

# VHF Repeater Network



Since 2006, Australian Volunteer Coast Guard has been working to establish a VHF radio repeater network extending across Victoria's coast from Mallacoota to Portland. Regular monitoring of distress Channel 16 and working Channel 67 in the Gippsland Lakes area and up to 80km offshore has also been established as part of this project.

The project, partially funded by Marine Safety Victoria's Boating Safety and Facilities Program is designed to ensure VHF marine coverage is extended into key boating locations. Valuable support and technical expertise has been provided by Telstra Country Wide and Telstra's Managed Customer Network Solutions, as well as CFA Communications.

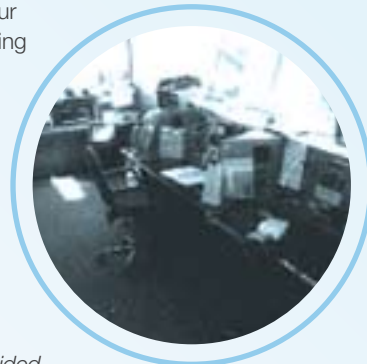
The repeater network's primary function is to complement the Offshore Tracking Sheets (OTS) system, managed by Coast Guard. Vessel owners planning an extended voyage are encouraged to submit an OTS to a Coast Guard Limited Coast Station (LCS) for forwarding to the relevant LCS along the vessel's intended passage. The repeater network, combined with the OTS paper trail, allows Coast Guard to maintain a listening watch by resourcing its LCS when vessels are known to be in transit.

Callsign:	Coast Guard – Melbourne VMR 360
<b>Monitored Channels:</b>	VHF: 12 / 16 / 67 / 21 / 82 27Mhz: 86 / 88 HF: 2524
<b>Radio Coverage Area:</b>	Bass Strait North, Port Phillip Bay, Westernport Bay
<b>Regular Hours:</b>	Winter: 07.00 – 20.00 daily Summer: 07.00 – 22.00 daily After hours duty supervisor 03 9598 7003
<b>Services Provided:</b>	Offshore Tracking System (OTS)
<b>Weather broadcast:</b>	07.05 11.05 17.05 all channels except VHF 12 Storm, Gale Force Winds and other hazards issued as they come to hand.
<b>The Operators:</b>	A roster is maintained with 10 operators on a pager system. All operators are volunteers with various backgrounds ranging from communications specialists to building industry Trades, all are dedicated to the cause - ensuring vessels arrive safely at their intended destination. The time they allocate to manning limited coast radio stations is testimony to this.

▶ The introduction of the repeater network has vastly increased our area of coverage and enables greater use of the Offshore Tracking System. This has allowed NSW, Vic and SA to work together for the safety of all boat operators. Some examples where the repeaters have proven useful are:

*"In March 2008 a search was mounted for a fisherman who had not returned by the nominated time. Communications between Water Police and Coast Guard was less than ideal until changing to Arthur's Seat Repeater Channel 82."*

*"In May 2008 a concerned wife wanted to make contact with her husband, who was sailing from Bateman's Bay (NSW) to Geelong with friends. Due to a change in weather they had decided to shelter in Refuge Cove, Wilsons Promontory – a black spot for radio and mobile phone communications for many years. By accessing Mt Oberon Repeater Channel 22, Pt Franklin LCS was able to contact the man and advise his wife that all was well."*



Callsign: Coast Guard – Port Albert VMR 394	
<b>Monitored Channels:</b>	VHF: 16 / 22 / 81 27Mhz: 88 HF:2182 2524 4215 4483 6215 8291
<b>Radio Coverage Area:</b>	VHF: Seaspray, Deal Island, Queenscliff HF: Eden (NSW) to Kangaroo Island (SA)
<b>Regular Hours:</b>	Operates on a when available basis due to work commitments. Provides back up to Port Franklin. Most evenings from 18.00 to 22.00
<b>Services Provided:</b>	Weather broadcast: As a back up to Kevin at Port Franklin
<b>The Operators:</b>	Stan runs the station from his home and he is currently the only operator at Port Albert. He is hoping to have other members commit to a weekend roster in the summer months.

▶ The repeater network has made it much easier to keep in touch with Coastal Transit vessels passing through, many of which were uncontactable in the past if they were any distance from shore. We now have reliable coverage into popular anchorages such as Refuge Cove and Oberon Bay.

