under their association with China.

4. RELATED READING MATERIAL (current editions).

- FAA Order 8260.3, United States Standard for Terminal Instrument Procedures (TERPS).
- FAA Order 8260.19, Flight Procedures and Airspace.
- FAA Order 8260.31, Foreign Terminal Instrument Procedures.
- International Civil Aviation Organization, Procedures for Air Navigation Services-Aircraft Operations (ICAO PANS-OPS) Document 8168-OPS/611, Procedures for Air Navigation Services - Aircraft Operations, Volume II.
- AC 90-101, Approval Guidance for RNP Procedures with AR.

5. BACKGROUND.

a. Instrument Procedure Development. The majority of instrument procedure development activities outside the United States and its territories use ICAO DOC 8168, Volume II, (ICAO PANS-OPS) criteria for procedure development. Some states may use a combination of ICAO PANS-OPS and FAA Order 8260.3, TERPS. The state's Aeronautical Information Publication (AIP) should detail what criteria was used to develop their instrument procedures.

b. Controlled Use of FTIPs. It may be necessary to restrict or deny use of certain FTIPs because of variations in application of, and adherence to, criteria by individual nations. To maintain flight safety, denial or restrictions to use certain FTIPs are identified through review of each procedure individually, or through an assessment of the entire Civil Aviation Authority (CAA) and AIP of a given ICAO member state. The FAA will continue to promote stronger processes within ICAO to ensure that the individual contracting States meet ICAO quality standards for instrument procedure design and maintenance.

6. FAA POLICY AND OBJECTIVES.

a. Review of Non-Precision, Approach Procedures with Vertical Guidance (APV), and Precision, Category (CAT) I Instrument Landing System (ILS) FTIP by ICAO Member States. The certificate holder has the ultimate responsibility to ensure that FTIPs they use are developed with approved criteria. Before using any FTIP, the certificate holder should verify the procedure has been developed with a level of criteria equivalent to FAA TERPS or ICAO PANS- OPS. Paragraph 7 covers certificate holder review of individual approaches. Certificate holders' OpSpecs will not list the authorized procedures individually. The approval of CAT II/III and Required Navigation Performance (RNP) Authorization Required (AR) procedures are covered in paragraphs 12 and 13, respectively, and will be authorized by airport in the certificate holders OpSpecs. If there are special concerns or conditions that require certificate holder/operator input, informational bulletins, etc., the certificate holder should accomplish coordination with the POI first.

b. Review and Authorization of FTIP Developed by Non-ICAO Member States. Areas for review are located in Appendix A and paragraph 7. If the POI finds it necessary to deny the use or issue a special restriction on a FTIP, he/she will issue OpSpec/LOA C058, Special Restrictions for Foreign Terminal Instrument Procedures.

> **NOTE: The existence of a commercially produced chart is not an assurance of compliance with criteria or suitability for use by an individual certificate holder.**

7. CERTIFICATE HOLDER REVIEW. Appendix A contains a detailed checklist which can assist in the evaluation of an individual instrument approach. If sufficient data is not available to conduct a satisfactory evaluation or the certificate holder/operator cannot conduct the evaluation, he or she should not use the procedure until he or she completes a proper assessment. As a minimum, OpSpec/MSpec/letter of authorization (LOA) C052, Straight-In Non-Precision, APV, and Category I Precision Approach and Landing Minima—All Airports**,** requires that certificate holders may not use any FTIP unless:

a. Safety of Flight. The individual approaches they intend to fly are safe for flight and compatible with their aircraft.

b. Special Criteria. The procedure has been constructed using criteria based on United States TERPS, ICAO PANS-OPS, or MIPS. Other special criteria used must be approved by the HQ AFS-400. The descent gradient in the final approach segment does not exceed the maximum allowed by criteria or limits specified in the Aircraft Flight Manual (AFM).

c. Visibility Values. The visibility, RVR, or Converted Meteorological Visibility (CMV) should be based on FAA Order 8260.3 (TERPS), or the applicable European Union (EU) or European Aviation Safety Agency (EASA) regulation or ICAO Doc 9365, Manual of All Weather Operations, Third Edition, and,

(1) The visibility values are not lower than those authorized in OpSpecs.

