Get out and use it!

● The Icom IC-910H transceiver provided Richard G0RSN and Terry G7VJJ with a great deal of pleasure on the v.h.f. and u.h.f. bands.

The Icom IC-910H

Despite being in the middle of moving to a new home when asked to review the IC-910H, keen *PW* reviewer Richard Newton G0RSN wasn't phased at all! He just recruited his father-in-law Terry G7VJJ's shack and antennas!

When I was asked to review Icom's new IC-910H s.s.b., c.w. and n.b.f.m. transceiver covering the 144 and 430MHz bands, with the ability to incorporate 1.3GHz (23cm band) as well, I realised I had to enlist some help!

I hadn't done any serious operating on either the 144 or 430MHz bands for a while. Additionally, due to an impending house move, my antennas and shack were packed away, so I called my father-in-law **Terry Wood G7VJJ** for help. Terry has good antennas and was very keen to lend a hand reviewing the IC-910H.

Professional Looking

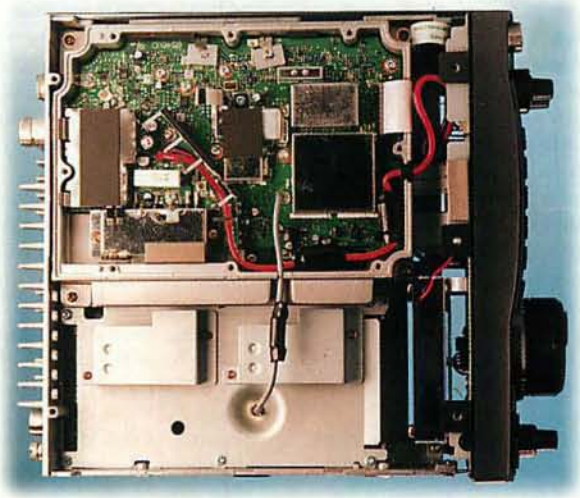
The transceiver is very professional looking, and although the IC-910H is not a large rig, it has the look and feel of a base station and is smartly finished in grey. One of the first things that we noticed was the well labelled and sensibly laid out controls.

The radio is supplied with a fist microphone, power lead and some spare fuses. An informative and well-written instruction manual is also provided. And although **this is definitely** a radio that you can plug in, switch on and operate immediately - if you want the full value - you **must** read the instruction manual.

Measuring 241 x 94 x 239mm deep the IC-910 weighs a reassuring 4.5kg. This increases slightly to 5.35kg when the optional 1.3GHz band unit is installed.

On v.h.f. the IC-910's receiver works as a single conversion superhet (10.8MHz i.f.) on s.s.b. and c.w. For v.h.f. n.b.f.m. operation the receiver is double conversion with a 455kHz second i.f. When operating on u.h.f. the receiver operates in double conversion mode for s.s.b. and c.w (using a 71MHz 1st i.f.) and as a triple conversion on n.b.f.m. (71, 10MHz and 455kHz).

Running at 100W the rig will draw up to a maximum of 23A on transmit on 144MHz and a maximum 75W on 430MHz. The optional 1.3GHz module provides an output power of 1-10W. If you're keen on operating portable it's worth noting that the IC-910 draws anything from a minimum of 2A to a maximum of 3.5A on receive (on 1.3GHz).



● Inside view showing the main chassis (underside) on the IC-910H.

Impressive Display

The front panel of the Icom IC-910H is dominated by the large display, tuning dial and the well organised and impressively backlit display. This shows the main band frequency at the top in large characters and the sub band frequency in slightly smaller characters immediately below.

Operating the transceiver **is a delight** and manipulating the frequencies in either the **Main** band dial or sub band dial **is wonderfully easy**. Switching from main band to sub band, bringing the sub band to the main band and even swapping between the two v.f.o.s and memories on each band is very straightforward. In fact it was a lot easier to do rather than write about it!

