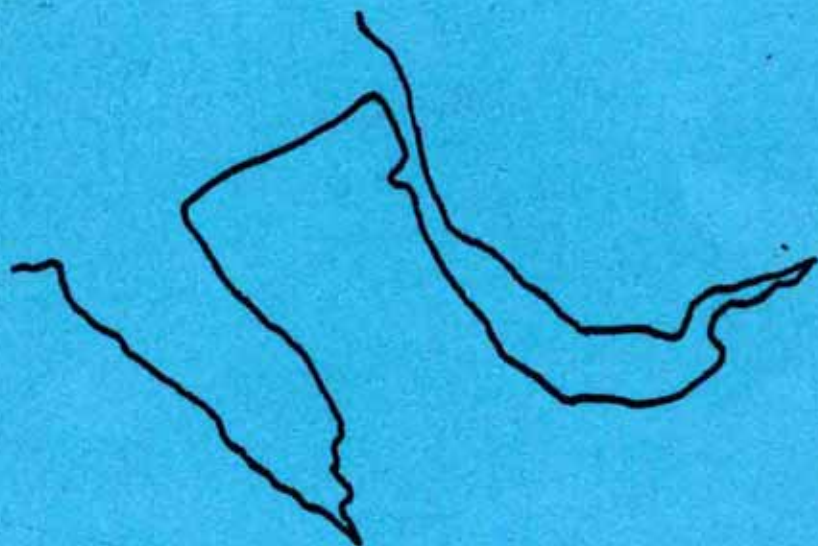


AIRWAVE

JAN 83

» 325 «



WIRRAL AND DISTRICT
AMATEUR RADIO CLUB

G4MGR --- G8WDC

CLUB EVENTS

January to April 1983.

- Jan. 12 Annual General Meeting.
 Jan. 26 Junk Sale.
 Feb. 9 Film Night.
 Feb. 23 Equipment Demonstration by Amateur Radio Exchange of St. Helens with this years new rigs.
 Mar. 9 Natter Night. Mixed topics including contests, Raynet, and our NARSA stand at Pontins.
 Mar. 23 Our members other hobbies. A show of other things that the members make or build.
 Apr. 13 SOTA Communications Ltd. Equipment Demonstration.
 Apr. 27 Passive D.F. Tips and Wrinkles. Talk and demo by G8UZZ and others. (Winners and Foxes.)
 May 11 (to be announced)
 May 18 Practice D.F. Hunt.

OTHER DATES TO NOTE

- March 19 & 20. RADIO WEEKEND Pontins Holiday Village, Southport. Formerly at Belle Vue Manchester. Org. by NARSA. Club has a stand booked. Details inside.
 March 5 & 6 RSGB National Amateur Radio Exhibition, National Exhibition Centre, Birmingham.
 March 27 White Rose ARS Rally, Leeds.
 May 15 Northern Mobile Rally, Harrogate.

SOME CONTEST DATES

- Feb 6. 432 Mhz. Fixed.
 Mar. 5-6. 144 Mhz/432 Mhz/SWL.
 Apr. 9-10. BARTG Spring RTTY.
 May 8. 144 Mhz. Low power.

CLUB MEETINGS are held at 8 p.m. on the second and fourth Wednesday in each month, at Irby Cricket Club. Visitors are welcome.

IRBY CRICKET CLUB is just off Irby Mill Hill Road, Irby, on the Easterly side, and about $\frac{3}{4}$ mile North of the centre of Irby.

A MAP is on the back page.

Please park at the top of the long drive and walk down to the Club-house, thus leaving room for guest speakers loading equipment, and the disabled members to park lower down.

D & W's

D & W's stands for 'Drinking & Waffling'- the name that we give to an informal gathering of members and friends who take liquid refreshment when not chatting at a pre-arranged local Hostelry. Most people arrive about 9pm onwards.

Jan 19. Green Lodge, Hoylake.

Feb 2. Greave Dunning, Greasby.

Feb. 16 Victoria Lodge, Hr. Tramere.

Mar. 2 Basset Hound, Thingwall.

Mar. 16 Wirral 100, Oxton.

Mar. 30 Red Cat, Greasby.

Apr. 6 Railway Hotel, Meols.

Apr. 20 The Harp, Neston.

May 4 Primrose, Liscard.

May 18 To be announced about 9pm, during the D.F. Practice.S 13.

Suggestions are welcome for other venues.

Other D&W's are often held on various nights of the week, and at quite short notice, by arrangement on '325', so listen out on S.13.

 VISITS

The Club's Social Secretary will arrange visits every month or two for the members benefit. Last year the visits were very interesting and varied, and this year should be the same. Remember, if you do book to go on a visit, please make every effort to go along, as the numbers are often limited.

Planned visits include the Radio City studios, and those of Radio Merseyside, as well as the new Controll Tower at Speke Airport. Also planned are visits to a Fire Brigade H.Q. and possibly an Ambulance Controll too.

For night owls, a visit could be arranged to the Daily Post & Echo, but this would have to start at Midnight. Let us know.

DATES have not yet been confirmed. In general, most organisations have been reluctant to confirm any dates for 1983, even last Dec. Perhaps financial cutbacks mean that they buy their '83 Diarys in the January sales.

For the latest information on Club events or visits, then attend the Club meetings regularly.

For further details and place bookings of all visits, contact-
 Social Secretary
 Frank, G4DBG.

WIRRAL AND DISTRICT AMATEUR RADIO CLUB.COMMITTEE:

CHAIRMAN.	JOHN FOGG.	G8UZZ	051 632 3131
SECRETARY.	GERRY SCOTT.	G8TRY	" 630 1393
TREASURER.	PETER REARDON.	G8WQQ	" 677 9561
CONTEST MANAGER.	(Vacancy)		
PUBLICITY MANAGER.	NEIL McLAREN.	G4OAR	" 608 1377
SOCIAL SECRETARY.	FRANK KNEALE.	G4DBG	" 339 9623
NARSA Rep.	PETER DENTON.	G6CGF	" 630 1467

CORRECT ONLY UNTIL THE AGM ON JAN 12 th.
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'AIRWAVES' - IS THE PERIODIC NEWSLETTER OF THIS CLUB AND IS PUBLISHED THREE OR FOUR TIMES A YEAR, AS ARTICLES AND EVENTS DICTATE.

ARTICLES FOR INCLUSION, INCLUDING MEMBERS ADS, ARE ALWAYS WELCOME AND SHOULD BE SENT TO THE SECRETARY AS SOON AS POSSIBLE BEFORE PUBLICATION.

