

New Search and Rescue Aircraft



Boatmaster

**New TIER 1 Aircraft
Dornier 328**

Darwin, Perth, Melbourne, Cairns and Brisbane





Funding for safety programs and new lifejacket regulation feedback

Recreational boaters, search and rescue organisations and boating facilities across Gippsland have received a major boost with over half a million dollars being allocated under the 2006-07 Boating Safety and Facilities Program.

This Program is funded from re-investing funds from recreational boat operator licensing fees and vessel registration revenue back into boating safety initiatives.

Improved navigational aids, signage, berths, pontoons and improvements in launching ramps will be an obvious benefit to local and visiting boat users to the region. In addition, many clubs and boating organizations will benefit from the funding of educational programs for their members.

With the number of boating related fatalities at its lowest in 15 years, there is good reason to contribute this decline to increased safety awareness campaigns, new safety equipment regulations and the introduction of boat licensing four years ago.

Search and rescue organizations across Gippsland will receive funding to replace rescue vessels, purchase equipment and enroll members in training programs that enhance safety skills.

With Australian Volunteer Coast Guard receiving \$67,382 from the Program boat operators will benefit from improved marine communications with the installation of VHF repeaters at Mt Imlay, Mt Taylor, Mt Fatigue, Mt Oberon, Arthur's Seat and Cape Otway - the project will be funded under the new Marine Communications category.

Research conducted by Marine Safety Victoria shows that more than 55 per cent of boaters are complying with the new regulations and wearing life jackets as required. Director of Marine Safety Victoria, Brian Riches, said most boaters are aware of the new regulations introduced in December 2005 and are doing the right thing.

'We want all boaters to make it home safely after a day out on the water', said Mr Riches.

An advertising campaign was launched in October to reinforce the rules relating to the wearing of life jackets, including the need for all children under the age of 10 to wear a life jacket when the boat is underway and the child is in an open area of the boat.

Mr Riches said that observational studies undertaken have highlighted that over 40 per cent of children aged under 10 are not complying with this requirement which is quite alarming.

A \$134 fine applies to those found to be not wearing a life jacket.



Asergeant Brian Hall
Officer In Charge, Gippsland Water
Police

It is now just under 10 months since the implementation of compulsory wearing of life jackets in Victorian waters. After the initial period of some operators not understanding their obligations I am happy to report that the compliance with the new regulations is very good. This is reflected in the minimal penalty infringement notices issued by members of the Gippsland Water police in that period for failing to comply. In the first instance we do try to educate boat operators but some people just don't get the message.

It's interesting to note that since the new regulations there has not been a boating fatality on Victorian waters. Keep up the good work everyone.

The amalgamation of a number of our volunteer units into the Coast Guard organisation continues smoothly with many benefits to the individual units. The most obvious being the replacement of vessels with purpose built - to survey - patrol and rescue vessels, for utilization in specific areas of operation, for example the supply of a PWC to the Lakes Entrance unit for fast response to incidents on the Lakes Entrance bar. From a marine coordinators point of view it

is comforting to know that the volunteers we call out are well equipped and trained to undertake the tasks that we sometimes request of them.

Another very pleasing benefit has been the increase in membership that some units have experienced. On making the decision to join the Coast Guard the Paynesville Rescue Squad had 12 members wishing to make the transition. They now have 34 active members two of those new members being female, which is great to see. I hope other Flotillas are experiencing a similar benefit.



Highline transfers 'Helimed1
Paramedics' April 2006



Lakes Entrance VF18

There was plenty of action in the first half of the year with things quieting down with the onset of winter. With 2 significant vessel salvage operations (each lasting for more than 4 days) there was plenty of experience gained by those newer members.

New Vessel – CG218

With the funding assistance from the local Fishermen's Co-operative, the East Gippsland Shire Council and local businesses the Flotilla has acquired a 700cc Yamaha Jet Ski and rescue sled. Life Saving Victoria who had used the unit for water safety during the Commonwealth Games offered the Jet Ski to the Flotilla at quite a reasonable price (with minimal hours on the clock). The Jet Ski will enable rapid response to marine incidents and allow access to patients in conditions (i.e. within the surf break) that would not normally be possible with our existing vessels.

Marine Incidents:-

(Since October 2005 – last edition)

- 23/11/05** – 5.3m Haines escorted across bar due to poor conditions
- 14/12/05** – Assisted 40' yacht with ruptured water lift muffler
- 26/12/05** – Transport CF and Police to fire at Barrier Landing
- 27/12/05** – Towed cruiser from Flannigan Island back to Lakes Entrance
- 30/12/05** – Towed 6m Edencraft across bar due to engine failure
- 31/12/05** – Transported CFA to fire caused by fireworks in Cunningham Arm.
- 5/01/06** - Responded to commercial fishing vessel (Tarpeena) which had ran aground on the western spit while crossing the bar. 2 crew were removed

from vessel, which capsized later that evening. Assisted with salvage of vessel over the following 5 days.

13/02/06 - Responded to 35' yacht that had lost propulsion offshore. Vessel was handed over to Gippsland Water Police who later towed the vessel across the bar.

11/03/06 – Assisted with water safety for Marlay Point overnight yacht race

15/03/06 - Responded to 15' runabout with flat battery on Lake Tyers. Vessel towed back to boat ramp.

14/04/06 - Transported CFA to fire at Barrier Landing.

5/06/06 – Responded to report of injured seal. Transported Parks Victoria personnel to inspect.

17/06/06 – Assisted with salvage of commercial fishing vessel (Pegasus) which had run aground on the western spit while crossing bar.



PORT ALBERT – VF19

Port Albert Flotilla has been involved in several operations since the beginning of the year.

On the 11th January we had a radio call on channel 16 at 0540 from the yacht “Saniano” with 3 POB. They were off the south end of Wilson’s Promontory with a disabled engine and requested assistance. CG19 left Port Albert at 0630 and located the vessel at 0730. The long tow to Port Welshpool commenced and the vessel was secured alongside at 1130. CG19 returned to Port Albert and after fuelling and cleaning the boat the crew stood down at 1230. The assisted vessel was a Farr 38 with an estimated value of \$200,000. For the expenditure of \$348 in fuel and 28 man hours of time we received the extremely generous donation of \$50!!

On 14th January we received a radio call on 27.88 Mhz at 1130. A 5.5m Cruise Craft with 2 P.O.B. had engine failure off McLoughlins Beach and requested assistance. CG19 with 3 crew left Port Albert and located the vessel at 1235. The vessel was taken in tow and taken to McLoughlins Beach via Mann’s Entrance. CG19 arrived back at Port Albert at 1400 and crew stood down at 1445.

On 16th February at 1155 we received a radio call on 27.88 Mhz from a 5.8 metre runabout off Kearney’s Entrance with engine failure. CG19 with 3 crew attended and located the vessel at 1300. The vessel was taken in tow and arrived back at Port Albert at 1400.

On 4th April at 1514 we received a radio call on 4125 khz from the motor sailer “Heart of Oak” in Refuge Cove. Their starter motor had failed. Repairs

had been attempted but were unsuccessful. After consulting a diesel mechanic it was decided that there was no option but to go to Refuge Cove and bring the starter motor back to have it repaired. CG19 left Port Albert at 1710, collected the starter motor and arrived back at Port Albert at 2000 hrs. While at Refuge Cove we received a request for assistance from the South African yacht “Owatu”. The yacht had 1 P.O.B. and was on a trip from Capetown to New Zealand. He was low on engine lubricating oil and requested that we deliver some oil to him when we returned with the starter motor. The next day the starter motor was taken to an auto electrician who declared it unrepairable. We then contacted a Bukh agent in Sydney who had a starter motor available (at a cost of a little over \$2000 !) and could send it Air Express to Yarram. The motor was in Yarram 18 hours after making the phone call.

On the 8th April CG19 departed Port Albert at 0740 with the starter motor and engine oil on board. We arrived at Refuge Cove at 0900 and after delivering the oil and starter motor we waited until the crew of “Heart of Oak” had fitted the starter motor and got the engine going. CG19 got back to Port Albert at 1330. For this exercise CG19 used \$565 in fuel and 32 manhours of crew time. However we ended up with some very grateful customers and a satisfactory outcome.

While delivering the oil to the South African yacht the skipper of the yacht "Rumblefish", also anchored in Refuge Cove approached the Coast Guard crew. This was the yacht that called the Coast Guard for assistance to evacuate a student who had been attacked by European Wasps a few days

earlier. This time he had found an apparently injured black cockatoo in the vicinity of Refuge Cove and was caring for it aboard his yacht. He had contacted the park ranger who could not come to collect it but suggested that he get it to a vet as soon as possible. So he asked the Coast Guard for help.

