

The Yaesu VX-6E Dual-Band Heavy Duty Waterproof Hand-Held Transceiver

Richard Newton GORSN is a keen outdoor man both professionally and while enjoying the hobby. Despite the Gilbert & Sullivan quote that his duty is difficult and "...has to be done" - he's really enjoyed using the rugged Yaesu VX-6E in the rain!



● "I'm pleased it's raining, really, so I can give the rig a thorough test!"
Richard Newton GORSN on a wet caravanning holiday!
(Photographs of Richard courtesy of Diane Newton M3HUN).

The Yaesu VX-6E is a dual-band f.m. transceiver offering full coverage of the 144 and 430MHz Amateur radio bands and a lot more besides! It's compact in design, excluding antenna, knobs and belt clips it only measures about 58 x 89 x 28.5mm. With antenna and battery pack and only weighing 270g, you hardly know when it's clipped to your belt!

The rig is very rugged and is clearly built with an outward-bound life style in mind. The rig looks fit for anything and finished in a matt finish black plastic it follows in the tradition set by the VX-5 and VX-7.

The Yaesu VX-6E is waterproof, **Fig. 1**, being manufactured to a specification that allows it to be submersed to a depth of three feet for a period of 30 minutes. The fact that the rig was waterproof was to prove invaluable while I was testing it out, more on that later!

The rig is supplied with a FNB-80LI 7.4V d.c. 1400mAh lithium ion battery pack. It has a 50Ω helical antenna with SMA type fitting. Also supplied is a wall charger, belt clip and hand strap and a well-written owner's handbook.

Packed With Features

So, let's now take a detailed look at the transceiver. Firstly, the Yaesu VX-6E is packed with features and I would highly recommend a good read of the manual to get the most out of what's on offer. The manual is essential reading!

Although it's a multi-band rig, the Yaesu VX-6E will only display one band, **Fig. 2**, at a time. The display is extremely clear and has a very effective backlight. This backlight also illuminates the keys and their primary functions, however the secondary and tertiary functions are not illuminated - but are clearly labelled on the external casing.

Like most modern transceivers, accessing a set-up menu enables the user to configure the more advanced functions on the Yaesu VX-6E and tailor it to their particular needs. The set-up menu on The VX-6E is very user friendly, being very easy to navigate.

Considering the VX-6E is feature-packed radio it's quite straightforward in appearance. The rig has two main control knobs on the top of the unit, **Fig. 3** (also showing charger for size comparison) and

these are ordinarily used to control the tuning and volume. However, the use is determined by the current function of the radio. For example, the same knobs are used to navigate the menus or step through memories.

The Yaesu VX-6E has a four-conductor, single jack socket on the top of the unit. This provides for the connection of an optional speaker/microphone.

Optional accessories can be purchased and these are designed with this specific type of four



● **Fig. 1: The sturdy Yaesu VX-6E shrugs off the rain - unlike GORSN!**



● **Fig. 2: The Yaesu VX-6E although a dual-band transceiver, displays one band at a time (see text).**

conductor plugs or you can purchase an adapter so that more conventional two times stereo plugs can be used. The Yaesu VX-6E also has the facility to connect an external 13.8V d.c. supply via a socket on the side of the rig.

Versatile Design

The Yaesu VX-6E offers versatility in almost every aspect of its design. Even the transmit deviation and microphone gain can be adjusted! The latter feature may be useful if you are connecting a TNC for packet radio to the microphone line, as it is easy to over drive such a device.

The squelch threshold is factory set but is easily adjustable via the set up menu. The VX-6E also offers advanced squelch control by use of full CTCSS and DCS operation and features paging and selective calling facilities.

Facilities for adjusting output power on the transmitter follows the general attention to detail. This is because the Yaesu VX-6E has the ability to adjust between a full 5 (even on the supplied battery pack), **Fig. 4**, a lower 2.5, 1W or an extra low 300mW setting. The lowest setting would be for really close communications at a rally perhaps, a great energy saving facility!

Separate transmit powers can be selected for each of the transmit bands. For example, you could have a low power setting for the 144MHz band because you are using a near-by repeater. And when you select the 430MHz band the rig can be set to automatically change to a high power setting to gain more distance on the higher frequencies.

Switching On

When the VX-6E is switched on, it provides a momentary display of the voltage being supplied to

the rig. This is a useful check for battery power.

