E.V. Persephone

Communications Systems Field Guide
Issued under license by Weyland-Yutani Interstellar Logistics Division, 2147.
Revision: 3A — For Crew Distribution Only
Unauthorized duplication or alteration prohibited under Interstellar Commerce Code 19.7C.

CONTENTS

E.V. Persephone 1
PART I: PRIMARY COMMUNICATIONS ARRAY (ENCRYPTED) 3
1.0 System Overview 3
2.0 Component Identification 4
3.0 Power Requirements 7
4.0 Maintenance Procedures 9
5.0 Repair Procedures 11
6.0 Security Notes 18
PART II: EMERGENCY COMMUNICATIONS BUOY 21
1.0 Deployment 21
2.0 Operation 23
3.0 Service Life 24

4.0 Limitations 26
5.0 Crew Note 26
PART III: EMERGENCY BROADCAST SYSTEM (UHF, UNENCRYPTED) 28
1.0 System Overview 28
2.0 Component Identification 29
3.0 Maintenance Procedures 31
4.0 Transmission Procedures 34
5.0 Channel Discipline 36
6.0 Brevity / Cant Appendix 37
ANNEXES 40
Annex A: Daily and Weekly Log Sheets 40
A.1 Transmission Log Template 40
Annex B: Troubleshooting Flowcharts 41
B.1 Primary Array: No Signal 41
Annex C: Glossary of Terms 43
Annex D: Training Exercises 44
D.1 Radio Discipline Drill 44
D.2 Fault Simulation 44
D.3 Stress Transmission 45
D.4 Written Exam (Sample Questions) 45
Annex E: Crew Advisory Notes 47
Annex F: Corporate Disclaimer 48

PART I: PRIMARY COMMUNICATIONS ARRAY (ENCRYPTED)

1.0 System Overview

The Class-V Hyperwave Communications Array is the principal long-range communications system aboard the E.V. Persephone. It is the only system rated for encrypted faster-than-light message transmission across interstellar distances. All mission reports, scientific findings, cargo manifests, and crew logs transmitted beyond the immediate system must pass through this array.

The Hyperwave Array operates on a quantum-entanglement carrier principle licensed exclusively to Weyland-Yutani under contract with the Interstellar Commerce Commission. While other firms may offer parallel products, only W-Y equipment is certified for military-grade key rotation and long-term cipher integrity. Crews are reminded that use of any non-certified comms systems, or bypassing the encryption module, is a violation of ICC Articles 45–47 and may result in civil penalties, mission cancellation, and loss of hazard pay.

Key Attributes of the System:

- Range: Unlimited, limited only by entangled-pair decay and available key refresh.

- Throughput: Up to 64 kb/s per channel. Optimized for text, telemetry, compressed imagery. *Not* optimized for live voice, which should be routed through UHF or tightbeam systems where

possible.

- Security: End-to-end quantum cipher with rolling 512-bit key rotation every 12 minutes.
- Resilience: Dual redundancy; array continues to function in degraded mode with one SPU offline.
- Fragility: Antennae, crypto-modules, and cooling loops are precision-built. Unauthorized field improvisation will degrade system integrity and void corporate guarantee.

REMEMBER: The encrypted comms array is not a toy. Do not attempt to "save power" by disabling encryption, and do not attempt to "boost range" by bypassing safety interlocks. Both actions are illegal, traceable, and punishable by removal from crew manifest.

2.0 Component Identification

The Primary Communications Array is composed of the following major subsystems. Each is labeled within the ship schematics (Ref. Plate 7-B, Annex 2).

1. Hyperwave Antenna Arrays
    - Function: Capture and transmit entangled-signal waveforms.

- Location: Fore and aft, mounted on telescoping booms.
- Notes: Keep clear of debris fields and docking arms; misalignment as small as 0.02° can cause total signal dropout. Antennae must be fully extended for FTL traffic.

2. Signal Processing Units (SPUs)

- Function: Convert shipboard signals into hyperwave carrier format.
- Notes: Contain radiation-sensitive circuits. Each SPU includes three status LEDs:
  - Green – Nominal
  - Yellow – Warning (check soon)
  - Red – Failure (replace immediately)
- Spare SPUs are stored in armored lockers B-17 and D-04.

