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<b>TEMA:</b> 0113	ATP - (CHAP. 02) EQUIPMENT, NAVIGATION, AND FACILITIES	
<b>COD_PREG:</b> 8135	<b>PREGUNTA:</b> Who must the crew of a domestic or flag air carrier airplane be able to communicate with, under normal conditions, along the entire route (in either direction) of flight?	<b>RPTA:</b> C
<b>OPCION A:</b>	ARINC.	
<b>OPCION B:</b>	Any FSS.	
<b>OPCION C:</b>	Appropriate dispatch office.	
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8140	Information recorded during normal operations of a cockpit voice recorder in a large pressurized airplane with four reciprocating engines	A
<b>OPCION A:</b>	may all be erased or otherwise obliterated except for the last 30 minutes.	
<b>OPCION B:</b>	may be erased or otherwise obliterated except for the last 30 minutes prior to landing.	
<b>OPCION C:</b>	may all be erased, as the voice recorder is not required on an aircraft with reciprocating engines.	
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8141	Which rule applies to the use of cockpit voice recorder erasure feature?	B
<b>OPCION A:</b>	All recorded information may be erased, except for the last 30 minutes prior to landing.	
<b>OPCION B:</b>	Any information more than 30 minutes old may be erased.	
<b>OPCION C:</b>	All recorded information may be erased, unless the DGAC needs to be notified of an occurrence.	
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8142	For the purpose of testing the flight recorder system,	B
<b>OPCION A:</b>	a minimum of 1 hour of the oldest recorded data must be erased to get a valid test.	
<b>OPCION B:</b>	a total of 1 hour of the oldest recorded data accumulated at the time of testing may be erased.	
<b>OPCION C:</b>	a total of no more than 1 hour of recorded data may be erased.	
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8143	A cockpit voice recorder must be operated	A
<b>OPCION A:</b>	from the start of the before starting engine checklist to completion of final checklist upon termination of flight.	
<b>OPCION B:</b>	from the start of the before starting engine checklist to completion of checklist prior to engine shutdown.	
<b>OPCION C:</b>	when starting to taxi for takeoff to the engine shutdown checklist after termination of the flight.	
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8145	When an air carrier flight is operated under IFR or over-the-top on "victor airways," which navigation equipment is required to be installed in duplicate?	A
<b>OPCION A:</b>	VOR.	
<b>OPCION B:</b>	VOR and DME.	
<b>OPCION C:</b>	ADF.	
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8146	When must an air carrier airplane be DME equipped?	B
<b>OPCION A:</b>	In Class E airspace for all IFR or VFR on Top operations.	
<b>OPCION B:</b>	Whenever VOR navigational receivers are required.	
<b>OPCION C:</b>	For flights at or above FL 180.	
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8147	When a pilot plans a flight using NDB NAVAIDS, which rule applies?	C
<b>OPCION A:</b>	The airplane must have sufficient fuel to proceed, by means of VOR NAVAIDS, to a suitable airport and land.	
<b>OPCION B:</b>	The pilot must be able to return to the departure airport using other navigation radios.	
<b>OPCION C:</b>	The airplane must have sufficient fuel to proceed, by means of VOR NAVAIDS, to a suitable airport and complete an instrument approach by use of the remaining airplane radio system.	
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8148	What action should be taken by the pilot in command of a transport category airplane if the airborne weather radar becomes inoperative en route on an IFR flight for which weather reports indicate possible thunderstorms?	B
<b>OPCION A:</b>	Request radar vectors from ATC to the nearest suitable airport and land.	
<b>OPCION B:</b>	Proceed in accordance with the approved instructions and procedures specified in the operations manual for such an event.	
<b>OPCION C:</b>	Return to the departure airport if the thunderstorms have not been encountered, and there is enough fuel remaining.	

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8149 If an air carrier airplane is flying IFR using a single ADF navigation receiver and the ADF equipment fails, the flight must be able to A

**OPCION A:** proceed safely to a suitable airport using VOR aids and complete an instrument approach by use of the remaining airplane radio system.

**OPCION B:** continue to the destination airport by means of dead reckoning navigation.

**OPCION C:** proceed to a suitable airport using VOR aids, complete an instrument approach and land.

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8150 If an air carrier airplane's airborne radar is inoperative and thunderstorms are forecast along the proposed route of flight, an airplane may be dispatched only C

**OPCION A:** when able to climb and descend VFR and maintain VFR/OT en route.

**OPCION B:** in VFR conditions.

**OPCION C:** in day VFR conditions.

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8151 An air carrier airplane's airborne radar must be in satisfactory operating condition prior to dispatch, if the flight will be A

**OPCION A:** conducted under VFR conditions at night with scattered thunderstorms reported en route.

**OPCION B:** carrying passengers, but not if it is "all cargo".

**OPCION C:** conducted IFR, and ATC is able to radar vector the flight around areas of weather.

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8152 While on an IFR flight in controlled airspace, the failure of which unit will precipitate an immediate report to ATC? C

**OPCION A:** One engine, on a multiengine aircraft.

**OPCION B:** Airborne radar.

**OPCION C:** DME.

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8154 Which airplanes are required to be equipped with a ground proximity warning glide slope deviation alerting system? A

**OPCION A:** All turbine powered airplanes.

**OPCION B:** Passenger-carrying turbine-powered airplanes only.

**OPCION C:** Large turbine-powered airplanes only.

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8194 Which equipment requirement must be met by an air carrier that elects to use a dual Inertial Navigation System (INS) on a proposed flight? C

**OPCION A:** The dual system must consist of two operative INS units.

**OPCION B:** A dual VORTAC/ILS system may be substituted for an inoperative INS.

**OPCION C:** Only one INS is required to be operative, if a Doppler Radar is substituted for the other INS.

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8195 An air carrier operates a flight in VFR over-the-top conditions. What radio navigation equipment is required to be a dual installation? A