Incidentally, the transceiver can display other useful information such as temperature, although this is the internal temperature of the rig. With an optional extra the rig will even tell you the barometric pressure and your altitude! (Very useful for /P work - much easier than trying to read a flapping paper map and contours and spot heights!).

The operator can also set the power on message to be whatever is desired up to six characters. I was intrigued and as this feature seemed to lend itself to a bit of self indulgence - I just had to programme in my callsign! But seriously if you lose the rig and you are lucky enough that a kind person recovers it what better way to assist it's safe return to you? That's my reason and I'm sticking to it!

The l.e.d.s on the front of the rig illuminate in the same way as many others - but with a slight difference. It glows red on transmit and green on



● **Fig. 3: The rig has two main control knobs on the top of the unit - also showing the charging unit for size comparison - and these are ordinarily used to control the tuning and volume.**

receive. However, this l.e.d. can also be set to be a lamp and it becomes a high brightness l.e.d. glowing white.

The other feature where the high brightness white l.e.d. comes into its own is that the rig has an emergency feature. When activated the rig will emit a loud noise and the high brightness l.e.d. will flash in a strobe style. It can even be set to continuously flash out SOS!

Is the SOS a bit of a gimmick? Maybe, but if carried by a walker, or when considering the waterproof feature for use on a small boat (for example), I'm sure this light would be better than nothing if you were in trouble in the pitch black and wanted to attract attention or indicate your location - the light would come into its own.

General Coverage

The rig not only offers transmit and receive coverage of two very popular Amateur bands but also a general coverage receiver. The modes and memory allocations more akin to a wide band scanning receiver than a dual band Amateur rig.

The Yaesu VX-6E offers a double conversion superheterodyne a.m. receiver, a narrow frequency modulation (f.m.) reception, and triple conversion superheterodyne receiver with wide f.m. receive modes across a wide coverage.

The rig has 11 bands in all.

504kHz – 1.8MHz

1.8 – 30MHz

30 – 88MHz

88 – 108MHz

108 – 137MHz

137 – 174MHz

174 – 222MHz

222 – 420MHz

420 – 470MHz

470 – 800MHz

800 – 999MHz

Each band has its own **Home** channel, a simple memory where you can store your favourite channel. Perhaps the one for 144MHz band would be 145.500 (the calling channel). Alternatively your local repeater, with the Home channel on Air band the tower at the local airport maybe? Whatever you decide - you can be programmed into the receiver.

The VX-6E's 900 standard memory channels augment the impressive frequency coverage and 50 sets of programmable band edge scan limits (programmable band scan) are also provided! There are 24 separate banks available so that the standard memories and programmable band scan limits can be organised into banks. Each of the 24 banks is able to take a maximum of 100 memories. As if that was not enough, the rig comes pre-programmed with Short-wave radio and vhf marine frequencies!

There are 89 short wave broadcast stations pre-programmed, covering the whole globe from Voice of America to BBC world service, from China to Finland and many, many more. All the v.h.f. Marine channels are also pre programmed, all 280 of them!

The Yaesu VX-6E has the ability to vary the tuning steps; the steps available are 5, 10, 12.5, 15, 20, 25, 50 and 100Hz. Additionally, 9kHz tuning is available on the medium wave broadcast band, the channel spacing for this band. However, Yaesu have not included the 8.3kHz tuning steps for the Air Band.

Amateur Bands Transmit

The Yaesu VX-6E will obviously only transmit on the recognised Amateur Radio bands of its coverage. But I have to say that when you are camping or just travelling and have an interest in radio - it's great to be able to take your hobby in one useful little package.

I was particularly interested with how The Yaesu VX-6E would fair on a caravan trip with my family, so off we went to Cirencester for a week.



● **Fig. 4: The transceiver can provide a full 5W output using the supplied battery pack (see text).**

Well, we were going anyway to tell the truth, but it was an opportunity to put the VX-6E through its paces.

No doubt, you'll be amused to know that we chose to camp in the Cotswolds during the week that the Tornado hit Birmingham! But the wet weather did give me an opportunity to try out the waterproof qualities of the VX-6E, and the efforts I go to for *PW* were kindly captured on film by my wife **Diane M3HJN**, who I have to say found the whole thing quite hilarious! And I can now confirm that the VX-6E is more waterproof than I am!