Incidents where the repeaters have been most useful were in the case of a fatal accident on one of our bars, when we could keep in touch with our RIB, which can be difficult at times due to this vessels low antenna height. Also on a tow from west of the Glennies Group, contact could be maintained throughout a 10 hour operation. This would not have previously been possible on VHF.

We do get more traffic since the repeaters were installed. We rarely fail to contact coastal transit vessels now and also have contact with some of the local pleasure vessels around Deal Island and west of the Prom, which was not possible before.



◀ Coast Guard – Port Albert VMR 394



Coast Guard  
Welshpool VMR 392 ▶

Callsign: Coast Guard – Welshpool VMR 392	
<b>Monitored Channels:</b>	VHF: 16 / 22 / 81 27mHz: 86 HF: 2524 4483 HF (Scan): 2182 4125 6215 8291
<b>Radio Coverage Area:</b>	VHF: Port Phillip Heads to the Oil rigs and Deal island on 81 HF: All of Bass Strait
<b>Regular Hours:</b>	07.00 – 22.00 daily in cooperation with VMR 394 – Port Albert
<b>Services Provided:</b>	Offshore Tracking System (OTS) Weather broadcast:
	08:05 MF/HF 2524
	08:10 VHF 81
	08:15 27Mhz 86
	12:35 HF 4483
	12:40 VHF 81
	12:45 27Mhz 86
	17:05 HF 4483
	17:10 VHF 81
	17:15 27Mhz 86
<b>The Operators:</b>	Husband and wife team Kevin and Noelene commenced in 2001 at Port Albert and moved to Port Franklin in August 2007. Their local knowledge about Port Albert and Port Welshpool is appreciated by many boaters.

▶ There were two incidents on 23 October 2007 when the channel 81 repeater was used to provide emergency communication. The vessel “Sea Magic” ran aground on the Port Albert bar just after midnight. The Port Franklin base was activated to provide communications while the Port Albert rescue boat CG19 went to their assistance. The vessel “Sea Magic” subsequently sank and the crew were taken off by CG19. About 07:00 the same morning Port Albert were mobilised to assist the vessel “Pamela May” which was disabled west of the Glennie Group. Once again Port Franklin LCS provided radio communication on channel 81. This incident took 12 hours and involved a tow of 53 miles.

# The VHF Repeater Network is here

## The Bass Strait VHF repeater network is now live.

The network, monitored by the Coast Guard, extends radio coverage across Victoria's coast from Portland to Mallacoota.

The project was partially funded by a grant from Marine Safety Victoria's Boating Safety and Facilities Program.

### Benefits of the VHF Repeater Network

- VHF marine coverage in key boating locations
- Clearer signals and greater range
- Regular monitoring of distress channel 16 and channel 67 in the Gippsland Lakes area and up to 80km offshore
- Combined with the Offshore Tracking Sheets system, Coast Guard use the network to keep a 'listening watch' when vessels are known to be in transit



- Telstra provided VHS Marine radio repeater site
- Coast Guard Limited Coast Station
- Water Police



Callsign: Coast Guard – Mallacoota VMR 375	
<b>Monitored Channels:</b>	VHF: 16 / 80 / 81 / 67 27MHz: 88 UHF (Scan): 1 – 40 HF (Scan): 2182 2524 4125 4483 6215 6516 Aircraft: 126.7
<b>Radio Coverage Area:</b>	VHF: Port Phillip Heads to the Oil rigs and Deal Island on 81 HF: All of Bass Strait
<b>Regular Hours:</b>	Listening 24 hours every day. Radios are set up in David's office and retransmitted to a receiver he carries with him around his property. It may take a few minutes to answer, so keep calling.
<b>Services:</b>	Offshore Tracking System (OTS) Weather Broadcasts: 07:10 19:10 VHF 67 & 27Mhz 86
<b>The Operators:</b>	David operates from home/work (he owns holiday units) and has been operating the radio station for 9 years.

In 1992, David broke down in a 40ft boat off Gabo Island and drifted for 2 days before making contact with a ham operator who organised a tow into Mallacoota. When he came to live in Mallacoota, David set up a radio base to help make sure the same doesn't happen to anyone else.

