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Editorial

Another transmission mode. Dan, KB6NU discusses FT8, the new HF/6m digital mode.

Have you wondered how exceptional we radio amateurs really are? Read a report by Dr. Hans D. Crofthill, Dr. Ginger Patrick, Dr. Tera Linn on the psychology of amateur radio and contesting 😊.

Ed

Curry Night

The first Friday in January has always been the “Curry Night” and this year members turned out in force numbering some 40 ladies and gentlemen all with great appetites. It was with much gratitude to Geoff G8BPN from everyone present for the organisation of the meals, especially so due to the somewhat unexpected vast numbers. It was generally felt that a different approach to the feeding of the 5000, will be need to be taken next year! But it really was a great evening!!

...Ed



IL5 Course

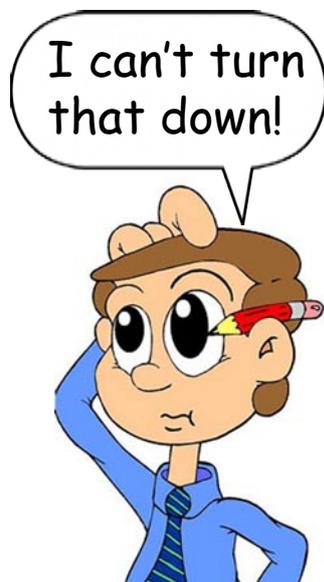


The pictures show the candidates on the IL5 course run by David Porter (G4OYX), and the 100% pass rate results. On the 11th December, the new calls were finally in. From left to right, Peter 2E0PJG, Anthony 2E0LFA, Wendy 2E0WKQ, Nick 2E0NGV and Ben 2E0KSX

Well done to everyone and a special thanks to David ably assisted by Adi G8IVO, for yet another invaluable successful course completed.

Humour

I saw an advert for a radio. It said, "Radio for sale £1.00 volume stuck on high".



Morse Key



Waters & Stanton RJ-1 Straight Hand Key

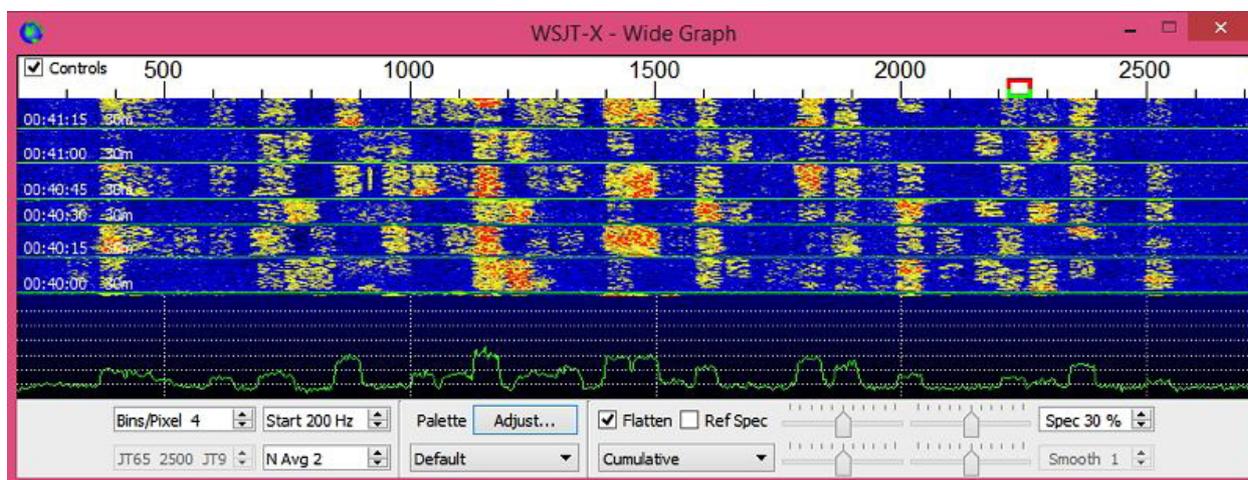
FT-8: I'm not really feeling the magic

By Dan Romanchik, KB6NU

Partly out of curiosity and partly because Jeff, KE9V, shamed me into it, I setup my Signalink interface, downloaded WSJT-X from <https://physics.princeton.edu/pulsar/k1jt/wsjsx.html>, and started operating FT-8, the latest “shiny object” (as the ARRL dubbed it) from the K1JT team. As you probably know, this mode has really caught on with the digital crowd, and the waterfall is chock full of FT-8 signals. Part of the reason for this is that it has some of the characteristics of JT-65, but is not as excruciatingly slow.