The black cockatoo was transported to Port Albert aboard the Coast Guard vessel. The bird was taken to the vet in Yarram, who diagnosed it as having a viral infection (no, it was NOT bird flu!). By this time it had not eaten for a few days and was in a weak condition. The bird was handed over to Jenny at Woodside, who looks after injured wildlife. At last report it is expected to survive and eventually be returned to the wild.

Over a period of a few days there were four incidents at Refuge Cove involving three different vessels. Each case was a little out of the ordinary, especially the one involving the black cockatoo. These incidents involved Coast Guard members for a considerable amount of time in chasing up a starter motor and oil for two boats and transporting the sick bird to the vet, quite apart from the time spent on the water travelling back and forth to Refuge Cove. In addition fuel to the cost of about \$300 was used by the Coast Guard vessel in these incidents. On the 22nd April at 1240 we received a phone call from the owner of the fishing boat "Albatross II". He had been in touch with the crew of the vessel by sat-phone. They were on a trip from Flinders Island to Port Welshpool. They were taking on water and all electrics including the bilge pump were out. We notified Gippsland Water Police of the situation. Attempts to contact the vessel by sat-phone were unsuccessful.

Gippsland Water Police requested Coast Guard to put to sea and render what assistance was necessary. CG19 departed Port Albert at 1400 and located the "Albatross II" at 38° 39'.0S 146°48'.4E at about 1500. Conditions were too rough to transfer a petrol driven pump we had on board. We offered to take the crew off but at the request of the skipper we escorted the vessel towards Port Albert.

At 1537 the "Albatross II" lost engine power due to flooding of the engine compartment. The crew were instructed to drop the anchor and to deploy a buoy on a long line to mark the position of the vessel. The crew were transferred to CG19 with considerable difficulty in the rough conditions. We arrived back at Port Albert at 1610. The "Albatross II" subsequently sank. The next day we took Gippsland Ports personnel out to the site of the sinking to examine the wreck as it posed a hazard to navigation.

On the 5th August at 1300 we received a "Pan Pan" radio call from a 5.5 metre runabout with 2 POB. that was out of fuel. They had departed Port Welshpool and while offshore they realised they were getting low on fuel. They headed for Port Albert because it was nearer than Port Welshpool and ran out of fuel just inside the entrance. The vessel was located and towed to Port Albert, arriving at 1415. One of the crew was then driven to Port Welshpool to pick up their car and trailer.

At present CG19 is out of service. Corrosion was discovered in the aluminium fuel tanks. We are having new tanks constructed. It is hoped to have the boat operational again soon.

Albatross 2 off Port Albert



This incident highlights the need for skippers to use a marine communications medium that 'broadcasts' as opposed to the point to point SAT-Phone system used during this emergency situation.

Local commercial operators should register their details with the nearest Coast Guard Limited Coast Station. (Associate membership is an ideal means of fulfilling this requirement). **Refer to MSV Commercial Safety Handbook 'Local VHF Requirements' Page 27.**

Marlo – VF21



VF21 members completed PWC training with SEAMEC in November, endorsement of boat licenses was required as the members are now operating a jet ski funded under the CSESP grant.

A concept drawing has been produced for the design of a joint CFA/Coast Guard facility that will provide both agencies with improved security for their equipment as well as improved amenities such as galley, change rooms and showers.

Peter Short recently relinquished the position of Flotilla Commander due to work commitments; Jeff Trewin has been appointed and will continue to manage the Flotilla's operations.

Paynesville – VF22

“VMR815 - COAST GUARD PAYNESVILLE”

- goes seven days a week -

The success of the Paynesville radio base during Christmas Holidays 2005/2006 and the continued use of the base each weekend since, has prompted VF22 to go on air 7 days a week from November 2006.

Commander Alex Fowler said that the response from members has been nothing short of fantastic and while the flotilla will certainly be a little stretched it is planned to make it a permanent service. The radio coverage will mean that both the local boating community, tourists and transit offshore traffic will have radio coverage 7 days a week between 0730 & 1700 hrs.

The increased hours of operation will be of assistance to boats going over the Lakes Entrance Bar. It is preferred that boat operators logging in their movements across the Bar use VHF Channel 16, as the reception on the 27MHz band is proving unreliable to Paynesville.

After hours coverage will still be available via the Coast guard telephone system, as telephone calls to the Radio base are automatically diverted to the Duty Controller. The Radio Base Number is (03) 5156 0106. It is hoped that in the not-too-distant future the Radio Base will operate 24/7.



Associate Membership. Gippsland

The Associate Membership program for Gippsland is now managed through the Paynesville Flotilla. This should provide a more efficient service to associate members in Gippsland.

New applications for Associate Membership can be forwarded direct to “PO Box 112 Paynesville, 3880”; or through any of the Gippsland flotillas.

AVCGA Associate Membership provides the member with up to three assists/tows a year in all areas serviced by Coast Guard in Victoria, not just Gippsland. Also, members can contact any of the Coast Guard radio bases to log their movements, obtain weather reports, or to ensure their radios are working efficiently. Radio Bases at Paynesville, Mallacoota, Melbourne (Port Phillip and Western Port Bays) operate daily. Bases at Port Albert and Port Fairy operate on weekends and public holidays.

Gippsland Coast Guard Flotillas with Rescue Vessels are at Lakes Entrance, Marlo, Paynesville, Port Albert and Port Welshpool. Coast Guard operates a radio base at Mallacoota.

Associate Membership subscription is \$50 per annum. As well as providing you with a “break-down service”, your

support assists the Coast Guard maintain its operations in Gippsland. An Application Form for Associate Membership is printed at the end of Boatmaster.

New Boat Grant

Celebrations are the order of the day at VF22. A grant of \$140,000.00 has been approved for the purchase of a new rescue vessel.

The Grant will allow Paynesville Coast Guard to replace its aging 6 metre rescue vessel with a larger, more efficient vessel for rescue work on the Gippsland Lakes and adjacent waters.

All that remains now is for the Flotilla to raise the additional capital needed to match the grant conditions. The flotilla has established a fund-raising committee with the task of raising \$45,000 over the next six months.

New Members

Once again we are pleased to report that our membership is continuing to grow and at the time of writing this article Paynesville Flotilla VF22 has 37 active members with several more potential members. The demographics of our membership are also changing with the number of younger members growing, and also more female members.

Our active training program initiated by Training Officer Ray Lyons is one of the reasons for our success in recruiting new members. Ray has recently been appointed as Vice Captain Training Victorian Squadron, this means yet more work for Ray. To assist Ray, David Lindsay has been appointed as Ray's Assistant with a view to becoming the VF 22 Training Officer.

Several Provisional Members have recently become full members and are well on their way to obtaining Competent Crew Status. All members recently undertook a First Aid Course and a Radio Operators Certificate Course is to be held prior to Christmas.



STO Ron Shepherd invests Leigh Hardwick as a full member at VF22 AGM

Associate Memberships

Paynesville has promoted the Associate membership scheme from the outset, and has now taken over co-ordinating the scheme for the region. We look forward to expanding that number of associate members during the coming season.

One of our major promotions of the associate membership scheme has been through our attendance at the Lions Club's Sunday market, held monthly in Paynesville. Several of our members including Phil Neale & Jeff Williams have played a vital role in this promotion.

Second Annual General Meeting

Paynesville Flotilla VF22 held its second AGM at the Paynesville Motor cruiser Club on Monday 18th September 2006. Attendance exceeded last year with 60 people in attendance, including Members & Partners, Councillor Jane Rowe, Mayor of East Gippsland Shire, Craig Ingram MLA, Ron Shepherd STO and representatives

of CFA, Gippsland Ports, Water Police, SES, Rural Ambulance, Paynesville Motor Cruiser Club & Gippsland Lakes Yacht Club.

Ron Shepherd invested Ray Lyons as Vice Captain Training Victorian Squadron and Leigh Hardwick as a full member of VF22.

The number of other services in attendance is a reflection of the support and recognition gained by VF22 in throughout the area.



Ray Lyons Invested as Vice Captain Training by Ron Shepherd STO

Marlay Point Overnight Race 2006

VF22 was again responsible for the on water safety competitors during the 2006 Marley Point t overnight yacht race. VF22 members set up two radio bases to monitor the boats through the entire race. A mobile base was set up at Holland's landing and co-ordinated rescue vessels until the fleet passed through McLenan Straits, before handing over to VF22 Base in Paynesville.

Radio coverage and rescue vessels were in action from late Saturday afternoon until late Sunday afternoon. Members undertook shifts at both radio bases and on the water.

Once again this year the provision of these safety measures could not have taken place without the assistance of

other Coast Guard Flotillas and SES units. VF 22 wishes to acknowledge and thank the members of Port Welshpool VF20, Carrum VF7 Lakes Entrance VF18, Bairnsdale SES & Yarram SES.

The race ran smoothly and no major incidents occurred, thanks to the efforts of all involved.