**OPCION A:** VOR.

**OPCION B:** VOR and ILS.

**OPCION C:** VOR and DME.

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8196 Routes that require a flight navigator are listed in the C

**OPCION A:** Airplane Flight Manual

**OPCION B:** International Flight Information Manual.

**OPCION C:** Air carrier's Operations Specifications.

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8197 Where is a list maintained for routes that require special navigation equipment? A

**OPCION A:** Air Carrier's Operations Specifications.

**OPCION B:** International Flight Information Manual.

**OPCION C:** Airplane Flight Manual

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8203 An air carrier that elects to use an Inertial Navigational System (INS) must meet which equipment requirement prior to takeoff on a proposed flight? B

**OPCION A:** The INS system must consist of two operative INS units.

**OPCION B:** Only one INS is required to be operative, if a Doppler Radar is substituted for the other INS.

**OPCION C:** A dual VORTAC/ILS system may be substituted for an inoperative INS.

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8868	Figura 125 Which RMI illustration indicates the aircraft to be flying outbound on the magnetic bearing of 235° FROM the station? (Wind 050° at 20 knots.)	B
<b>OPCION A:</b> 2. <b>OPCION B:</b> 3. <b>OPCION C:</b> 4.		
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8869	Fig. 125 What is the magnetic bearing TO the station as indicated by illustration 4?	B
<b>OPCION A:</b> 285°. <b>OPCION B:</b> 055°. <b>OPCION C:</b> 235°.		
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8870	Fig. 125 Which RMI illustration indicates the aircraft is southwest of the station and moving closer TO the station?	A
<b>OPCION A:</b> 1. <b>OPCION B:</b> 2. <b>OPCION C:</b> 3.		
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8871	Fig. 125 Which RMI illustration indicates the aircraft is located on the 055° radial of the station and heading away from the station?	B
<b>OPCION A:</b> 1. <b>OPCION B:</b> 2. <b>OPCION C:</b> 3.		
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8901	What is the advantage of HIRL or MIRL on an IFR runway as compared to a VFR runway?	B
<b>OPCION A:</b> Lights are closer together and easily distinguished from surrounding lights. <b>OPCION B:</b> Amber lights replace white on the last 2,000 feet of runway for a caution zone. <b>OPCION C:</b> Alternate red and white lights replace the white on the last 3,000 feet of runway for a caution zone.		
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8902	Identify touchdown zone lighting (TDZL).	A
<b>OPCION A:</b> Two rows of transverse light bars disposed symmetrically about the runway centerline. <b>OPCION B:</b> Flush centerline lights spaced at 50-foot intervals extending through the touchdown zone. <b>OPCION C:</b> Alternate white and green centerline lights extending from 75 feet from the threshold through the touchdown zone.		
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8903	Identify runway remaining lighting on centerline lighting systems.	B
<b>OPCION A:</b> Amber lights from 3,000 feet to 1,000 feet, then alternate red and white lights to the end. <b>OPCION B:</b> Alternate red and white lights from 3,000 feet to 1,000 feet, then red lights to the end. <b>OPCION C:</b> Alternate red and white lights from 3,000 feet to the end of the runway.		
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8904	Identify taxi lead off lights associated with the centerline lighting system.	C
<b>OPCION A:</b> Alternate blue and white lights curving from the centerline of the runway to the centerline of the taxiway. <b>OPCION B:</b> Green lights curving from the centerline of the runway to the centerline of the taxiway. <b>OPCION C:</b> Alternate green and yellow lights curving from the centerline of the runway to a point on the exit		
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8905	How can a pilot identify a military airport at night?	C
<b>OPCION A:</b> Green, yellow, and white beacon light. <b>OPCION B:</b> White and red beacon light with dual flash of the white. <b>OPCION C:</b> Green and white beacon light with dual flash of the white.		
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8906	How can a pilot identify a lighted heliport at night?	A
<b>OPCION A:</b> Green, yellow, and white beacon light. <b>OPCION B:</b> White and red beacon light with dual flash of the white. <b>OPCION C:</b> Green and white beacon light with dual flash of the white.		

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8907	Identify the runway distance remaining markers.	A
<b>OPCION A:</b>	Signs with increments of 1,000 feet distance remaining.	
<b>OPCION B:</b>	Red markers laterally placed across the runway at 3,000 feet from the end.	
<b>OPCION C:</b>	Yellow marker laterally placed across the runway with signs on the side denoting distance to end.	

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8908	What are the indications of Precision Approach Path Indicator (PAPI)?	A
<b>OPCION A:</b>	High - white, on glidepath - red and white; low - red.	
<b>OPCION B:</b>	High - white, on glidepath - green; low - red.	
<b>OPCION C:</b>	High - white and green, on glidepath - green; low - red.	

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8909	What does the pulsating VASI consist of?	C
<b>OPCION A:</b>	Three-light system, two pulsing and one steady.	
<b>OPCION B:</b>	Two-light projectors, one pulsing and one steady.	
<b>OPCION C:</b>	One-light projector, pulsing white when above glide slope or red when more than slightly below glide slope, steady white when on glide slope, steady red for slightly below glide path.	

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8910	What are the indications of the pulsating VASI?	B
<b>OPCION A:</b>	High - pulsing white, on glidepath - green, low - pulsing red.	
<b>OPCION B:</b>	High - pulsing white, on glidepath - steady white, slightly below glide slope steady red, low - pulsing red.	
<b>OPCION C:</b>	High - pulsing white, on course and on glidepath - steady white, off course but on glidepath - pulsing white and red; low - pulsing red.	