THE VIEWS EXPRESSED IN ANY ARTICLE IN THE NEWSLETTER ARE NOT NECESSARILY THOSE OF THE COMMITTEE. THE COMMITTEE RESERVE THE RIGHT TO WITHHOLD ANY ARTICLE FROM PUBLICATION.

If you find mistakes in this publication, please consider that they are put there for a purpose.

We publish something for everyone, and some people are always looking for mistakes!



WIRRAL AND DISTRICT AMATEUR RADIO CLUB

G4MGR --- G8WDC

Members Notice

5th ANNUAL GENERAL MEETING OF THE WIRRAL AND DISTRICT AMATEUR RADIO CLUB

I give notice that the 5th. Annual General Meeting of our club will be held on Wednesday, 12th. January, 1983, at 8pm for 8.15 prompt. The venue is the Members Lounge of Irby Cricket Club.

Nominations for the election of the Club's Officers and Committee members should be given to the Secretary on the night, before the start of the A.G.M.

Details of the motions (below) may be had from the secretary in advance, but they may be the subject of ammendment up until the start.

Gerry Scott G8TRY
Secretary.

24/11/82

W&D ARC 5th Annual General Meeting

AGENDA

- 1 Apologies for absence.
- 2 Approval of the Minutes of the 4th. A.G.M.
- 3 The Chairmans Report on the activities of the previous year.
- 4 The Treasurers Report and approving the audited ballance sheet.
- 5 A motion to amend the categories of membership.
- 6 Setting the fees for all classes of membership.
- 7 A motion to adopt a revised Constitution recommended by the Committee.
- 8 The election of the Committee for the year of 1983/4.
- 9 Any other buisness. (Limited to 30 minutes maximum.)

THIS NOTICE WAS GIVEN ON THE TWO CLUB MEETINGS PRIOR TO THE AGM
AS REQUIRED BY THE CONSTITUTION. G8TRY. Sec.



THE BEGINNING OR THE END

Welcome to another edition of "Airwave", the third this year. It hardly seems like any time at all since I wrote the editorial for the last one. Initially, I had hoped that we would have done at least four issues, even six this year.

But why only three? Well basically, there's a lot of hard work that can take a couple of hours a day for nearly a month before, depending on the articles that have to be written, or copied. Then it all has to be checked, typed, laid out, taped together and photo-copied. Ok, so I don't do the typing or photo-copying, but the copied pages then have to be collated and stapled and folded, then put into envelopes and addressed and stamped and licked and posted. There's about two days work involved in the last sentence above. Did you know that the last edition was posted at about 1.30am, to get them all out in time before we moved to Irby Cricket Club?

Incidentally, because we ran to 28 pages, and had another couple of sheets slipped in as well, the envelopes were actually overweight for the lower postage limit. I didn't appreciate this until I got one weighed, so apologies to anybody who had to pay excess postage, not that I think anybody did. One or two copies did not arrive, and one or two took nearly a week to arrive. If you think this edition took a long time to arrive, please keep the envelope, and ask me when it was posted, so that any complaints can be passed on to the Post Office for investigation.

Back to the question "why only three". A lot of the answer lies in the hand(s) of you the reader and club member. The more articles that are sent in, then the more often we can produce a newsletter. Moreover, we can produce a newsletter that is more a reflection of the members ideas and interests than those of its Committee, and it makes it a less arduous task for those who have to put it together.

Now, if any of this has stirred you into thinking about writing anything for the next newsletter, then please, please, write it now. Articles can never arrive too soon for the next edition, but all too often promises get forgotten, and the contents of this newsletter get left to someone else to write. Naturally, our thanks go to those who have contributed articles or ideas or just generally helped in some way to the production of this newsletter, with special thanks to the typists who have had to decipher some terrible handwriting.

From the last few comments, it sounds like we are coming to the end of something. Well, we are. Not just the end of 1982, but also the end of the Clubs year in January at the A.G.M. Notice of the A.G.M. is given in this newsletter.

AGM's bring changes, Election of a new Committee, changes to rules, subscription, and so on. They also have a habit of producing a lower attendance of members than we would like, and to produce a truly democratic debate, all the members should attend, who knows who will be on the next Committee. This year, we have run for the first time with one member down, a Contest Manager, and our progress with contests has been backwards, to say the least. Next year our Chairman John (G8UZZ) and our Treasurer Peter (G8WQQ) will not be able to hold office, and both will be missed and very hard to replace. Therefore there are at least three vacancies to be filled.

Will there be any other changes in re-arrangements? Well that depends upon the members, as to who is proposed and who is voted in. Your opportunity will be on January 12th. Please start by considering yourself for a position, and then look to the other club members to see who might be acceptable to you, and above all, would be willing to serve his (or her) fellow club members.

Enough of the A.G.M., and back to the recent past. Firstly, Irby Cricket Club. I think that it's true to say that the move to Irby has been warmly received by all our members, and by the Committee and members of Irby C.C. themselves, which is very important. Please remember that all our members (except Country Members) are members of Irby C.C. and are free to go there at any time that it is open, and not just on Radio Club nights.

Most of the visitors who have come to see us have wanted to join the Club. However, one or two visitors have commented that they did not feel welcome, as if we were some sort of clique, or had got the impression that our members were not interested in them. This is of course far from the truth. Please remember that you, too, were probably a visitor or new to amateur radio one day and help to make all our visitors feel warmly welcome.

With a membership of about 90, it is very difficult to remember every face, and most visitors would not like to stand up and identify themselves. So if you see a new face at the club, please make the person welcome, and don't just ignore him.

Secondly, a major talking point - the M.o.D. and the 70cms band. I was going to write an article on this but an excellent account appeared in "Talkthrough", and with their permission, this article is produced in this newsletter.

Hands up who doesn't know what "Talkthrough" is? Well it's the newsletter of the UKFMG(W) (The United Kingdom F.M. Group (Western)). The group who, by voluntary subscriptions and donations, build and maintain the repeaters in this part of the Country, including MP, LI, MN, VT and the new RTTY/DATA repeater at Winter Hill. The group only requests that those who enjoy (or should it be endure) working through or listening to repeaters, should join them. Membership is currently £3 per year, and forms are available from the Secretary of the group, or from the club.

HAPPY NEW YEAR

73 Gerry. G8TRY (Secretary)

FOLLOW UP

Yes folks, more about the Tunnel.

In brief - Introduction of automatic machines delayed yet again. Renovation of ventilation building nearly completed. Contracts now placed for lighting and resurfacing old tunnel. Consultants report 50 year old ventilation plant in old tunnel does not require replacing - only refurbishing and saving money.

