

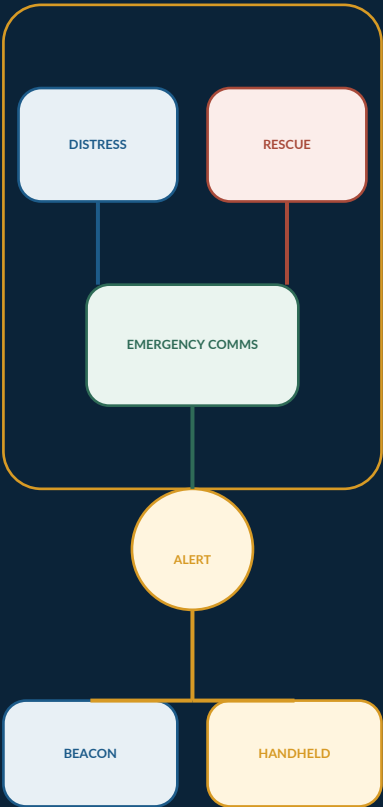
Understanding Emergency Communications Equipment

An owner's guide to EPIRBs, PLBs, SARTs, handheld radios and distress messaging

Emergency equipment must survive the incident, leave the yacht with the crew and work without ship power. Registration, battery life, mounting and deployment are as important as the device itself.

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ALERT | LOCATE | COMMUNICATE

GUIDE OVERVIEW

What emergency communications equipment is designed to do

Emergency communications equipment alerts rescue services, helps search units locate survivors and provides local coordination after normal ship systems are unavailable.

SCOPE

This guide covers EPIRBs, personal locator beacons, DSC VHF, satellite distress or messaging devices, SART or AIS-SART equipment, handheld VHF and visual signalling. Legal carriage and registration requirements vary.

By the end of this guide, you should be able to:

- Trace the complete path from command or supply to the physical result.
- Identify the principal components, controls, protection and monitoring.
- Recognise common failure modes and early warning signs.
- Understand hidden dependencies and safe degraded operation.
- Ask better questions during purchase, survey, sea trial, refit and offshore preparation.

CORE PRINCIPLE

Emergency equipment should be independently powered, correctly registered, accessible from a safe route and capable of leaving the yacht with the crew.

Safety

False distress alerts consume rescue resources and may have legal consequences. Use only approved self-test functions; follow official cancellation procedures after accidental activation and avoid opening sealed battery or beacon enclosures.

SYSTEM ARCHITECTURE

Alerting, locating and communicating after a serious incident

Emergency equipment performs three related jobs: send a recognised distress alert, guide rescuers to the yacht or survivors and support local voice or visual coordination.



Area	Why it matters	Owner focus
Distress alert	Notifies rescue coordination or nearby stations.	Know activation, confirmation and cancellation procedure.
Identity and registration	Links the signal to vessel, owner and emergency contacts.	Update after purchase, address or voyage changes.
Position and homing	Provides GNSS position or local locating signal.	Check antenna view, mounting and self-test status.
Survivor communication	Allows instructions and coordination with rescuers.	Keep handheld radios and batteries with grab equipment.
Visual signalling	Supports final detection in daylight or darkness.	Store accessible, dry and within service life.

CORE PRINCIPLE	A distress alert starts the rescue process; it does not replace the ability to communicate locally, make survivors visible and provide updated information.
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MAIN COMPONENTS

What owners should be able to identify

The crew should be able to locate, remove and operate every beacon, radio and signalling item in darkness, smoke, heavy weather or abandonment conditions.

EPIRB
Vessel distress alert
and location

PLB
Personal distress
beacon

SART / AIS-SART
Local search and
locating aid

HANDHELD / VISUAL
Voice and final
detection

Area	Why it matters	Owner focus
EPIRB	Provides registered satellite distress alert and position.	Hydrostatic or manual release, bracket, antenna, battery and registration.
PLBs	Provide personal satellite alert for individual crew.	Assignment, wearing or stowage, GNSS and registration.
DSC VHF	Sends digital distress and supports voice follow-up.	MMSI, position input, antenna and emergency power.
Satellite distress or messaging device	Provides SOS and two-way text on supported networks.	Subscription, contacts, battery, antenna view and waterproofing.
SART or AIS-SART	Helps nearby rescue units locate survivors.	Mounting, battery, test and liferaft deployment.
Handheld VHF and visual signals	Supports local contact, helicopter or vessel coordination.	Waterproofing, channels, battery packs, lights and service dates.