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8911	What is the advantage of a three-bar VASI?	B
<b>OPCION A:</b>	Pilots have a choice of glide angles.	
<b>OPCION B:</b>	A normal glide angle is afforded both high and low cockpit aircraft.	
<b>OPCION C:</b>	The three-bar VASI is much more visible and can be used at a greater height.	

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8912	A pilot of a high-performance airplane should be aware that flying a steeper-than-normal VASI glide slope angle may result in	B
<b>OPCION A:</b>	a hard landing.	
<b>OPCION B:</b>	increased landing rollout.	
<b>OPCION C:</b>	landing short of the runway threshold.	

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8913	The higher glide slope of the three-bar VASI is intended for use by	C
<b>OPCION A:</b>	high performance aircraft.	
<b>OPCION B:</b>	helicopters.	
<b>OPCION C:</b>	high cockpit aircraft.	

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8914	What is the purpose of REIL?	A
<b>OPCION A:</b>	Identification of a runway surrounded by a preponderance of other lighting.	
<b>OPCION B:</b>	Identification of the touchdown zone to prevent landing short.	
<b>OPCION C:</b>	Establish visual descent guidance information during an approach.	

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8915	Identify REIL.	C
<b>OPCION A:</b>	Amber lights for the first 2,000 feet of runway.	
<b>OPCION B:</b>	Green lights at the threshold and red lights at far end of runway.	
<b>OPCION C:</b>	Synchronized flashing lights laterally at each side of the runway threshold.	

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8916	What does the tri-color VASI consist of?	B
<b>OPCION A:</b>	Three light bars; red, green, and amber.	
<b>OPCION B:</b>	One light projector with three colors; red, green, and amber.	
<b>OPCION C:</b>	Three glide slopes, each a different color; red, green, and amber.	

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8917	Which color on a tri-color VASI is a "high" indication?	B
<b>OPCION A:</b>	Red.	
<b>OPCION B:</b>	Amber.	
<b>OPCION C:</b>	Green.	

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8918 Which color on a tri-color VASI is an "on course" indication? C  
**OPCION A:** Red.  
**OPCION B:** Amber.  
**OPCION C:** Green.

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8919 Which color on a tri-color VASI is a "low" indication? A  
**OPCION A:** Red.  
**OPCION B:** Amber.  
**OPCION C:** Green.

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8920 What is the normal range of the tri-color VASI at night? A  
**OPCION A:** 5 miles.  
**OPCION B:** 10 miles.  
**OPCION C:** 15 miles.

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8921 What does the Precision Approach Path Indicator (PAPI) consist of? B  
**OPCION A:** Row of four lights parallel to the runway; red, white, and green.  
**OPCION B:** Row of four lights perpendicular to the runway; red and white.  
**OPCION C:** One light projector with two colors; red and white.

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8922 Fig. 129 A  
What is the runway distance remaining at "A" for a daytime takeoff on runway 9?  
**OPCION A:** 1,000 feet.  
**OPCION B:** 1,500 feet.  
**OPCION C:** 2,000 feet.

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8923 Fig. 130 B  
What is the runway distance remaining at "A" for a nighttime takeoff on runway 9?  
**OPCION A:** 1,000 feet.  
**OPCION B:** 2,000 feet.  
**OPCION C:** 2,500 feet.

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8924 Fig. 130 C  
What is the runway distance remaining at "B" for a daytime takeoff on runway 9?  
**OPCION A:** 2,000 feet.  
**OPCION B:** 2,500 feet.  
**OPCION C:** 3,000 feet.

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8925 Fig. 130 B  
What is the runway distance remaining at "C" for a daytime takeoff on runway 9?  
**OPCION A:** 2,500 feet.  
**OPCION B:** 2,000 feet.  
**OPCION C:** 1,500 feet.

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8926 Fig. 130 B  
What is the runway distance remaining at "D" for a daytime takeoff on runway 9?  
**OPCION A:** 500 feet.  
**OPCION B:** 1,000 feet.  
**OPCION C:** 1,500 feet.

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8927 Fig. 131 B  
What is the runway distance remaining at "E" for a daytime takeoff on runway 9?  
**OPCION A:** 1,500 feet.  
**OPCION B:** 2,000 feet.  
**OPCION C:** 2,500 feet.

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8928 Fig. 131 B  
What is the runway distance remaining at "A" for a nighttime takeoff on runway 9?  
**OPCION A:** 2,000 feet.  
**OPCION B:** 3,000 feet.  
**OPCION C:** 3,500 feet.

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8929 Fig. 131 A  
What is the runway distance remaining at "D" for a daytime takeoff on runway 9?  
**OPCION A:** 3,000 feet.  
**OPCION B:** 2,500 feet.  
**OPCION C:** 1,500 feet.

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8930 Fig. 131 B  
What is the runway distance remaining at "B" for a nighttime takeoff on runway 9?  
**OPCION A:** 1,000 feet.  
**OPCION B:** 2,000 feet.  
**OPCION C:** 2,500 feet.

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8931 Fig. 131 C  
What is the runway distance remaining at "F" for a daytime takeoff on runway 9?  
**OPCION A:** 2,000 feet.  
**OPCION B:** 1,500 feet.  
**OPCION C:** 1,000 feet.

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8932 Fig. 131 A  
What is the runway distance remaining at "C" for a nighttime takeoff on runway 9?  
**OPCION A:** 1,000 feet.  
**OPCION B:** 1,500 feet.  
**OPCION C:** 1,800 feet.

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8945 How may a pilot determine if a LORAN-C receiver is authorized for IFR operations? A  
**OPCION A:** Consult the Airplane Flight Manual Supplement.  
**OPCION B:** A placard stating, "LORAN-C APPROVED FOR IFR EN ROUTE, TERMINAL AND APPROACH SEGMENTS."  
**OPCION C:** An airframe logbook entry that the LORAN-C receiver has been checked within the previous 30-calendar days.

