W9AY STUDY GUIDE · ELEMENT 9 · FREE SAMPLE

GMDSS Radio Maintenance

Complete question pool, organised by section, with study notes and every answer.

50	300	7	1.6 h
EXAM QUESTIONS	IN THE POOL	SECTIONS	TO READ ONCE

This is one section, free. 9D, Test Equipment & Procedures: all 24 of its pool questions, each with its answer. Read the notes, then cover the answers and work through the questions, and watch how quickly the answers start to stick. The rest of the guide works the same way.

Get the full guide: w9ay.com/study/gmdss-maintainer. It adds all 7 sections and every one of the 300 pool questions. Pay through Stripe; your download link appears as soon as you pay and is emailed to you.

w9ay.com

Contents

50 questions on the exam, drawn from 300 in the pool.

SECTION	TOPIC	QUESTIONS	READING
9D	Test Equipment & Procedures	24	~6 min

Element 9D — Test Equipment & Procedures

Topic 33

Emergency Position-Indicating Radio Beacon (EPIRB)

- COSPAS-SARSAT satellites DO calculate position via Doppler shift — **trap question** asks which is NOT a function.
- Magnet in EPIRB bracket: **prevents accidental operation** while secured.
- EPIRB battery replacement: every **5 years** or **after use**.
- **NOT** part of 406 MHz EPIRB: **aural locator signal**.
- Automatic release mechanism (hydrostatic): replaced every **2 years**.
- 406 MHz EPIRB includes: **5-watt 406 MHz beacon**, **Automatic Hydrostatic Release (ARM)**, **strobe light**.

9-33D1 *(modified — acronym expanded)*

Which is not a function of a satellite under Space System for the Search of Vessels in Distress (COSPAS)-Search and Rescue Satellite-Aided Tracking (SARSAT) using satellite EPIRBs?

- *A. After the EPIRB's position is calculated using the Doppler shift COSPAS-SARSAT satellites provide follow-on Search and Rescue (SAR) communications.*
- B. Relayed satellite message includes the EPIRB ID number which provides a reference for retrieval of vessel information from the shore database.
- C. Doppler shift of EPIRB signal is measured and the EPIRB's position is calculated.
- D. Information received from EPIRBs is time-tagged and transmitted to any Local User Terminal in the satellite's view.

Answer: A

9-33D2

What is the purpose of the magnet in the EPIRB mounting bracket?

- A. To secure the EPIRB in the mounting bracket.
- B. Prevent accidental operation of the EPIRB while secured in the mounting bracket.
- C. To activate the automatic release mechanism.
- D. When the EPIRB is released it causes a signal to be sent to the bridge.

Answer: B

9-33D3

How often must the EPIRB battery be replaced?

- A. Every 2 years.
- B. Every 3 years or after use.
- C. Every 5 years or after use.
- D. Every 8 years.

Answer: C

9-33D4

What feature is not a component of a 406 MHz satellite EPIRB?

- A. 121.5 MHz emergency homing transmitter.
- B. Emergency transmission on 406.025 MHz.
- C. Float-free release bracket.
- D. Aural locator signal.

Answer: D

9-33D5

How often must the automatic release mechanism be replaced.

- A. Every 2 years
- B. Every 3 years
- C. Every 5 years
- D. Every 8 years

Answer: A

9-33D6

Which of the following is normally part of 406 MHz satellite EPIRBs?

- A. A strobe light, automatic float-free bracket, 1-watt 406-MHz alert beacon.
- B. A 5-watt 406-MHz alert beacon, Automatic Hydrostatic Release (ARM), strobe light.
- C. Automatic float-free bracket, 5-watt 121.5 MHz homing beacon, strobe light.
- D. Automatic Hydrostatic Release (ARM), 1-watt 121.5 MHz alerting beacon, strobe light.

Answer: B

Topic 34

Search and Rescue Transponder (SART)

- SART on Radio Detection and Ranging (RADAR) display: series of **12 equally spaced dots**.
- SART operating frequency band: **9 GHz** (3 cm X-band radar).
- SART begins transmission: when activated and **responding to RADAR interrogation**.
- SART battery replacement: every **5 years** or **after use**.
- SART transmitted signal: **0.4 µsec sweep** across entire 3 cm radar band, then returning sweep.
- Distance between dots on radar display at 5 miles: **0.64 nm** (nautical miles).

9-34D1

How should the signal from a Search And Rescue RADAR Transponder appear on a RADAR display?

- A. A series of dashes.
- B. A series of spirals all originating from the range and bearing of the SART.
- C. A series of twenty dashes.
- D. A series of 12 equally spaced dots.

Answer: D

9-34D2

In what frequency band does a search and rescue transponder operate?

- A. 9 GHz
- B. 3 GHz
- C. S-band
- D. 406 MHz

Answer: A

9-34D3

What causes the SART to begin a transmission?

- A. When activated manually, it begins radiating immediately.
- B. After being activated the SART responds to RADAR interrogation.
- C. It is either manually or water activated before radiating.
- D. It begins radiating only when keyed by the operator.

Answer: B

9-34D4

At what interval must the SART’s battery be replaced?

- A. Every 2 years.
- B. Every 3 years or after being used.
- C. Every 5 years or after being used.
- D. Every 8 years.

Answer: C

9-34D5

What are the characteristics of the SART transmitted signal?

- A. It starts with a sweep of 10.2 usec.followed by a sweep of 0.6 usec for a total of 10 sweeps.
- B. It starts with a sweep of 0.8 usec followed by a sweep of 12.6 usec for a total of 12 sweeps.
- C. It starts with a sweep of 0.4usec across the entire 3 cm radar band followed by a returning sweep of 7.5 usec back to the beginning for a total of 12 sweeps.
- D. It starts with a sweep of 8.5 usec followed by a sweep of 0.4 usec for 10 sweeps.