But, of more interest to us as amateurs:-

The existing VHF mobile radios for Tunnel Police and breakdown crews has now been replaced by a UHF system. On the new tunnel this has meant that a single UHF beam aerial located by the control room now provides radio coverage between control and mobiles through the length of the twin tubes, and right through to Liverpool. This replaces the existing system which involved using aerials inside the tunnel tubes.

Engineers reveal that most of the older VHF mobile equipment had been leased, and therefore there was no possibility of purchasing units on a club basis for the members benefit.

Hard work never killed a man but it sure scared a lot of them.

That an exciting year 1982 has turned out to be for amateur radio! The rumour mongers have had a field day. What with the fiasco over the new licence schedule published by the Home Office in the London Gazette of 12th February 1982; and now the spate of rumours regarding the impending "loss" of our 430MHz 70cms band. The irony of course is that the very nature of our hobby allows rumours to spread extremely quickly.

In spite of this the RSGB has reacted quickly to both these stories. The new licence schedule is no longer news, and we do not propose to deal with it any further. Hopefully the Home Office will by now have recognised its own shortcomings, and perhaps the RSGB will be given the benefit of prior consultation on future occasions.

However the 430MHz story is more recent and in some ways more complicated. For those who did not see it we reproduce alongside "The Guardian" item of Tuesday 17th August 1982 (with acknowledgement to The Guardian newspaper). At about the same time the September 1982 edition of "Practical Wireless" appeared with a news item headed "On the Grapevine" stating... "Rumours are circulating about a potential Home Office decision to remove frequencies between 431 and 432MHz from the UK amateur allocation. At present the bottom 2MHz of the 432MHz band is available in certain areas, but restricted to 10W e.r.p. and falls outside the existing UK bandplan. The reason behind this possible decision is to free this part of the UHF spectrum for PMR use, initially in the already congested Home Counties".....

Obviously two different stories about the 430MHz band were leaked at the same time. Most of our members will have heard the GB2RS news on Sunday 22nd August when "The Guardian" story was explained. Two weeks later in GB2RS news the RSGB confirmed that the "Practical Wireless" item regarding PMR use of the 431 to 432MHz sub-band was correct.

We shall content ourselves therefore with trying to put these matters into perspective.

The whole 430MHz band up to 440MHz was until 1st January 1982 shared by the Radiolocation, Space Research and Satellite, and the Amateur and Amateur Satellite services - with Amateur Radio having secondary service status. During the Geneva 1979 World Administrative Radio Conference the situation changed (effective 1/1/82 and later) when Amateur Radio was put on an equal primary status with Radiolocation in Region 1 (Europe) subject to various footnotes - which are too numerous to reproduce here.

In west Germany, Austria, Switzerland and certain other European countries Industrial, Scientific & Medical equipment may be operated between 433.05 and 434.79MHz (centre frequency 433.92MHz), and in France the sub-band 433.75 to 434.25MHz is allocated to Earth-to-Space operations on a primary basis until 1990. The French also stipulate that their radio amateurs shall only have 430 to 434MHz on a secondary basis.

MoD invades radio hams' waves

By Nick Davies

The Ministry of Defence has punched a hole through the esoteric world of the radio "ham" by planting its new £7 million communication network in one of the hams' most popular wavebands.

Mr Dick Gamberton, assistant editor of Practical Wireless, said: "As far as radio amateurs are concerned, it's a disaster."

The full extent of that disaster has not yet dawned on many hams, since the MoD has not publicised the details of its new network, including the fact that it will use radio frequencies between 430 and 440 megahertz.

The choice of waveband could hardly be worse for them. It is used by an estimated 15,000 of the 40,000 British enthusiasts and it is the only one on which they can broadcast amateur television and amateur satellite link-ups.

Even worse, they have spent several hundred thousand pounds of their own money building a network of hill-top "repeaters" around the country to strengthen their broadcasts. They are all tuned to the 430 band. The MoD scheme will make them effectively useless.

The hams were already feeling claustrophobic: they share the waveband with an oil exploration operation, Sileas, which emits a series of loud pulses, as well as with morse-coders and existing MoD traffic which limits their use of the lower end of the band.

Their licensing organisation, the Radio Society of Great Britain, is holding talks with the MoD and the Home Office. The society's spokesman said yesterday that the problem was "pretty small beer." One ham replied that the society was "a bloody ostrich." Another said it was "being over-diplomatic, to say the least."

Mr Gamberton said: "It means that about £300 of my equipment is down the drain."

An MoD spokesman said last night that the ministry had been the official "primary user" of the waveband for many years but had not previously taken up its option on it. "It is unfortunate that the amateurs have also been using it, but it is not the case that we could change to another one."

In the UK our own administration may modify these arrangements so long as such changes do not adversely affect the interests of neighbouring countries. Our use of the 430 to 432MHz band is severely curtailed because of a "never heard" facility apparently centred on Fylingdales on the North Yorks moors. Furthermore our status in the whole of the band, even after 1st January 1982, is still stated in our licence schedules as being on a secondary basis - in spite of the new WARC provisions.

In fact it is not the Radiolocation service that is responsible for the recent excitement, although in the past radio amateurs along the Fylde Coast have experienced problems with the "Syledis" position fixing system being operated in conjunction with drilling operations in the Irish Sea. Both "Syledis" and a similar system called "Maxiran" operate in the 420 to 450MHz band. Installations tend to be of a temporary nature, although a permanent Syledis system is now installed around the Kent coast. The interference caused by these radar systems to our 70cms repeaters tends to be catastrophic, because of the kids band nature of the pulse transmissions.

The latest Ministry of Defence system referred to in "The Guardian" is quite different. It is called "MOLD" and is a Military Home Defence scheme involving some 100 transmitters. They are being installed currently in the Home Counties area by Pyc Telecomms in conjunction with the Royal Signals based at Catterick, Yorkshire. If mobile operators set their rigs on 1kHz scan when down in the 12.5kHz from our own repeater channels and in the 433MHz band. It is not expected that this system will be in regular use - at least in peace time. It has been suggested that the recent loss of part of our 4 metre band from 70.5 to 70.7MHz is associated with this new development; but obviously the Ministry of Defence cannot comment - and indeed it seems that they do not even tell the Home Office what their plans are!

Since very few radio amateurs have noticed these test signals it is likely that they will not trouble us. Maybe if someone drops a big bomb on us those 70cms repeaters which are still operable might be pressed into community service; but in that event surviving radio amateurs will have other problems to worry about!

Strangely there has been far less outcry about Private Mobile Radio in the Home Counties being slotted into the 431 to 432MHz sub-band. PMR is not a Radiolocation service although the Scandinavian countries do have a new footnote in the WARC regulations permitting their Fixed & Mobile services to use the 430 to 432MHz and 438 to 440MHz sub-bands. Perhaps the Home Office considers the UK to be a Swedish off-shore island!