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8946 What documents the authorized operational level of LORAN-C? B  
**OPCION A:** A placard stating "KIRAB-C APPROVED FOR IFR."  
**OPCION B:** The Airplane Flight Manual Supplement or DGAC Form 337, Major Repair and Alteration.  
**OPCION C:** An entry in the aircraft maintenance logbook giving place, date, and signature of authorizing official.

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8947 LORAN-C is based upon measurements of the difference in time arrival of pulses generated by what type radio stations? C  
**OPCION A:** A group of stations operating on the 108-115 MHz frequency band.  
**OPCION B:** Two stations operating on the 90-110 MHz frequency band.  
**OPCION C:** A chain of stations operating on the 90-110 kHz frequency band.

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8949 Which class of NOTAM gives the latest information on LORAN-C chain or station outages? B  
**OPCION A:** NOTAM (L)'s under the identifier "LORAN-C."  
**OPCION B:** NOTAM (D)'s under the identifier "LRN."  
**OPCION C:** Class II NOTAM's published every 14 days.

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8956 Which component associated with the ILS is identified by the last two letters of the localizer group? B  
**OPCION A:** Inner marker.  
**OPCION B:** Middle compass locator.  
**OPCION C:** Outer compass locator.

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8957 Which component associated with the ILS is identified by the first two letters of the localizer identification group? C

**OPCION A:** Inner marker.  
**OPCION B:** Middle compass locator.  
**OPCION C:** Outer compass locator.

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8958 What aural and visual indications should be observed over an ILS inner marker? A

**OPCION A:** Continuous dots at the rate of six per second.  
**OPCION B:** Continuous dashes at the rate of two per second.  
**OPCION C:** Alternate dots and dashes at the rate of two per second.

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8959 What aural and visual indications should be observed over an ILS middle marker? C

**OPCION A:** Continuous dots at the rate of six per second.  
**OPCION B:** Continuous dashes at the rate of two per second.  
**OPCION C:** Alternate dots and dashes at the rate of two per second.

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8960 What aural and visual indications should be observed over an ILS outer marker? B

**OPCION A:** Continuous dots at the rate of six per second.  
**OPCION B:** Continuous dashes at the rate of two per second.  
**OPCION C:** Alternate dots and dashes at the rate of two per second.

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8961 Within what frequency range does the localizer transmitter of the ILS operate? B

**OPCION A:** 108.10 to 118.10 MHz.  
**OPCION B:** 108.10 to 111.95 MHz.  
**OPCION C:** 108.10 to 117.95 MHz.

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8962 If installed, what aural and visual indications should be observed over the ILS back course marker? A

**OPCION A:** A series of two dot combinations, and a white marker beacon light.  
**OPCION B:** Continuous dashes at the rate of one per second, and a white marker beacon light.  
**OPCION C:** A series of two dash combinations, and a white marker beacon light.

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8963 The lowest ILS Category II minimums are B

**OPCION A:** DH 50 feet and RVR 1,200 feet.  
**OPCION B:** DH 100 feet and RVR 1,200 feet.  
**OPCION C:** DH 150 feet and RVR 1,500 feet.

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8964 What is the lowest Category IIIA minimum? C

**OPCION A:** DH 50 feet and RVR 1,200 feet.  
**OPCION B:** RVR 1,000 feet.  
**OPCION C:** RVR 700 feet.

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8965 How does the SDF differ from an ILS LOC? A

**OPCION A:** SDF - 6° or 12° wide, ILS - 3° to 6°.  
**OPCION B:** SDF - offset from runway plus 3°, ILS - aligned with runway.  
**OPCION C:** SDF - 15° usable off course indications, ILS - 35°.

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8966 What functions are provided by ILS? C

**OPCION A:** Azimuth, distance, and vertical angle.  
**OPCION B:** Azimuth, range, and vertical angle.  
**OPCION C:** Guidance, range, and visual information.

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8967 How does the LDA differ from an ILS LOC? B

**OPCION A:** LDA. 6° or 12° wide, ILS - 3° to 6°.  
**OPCION B:** LDA. offset from runway plus 3°, ILS - aligned with runway.  
**OPCION C:** LDA. 15° usable off course indications, ILS - 35°.

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8968 When is the course deviation indicator (CDI) considered to have a full-scale deflection? B

**OPCION A:** When the CDI deflects from full-scale left to full-scale right, or vice versa.  
**OPCION B:** When the CDI deflects from the center of the scale to full-scale left or right.  
**OPCION C:** When the CDI deflects from half-scale left to half-scale right, or vice versa.

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8969 Which "rule-of-thumb" may be used to approximate the rate of descent required for a 3° glidepath? A  
**OPCION A:** 5 times groundspeed in knots.  
**OPCION B:** 8 times groundspeed in knots.  
**OPCION C:** 10 times groundspeed in knots.

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8970 What facilities may be substituted for an inoperative middle marker during a Category I ILS approach? B  
**OPCION A:** ASR and PAR.  
**OPCION B:** The middle marker has no effect on straight-in minimums.  
**OPCION C:** Compass locator, PAR, and ASR.

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8971 Fig. 135 to 138 B  
Which displacement from the localizer and glide slope at the 1.9 NM point is indicated?  
**OPCION A:** 710 feet to the left of the localizer centerline and 140 feet below the glide slope.  
**OPCION B:** 710 feet to the right of the localizer centerline and 140 feet above the glide slope.  
**OPCION C:** 430 feet to the right of the localizer centerline and 28 feet above the glide slope.