3. Crypto-Module

- Function: Manages encryption, cipher rotation, and key sync.
- Description: Encased in a hardened black cube, marked WY-CRYP-47B. Weight: 14.2 kg.

- Notes: Only swappable under cold shutdown conditions. Handle with antistatic gloves.
- Warnings: DO NOT open casing. DO NOT immerse in coolant. DO NOT attempt "repair."

4. Cooling Loops
   - Function: Maintain crypto-module at operating temp (7–10°C).
   - Notes: Loops must be fully charged. Check for bubbles, discoloration, or sediment.
   - Common failure: loop blockage → module overheating → automatic shutdown.

5. Power Regulation Panel
   - Function: Routes stable current from reactor auxiliaries to array subsystems.
   - Notes: Arc flashes are common if panel is left exposed. Always secure housing before powering up.

Diagram Note: The actual technical diagram is restricted, but crew should familiarize themselves with the schematic labels in Annex 2.

3.0 Power Requirements

The Hyperwave Array requires significant, stable power input.

- Nominal Continuous Load: 22.5 kW. This load is sustained during normal message traffic.
- Auxiliary Load: 5.0 kW per SPU, drawn during signal processing peaks.
- Startup Surge: Up to 30 kW for 12 seconds during array initialization.
- Emergency Cut-In Priority: Level 2 (second only to life support).

CAUTION: Attempting to run the array on reduced power may result in corrupted transmissions. Corrupted transmissions are indistinguishable from authentic traffic until decrypted, at which point they appear as nonsense. This creates mission-critical risks: garbled coordinates, false manifests, unreadable distress calls.

Power Routing Procedures:

1. Verify reactor auxiliaries are in green band.
2. Confirm breaker 3A-17 is closed.
3. Engage regulation panel.

4. Monitor amperage spike; abort startup if amperage exceeds 140%.

Common Mistakes:

- Crew rerouting power from comms to environmental systems without authorization.
- Forgetting to re-engage breakers after emergency load shedding.
- Attempting to run array on portable generators (inadequate output, hazardous).

REMINDER: All power allocations are logged. Deliberate tampering with comms power priority is reportable misconduct.

4.0 Maintenance Procedures

Daily Maintenance Checklist:

1. Run SPU self-test: Enter DIAG-RUN-04 at the comms console. Wait for pass/fail report. Do not interrupt sequence.

2. Verify coolant pressure: Gauge must remain in green band (1.2–1.6 bar). If outside, notify Engineering.

3. Confirm antenna alignment: Use console readout. Alignment must remain within ±0.01°. Misalignments require gimbal recalibration.

4. Inspect power panel: Check for scorched wiring, loose housings, or metallic odor.

Weekly Maintenance:

- Swap cipher cache: Enter CIPHER-CYCLE. New keys load from registry. Log completion time.

- Confirm key sync: Check against ICC central registry. If unreachable, note “NO SYNC” in log.

- Thermal service: Shut down module, apply approved paste to cooling plates, restart.

Quarterly Maintenance:

- Replace all SPU filters.
- Inspect gimbal motors for wear.
- Run full transmission test with Core Systems echo server.

Training Note: Untrained personnel attempting crypto-module handling may permanently disable the unit. Always defer to Communications Technician or Engineering Chief.

5.0 Repair Procedures

The Hyperwave Array is a critical system. When it fails, your capacity to interact with the broader universe drops to zero. Repairs should always be logged and performed by qualified technical crew, but in practice, any hand on deck may need to attempt field repair in emergency circumstances.

5.1 Common Fault: Loss of Carrier

This fault presents as a red “NO CARRIER” status on the comms console. Common causes: antenna misalignment, SPU failure, or power dropout.