For the time being radio amateurs within a 100km radius of Central London are being asked to avoid the use of 431 to 432MHz, whilst those of us in the NW and NE of England are not allowed below 432MHz anyway!

A few years ago in the columns of "Talkthrough" we put forward a proposal for an amateur Novice Licence on the 430MHz band - in the hope that this would stimulate activity and preserve the allocation for future generations of radio amateurs. The Editor of "Short Wave Magazine" indicated his strong disapproval of this idea, the self same journal has however been known to suggest a return to the pre-war system of "Artificial Aerial" licences for beginners! By contrast we note that in their August 1982 Editorial they propound a "use or loss" philosophy if we are to retain our VHF/UHF allocations.

We make no apology for returning to the subject of a "Novice Licence" in this edition of "Talkthrough". The RSGB has been talking about it for years, and the Home Office appears too busy (with CB?) to listen at the moment. Maybe "Practical Wireless" would give the notion an airing before we lose more of 70cms.

Hopefully the last of the bad news is that more non-amateur users are going to be put in the 10.25 to 10.40GHz microwave band - bands up - who uses it?

The first of the good news just announced by the Home Office concerns the new 18 and 24 MHz bands which were agreed at WARC in 1979. Although these will remain allocated to the fixed and land mobile services until amateur primary or even exclusive status is achieved not later than the 1st July 1989, these bands will become available to UK radio amateurs from 1st October 1982. We must however observe the following conditions.

Firstly, the Amateur Service will operate on a non-interference basis to all other services which are operating in conformity with the Telecommunication Convention and the International Radio Regulations. The class of emission will be limited to CW or ALA in the new designations; and the maximum antenna gain in any direction shall not be greater than zero db with respect to a half-wave dipole. The antenna itself shall be horizontally polarised in order to reduce ground-wave radiation, and the carrier power supplied to the antenna shall be 10dbw - or 10watts. The precise frequencies which will be allocated from the 1st October 1982 are 18.068 to 18.168MHz and 24.890 to 24.990MHz.

By the way, did you know that the BBC World Service has a broadcast outlet on 18.080MHz? We wonder whether they will be asked to move this transmitter into one of the assigned broadcast bands?

The next piece of good news concerns 50MHz. For research purposes only, a very limited number of Class "A" amateurs will be permitted to operate from 50 to 52MHz on a non-interference basis outside UK broadcasting hours. We must stress that this is by way of an experiment, and an extremely valuable concession on the part of the Home Office - so we need to take great care of this privilege. Those who are interested in taking part in these night-time tests are asked to contact the RSGB's VHF Manager directly. He is Mr Keith Fisher G3WSN, and his address is 7 Burlington Road, Swanage, Dorset BH19 1LR. This may have come too late for the 1982 Sporadic-E season, but did you know that there is a minor burst of Sporadic-E around the end of December and early January - this is not very widely known?

Furthermore the four new microwave bands agreed at WARC '79 will also become available from 1st October 1982. These are at 47.0 to 47.2, 75.5 to 76.0, 144 to 144 and 248 to 250GHz. The power, classes of emission and safety precautions will be as for the other bands above 1GHz. Now don't tell us you haven't got any plumbing ready for these bands yet!

Finally, from the 1st October 1982 - and in time for the 25th Scout Jamboree-on-the-Air - the Home Office has now agreed to a relaxation in the control of greetings messages. As from this date non-licensed persons may send greetings to other stations as part of an on-going experiment. The facility will initially be for users of special event callsigns only. Greetings messages may only be sent within the UK to begin with - since agreements with other Countries are required before international messages may be transmitted. The Home Office have set out the following guidelines after discussions with the RSGB. Each greetings message should not exceed two minutes in length; the message may only be sent once to each station with which the originating station is in contact; and the non-licensed person may speak into the microphone - but the licensed operator must operate the transmitter controls and identify the station. The RSGB has a letter of authority from the Home Office to go ahead with this experiment and the terms of the amateur licence will be changed in due course.

The 25th International Scout Jamboree-on-the-Air will take place this year on Saturday/Sunday 16th/17th October. The greetings message concession will be of great interest to all the scouts who take part in this event. The Radio Society of Great Britain is to be congratulated for securing this facility, (which was withdrawn many years ago), and further we must thank them for the part they have played in getting the Home Office to make the other concessions detailed above.

All in all - we think the good news outweighs the bad news, but we must be vigilant. Our VHF and lower micro-wave bands will be under great pressure in the years to come. Use them well and encourage other amateurs to do likewise.

John Callthorpe.

THE RSGB'S NEW HEADQUARTERS

The RSGB are pleased to announce that after a good deal of searching and much negotiation, the Society has moved to a new Headquarters building at Potters Bar in Hertfordshire, as from November 8th. There are several reasons for the availability of property at an advantageous price: an equivalent property in London would have cost many times more.

Many other advantages come from the move. The floor area is between three and four times greater than that at Doughty Street, and there is ample scope for future expansion of the Society's activities. The available facilities range from good free car parking to sufficient storage area to keep much larger book stocks than was possible at Doughty Street. The new Headquarters, which also offers better working conditions, should eventually have a profound effect on the quality of the service the Society can offer to its members and the amateur radio trade.

The Society's new address from 8 November 1982 is:

Alma House
Cranborne Road
POTTERS BAR
Hertfordshire
EN6 3JN

Telephone: Potters Bar (0707) 59015
Telex-25280 (same as existing number)

The Headline News Service will be extended, and its new number is :

Potters Bar (0707) 59312

A dedicated answering machine operates to collect items of news for GB2RS and the Headline News Service, and messages may be left on :

Potters Bar (0707) 59260

These facilities came "on line" on 8 November 1982, and should help the Society's service. The deadline for GB2RS items will remain at 10 am on the Wednesday before the broadcast.

The fickle finger factor.

Part 1 Rotors never break when the weather is nice.

Part 2 The same goes for antennas.

Part 3 The higher the beam, the surer it is to break.

Part 4 He who buys a piece of equipment usually sees it on sale in the next issue of QST.

Part 5 He who wants rain should take his new rig out on field day.

TRW ARC

12 MONTHS ON 2 METRES F.M. WITH 1½ WATTS & WET STRING AERIALS

"I'm running the legal limit" well you might be but I'm not. I can't get much further than the East Coast of Ireland (and I need lift for that).

