

Radio Amateurs in WW2

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On August 31st 1939, all British amateur transmitting licences were suspended and all transmitting equipment was taken into official custody for the duration of the war. Many amateurs joined the armed forces but kept in touch with their hobby through the Radio Society of Great Britain (RSGB), housed in temporary headquarters in North London.

There was also a ban on any wireless receiving apparatus installed in any vehicle. Portable sets and all apparatus, including aerials, were to be removed, whether a vehicle was in use or laid up. On June 6th 1940, the Home Secretary announced that with immediate effect enemy aliens were prohibited from having any wireless transmitting or receiving apparatus whatsoever.

RSGB Handbook

The RSGB published the revised and enlarged second edition of the *Amateur Radio Handbook*, receiving it from the printers the day before war was declared. With war imminent, and amateur radio suspended, it seemed unlikely that many of the 3,000 reprints would be sold, but demand was such that by the following July a further edition was in print. Over the next six years 12 reprints, totalling 181,500 copies, were sold to radio enthusiasts and to the armed forces, who used it as a training manual.

Membership of the Society fell following the outbreak of war. There were 3,600 members in August 1939, which reduced to about 2,500 by the following May. By the end of 1940, however, numbers were up to 4,000, mainly because of interest stimulated in the Services by the *Handbook*.

If Invasion Comes

Although the practice of amateur radio communication had disappeared, interest in the subject definitely had not. Specialist magazines were still being published, and a study of their pages in 1940 gives some interesting reflections of the times.

The July issue of the RSGB's *T&R Bulletin* (forerunner of *RadCom*) carried an editorial, "If Invasion Comes", advising amateurs not already in the Forces or engaged on government work on how to prepare themselves for this possibility.

The *Bulletin*, popularly known as *The*

Tony Smith G4FAI relates the intriguing story of UK amateur radio during WW2, including the parts played by enemy stations, VIs and some

Another 10,000 !
Reprinted as recently as February 1, 1941 the full printing of 5,000 copies of
The Amateur Radio Handbook
WAS EXHAUSTED IN SIX WEEKS
A further reprint of 10,000 copies is in hand and supplies will be available early in April.
The *Amateur Radio Handbook* contains 328 Pages, 25 Sections, and 300 Illustrations.
BRITAIN'S BEST BOOK OF SHORT-WAVE RADIO INSTRUCTION.
EASILY A BEST SELLER IN THE RADIO FIELD.
Special Trade Quotations. PRICE 4/2 By Post

The T. & R. Bulletin
Official publication of the R.S.G.B., contains up-to-the-minute technical, topical and Service features.
Send P.O. for 1/- for a copy of the current issue and ask for details of membership. (*Handbook and Bulletin together 5/-*)
Obtainable from all suppliers of Amateur Radio Apparatus and from all Booksellers.
Reduced War-time Subscription Rates :
Home Corporate Members, 15s. p.a. ; Active Service Members, 10s. p.a. ; Overseas Members, 12s. 6d. p.a.
All communications to The Secretary-Editor,
RADIO SOCIETY OF GREAT BRITAIN,
16, Asbridge Gardens, London, N.13
Phone : Palmers Green 3255. Office Hours : 9.30 a.m.-5.30 p.m. Saturdays : 9.30 a.m.-12 noon. Closed at week-ends.

Bull, carried a regular feature with information about members in the Forces. **L Frank G4NU**, wireless mechanic 1st Class, RAOC, reported reading his *Bulls* on the beaches of Dunkirk: "I was waiting for nearly four days, and I read them from cover to cover during that period..... Unfortunately, these valued copies had to remain on the beach with the remainder of my kit."

The Society replaced his magazines free of charge. It did the same for all members reporting similar losses on active service and arranged for regular copies to be sent to the home addresses of all those known to be prisoners of war. A list of members on active service was published each month, and there was also a list of others offering 'Ham Hospitality' to any amateurs finding themselves in their locality.

It was announced that QSLs could no longer be posted to censorable countries, with the exception of those under American and British possession. Activity on the HF bands was sparse; a combination of little activity and poor propagation conditions. On the 10m band only six amateur stations were reportedly logged in June: OQ5AB, PY7VB, CE, W3FJS, LU1DJ and D1DSR.

Emphasis on Listening

Practical Wireless, published weekly, raised its price to 4d (1.6p) on June 1st 1940. Its



emphasis, as with other magazines, was on receiving broadcast stations. Articles covered receiver construction, intermittent fault finding, frame aerials for small portables, coil winding, matching feeders for short wave reception and a regular column from the British Long Distance Listeners Club.

In July, *Electronics and Television & Short Wave World*, price 1/- (5p), ran to 48 pages and carried a report of an American attempt to adopt preferred valve types to reduce the wide variety then available to manufacturers. The British Institution of Radio Engineers had made similar recommendations and proposed a range of just twenty 6.3V, 0.3A valves, compared to the full range of nearly a thousand types. One article described the attempts of the technical staff of the American Radio Relay League (ARRL) to find a low-priced television tube suitable for amateur two-way experimental transmission, and looked forward to the time when such tubes might become available in the UK.

