



Operational Realities of Global Search and Rescue: Defining Accountability in Command and Control

A Protocols-Based Framework for Interoperability
under ICAO Annex 12 and the IAMSAR Manual

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THE ICAO ANNEXES

THE GLOBAL STANDARDS FOR SAFE, SECURE & EFFICIENT AVIATION

The International Civil Aviation Organization (ICAO) develops Standards and Recommended Practices (SARPs) through its 19 Annexes to ensure safe, secure, efficient and environmentally responsible international aviation.

1		Personnel Licensing	Licensing of flight crew, air traffic controllers and other personnel.
2		Rules of the Air	Rules for the conduct of aircraft in flight.
3		Meteorological Service for International Air Navigation	Standards for meteorological observations, forecasts and information.
4		Aeronautical Charts	Specifications for aeronautical charts and related products.
5		Units of Measurement	Units of measurement to be used in air and ground operations.
6		Operation of Aircraft	Standards for aircraft operation and dispatch.
7		Aircraft Nationality and Registration Marks	Rules for aircraft nationality, registration and marking.
8		Airworthiness of Aircraft	Standards for the design, certification and maintenance of aircraft.
9		Facilitation	Facilitation of international air transport.
10		Aeronautical Telecommunications	Standards for communication, navigation and surveillance systems.
11		Air Traffic Services	Standards for air traffic services and procedures.
12		Search and Rescue	Standards for search and rescue services and coordination.
13		Aircraft Accident and Incident Investigation	Standards for the investigation of accidents and incidents.
14		Aerodromes	Standards and recommended practices for aerodrome design and operations.
15		Aeronautical Information Services	Standards for aeronautical information services.
16		Environmental Protection	Standards for minimizing the environmental impact of aviation.
17		Security	Standards for safeguarding civil aviation against acts of unlawful interference.
18		The Safe Transport of Dangerous Goods by Air	Standards for the safe transport of dangerous goods by air.
19		Safety Management	Standards for safety management systems (SMS) in aviation.

Together, the 19 Annexes form the foundation of international civil aviation, ensuring a harmonized and safer sky for all.

ICAO | UNITING AVIATION FOR A BETTER WORLD

International Obligations Under ICAO Annex 12

- **The Legal Basis:** Chicago Convention on International Civil Aviation, Annex 12 (Search and Rescue).
- **State Obligation:** Contracting States shall establish and provide SAR services within their territories and designated Search and Rescue Regions (SRRs).
- **The Non-Delegable Core:** Sovereign states bear the ultimate operational accountability for managing alerts and executing missions within their geographic boundaries.

What Defines an RCC? (Per IAMSAR Manual Vol. I & II)

- **24/7 Operational Availability:** Continuous, uninterrupted readiness with immediate communication access.
- **Pre-Delegated Launch Authority:** Immediate, legally binding command to task and deploy physical Search and Rescue Units (SRUs).
- **Designated SMC Capability:** Qualified Search and Rescue Mission Coordinators on desk to run environmental drift modeling, determine probability of detection, and construct search grids.
- **Direct Tactical Communications:** Dedicated, redundant networks linking the center directly to surface vessels, aircraft, and on-scene coordinators.
- **Geographic Jurisdiction:** Formally registered and bound to a specific, recognized SRR within the international master SAR plan.



Operational Contrast:

Execution vs. Facilitation

True RCC / JRCC

Operational Authority | Direct, pre-delegated command to task and launch Search and Rescue Units (SRUs) with direct tactical control, localized mission planning, and asset deployment.

SAR Mission Coordination (SMC) | Houses active, qualified SMC staff to run environmental drift modeling and execute search patterns.

Domain Integration | Seamlessly bridges maritime and aeronautical domains under a unified tactical command structure.

Jurisdictional Role | Formally registered as the ultimate operational authority for a specific, bound SRR.

Regional Air Navigation Service Provider (ANSP) / Communications Hub

Orderly separation of transit traffic, upper-airspace management, and route billing.

Administrative oversight; holds no sovereign authority to launch physical assets.

Functions strictly as a SPOC (SAR Point of Contact) to relay automated messages down the chain.

Focused primarily on civil aviation telecommunications networks and radar tracking.

Facilitates regional telecom data crossing boundaries without possessing localized jurisdiction.

The Operational Risk of Title Misnomer

- **The Hazard of Mislabeling:** Presenting administrative Air Navigation Service Providers (ANSPs) or communications hubs as "RCCs" introduces dangerous ambiguity into global response networks.
- **The Chain of Delay:** Intermediary regional entities that lack localized asset control add an extra layer of routing, potentially creating an administrative bottleneck during time-sensitive operations.
- **The Necessity of the Direct Line:** For seamless international interoperability, global centers require direct, unmediated communication with the localized national assets that own the physical ships and aircraft.



A Functional Regional Baseline: JRCC Miami Model

- **The Scope:** JRCC Miami operates as a high-tempo, multi-mission unified command covering vast oceanic and aeronautical sectors in the Atlantic and Caribbean.
- **The Execution Pipeline:**
 1. **Immediate Intake:** Sub-surface, surface, and aeronautical alerts synthesized instantly.
 2. **Direct Tasking:** Direct operational command over multi-mission ships, long-range aircraft, and rotary rescue assets.
 3. **Domain Integration:** Seamlessly bridges aeronautical and maritime domains under unified SMC leadership.
- **Interoperability Standard:** Serving as an accessible, authoritative anchor that interfaces directly with localized sovereign nations.



Safeguarding the International Master SAR Plan

- **Adherence to Definitions:** Regional entities must be accurately designated based on functional capacity. Upper-airspace ANSPs as SPOCs/Communication Hubs; active tactical command posts as RCCs.
- **Protecting the Framework:** Ensuring individual States retain localized tactical execution capability and direct asset accountability under Annex 12.
- **Our Shared Goal:** Eradicating operational friction to guarantee rapid, unambiguous lifesaving response across international boundaries.