I can consistantly work most of Merseyside and N.E. Wales, except West Kirby, and even further if the other chap has a beam and a pre-amp to point at me (how do you aim a pre-amp?). The club secretary has been copied from the Isle of Man but he was scratchy as he was horizontal (on the beach or in front of the bar?).

Some of the real DX contacts were made with 1½ watts using the MK1 Rucksack Portable Special. I shall digress for a moment to cover the constructional details of this high quality piece of equipment. Take a length of co-axial cable (50~~ohm~~) and 1 PL 259 plug - you now have all the materials. Fit the plug to one end of the cable and seperate the screen off 19½" of the cable at the other end, don't cut the screen off though. Attach a piece of string to the centre core and a weight to the screen (having trimmed both the centre core and screen to length using a S.W.R. meter). Installation requires a stone attached to the end of the piece of string, and thrown high over the branch of a tree then hoist up the aerial. The purists will tell you the foliage will upset your signal - it will but at 1000ft plus above sea level so what!

The most impressive sounding contacts made on this super quality aerial are naturally across water. The first proving test from Heswall found Barrow-in-Furness and he gave me a 5 x 5 report. This aerial also produced my first EI simplex contact, Waterford from St Ives in Cornwall. Not every contact is successful though. Imagine a small tent in S. Uist in continuous rain with me, an IC2E and the MK1 aerial inside (the mind boggles). GB3HI repeater was fully quieting but I couldn't get back. Do you think the sodden tent, metal tent poles, and aerial 1½" above the ground was affecting my signal?

If you would like to hear a demonstration of the MK1 Special, call me on S13 - I use it in the loft at home now.

I've gone mad now I've got high power 8 watts S.S.B. CQVK.....CQVK.....

Peter G6GGJ

You know your getting older when
your knees buckle and your belt won't.



NOT ME!

By John G. Troster, W6ISQ

"Thank you. Thank you, club members. Don't get up. No big appreciation demonstration, please. Now you elected me your new president on my 'New S9 Action Program' to make this miserable group into the best club in the whole U.S. of A....right?"

"Right... Yippee... Wah hoo wah".

"And we're gonna be a world champeen club.... right?"

"Right on... Hoooorrrrayyy... S9 plus, Old Man."

"And we're gonna move forward and onward... and ahhh... upward... and ahhh... right?"

"Right... We're ready... What you gonna do, Mr Prez?"

"Okay, the first thing in my New S9 Program is to make us a big winner in Field Day.... right?"

"Hooorrraaayyy... We're number one... What kinda trophy we get?"

"Okay! First thing we need is a hard-charging, good-organizing Field Day chairman who's gonna ramrod this club into an oiled, smooth-running, efficient QSO machine to pile up points.... who wants to volunteer to be chairman?"

Z Z Z Z Z Z Z Z Z Z

"Ahhh... who wants to volunteer to be the leader of this winning team? Ahhh... volunteers??... hmmm... you're all too modest... ahh... okay, then, I'll appoint a leader. I'm gonna appoint our club fireball, old Charlie. Charlie, I want you to take ahold of Field Day and move us forward... multi rigs...multi antennas....every member in there CQing for the glory of this stagnant old club....the XYLS cooking chow and the kids running hamburgers and drinks to the ops....right?"

"Waalll....I dunno if I want to volunteer to get appointed Field Day skipper or not....lot a work, you know....all them rigs....putting up all the antennas....and all them XYLS and kids....ugh....hear 'em now....makes me kinda tired just thinking about it."

"Yeah, Mr President, you appoint old Charlie our Field Day skipper and first thing you know he's out appointing a lot of us assistants. And Second thing you know we'd all have to be out there in the hot sun working on Field Day....lot a work there....I was trying to get away from the XYL for one weekend anyway....We ain't never been in a Field Day before....not me."

"You mean you fellas is gonna pass up a opportunity for this miserable club to make the greatest score in the history of Field Days?"

"Naw, he's right, Mr President....Not me....We never done it....I was planning a barbeque that weekend....me too....All that work....Not me."

"Okay, okay....let's forget Field Day for a while. But let me tell you there's no way we're gonna have a 'New S9 Action Program' without a great, first-class club paper....right?"

"Right! Sure thing....Great thinking....Give us prestige...."

"Glad to hear everybody's in favor of a great paper. Now, who wants to volunteer to edit our new award-winning club paper? Come on....somebody volunteer....volunteers anybody? "Hmmm.... Okay, I appoint Jimmy. There

you are, Jummy. You gotta start investigative reporting. Nobody ever got a Nobel Prize without investigating. Gotta crusade for better band conditionsless sun spots....ahhh....smaller pileups....more DXCC countries."

"Weeeelllll....ahhh....I dunno, Mr President. Takes a lot a time, and I ain't never done no Nobel prize investigating....'course I could appoint a bunch of columnists to help."

"Naw....Not me....Forget that appointing stuff, Jimmy.... Write it ourself....Not me....For this club you only need a cartoonist....Not me.... eah, a comic book maybe....Not me....I can't draw."

"Here I'm trying to progress this lousy club into S9 world class ranking, and nobody will do nothing! If you didn't like my 'New S9 Action Program,' how come you elected me president?"

"You was the only one running. Yeah, Old Man, your S9 program is down to about a S5 right now."

"Okay, you lost your chance. I'm not gonna let nobody else volunteer, I'm only going to appoint people from now on. So, I'm gonna appoint Old Sam to be chairman of our new program committee. We need new exciting speakerspeople who are gonna tell us what we ought to know....get us all fired up....what do you say, Sam?"

"Ahhhh....waaalll, Mr President, I don't know nobody who's excited about much....only exciting fella I ever knew finally made DXCC, but then he went back to full-time rag chewing....maybe somebody else....not me."

"Come on, Sam. We need speakers to educate us....launch us onto the wave of the future with outstanding speakers....ahhh....the way to the future is forward...."

"Maybe Sam he don't wanna go forward on a wave....You're down to about a S2, Mr President."

"All right....okay....I'll get the speakers myself. But one thing the S9 Program is gonna do right now is to save us all from poisoning....ha ha. I'm gonna move us out of this terrible Mom's Pizza Parlor here into a decent restaurant. We can't move forward if we all get promaine poisoned in the back of a pizza parlor....I'm gonna appoint a restaurant committee."

"What you got against old Mom's Pizza? Yeah, we like her cheese and them hot peppers....Not me....I stay....Love that Polish sausage....Me too.. ..Not me....You're down to a S-nothing, Mr President....Not me!"

"You elected me president to turn this club around and progress, to move forward into world class contention....ahhh....or did you? All I need is a little help....a few committee chairmen....right? ...ahhh...."