VF22 Paynesville 2006 Statistics

This year from January to September the following statistics have been accrued:

Number of activations: 81

Number of persons assisted: 43

Number of vessels assisted: 33

Value of vessels assisted:\$1,390,000

Radio calls 27mHZ & VHF: 1302

Public Events attended: 18

VF22 man Hours: 3667



VF7 & VF22 prior to the race start

Cover Article – A New Era for Search and Rescue in Australia

The Australian Maritime Safety Authority's (AMSA) second dedicated search and rescue aircraft, the Dornier 328 turbo-prop, *Nemo 2*, was commissioned in Perth, by AMSA's Chief Executive Officer, Clive Davidson.

"The new Perth based Dornier is a great boost to AMSA's ability to rapidly respond to a search and rescue incident in Western Australia and it is a vital asset in the Government's emergency response arrangements."

The dedicated search and rescue service is part of the \$74 million funding package announced by the Minister for Transport and Regional Services, Warren Truss, in the 2004 and 2005 Budgets to strengthen AMSA's search and rescue capability around Australia.

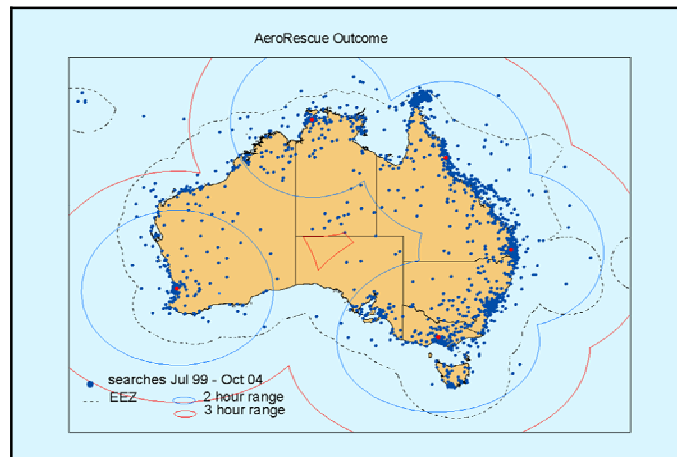
The twin turbine engine Dornier 328 is fitted with the latest technology including Forward Looking Infra-Red (FLIR) camera system, satellite communications and direction finding equipment to detect and home in on emergency beacon transmissions and radio distress calls, and by the end of the year surface search radar. Life rafts and other emergency equipment can be deployed from the Dornier to people in emergencies. The Dornier is capable of operating at speeds in excess of 600 kilometres per hour, in all weather conditions and will be ready to respond to an emergency within 30 minutes.

The Dornier is operated by AeroRescue Pty Ltd, a subsidiary of the Paspaley Group, who won the contracts to provide five aircraft for search and rescue services at strategic locations around the Australian coastline. AeroRescue already provides the dedicated search and rescue Dornier aircraft (*Nemo 1*) for AMSA in Darwin. The other three search and rescue aircraft are to be progressively introduced at Cairns in October 2006, Melbourne in December 2006 and Brisbane in February 2007.

The Dornier is an important part of AMSA's multi-disciplinary approach to

maritime and aviation emergency response and will be available under a whole of Government approach to other agencies.

Drop capability of 5 aircraft servicable



SAR Aircraft home base locations



View from right observer station





**Cruise speed 335knts, 400Nm transit
3.29hrs on task below 1500ft.**



**Drop capability – Dewatering Pump & Stores
delivery capsule**



Stores dispatch platform

- Elta EL/M-2022 Maritime Surveillance Radar
 - Strip search for oil pollution detection
 - MTI, DBS, SAR, ISAR and SART detection & display
- FLIR - FSI Star SAFIRE III
- SAR DF517 & AR5000 RF Scanner & DF
- SAAB R4A Automatic Identification System (AIS)
- ADS(B) input & output transceiver
- 3 Iridium sat phones
- Aerodata Moving Map System (MMS)
- Bi-spectral IR/UV scanner on two aircraft
 - Cairns and Melbourne



Sensor Station & FLIR display

Hidden hazards – ‘Cold Water’

After thirty minutes or more of immersion, death may occur from hypothermia. The reason for this is that water has a specific heat 1000 times that of air and a thermal conductivity of about 25 times that of air. Thus, when a body is immersed in water below body temperature (37°C), it will inevitably cool to hypothermic levels at a rate dependent on:

- Temperature differential
- Clothing insulation
- Rate of agitation of the water
- Body heat production produced by shivering and exercise
- Ratio of body mass to surface area
- Subcutaneous fat thickness
- State of physical fitness
- Diet prior to immersion
- Physical behaviour and body posture in the water

As the deep body temperature falls, humans lapse into unconsciousness. Death may occur in two ways - drowning through incapacitation, and cardiac arrest. Death from drowning will occur in a lightly dressed individual even wearing a lifejacket, approximately one hour after immersion in water at 5°C, or two hours in water at 10°C, or in six hours or less at 15°C (Reference 57).

If the deep body temperature continues to fall, death occurs on average from cardiac arrest somewhere below a body core temperature of 24°C. The lowest recorded survival temperature in an accidental victim is 13.7°C. However, after surgical induction of hypothermia, there has been one reported incident of resuscitation from a body core temperature of 9°C.

If the immersed person has survived the initial two stages of immersion, i.e. cold shock and swimming failure, then the next hurdle to face is hypothermia. It is now known that this per se may not be the cause of death. These curves must be used with caution. As Golden pointed out in 1996 (Reference 57), the predicted 50% survival times for fully clothed men in water wearing lifejackets are 1 hour at 5°C, 2 hours at

10°C, and 6 hours at 15°C. Yet these figures are difficult to validate in the laboratory where the body temperature only falls about two or three degrees in the equivalent time. There must be another cause of death. Golden explained that a conscious survivor in a seaway will make the physical effort to keep his/her back against the waves, but when physically impaired through muscle cooling, semi-conscious and with a loss of determined will to survive, both of which occur after a body core temperature drop between 2-3°C, then the survivor turns into the waves and drowns. He also emphasized the point that death will occur much quicker from drowning if a lifejacket is not worn.

Brooks C.J., Survival in Cold Waters, Staying Alive: Transport Canada, 2003

THE EARLY YEARS – Formation of the Australian Volunteer Coast Guard

By the late, TED MADDEN P/National Commodore AVCGA

One summer evening late in 1960, I was sitting in the kitchen of the late Bill Down's house in Beaumaris with Bill and a bottle of beer. We were both, at the time, officers of the newly-formed Beaumaris Motor Yacht Squadron; Bill was, I think, Vice-Commodore, and I was Operations Officer. We were talking about some of the horrible things we had seen happening, or nearly happening, in Beaumaris Bay. As the evening progressed, so did our determination to do something about it.

I mentioned to Bill that I had read a story about the United States Coast Guard Auxiliary in the Saturday Evening Post. Bill had read the same story. We agreed that the USCGA appeared to be the one organisation that had all the clues.

As it happened, I was going to write to the Post on another, purely professional, matter. I suggested I might ask for a contact in the United States Coast Guard Auxiliary. Good idea, said Bill.

We finished the beer. And so the Australian Coast Guard Auxiliary was born.

If I had been able to foresee, at that moment, one tenth of the work, the trouble, the grief and pain that would follow from that decision, the letter would never have been written. But we could only see the problems immediately ahead of us, and none of them seemed a match for our enthusiasm.

Early in February, 1961, I received my reply from the Post, which gave me the address of US Coast Guard headquarters in Washington. On February 6, I wrote to the Public Relations Officer, US Coast Guard, asking for information on the Auxiliary, and on boating safety generally.

Within a fortnight, I had received a bulky communication from Captain Richard Baxter, USCG, Chief Director of the Auxiliary. Dated February 14, 1961, it was the polite note you might expect. But it contained the sentence: "It is probable that a comparable organisation may afford your people an equally effective means of improving boating standards". There were four enclosures: (1) Manuals; (2) Bibliography; (3) Leaflets; (4) 8-lesson course and lesson plan.

There are no records covering the six months that followed, and memory is a tricky jade. But in those six months occurred the critical events which determined that the Australian Coast Guard Auxiliary would be established, come what may. Because things happened as they did, we had a legacy of problems to overcome. But if they had not happened as they did, it is hard to envisage the organisation even getting off the ground.

To begin with, Bill Down -- who, by the way, had spent his war running a landing barge -- had already organised a short instructional course in boat handling at the home of another club member, Len Vial. The instructor was Tony Pays, an ex-merchant navy officer and currently chief designer for the boatbuilding firm of Benson and Shaw, who had just completed the hull of my boat. When Bill, Tony and I saw the excellent training material, we were enraptured -- hopelessly and permanently. We have been instructing ever since.

But how to get the organisation going? I tried to interest the club, with indifferent results. It was obviously futile to hope that the idea would ever spread, more or less naturally, from one club to another. It would take years to get people to agree on what must be done, and how to go about it.