on the CQ, the program began decoding signals on that frequency and display the transmissions in the “Rx Frequency” window.

Then, I clicked on “Enable TX” and the program began the contact sequence, sending “WA9THI KB6NU EN82.” EN82 is my grid designator. This is shown as the first yellow line in the Rx Frequency window. The transmissions that I sent are highlighted in yellow. The transmissions sent by WA9THI are highlighted in red.



A waterfall display generated by WSJT-X at 7:30 pm, 23 November 2017.

Over the past couple of days, I've made 32 QSOs, including a couple of DX contacts. It's been fun to try something new, but to be honest, I'm not really feeling the magic.

Part of it is that I don't feel like I'm really doing anything. I downloaded the software, plugged in my digital interface, fooled around with the settings a bit, and then, the computer started making contacts. I have to click a few on-screen controls to make contacts, but even that's a step that could be easily programmed in by the WSJT-X developers. (In fact, I wonder why they haven't done that already!)

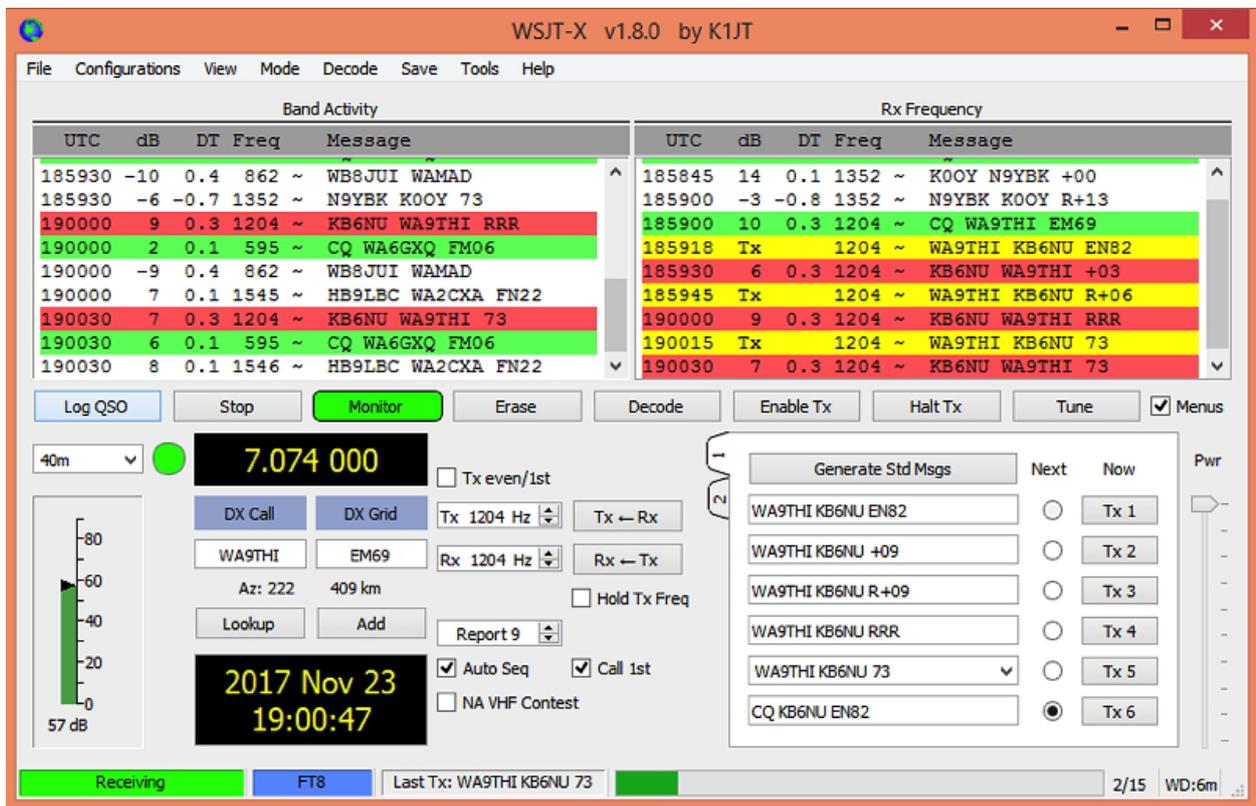
Take a look at the screenshot overleaf to see how a typical contact happens. When a CQ appears in the “Band Activity” window, you double click on it. When you do this, the software begins listening for signals on that frequency. In this case, I double-clicked on the CQ by WA9THI. When I double-clicked