Procedure:

1. Verify Antenna Gimbal Power
    - Access control panel 7-B.
    - Check status lights on gimbal motors. If unlit, reroute power.
    - WARNING: Do not attempt manual repositioning. Gimbals are precision-calibrated.
2. Run SPU Reset (RESET-SIG-A)
    - At console, input RESET-SIG-A.
    - Wait 120 seconds for SPU cycle.

- If no response, move to Step 3.

3. Replace SPU

   - Retrieve spare WY-SPU-2147 from locker.
   - Power down affected unit.
   - Disconnect harness carefully; latching clips are fragile.
   - Slot new SPU into bay. Confirm “green” status LED before reseating panel.

4. Log Repair Attempt

   - Record date, time, crew ID, and outcome in Comms Logbook Annex C.

NOTE: If loss of carrier persists after SPU replacement, fault lies with crypto-module or antenna integrity. Escalate immediately to Engineering.

5.2 Common Fault: Degraded Encryption
Symptoms: transmission received but rejected as “UNVERIFIED” by recipient, or console reports “CIPHER DESYNC.”

Procedure:

1. Confirm Cipher Sync
    - Enter SYNC-CHECK.
    - If “NO SYNC,” attempt re-sync with registry.
    - If registry unreachable, note in log.
2. Cycle Crypto-Module
    - Enter CIPHER-CYCLE.
    - Module will pause transmission for ~90 seconds.
    - Wait for “SYNC RESTORED.”
3. Replace Crypto-Module
    - Remove WY-CRYP-47B.
    - Install new module from armored locker.

- Always use antistatic gloves.
- WARNING: module weight is 14.2 kg; use two crew if possible.

4. Post-Repair Check
   - Run SYNC-CHECK again.
   - Log completion.

5.3 Common Fault: Thermal Shutdown
Crypto-module shuts down automatically when coolant loop fails.
Symptoms: console displays “MODULE TEMP HIGH.”

Procedure:

1. Inspect Coolant Loop Pressure
    - Gauge must read 1.2–1.6 bar.
    - If pressure below 1.0, check for leaks.
2. Replace Coolant Cartridge (WY-COOL-S)
    - Shut down array.
    - Remove cartridge from loop.
    - Dispose via hazardous waste protocols.
    - Insert new cartridge; purge air by vent valve.
3. Restart Module
    - Wait 60 seconds for cooling cycle.
    - Monitor temperature display; must stabilize under 10°C.

4. Escalate if Unresolved

    - If temp rises >20°C after restart, disable array.
    - Mark system “INOPERABLE.”
    - Note in Engineering Log Annex E.

5.4 Prohibited Actions

- Do not use coolant substitutes (alcohol, water, refrigerant gas).
- Do not attempt to "bridge" damaged modules with jury-rigged wiring.
- Do not bypass crypto-module to "send raw carrier." This is an ICC violation and will result in disciplinary action.

6.0 Security Notes

The Hyperwave Array is subject to strict regulation under ICC Articles 41–50. Security is not optional; it is the backbone of corporate communications integrity.

6.1 Encryption Standards

- Default: End-to-end quantum cipher.
- Key Rotation: Every 12 minutes.
- Keys provided by central registry; cached locally for 72 hours.
- Expired keys are auto-purged.

6.2 Legal Restrictions

- All transmissions must remain encrypted.
- Deliberate bypass constitutes tampering under ICC Article 45.
- Tampering penalties include: loss of license, wage forfeiture, forfeiture of hazard insurance.

6.3 Logging Requirements

- Every transmission is logged with: timestamp, sender ID, recipient ID, checksum.
- Logs are immutable and reviewed at port inspection.
- Missing or altered logs trigger fines.

6.4 Anomaly Protocols

- If cipher sync anomaly occurs:
    1. Pause transmissions.
    2. Note timestamp.
    3. Log anomaly.
    4. Attempt resync.
- If resync fails: revert to Emergency Broadcast System (Part III).

6.5 Crew Advisory

Remember: encryption protects the Company, not the crew. Personal communications are scanned, logged, and flagged for keywords. Use personal mail channels at your own discretion.