"Not me....you're the president....You do the work....Yeah, we elected you and now you're trying to make us do the work."

"Okay, okay....hmmmm....well....all right. That's about all for this meeting tonight. Next meeting....ahhh....we meet here in the back room of Mom's Pizza....no speaker program....just swap lies like usual....forget winning Field Day.... forget our Nobel winning paper."

"Hey, sure like your 'New S9 Action Program,' Mr President. Learning fast....good program....gonna make a great president....You're back up to S9 plus....Yeah, with a good club Action Program like that, maybe we'll elect you president again next year."

"Not Me!"

Your Secretary has asked me to write a note for "Airwave - 325" on the lines of my remarks on operating made during your social evening last November.

The two points that I was trying to make (forcibly - I hope) were about call signs and operating standards generally.

(1) On call signs I tried to enlist your support for "CECECS". This stands for - Campaign Encouraging the Clearer Enunciation of Call Signs. Many amateurs gabble their call signs once they have established contact, a few do it before they have established contact!

Please remember that there are probably many listening - whether you like it or not - and they may want to contact you later or even record the QSO in a listeners log. Please consider your colleagues in our unique hobby by giving your call sign clearly and with appropriate phonetics. On the matter of phonetics a re-read of your licence will not do any harm!

The message from GOLF TWO ALFA MIKE VICTOR is DELTA OSCAR NOVEMBER
TANGO GOLF ALFA BRAVO BRAVO LIMA ECHO.

Two metre operators include many who offend but the symptom is by no means confined to that band.

(2) There are now over 1.5 million licenced amateur operators world wide. We are packed in to little bits of the spectrum. (I sincerely believe that the amateur movement has done well to retain/and recently improve upon?/its allocations against the intense competition for more space.)

It is up to all of us to watch our operating standards and techniques. Only by setting ourselves the highest standards and first class techniques can we hope to exist successfully along side the other 1,499,999 users of our bands.

My duties and interests during the last few years have taken me to the States and several other European countries. It is gratifying to find the high esteem with which RSGB and UK amateur operators are held. Do we not therefore have a moral duty to continue setting good standards so that this reputation is upheld?

Finally I must just have a look at the other side of the coin and confess to you that I occasionally wince at some of the conversations I hear on the amateur bands. At those times I just sit and hope that the H.O. monitoring service (on whatever) is not listening!

None of us is perfect but wouldn't it be nice!

73's G2AMV

My thanks go to Basil for finding the time to write the above article for our magazine. At the time he was deeply involved in negotiating the new RSGB Headquarters, earlier in the year. The Social referred to was the one in 1981, as this article was intended for publication in early November.

G8TRY

UZU IN AMMELAND

- AMMES - Fearsome inhabitants of Ammeland.
 JAITS - Mysterious primitive tribe from the dark zone;
 Serfs of the Klarsays.
 KLARSAYS - A dominant body of advanced beings, considered
 intellectually superior to the Jaits.
 RIPITA - God to all Jaits.
 LORGIC - All seeing mind of the Ripita.
 JEETOOS & JEETREES - Elders of the Klarsay tribe.
 JEEFAWS - Young, newly-blooded warriors of the Klarsays tribe.
 MAWSE - Supreme God of the Klarsays.
 KUSOS - Conversations, futile and un-intelligible to the Aliens,
 between individual Ammes. Jaits speak in Phoney, Klarsays
 either in phoney or in the monotonous tongue of their God-
 Mawse. Kusos consist largely of teknikalities interspersed
 with such phrases as "yertherejim", "aitcheye", "seeyerfur-
 derdownlog", and "krystitsblownup".
 EFFEM, AYEM & ESSESBEE - Amme dialects of the language Phoney.
 KAY - Erotic slave-girl of Ripita. Often violated by Jamma.
 O'MOFFISS - Celtic patron saint of all Ammes.
 JAMMAS - An alien group of single-cell creatures intent on bring-
 ing about the downfall of Ripita.
 ARMONIKS - Base-born issue of Ammes. Hunted down by O'Moffiss and
 despised by Nayberz.
 NAYBERZ - Hostile peoples dwelling adjacent to Ammeland. They prey
 nightly on their one-eyed "Gogulboks".
 EYEWUNZ - Latin tribe of Ammes. Their language is Splatta, a
 dialect of phoney.
 SEEK-YOU - Mating call of Ammes. Uttered in dreary monotone and
 repeated non-stop for up to five minutes.
 KUARZED - Reply to the mating call "seek-you".
 NEGGERTIF - Abbreviation for "no".
 AYFERMATIF - Abbreviation for "yes".
 HELO RAY-DEE-OH - Call emitted by Essessbee speaking Ammes when
 mating call does not bring a response. Frequently gives
 the Gogulboks convulsions.
 ENNEFFDEE - Midsummer festival of the God Mawse and celebrated by
 Ammes in a 24-hour open orgy of meaningless kusos.
 Number swapping is belived to take place.
 QUEUE ESSELLES - Hunting trophies much prized by Ammes.
 SHAX - Simple dwelling place of Ammes. Often decorated with
 queue-esselles in colourful manner.
 R.S.P.C.A. - Royal Society for the Prevention of Cruelty to Animals.
 Presumed to be responsible for the "Dog-X-ray" often
 mentioned in kusos.
 BITTERVERLIFTON - Natural phenomenon causing temporary insanity
 amongst the Jaits, who wait in their Shax waiting
 for evidence of a Dog-X-ray taking place.

Its always nice to have material such as this to go in the mag. ,
 except that for this issue I was given two slightly different
 versions by different people. As far as I can tell, this is the
 original as appeared in 'Talkthrough' (again ?) in 1979. (HENCE NO GUESSES)
 The other came from a more recent club magazine.

MAIERS LAW

If the facts do not confirm the theory, they must be dispensed of.

CONTEST NEWS

SSB Field Day 1982 results extract from RADCOM Jan 83.

1 G#4CC/P Swansea ARS	1213 QSO's	603,200 Score
17 G4DLY/P Wirral CG	713 QSO's	249,228 Score
22 G3NWR/P Wirral ARS	500 QSO's	140,622 Score

Congratulations to Paul G4DLY and Neil G4OAR for their joint effort on Neston marshes. It shows what can be done when people enter contests for the sole purpose of winning. This was NOT a club entry.

RAYNET NEWS

As most of you will know, Ian Brooks has had to resign as Wirral Raynet Controller, and his function has been performed by Mike Hampson, G8RXB, Ian's Deputy. Pressure of work caused Ian to leave his post, but he will still continue to remain active in Raynet as time permits. Therefore, Mike has been duly nominated as Group Controller for Wirral, and John Fogg G8UZZ as his deputy.