Answer: C

9-34D6

What is the approximate distance between dots on a radar display at a distance of 5 miles?

- A. 0.36 nm
- B. 0.48 nm
- C. 0.56 nm
- D. 0.64 nm

Answer: D

Topic 35

Survival Craft Transceiver (SCT)

- Survival Craft Transceiver (SCT) battery replacement: every **5 years** or **after distress use**.
- Minimum receiver sensitivity: **2.0 microvolts**.
- Minimum effective radiated power: **0.25 watt**.
- Must have capability: operation on **Ch-16**.
- **NOT true** about survival craft VHF: "operates simplex on Ch-70 and at least one other channel" — trap question.
- Required characteristics: **Ch-16 operation**, **watertight**, **permanently-affixed antenna**.

9-35D1

How often must the Survival Craft Transceiver battery be changed?

- A. 2 years or after use for distress communications.
- B. 3 years or after use for distress communications.
- C. 5 years or after use for distress communications.
- D. 8 years or after use for distress communications.

Answer: C

9-35D2

What is the minimum receiver sensitivity required for a Survival Craft Transceiver?

- A. 0.1 microvolts
- B. 0.5 microvolts
- C. 1.0 microvolts
- D. 2.0 microvolts

Answer: D

9-35D3

What is the minimum required effective radiated power?

- A. 0.25 watt
- B. 0.5 watt
- C. 1 watt
- D. 2 watts

Answer: A

9-35D4

Equipment for radiotelephony use in survival craft stations under GMDSS must have what capability?

- A. Operation on 457.525 MHz.
- B. Operation on Ch-16.
- C. Operation on 121.5 MHz.
- D. Operation on Ch-70.

Answer: B

9-35D5

Which statement is NOT true regarding the requirements of survival craft portable two-way VHF radiotelephone equipment?

- A. Watertight to a depth of 1 meter for 5 minutes.
- B. Operates simplex on Ch-70 and at least one other channel.
- C. Effective radiated power should be a minimum of 0.25 Watts.
- D. The antenna is fixed and non-removable.

Answer: B

9-35D6

Equipment for radiotelephony use in survival craft stations under GMDSS must have what characteristics?

- A. Permanently-affixed antenna, watertight, power 1W or 25W.
- B. Watertight, power a minimum of 1W, operation on CH-16, Ch-13 & Ch-70.
- C. Operation on Ch-16, watertight, permanently-affixed antenna.
- D. Operation on Ch-16, Ch-13 & Ch-70, power 1W, permanently-affixed antenna.

Answer: C

Topic 36

NAVTEX Receiver

- Primary NAVTEX frequency: **518 kHz**.
- Powers on normally but no new messages: **RF amplifier at antenna base is defective**.
- Program to reject messages: choose message category's **single letter (A–Z) identifier**, then deselect.
- Prevent certain NAVTEX broadcasts: **program receiver** to reject certain stations and message categories.
- NAVTEX accuracy: **each character sent twice** with a time interval (time diversity).
- NAVTEX broadcasts sent: **in categories** of messages indicated by a **single letter identifier**.

9-36D1

Which of the following is the primary frequency that is used exclusively for NAVTEX broadcasts internationally?

- A. 490 kHz
- B. 518 kHz
- C. 2187.5 kHz
- D. 4209.5 kHz

Answer: B

9-36D2

The NAVTEX is powering on and appears to be functioning normally except there have been no new messages for an extended period. The station settings are correct. What is the most likely source of the problem?

- A. The audio amplifier is defective.
- B. The wrong frequency has been selected.
- C. The RF amplifier at the antenna base is defective.
- D. The DC supply voltage is too low.

Answer: C

9-36D3

How is a NAVTEX receiver programmed to reject certain messages?

- A. The transmitting station's two-digit identification can be entered to de-select reception of its broadcasts.
- B. By entering the SELCALL of the transmitting station.
- C. By pressing "00" in the transmitter's ID block.
- D. By choosing a message category's single letter (A-Z) identifier and then deselecting or deactivating.

Answer: D

9-36D4

How can reception of certain NAVTEX broadcasts be prevented?

- A. The receiver can be programmed to reject certain stations and message categories.
- B. Stations are limited to daytime operation only.
- C. Coordinating reception with published broadcast schedules.
- D. Automatic receiver desensitization during night hours.

Answer: A

9-36D5

How is accuracy insured in NAVTEX broadcasts?

- A. A parity check character is sent at the end of each line.
- B. Each message is retransmitted.
- C. Selective FEC is used to prevent errors.
- D. Each character is sent twice with a time interval.

Answer: D

9-36D6

NAVTEX broadcasts are sent:

- A. In categories of messages indicated by a single letter or identifier.
- B. Immediately following traffic lists.
- C. On request of maritime mobile stations.
- D. Regularly, after the radiotelephone silent periods.

Answer: A

Want the rest?

Get the full guide

The complete GMDSS Radio Maintenance guide is one PDF: all 7 sections and every one of the 300 pool questions, each with its answer.

1. Go to **w9ay.com/study/gmdss-maintainer**.
2. Press **Buy the PDF** and pay through Stripe.
3. Your download link appears as soon as you pay, and it is emailed to you.

What the full guide covers

SECTION	TOPIC	QUESTIONS	WHERE
9A	GMDSS Equipment Maintenance	60	full guide
9B	Digital & Satellite Systems	72	full guide
9C	Safety Equipment Maintenance	60	full guide
9D	Test Equipment & Procedures	24	in this sample
9E	Troubleshooting	24	full guide
9F	Regulations & Survey	36	full guide
9G	Safety & Best Practices	24	full guide