WARNING:

DO NOT ATTEMPT TO FABRICATE SPARES.
CRYPTO-MODULES MANUFACTURED OUTSIDE WY FACILITIES WILL FAIL

AUDIT AND MAY TRIGGER AUTOMATIC SYSTEM SELF-DESTRUCT OF ASSOCIATED HARDWARE.

PART II: EMERGENCY COMMUNICATIONS BUOY

1.0 Deployment

The Emergency Communications Buoy (ECB) is designed to automatically preserve and transmit the final state of the vessel in the event of catastrophic failure, abandonment, or crew incapacity. Deployment may be automatic or manual.

Automatic Deployment:

- Triggered by Abandon-Ship sequence (ref. Ship Systems Manual, Section 12).
- Also triggered by any of the following:
    1. Catastrophic reactor failure.
    2. Pressure hull breach exceeding 20% total volume.
    3. Life support offline > 12 hours.
- Sequence:
    1. Buoy is ejected from housing bay.
    2. Protective aeroshell deploys.

3. Transmitter activates after 60-second delay.

4. Encoded message begins repeating omni-directionally.

Manual Deployment:

- Access Bridge Comms Console.
- Remove switchguard on lever marked “BUOY DEPLOY.”
- Confirm intent on console (double-key input required).
- WARNING: Manual deployment cannot be reversed. Once launched, buoy cannot be retrieved without EVA and specialized docking gear.

Crew Advisory: If you are considering manual deployment, assume the Company already considers the mission unrecoverable.

2.0 Operation

Once deployed, the ECB functions independently of the parent vessel.

- Message Content:
    - Ship registry and class.
    - Crew manifest (including cryo occupants).
    - Mission assignment and number.
    - Last known vector, velocity, and star fix.
    - Final 96 hours of telemetry (environmental, reactor, navigation).
    - Audio/video snippets: final 5 minutes of bridge and engineering feeds.
- Transmission Behavior:
    - Message repeats continuously every 11.7 seconds.
    - Output is omni-directional.
    - No encryption override: message is broadcast in encoded format only.

- Autonomy:
    - Buoy requires no maintenance.
    - No command channel exists. Buoy cannot be queried or altered post-launch.

Important: The buoy does not “call for rescue.” It broadcasts data. Whether or not anyone hears it, or responds, is beyond company control.

3.0 Service Life

The ECB is powered by a self-contained micro-fission battery.

- Rated Life: 500 years continuous broadcast.
- Design Redundancy: Dual-core battery ensures operation continues even if one fails.
- Power Decay Curve: Output remains nominal for 480 years, then decays sharply.
- Survivability:
    - Radiation-hardened casing.

    - Shock-resistant to 40 g.
    - Pressure tolerance: 800 atmospheres (suitable for gas giant entry).
- Failure Modes:
    - Antenna destruction (rare).
    - Complete obliteration (meteor impact, hostile action).

Comparison Note: Service life of the buoy is significantly longer than any vessel, outpost, or human settlement to date. Its message will likely outlast your crisis.

4.0 Limitations

While impressive, the ECB has significant operational limitations:

- Non-Interactive: Once deployed, the buoy cannot be contacted, redirected, or reprogrammed. It is a dumb broadcast device.
- Fixed Message: The pre-encoded distress package cannot be updated. Even if crew survive, the buoy will continue transmitting the "final" state.
- Signal Saturation: By design, the buoy transmits across all frequencies simultaneously. This increases detection chances but creates noise that may interfere with local comms.
- Detection Range: Effective only within ~2 light-years. Beyond that, signals degrade below ICC recovery threshold.
- Narrative Limitation: The buoy does not save the crew. It saves the data.

5.0 Crew Note

Deployment ensures:

- Insurance claims are supported.

- Mission failures can be investigated.
- Future crews can be briefed on "lessons learned."

It does not ensure:

- Your rescue.
- Your family's receiving word.
- Continuation of hazard pay.

Crew reports from past incidents:

- *"The buoy launched. We watched it drift. It felt like signing our own death warrant."* — Survivor Log, Rigel Outpost Incident.
- *"We deployed it too early. By the time rescue arrived, they assumed us already dead. They did not check the wreck."* — Salvage Debrief, Weyland-Yutani internal file 17-3C.