ACCESS AND LABELLING	Emergency equipment stored deep in a locker or mounted beside the likely fire or flooding source may be impossible to recover when needed.
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SYSTEM ARRANGEMENTS

Vessel beacons, personal beacons and local locating aids

Different devices alert different networks and are intended for different phases of rescue. Their coverage and registration should be understood rather than assumed.



Area	Why it matters	Owner focus
Float-free EPIRB	Can release automatically if the yacht sinks.	Correct hydrostatic installation, clear path and manual access.
Manual EPIRB	Requires deliberate removal and activation.	Accessible route and crew familiarity are critical.
Personal locator beacon	Travels with a crew member and supports personal rescue.	Not always a substitute for vessel EPIRB or local radio.
Radar SART or AIS-SART	Creates a locating response on nearby rescue equipment.	Understand activation, height and display type.
Satellite messenger or phone SOS	May provide two-way information through a commercial network.	Service plan, coverage, emergency centre and device registration.
Handheld VHF and pyrotechnic or electronic signal	Supports close-range rescue coordination.	Battery and legal storage or expiry management.

PRACTICAL DISTINCTION	No single device provides every alert, locating and communication function. A layered arrangement improves both reach and final recovery.
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OPERATION AND CONTROL

Activation, deployment and preventing accidental alerts

The crew should know which device to activate, how to position its antenna, how to confirm transmission and how to carry it into a liferaft or tender.



Area	Why it matters	Owner focus
EPIRB activation	Remove from bracket if required, deploy with antenna clear and tether correctly.	Do not secure it to a sinking yacht if abandoning.
PLB activation	Position antenna with clear sky and keep with the casualty or survivor.	Follow device-specific orientation and test procedure.
DSC distress	Send alert with position and follow on the designated voice channel.	Use the correct category if time permits.
SART or AIS-SART	Activate in liferaft or survival craft and mount as high as practical.	Conserve battery until search units are expected as procedure requires.
Handheld VHF	Use concise calls, correct channel and battery discipline.	Keep one unit dry and reserved for rescue coordination.

OPERATOR FOCUS	Under stress, simple labels and repeated drills matter more than a thick manual. The activation steps should be readable at the storage point.
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DEPENDENCIES AND RESILIENCE

What can remove apparently independent capability

Emergency devices can still share weak points such as one locker, expired batteries, outdated registration, one charging lead or an inaccessible grab bag.

SHARED LOCATION

Fire or flooding blocks all equipment

SHARED REGISTRATION

Wrong vessel or contacts

SHARED BATTERY

Portable charging plan fails

SHARED NETWORK

Several devices use one service

Area	Why it matters	Owner focus
Storage location	Several portable devices may be kept in one vulnerable compartment.	Distribute logically between bridge, grab bag and personal equipment.
Registration database	EPIRB, PLB and satellite accounts may contain old details.	Audit identifiers and emergency contacts annually.
Battery life	Sealed beacon and rechargeable radio batteries age differently.	Track expiry, capacity and replacement lead time.
GNSS reception	Below-deck or poor orientation can delay position acquisition.	Deploy with antenna clear and upright.
Commercial network	Satellite messenger and phone may share one provider.	Retain recognised beacons and VHF alternatives.

COMMON-MODE RISK

A device can be electrically independent but operationally useless if it is unregistered, inaccessible or unfamiliar to the crew.

MONITORING AND NORMAL VALUES

Using self-tests, service dates and registration as evidence

Emergency equipment should be monitored through approved self-tests, battery and hydrostatic-release dates, physical inspection, registration checks and radio battery capacity.