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8972 Fig. 136 -138 C  
Which displacement from the localizer centerline and glide slope at the 1,300-foot point from the runway is indicated?  
**OPCION A:** 21 feet below the glide slope and approximately 320 feet to the right of the runway centerline.  
**OPCION B:** 28 feet above the glide slope and approximately 250 feet to the left of the runway centerline.  
**OPCION C:** 21 feet above the glide slope and approximately 320 feet to the left of the runway centerline.

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8973 Fig. 137 - 138 A  
Which displacement from the localizer and glide slope at the outer marker is indicated?  
**OPCION A:** 1,550 feet to the left of the localizer centerline and 210 feet below the glide slope.  
**OPCION B:** 1,550 feet to the right of the localizer centerline and 210 feet above the glide slope.  
**OPCION C:** 775 feet to the left of the localizer centerline and 420 feet below the glide slope.

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8984 Fig. 139 A  
What is the lateral displacement of the aircraft in nautical miles from the radial selected on the No.1 NAV?  
**OPCION A:** 5.0 NM.  
**OPCION B:** 7.5 NM.  
**OPCION C:** 10.0 NM.

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8985 Fig. 139 C  
On which radial is the aircraft as indicated by the No.1 NAV?  
**OPCION A:** R-175.  
**OPCION B:** R-165.  
**OPCION C:** R-345.

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8986 Fig. 139 B  
Which OBS selection on the No.1 NAV would center the CDI and change the ambiguity indication to a TO?  
**OPCION A:** 175.  
**OPCION B:** 165.  
**OPCION C:** 345.

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8987 Fig. 139 C  
What is the lateral displacement in degrees from the desired radial on the No.2 NAV?  
**OPCION A:** 1°.  
**OPCION B:** 2°.  
**OPCION C:** 4°.

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8988 Fig. 139 A  
Which OBS selection on the No.2 NAV would center the CDI?  
**OPCION A:** 174.  
**OPCION B:** 166.  
**OPCION C:** 335.

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8989	Fig. 139 Which OBS selection on the No.2 NAV would center the CDI and change the ambiguity indication to a TO?	C
<b>OPCION A:</b> 166. <b>OPCION B:</b> 346. <b>OPCION C:</b> 354.		
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8990	Fig. 140/141 To which aircraft position(s) does HSI presentation "A" correspond?	A
<b>OPCION A:</b> 9 and 6. <b>OPCION B:</b> 9 only. <b>OPCION C:</b> 6 only.		
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8991	Fig. 140-141 To which aircraft position(s) does HSI presentation "B" correspond?	B
<b>OPCION A:</b> 11. <b>OPCION B:</b> 5 and 13. <b>OPCION C:</b> 7 and 11.		
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8992	Fig. 140-141 To which aircraft position(s) does HSI presentation "C" correspond?	C
<b>OPCION A:</b> 9. <b>OPCION B:</b> 4. <b>OPCION C:</b> 12.		
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8993	Fig. 140-141 To which aircraft position(s) does HSI presentation "D" correspond?	C
<b>OPCION A:</b> 1. <b>OPCION B:</b> 10. <b>OPCION C:</b> 2.		
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8994	Fig. 140-141 To which aircraft position(s) does HSI presentation "E" correspond?	B
<b>OPCION A:</b> 8 only. <b>OPCION B:</b> 8 and 3. <b>OPCION C:</b> 3 only.		
<hr/>		
8995	Fig. 140 - 141 To which aircraft position(s) does HSI presentation "F" correspond?	A
<b>OPCION A:</b> 4. <b>OPCION B:</b> 11. <b>OPCION C:</b> 5.		
<hr/>		
8996	Fig. 140-141 To which aircraft position(s) does HSI presentation "G" correspond?	B
<b>OPCION A:</b> 7 only. <b>OPCION B:</b> 7 and 11. <b>OPCION C:</b> 5 and 13.		
<hr/>		
8997	Fig. 140 - 141 To which aircraft position(s) does HSI presentation "H" correspond?	B
<b>OPCION A:</b> 8. <b>OPCION B:</b> 1. <b>OPCION C:</b> 2.		
<hr/>		
8998	Fig. 140 - 141 To which aircraft position(s) does HSI presentation "I" correspond?	C
<b>OPCION A:</b> 4. <b>OPCION B:</b> 12. <b>OPCION C:</b> 11.		

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8999	Fig. 142 - 143 To which aircraft position does HSI presentation "D" correspond?	C
<b>OPCION A:</b> 4. <b>OPCION B:</b> 15. <b>OPCION C:</b> 17.		
<hr/>		
9000	Fig. 142 - 143 To which aircraft position does HSI presentation "E" correspond?	B
<b>OPCION A:</b> 5. <b>OPCION B:</b> 6. <b>OPCION C:</b> 15.		
<hr/>		
9001	Fig. 142-143 To which aircraft position does HSI presentation "F" correspond?	C
<b>OPCION A:</b> 10. <b>OPCION B:</b> 14. <b>OPCION C:</b> 16.		
<hr/>		
9002	Fig. 142-143 To which aircraft position does HSI presentation "A" correspond?	A
<b>OPCION A:</b> 1. <b>OPCION B:</b> 8. <b>OPCION C:</b> 11.		
<hr/>		
9003	Fig. 142 - 143 To which aircraft position does HSI presentation "B" correspond?	C
<b>OPCION A:</b> 9. <b>OPCION B:</b> 13. <b>OPCION C:</b> 19.		
<hr/>		
9004	Fig. 142-143 To which aircraft position does HSI presentation "C" correspond?	C
<b>OPCION A:</b> 6. <b>OPCION B:</b> 7. <b>OPCION C:</b> 12.		
<hr/>		
9019	What would be the identification when a VORTAC is undergoing routine maintenance and is considered unreliable?	C
<b>OPCION A:</b> A test signal, "TESTING", is sent every 30 seconds. <b>OPCION B:</b> Identifier is preceded by "M" and an intermittent "OFF" flag would appear. <b>OPCION C:</b> The identifier would be removed.		
<hr/>		
9020	Which indication may be received when a VOR is undergoing maintenance and is considered unreliable?	A
<b>OPCION A:</b> Coded identification T-E-S-T. <b>OPCION B:</b> Identifier is preceded by "M" and an intermittent "OFF" flag might appear. <b>OPCION C:</b> An automatic voice recording stating the VOR is out-of-service for maintenance.		
<hr/>		
9023	What DME indications should a pilot observe when directly over a VORTAC site at 12,000 feet?	B
<b>OPCION A:</b> 0 DME miles. <b>OPCION B:</b> 2 DME miles. <b>OPCION C:</b> 2.3 DME miles.		
<hr/>		
9024	Where does the DME indicator have the greatest error between the ground distance and displayed distance to the VORTAC?	A
<b>OPCION A:</b> High altitudes close to the VORTAC. <b>OPCION B:</b> Low altitudes close to the VORTAC. <b>OPCION C:</b> Low altitudes far from the VORTAC.		