The sequence of transmissions shown there comprise a complete contact, and that whole process takes less than two minutes. And, once WA9THI received my first transmission, the sequence is all automatic. You just sit there and watch the two computers talk to one another.

While I can certainly appreciate the thought and the work that went into the design of the protocol and programming to implement it, sitting and watching the computers talk to one another just doesn't excite me. On the other hand, if you're one of those guys who wants to make contacts, but doesn't really want to talk to anyone, than this is the mode for you!

Here are a few more notes about FT-8 operation:

- Not surprisingly, synchronizing your computer with the other stations computer is very important. To do that, you need to



WSJT-X screenshot. The sequence of transmissions in the Rx Frequency window comprises a contact.

get your computer to use the network time protocol (NTP). I failed to do this when I first installed WSJT-X, and while my waterfall was full of FT-8 signals, WSJT-X just wouldn't decode them.

- I got my PC laptop to talk ntp by installing Meinberg NTP software (<http://www.ntp.org/ntpfaq/NTP-s-def.htm>). Once I did that, WSJT-X magically started decoding transmissions.
- Most of the cool guys seem to be using Meinberg NTP, but there are other options. One of the guys in our club is using a program called Dimension 4, for example.
- Apparently, you don't have to limit your power output as you would with PSK-31. At first, I set my output power to 10 W. I had a bit of success at 10 W, but I expected more. When I asked on Twitter how much power other guys were using, most of them said that they were using more than that.
- For the last couple of sessions, I've been setting my output power to 25 W, and I've been having more success. I've now worked several Europeans on 30m.
- Even at 25 W, my signal reports are more often than not as good as the signal

reports I'm handing out. I haven't figured this one out yet. This doesn't happen to me when I'm operating CW, so I don't think it's my antenna.

- When I'm operating, I write down the calls of stations I've contacted. The reason for this is that while WSJT-X does have a logging function, it doesn't have a log window, so unless you have a great memory, you could end up working guys two or three times a session. That's probably not a big deal since contacts are so quick, but I'd rather avoid doing that if I can.
- WSJT-X works "split." While most contacts take place on the same frequency, a station can call you anywhere in the passband of your receiver and WSJT-X will decoded the signal and begin a contact. This threw me the first time or two that this happened, and I tried to change my transmit frequency to match the other station's. In doing so, I messed up the sequence. I now just let the contact proceed normally, and it works out great.
- When I work the other digital modes, I set my IC-746PRO to the USB-D mode. In this mode, the receive passband is narrower than for working phone. When

operating FT-8, however, you don't want to limit that passband. Signals will appear across the entire 2.6 kHz of the USB signal, and if you narrow the passband, you won't be able to work those stations.

- WSJT-X checks the validity of call signs. This afternoon, there was a guy who had typed in his call as "WAMAD" and was calling CQ. WSJT-X wouldn't let me answer that CQ.
- Operating this mode opens up the possibility of working more stations whose callsigns spell words and adding

those QSL cards to my collection. I have, for example, already worked K1GUY, N4HER, and N5SLY. I'm guessing that these guys don't operate CW.