(2) Landing minima values must be expressed in the same terminology used in the foreign country when broadcasting the weather to pilots (e.g., meters, feet, nautical miles (NM), etc.).

(3) The responsibility to assure compliance with approved visibility criteria remains with the certificate holder. However, the certificate holder may contact the POI for assistance. This does not preclude the use of a charting service/contractor to calculate and publish visibility values for the certificate holder.

d. Landing Minimums. When a host nation's AIP does not specify an MDA(H) or DA(H), the lowest authorized MDA(H) or DA(H) shall be obtained as follows:

(1) When an Obstruction Clearance Limit (OCL) is specified, the authorized MDA(H) or DA(H) is the sum of the OCL and the airport elevation. The MDA(H) may be rounded to the next higher 20 foot increment. The resultant minimums must not be lower than authorized in OpSpecs.

(2) When an Obstacle Clearance Altitude (OCA)/Obstacle Clearance Height (OCH) is specified, the authorized MDA(H) or DA(H) is equal to the OCA/OCH as adjusted by an operational requirement to increase the altitude/height. The MDA(H) may be rounded to the next higher 20 foot increment. The resultant minimums must not be lower than authorized in OpSpecs.

e. Lighting Systems. Foreign approach lighting systems compliant with the ICAO Annex 14 Standard and Recommended Practices (SARP) or equivalent U.S. standards are authorized for non-precision, APV, and precision instrument approaches. Sequenced flashing lights are not required when determining the equivalence of a foreign approach lighting system to U.S. standards.

> **NOTE: It is the responsibility of each certificate holder to ensure the FTIP they are using is current and meets the standards under which they are authorized to operate.**

8. FTIPs DEVIATIONS FROM CRITERIA. Even though a country is an ICAO member state, it may not fully comply with all ICAO technical manuals. ICAO, Annex 15, directs ICAO member nations to identify in their AIP all exceptions to ICAO SARPs. If the certificate holder or any other source detects or receives information of discrepancies involving safety of flight which is not already advertised in the international Notices to Airmen (NOTAM) system, he or she must notify the POI, who will then contact the appropriate FAA offices to conduct a review of the FTIP. The FAA will evaluate the alleged discrepancy or deviation with all available data and, determine what procedural restrictions or special provisions (if any) are necessary to achieve an equivalent level of safety or to comply with criteria. If procedural restrictions are not practical, or if an equivalent level of safety (in accordance with criteria) cannot be obtained through restrictions or special provisions such as aircrew training, it may be necessary to deny a certificate holder's use of an FTIP. The POI will issue OpSpec/LOA C058 if it is necessary to place a restriction on a certificate holder/operator's use of an FTIP or if it is necessary to deny use of an FTIP.

NOTE: Flight Operations Branch (AFS-410) will list all FTIP that have current procedural restrictions or special provisions on the "Special Restrictions_for_Foreign_Terminal_Procedures"Web site:http://www.faa.gov/about/office_org/headquarters_offices/avs/offices/afs/afs400/afs410/ftip/. Additionally, a link to the AFS-410 FTIP Web site can be found on the U.S. NOTAM page under Aeronautical Information: https://pilotweb.nas.faa.gov/PilotWeb/.

NOTE: The certificate holder is responsible for periodic reviews of all FTIP that they fly that have procedural restrictions. They should initiate a review at any time they discover or suspect additional discrepancies with criteria or if there have been any procedural changes to the FTIP. The operator should contact their POI if they have questions or to request assistance with a review.

9. FTIP DEVELOPMENT BY THE CERTIFICATE HOLDER. Certificate holder developed FTIP based on conventional Navigational Aid (NAVAID) is outside the scope of this Advisory Circular. Paragraph 13 covers RNP AR instrument procedure development to include a proponent developed special procedure.

