

Last Month's Meeting. Practical Wireless by Rob Mannion G3XFD.

Rob travelled all the way from Poole in Dorset to give his talk. It had been eagerly awaited by Club Members and the audience completely filled the hall.

He said it was 45 years since that he last came to Marconi's to learn about some Marconi equipment that was being fitted in the Gannet Airborne Early Warning helicopter. They also made the radio altimeter that wasn't fitted in the aircraft in which he later crashed.

Rob used to be in the Royal Navy Fleet Air Arm and would fly in a Gannet 2 or 3 times a week. He was responsible for looking after the communications equipment. When the Gannets were first delivered in 1957/58 Collins spectrum analysers were to have been used to detect the fingerprint of any submarines in range. On delivery it was found the Collins equipment wasn't available, so pan-adaptor displays made by the Amateur Radio manufacturers Heathkit were used as a stop-gap instead. So for a while the defence of the realm depended on Amateur Radio equipment. Incidentally the sonar buoys dropped from the Gannet transmitted on frequencies just below our 430 MHz band. A Gannet he was flying in crashed in 1962 and Rob lost an arm and suffered severe injuries to his legs, which resulted in him being invalided out of the Royal Navy.

He got his amateur radio licence G3XFD in 1968 and also qualified as a medical doctor the same year. During the early 70's he was Scottish editor and medical correspondent of Rail News magazine. He then joined the IBA at Winchester in 1974 where his boss was Pat Hawker G3VA. During this time he was used by Southampton University as a test bed for an electronic arm. This proved very uncomfortable to wear and in the presence any RF, from a nearby transmitter, the arm would open and close on its own. Rob called this his "Dr. Strangelove" arm. Walking down long carpeted corridors was also a problem due to the static which caused the arm to open and close continuously soon flattening the batteries.

Rob had brought along his travelling archive containing copies of Practical Wireless from the 1930's and 40's. One issue of PW came with a free toolkit containing good quality tools in a metal case. Somewhat different from the cheap plastic freebies magazines have today! He passed the magazines around the audience along with the PW Comment Book so he could get members feedback on the modern day magazine. While these were circulating Rob launched into the history of the great magazine.

The Radio Boom.

After the Great War masses of scrap wireless kit was available on the surplus market although some of it needed a team of horses to pull it! In the UK and Europe governments were not keen

on citizens having access to wireless. Fortunately in the USA a more enlightened attitude prevailed and

as a result broadcast radio flourished. During 1920/21 radio masts went up everywhere. Accompanying this there were well over a hundred different magazine titles available in the States catering for the thirst for information on the new medium of Wireless.

The UK lagged behind but between 1922 and 1926 there were over 40 separate radio titles being published. At that time all magazines were weekly such was the demand, but many magazines floundered after just a few months. This was because many people could only afford to build crystal sets and there was a limit to how many variants of these you could publish.

Practical Wireless is Born.

After 1926 the boom in radio titles started to drop off. Practical Wireless itself appeared in September 1932 long after all the other titles had become established but despite it's late start it was to outlive the other established titles.

It was an immediate success and the first weeks' issue of 400,000 copies completely sold out. The circulation figure eventually settled down to about 250,000 a week, this compares with a circulation of under 20,000 today.

Its founder was Fred Camm; an enterprising character, he founded a host of magazine titles covering all sorts of technical and specialist interests. Fred founded Practical Wireless on a central core of tried and tested projects. He was only too happy to take other peoples ideas and circuits and pass them off as his own. When Pat Hawker G3VA visited the Practical Wireless offices in the mid 1930's he found over 40 staff trawling through wireless magazines from all over the world. They took the articles from other magazines and published them under Fred Camm's name.

Surplus Equipment.

Practical Wireless kept publishing throughout the 1939-45 war although with much reduced size due to the paper shortage. The end of the war saw the release of a huge amount of surplus equipment and people from the Forces. Rob mentioned that some of the ex-service telegraphists have only recently been able to get into Amateur Radio following the introduction of the Intermediate and Foundation Licences. Rob recalled that he worked a recently licensed ex-WRAF wireless operator who is now in her 80's but she could still send and receive morse code at 20 wpm.

In 1946 Practical Wireless comprised 100 pages of which 70% were adverts and 30% was editorial, this is twice the amount of advertising that Practical Wireless has today. Amongst the adverts from that time were EF91 valves for 9d (4p) each and all manner of components and surplus military equipment. During the late 40's and 50's Tottenham Court Road and Lisle Street in London became a mecca for shops specialising in military surplus equipment.

PW loses direction.