WARNING: Do not confuse buoy deployment with a call for help. It is not.

PART III: EMERGENCY BROADCAST SYSTEM (UHF, UNENCRYPTED)

1.0 System Overview

The Emergency Broadcast System (EBS) is the final line of communication available to the crew of the *E.V. Persephone*. Unlike the Primary Hyperwave Array, the EBS is not elegant, not efficient, and not encrypted. It is, however, rugged and repairable under almost any circumstance.

The EBS exists for one purpose: to allow stranded or damaged vessels to signal for assistance within local space. Its design philosophy prioritizes simplicity and survivability over sophistication.

Design Characteristics:

- Range: Approximately 300 km line-of-sight under nominal power. With orbital relay, range extends to ~1,200 km.
- Mode: Analog UHF voice/data transmission.
- Encryption: None. All transmissions are open.
- Resilience: Resistant to electromagnetic pulses, radiation, and mechanical shock.

- Ease of Use: Single push-to-talk operation. No software dependencies.

The EBS requires no specialized training beyond common sense and adherence to established transmission protocols. This is intentional. In the aftermath of hull breaches, reactor scrams, or boarding actions, communications cannot rely on a handful of trained operators. Every crew member must be capable of picking up the handset and operating within the system's rules.

Historical Note: The EBS is based on Colonial Administration survival radio designs dating back to the 21st century. These designs were tested in environments ranging from desert combat zones to suborbital emergency capsules. The fundamental principle remains unchanged: keep it simple, keep it working.

2.0 Component Identification

The EBS consists of a handful of modular components. Each is accessible for inspection and replacement by untrained crew.

1. Whip Antennae
    - Telescoping, shock-mounted rods.
    - Designed to flex under stress rather than break.

- Protective ceramic coating prevents corrosion in vacuum and atmosphere.
- Field Repair: Damaged sections can be cut and re-extended. Signal loss acceptable up to 30% length reduction.

2. UHF Transceiver Unit

- Rugged metal-cased box.
- Contains oscillator, amplifier, and frequency selector.
- Status LEDs:
  - Green – Operational
  - Yellow – Weak Signal / Check Antenna
  - Red – Fault / Replace Fuse
- Field Repair: Replace fuse, reseat board, tap casing firmly.

3. Analog Control Set

- Rotary knobs for frequency tuning.
- Push-to-talk (PTT) switch.
- Volume control.

- Simplicity ensures continued function even if digital systems fail.

4. Power Interface

- Accepts direct ship auxiliary feed or swappable battery packs.
- Battery packs last ~36 hours continuous transmission.
- Packs can be recharged via solar trickle kit (stowed with survival equipment).

Maintenance Advisory: All parts are designed for hand replacement with no tools beyond a screwdriver. The system will accept non-Weyland spares without complaint. Unlike the Hyperwave Array, this system is not monitored for compliance.

3.0 Maintenance Procedures

Weekly Checklist:

1. Extend antenna fully and visually inspect for bends or cracks.
2. Clean antenna contacts with provided wipes.
3. Check transceiver LEDs by pressing TEST button.

4. Switch to each pre-set frequency; confirm static.

5. Test transmission with bridge station. Confirm “HOWME” returned.

6. Replace fuses if warning indicators flash.

Monthly Checklist:

- Remove and reseat transceiver unit. Dust interior with compressed gas.
- Cycle each control knob through full range. Listen for scratchy audio. Apply contact cleaner if necessary.
- Discharge and recharge one battery pack. Swap to ensure rotation.

Emergency Maintenance:

- If system fails entirely:
    - Step 1: Replace fuse.
    - Step 2: Swap to fresh battery pack.
    - Step 3: Bypass ship power and run on battery direct.
    - Step 4: If no improvement, replace transceiver.

Warning: Never attempt to “boost” transmission range by plugging into reactor bus. This will overdrive amplifier and may cause permanent failure.

4.0 Transmission Procedures

When using the EBS, clarity and brevity are critical. Transmission rules are designed to maximize signal intelligibility under stress.