Impressive Features

The IC-910 is armed with some very impressive features and has all the bells and whistles I would

hope to see on any self-respecting base station. It's equipped with direct entry keypad; Voice Operated Transmit (**VOX**), and a user-defined microphone gain control with a compressor that can be switched in as desired. It also has a **RF Gain/Squelch** control that can be set up in different configurations to suit different operating styles.

On the air the Icom IC-910H is well equipped to cope with the bands at their busiest and help work that illusive DX. There's a rather effective attenuator offering protection against distortion from large signals.

Additionally, the auto-frequency control is useful in the n.b.f.m. and a.m. modes to track received signals that drift a little in frequency. Lastly, I was pleased to see one of my favourites, the **RIT** and intermediate frequency (i.f.) **Shift** facility.

The i.f. Shift facility is especially useful when you're working a DX station and there's strong adjacent channel inference. By using the Shift the operator can slightly adjust the receiver's i.f. pass band frequency within 1.2kHz, providing an extra edge on selectivity to complete the contact.

As an optional extra you could also choose to install Digital Signal Processing (DSP) unit for your main band. Additionally, if you're feeling particularly flush you could install a second unit to provide this on the sub band as well. (The optional DSP filter also provides an automatic notch filter).

The Icom IC-910H is well equipped with 99 regular memory channels and six scan edge memories. It also incorporates a call frequency for each band

● The antennas used by G0RSN when operating from G7VJJ's shack to evaluate the IC-910H transceiver. (photo courtesy of Terry Wood G7VJJ).

Optional Extras

Many optional extras are available for the IC-910H. Amongst these are external weatherproof masthead pre-amplifiers controlled from the radio. Once installed they're activated (by a selection in the IC-910's user set-up menu) and then turned on and off by a front panel button. You can also add a high stability crystal unit to further improve the overall frequency stability, together with a narrow c.w. filter.

The transceiver provides voice capability on narrow band f.m. (n.b.f.m.), a.m and s.s.b as well as c.w. You can even transmit c.w. using the built-in c.w. keyer and the **Up** and **Down** buttons on the microphone! I actually put out a Morse CQ call on 144.050MHz but got no reply, a relief to tell the truth as I am a little rusty on c.w!

The Icom IC-910H also offers Data modes at 1200 or 9600bps via dedicated mini data ports on the rear of the radio. Although the rig does not have an FSK mode for RTTY, PACKET or AMTOR, etc., these are operated using ASFK in either the n.b.f.m or s.s.b modes.

You can also add a high stability crystal unit to further improve the overall frequency stability. And for the c.w operator a narrow c.w. filter in the main and sub band can be fitted. There's also a voice synthesiser unit which can be added to help operators with sight problems.

Satellite Operations

Another advanced feature that the Icom IC-910H offers is Amateur Radio Satellite operations. However, I must confess I've not tried this mode. But I have been impressed by other's efforts and their rather impressive antenna arrays.

The Icom IC-910H seems to offer the would-be satellite operator a myriad of choices. It's able to operate both satellite mode B (435MHz up-link and 145MHz down-link) and also satellite mode J (144MHz up-link with a 430MHz down-link) which can be further extended with the addition of the 1.3GHz module to encompass the satellite mode L.

Even the Icom IC-910H instruction manual advises the new operator to seek advice and further information before attempting satellite working. I felt this was a very good idea!

Band Sweep

Just before the on air results I must mention the band sweep function, which I liked very much. In principle this operates as a simple band 'scope. However, the most interesting feature is that it **doesn't disable** the received audio when it's in operation.

Using the band sweep means that you can monitor the calling frequency **and see a visual representation** of where the activity is. This is then indicated by segments on what's normally the S-Meter. (The sweep time interval is user-selectable via the set up menu).

Ready To Go!

At last we were ready to go! Operating from Terry's shack not too far away from my own QTH on the outskirts of Bournemouth (about 30m above sea level) we had the IC-910H connected to his 9-element horizontally polarised 144MHz beam. We also had a white stick style collinear for the 144 and 430MHz bands.