Fred Camm passed away in 1959 and under the various editorships Practical Wireless rather lost its sense of direction trying a variety of different ideas to maintain circulation. The magazine published a series of articles under the heading "Practical Electronics" these proved immensely popular and before long a separate magazine title of the same name was created. In the early 70's PW helped develop another niche publication market when it printed the PW Treasure Tracer metal detector project which used the Denco long-wave oscillator coil. Such was the success of this project that everywhere sold out of the Denco coils. The project resulted in the new hobby of metal detecting supported by several new magazine titles. Even today there are still 3 or 4 magazines that specialise in the subject.

PW embraces Amateur Radio.

Around about 1978/79 other magazines such as Radio Constructor were dying and it was decided that Practical Wireless would become an Amateur Radio magazine.

In the 1980's IPC, the owners of PW and a host of other magazines, decided to get out of specialist publishing and gave all their specialist titles to their staff as part of the redundancy package. The 7 staff members of the Practical Wireless become overnight the owners and they moved to new offices down at Poole Quay in Dorset.

Rob joins the PW team.

At the end of the 80's the magazines highly respected editor Geoff Arnold G3GSR decided to start up a new magazine called Radio Bygones. This meant a new editor had to be found. Rob at that time was working for Navy News but he proved to be far too outspoken to fit in with the regime there. He was, however, initially hesitant about joining Practical Wireless as editor because all of the other staff at PW were also the magazines owners. Fortunately he decided to make the move and he's still there 14 years later.

When Practical Wireless started off back in 1932 it was produced by a staff of 120 now they are just 3 people who produce the entire magazine. Rob is the only one of the 3 who works full time on PW the other two also work on Short Wave Magazine and Radio Active.

Although the magazine is produced in Poole it is actually printed in Lincolnshire. The entire publication is downloaded to the printers using ISDN telephone lines. The time for the make up and preparation of the magazine which used to be 2 or 3 weeks, is now down to 3 or 4 days.

Rob is a true professional committed to getting the job done and at times has worked a straight 27.5 hour day in the office in order to get the magazine out on time. [I don't know how he does it, I feel shattered after working a 14 hour day – M5AKA] PW readers are always requesting more and more construction articles but Rob has discovered that

although they may like reading such articles very few appear to actually build them!

The publishing environment today is fiercely competitive with over 5500 different technical magazines (75% computer related) fighting for shelf space in the High Street newsagents.

Rob said he hopes one day to produce a magazine with no mistakes but given the pressure under which the small dedicated team of staff work it's not too surprising that the occasional typo creeps in.

In Conclusion.

This short report has concentrated on the basic history of Practical Wireless. It cannot hope to convey the glory of Rob in full flow. His talk was peppered with a 101 anecdotes ranging from topics as diverse as the maker of road cats-eyes to King Hussein and John Birkett's Lincoln emporium. After the meeting Members commented that his was the best talk we'd had at the Club for many a year. Thanks Rob for a first class evening.

Rob asked that his travelling expenses for the evening be donated to the RAIBC

Report by Trevor M5AKA

The Floating Transmitter by Dave G3PEN.

Back in the late 50's, some parts of Ilford and Seven Kings were still on DC mains - at 220V. In fact, this supply was a 3-wire system, with +220V, -220V and a common return wire, plus earth. Most premises had either a positive or a negative supply only, but at F&S Ruth's, radio and electrical emporium for the cognoscenti, the shop had one polarity and Fred (Junko, G2BRH) Ruth's attached house had the other - and Fred's workshop/shack cum Ilford Radio Club meeting room had both.

Now, most old electrical appliances eg fans, vacuum cleaners, fridges etc. used locally were entirely unsuitable for use on AC mains, because the motors were not of laminated iron. When the local electricity supply company eventually up-graded the district to AC supplies, they did it bit by bit, compensating householders with cash to buy new AC machines. As the old machines were not collected in (oh dear!), a brisk trade developed in the area, partly via Junko and Sid's shop, where old DC machines were bought-in, and re-sold to people still using DC. (It was fair enough in some ways, as the change-over extended over a couple of years, and people had to have "new" appliances when necessary!) The same machines typically circulated through the shop several times. Fred and Sid, of course, had a very full complement of equipment that needed replacing, by the time their premises were "converted", towards the end of the up-grade programme.

So what had this to do with amateur radio? Well, Fred had a collection of rather ancient equipment in the shack, including an AR88 and an ex-WD Tx for Top Band and 80m, all AC-powered

and supplied by means of a very large, noisy and unreliable DC-to-AC rotary converter. The Tx was extremely inefficient in terms of AC in to RF out. He decided to change this, so that he could use a much smaller and quieter converter for the AR88 and other small items, by having a Tx powered directly from the DC mains. This Tx had to cover Top Band (160m) and 80m, with good AM plate and screen modulation, and with sufficient power to "get out" well on both bands. (Certain financial benefits from having a "DC-only" Tx at this time may also have occurred to Fred - who knows?)