Standard Procedure:

1. Prepare – Choose correct channel/frequency.
2. Identify – State your callsign and intended recipient.
3. Transmit – Deliver message in under 5 seconds. Speak clearly, slowly, in monotone.
4. Acknowledge – Await reply. Confirm receipt with brevity code.

Example:

- "Persephone Actual, this is Bravo Two. Hull breach at Section D. Request ANGELOPS, HOWME."
- "Bravo Two, this is Persephone Actual. Copy hull breach, ANGELOPS noted. AFFIRMATIVE."

Do Not:

- Ramble or add personal commentary.

- Transmit while another crew member is speaking.
- Use sarcasm, jokes, or filler words.

Voice Discipline Tips:

- Use monotone. Stress distorts voice.
- Spell critical numbers digit by digit (“one-four” not “fourteen”).
- Use NATO phonetic alphabet for names and codes.

5.0 Channel Discipline

Radio discipline is the difference between coordination and chaos.

Core Rules:

- One voice at a time. Never "step on" another transmission.
- Silence is default. Do not speak unless mission-critical.
- Acknowledge all messages. Every instruction must be confirmed.
- Keep it short. Messages longer than 5 seconds are discouraged.

Priority Levels:

1. Distress Traffic – Life-threatening emergency. Absolute priority.
2. Coordination Traffic – Orders, maneuvers, system status.
3. Routine Traffic – Maintenance, location check-ins.

Discipline Violations:

- Talking over another crew member → results in garbled messages.
- Failing to acknowledge → forces repeats, wasting time.

- Overly long transmissions → blocks channel.

Case Study:
In 2122, the ore hauler *Nostromo* experienced communication breakdown with its shuttle *Narcissus*. Mis-timed, overlapping transmissions caused crew to miss critical updates. The result was total crew loss with only one survivor.

6.0 Brevity / Cant Appendix

Brevity codes condense complex concepts into single words. Use them whenever possible.

Core Codes:

- AFFIRMATIVE – Yes / Understood.
- NEGATIVE – No / Not possible.
- HOWME – Confirm receipt.
- PARTYLINE – Unsecured channel; assume third-party listeners.
- STATIONRESCUE – Establish stable orbit and signal for pickup.
- ANGELOPS – Friendly rescue/recovery forces commencing operations.

- RESCUEBEACON – Broadcasting own location/status for recovery teams.

Usage Notes:

- AFFIRMATIVE and NEGATIVE must always be stated in full; never shorten to “Affirm” or “Neg.”
- HOWME should be used liberally to confirm important data (coordinates, times, vectors).
- PARTYLINE alerts others to compromised comms – immediately shift frequency.
- ANGELOPS implies friendly units are inbound; non-involved crew should clear space.
- RESCUEBEACON is used by survivors broadcasting fixed location.

Sample Dialogue:

- A: “Persephone, this is Echo. Engine restart complete. HOWME.”
- B: “Echo, Persephone. Engine restart confirmed. AFFIRMATIVE.”
- A: “Persephone, this is Echo. PARTYLINE, shifting channel.”
- B: “Echo, Persephone. Roger, shifting.”

ANNEXES

Annex A: Daily and Weekly Log Sheets

All communications activity must be logged. Logs are the only verifiable record of system use and will be inspected at next port of call. Failure to maintain accurate logs may result in fines, loss of corporate bonus, or disciplinary action.

A.1 Transmission Log Template

Timestamp (Ship Time)	Callsign (Sender)	Callsign (Recipient)	Channel/Freq	Message Summary	Brevity Used	ACK (Y/N)	Operator ID
2147-06-19 13:42	Persephone Actual	Bravo 1	433.00 MHz	Hull breach reported	ANGELOPS	Y	T.K-293

Annex B: Troubleshooting Flowcharts

When comms fail, panic is your enemy. Use flowcharts to isolate fault conditions.