Even though the review radio was equipped with the 1.3GHz module, we didn't have an antenna capable of transmitting on that band. However, I listened round using a discone antenna but didn't hear any transmissions.

Terry and I threw caution to the wind and fired up the Icom IC-910H and first tried calling on 144.300MHz, the s.s.b calling frequency. Then I heard F6IFR calling "CQ Contest" from JN09TT a distance of 400 kilometres or so. I went back to him and received a 53 report (he was an excellent signal with us).

Spurred on by our success we renewed our CQ calls and had a very enjoyable chat with **Roger Powell G0AOZ**, located near Abingdon in Oxfordshire. Roger gave us some excellent reports saying that the IC-910H "sounds very nice, crisp communications quality audio" and went on to say that the transmitted audio was "sharp".

We started off the QSO with G0AOZ receiving a 4 and 2 report. However, after raising the antenna to

Product

Icom IC-910H v.h.f./u.h.f. Transceiver
Cost: *£1299 (Icom RRP)*
Company: *Icom (UK) Ltd.*
Contact: *Sales*
Tel: *(01227) 741741.*

Pros & Cons

Pros: *A joy to operate, The received audio was excellent, The large tuning control knob and the easy way that you can change tuning steps and switch between v.f.o.s made trawling the bands so simple.*

Cons: *If you're keen on operating portable it's worth noting that the IC-910H draws anything from a minimum of 2A to a maximum of 3.5A on receive (on 1.3GHz).*

Summary

You can get it out and use it straight away. But after an hour or so with the manual and playing around and you will be having great fun and using more and more of the advanced features. The IC-910H can also be computer controlled using the optional CI-V converter and the plug on the rear of the radio.

Terry and I had great fun operating the Icom IC-910H, However I did feel almost guilty about having so much fun as the IC-910H has the air of a 'serious rig'. It has the potential to be a very competent piece of hardware for the discerning and serious v.h.f./u.h.f operator.

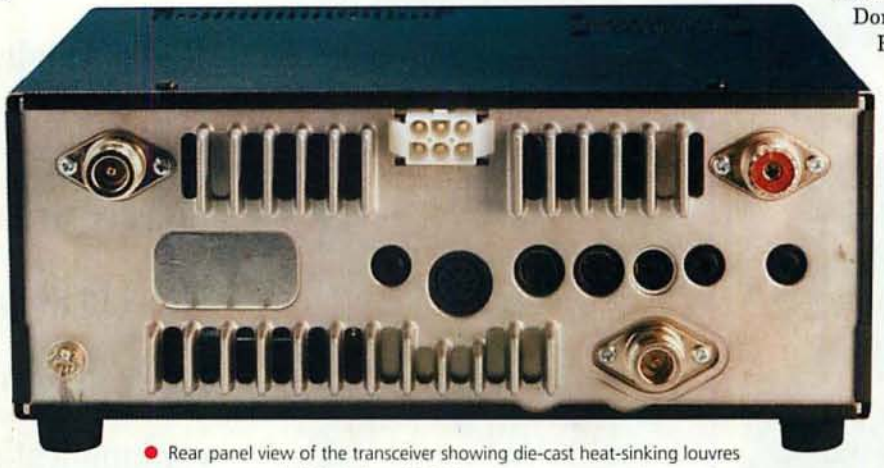
Thanks

Thanks for the loan of the review IC-910H go to ***Icom (UK) Ltd., Sea Street, Herne Bay, Kent CT6 8LD. Tel: (01227) 741741.***

the full height of Terry's Tenna mast (approximately 10m) and turning the beam we enjoyed a 5 and 9 each way contact that Roger described as being "Armchair copy". Roger was about 114km away using a Kenwood TS-711E running about 60W into his home-brewed 16-element beam.

We were then called by **James Roff 2E1EMK**. James was about 72km away from us in a village called Willcot near Pewsey in Wiltshire. James was running his 10W maximum from a Yaesu FT-100 into a 9-element beam.

