THE 5 METRE STORY part 3

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G6DH

Denis Heightman G6DH began listening on 56Mc/s in 1936 but as he was located at Clacton-on-Sea he did not often hear any of the London stations. His first QSO was cross-band between 28Mc/s and 56Mc/s with YL2CD (Latvia)! At 0810 on June 3rd 1937 Denis asked the Latvian station (on 28Mc/s) to listen out for him on 56·1Mc/s. This he did and he gave Denis R5 to 7 for his 5 metre signal.

The first G contact that G6DH made on 5m was in 1937 with G8MU in Ipswich and then with G5LC. In May 1938 Denis received the auto transmissions on 56Mc/s from SM5SN of the Luma Lampworks in Stockholm. It was a pity that they were not listening on the band, because G6DH is sure that a QSO would have resulted. On July 24th 1939 another strong signal, this time from Lisbon, was received by G6DH; he heard the auto transmission at 1745 of CS3VA calling G6YL but again the Lisbon station was not receiving so Denis was unable to attempt a DX QSO.

Across the Border

For several years prior to 1935 a number of Scottish amateurs were carrying out experiments on 56Mc/s under the leadership of G6WL, who, before giving up owing to ill health, inspired Archie Brown, G6ZX with the 5m bug. Archie was very active on "five" from about 1933 and had carried out many tests with G5YG, between a fixed station and a moving vehicle, and vice versa. The birth of the Glasgow and District Radio Club, and its members' interest in 56Mc/s operation, gave G6ZX new incentives and Sunday morning schedules with the local radio club began.

On May 5 1935, members of the club set off with 56Mc/s receivers, batteries, and all necessary equipment for the top of Ben Lomond (2,500ft) which was about 33 miles NW of Archie Brown's location in Clarkston. For his part, G6ZX used a beam aerial and also a straightforward vertical half-wave system. When the expedition reached the top, one of the receivers was hooked up while a short aerial was being erected, and, to everyone's amazement, Archie's signal came pounding in before the aerial was connected.

Snowdon to England

The banner of amateur radio had been planted on Snowdon by another 56Mc/s enthusiast in 1933, but this did not deter Douglas Walters G5CV and his companion David Richards (director of radio communications in the previous Mount Everest expedition) from taking their 5m gear up this 3,500ft mountain in June 1935 for more experiments. Before leaving London, arrangements were made for a full description of the tests and schedule to be mailed to 56Mc/s enthusiasts throughout the country. Marchese Marconi very kindly promised to co-operate and the Marconi Company at Chelmsford set up two special 56Mc/s stations with directional aerials for Snowdon. The War Office and Post Office also co-operated and a watch was kept on these tests by the Royal Engineers at Woolwich and the P.O. Engineers at Dollis Hill.

The first contact from G5CV on Snowdon was with G5MQ (55 miles) in Liverpool, and the next with G2IN whose gear was installed in a car near Ormskirk (75 miles). After the tests were completed it was learnt that G5JU had received their signals in Bristol (140 miles) and a report from G6CJ at Stoke Poges increased the distance to 180 miles, and, finally, on arrival back in London, Douglas learnt that his 56Mc/s signal from Snowdon had been heard by G2NU near Romford, a distance of 207 miles.

An interesting fact emerged from these tests; the signal strength from all stations fell to a minimum between 1100 and 1400 hours, a phenomenon which had been observed on several occasions during the previous three or four years, and also by Mr. Dent of the *Wireless World*.

The low power transmitter used on Snowdon was the same one that Douglas Walters had used for his aircraft and glider experiments. Their larger transmitter employed two special PX25 valves in push-pull and a PT25B as modulator. For the occasion, Messrs Webbs Radio loaned them an Eddystone 56Mc/s