The lack of a permanent venue for Raynet meetings has not helped in maintaining the vital communications and training link between Raynet members, however a Raynet Net night exists on the 10 th., 20 th. & 30 th. of each month as a regular means of contact between Controller and members. Time is 8 pm local, and initial contact is on S8, but the net may QSY by a few channels if the freq. is occupied, as often happens on Monday and Thursdays. More stations are now taking part in the net, but it would be nice if all those who left early from the Saughall meeting a few years ago were still as active now as then.

During the course of December, the RSGB issued a notice that would vary the terms of the Amateur Licence from about 1 st. Jan. The effect of this notice would be to allow a licenced amateur to pass third party messages in the case of REAL emergencies when normal means of communication where not available or out of order within a reasonable distance of the scene. Also, it would be permissible to allow, for example, a Doctor to use the microphone under the amateurs controll, under the above circumstances- e.g. A multiple pile up on the Motorway when the roadside 'phones were out of order.

The notice would also permit Raynet groups to take part in an exercise with any of the user services named in the licence on a basis of not exceeding one exercise per callendar month. The RSGB and HO feel that other services such as the Fire and Coastguard Services should and could be included on the amateur licence, and it is largely up to the amateurs to persuade them to apply to the Home Office for inclusion. Marathons and charity walks would also be O.K. for Raynet cover.

The latest batch of Raynet renewals have been processed and the newly laminated I.D. cards are now ready. The cards expiry date is last day of December 1984. We hope it's no omen.

73, Mike, G8RXB.

KERCHUNKERS

The KERCHUNKERS meet every day on any and all repeaters around. They only meet on repeaters that are not in use.

Do you want to join this club?

To qualify as a kerchunker one must show their skill by pressing the PTT button long enough to activate the repeater. To be a fully certified kerchunker, one must perform this action until the button finger tires or becomes a bloody stub (whichever comes first). There is one and only one other reason to stop- if someone asks for a break or starts to use the repeater. However under no condition should you answer the person using the repeater as this might identify you as a kerchunker, and a kerchunker must remain anonymous.

By being a Certified Kerchunker, one can do the following :

1. See if you can access the repeater with your rig.
2. Let other kerchunkers know you are on the air.
3. Thrill to the joyous sound of squelch trails.
4. Find out if anyone else has kerchunked by the presence of the repeater I.D.
5. Assume that the repeater is down when you do not hear the squelch trail and complain loudly about it.

If you feel that it is a real thrill to use your rig in this way, you are a candidate for membership in the kerchunkers. However, please do not apply, as there are too many members now.

HAM RADIO TODAY

In the last Airwave we told you of a new magazine 'Amateur Radio' appearing during June, and, largely due the expansion of amateur radio, a second magazine has appeared in December entitled 'Ham Radio Today'. This promises to be a good magazine, designed especially with all aspects of amateur radio in mind, without filling the pages with audio or auto projects.

As a service to members, and as a way for the club to make a few bob, we shall be selling copies of the mag. each month at club meetings. It is quite possible for us to have copies before they appear on the bookstalls, and we may even knock off a few coppers.

We shall check with other magazines to see if we can do a similar type of direct sale.

FOR SALE:

Pye Cambridge. AM/FM 6 Channels ONLY £35
Peter G8WQQ 677 9561

Oscilloscope- old type- valved £20
Marine band VHF transciever. Valved £20
Myford bench lathe. £ POA
Peter G6CGF

Voice in the Dark

The truck rolled along steadily into the night, the driver switched on his rig hoping for a QSO, but no-one came back to him. Many times he called, but no reply.

Suddenly a deep voice boomed over the speaker "This is the road to the Pearly Gates" it said.

The driver peered through the mist and ahead there was a bright light shining. Now the Golden Gates were visible, shining brighter than before.

Again the voice boomed "You can't come in yet, it's not your time. Turn around and go back."

The driver stamped on the brakes, bang! the pedal hit the floor, The truck never slowed - it still thundered on down the brightly lit road.

Again the voice boomed "Stop and go back", but the truck seemed to speed up.

The newspaper headlines read "Driver and wagon go over the end of new Motorway bridge."

The voice boomed for the final time "O.K. driver, now you can come in."

Peter Denton, G6CGF.

A personal message from Peter.

This letter of thanks is to all the members of the Wirral and District Amateur Radio Club, for the very kind help and all the visits and good wishes whilst I was in hospital, both times.

These times, when one can not do very much is the time when help in many ways is much appreciated.

Once again many thanks to all and everyone of my friends.

Peter L Denton. G6CGF.

Heard on C.B.

" With a hand held and the aerial pulled out, I can't find any breakers."

CGF Comment - Oh. That D.F. hunting was so simple!! eh what!!!

Heard on LI

" I've sat here all evening with one eye on the telly and one on the repeater. "

We hoped to give more comments heard on the air, but the supplier can't find them. Perhaps he's too embarrassed.

INSTANT "BUZZWORD" GENERATOR.

Technology has created a new type of jargon that is nearly as in-comprehensible as it is sophisticated. We recently came across an unusual technique, called an instant "Buzzword" Generator, which will help you master this jargon. With it you can generate an almost endless variety of intelligent-sounding technical terms.

The technique is easy to use. Merely select a digit from each of the three columns below and combine the words opposite each number into your own technical jargon. For example, select 3,9,0, and you generate "parallel policy option", an expression bound to command instant respect and confusion.

Column 1	Column 2	Column 3
0 integrated	0 management	0 options
1 total	1 organizational	1 flexibility
2 systematized	2 monitored	2 capability
3 parallel	3 reciprocal	3 mobility
4 functional	4 digital	4 programming
5 responsive	5 logic	5 concept
6 optical	6 transitional	6 time-phase
7 synchronized	7 incremental	7 projection
8 compatible	8 third-generation	8 hardware
9 balanced	9 policy	9 contingency

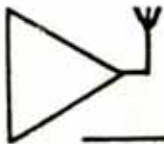
We have details of a RTTY program specially written for the ZX 81, both TX & RX using the 16K Ram-pack. Price £9.75 for the cass. and £3.75 for an interface PCB. (Board only) all inc. Ask Sec. for details.

There was an amateur from Kent
Whose antenna was extremely bent
To save all the trouble,
He kept it bent double,
And instead of receiving he sent.

When Adam was a lad,
Before paper was invented,
He worked his maths
Upon the grass
And walked away demented.



