



Tidetech VAN DIEMEN'S LAND CIRCUMNAVIGATION CRUISE



Addendum to Newsletter No.2

19th September 2023

Unfortunately it seems the HF radio receiver originally recommended in Newsletter No.2 has turned out to be unsuitable. Below is the section on HF Radio Installation & Certification appropriately amended to recommend use of a different HF receiver, also located in South Australia. A change bar indicates text changed from that published in the already circulated Newsletter No.2.

HF Radio Installation & Certification:

As stated in the VDL-C 2024 Safety Requirements, Section 5.07 (Marine Radios), and reiterated in Newsletter No.1, to be eligible to participate in Tidetech VDL-C 2024 Cruise, **participants must demonstrate they have an HF radio on board capable of using the cruise working frequency of 4483 kHz**. This demonstration is achieved by calling a radio station at least 100 nautical miles away. The demonstration can occur no earlier than Sunday 1st October 2023 and **must have been achieved no later than Monday 12th February 2024**, two days before the fleet is scheduled to leave Hobart. Please note that **failure to gain this certification renders your boat ineligible to join the cruise**.

Before calling, please ensure you have your AIS transponder switched ON at least half an hour and preferably longer before you begin your HF transmission test. This will give the MarineTraffic.com website time to register your signal. As well as establishing from where you are transmitting, this will enable the certifying station operator to check you have a working AIS transponder.

The certification process will involve an assessment of both signal **strength** and **clarity**. To be acceptable, on a scale of 1 to 5 on the cruise working frequency of 4483 kHz, your radio must rate a performance level minimum of 2 for both, preferably much better. The certifying operator will record the ratings and whether or not your AIS is working.

HF Radio Certifying Shore Stations:

With the retirement of Mary Kay of Smithton Radio and the demise of Dover Radio, Tasmanian stations operating on HF maritime frequencies have become quite scarce. Boats located in places other than SE Tasmania can use Tas Maritime Radio for their certification demonstration. An alternative is use an automated HF receiving station that can be operated remotely over the internet. This facility is not only useful for certification for the VDL-C cruise, but also will enable you to test the effectiveness of your boat's HF radio transmissions in real time.

TAS MARITIME RADIO:

TMR is the last remaining maritime HF radio station in Tasmania. Their main HF transceiver is on North Bruny Is. some 12M S of Hobart, with a back-up station on Snug Tiers above Margate on the opposite (mainland) side of D'Entrecasteaux Channel. Their website is www.tasmaritime.com.au and they can be contacted via ☎03 6231 2276 and email: ops@tasmaritime.com.au.

TMR is run by a collective of dedicated volunteers providing safety services for all Tasmanian mariners with the requisite radio equipment. It is supported by various government agencies. Its operating costs are covered largely by a membership subscription (at a paltry \$35.00 a year). TMR makes no distinction between call-ins and assistance given to members and non-members. Apart from helping with TMR's operating costs, this subscription enables TMR to hold information about you and your boat that will facilitate assistance being given in case of an emergency whereby details of you and your boat will be readily available to the TMR operator and through them to emergency services. For further details, their website is well worth a visit.

TMR maintains a continuous listening watch from 07:00 to 19:00 daily on its network of multi-channel VHF base stations covering almost all the Tasmanian coast, and on HF frequencies 4125 and 6215 kHz.

To initiate the HF certification process, call TMR on one of the above HF calling frequencies, explain who you are and what you want, and the duty operator will take you to 4483 kHz, maybe via their normal working frequency 4146 or 6227 kHz. It is a good idea to call by telephone and make a specific arrangement, but don't call at a TMR sched time when the operator will be busy running the normal weather and call-in sched. This sched runs for approximately 30 minutes from 07:45, 13:45 and 17:33 each day on 4146 and 6227 kHz and VHF-67, 68, 69. At busy times it lasts longer. If you do call in during a sched, the TMR operator will probably ask you to wait until its end before arranging to go to 4483 kHz.

USING A REMOTE HF RECEIVER (OVER THE INTERNET):

There is a suitable receiver located near Tarlee in South Australia. It can be operated remotely via the internet.

Here is a recipe for using it:

- 1) Go to the website: <http://kiwisdr.arez.org.au:8074/>
- 2) Click on the 'play' symbol to start the *OpenWebRX* app.
- 3) Set up reception using the control panel (in bottom right corner of the screen):
 - set frequency to 4483.00 (top left in the panel)
 - click the USB tab (to select **Upper SideBand** mode)

and press **enter/return**.