All told, I've found this to be an interesting foray into a new digital mode. While I'm not feeling the magic that some others seem to be feeling when operating FT-8, it certainly will be a change of pace to operate this mode from time to time. Give it a shot and tell me what you think.

73 Dan, KB6NU (cwgeek@kb6nu.com)

Foxhole Radios

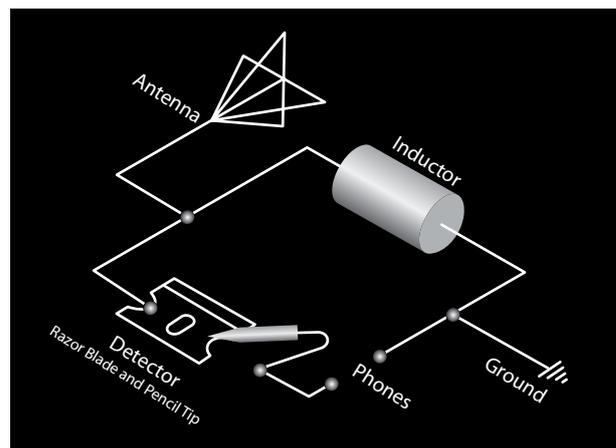
A foxhole radio is a makeshift radio that was first used by soldiers in World War II, specifically at Anzio, spreading later across the European and Pacific theaters. There were different versions of the foxhole radio; all used a safety razor blade as a radio wave detector.

The "classic" foxhole radio was configured like a crystal radio, with the blade acting as the crystal and a wire, safety pin, or, later, a pencil serving as the cat's whisker. Other versions were similar to the microphone detector of David Edward Hughes, rediscovered by Harry Shoemaker and Walter Wentworth Massie, popular among amateurs in the early days of radio. They were named, likely by the press, for the foxhole, a defensive fighting position developed before and during the war.

The foxhole radio is like a crystal set, in that it does not require an external power source. The radio is powered by the radio signal it receives. This makes the foxhole radio ideal for prisoners of war (POW); though it is unclear if this type of receiver was used by prisoners of war during World War II (prison camp sets were usually more sophisticated), there are accounts of sets built by American POWs during the Vietnam War.

History

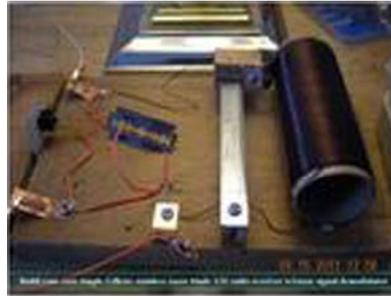
The maker of the first foxhole radio is unknown, but it was almost certainly invented by a soldier stationed at the Anzio beachhead during the stalemate of February – May 1944. One of the first newspaper articles about a foxhole radio ran in the New York Times April 29, 1944. That radio was built by Private Eldon Phelps of Enid, Oklahoma, who later claimed to have invented the design. It was



Schematic diagram of a Foxhole Radio

fairly crude, a razor blade stuck into a piece of wood acted as the crystal, and the end of the antenna wire served as a cat whisker. He managed to pick up broadcasts from Rome and Naples.

The idea spread across the beachhead and beyond. Toivo Kujanpaa built a receiver at Anzio and was able to receive German propaganda programs. The propaganda programs were directed towards Allied military from an Axis station in Rome. Many veterans of Anzio refer to the female announcer they heard as "Axis Sally", the nickname usually used when referring to propagandist Mildred Gillars, however Gillars broadcast from Berlin, and the men at Anzio were more likely hearing Rita Zucca, who broadcast from Rome. Though Gillars is more



Examples of Foxhole Radios

often associated with the “Sally” moniker, it was Zucca who actually referred to herself as “Sally” during broadcasts.

There were also allied broadcasts available, from the 5th Army Mobile Radio Station and the BBC.