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9080	During an en route descent in a fixed-thrust and fixed-pitch attitude configuration, both the ram air input and drain hole of the pitot system become completely blocked by ice. What airspeed indication can be expected?	B
<b>OPCION A:</b>	Increase in indicated airspeed.	
<b>OPCION B:</b>	Decrease in indicated airspeed.	
<b>OPCION C:</b>	Indicated airspeed remains at the value prior to icing.	

---

9081	What can a pilot expect if the pitot system ram air input and drain hole are blocked by ice?	A
<b>OPCION A:</b>	The airspeed indicator may act as an altimeter.	
<b>OPCION B:</b>	The airspeed indicator will show a decrease with an increase in altitude.	
<b>OPCION C:</b>	No airspeed indicator change will occur during climbs or descents.	

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9082	If both the ram air input and drain hole of the pitot system are blocked by ice, what airspeed indication can be expected?	A
<b>OPCION A:</b>	No variation of indicated airspeed in level flight if large power changes are made.	
<b>OPCION B:</b>	Decrease of indicated airspeed during a climb.	
<b>OPCION C:</b>	Constant indicated airspeed during a descent.	

---

9099	When setting the altimeter, pilots should disregard	A
<b>OPCION A:</b>	effects of nonstandard atmospheric temperatures and pressures.	
<b>OPCION B:</b>	corrections for static pressure systems.	
<b>OPCION C:</b>	corrections for instrument error.	

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9163	En route at FL270, the altimeter is set correctly. On descent, a pilot fails to set the local altimeter setting of 30.57. If the field elevation is 650 feet, and the altimeter is functioning properly, what will it indicate upon landing?	C
<b>OPCION A:</b>	585 feet.	
<b>OPCION B:</b>	1,300 feet.	
<b>OPCION C:</b>	Sea level.	

---

9164	What is corrected altitude (approximate true altitude)?	B
<b>OPCION A:</b>	Pressure altitude corrected for instrument error.	
<b>OPCION B:</b>	Indicated altitude corrected for temperature variation from standard.	
<b>OPCION C:</b>	Density altitude corrected for temperature variation from standard.	

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9172	If the ambient temperature is warmer than standard at FL350, what is the density altitude compared to pressure altitude?	B
<b>OPCION A:</b>	Lower than pressure altitude.	
<b>OPCION B:</b>	Higher than pressure altitude.	
<b>OPCION C:</b>	Impossible to determine without information on possible inversion layers at lower altitudes.	

---

9173	If the ambient temperature is colder than standard at FL310, what is the relationship between true altitude and pressure altitude?	B
<b>OPCION A:</b>	They are both the same, 31,000 feet.	
<b>OPCION B:</b>	True altitude is lower than 31,000 feet.	
<b>OPCION C:</b>	Pressure altitude is lower than true altitude.	

---

9174	Which pressure is defined as station pressure?	B
<b>OPCION A:</b>	Altimeter setting.	
<b>OPCION B:</b>	Actual pressure at field elevation.	
<b>OPCION C:</b>	Station barometric pressure reduced to sea level.	

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9222	How will the airspeed indicator react if the ram air input to the pitot head is blocked by ice, but the drain hole and static port are not?	A
<b>OPCION A:</b>	Indication will drop to zero.	
<b>OPCION B:</b>	Indication will rise to the top of the scale.	
<b>OPCION C:</b>	Indication will remain constant but will increase in a climb.	

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9258 What type service should normally be expected from an En Route Flight Advisory Service? A  
**OPCION A:** Weather advisories pertinent to the type of flight, intended route of flight, and altitude.  
**OPCION B:** Severe weather information, changes in flight plans, and receipt of position reports.  
**OPCION C:** Radar vectors for traffic separation, route weather advisories, and altimeter settings.

---

9261 Below FL 180, en route weather advisories should be obtained from an FSS on B  
**OPCION A:** 122.1 MHz.  
**OPCION B:** 122.0 MHz.  
**OPCION C:** 123.6 MHz.

---

9357 How long is cockpit voice recorder and flight recorder data kept, in the event of an accident or occurrence A  
resulting in terminating the flight?  
**OPCION A:** 60 days.  
**OPCION B:** 90 days.  
**OPCION C:** 30 días.

---

9375 What is the maximum permissible variation between the two bearing indicators on a dual VOR system when A  
checking one VOR against the other?  
**OPCION A:** 4° on the ground and in flight.  
**OPCION B:** 6° on the ground and in flight.  
**OPCION C:** 6° and in flight and 4° on the ground.

