

VHF RADIO EQUIPMENT and CHANNELS



What We are Covering

VHF Simplex and Duplex channels for SAR

How to operate the Tait TP8115 portable VHF radio

How to deploy the “Yellow Box” portable VHF repeater

The 'glue' that holds together Operations

Communications Plan

Form SAR 41
Ver Dec 2010



Operation Name:	Erua	Time:	2230hrs
Prepared By:	J. Osborne	Date:	11/5

1. Operational Period for this Plan (Date and Time)

From:	0530hrs 12/5	To:	1800hrs 12/5
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2. Key Contact Details

	Land Line	Cell Phone	Email/Fax/Other
Incident Controller	04 4357861	024 763290	
Information/Liaison/Media	04 4357861	024 763290	
Operations Section	04 4357861		
Planning & Intel Section	04 4357861		
Logistics Section	04 4357861		
Staging Area		021 547890	
Comms Unit Leader		021 896575	

3. VHF Comms

	Chan Name	Chan ID	Bank/Ch #	Comments
Command & Control	ESB 58			Direct channel for command/control
Operations	ESB 57			Duplex for all parts of search area
Team Simplex	ESX 07			Team to team. Could use for relaying messages to Ops if needed
Air Ops Channel	MSX 27			Ground to air

4. HF Comms

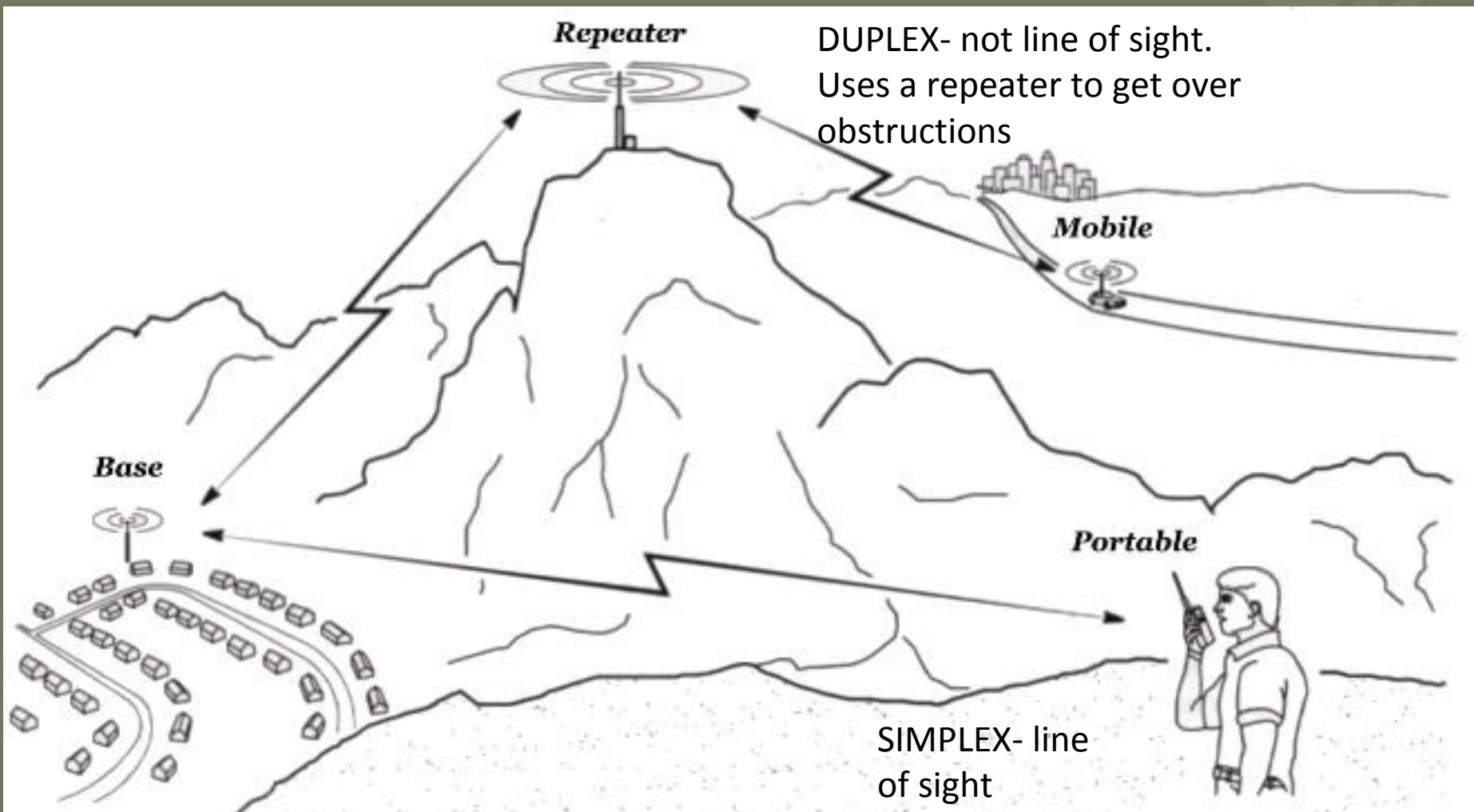
Chan Name	HF Schedule Time	Comments
1	as needed	Night time frequency. Use as backup for VHF. Listening watch will be maintained by Ops
2	as needed	Day time frequency. Use as backup for VHF. Listening watch will be maintained by Ops