THE T. & R. BULLETIN, September 1939. 161

TRANSMITTING ENTRIES

Call	Location	Crystal Frequency	Transmitter Line-up	Receiver	Aerial Systems	No. of QSO's	No. of Stns. Hrd.	Max. Dist. Wrkd. Miles
G2ZVP	Bury Hill, Sussex	7	6L6/6L6	*Acorn* Superhet	½ wave beam two long wires	8	29	52
G8LVP	Near Basingstoke	14	6L6/RK39	0–v–2	½ wave beam	4	16	46
GW6AAP	Snowdon ...	28	6J5/807/35T	*Acorn* 1–v–1	½ wave zepp fed	25	31	124
G2NHP	Near Dorking ...	9·3	6L6/6N7	Superhet	½ wave dipole	20	39	—
G8JVP	Near Leek ...	28	RK34/RK34	*Acorn* 1–v–1	½ wave dipole	14	18	70
G5MAP	Near Storrington, Sussex.	14	6L6/6N7	Superhet	½ wave dipole	18	35	52
G2QYP	Near Elstree ...	7	6L6/6L6/T20	1–v–1	½ wave beam	10	32	—
G2RDP	Woldingham, Surrey.	ECO	6L6/6L6	0–v–1	½ wave	5	—	—
G2WSP	Woldingham, Surrey.	ECO	89/6L6	1–v–1	W8JK 4 × ½ wave dipole	9	—	—
G5CDP	Amersham, Bucks.	7	(See July BULLETIN)	*Acorn* Superhet	½ wave	3	18	—
G5CMP	Billingshurst, Sussex.	ECO	89/6V6	0–v–2	½ wave beam	7	—	—
G3CUP	Epsom	7	6L6/6N7	0–v–1	½ wave dipole	15	—	—
G3APP	Grays, Essex ...	7	3 stage	0–v–1	14 × ½ waves	4	7	61
G3BYP	Hartshead, Pike...	28	6J5/6V6	*Acorn* 1–v–1	2 × ½ wave in phase	7	11	—
G2JBP	Warlingham, Surrey	—	Long-line	0–v–1	½ wave reflector	7	12	35
G8AAP	Near Birkenhead	—	S excited	Transceiver	½ wave	2	6	—

A typical contest table of 1939, showing the type of gear which was in use at the time. All stations were operating portable, hence the final "P" on the callsigns.

Table courtesy of the RSGB

receiver, the GEC supplied the Osram valves, and the Chloride Electrical Storage Company supplied the Exide accumulators which provided their LT supply and powered the generators which in turn supplied the HT current for both transmitters. Which all goes to show how confident other people were in Douglas Walters and his amateur radio experiments.

On August 23rd 1936 another group comprising G6KY, 2AKD, G6YQ and G5YP set up station on the summit of Snowdon. Promptly at 0900, G6YQ/P was in operation and shortly afterwards contacted G5BY, from Croydon, who had journeyed by road to Fishguard with his gear and erected it at Strumble Head (85 miles). Early contact was made with G6AA/P at Holyhead and then with G6IA, assisted by G5SD who had hauled their rig to the summit of Snaefell, I.O.M. (87 miles). The best DX was made at 1530 when contact was made between Snowdon and EI8G/EI5F at Mount Merrion Estate, Dublin, a distance of 96 miles, and was the first QSO between EI and G on 56Mc/s.

One definite conclusion emerged as a result of the Snowdon tests and from subsequent portable operations elsewhere:—A horizontally polarised wave seemed more satisfactory for DX work and produced a better signal at the receiving end than did a vertically polarised wave.

After the GW 56Mc/s contest in September 1937 competitors realised that it is not always transmitter power that gets the most contacts. From 11 stations who sent in logs, one had a transmitter power of 25 watts, two of 5 watts, one of 4 watts, six of 10 watts, and the winner's power was a mere 1·8 watts! The success of the leading station operated by H. Jones G5ZT/P was due to his location on Parlike Pike, near Preston. In second place came GW6OK/P with 5·4 watts; he had 9 contacts compared with the winner's 15 but again his low power earned him points because he was located on top of Snowdon. To the third and fourth operators G6MX/P Snaefell, and G2DC/P near Buxton, went the joint honour of the then longest 56Mc/s QSO in the UK, 124 miles when both were using 10 watts.

During this event Barbara Dunn G6YL succeeded in contacting G5VQ using CW and, although the distance was only 27 miles, the intervening country was very hilly. Barbara was using a long lines transmitter with an LS5B valve.

Solar First

It was G6YL who made the very important observation on July 31st 1939, when she reported hearing the "hissing" noise from a solar burst in the 5m band, and her claim was supported by 2BIL. The "hissing" noise from solar activity (In the author's opinion, this was the birth of solar radio astronomy) was first discovered by Denis Heightman G6DH in 1935 when he was operating on the 10m band. Many other radio amateurs also heard it at 28Mc/s but Miss Dunn was the first on 56Mc/s.

Denis Heightman was again to the fore in the 1939 "GW Trophy" 56Mc/s contest, not as the winner, although he did take third place, but as the station which gave the longest distance contacts to both the leading contestants, G8JV/P in Staffs who won the trophy, and G2VZ/P assisted by 2DDD, who were runners up.

The apparatus used in this event was not only of a truly portable nature but also of the latest design. For instance, the winner, George Henderson, was pleased with the performance of the Mullard TV03/10 double-triode valves employed in his transmitter when four out of his 17 contacts were greater than 140 miles. The team in second place proved the superiority of the three-element beam over the long wire aerial. Of the 11 stations that submitted logs, five were using 954 Acorn valves in their receivers, three had superhets and the others had 0-V-1.