10. FTIP DEVELOPMENT AND DESIGN. Mission Support Services, Aeronautical Products (AJV-3), may perform FTIP development under a reimbursable agreement with the host nation. The host nation must contact the FAA Office of International Aviation, AIA-1, to determine the level of support available and the financial arrangements. AJV-3 offers the following services:

- FTIP development, design, and maintenance in accordance with Order 8260.3.
- Assistance to the POI through the NextGen Branch as a technical source to provide guidance and interpretation on TERPS criteria application.

11. FLIGHT INSPECTION SERVICES. Technical Operations, Aviation System Standards (AJW-3) may perform flight inspection services under a reimbursable agreement with the host nation. Flight Inspection Services include initial commissioning of the procedure and periodic flight inspections as required by the host nation or in the current edition of FAA Order 8200.1, United States Standard Flight Inspection Manual.

12. SURVEILLANCE AND FEEDBACK. The certificate holder, aviation safety inspectors (ASI) who conduct periodic surveillance at foreign airports used by U.S certificate holders, and AFS personnel making in-flight observations during operations into foreign airports used by U.S. certificate holders are in a position to observe the airport's approach and departure environment and can provide feedback for deviations from safe operating procedures. Additionally, when the certificate holder detects or receives information of discrepancies affecting safe use of an FTIP, the certificate holder should take immediate steps to mitigate the potentially unsafe situation and then notify the POI. The POI will contact the controlling region to initiate a permanent corrective action.

13. CAT II/III FTIP APPROVAL. When requested by a certificate holder through their POI, the controlling region will determine which foreign Category (CAT) II and III approach

procedures are authorized for use. If CAT II or III operations are authorized, AFS-410 will list the CAT II and III authorizations on the "CAT II/III ILS information/Foreign Facilities Approved for Category II/III Operations" Web site http://www.faa.gov/about/office_org/headquarters_offices/avs/offices/afs/afs400/afs410/. Once CAT II and III operations are authorized**,** the certificate holder must monitor the status during routine operations to determine if there have been any significant changes to the procedure not posted in a host nation international NOTAM.

14. RNP AR INSTRUMENT PROCEDURES. Prior to issuance to an operator, AFS-400 must review and approve all RNP AR FTIPs. The criteria used to construct RNP AR FTIPs are in ICAO Doc 9905, Required Navigation Performance Authorization Required (RNP AR) Procedure Design Manual. See AC 90-101, Approval Guidance for RNP Procedures with AR, for additional information; AFS-470 maintains a list of approved RNP approaches at http://www.faa.gov/about/office_org/headquarters_offices/avs/offices/afs/afs400/afs470/.

15. REQUEST FOR INFORMATION. Direct questions or comments to AFS-410 at 202-385-4623.

ORIGINAL SIGNED by
/s/ Michael Zenkovich for

John M. Allen
Director, Flight Standards Service

APPENDIX 1. CHECKLIST FOR USE OF FOREIGN TERMINAL INSTRUMENT PROCEDURES

1. GENERAL. The certificate holder/operator can use the checklist below to review an instrument approach procedure (IAP). If there are any questions concerning the safety of an approach during a review, the certificate holder/operator should contact their POI.

a. Critical Areas. The areas listed in the checklist below are used to determine critical areas that may require operational restrictions. When anomalies are discovered, determine if/what action is necessary to compensate. It also may be necessary to establish special training or qualification for specific situations discovered in the review or as a result of any issues identified from adverse "service experience" with the procedure.

b. Documenting a Review. Review the FAA International Flight Information Manual (IFIM) and NOTAM-Domestic/International for potential concerns that may discourage use/acceptance. The following format is recommended when documenting a review:

(1) Location. Airport name, country, and four-letter ICAO identification.

(2) Procedure. Identification of procedure exactly as the country has it published.

(3) Review Date. Date review accomplished.

(4) Reviewer. Name.