Once on the site I'd rigged up a small mast and put a Watson W30 collinear antenna on top. I purchased an SMA to SO239 coaxial adapter, so I was able to connect the rig to the mast antenna when necessary

Smart Search

Having settled in, I decided it would be a good time to try out the VX-6E's **Smart Search** facility. New to this feature? I'll explain; when you use Smart Search the rig tunes above and below the current operating frequency and automatically stores any busy frequency it finds in a special bank of 31 memory channels.

The VX-6E will store 15 frequencies above and 15 below the current working frequency, and the current working frequency itself - if activity is found. This is a great way to identify where the local activity is with no pain at all. In fact you can set the rig to just do this continuously or just a single sweep!

In fact I used this great feature to wonderful effect by putting the rig on a frequency 145.7MHz, and setting the steps to 12.5kHz I was able to search the entire repeater allocation and very quickly found the local repeaters the receiver could hear. From my caravan site location I could hear about five repeaters, but by far the best signals received were from **GB3WH** and **GB3VA**.

Using the rig on the main antenna I spoke to **Bob G0VTA/M** through GB3WH and had a very enjoyable chat with him while he was on the way to his radio club in Swindon. Bob reported the signal from the VX-6E as having "Very nice, smooth modulation, good clarity". He went on to say it was just what was needed for mobile operators.

My brother, **William G7GMZ** and his family

came up to visit us and I worked him using simplex on the way in. I used both the main antenna and the helical whip. William said; "Sounds fine Rich, good signal, very crisp".

Conventional Twiddling

Although extremely impressed with the VX6-E's Smart Search facility I thought it best to go back to more hands-on conventional twiddling to find some aircraft frequencies to listen into. Being so close to Fairford and the former RAF airfield at Kemble (now a civil airfield) there was no shortage of traffic to hear.

I was extremely impressed with the receive quality of the a.m. air band transmissions I listened to on The Yaesu VX-6E. I have to say that it was just as good, in fact may even have had the edge, over my AOR 8200 wide band receiver that I normally use for Air band listening.

It's worth mentioning that I've looked and tried many hand held radios that purport to offer air band receive. I don't exaggerate when I say the VX-6E is one of the best I have ever used on the band.

Another useful feature on the transceiver was the rather impressively named **Automatic Range Transponder System**, ARTS for short. This is useful where two radios carrying this feature can be set to poll one another and bleep or just display whether the two radios are in communications range.

My boys, **Fig. 5, Tom M3TJN** and **Oliver M3ORN** are 12 and 10 years old. I own a VX1, which also has the ARTS feature and it struck me that it would be a great opportunity to trial ARTS there and then!

A good test idea seemed to be if I could get the boys to carry my VX1 - set to low power - and I used the VX-6E set to 300mW. I would then have early warning of them wandering too far on their bikes!

If the VX-6E gave the out of range warning it would be just a case of putting up the power or popping the rig on the main antenna and giving them a shout to make sure everything was okay. The other benefit of this system is that if you are calling on the radio and getting hoarse and no reply - at least you know that the radios are in range and working fine, so the break down in communication is due solely to human error (or the boys don't want to come back for lunch!).

Not Enough Room!

I honestly don't have room in the article to tell you about everything this rig will do. However, just as I was thinking that I'd discovered everything the VX-6E did, I was flicking through the manual during the holiday and discovered the rig is also a Morse tutor! It worked extremely well, and I had great fun brushing up on my Morse.

Well, as you can now judge it was great fun

using the VX-6E. It really did do well, provided great company at night for the family when tuned to BBC Radio 2, gave excellent audio and much better reception than the portable radio I'd taken designed for the task!

Finally, it's worth mentioning that the l.e.d on the front, set to light mode, gave enough light to read by in the caravan! And the automatic power-off and power-on features made sure it kept us company at night and woke us in the morning. It's a truly versatile radio!

PW



● **Fig. 5: Tom Newton M3TJN and Oliver Newton M3ORN are 12 and 10 years old. Richard owns a VX1, which also has the ARTS feature and decided to trial the ARTS there and then to keep track of his sons (see text)!**

● Product

Yaesu VX-6E dual-band hand-held transceiver

● Company

Yaesu UK Ltd.

● Contact

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● Pros

Well, as you can now judge it was great fun using the VX-6E.....It really did do well.....It's a truly versatile radio!

● Cons

Yaesu have not included the 8.3kHz tuning steps for the Air Band and displays one band at a time (see text).

● Price

£229

● Supplier

Thanks for the loan of the review unit go to **Yaesu UK Ltd, Unit 12, Sun Valley Business Park, Winnal Close, Winchester, Hampshire SO23 0LB.**