SELF TEST

Approved internal check

PHYSICAL

Bracket, seals and antenna

DATES

Battery, HRU and service life

REGISTRATION

Identity and emergency contacts

Area	Why it matters	Owner focus
Self-test fails or gives fault	Battery, GNSS, antenna or internal electronics issue.	Remove from reliance and arrange approved service.
Bracket or casing damaged	Impact, UV, corrosion or poor mounting.	Repair mounting or replace equipment.
Battery or HRU near expiry	Planned service window is approaching.	Replace early enough for the intended passage.
Registration details outdated	Ownership, contact or vessel information has changed.	Update the relevant authority or provider immediately.
Handheld capacity poor	Ageing cells, charger or cold-temperature loss.	Replace battery or carry approved spare pack.

TREND, DO NOT GUESS	A green self-test does not prove correct registration, accessible mounting, crew knowledge or usable handheld battery endurance.
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FAILURE AWARENESS

Common weaknesses and warning signs

Emergency equipment failures often arise from expired batteries, incorrect mounting, water ingress, blocked antenna view, poor registration or devices left behind during abandonment.

NO ALERT
Battery, antenna or electronics

WRONG IDENTITY
Registration or MMSI error

NO POSITION
GNSS or deployment problem

NO LOCAL CONTACT
Radio, battery or antenna failure

Area	Why it matters	Owner focus
EPIRB does not release	Incorrect bracket, obstructed float-free path or expired HRU.	Automatic alert may never occur.
Beacon will not acquire position	Antenna blocked, device submerged incorrectly or GNSS fault.	Alert may contain delayed or less accurate location.
Rescue centre receives wrong details	Registration was not updated.	Verification and response can be delayed.
Handheld VHF fails in liferaft	Battery, water ingress or no charging.	Survivors cannot coordinate final rescue.
SART not detected	Incorrect activation, low mounting, battery or incompatible expectation.	Search units lose a locating aid.

DO NOT NORMALISE CHANGE	Emergency equipment should be treated as a complete deployment system, including bracket, lanyard, battery, registration, instructions and crew action.
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FAILURE RESPONSE

Using layered distress and locating methods

When one alert or communication path is uncertain, activate another appropriate system, preserve battery and continue transmitting updated position and situation information.



Area	Why it matters	Owner focus
No acknowledgement	Repeat by another method and activate EPIRB where appropriate.	Assuming a sent message was received.
Abandoning yacht	Take grab bag, handhelds, beacons and SART; deploy EPIRB correctly.	Leaving portable equipment aboard.
Beacon accidentally activated	Follow official cancellation procedure and contact rescue authority.	Simply switching off without reporting.
Battery conservation needed	Prioritise recognised distress alert and scheduled communication.	Using all devices continuously without a plan.
Rescue units nearby	Use VHF, SART or AIS-SART and visual signals to guide final approach.	Assuming the satellite alert alone identifies the exact survivor position.

PROTECT THE WIDER YACHT	Use several methods when life is at risk, but avoid contradictory positions or uncontrolled battery use. Keep one person responsible for the communications log.
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TESTING AND DEMONSTRATION

Testing without transmitting a false distress alert

Testing should use only approved self-test or test-call functions and should include physical deployment practice, registration review and battery-capacity checks.

INSPECT
Mounting, casing and labels

SELF TEST
Approved beacon or SART routine

RADIO TEST
Handheld and DSC without distress

DRILL
Retrieve, deploy and communicate

Area	Why it matters	Owner focus
EPIRB or PLB self-test	Checks selected internal functions without full distress transmission.	Follow timing and frequency limits in the manual.
GNSS self-test where provided	Shows position acquisition and antenna performance.	Consumes additional battery allowance on some devices.
SART approved test	Confirms electronics and indication.	Coordinate if local radar or AIS display is used.
Handheld VHF radio check	Confirms audio, transmit and battery under load.	Use authorised channel and avoid distress traffic.
Abandonment drill	Shows equipment can be retrieved and assigned quickly.	Do not trigger live beacons or pyrotechnics.

MEANINGFUL EVIDENCE

A drill should reveal who carries each item, how it is attached and whether it can be operated with gloves, darkness and limited instruction.

MAINTENANCE STRATEGY

Keeping sealed devices, brackets and portable batteries ready

Maintenance is mainly controlled inspection, approved service, date management, registration and correct charging rather than owner disassembly.