5. Notes/Other Comms

<p>Call Signs ICP : Erua Base Team 1 : Erua 1 Team 2 : Erua 2</p> <p>Schedule time : Hourly on the hour</p> <p>Alternate Channel: In event you cannot raise Ops on above channels use DOC 20. This may not be accessible in some parts of search area due to terrain</p>
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Approved: J.OSBORNE Date/Time: 11/5 2245HRS

Simplex and Duplex Explained



LandSAR and Police Simplex

Part of a Standard 16 Channels common to all LandSAR and Police SAR radios (and all Police vehicles equipped with digital radios).

ESX07 LandSAR/Police Primary Simplex

ESX53 LandSAR Police Secondary Simplex

MSX27 LandSAR/Police/RNZAF Ground-to-air



LandSAR & Police Duplex – Portable Repeaters

Part of a Standard 16 Channels common to all LandSAR and Police SAR radios (and all Police vehicles equipped with digital radios).

ESB57
ESB58
ESB 59
ESB 60

North Island generally use ESB57 for ops
and ESB58 for training

South Island generally use ESB 59 for ops
and ESB60 for training

(Photo: Police-owned “Yellow Box” repeater)



LandSAR & Police Duplex – Fixed Repeaters

Part of a Standard 16 Channels common to all LandSAR and Police SAR radios (and all Police vehicles equipped with digital radios).

MS08
MS17
EE122
EE196

Commonly installed in many operationally busy areas (esp. Lower North Island and Waikato) where no shared facilities available with other agencies

Licensing requirements apply – contact LandSAR National Office

(Photo: LandSAR Wellington Mt Baker Repeater)



CIMS Liaison Channels

LandSAR, Police, Fire (Urban & Rural), Ambulance and CDEM. So assets can communicate using these channels.

All agencies will have the channels, but naming may vary.

ESX39 Liaison Simplex

ESX39 in LandSAR & Police radios

DOC 33 in DOC radios

Fire 10 in most Fire radios.

Also “Liaison simplex” to some users

ESB164 Liaison Repeater

ESB164 in LandSAR/Police radios

Other agency naming varies by region

DOC Channels

DOC has a standard naming convention between areas;
most repeater channels are re-used at least 5 times
around NZ .

DOC 15 Primary Simplex

DOC 17 Secondary Simplex

DOC 20 Portable Operations Repeater (Duplex)

DOC 33 ESX39 Simplex in LandSAR/Police radios

LandSAR Radios have all common DOC repeater channels +
above channels

Surf Life Saving & Coastguard

Standard 16 Channels common to all LandSAR and Police SAR radios (and all Police vehicles equipped with digital radios) include the following SIMPLEX channels:

MM06: Marine ship-to-ship (can be used ship-to-team if necessary)
MM16 : Marine Emergency/Calling Channel

LandSAR radios also have MM69 Simplex for communicating with Surf Life Saving NZ

Most local marine repeaters available in LandSAR radios

Note: A license is required to operate on marine frequencies
LandSAR groups and members are encouraged to obtain appropriate license from Coastguard Boating Education.