2. SOURCE AND SOURCE DATE. Identify the product source (e.g., AIP) reviewed and the date on the source material.

3. SUITABILITY OF GROUND SYSTEMS/EQUIPMENT. Ensure airport lighting, transmissometers, and other items relating to the airport infrastructure are suitable for the type of operations and aircraft that will be using these procedures. Consider the countries' NAVAID maintenance, system reliability rates, and monitoring capabilities, if this information can be obtained.

4. SUITABILITY OF AIRPORT/RUNWAY. Review AIP data provided on airport obstructions, clear zones, and runway markings that may affect the instrument procedure. Based on the information available, the assessment should determine if safe operations could be conducted in the type of aircraft operating at this location.

5. AVAILABILITY OF AERONAUTICAL INFORMATION. Determine if the country maintains/updates their AIP in a timely manner (procedures dated over five years ago may be questionable as to their currency) and determine if international NOTAMs are issued and received by the United States NOTAM office.

6. MINIMUM SECTOR ALTITUDES (MSA) NAVAID/Source. Enter the facility ID and the type facility, or the airport, as appropriate. Some airports may publish different MSAs depending on the source (military or civilian). If you happen to find this difference while doing research for the location, select the highest MSA and document the action taken.

7. SPECIAL NOTES. All notes published by the country must be assessed to determine if this will affect carrier operations and if limitations will have to be placed on the procedure.

8. PROXIMITY TO SPECIAL USE AIRSPACE (SUA). Determine if the procedure ground track enters or is in close proximity to the SUA. It may be necessary to warn pilots to pay strict attention to maintaining a proper course in the vicinity of this airspace or ensure proper clearance has been received prior to entering the SUA.

9. FEEDER ROUTES. If the procedure uses feeder routes, ensure that the altitudes along the feeder routes are equal to or higher than the initial approach fix (IAF) altitude.

10. HOLDING PATTERNS. Review each holding pattern separately. Refer to the current edition of FAA Order 7130.3, Holding Pattern Criteria, for additional information regarding holding patterns.

a. Leg Length. Determine whether or not the holding pattern leg length is acceptable for the type of aircraft that will be operating at this location.

b. No-Course-Signal Zone. Be aware that some holding patterns may have been designed without consideration to a potential loss of signal. Distance measuring equipment (DME) distances should not have been established within a No-Course-Signal Zone. A typical alert to pilots would be: “CAUTION: Possible (type NAVAID) unlocks during holding.”

c. Maximum Holding Speeds. Each country may have their own rules regarding holding pattern airspeeds. Speed restrictions/limitations may not be defined on the procedure and it may be necessary to research this information elsewhere in their AIP.

11. INITIAL SEGMENT. When a procedure has more than one IAF published, review each initial segment individually. Consider each of the following items:

a. Fix Identification. Ensure that the type of aircraft that will be using this procedure has the navigation equipment necessary to identify the fix(es).

b. Altitudes. Review the altitudes using information available for the surrounding terrain/obstructions in the area. Determine if the altitudes are mean sea level (MSL) (requiring use of a (Barometric pressure for Local Altimeter Setting) QNH altimeter setting) or heights above the altimeter station (requiring the use of a air pressure at airfield elevation QFE altimeter setting), and alert pilots of possible confusion and applicable action to be taken.

c. Procedure Turn Angle of Divergence. If a procedure contains a procedure turn of any kind, determine whether or not the angle of divergence/intercepts is acceptable and can be flown by the type of aircraft that will be using the procedure.

d. Arc Radius/Arc Length. Review to ensure that instrument procedures containing arcs can be flown without difficulty by the type of aircraft that will be using the procedure.

e. Segment Length. Review to ensure that the instrument procedure segment length is acceptable and can be flown by the type of aircraft that will be using the procedure.

f. Descent Gradient. Review to ensure that the instrument procedure segment descent gradient can be flown without difficulty by the type of aircraft that will be using the procedure.

g. Lead Radial. Ensure that a lead-radial has been established where required. If not, establish pilot guidance to ensure that there is adequate lead-time for a turn to be initiated by the type of aircraft that will be using the procedure.

h. Course Alignment. When there are course changes in this segment, review to ensure that the instrument procedure course alignment is acceptable and can be flown by the type of aircraft that will be using the procedure.