YES MY SON, IT IS ONE OF OUR EXTENSIONS
BUT I AM AFRAID I DON'T KNOW WHERE
IT GOES



Northern Amateur Radio Societies Association

Ref: FS/ID

Date September 1982

Please Reply To:

F. Smith. G4GDM,
20 Guiseley Close,
BURY. BL9 5JR,
Lancs.

21ST N.A.R.S.A. EXHIBITION. 19TH AND 20TH MARCH, 1983
PONTINS HOLIDAY VILLAGE, AINSDALE, SOUTHPORT

The N.A.R.S.A. are pleased to announce further details of our Exhibition Weekend 1983 replacing what was known, and loved by many, as "Belle Vue" Manchester.

The details are as follows:-

Pontins will be pleased to accommodate you for one night (I.E. Saturday)

2 Person Chalet	-	£10.00 + V.A.T.
3 Person Chalet	-	£14.00 + V.A.T.
4 Person Chalet	-	£18.00 + V.A.T.
5 Person Chalet	-	£22.00 + V.A.T.
6 Person Chalet	-	£26.00 + V.A.T. (Families Only)

(Minimum Charge - £10.00 + V.A.T.)

For further details regarding accommodation for larger families, contact Pontins direct. Telephone No. 0704 77165.

The Chalets are fully equipped for self-catering so bring food supplies if you so wish. Alternatively, excellent catering facilities are available on site at very reasonable charges.

Family entertainment including - childrens adventure playground, amusement arcade, crazy golf, prize bingo, snooker. (Indoor swimming pool, and paddling pools may be opened depending on anticipated demand).

Evenings - cabaret lounge, with excellent bar, will be open to "Residents," with entertainment.

Exhibition Opening Times.

Saturday 19th March 1983	-	11 am. till 5 pm.
Sunday 20th March 1983	-	10 am. till 4 pm.

Why not get your Radio Club to organise a coach - block bookings in advance are cheaper. (See below).

Admission - 60p per day or £1.00 for the weekend for all over 14 years of age wishing to enter Exhibition Areas i.e. NO CHARGE for families who do not wish to visit any of the Exhibition Stands. Car Parking is FREE.

-2-

The N.A.R.S.A. see this Exhibition as a "First" - A good weekend to involve the Family.

Tickets may be obtained in advance at a discount of 20% (20 or more lots) by sending the appropriate cash and stamped addressed envelope to:

Mika Bainbridge, G4GSY,
7 Rothbury Close,
Bury. BL8 2TF,
Lancs.

Booking forms for Chalets are obtainable direct from Pontins, Southport.

Book early - Don't miss this weekend - Don't leave it too late and be disappointed.

The N.A.R.S.A. have gone to a lot of trouble to find a suitable alternative to Belle Vue - not an easy task. We hope you will join us and have a great weekend.



73 DE FRANK. G4GDM.

N.A.R.S.A.

Following last years fiasco at Belle Vue, we would like to put on a good show for the two day event at Pontins this year.

Several people want to put things on the stand (we have two tables reserved) and once again I am offering the use of a room in my house to practice erecting the stand.

So, let's have all the goodies sorted out, together with anything else you can lend for the stand, at my house, under the auspices of the 1983 NARSA Rep.

Thank you.

Peter Denton, G6CGF.

RSGB PROPAGATION STUDIES COMMITTEE

Sporadic E Study Project in Conjunction with CCIR

From 1982 onwards, the RSGB and CCIR will be developing the study of VHF Sporadic 'E' propagation.

The extent of the sporadic E openings observed on 144MHz greatly exceeds that expected by using the method currently recommended by the CCIR. Studies of major openings are in progress using the reports on the IARU "VHF sporadic E long distance propagation report sheet". However one topic that is not being closely studied at present is the determination of the duration of particular events. This is important to other radio services in adjacent bands as the acceptability of interfering signals to a service can depend upon the length of the interference burst. The small amount of information on this topic that is quoted by CCIR all relates to frequencies between 40 and 70MHz. It would be a valuable contribution to the replanning of various services following the WARC to have available information relating to higher frequencies.

By recording the duration from the first observation a Es signal until it fades into the noise (short fades excluded) from stations which are fairly close together (say within 100km of each other). The observed duration in minutes would then contribute to a probability distribution which gives "event duration longer than..." information. Successive reports relating to stations in different areas will give information on the movement of Es ionisation.

This study will be in support of the excellent work presently being carried out within IARU Region 1 by many amateurs whose reports are co-ordinated by the DUBUS team and F8SH. All reports will be interchanged between IARU, DUBUS and RSGB. The IARU Sporadic 'E' report form presently in use will continue to be used and will be supplemented by a new form available from RSGB.

Copies of this form are being distributed throughout IARU Region 1. British Amateurs may receive copies by sending an S.A.E. to R.S.G.B. H.Q. or by visiting R.S.G.B. stands at exhibitions throughout the year.

HAM RADIO TODAY

Published by Argus Specialist Publications Ltd

145 Charing Cross Road, London WC2H 0EE Tel (01) 437-1002 Telex No. 8811896

HAM RADIO TODAY fills a unique slot. It will be the only magazine in the UK to be dedicated 100 per cent to the radio amateur market and available through general distribution and emporiums on a sale or return basis.

It will not be CB (amateurs get quite upset if their hobby is confused with CB radio) but will cater for the massive influx of radio amateurs who came into the hobby through an interest in CB.

As such **HAM RADIO TODAY** will be readable by amateurs of all ranges of technical competence. The writing style will not take a massive in depth knowledge for granted; this is perhaps the biggest disadvantage of the competition such as it is.

However, the style will not alienate the readership of the experienced amateurs. We have gone to great pains to avoid 'talking down' to the reader or filling the pages with newspeak jargon.

For instance, the launch issue (3rd December, print order 50,000), will contain constructional details of a complete digitally synthesised HF amateur radio transceiver, the first time that any magazine, anywhere in the world, has tackled such a complex project.

We have enough faith in our style of presentation that we shall be able to present a truly daunting project in easy to read form for amateurs of all abilities.

We will back high quality constructional articles with an amateur radio equipment review section against which the efforts of other magazines will pale into insignificance. Remember, it is the review sections which have created the massive and diverse magazine markets for photographic and hi-fi equipment. We plan to do the same for the amateur radio market. Furthermore, with the facilities at our disposal (British Electric Traction, the holding company for Argus also owns Redifon Telecommunications, the magazine's review laboratory) our position as the UK's foremost amateur radio equipment reviewer will become unassailable.

When the other features and regular columns are taken into account, **HAM RADIO TODAY** will offer the most attractive package on the market.

Contact us about advertising because we have a special launch offer that you won't be able to refuse.

Neil Terry
Advertisement Manager

Frank Ogden G4JST
Editor



K35UK