It was the Commodore of the club, Ian Smith, who suggested that I approach the late Wally Peterson, a prominent and controversial businessman, whose 65-ft cruiser, Webray, swung her moorings at Beaumaris. Wally was a highly complex character, in many ways full of contradictions. His detractors would say that he immediately saw the possibilities for personal publicity. If he did, it is beside the point; he saw, and immediately appreciated, the solid worth of the proposal, wondering -- as Bill and I did -- why something had not been done about it already.

Wally's reaction was typical. He would be the initial Commodore; he would make the decisions. I, and others, would do the work. It was a risky arrangement, because Wally never really spared the time to make himself as truly proficient in the trade of small boat seamanship as ACGA officers are required to be today, although he was one of the most naturally gifted seamen I have ever seen. His grasp of the concept of the Auxiliary was immediate and complete, as far as its essentials are concerned, but somehow remained superficial. He would make disastrous gaffes and personal blunders, and

yet, when we sat down to work out what must be done at a National Board meeting, he had the sure touch that had made him a success in business.

It can truly be said that without the publicity and financial backing that Wally Peterson gave it at the beginning, the Australian Coast Guard Auxiliary would not exist today. But he also made a number of hard-headed, practical decisions establishing policies which appeared, at first, to be against the grain, which made the organisation virtually self-perpetuating. Most important of these was setting up the Public Education Program on a firm, if minimally profitable, business basis.

The key people in the official foundation of the ACGA were Wally Peterson, Jack Madden (a namesake, not a relation of mine), who was his personal assistant in his business, and myself. Later was added a fourth founder, Mervyn Sayer, who was to play a vital role in the development of the public instruction program.

The first task was to produce a Constitution. This was done largely by myself, working on the USCGA Constitution as a model, in consultation with Jack Madden. Wally ultimately, if cursorily, approved the principle details of the draft, which was finally transformed into legal language by his lawyers. Wally was responsible, as I have said, for a number of valuable practical innovations, but also for at least one other, which stemmed from his own personal interest, and which was to prove nearly disastrous.

He wanted to see himself at the head of an organisation which would quickly become the biggest in boating, able to exert decisive pressure on the Government to obtain the benefits which have long been denied the boating community. The policy he adopted was one of the largest and quickest possible growth of the organisation. Quite rightly -- because otherwise the organisation could not have survived its birth pangs -- he insisted that the Constitution provide for a minimum period of tenure for the first National Board, consisting of the founders. Thus was written into the original Constitution a clause deferring National elections until the organisation had reached what subsequently proved to be an unrealistic size in at least two States. When, for adequate reasons -- including his own loss of interest in the organisation and his inability to devote time to it -- it became necessary to replace Wally, the pressure was increased to

recruit new members and raise new flotillas so that it could become constitutionally possible to elect a new National Commodore. Ultimately, this was not necessary, because Wally Peterson retired early in 1963. But the damage had been done.

Because we had a great number of "paper" flotillas and nominal members, and control at the State level was entrusted to officers who were insufficiently trained and, in many cases, who did not really understand the Auxiliary, flotilla and State organisation in both Victoria and South Australia subsequently collapsed, and the Auxiliary was kept going only by the repeated intervention of National officers, to settle what were, basically, personal difficulties.

As it turned out, stability at the State level was not achieved during the two years I administered National Board affairs as Deputy Commodore (1963-4), or during my own period of office as National Commodore (1965-6), but only really began to emerge in 1967, during the period of office of the current National Commodore, Les Swift. Looking back, it is obvious that the organisation would have developed much more logically and harmoniously, if we had initially concentrated all our efforts on one flotilla only, developing new flotillas only as we produced trained and experienced personnel to officer them.

Another reason why there was instability at the State level -- and a compelling reason at that -- was the fact that absolute priority had to be given the public instruction program, which is, in the final analysis, the be-all and end-all of the Auxiliary's existence, the heart and core of its reason for being.

We had, in the early years, five instructors, who were able to rapidly assimilate the science of small boat seamanship, and teach it, by virtue of their own service experience. There were Jack Madden and myself (who, by a curious co-incidence, not only possess the same surname, but both served as artillery officers in the AIF, and both attained the same rank, that of Captain, although we never met during the war); Tony Pays, a former Merchant Navy officer; Bill Down (Army Small Ships); and Mervyn Sayer, an Australian who had lived much of his life in Canada, and had been an instructor with the Canadian Power Squadrons.

For business and personal reasons, Tony Pays and Bill Down could be used only sparingly. Mervyn Sayer served for one year

only (1962) and then returned to Canada. This meant that the bulk of the Public Instruction work had to be carried by Jack and myself. We were instructing regularly two, and sometimes three nights a week, and it was impossible to devote any time to flotilla organisation.

What happened, basically, was that members were recruited at the conclusion of PIC's, and posted to local flotillas, which were left to their own devices and expected to throw up their own leadership.

They did -- but it was generally untrained, uninformed, and often not very active leadership. Looking back, it would have been much better if either Jack or myself had concentrated exclusively on membership training. But this, because of the overall policy which had been adopted, was impossible.

In his one year, Mervyn Sayer contributed greatly to the know-how of the Auxiliary. Our first PIC's had been far from successful. We made no charge on students, and instructors worked on an honorary basis. Sayer pointed out that, at the very best, only a minimal public instruction campaign, can be carried out on this basis, because it required a large, well trained instructional and organisational team for each course. He also pointed out that the entire basis of the very successful Power Squadrons operation in the US and Canada is that students must pay a fee, and the instructor must receive a payment to cover his expenses.

Jack and I were worried about the principle of amateur status, but Wally's business brain immediately saw the sense of the suggestion, and thenceforth we adopted the principle of charging for PIC's (three guineas was set, a figure which remained the charge for years) paying instructors a fixed honorarium to cover their out-of-pocket expenses.

The effect was miraculous. Previously, we had found that attendance at classes was erratic; students who paid for their instruction turned up regularly, to get their money's worth.

Previously, we had had a lot of trouble filling in for instructors who couldn't make it at the last minute (sorry, mate; we've got visitors at home tonight. Can you fill in for me?). This honorarium placed the instructor under a definite obligation; more than that, his cheque at the end of the course could be handed over to Mum, and this assured him of a leave pass.

From that moment, we found that we could allot an entire course to one instructor, and leave him to it. We have never, since that date, had any trouble with last-minute replacements. The result was that the number of courses we could conduct was multiplied.

In December 1961, we advised Captain Baxter, at US Coast Guard headquarters, of the formation of the Auxiliary, which was constitutionally inaugurated on September 14 of that year, and sent him the first Boatmaster's Jack we received from the manufacturer. The presentation was made to him, officially, in Washington, by the Australian Ambassador.

The USCGA thereupon made us a present of a complete set of slides -- more than 300 of them -- for the Basic Seamanship Course. These slides arrived (via the diplomatic pouch, to the US Embassy in Canberra) in February 1961. Mervyn Sayer set about adapting the slide series to Australian conditions, and produced the framework for the ACGA Basic Seamanship Course, which I set down in Lecturers' Notes, which have been used ever since.

The original, pre-ACGA instruction courses had been held in Len Vial's home (Len never actually became a dues-paying member). The first course after the formation of the organisation was also held there. After that, however, we used the theatre which Wally Peterson had provided for the instruction of his salesmen, at his business premises in Ormond.

What assured the success of the early public instruction program was the radio publicity which Wally gave each course in his own sponsored programs, and other free advertising which he gave us. The organisation received all the income from these courses, but paid virtually no expenses, apart from the lecturers payments. As a result, we were able to build up considerable National Board funds, which eventually enabled us to promote the formation of the Auxiliary in Geelong and, especially, Adelaide.

In March, 1962, we had our first really successful PIC under way, with an enrolment of 38. By August, we had started our eleventh course for the year, with six running concurrently: three at Ormond, one at Frankston, one at Geelong, and one at Dandenong. In addition, we were running three advanced courses, for Patrol Officers. The total for the year was an incredible 24

courses -- 18 Basic, and 6 Advanced. It is a total which has, I believe, not since been surpassed.

Just before Christmas, 1962, I was invited by the Shell Company to give a series of lunchtime lectures on boating safety in its theatre. The series was very successful, and the result was that the company made its theatre available to us for Basic Seamanship lectures in the years that followed. This provided a first class venue for three, and sometimes four, courses a year.

But by now the Auxiliary had run into serious organisational problems which threatened to destroy it completely, and, apart from these major courses, and those that were held at Geelong and Frankston, little was to be achieved in Victoria during 1963.

A major problem arose from the drying up of Wally Peterson's help, as a result of business difficulties). The PIC program had to carry its own advertising costs now, and the low fee, quite frankly, was not nearly sufficient to permit an adequate advertising and publicity campaign. It was only after some years, and with outside assistance -- notably from radio station 3UZ -- that the PIC program was again able to make what might be termed dynamic headway.