So, several of us new or budding "G3s" were conscripted - we used to meet at Fred's most nights and weekends anyway - to design and build a transmitter for Fred. The Tx portion was crystal-controlled (quite a lot of stations used this, even at that time), with oscillator and buffer/doubler stages (the doubler was for 80m operation), and the output stage used an 807. This was a 40W anode-dissipation valve, and with the right voltages could run 100W input - at a pinch. The problem was, with a 220V anode supply we could barely get the legal power input on 160m, with poor efficiency, and the 80m output was hopeless. The same problem applied to the modulator section, which used 6L6s, approximately an audio equivalent of the 807.

The answer was to use both the +220V and -220V supplies available in the shack, with the +220V going to anodes in the normal manner, and with all the cathodes sitting at -220V to earth. This gave a much-needed 440V total supply, and we were able to get the power etc. that Fred required. However, this technique caused severe problems during design, construction and testing! All the stages were, effectively, "floating" ie the chassis of the Tx was at earth potential, but virtually nothing else was. All the circuit elements that should have been at earth potential were de-coupled to earth via great big silver-mica or paper capacitors.

Bias for the various valves was achieved by a combination of bias batteries and cathode resistors. Power smoothing was via some hefty chokes in both 220V supplies, straight off the mains, plus the usual capacitors (but with all the cans of the -220V "live" of course), which gave a capability for drawing several amps, so the fusing strategy was quite critical. The valve heaters were all wired from the -220V supply in series, with lots of RF de-coupling to avoid feedback, and equalising resistors across some heaters to get the right current for each valve, plus a very large ex-TV dropping resistor to set the overall current correctly. We weren't short of "amps" for this Tx. Did I say "chassis"? This rig was built as per 1930's design (most of the components were from Junko's stock of old components and from that period!), with a wooden base-board and panel. (807s etc were just available pre-WWII, incidentally.) It was to stand on a shelf in a metal rack, so didn't have any covers. The valve-holders were screwed to the board and panel, as were all the main components. The wiring was done in thick solid double-cotton-covered wire, neatly bent at right-angles as per John Scott-Taggart

practice - although we did solder the connections in most cases, rather than rely on nuts and bolts to make connection. The "common earth" connection was a very heavy-gauge wire running the length of the bread-board base, and connected to the mains and shack earth at one point only.

When we'd finished, that Tx looked like a real vintage production, and what's more - it worked! It looked really hairy, it had no RF screening against TVI, and it probably was electrically lethal to anyone foolish enough to poke around inside it - but then so were most valve Txs (and TVs) of the time. It was used for a few months, perhaps, though never on 80m, I think - and then Fred got AC mains, and a handsome cheque to replace his antique Tx with something equivalent that ran on AC. He bought a Heathkit DX100U, as a kit - and his slaves set to again, to build it, test it and get him on the air as quickly as possible. Meanwhile, Fred used the old ex-WD Tx again on AC. Incidentally, Fred was also compensated for the DC-AC converters - because they wouldn't run on AC either! (I think there's something wrong there with the logic of such compensation.)

I don't know what happened to the old rig - maybe it's sitting in some collector's shack, complete with its 1900kc/s crystal, labelled as a rare vintage construction, and adored by its current owner. I hope it isn't you!

MB7UCF by Trevor M5AKA .

MB7UCF is the callsign of the new APRS Digipeater for Chelmsford. The system runs UI-View v1.86 and is operational 24hrs a day, providing a service to local users.

You can also use the built-in INFO-KIOSK. This is a messaging system. Just send a message to MB7UCF with the text ?INFO in the message box, and you'll be presented with a list of options.

MB7UCF runs 24/7. It also serves up International stations when MOPZT is connected to the internet. This allows real-time messaging to stations anywhere in the World.

It currently runs on 144.800, with 50.990 a possibility for the Sporadic E season this year on 6m. MoD Clearance for 433.800 is also going through, and this port will be experimental, just like 6m.

The MB7UCF Server is co-sited with the GB7CF Packet Node and the MOPZT Internet link.

MB7UCF Vital Statistics.

Software:	UI-View v1.86
Radio:	FT-290R MK1
Frequency:	144.800 (50.990, 433.800)
Power Output:	2.5 - 10watts ERP (5/12W ERP on 50/433 MHz)
Aerial:	Diamond V-2000 tri-band colinear @ 45feet
Digi Paths:	CHELMS or WIDE