The VHF repeater at Mt Imlay gives him a clearer signal and a vastly greater range. Organisers and entrants in the Sydney to Hobart yacht race have also taken advantage of the greatly improved communications since this repeater was commissioned.



Coast Guard – Paynesville VMR 815

Callsign: Coast Guard – Paynesville VMR 815	
<b>Monitored Channels:</b>	VHF: 16 / 67 / 80 / 70 (DSC) HF: 2182 / 2524 / 4125 / 4483 + DSC 27MHz: 88
<b>Radio Coverage Area:</b>	VHF: Marlo to Seaspray and 45NM offshore
<b>Regular Hours:</b>	7 days / week 07:30 – 17:15
<b>Services Provided:</b>	Offshore Tracking System (OTS) Weather Broadcasts: 07:45 11:15 17:10 Any time on request VHF 67 via Mt Nowa Nowa transceiver
<b>The Operators:</b>	With 32 active members, the base is manned by appropriately qualified members on a rostered basis. The flotilla places a high priority on acquisition of MROCP licenses by its members and runs internally resourced Marine Radio Operators courses for its members and the public on a regular basis.

The provision of repeaters on Mt Taylor and Mt Nowa Nowa, a recent move into new premises and implementation of HF monitoring has significantly improved the capability of the flotilla's radio base to assist vessels both within the Gippsland Lakes and offshore. An example of the improved facility was a recent incident involving a vessel transiting offshore between Melbourne and Eden, who experienced fuel problems adjacent to Seaspray. The vessel was able to contact the base on the channel 80 repeater and an appropriate response was arranged. Prior to the provision of extended coverage via the repeater network this would not have been possible. In a number of other situations communications with vessels traveling offshore have been markedly improved ensuring safer journeys for those vessels.

Radio traffic on both VHF and 27 Mhz has increased significantly. VHF contacts with vessels has averaged 240 per month over the past 6 months, as against 65 per month for the same period in 2007. Some of this may be ascribed to natural growth but the proportion of VHF traffic growth is larger and is related to provision of increased coverage provided by the repeater network.

<b>Callsign:</b>	<b>Coast Guard – Port Fairy VMR 380</b>	
<b>Monitored Channels:</b>	VHF: 16 / 67 / 72 / 80 / 81 27Mhz: 86 / 94	
<b>Radio Coverage Area:</b>	VHF 81: Port McDonald (SA) to Warrnambool VHF 80: Port Fairy to Wilson’s Promontory	
<b>Regular Hours:</b>	Mon – Fri: 8:45 – 18:00	
<b>Services Provided:</b>	Offshore Tracking System (OTS) Weather broadcast:	
	08:45 – 9:15	VHF 81/80
	12:45 – 13:15	
	17:15	
<b>The Operators:</b>	A VHF marine radio antenna and receiver at Port Fairy CFA Fire Station links to a control unit in Joan’s home.	

▶ Joan says the VHF repeater “...is wonderful, because I can now hear vessels I’ve never heard before.”

<b>Callsign:</b>	<b>Coast Guard – Portland VMR 2233</b>	
<b>Monitored Channels:</b>	VHF: 12 / 16 / 67 / 72 / 81 DSC 27Mhz: 88 / 94 HF: 2524	
<b>Radio Coverage Area:</b>	VHF: Warrnambool – Pt McDonald (SA) and 100nm offshore	
<b>Regular Hours:</b>	Weekends / Public holidays 08:00 – 18:00	
<b>Services Provided:</b>	Offshore Tracking System (OTS) Weather broadcast:	
	08:45	27Mhz: 88/94;
	12:45	HF: 2524
	17:30	VHF: 16/72/81
<b>The Operators:</b>	Members operate on a roster, with two shifts per day when they are operating.	

▶ Boaters are starting to use the repeater network more as it provides much clearer communication over a far greater range than was previously possible.