NZ Fire Service Channels

These channels are common to NZFS Urban appliances (VHF), Incident Command/Hazmat vehicles, and Rural Fire appliances

- Fire 1 Incident Ground simplex
- Fire 2 Command/Control
- Fire 3 BA Control
(Breathing Apparatus Control)
- Fire 4 Air Operations
(This channel often in agricultural I helicopters, even if not normally used for SAR)
- Fire 10 ESX39 Simplex in LandSAR/Police radios



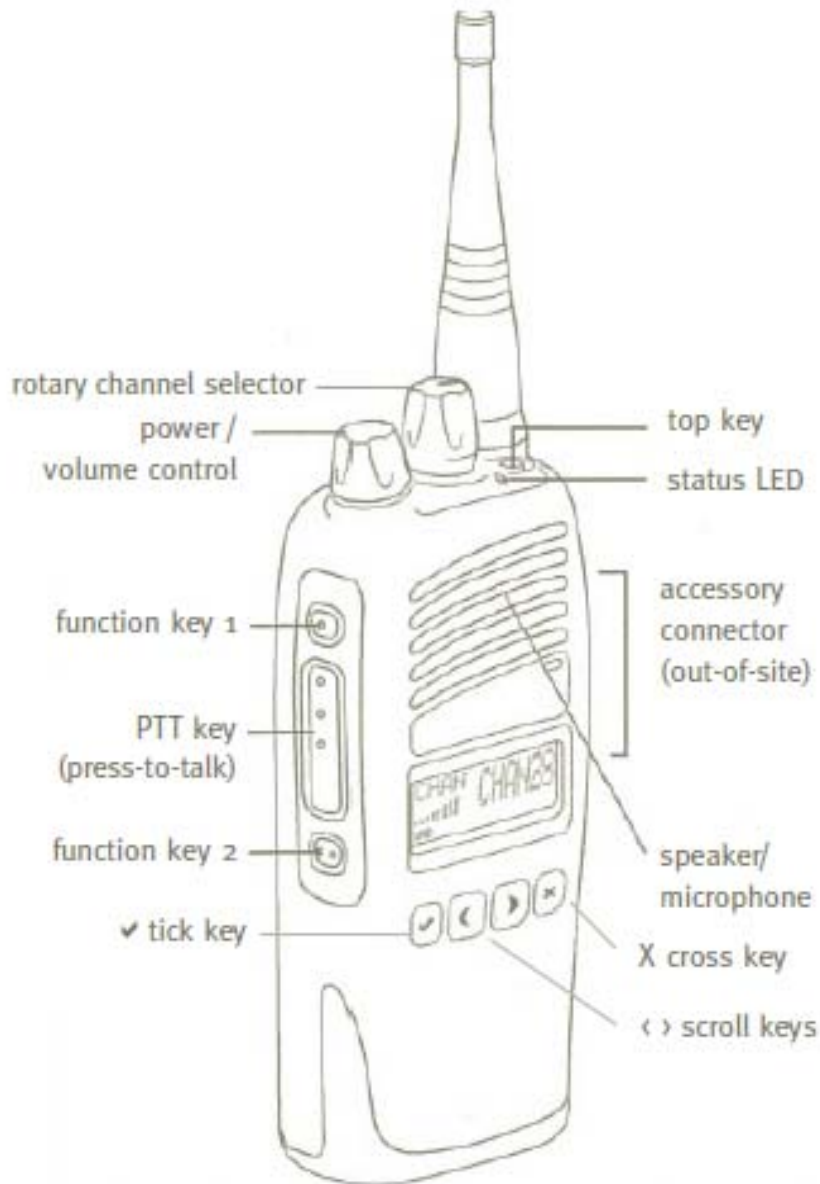
These channels may only be used when Rural/Urban Fire are involved in an incident and when not used for fire fighting purposes. Fire 4 may be used at other times when no alternative available, but only if no fire operations within radio range (up to 30km)