BEACONS
Casing, antenna and self-test

BRACKETS
Release and access

BATTERIES
Expiry and capacity

REGISTRATION
Identity and contacts

Area	Why it matters	Owner focus
EPIRB and PLB	Inspect casing, seal, antenna, lanyard and approved test.	Preserves water integrity and activation.
Float-free bracket and HRU	Clean, unobstructed, correctly oriented and within date.	Supports automatic release.
SART or AIS-SART	Inspect mounting, test and battery expiry.	Maintains local locating ability.
Handheld radios	Charge, capacity test, inspect seals and spare batteries.	Supports survivor communication.
Visual signals and lights	Check service life, waterproof storage and legal requirements.	Supports final detection and night use.
WORK TO REFER	Sealed beacon batteries, hydrostatic releases and internal repairs should be handled by approved service providers where required.	

RECORDS, SPARES AND SUPPORTABILITY

Keeping registration, assignments and expiry control current

A simple emergency-equipment register should identify each device, unique identity, registration authority, battery date, location and assigned crew responsibility.



Area	Why it matters	Owner focus
Equipment register	Serial, HEX ID or MMSI, location and service dates.	Prevents missing or duplicated records.
Registration evidence	Authority or provider confirmation and emergency contacts.	Supports rescue verification.
Expiry plan	Battery, HRU, flare or electronic-light dates and lead times.	Avoids last-minute unavailability.
Abandonment list	Who takes EPIRB, grab bag, radios and SART.	Supports rapid evacuation.
Printed instructions	Concise activation and cancellation steps.	Works after network or display loss.

SUPPORTABILITY	Registration is part of the equipment. A correctly functioning beacon with another vessel's identity can delay rescue verification.
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BUYER AND SURVEY PERSPECTIVE

Assessing emergency equipment as a deployment package

A buyer should confirm ownership transfer, registration, battery dates, correct brackets, accessible locations and compatibility with the intended operating area.



Area	Why it matters	Owner focus
EPIRB registration	Does the unique identity transfer correctly to the new owner and vessel?	Complete authority update before reliance.
Dates and service	Are batteries, HRUs and portable packs within useful life?	Budget replacement before offshore use.
Mounting and access	Can equipment be removed from a safe route?	Inspect float-free clearance and signage.
Coverage and type	Do beacon and satellite networks suit the cruising area?	Understand local and global limitations.
Crew and documentation	Are instructions, assignments and drills current?	Do not assume previous-owner familiarity transfers.

BUYER FOCUS
Emergency equipment is not fully transferred with the keys. Registration, service dates, accounts and crew knowledge all need deliberate handover.

OFFSHORE READINESS

Questions before relying on emergency communications equipment

A ready arrangement can alert, identify and locate the yacht or survivors after loss of ship power and can be deployed rapidly by more than one crew member.

Area	Question to resolve
EPIRB	Is it correctly registered, within date and accessible or float-free?
Personal equipment	Which crew carry PLBs and who takes each handheld?
Local locating	Which SART, AIS-SART and visual signals support final rescue?
Power	How are handheld and satellite-device batteries maintained?
Coverage	Which networks serve the intended route and diversion areas?
Drills	Can the crew retrieve and operate equipment in darkness or heavy weather?

Quick readiness check

	Readiness statement
☐	Every beacon and radio has a current register, location and assigned user.
☐	EPIRB, PLBs and satellite devices are correctly registered.
☐	Battery, hydrostatic-release and service dates cover the intended voyage.
☐	Approved self-tests and radio checks have been completed.
☐	Equipment can be retrieved without entering a likely fire or flood space.
☐	At least one recognised distress alert and one local communication path remain after blackout.
☐	Grab-bag, liferaft and abandonment assignments are practised.
☐	Printed activation, cancellation and emergency-contact information is available.

KEY TAKEAWAY

Dependable emergency communications combine recognised distress alerts, correct registration, independent batteries, accessible deployment, local locating aids and practised crew action.

Guidance to consult

Use the current vessel emergency and abandonment plans and the installed EPIRB, PLB, DSC, satellite, SART and handheld-radio manufacturers' instructions, together with applicable registration, carriage and operator requirements.

Understanding Yacht Systems

Practical guides for owners, buyers
and offshore cruising crews.

AMTG-045

Understanding Emergency Communications Equipment

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