Meanwhile, the organisation, in Victoria, had grown into a huge paper mushroom.

The Auxiliary was constituted with Wally Peterson as National Commodore, myself as National Vice-Commodore, Mervyn Sayer as Training Commodore and Jack Madden as Staff-Commodore. Its first flotilla, the First Victorian (VF1) was raised by National Board charter on September 14, 1961. No commander was appointed; only a staff officer, for the time being. Of the original members of VF1, only two were still in the Auxiliary six years later: Bill Down, and Peter Swan.

In November, we had a further 18 enrolments, including six men who were to play a considerable role in the early years (George and Graeme Bale, Lyall Blegg, Ralph Hallam, Tom Larkin and Fred Shepherd), and the Second Victorian Flotilla, based on South-eastern suburbs north of Mentone, was constituted.

A further 18 enrolments in December included Keith Hopkins and Owen Davies (subsequently FL and FSO of VF4), George

Bailey and Frank Cooper, who initiated the moves to raise VF3 at Frankston, and David Westonsmith, who was the most active and dedicated member of all, at that time, and was to become Commander of VF2, and ultimately Victoria's first Group Commodore.

On Australia Day weekend, 1962, the Auxiliary held its first training cruise. Wally Peterson, in his 65-footer, Webray, was to escort a squadron consisting of Akoonah (David Westonsmith), Nor-Vale (George Wilson), Miss H (Ralph Hallam) a jet-powered inboard runabout (Lloyd Salisbury) and Crusader (myself) from Sorrento, "outside" and around to Cowes, in Westernport Bay, where Keith Hopkins had a holiday home.

A howling nor'easter during the night meant that Webray could not make the dawn rendezvous off the Sorrento ramp, and conditions were far too dangerous "outside". Accordingly, we trailed to Tooradin, launched, and made Cowes via the North Arm of Westernport.

The result of this visit was the formation of VF4, in the Eastern suburbs, under Keith Hopkins, with an intention (never realised) of making Westernport Bay its operational area.

In Frankston, meanwhile, George Bailey had been given authority to convene VF3, which was launched at a public meeting in the Frankston Yacht Club, attended by 70 people. It was followed by a successful PIC, also in the Yacht Club, which remained VF3's home until it was able to rent its present premises from the local council.

Enrolments in February 1962, included the present Victorian State Commodore, Don Harper; Bob Wilhelm and the late Sam Hawkins. In March, Kevin Manning and Allen Rayner, who was to become an extremely active training officer, joined the Auxiliary. The April intake included Alan Currie, and Herbie King. Sam Hawkins immediately began work on producing several copies of the PIC slide series.

In April, also, our first "CG" registration numbers were allotted.

In May, our first woman member, Sylvia Blegg, was admitted, and the month's intake also included Jack Arnott, who was to become Divisional Captain (Peninsula), his brother-in-law, Joff Allen, Isi Plack and Ted Hill.

By now, it was clear that something had to be done about flotilla organisation, which was chaotic. The six Melbourne flotillas were reorganised, for the time being, into one, of six sections, each of which was to be upgraded to flotilla as soon as possible. David Westonsmith became Flotilla Leader, with Fred Shepherd as his Vice-Leader and Stuart Backhouse as Training Leader. FSO was Graeme Bale.

These officers, actually, stayed together as a team and carried out their objective of building six sections up to constitutional flotillas, eventually becoming the first flag officers of the Victorian Group.

It is interesting to record the flotilla boundaries allotted (the basis, then, was member's residence, which proved unsatisfactory, and is not to be compared with the "point of use" system which is now in vogue).

VF1 : Southern suburbs : between South Road and Mordialloc Creek
VF2 : South-eastern : between the line of Gardiner's Creek and South Road
VF3 : Frankston : South of Mordialloc Creek
VF4 : Eastern : Between the line of the Yarra River and the line of Gardiner's Creek
VF5 : Northern : Between the line of the Yarra River and Moonee Ponds Creek
VF6 : Western : West of the line of Moonee Ponds Creek.

At this time we acquired our first skin divers. They were organised into a special flotilla, under Athol Pearsall, instead of being attached to regular flotillas, as is now the case.

The reorganisation was anything but a howling success, at first; the sections were left with only nominal leadership, and it was not till much later, when new blood, in the form of personnel who had been trained in the Officer Training Course, which was then just beginning, reached flotillas, that they began to make progress.

At this stage, Wally Peterson was still taking a very active interest in the organisation, and in Easter 1962 he took Webray around to Refuge Cove, to rendezvous with a squadron of trailer boats which was to launch at Port Welshpool and come down the Eastern side of the Promontory. They were Akoonah (D. Westonsmith), Patti Too (F. Shepherd), Sylvon (L. Blegg) and Pandora (F. Corboy).

The exercise should interest many of our operational commanders of today who, I fear, are inclined to place too much reliance on a rendezvous made at sea. Rather formidable fuel and water (the creek at Refuge Cove was dry, that year) problems were to be solved by Webray, which carried stocks for the whole squadron; but, while the mobile boats made Refuge Cove from Welshpool on time, Webray, thrashing down the weather side of the Promontory, with a certain amount of engine trouble, did not. Water became a problem before she arrived, and had she not got there, some of the boats would not have had the fuel to get back to Port Welshpool.

This exercise was also remarkable for a superb navigational feat by Akoonah. A TV cameraman from Channel 2 accompanied the squadron; after filming, late on Easter Saturday, he had to return to Port Welshpool. David Westonsmith took him back, in Akoonah.

Dropping him off, at dusk, David set out to find Refuge Cove in the dark -- virtually an unheard of feat. Moreover, he had no chart, having lent his to somebody else. He made the unlighted cove by night, spot on -- it is hard enough to find in the daytime -- with the aid of careful notes he had made on his voyage up the coast, and that invaluable volume, Sailing Directions (Victoria) 1959.

The mention of television and Channel 2 prompts an aside here : the Eagle Anchor device of the Auxiliary was, in fact, designed by the Art Department of Channel 2 which, incidentally, helped us a lot with TV publicity in the first two years.

August 1962 saw the official formation of the Eighth Victorian Flotilla, at Geelong. This Flotilla was conceived, grew up, and during its vulnerable formative period operated under the personal guidance of Jack Madden.

Jack, who had friends in Geelong, carried out a good deal of promotional work; the upshot of this was a public meeting in the pavilion of the Geelong Football Club, addressed by Wally Peterson, Jack, and myself. Out of it came a PIC -- the first of a series that is still continuing, gathering strength year by year -- and a flotilla. Among the first members enrolled were Bill Libby, Jim Blackwell and Eric Holloway.

Among the Melbourne members enrolled at the same time were the serving Staff-Commodore, George Clark, the serving Staff-

Captain (Victoria), Frank Stone; Lou Lawson, who was to become Divisional Captain (Melbourne), and other active officers in Ken Carmichael, Bert Bryant, Jim Waddle Gil Haywood and Fred Lauger.

At Frankston, meanwhile, George Bailey relinquished temporary command of VF3 and Ted Hill took over. Tom Larkin began organising the Ninth Flotilla, at Dandenong.

In September, the Coast Guard Auxiliary held its first (and only, so far) annual ball, which was a joint function, with Wally Peterson's firm.

October's enrolments included Reg Morse, Ralph Ramage and Eric Winkler (Geelong), Ray Hocking (Dandenong) and Bert Murray (Frankston). Allen Rayner took over VF1 as Acting Leader, and Bill Libby assumed control of VF8 as Training Leader, with Reg Morse as his FSO.

At this time, the National Board made two very important rulings. The first was that the Quartermaster rating could not be attained by examination alone, but requires a test of boat-handling. The second (after receiving confirmation of the propriety of doing so from the Prime Minister's Department, Canberra) was that Auxiliary vessels should display the Blue Ensign, not the Red.

As the year ended, a new batch of enrolments included Dr. Gordon Way, and two very active men who were to become the dynamo which sparked VF6 -- Ben Syle and Jack Penlerick.

VF3, at Frankston, had attained regular status, and was authorised to hold its elections, and the Melbourne sections had got to the stage of being rated flotillas again. Under David Westonsmith, an Acting Divisional Board was convened.

The most active year, in terms of Auxiliary growth, was nearing its end. VF3 celebrated reaching regular status with a dinner dance at Frankston. More importantly, with the 1st two PIC's getting under way at Ormond and Frankston, respectively, the total number of Basic Seamanship courses for the year reached 18. Advanced courses totalled 6.

It seemed that the Auxiliary was on the verge of total success. The public instruction program had had a tremendous impact, winning us friends in many places. Organisationally, it appeared as if the Victorian flotillas, with active officers emerging, could

look after themselves in future. I had been to Adelaide, in a professional capacity; Wally Peterson had a company over there, and with the prospect of regular contacts with people in that city, we began to think about promoting the Auxiliary in South Australia.