James reported that our audio was very good, describing it as "Loud and punchy". He also took the time to help us out with tests on the 430MHz band. We went onto vertical polarisation and had a good s.s.b. contact with James, although it was somewhat more difficult than 144MHz, so we went back to v.h.f. to finish off our QSO.



● Rear panel view of the transceiver showing die-cast heat-sinking louvres vents, and v.h.f, u.h.f. and 1.3GHz antenna connectors (see text).

We were then called by **George Aldeman G3BNE** in Sidcup in South East London. George had been very patient as he'd been waiting during our QSO with James. George gave his locator as JO01BJ, this translates to a distance of about 150km.

George was operating a Kenwood TR-751E with a 9-element beam. He gave us a great report saying that we were 5 and 1 rising 5 and 3 and with the odd aircraft reflection we rose to 5 and 7!

During the QSO George explained he was employing DSP. He told us that he'd found the better the received audio was - the better the DSP actually worked. He used this as a way to demonstrate that the audio from the Icom IC-910H was very good indeed. George commented that the modulation was excellent even when we went down in the noise occasionally.

Joy To Operate

At this point I have to say that the Icom IC-910 was a joy to operate. The large tuning control knob and the easy way that you can change tuning steps and switch between v.f.o.s made trawling the bands so simple.

The received audio was excellent, it was so easy to hear even a distant or weak signal and then be able to turn the beam and make a contact. Although the optional masthead pre-amplifier is undoubtedly a good idea for serious contesting or DX hunting, the fact remains that the IC-910 seems sufficiently sensitive for an enjoyable and productive every-day QSO.

The contacts just kept coming! We spoke to **Kevin Danks G0DBI** who was not far away from us near Christchurch. Kevin was using the Yaesu FT-817 and reported our signal as being "Impressive" (rarely I am called impressive!). Thanks Kevin! As we were not too far away from each other we went for a QRP contact and I turned the IC-910H down to the minimum 5W and Kevin dropped from his 5W down to 500mW. We still received Kevin as a strong 5 and 1 signal.

Nick 2E1IDX in Hertfordshire, at a distance of about 200km also gave us a very favourable report. He was using the Kenwood TS-2000 with 10W into a 14-element beam.

Having now satisfied ourselves that the Icom IC-910H was competent on s.s.b we decided to give a go on n.b.f.m. Again we had little joy on 430MHz, but tuning round the 144MHz band we heard a French repeater on 145.325MHz, which provided a clear 5 and 2 signal. This was a good indication that this band was 'up'.

We were soon in contact with **Rex M1DLN** from just south of Winchester in Hampshire. Rex said that Bournemouth was a difficult path from his direction and complemented us on the "Nice strong signal", he went on to say that the IC-910 "Sounds very nice". Rex was using an Icom IC-2100 and was about 75m or so above sea level running about 25W. We achieved a 5 and 9 report after putting the antenna up to full height. This was a trip of about 60km.

Finally Terry spoke to a good friend of ours, **Bob Knight G6DZM** while he was mobile on the way to the Dorset town of Blandford Forum to a local club meeting. Bob was also very impressed with the good audio from the IC-910H, saying that he had no problem hearing us even with the mobile flutter. I guess at the most distant Bob would have been about 25km away over less-than-ideal terrain.

Jam Packed

In my opinion the Icom IC-910H is just jam packed with useful stuff like the band sweep, together with full CTCSS, auto repeater shift and quick access memo pads for rapidly storing interesting frequencies. Despite these facilities I think that the main attraction of this menu driven rig is that **it's so easy and simple to operate**. Honestly it really is!

I would like to say a quick thank you to Terry as not only did I take over his shack to do this review. I also commandeered his computer to write it as I had packed mine away for the move! *PW*

● Richard G0RSN on the air from G7VJJ's 'borrowed' loft shack where he reports that the IC-910H provide a great experience for both operators. (photo courtesy of Terry Wood G7VJJ).