<b>Callsign:</b>	<b>Coast Guard – Westernport (Hastings) VMR 361</b>	
<b>Monitored Channels:</b>	VHF: 16 / 67 / 21 / 22 / 81 / 82 27Mhz: 88 HF: 2524	
<b>Radio Coverage Area:</b>	Covers all of Westernport plus Bass Strait between Port Phillip Heads and Wilson’s Promontory.	
<b>Regular Hours:</b>	Weekends and public holidays 08:00 – 17:30 (or sunset during summer) On call 24/7 for rescue and assists	
<b>Services Provided:</b>	Offshore Tracking Sheets (OTS) Safety radio checks Weather broadcast:	
	08:05	27Mhz 86 / 88
	08:10	VHF 16 / 67
	08:15	HF 2524
	08:20	VHF 16 / 21
	10:55	27Mhz 86 / 88
	11:05	VHF 16 / 67
	11:20	VHF 16 / 21
	12:15	HF 2524
	14:50	27Mhz 86 / 88
	15:05	VHF 16 / 67
	15:20	VHF 16 / 21
	16:35	27Mhz 86 / 88
	16:40	VHF 16 / 67
	17:05	HF 2524
	17:20	VHF 16 / 21
<b>The Operators:</b>	Roy, Zoe and other members work a roster on the weekend working from both, the Coast Guard station and from home. Currently working on establishing a 7 day roster. Their reward is knowing they have done their best in sometimes challenging situations.	

▶ The repeater network has been well accepted and requires little change in procedures. It has provided better, clearer communication due to the topography in and around Westernport Bay and allows effective transmission as far as Wilson’s Promontory. A couple of noteworthy incidents...

A vessel making heavy weather at night in Bass Strait with a seasick crew were encouraged by CG operators who continued contact and talked them into safe anchorage, while vessel CG4 maintained a position to intercept should the vessel’s crew be unable to manage.

A vessel missing for 24 hours was finally located by the efforts of three LCS (Westernport, Port Albert, Port Welshpool), using the repeater network to communicate and map out possible vessel course and likely position.

# Marine Distress Communication

A number of communication options are available to the commercial and recreational boater, including;

- Marine Radio – Refer to Marine Safety Victoria publication “**Marine Radio Communications**” for detailed information on radio requirements and usage.
  - o VHF radio. Owners do not need a licence to have the equipment. Operators are required to hold a **Marine Radio Operators Certificate of Proficiency** or its equivalent. Talk to a Coast Guard member about Marine VHF radio training.
- Emergency Position Indicating Radio Beacon (EPIRB) – If you are operating more than 2 nautical miles offshore, an EPIRB is required on your vessel. An EPIRB is turned on as a last resort in a life-threatening situation, as it will activate major search and rescue teams.
- Satellite phone – in the right weather conditions, communication is worldwide; as long as there is someone to pick up the phone at the other end.
- Mobile phone – Take your phone, by all means but don’t think it will do the job of a radio in all situations. With a phone, only one person can hear your call. With a radio transmission, every station (including vessels) in your vicinity will hear your call.

**From 1 February 2009, only digital 406 MHz EPIRBs will be detected by satellite. Analogue 121.5 MHz will no longer be received.**

## Calling for Help

<b>MARINE RADIO</b>	27 MHz	Channel 88	Can be noisy, unreliable and can suffer from interference from the engine. Range is generally up to 20km.
	VHF	Channel 16	Monitored 24/7 in the Port Phillip Bay/Westernport area, and Limited Coast Stations in other areas at selected times. If no response on channel 16, try the local repeater – refer to the centrefold coverage chart in this document for channel information. Range is generally up to 50km but repeater channels can be further.
	HF	4125 KHz 6215 KHz 8291 KHz	Depending on frequencies used, coverage can be worldwide. Monitored 24/7 by National coast radio network. 2182 KHz is monitored by some Limited Coast Stations.
<b>PHONE</b>	<b>000</b>		
<b>EPIRB</b>	<b>Activate your distress beacon</b>		

## Recreational Vessels

- A marine radio is required on all powerboats (excluding PWCs) and yachts when operating more than 2 nautical miles from the coast.
- On recreational vessels, 27 MHz or VHF are the most common.

**Refer to the “Victorian Recreational Boating Safety Handbook” for additional information.**

## Commercial Vessels

- All commercial vessels must be equipped with radio equipment appropriate to their area of operation and comply with Section 12 of the USL Code.
- A VHF installation must be fitted to all Class A, B, C, D and 1E vessels.

**Refer to the “Victorian Commercial Vessel Safety Handbook” for additional information.**

The **general exemption** from carrying a radio - for fishing vessels under 8 metres and operating within 5 nautical miles offshore – has been **rescinded**. Effective from **1 August 2008**.