---

9376 Which entry shall be recorded by the person performing a VOR operational check? C  
**OPCION A:** Frequency, radial and facility used, and bearing error.  
**OPCION B:** Flight hours and number of days since last check, and bearing error.  
**OPCION C:** Date, place, bearing error, and signature.

---

9377 Which checks and inspections of flight instruments or instrument systems must be accomplished before an A  
aircraft can be flown under IFR?  
**OPCION A:** VOR within 30 days and altimeter systems and transponder within 24 calendar months.  
**OPCION B:** ELT test within 30 days, altimeter systems within 12 calendar months, and transponder within 24 calendar months.  
**OPCION C:** Airspeed indicator within 24 calendar months, altimeter system within 24 calendar months, and transponder within 12 calendar months.

---

9378 A pilot approaching to land a turbine-powered aircraft on a runway served by a VASI shall C  
**OPCION A:** not use the VASI unless a clearance for a VASI approach is received.  
**OPCION B:** use the VASI only when weather conditions are below basic VFR.  
**OPCION C:** maintain an altitude at or above the glide slope until a lower altitude is necessary for a safe landing.

---

9380 What action is necessary when a partial loss of ILS receiver capability occurs while operating in controlled C  
airspace under IFR?  
**OPCION A:** Continue as cleared and file a written report to the DGTA if requested.  
**OPCION B:** If the aircraft is equipped with other radios suitable for executing an instrument approach, no further action is necessary.  
**OPCION C:** Report the malfunction immediately to ATC.

---

9381 What action should be taken if one of the two VHF radios fail while IFR in controlled airspace? A  
**OPCION A:** Notify ATC immediately.  
**OPCION B:** Squawk 7600.  
**OPCION C:** Monitor the VOR receiver.

---

9386 While flying IFR in controlled airspace, if one of the two VOR receivers fails, which course of action should B  
the pilot-in-command follow?  
**OPCION A:** No call is required if one of the two VOR receivers is operating properly.  
**OPCION B:** Advise ATC immediately.  
**OPCION C:** Notify the dispatcher via company frequency.

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9387 While flying in controlled airspace under IFR, the ADF fails. What action is required? C  
**OPCION A:** Descend below Class A airspace.  
**OPCION B:** Advise dispatch via company frequency.  
**OPCION C:** Notify ATC immediately.

---

9403 Which facility may be substituted for the middle marker during a Category I ILS approach? C  
**OPCION A:** VOR/DME FIX.  
**OPCION B:** Surveillance radar.  
**OPCION C:** Compass locator.

---

9404 What record shall be made by the pilot performing a VOR operational check? B  
**OPCION A:** The date, frequency of VOR or VOT, number of hours flown since last check, and signature in the aircraft log.  
**OPCION B:** The date, place, bearing error, and signature in the aircraft log or other record.  
**OPCION C:** The date, approval or disapproval, tach reading, and signature in the aircraft log or other permanent record.

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9405 During a VOT check of the VOR equipment, the course deviation indication centers on 356° with the TO/FROM reading FROM. This VOR equipment may B  
**OPCION A:** be used if 4° is entered on a correction card and subtracted from all VOR courses.  
**OPCION B:** be used during IFR flights, since the error is within limits.  
**OPCION C:** not be used during IFR flights, since the TO/FROM should read TO.

---

9406 If an airborne checkpoint is used to check the VOR system for IFR operations, the maximum bearing error A  
permissible is  
**OPCION A:** plus or minus 6°.  
**OPCION B:** plus 6° or minus 4°.  
**OPCION C:** plus or minus 4°.

---

9407 A function of the minimum equipment list is to indicate required items which C  
**OPCION A:** are required to be operative for overwater passenger air carrier flights.  
**OPCION B:** may be inoperative for a one-time ferry flight of a large airplane to a maintenance base.  
**OPCION C:** may be inoperative prior to beginning a flight in an aircraft.

---

9408 When is DME required for an instrument flight? A  
**OPCION A:** At or above 24,000 feet MSL if VOR navigational equipment is required.  
**OPCION B:** In terminal radar service areas.  
**OPCION C:** Above 12,500 feet MSL.

---

9410 Information obtained from flight data and cockpit voice recorders shall be used only for determining C  
**OPCION A:** who was responsible for any accident or incident.  
**OPCION B:** evidence for use in civil penalty or certificate action.  
**OPCION C:** possible causes of accidents or incidents.

---

9411 Which ground components are required to be operative for a Category II approach in addition to LOC, glide C  
slope, marker beacons, and approach lights?  
**OPCION A:** Radar and RVR.  
**OPCION B:** RCLS and REIL.  
**OPCION C:** HIRL, TDZL, RCLS, and RVR.

---

9412 When may a pilot descend below 100 feet above the touchdown zone elevation during a Category II ILS C  
instrument approach when only the approach lights are visible?  
**OPCION A:** After passing the visual descent point (VDP).  
**OPCION B:** When the RVR is 1,600 feet or more.  
**OPCION C:** When the red terminal bar of the approach light systems are in sight.

---

9413 In addition to the localizer, glide slope, marker beacons, approach lighting, and HIRL, which ground C  
components are required to be operative for a Category II instrument approach to a DH below 150 feet AGL?  
**OPCION A:** RCLS and REIL.  
**OPCION B:** Radar and RVR.  
**OPCION C:** TDZL, RCLS, and RVR.

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9416 When instructed by ATC to "Hold short of a runway (ILS critical area, etc.)," the pilot should stop **B**  
**OPCION A:** with the nose gear on the hold line.  
**OPCION B:** so that no part of the aircraft extends beyond the hold line.  
**OPCION C:** so the flight deck area of the aircraft is even with the hold line.