Thanks to the conservative genius of Jack Madden, who looked after our accounts, and was prompt to accept receipts and reluctant to pay a bill unless it was obvious that it could not be charged elsewhere, we had a few hundred pounds in the kitty.

Wally Peterson's business appeared to be booming, absorbing more and more of his interest, so that the affairs of the Auxiliary were being left to men really dedicated to it. During September, we had conducted our first really hairy search and rescue operation, for a fishing boat lost on the Bay, and had proved that our skippers would turn out when asked. Enrolments were coming in, thick and fast.

But 1963 -- a year of major setbacks -- was just around the corner. It was a year that nearly saw the complete collapse of the Auxiliary.

But it was also a year that saw the Auxiliary plant its feet firmly on the ground, and prove itself an organisation containing the vital seeds of self-perpetuation. 1963 was to prove that when Shakespeare wrote, "Sweet are the uses of adversity," he wasn't kidding.

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Rescue saves three

Continued from page 1.

Concerned relatives contacted police at 10.30pm on Sunday, after the anglers failed to return home by their predicted time of 7pm.

Police notified the Coast Guard, who were on the water by 11.45pm. They searched unsuccessfully until 4.30am, before returning to Port Welshpool to refuel and be back on the water by 6.30am.

"We covered the bottom end of the inlet and found the boat at the entrance on the eastern side, between the Prom and Snake Island", said Coast Guard volunteer Justin Griffin.

Flotilla commander Geoff Noad said Mr Griffin and deputy flotilla commander Charlie Young searched Doughboy, Franklin and Benmison channels, the south-west corner of the inlet and to the Toora jetty, but to no avail.

They towed the submerged 4.5 metre aluminium boat to Port Welshpool. It belonged to a friend of the Mentzing family.

"This rescue just goes

to show how important the Coast Guard is when we have volunteers who are willing to stay out there all night looking for people in danger", Mr Noad said.

Police said new regulations requiring life jackets to be worn at all times while in a vessel less than 4.8 metres most likely saved the lives of the trio.

"One of the main problems was that we didn't know where they were going fishing. If they had told their family where they were going, that would have made the search a lot quicker", S/C Wilson said.

"If they had said they were going to fish the channel near Barry Beach, then that's where the search would have started and ended."

Toora Police and the Melbourne Water Police were also involved in the search.

S/C Wilson reminded boaters to remember the life-jacket laws also require life-jackets to be worn when operating a boat by yourself, crossing a bar and when a current severe weather warning is issued.

RIGHT: Police praise: Gippsland Water Police Senior Constable Tony Wilson (left) described the rescue efforts of the Port Welshpool Coast Guard volunteers as "fantastic". Senior Constable Mal Heywood (right) of Toora Police congratulates flotilla commander Geoff Noad and his crew Justin Griffin (back, left) and Charlie Young on their night-long search for the missing crew and boat.



VF20 - Port Welshpool

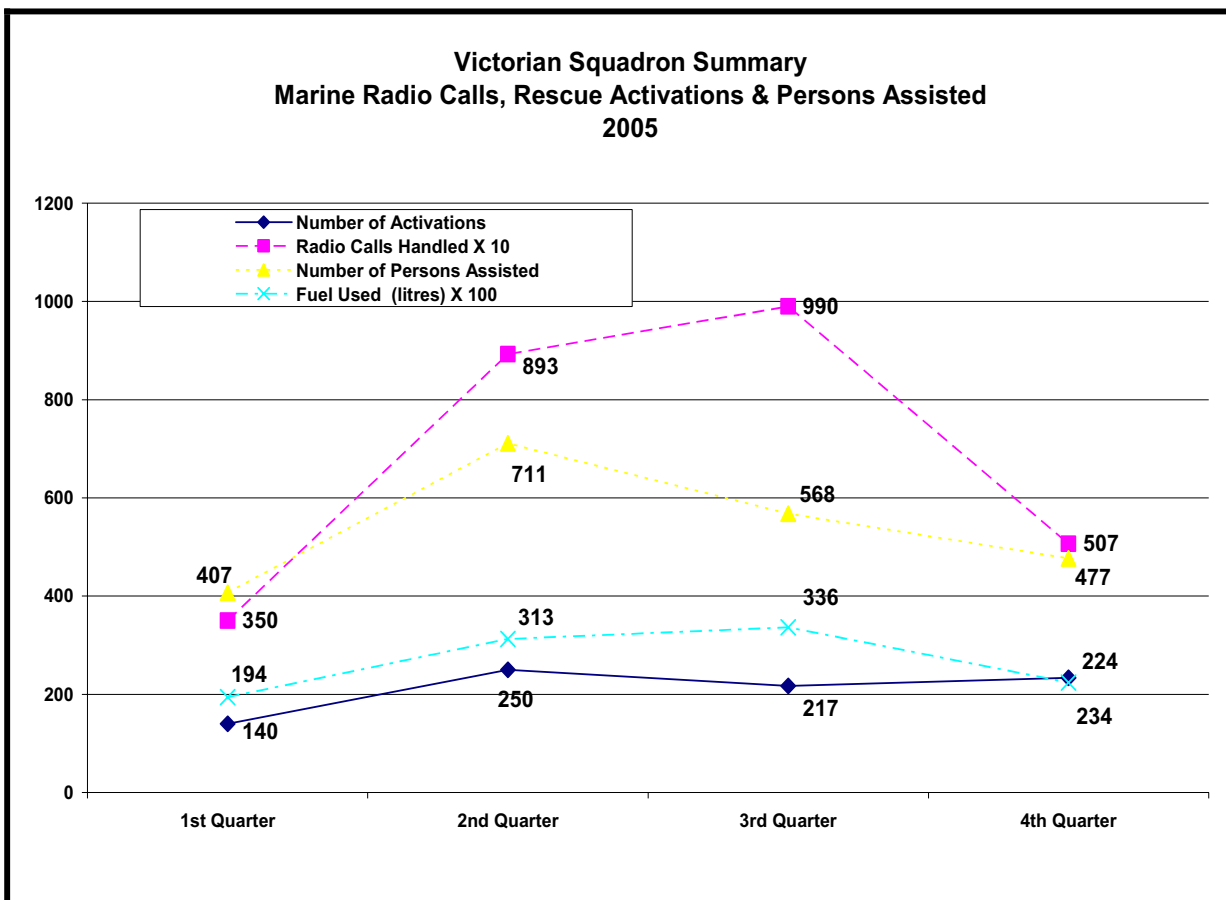
Who said that winter is the quiet boating months? Activities at VF20 suggest quite the contrary - Installation of a 40 foot Nally tower, fund raising for a replacement tow vehicle (the tractors had a cardiac arrest), building renovations and a number of note worthy assists....! The local Shire has donated funds in order to purchase a projection unit, which is proving a valuable asset for the conduct of public courses. Next job...? No time for rest, the eucalypt trees are blossoming!



Up and out: Gippsland Water Police recover the vessel.

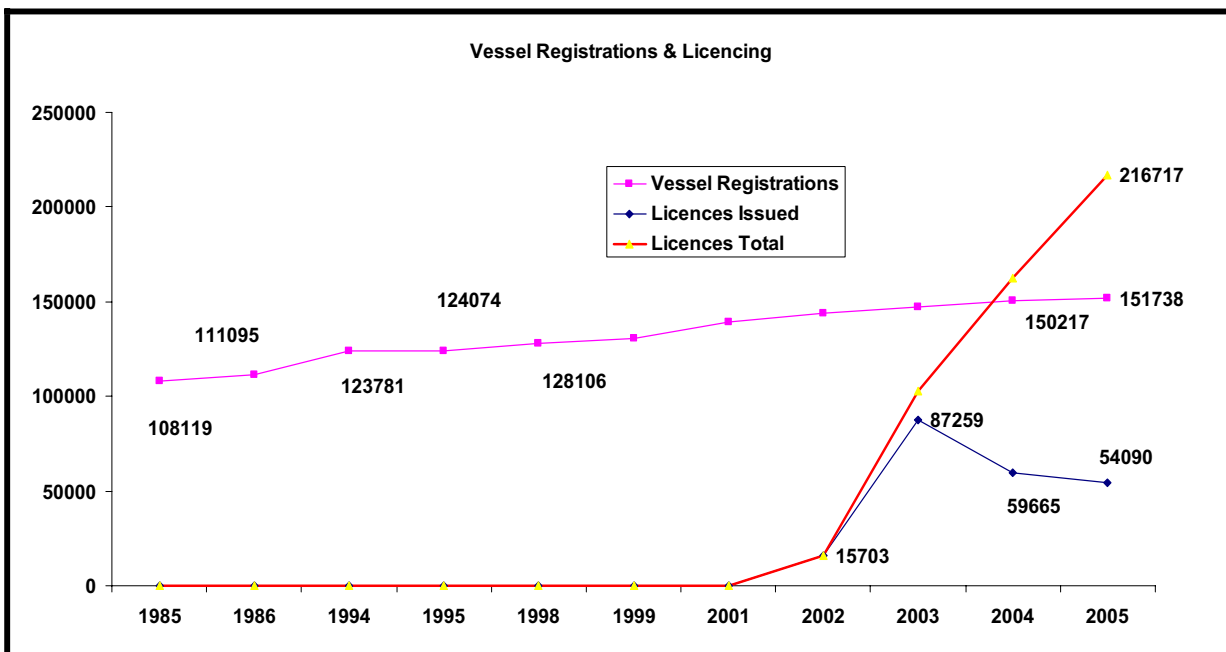


Victorian Squadron Summary Marine Radio Calls, Rescue Activations & Persons Assisted 2005



For MIR documentation including procedures go to <http://www.marinesafety.vic.gov.au/>
 All Gippsland Flotillas are to forward completed MIR to OIC Gippsland Water Police.
 It is important to complete your Flotilla Statistics Form each month and e-mail to Squadron.vic@coastguard.com.au – Registration source VicRoads Annual Report 0405.