12. INTERMEDIATE SEGMENT. Consider each of the following items:

a. Fix Identification. Ensure that the type of aircraft that will be using this procedure has the navigation equipment necessary to identify the fix(es).

b. Altitudes. Review the altitudes using information available for the surrounding terrain/obstructions in the area. Determine if the altitudes are MSL (requiring use of a QNH altimeter setting) or heights above the altimeter station (requiring the use of a QFE altimeter setting), and alert pilots of possible confusion and applicable action to be taken.

c. Segment Length. Review to ensure that the segment is sufficient in length (and alignment) to allow time to properly configure the type of aircraft that will be using the procedure. Many countries do not provide a straight intermediate segment and have a teardrop turn completion at the final approach fix (FAF). Consider establishing pilot guidance to configure the aircraft for landing early when encountering short, turning intermediate segments.

d. Descent Gradient. Review to ensure that the instrument procedure segment descent gradient can be flown by the type of aircraft that will be using the procedure.

e. Course Alignment. Review to ensure that the instrument procedure course alignment is acceptable and can be flown by the type of aircraft that will be using the procedure.

13. FINAL SEGMENT. Consider each of the following items:

a. Fix Identification. Ensure that the type of aircraft that will be using this procedure has the navigation equipment necessary to identify the fix(es). Be cautious of procedures that use crossing radials for fix identification. It is important to ensure that aircraft using the procedure are appropriately equipped to define these fixes.

> **NOTE: The procedure identification may not represent all the NAVAID types necessary to fly the procedure. For example, many countries may have a Non-Directional Beacon (NDB) Rwy XX procedure; however, it may require the aircraft to be equipped with dual automatic direction finder (ADF) receivers. Also at some locations an ILS procedure may require the use of an NDB for the missed approach but NDB is not part of the procedure identification.**

b. Altitudes. Review the altitudes, including step down fix altitudes, using information available of the surrounding terrain/obstructions in the area. Determine if the altitudes are MSL (requiring use of a QNH altimeter setting) or heights above the altimeter station (requiring the use of a QFE altimeter setting), and alert pilots of possible confusion and applicable action to be taken based on company policy and/or OpSpec limitations.

> **NOTE: Check the ability to discontinue an approach, if necessary, from any point to touchdown.**

c. Segment Length. Review to ensure that the instrument procedure segment length is adequate for the type of aircraft that will be using the procedure.

d. Missed Approach Point to Threshold. Assess the published distance to ensure it is acceptable and determine if there are any potentially hazardous obstacles to be avoided in the visual segment. It may be appropriate to establish higher visibility minimums at some locations to ensure such obstacles can be visually acquired and avoided in the visual segment. Also consider limiting operations to "daytime only" if visual avoidance of obstacles is necessary, even if they are lighted but could be difficult to visually locate due to aircraft angle-of-attack and/or blending in with other ground lighting.

e. Descent Gradient. Calculate by dividing the height loss from the FAF/stepdown fix to the runway threshold crossing height (TCH) by the NM length of this segment. Determine if this descent gradient is suitable for the type of aircraft that will use this procedure.

> **NOTE: Some countries publish a descent gradient on final by expressing it as a percentage on the Profile View (e.g., 6.8 percent). Convert the percentage into a descent gradient expressed in ft per nautical mile (FPNM) by multiplying the percentage by 6076.11548 (e.g., .068 x 6076.11548 = 413.1758526 FPNM).**

f. Descent Angle/TCH. Review the procedure to ensure the descent angle and TCH are adequate for the type of aircraft that will use this procedure.

g. Course Alignment. Review to ensure that the instrument procedure course alignment is acceptable and can be flown by the type of aircraft that will be using the procedure. If your review causes doubt as to whether a final approach course is appropriate for straight-in operations, you should determine if it meets straight-in criteria by applying calculations prescribed in the appropriate criteria.