Censorship

No amateur transmitters were advertised, and very few receivers either. Webb's Radio advertised the Hallicrafters SX-24 receiver at £24, with a double-balanced crystal fil-

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ter claimed to give 'knife edge' selectivity, but could give no guarantee of delivery because of 'urgent national demands' for short wave equipment. They were, however, offering a full range of Morse keys, practice sets, oscillators, recorders, and other radiotelegraph apparatus, "designed and manufactured by T.R. McElroy, the world champion telegraphist."

The same month, *Wireless World* (*WW*), price 1/-, had several articles of interest to amateurs, including a design for a simple 4-valve direction finding receiver, a home-made Morse recorder (inker) capable of recording signals up to 80WPM, Morse key manipulation, a list of short-wave broadcasting stations and receiving conditions for July. In August 1942, it was reported that sales of the *WW* booklet *Learning Morse* had passed the quarter-million mark.

The magazines did their best to keep amateurs in touch with their lost hobby although they were subject to censorship, particularly if they wanted to describe recent developments in the technical field. In view of the shortage of paper, it seems surprising they were allowed to continue at all. Fortunately, they were, and they provide a valuable record of a world, and a way of life, vastly different to what we know today.

German Stations

At the outbreak of war, 121 of the 250 DXCC countries went off the air. This left 129 countries on-air so there was still activity on the amateur bands in some parts of the world. Surprisingly, some enemy stations were also active. In April 1940, *QST*, journal of the ARRL, published a letter from a German amateur, D4BIU: "According to a statement made by our government, all sport activities etc. will be continued during the war to as large an extent as possible. Consequently, amateur stations D4ACF, D4ADF, D4BIU, D4BUF, D4RGF, D4TRV, D4WYF, D4HCF and D4DKN have recently been relicensed. More stations will follow shortly. The stations are supposed to carry on strictly in the usual manner. Please notify all those interested." Before they could obtain their licences, the German amateurs were required to be members of DASD (Deutscher Amateur Sende-und-Empfangs Dienst) and logbooks of both amateurs and listeners had to be submitted regularly to a central address for scrutiny.

At the outset of the European war, the ARRL had issued a neutrality code for amateurs suggesting they should not work any stations from countries engaged in hostilities. An editorial in *QST* of July 1940 rec-



ommended US amateurs not to work any European stations at all, and in the same issue an official order was reported that overtook any suggestion of voluntary action by banning all foreign contacts.

Station WRUL broadcast a talk about amateur radio that was heard in Britain on the 25MHz band and this confirmed that the ban on foreign contacts was due to the unwelcome activities of the German stations. An appeal was made for amateur assistance in forming an anti-fifth column corps. The formation of an emergency corps was announced to work with the police and Red Cross, and certain frequencies were to be reserved for their use. All amateurs were asked to improve their code proficiency, and to this end special Morse practice transmissions were to be made from W1AW, headquarters station of the ARRL.

The FCC radio monitoring system expanded to several times its peacetime size. By the spring of 1941, calling procedures were tightened and identification was required at the beginning, end and every ten minutes during a QSO. War was still in the future, and amateur radio continued to function until America's entry into the war in December 1941 brought the inevitable closedown.

Monitoring the Enemy

Back in the UK amateurs who were not in the forces, but who had good Morse skills, were recruited by the Radio Security Service (RSS) as part-time Voluntary Interceptors (VIs). Their task, initially, was to listen for transmissions by enemy spies, none of which were ever heard, and later to monitor and report specified enemy radio transmissions by the German Intelligence

Photo 1: 181,500 copies of the RSGB Handbook were sold during the war. The Forces used it as a training manual. (RSGB Handbook advert 1941)

Photo 2: German WW2 QSL card. Photo 3: The National HRO receiver was used by some VIs to monitor enemy transmissions. Designed as an amateur receiver in 1934, the HRO was one of the best-known receivers used by the Allied services in WW2. The basic design survived for over 20 years with few alterations apart from the need to keep up with changing valve technology.

Services for assessment and decoding at Bletchley Park. They were allocated particular frequency bands, and sometimes particular frequencies, to monitor and reported back to the RSS daily via Post Box 25, Barnet, Herts.

It is believed that some 1500 amateurs were recruited for this important work. They used their own receivers, sometimes home-made, and in some cases were issued with high-quality receivers such as the Hallicrafters SX-24 or the National HRO. Operating secretly in their own homes under the restriction of the Official Secrets Act, they copied coded Enigma messages, which they did not understand, and in a few cases were reported to the police by inquisitive neighbours who thought they were German spies!

They could not explain what they were doing. Somehow, they had to persuade the police that they were legally listening to their radios in pursuance of their hobby and that they had no transmitting equipment. The work of the radio amateur interceptors, both part-time and full-time, enabled Bletchley Park to play an important part in shortening the war.

While all this was happening, it should be noted that many German amateurs were similarly employed in monitoring Allied radio traffic and many served as radio operators in the armed forces. These operators were recognised by the British monitors from their frequent unofficial use of amateur terms and procedures, which weren't always approved of by their superiors.