Vessel Registrations & Licencing





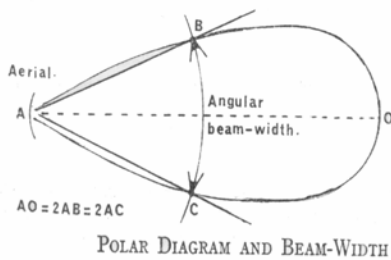
Technical:

Following on from our last article in BOATMASTER Kevin Feltham asks the following:

“ I read with interest your article on basic radar setup and wonder if you can explain why, at times, some returns take on a ‘curved’ appearance?”

Well Kevin , this is one of many false echoes that you are likely to see on your radar, and put simply, is a result of the size of your radar antenna.

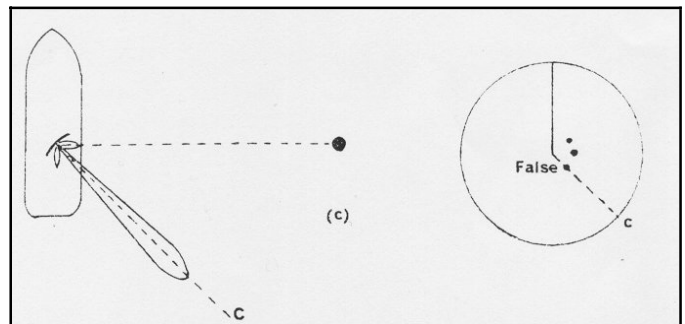
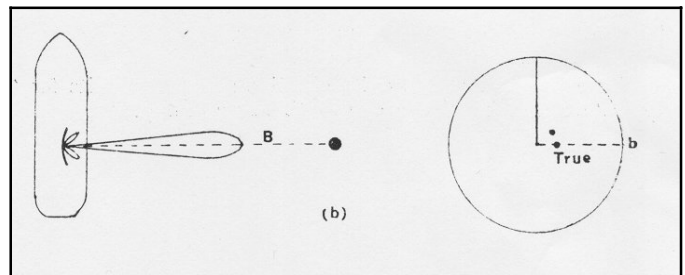
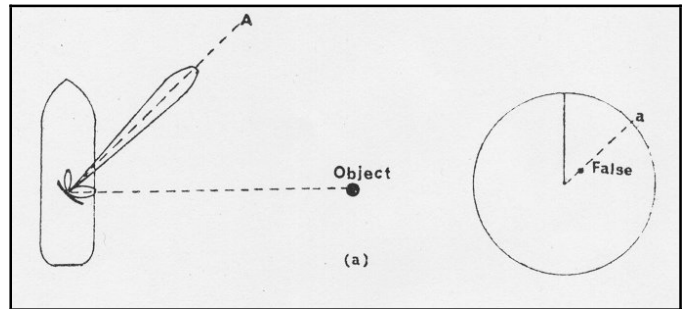
To explain why, we need to look at the pattern of radiation emitted from your radar scanner. The antenna transmits essentially a main beam of radiation like so.



The angle where the intensity of the beam is half of the maximum power emitted (half power point) is termed the horizontal beam width (remember this for later!) **The smaller this angle is, the ‘sharper’ the beam.**

Now, our radar antenna does not only produce this main beam, but also produces what is known as ‘side lobes’ – smaller beams that are weaker than the main and diminish as the angle increases. These side lobes, although relatively small compared to

out main beam, are also capable of ‘bouncing off’ a target and painting a return on our radar display.



If the side lobes are many, and more significant, the picture painted on our radar display above which show three distinct returns, may actually show one return resembling a semi circular “smeared” appearance.

Now take note of the following:

The **larger** (wider) the antenna --- the **narrower the horizontal beam width** and the **less significant** the side lobes are.

Conversely, the **smaller** the antenna --- the **wider the horizontal beam width** and the **more significant** the side lobes are.

As a rough guide a shore based installation with an 8’ antenna would expect to have a

horizontal beam width of approx 1 degree or less.

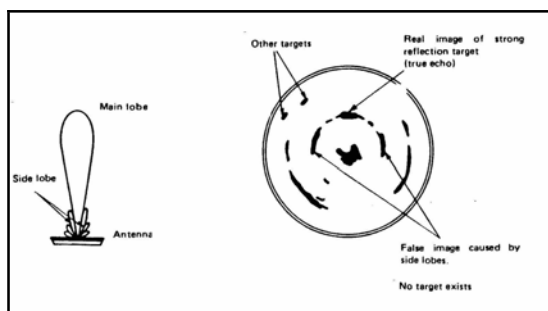
A medium sized vessel installation with a 4' antenna would produce about a 2 degree horizontal beam width, and, at the other end of the scale we have small radars with approx 1' antenna which produce as much as a 6 degree horizontal beam width.

So we are saying small antenna size produces:

- less gain (therefore range) ,
- wider horizontal beam width, and
- greater side lobes.

Consequentially, what happens here is that at relatively close ranges the leading side lobe transmission reaches the target and is returned, the main (relatively wide) beam returns signal over a wide arc, then the trailing side lobes return enough signal to also paint a picture.

The result of all this is a single target that appears 'smudged' like so:



This target should only appear as one dot.

The situation is one of a catch 22, whereby technology produces radar receivers that are more and more sensitive in order to pick up weak signals reflected from targets further away by getting away with using small antennas which have less gain, but only to exaggerate the side lobe affect.

So how do we minimize this annoying problem?

Well, firstly, as rescue boat operators we need to carefully choose a radar that has a moderate size antenna (or larger) --- not the smallest we can find.

All very well if we are still to purchase, but using what we may already have the problem can be minimized by applying a little more anti-sea clutter than the conditions call for and/or reduce the overall gain (sensitivity).

This really does become a balancing act between acceptable picture and acceptable detection if looking for something. Changing pulse length may also help at times.

The side lobe effect is also exaggerated when targets that produce a very good return are close by e.g. a ship beam on, or other large metallic objects.

Next time we will look at how horizontal beam width can also effect other aspects of our radar operations.

Marcus Grinblat

Communications Manager, Victorian Squadron



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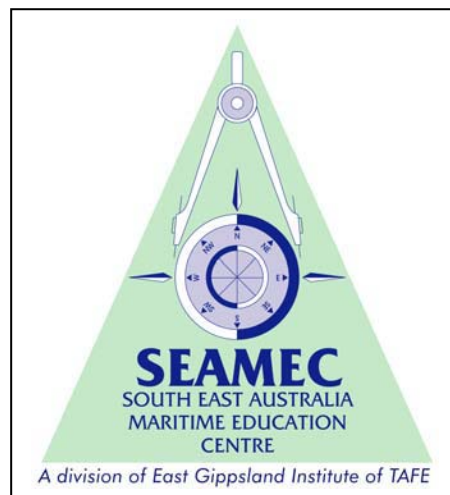
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Changes to VHF (very high frequency) Radio Marine Weather Services – Courtesy www.bom.gov.au

The Bureau of Meteorology advises that, as of 3am Eastern Standard Time 31 May 2006, the Bureau will no longer be using the Telstra Seaphone Service to broadcast coastal weather forecasts twice daily. For further information about alternative sources of coastal waters weather information for your area please see below. There is a considerable range of alternative and more comprehensive sources of broadcast weather information, provided or sponsored by other VHF and HF radio broadcasters **including state maritime safety organisations** and volunteer organisations such as **the Volunteer Marine Rescue and Coast Guard**. Most of these organisations broadcast weather information generally twice daily, both morning and afternoon, whilst some will provide weather information on demand. The Bureau is encouraging mariners to use these alternative sources in advance of the date of cessation.