14. MISSED APPROACH SEGMENT. Review the procedure to ensure the missed approach segment is adequate for the type of aircraft that will use this procedure.

> **NOTE: The missed approach procedure should specify an altitude sufficient to permit holding or en route flight. It should also specify a clearance limit. If either of these requirements is not met, specific operational guidance for pilot action should be established.**

a. Course Alignment. Review to ensure that the missed approach course alignment is acceptable and can be flown by the type of aircraft that will be using the procedure. If your review causes doubt as to whether a course can be flown, you should validate it by applying calculations prescribed in the appropriate criteria.

b. Climb Gradients. Missed approach climb gradients that exceed 200 FPNM (air traffic control (ATC) or minimum for obstacle avoidance) must be evaluated to ensure that the aircraft that will be using this procedure is capable of meeting the requirement.

c. Description of Missed Approach Instructions. Review the text of the missed approach instructions to ensure they are easy to understand and follow a logical sequence of events. Provide additional pilot guidance if there is potential for misinterpretation.

15. CIRCLING. Review circling procedures to ensure that the applicable aircraft CAT is published and available for the type of aircraft that will be using the procedure. Determine what criteria were used to develop the circling procedures and ensure pilots are made aware of the maximum speeds allowed when conducting the maneuver.

> **NOTE: The airspeeds and obstacle protected airspace permitted by ICAO PANS-OPS criteria are vastly different than those permitted by United States TERPS. See ICAO PANS-OPS Document 8168-OPS/611, Procedures for Air Navigation Services, volume I, for further details regarding airspeeds permitted.**

16. PLAN VIEW/PROFILE VIEW. Review the procedure to ensure data shown in the plan view corresponds to data published in the profile view. Scan these views for items that may have been inserted that are out of the ordinary and may require the additional attention of the pilot.

17. DEPARTURE PROCEDURES. Begin the review by determining if the country has established a departure procedure solely for obstacle avoidance. Review all obstacle departure procedures and Standard Instrument Departure (SID) that will be used, by following the recommended guidelines below:

> **NOTE: Some countries do not establish a departure procedure for obstacle avoidance like the United States. They expect the pilot to avoid obstacles when not using a SID. If the location is situated in an "obstacle rich" environment, it may be appropriate to operationally require use of published SIDs as the only method of departing.**

a. Departure End of Runway (DER) Crossing Restrictions. Determine if the country has established any unique DER crossing restrictions.

> **NOTE: Most departure procedures based on ICAO criteria are developed with a DER crossing restriction built in. This is commonly referred to as a "screen height." The standard ICAO screen height is 5 meters (16 ft) and assumes that all aircraft will cross the departure end of runway at or above this height. Some countries may apply the United States option that allows this crossing height requirement to be as high as 35 ft.**

b. Low, Close-In Obstacles. Consider the potential of a requirement to avoid low, close-in obstacles that are not considered in the calculation of either standard or non-standard climb gradients. Some countries may or may not depict this information on a procedure chart. This information may only be found elsewhere in their AIP in a profile map.

c. Early Turns. Review the procedure to determine if an early turn [below 400 ft above ground level (AGL)] is expected and that the type of aircraft that will be using the procedure can accomplish it safely.

d. Climb Gradients. Countries may publish climb gradients as a percentage and should be converted to a climb gradient expressed in "feet per nautical mile." Climb gradients in excess of the standard 3.3 percent (200 FPNM) will require an assessment to determine if the aircraft using the procedure can meet the published climb gradient.

e. Crossing Altitudes. Review all crossing altitudes to ensure that the aircraft using the procedure has the performance capability to meet all published restrictions. Treat all crossing altitudes as a requirement for obstacle avoidance unless specifically addressed as an ATC crossing restriction. Not all countries clearly define the difference.

f. Positive Course Guidance. Review the procedure to determine if operational restrictions will be necessary if there are excessive portions of the procedure that do not contain positive course guidance.

g. Complexity. Review the departure procedure for its complexity and if necessary, provide clarifying guidance to ensure flight safety.