American G.I.s in Italy would put several radios together. The G.I.s would listen at night near the front lines to phonograph records played on a radio station in Rome. You could usually hear a radio station on a foxhole radio if you lived twenty five or thirty miles away. In 1942, Lieutenant Colonel R. G. Wells—a prisoner of war in Japan—built a foxhole radio to get news about the international situation. “The whole POW camp craved news”, according to Wells.

Designs and principles of operation

Foxhole radios were built using numerous designs. All of them receive AM (amplitude modulation) radio transmission without the need for a power source. They use an antenna or wire aerial, a coil serving as inductor, head phones, and some sort of improvised diode to rectify the signal. A diode can be built from an oxidized razor blade (rusty or flamed) with a pencil lead sitting on the blade. The oxide layer on the razor blade and the point contact of the pencil lead form a Schottky diode and only allow current to flow in one direction.

The antenna is connected to the grounded inductor, which is connected to the head phones, which is connected to the diode, which is connected to the antenna, completing the circuit.

The coil has an internal parasitic capacitance and therefore acts like an LC resonator with a specific resonant frequency. By varying the inductivity with a slider-tuner arm, the radio can be tuned to receive different frequencies. Most of these wartime sets did not have a

slider-tuner arm and could only tune to one frequency.

Richard Lucas, a POW in Vietnam, constructed a radio in camp and built his own earphones. Richard built his earphones by binding four nails together with cloth then winding wire and dripping wax over the turns. After about ten layers of wire he placed it in a piece of bamboo. A tin can lid was placed over the coil of wire. The listener connected the improvised earphone to the foxhole radio and received three radio stations. The best listening was at night, according to Lucas.

All credits must go to Wikipedia for this fascinating article ...Ed

HARS radio equipment available for loan to Club members

The following list of equipment is available for loan to Club members. The loan period is 3 months and members wishing to use the equipment will have to sign a simple agreement which covers the loan terms. If you wish to borrow then please contact Duncan (Hon Sec) M00TG.

- Grid Dip Meter MFJ-201
- Buddipole 10-40M portable antenna with tripod and carrying case.
- Yaesu FT450 All bands to 50MHz. Needs a 12V PSU
- Pixie 7MHz QRP kit. Needs assembling.
- Baofeng UV-5R 70cms/144MHz hand-held complete with accessories.

Go portable with the Buddipole! Ed.

Psychological Profiling of Radio Contesters!

A reprint from Psychology and More 75(3):11-12 Ó Tailor and Franchiser Group.

Dr. Hans D. Crofthill, Dr. Ginger Patrick, Dr. Tera Linn
Cobblers University, Laboratory of Human Research

Hans.E.Crofthill@BrainCrackers.com

Background

Amateur radio is a leisure pursuit that has its origin in the early 1900s starting with the invention of wireless (radio) communication by early amateurs. Over a period of 60-80 years, it expanded into a hobby of millions in Europe, North America, and Japan. Social scientists have evidence that the national product, social system, and the national character explained the level of prevalence at the country level, which reached intensities of 0.01-0.015 in the late 1980s and has since then decreased globally, with considerable between-country variation. Very little psychological research has been conducted on this population, and with the recent declines in the numbers of fanatics and the drastic disturbances in radio amateur population dynamics, it was decided that a cross-section survey is appropriate and of high priority. We had evidence that the character of radio amateurs might be best preserved and available in a subgroup called the radio contesters, who pursue the virtues of amateur radio at several intellectual dimensions. The contesters are also loyal to the hobby with many elderly samples available, which is helpful for the reconstruction of the historical aspects of the psychological outlines explaining the temporal patterns in the preoccupation and attachment of the amateurs to their hobby. Our study was conducted using questionnaires and house calls with a global and wide temporal coverage. Subjects were selected randomly and the analysis of replies followed the HDI method that has FCC and ACME approvals. The replies were anonymous so that psychological therapy was never suggested to the subjects. The next Section presents the results in the form of tabulated data and the third Section provides a discussion of the results and an outlook on the future of radio contesters. We link our findings to those made for other hobbies.