Aerials

Throughout his researches the author found that the enthusiasts had tried and tested a wide variety of aerials on the 5m band. Some used the Windom while others, like Ted Williams G2XC, back in 1935, used their already established 7Mc/s "Zepp", a 66ft horizontal wire fed by open wire tuned line, which of course accommodated eight half-waves.

Getting parts for aerials was not too easy. Eddystone marketed transposition blocks for dipoles but most amateurs used wooden dowel boiled in wax. George G2CIL can't remember seeing a coaxial cable in those early days, but both G2AKM and G6NK remembered 50ohm coax with a black substance for insulation, and a 50ohm flat twin feeder.

Rotating Beam

G8LY loved experimenting with aerials, and was grateful to her 60-year-old tree-climbing father who fixed her 56Mc/s vertical aerial some 70ft up in a fir tree! Unfortunately, the lossy feeders available then did not do justice to the height of her aerial. One day, A. E. Mitchell G8DF appeared, with G5LT, and on the roof of his car was a 5m beam for Constance to use. This beam was eventually mounted on a pole which had a unique (G8LY Special) rotating system. A metal pipe was placed in the centre of a ten-gallon oil drum which was filled with concrete, three bagatelle balls were dropped into the pipe to act as a bearing for the aerial mast, which slid down into this pipe. Constance carried out many directional aerial tests with other 5m operators using this beam.

During the late 1930s, Constance was the first YL to contribute an article to the *T & R Bulletin*, and her subject was "UHF Measurement by means of Lecher wires" and for some time she compiled the monthly 56Mc/s report for the journal.

Constance, a radio enthusiast since the 1920s, lived near Basingstoke in her 5m days, in a house which had no main electricity supply, so all her soldering was done in the kitchen with a large iron heated on the kitchen range. Her shack was in the attic and so accumulators were used for the filaments of her valves.

Unique Propagation Study

R. H. Hammans G2IG and J. L. Nixon G6XO had both experimented on 56Mc/s since 1931, and in May 1934 the *T & R Bulletin* published a lengthy article about their design, construction and testing of a 5m "manpack" outfit ("56 Megacycling on Foot"). The author was fascinated by the following extract and felt that this was just another example of the enthusiasm of the 5m brigade. "The initial step was to erect a transmitter at one of our stations, which were 300 yards apart in a crowded residential district. A "detector and one LF" receiver was built at the same time.

The first tests were carried out between two rooms at the same station, using an unmodulated carrier. Our ambition next was to receive the signal at the other station. As we could not do so, we set out to find where the signal was lost. The transmitter (consisting of two D.E.5 valves in a push-pull circuit with 120 volts HT) was mounted on a dinner wagon and hauled through the streets! The signal on this momentous occasion lasted 150 yards and then disappeared. Aerials were then fitted to the transmitter and receiver for the first time, and signals were at last received between the stations. The transmitter was then keyed and a signal received over 100 yards, acknowledgment being made by flash-lamp. During this test an unaccountable variation in signal strength was noted, which had considerable bearing on subsequent work. It was observed that reception on one side of a lamp standard was 60 per cent greater than on the opposite side." Screening by buildings was obviously a handicap, so tests were made in open country, signals being obtained at R7 over three-quarters of a mile and acknowledged by Klaxon horn.

The Curtain Came Down

The author has tried to show the great enthusiasm and co-operation that existed among the 5m brigade; it was as if there was a great sense of urgency about the whole affair. They never looked back, they shared their findings with others and were always willing to try something new. There was a feeling of sadness among the majority of 56Mc/s enthusiasts when the news came through on September 1st 1939 that their licences had been withdrawn. In November 1939 Constance Hall began her 56Mc/s Column (*T & R Bulletin*) with the following verse:—

Hang up your headphones on the old shack wall,
And cuss, cuss, cuss,
Hang up your headphones on the old shack wall,
But do not make a fuss.
What's the use of listening,
It hardly is worthwhile, so—
Hang up your headphones on the old shack wall,
But smile, smile, smile.

Well, they hung up their own headphones alright, and the majority of them took up His Majesty's headphones and gave all of their 5m experience and know-how, to the service of their country.

To prove that their efforts were not overlooked, the author turned to the book about the Battle of Britain, called *The Narrow Margin* by Derek Wood, and on Page 16 he found the following extract which for the author sums it all up.

"Throughout the operational, installation and development period of German Radar all branches of the service connected with it suffered from an acute shortage of skilled manpower. This was almost entirely due to Goebbels who had seen fit to ban all amateur radio operations shortly after Hitler's rise to power. The excuse given was that of countering subversive elements during the anti-communist purge. The order was never rescinded.

"Until the end of the war Germany was short of good quality radio and radar operators and engineers, *in complete contrast to Great Britain where literally thousands of radio hams with first class knowledge joined the services and the research establishments.*"

The author apologises to the many 5m enthusiasts whose names he has not used in this article, there are many parts of this story still to be told. ●