4) Use the converging or diverging arrows in the control panel to expand or contract what radio techs call 'the waterfall' to widen or condense the frequency span visible on your screen. The transmissions should appear as lighter streams among the noise speckles that make up most of the waterfall.

Normal HF radio caveats apply – whether or not transmission is audible will depend on the time of day and other influences on ionospheric conditions.

Notes:

1. This open-source app should work on most browsers; your indefatigable newsletter editor has used it successfully via *Firefox, Chrome, Safari* and *DuckDuckGo*.
2. There are several Australian receiving stations with this capability around mainland Australia; this one is relatively close (near the Clare Valley wine district) and seems to have a quite effective antenna.
3. You can try out this app at home, by listening to one of the TMR scheds at 07:45, 13:45, or 17:33 on 4146 kHz or 6227 kHz. Bear in mind TMR are transmitting from a tall radio mast radiating 400 watts, listening for transmissions from a boat with less than 120 watts and with a more or less effective backstay antenna and a problematical power supply may be quite a different kettle of fish.

After the 1st October 2023, certification using the Tarlee receiver can be achieved by contacting one of the following members of the VDL-C 2024 Organizing Committee to arrange a time for a certification transmission.

Here are their phone numbers and email addresses:

Jeremy Firth	☎0418 126 048	firthjeremy@gmail.com
Bill Newman	☎0412 531 318	maatsuyker@bigpond.com
David Meldrum	☎0418 348 938	dmeldrum@swp1.com.au
John Hall	☎0429 313 211	jhmelbourne@outlook.com

Some Helpful Hints on HF Radio Installation:

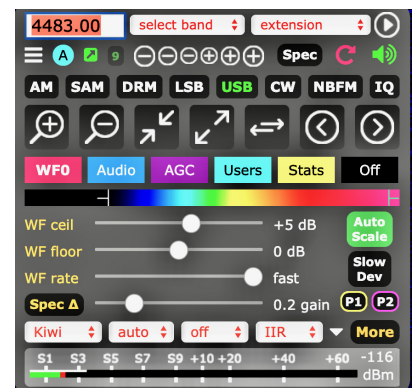
If you currently do not have an HF radio on board, you are strongly advised not to leave its installation until the last minute. Installing a fully functional HF system is something of a dark art and is rarely achieved without at least one hiccup.

If you are having trouble achieving the requisite HF radio performance level, here are a some suggestions for improving the signal:

- Ensure all the cable connections (radio-to-tuner, tuner-to-antenna, tuner-to-earth) are in good order – making good contact, with no corrosion to inhibit electrical connection.
- The cable feeding the signal from the tuner to the antenna has to be unshielded (i.e. not coaxial) and thus should be separated as far as possible from anything that might act as even a partial earth. RF radiation wants to run along the surface of a metal-conducting medium (wire or a copper strip).

This means:

- the tuner should be as close as is practicable to the antenna so the unshielded cable feed is as short as possible, thus minimising radiation leakage before it reaches the antenna;
 - if the tuner is below deck, it should have a properly designed through-deck fitting insulating the antenna feed;
 - if your antenna is an insulated backstay, spacers should separate the cable feed from the backstay below the insulator by at least 100 mm (and as far as possible be located at least that far from anything else).
- Check there is an effective earth connection from the tuner to the sea outside the hull. This is as important as unshielded cable separation on the antenna side of the tuner. If the earth strap is connected to a through-hull fitting or to a keel bolt, be sure to check the contact has not become corroded or too oily (particularly if it is in the bilge). A properly designed and weed-free earth-plate on the outside of the hull below the waterline is strongly advised for all nonmetallic hulls, especially for those where the metallic ballast of the keel is encased in plastic.
 - To check the effectiveness of your installation, rather than transmitting from a marina berth surrounded by aluminium masts, steel shrouds and many electrically noisy devices that are unlikely to do justice to your transmission's strength or clarity, it is better to conduct your HF certification transmission in open water.



Even though HF radio waves from your antenna will bounce off the ionosphere in most directions on their way to their destination, if your antenna is the backstay it is a good idea to point the stern of the boat in the general direction of the receiving station.

A transmission on 4 mHz across Bass Strait from Hobart to South Australia, or from other places on mainland Australia's E coast to Bruny Is., is most likely to get through early in the morning or late in the day.

- If you have any doubts about the strength of the ship's battery to supply sufficient RF transmission power, try transmitting with the engine running so that you are drawing power from its alternator, rather than a battery. It may sound noisy to you, but not necessarily to the receiving station.

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