---

9417 You have just landed at JFK and the tower tells you to call ground control when clear of the runway. You are **C**  
considered clear of the runway when  
**OPCION A:** the aft end of the aircraft is even with the taxiway location sign.  
**OPCION B:** the flight deck area of the aircraft is even with the hold line.  
**OPCION C:** all parts of the aircraft have crossed the hold line.

---

9421 Holding position signs have **A**  
**OPCION A:** white inscriptions on a red background.  
**OPCION B:** red inscriptions on a white background.  
**OPCION C:** yellow inscriptions on a red background.

---

9422 Airport information signs, used to provide destination or information, have **C**  
**OPCION A:** yellow inscriptions on a black background.  
**OPCION B:** white inscriptions on a black background.  
**OPCION C:** black inscriptions on a yellow background.

---

9423 Hold line markings at the intersection of taxiways and runways consist of four lines (two solid and two dashed) **B**  
that extend across the width of the taxiway. These lines are  
**OPCION A:** white in color and the dashed lines are nearest the runway.  
**OPCION B:** yellow in color and the dashed lines are nearest the runway.  
**OPCION C:** yellow in color and the solid lines are nearest the runway.

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9425 TCAS I provides **B**  
**OPCION A:** traffic and resolution advisories.  
**OPCION B:** proximity warning.  
**OPCION C:** recommended maneuvers to avoid conflicting traffic.

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9426 TCAS II provides **A**  
**OPCION A:** traffic and resolution advisories.  
**OPCION B:** proximity warning.  
**OPCION C:** maneuvers in all directions to avoid the conflicting traffic.

---

9427 Each pilot, who deviates from an ATC clearance in response to a TCAS advisory, is expected to **C**  
**OPCION A:** maintain the course and altitude resulting from the deviation, as ATC has radar contact.  
**OPCION B:** request a new ATC clearance.  
**OPCION C:** expeditiously return to the ATC clearance in effect prior to the advisory, after the conflict is resolved.

---

9428 Each pilot who deviates from an ATC clearance in response to a TCAS advisory is expected to **C**  
**OPCION A:** maintain the course and altitude resulting from the deviation, as ATC has radar contact.  
**OPCION B:** request ATC clearance for the deviation.  
**OPCION C:** notify ATC of the deviation as soon as practicable.

---

9436 Fig. 156 **B**  
This sign, which faces the runway and is visible to the pilot, indicates  
**OPCION A:** a point at which the pilot should contact ground control without being instructed by the tower.  
**OPCION B:** a point at which the aircraft will be clear of the runway.  
**OPCION C:** the point at which the emergency arresting gear is stretched across the runway.

---

9437 Fig. 157 **C**  
This is an example of:  
**OPCION A:** an ILS Critical Area Holding Position Sign.  
**OPCION B:** a Runway Boundary Sign.  
**OPCION C:** an ILS Critical Area Boundary Sign.

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9570	Fig. 112 While arcing left on the IAH 10 DME Arc, the pilot experiences a left crosswind component. Where should the bearing pointer be referenced relative to the 90° (wingtip) position to maintain the 10 DME range?  (Refer to Appendix 3, Figure 112)	C
<b>OPCION A:</b>	On the left wingtip reference.	
<b>OPCION B:</b>	Behind the left wingtip reference.	
<b>OPCION C:</b>	Ahead of the left wingtip reference.	

---

9723	Authorization to conduct any GPS operation under IFR requires that	C
<b>OPCION A:</b>	the equipment be approved in accordance with TSO C-115a.	
<b>OPCION B:</b>	the pilot must review appropriate weather, aircraft flight manual (AFM), and operation of the particular receiver.	
<b>OPCION C:</b>	procedures must be established for use in the event that the loss of RAIM capability is predicted to occur.	

---

9724	Authorization to conduct any GPS operation under IFR requires that	B
<b>OPCION A:</b>	the pilot review appropriate weather, aircraft flight manual (AFM), and operation of the particular GPS receiver.	
<b>OPCION B:</b>	air carrier and commercial operators must meet the appropriate provisions of their approved operations specifications.	
<b>OPCION C:</b>	the equipment be approved in accordance with TSO C-115a.	

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9731	Land and Hold Short Operations (LAHSO) include landing and holding short:	B
<b>OPCION A:</b>	of an intersecting taxiway only.	
<b>OPCION B:</b>	of some designated point on the runway.	
<b>OPCION C:</b>	only of an intersecting runway or taxiway.	

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9732	A Land and Hold Short Operations (LAHSO) clearance, that the pilot accepts:	B
<b>OPCION A:</b>	must be adhered to.	
<b>OPCION B:</b>	does not preclude a rejected landing.	
<b>OPCION C:</b>	precludes a rejected landing.	

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9733	In conducting Land and Hold Short Operations (LAHSO), the pilot should have readily available:	A
<b>OPCION A:</b>	the published Available Landing Distance (ALD), landing performance of the aircraft, and slope of all LAHSO combinations at the destination airport.	
<b>OPCION B:</b>	the published runway length and slope for all LAHSO combinations at the airport of intended landing.	
<b>OPCION C:</b>	the landing performance of the aircraft, published Available Landing Distance (ALD) for all LASHO combinations at the airport of intended landing, plus the forecast winds.	

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9734	The airport markings, signage and lighting associated with Land and Hold Short (LAHSO) consists of:	B
<b>OPCION A:</b>	yellow hold-short markings, red and white signage, and in-pavement lights.	
<b>OPCION B:</b>	red and white signage, yellow hold-short markings, and at some airports, in-pavement lights.	
<b>OPCION C:</b>	red and black signage, in-pavement lights, and yellow hold-short markings.	

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