Mariners who need more information are advised to contact the Bureau office in their state or territory, or by emailing the Bureau's marine radio contact desk at marineradio@bom.gov.au, or by writing to the National Manager, Marine Weather Services, GPO Box 1289 Melbourne Vic 3001.

Severe thunderstorms and wind gusts in Victoria

Severe thunderstorms by definition produce wind gusts of at least 90 km/h or more, although peak winds may exceed 160 km/h in the most damaging storms. The strongest measured wind gust during a thunderstorm in Victoria is 168 km/h near the Lara area on 9th Jan 1981 .

Wind gusts are generated in thunderstorms when falling rain and hail drag the surrounding air downwards. Evaporation of the raindrops and hail cools the descending air, increasing the air's density, and accelerating the downward rush. The strong downdraft then spreads out once it reaches the ground, producing a cool, gusty wind that can cause damage. If the storm itself is moving quickly, or the atmospheric winds aloft are strong, the wind gusts at ground level may increase further.

Severe thunderstorm wind gusts can occur at any time of the year. Approximately 40% of all severe thunderstorms are associated with strong wind gusts. The most damaging thunderstorm-related windstorm to date in Australian history occurred in Sydney's northern suburbs on the afternoon of 21 January 1991. Trees up to one metre in diameter were snapped or uprooted and 7,000 houses damaged, 20 so badly they had to be demolished. An inspection of damage following the event suggested winds at the height of the storm reached 230 km/h. The combination of extraordinary winds and hail up to 7cm in diameter saw an insurance payout of \$219 million.

Recent examples of damaging wind gusts from thunderstorms in Victoria include:

- 08 Feb 2004: Severe thunderstorms with strong wind gusts caused damage in Myrtleford, Corowa, Wangaratta, Shepparton and Bright. Trees and powerlines were brought down and a roof was lifted off a house. Orchards in the Goulburn Valley were damaged.
- 15 Feb 2002: At Swan Hill a thunderstorm severe wind gusts to 124km/hr. The airport terminal building roof was blown off and other building damage was sustained. The SES were called to over 40 jobs

In addition to the regulations that enforce the wearing of a PFD for vessel occupants (vessels 4.8 Mtrs and less*). 'Heightened Risk' defines the condition associated with vessels > 4.8Mtrs & <12Mts.

Vessel operators & crews onboard vessels greater than 4.8 metres – up to and including 12 metres in length overall, when UNDERWAY AND NOT IN AN ENCLOSED CABIN are required to wear an approved PFD in the following condition.

When the vessel is operating in an area where: a GALE WARNING, STORM WARNING, SEVERE THUNDERSTORM OR SEVERE WEATHER WARNING is issued by the Bureau of Meteorology. Severe thunderstorms & severe weather warnings are associated with wind gusts of 90km/h (50knots) or greater. THEREFORE A GALE WARNING IS THE MINIMUM WIND STRENGTH THAN ENFORCES THE PFD CONDITION – Beaufort Scale Number 8 (63-75Km/h or 34-40Knots).

NOTE: The majority of Severe Thunderstorms occur during the period October – April, which just so happens to coincide with the boating season.

Refer to marinesafety.vic.gov.au for a copy of the regulations in relation to Personal Flotation Devices.

Beaufort scale number	Descriptive term	Units in km/h	Units in knots	Description on Land	Description at Sea
0	Calm	0	0	Smoke rises vertically	Sea like a mirror.
1-3	Light winds	19 km/h or less	10 knots or less	Wind felt on face; leaves rustle; ordinary vanes moved by wind.	Small wavelets, ripples formed but do not break: A glassy appearance maintained.
4	Moderate winds	20 - 29 km/h	11-16 knots	Raises dust and loose paper; small branches are moved.	Small waves - becoming longer; fairly frequent white horses.
5	Fresh winds	30 - 39 km/h	17-21 knots	Small trees in leaf begin to sway; crested wavelets form on inland waters	Moderate waves, taking a more pronounced long form; many white horses are formed - a chance of some spray
6	Strong winds	40 - 50 km/h	22-27 knots	Large branches in motion; whistling heard in telephone wires; umbrellas used with difficulty.	Large waves begin to form; the white foam crests are more extensive with probably some spray
7	Near gale	51 - 62 km/h	28-33 knots	Whole trees in motion; inconvenience felt when walking against wind.	Sea heaps up and white foam from breaking waves begins to be blown in streaks along direction of wind.
8	Gale	63 - 75 km/h	34-40 knots	Twigs break off trees; progress generally impeded.	Moderately high waves of greater length; edges of crests begin to break into spindrift; foam is blown in well-marked streaks along the direction of the wind.
9	Strong gale	76 - 87 km/h	41-47 knots	Slight structural damage occurs - roofing dislodged; larger branches break off.	High waves; dense streaks of foam; crests of waves begin to topple, tumble and roll over; spray may affect visibility.
10	Storm	88 - 102 km/h	48-55 knots	Seldom experienced inland; trees uprooted; considerable structural damage.	Very high waves with long overhanging crests; the resulting foam in great patches is blown in dense white streaks; the surface of the sea takes on a white appearance; the tumbling of the sea becomes heavy with visibility affected.
11	Violent storm	103 - 117 km/h	56-63 knots	Very rarely experienced - widespread damage	Exceptionally high waves; small and medium sized ships occasionally lost from view behind waves; the sea is completely covered with long white patches of foam; the edges of wave crests are blown into froth.
12+	Hurricane	118 km/h or more	64 knots or more		The air is filled with foam and spray. Sea completely white with driving spray; visibility very seriously affected



Comparison of 406 MHz and 121.5 MHz beacons

Compliments of USCG Public Relations

	406 MHz Beacons	121.5 MHz Beacons
Coverage:	Global	Ground station dependent; ground stations have an effective radius of about 1800 nm. Current coverage is about one-third of the world.
Reliability; False Alerts/ False Alarms:	<p>All alerts come from beacons. Satellite beacon transmissions are digital, coded signals. Satellites process only coded data, other signals are rejected.</p> <p>About 1 in 10 alerts are actual distress.</p> <p>Beacon-unique coding/registration allow rapid incident corroboration. Registration mandatory since 1994. 90% beacons are registered. About 80% of false alarms are resolved by a phone or radio call to registration POC s prior to launching SAR assets.</p>	<p>Only about 1 in 5 alerts come from beacons. Satellites cannot discern beacon signals from many non-beacon sources. Beacons transmit anonymously.</p> <p>Fewer than 3 in 1000 alerts and 3 in 100 composite alerts are actual distress.</p> <p>Since 121.5 MHz beacons transmit anonymously, the only way to ascertain the situation is to dispatch resources to investigate -- a costly disadvantage.</p>

	<p>First alert confidence sufficient to warrant launch of SAR assets. Earlier launches put assets on scene earlier -- Average 2.5 hrs saved in maritime, 6 hrs in inland.</p>	<p>High false alarm rate makes first-alert launch unfeasible. Absent independent distress corroboration, RCCs must wait for additional alert information.</p>
	<p>Average initial detection/alerting by orbiting satellites is about 45 minutes -- worst case 60 minutes.</p>	<p>Same as 406 MHz.</p>
	<p>Average subsequent satellite passes every 60 minutes.</p>	<p>Same as 406 MHz.</p>
	<p>Vessel/aircraft ID, point of contact information provided with alerts allows rapid corroboration or stand-down.</p>	<p>Alerts are anonymous. 121.5 MHz technology not capable of transmitting data.</p>
	<p>Allows false alarm follow-up to continuously improve system integrity/reliability.</p>	<p>No capability.</p>
	<p>Near instantaneous detection by geostationary satellites. System provides world-wide coverage.</p>	<p>No capability.</p>
<p>Position Information:</p>	<p>1-3 nm (2-5 km) accuracy on average, position calculated by doppler shift analysis.</p>	<p>12-16 nm (15-20 km) accuracy on average. Position calculated by doppler shift analysis.</p>
	<p>100 yard accuracy with GPS-equipped beacon. GPS position processed with initial alert. System infrastructure now available.</p>	<p>No capability</p>
<p>Locating the Target:</p>	<p>Superior alert (non-GPS) position accuracy limits initial search area to about 12.5 sq nm (20 sq km).</p>	<p>Initial position uncertainty results in 450 sq nm (700 sq km) search area on average.</p>
	<p>GPS-equipped beacons reduce search area to a negligible area.</p>	<p>No GPS capability.</p>

	121.5 MHz homing signal facilitates target location by radio direction finder equipped search units.	Same as 406 MHz.
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Power Output:	5.0 Watts	0.1 Watt
As of 1 February 2009, 121.5 Hhz EPIRB system will be switched off. Vessel operators will need to purchase a 406 Mhz EPIRB.		