B.1 Primary Array: No Signal

```
NO SIGNAL?
   |
   v
Check Power LEDs -> OFF? -> Restore Reactor Feed
   |
   v
Power OK -> Check Temp -> HIGH? -> Replace Coolant
   |
   v
Temp Normal -> Run SPU Reset
   |
   v
Signal Restored? YES -> Resume Ops

                    NO -> Replace SPU
                        |
                        v
                Still No Signal? -> Replace Crypto Module
                        |
                        v
                Still No Signal? -> Declare Array INOPERABLE. Switch
to EBS.
```

B.2 Emergency Broadcast System: No Transmission

```
NO TRANSMISSION?
   |
   v
Check Battery -> DEAD? -> Replace Pack
   |
   v
Battery OK -> Fuse Intact? -> NO -> Replace Fuse
   |
   v
Fuse OK -> Antenna Extended? -> NO -> Extend
   |
   v
Antenna Extended -> Static Heard? -> NO -> Replace Transceiver
   |
   v
System Fails -> Declare Comms BLACK. Log Incident.
```

Annex C: Glossary of Terms

- Actual – The commanding officer of a unit. “Persephone Actual” = ship’s captain.
- Blackout – Total loss of communications capability.
- Carrier – The signal baseline upon which communications are encoded.
- Cipher Desync – Loss of synchronization between crypto-module and registry keys.
- HOWME – Brevity code for confirmation of receipt.
- Line-of-Sight – Direct path between transmitter and receiver without obstruction.
- Partyline – Brevity code meaning “channel is unsecured; others listening.”
- SPU (Signal Processing Unit) – Converts signals into hyperwave-compatible format.
- Vector – Direction of travel in three dimensions.
- WY-CRYP-47B – Standard corporate crypto-module, classified.

Annex D: Training Exercises

The following exercises are mandatory for all new crew within 72 hours of assignment.

D.1 Radio Discipline Drill

- Crew split into pairs.
- Instructor assigns random tasks (e.g., “report hull breach,” “request medical support”).
- Each pair must communicate using brevity codes only.
- Messages longer than 5 seconds penalized.
- Talking over another transmission penalized.

Objective: Condition crew to communicate under pressure with maximum efficiency.

D.2 Fault Simulation

- Instructor disables either antenna, SPU, or fuse in training rig.
- Crew member must use flowchart to diagnose and repair.

- Time to resolution logged.

Objective: Ensure every crew member can perform basic fault isolation.

D.3 Stress Transmission

- Room filled with noise (alarms, shouting, recorded static).
- Crew member must transmit distress call using brevity codes.
- Instructor intentionally overlaps with other transmissions.

Objective: Train crew to remain calm, wait for silence, then transmit clearly.

D.4 Written Exam (Sample Questions)

1. What is the maximum service life of the Emergency Communications Buoy?
    - a) 50 years
    - b) 100 years
    - c) 500 years *(correct)*
    - d) Unlimited

2. Which brevity code signals an unsecured channel?
    - a) RESCUEBEACON
    - b) PARTYLINE *(correct)*
    - c) HOWME
    - d) NEGATIVE
3. During Primary Array "Loss of Carrier," what is the third troubleshooting step?
    - a) Replace Crypto-Module
    - b) Replace SPU *(correct)*
    - c) Run CIPHER-CYCLE
    - d) Declare array INOPERABLE

Annex E: Crew Advisory Notes

From prior incidents:

- *"When the buoy launched, half the crew thought help was coming. It wasn't. We wasted three days waiting instead of working the problem."* — Salvage Report, LV-642.

- *"UHF worked even after everything else died. We stripped the wires, ran it off a forklift battery, and still got a signal out."* — Survivor Debrief, Themis Station.

- *"People talk too much. Everyone wants to explain themselves over the radio. The only thing that saved us was the engineer screaming 'SILENCE' until we remembered the book."* — Crew Log, *Syrinx*.

Annex F: Corporate Disclaimer

Weyland-Yutani assumes no liability for crew fatalities, mission failure, or salvage loss resulting from improper use of communication equipment. This manual is provided as-is, without warranty, and supersedes any prior field instructions. Unauthorized duplication of this document is punishable under ICC Regulations.