(Photo: NZFS Command/Hazmat vehicle)

TAIT Radio- TP8115



TP8115 Instructions



Long and short key presses

A short key press is less than one second

A long key press is more than one second

Function key 1

Long press: Enable key-selector lock

Function key 2

Short press: Backlight on/off

Long press: Background scan*

< > Scroll keys

Change selected channel

✓ tick key and X cross key

X Disable key-selector lock

Rotary channel selector

1 ESX07*	7 MS08	13 MSX27*
2 ESX53	8 MS17	14 DOC20
3 ESB57	9 EE122	15 MM06
4 ESB58	10 EE196	16 MM16
5 ESB59	11 ESX39	
6 ESB60	12 ESB164	

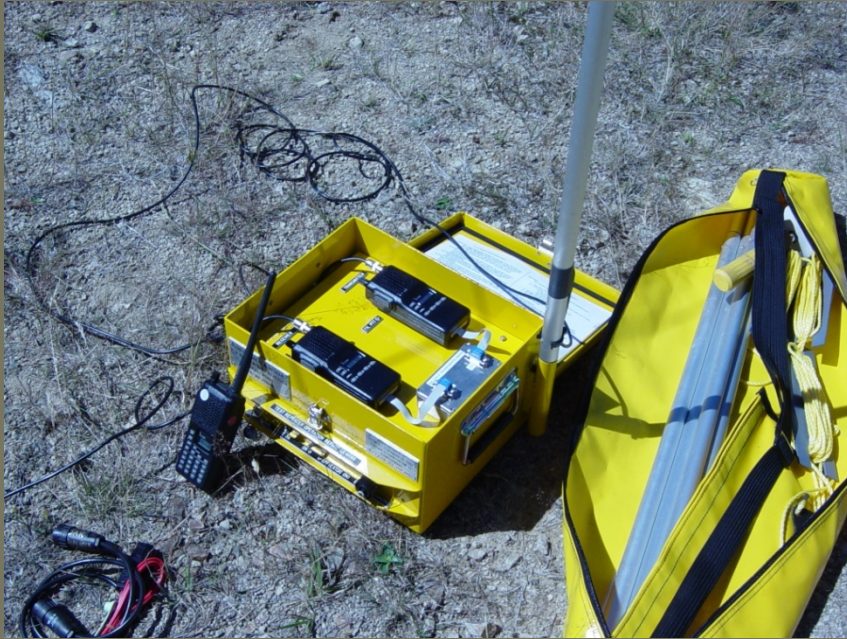
* Denotes channel scanned by background scan function

Basic Fault finding

Common Faults are

- Flat Battery
- Incorrectly fitted Battery
- Damaged aerial or connector
- Broken aerial

“Yellow Box” Portable Repeaters



Practical

Divide into 2 teams.

Phase 1 :

A team will assemble the repeater, test it and talk through it to the other group.
Disassemble and re-pack

Then the 2 teams will use the two LandSAR simplex channels and the CIMS simplex channel to pass messages between each other

Phase 2

Swap roles

Those being transmitted to will re assemble, test the repeater, and transmit to the other team. Then pass messages via the 3 simplex channels

Phase 3

1 team will switch to a repeater channel and activate the background scan function on the Tait radios. The other team will then radio on ESX07 to demonstrate the scan function.

Debrief



REFERENCES

- LandSAR NZ Radio Procedures Manual
- LandSAR NZ Aide Memoir Cards LandSAR
- NZ Team Member Competencies - this module can be used to assess against the competencies if necessary

ACKNOWLEDGEMENTS

- **Subject matter expert : Ross Browne (prime material)**
- **Material contribution and review: Members of NZ LandSAR, NZ Police and AREC**

Resource developed by Global SAR Services Ltd for NZ LandSAR