When the war ended the VIs were still bound by the Official Secrets Act and it was not until 1979, following a BBC television broadcast, that the true purpose of their activities became known and they were finally able to understand the importance of their wartime activities.

International Activity

During 1940, the International Amateur Radio Union, via *QST*, was still reporting amateur activities in some countries, although contacts between them were be-

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coming increasingly rare. The 10th annual meeting of ARI, the Italian national society, was held in Bologna on May 26th. The 'Hungarian Test' took place on April 28th with 75 stations active on 80m and 40m. Lithuania's annual contest was held in February, but all stations were closed down in July.

In Australia, amateur radio was also suspended. However, examinations for licences were still being held and the Wireless Institute of Australia (WIA) hoped to continue normal activities, including meetings. Amateurs were permitted to retain their equipment but they were not allowed to dispose of it, or acquire more, without a special permit. Those affiliated to the Air Force Wireless Reserve had reported for active duty, and the WIA had offered the services of its remaining appropriately skilled operators to the Postmaster-General's Department for monitoring purposes, should they be required. The New South Wales Division was offering Morse classes to improve the operating abilities of members.

Excellent Example

Electronics and TV and Short Wave World reported that Canadian clubs were determined to carry on, with technical development as their main aim and purpose. The magazine commented that this was an excellent example for amateur groups in all affected countries to follow.

The executive branch of the New Zealand Association of Radio Transmitters (NZART) felt that it was too early to decide what the future of the Association should be. In the meantime, all activities not affected by the licence ban would be continued as far as possible. It was hoped to continue publication of the magazine *Break-In*, albeit reduced in size. Because of the ban, the Australia/New Zealand centennial DX contest was cancelled.

The South African Radio Relay League discontinued normal activities on June 30th. Argentina announced a proposed affiliation of radio amateurs with the military services. Uruguay closed all stations down but a few months later, together with Brazil, was back on the air with normal operation. On June 10th the Philippines prohibited contacts with any external country except the USA, although by this time the ban on US foreign operation had been imposed.

Electronics and TV and Short Wave World reported that in Germany, DASD had suspended publication of its journals except CQ, which was to appear every other month. Meetings of local clubs had been



Photo 5: Hallicrafters SX-24 receiver. Advertised for £24 in 1940 with no guarantee of delivery due to urgent national demands.

discontinued but, as noted above, some stations remained on the air.

In France the Réseau des Emetteurs Français (REF) had closed down. Their journal was suspended and the QSL bureau was no longer in operation. And so it went on. Amateur radio struggled to survive in different ways, but the extension of hostilities around the world put an end to all normal activity not only in the warring and occupied countries but in some other countries as well.

News in Morse

In September 1943, *Wireless World* gave details of news bulletins in Morse broadcast by the Post Office to overseas listeners that under suitable conditions might be heard in the UK. The callsigns used were GAD, GAY, GBC5, GBL, GCP, GIA, GID, GIH and GIM, each operating on a specified frequency between 15.27m and 34.56m and broadcast at specified times between 0048 and 2000hrs. The BBC also transmitted half-hour bulletins in Morse at 0030, 0100, and 0130GMT in English, French and German on wavelengths in the 49, 41 and 31m bands.

A Dutch language leaflet dropped by the RAF in Holland at the time gave details of these broadcasts and suggested that listeners who knew Morse could copy the bulletins for circulation to others who did not know the code. As reception of enemy broadcasts in the occupied countries could invoke the death penalty, these bulletins had to be listened to in great secrecy. Given the opportunity, radio amateurs in those countries would undoubtedly have played their part in deciphering and passing on the news broadcast from London. The leaflet explained to its readers how the Morse

code was structured and encouraged them to learn the code if they did not already know it, and suggested various ways of mastering it.

Mysterious G Stations

Later in the war, in 1944, nine mysterious G7 stations appeared on the air. These officially authorised stations operated under 'Plan Flypaper', which, it was hoped, would entice the German amateur stations into contacts that might reveal useful information for the Allies, or even provide a channel for anyone in Germany wishing to contact the British government.

The G7 stations operated with 50W on the 80, 40, 20 and 10m bands and had strict instructions on how to conduct QSOs with either neutral or enemy stations. They were not to call any D station directly but could reply to one if called. Exchanges were to be very formal, strictly procedural and non-revealing in personal terms. The war situation was not to be mentioned at all. It was believed that at least two stations with Portuguese calls were in fact located in Germany but the G7s, if they worked them, were instructed to treat them as if they were actually in Portugal to avoid revealing that information was known about them. The G7 stations were closed down in June 1945 after the German surrender and, although some contacts had been made with neutral countries and a few D stations, it is not thought that anything of great value had been gained from the exercise.

Important Contribution

In their different ways, using their skills in all branches of the armed forces, working with the Radio Security Service or taking part in other clandestine activities, radio

amateurs played a commendable part in the war effort. When it was all over and life returned to normal, their equipment was returned to them and new amateur licences were issued. A number of irksome pre-war restrictions and limitations were removed from the licence conditions and a new post-war era of amateur radio communication could begin.

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