Results of the Survey

In order to give the readers a thorough view of the examined population, we first give tables with the fundamental data of our large-scale psychological profiling, which was used for deriving the Atkinsson-Aykroyd HD indexes (A-A Hobby Disorder Index) and clustered the population according to the behavioral patterns found in the multidimensional data. Below are some samples of our questionnaire and the distribution of answers.

“Given that the following needs in your case need to be fulfilled, pick the most urgent one”

Need	%
Water	3.2
Sex	4.0
Spouse	0.8
Radio	92.0

“Has your hobby jeopardized your marriage / partnership?”

Occurrence	%
Never had a partner	10.0
Never	0.1
At times	2.9
Repeatedly	15.5
Divorced	31.5
Divorced many times	41.0

“You started with radio contesting because of (select the most suitable alternative)?”

Reason	%
It is fun	1.5
It is relaxing	0.5
I have a low self-esteem	17.8
Don't really know	80.2

“Select the picture that pleases you most” (for males)



5.4%



98.1%

The radio contester population was very challenging to characterize based on the data received. We observed large offsets with respect to the general population, and when attempting to numerically cluster the data, using methods of multivariate-obscure statistics, all of them failed to invert the observation matrix that was needed for a solution of the behavioral parameters. Thus, we had to use suboptimal pseudoinverse techniques. However, when we grouped VHF and HF contesters separately, we could compute the Patrick-Linn principal patterns of behavior (PLPPNs) using standard math on our pocket PCs. We further investigated the reasons behind the numerical instability, and it was revealed that HF and VHF contesters have entirely different temporal patterns of mood changes and the response to Aurora Borealis has a -0.999 coefficient of correlation in these groups. This is unseen in behavioral studies and as we know, the estimation of behavioral patterns is ill-posed in the presence of strong negative dependencies, because of rank deficiencies. Reordering the matrix to the row-echelon-form (i.e by those seen/not seen the Martin Sheen Movie of 2008) was the alternative solution.

The mood shifts the in HF contester communities were also interesting. From our multitemporal data we could deduce mainly annual or decennial autocorrelation of mood patterns. We noticed also a recent decline in the mood of HF contesters that we first tried to relate with and explain by the exchange rates of currencies (wide-spread use of imported radio equipment), the outbreak of the feminine movement, and the increased use of the impossible-to-see miniature electronic components. However, the answer was revealed by a letter that we received from one individual, in which he expressed his concern

over the recent events in the Sun. Should solar activity remain low in the next years to come, we anticipate a further decline in the mood of the HF contester population, and we see that therapeutically oriented discussions among the population should be undertaken to attenuate the effects at personal levels. For some individuals this could lead to extreme suffering as the expectations and the reality (in the Sun) are in contradiction, and the individuals may not perceive that solar activity is beyond their control. The following table presents the HDI index, which describes the level of enthusiasm in the population towards their hobby.

HDI among radio contesters. Hobby-Disorder-Index describes how well the hobby is in balance with other aspects of life or if it has turned into an obsession.

HDI level	%
Below normal	0.9
Normal	1.1
Above normal	3.5
Alarming	10.5
Dangerous	85.0

The distribution of the HDI index is at the typical range of extreme hobbies, which include horses (The Yearbook of American Horse Widows' Association), Harry Potter books especially, when the subject starts to speak with a British accent, and the hobby of keeping fit and eating well. Many of these were listed already in the 1957 ACME-publication 'All that you should know about your future spouse', which is an often ignored reference of information for family therapists.

Discussion and outlook

Our research revealed many unseen details that will fill many gaps in the psychological research of obsessive hobbies. Amateur radio contesting offers great opportunities for individuals to get neurotic and lose contact with reality (only in mild forms) and devote innumerable hours into a hobby that placed high on the HDI scoreboard. Our results revealed contradicting patterns among subgroups of contesters – a strong division of the population was observed and it was associated with the frequency range that they used for communication. It remains for neuroscience to uncover a possible physical-based, wavelength- *Continued opposite*

Contest Corner

by G1YBB

2017 is over and HARS achieved great success our first proper year!

50 MHz.

We WON this band! 22 members active on this band through the year enabled us to gradually catch up and overtake. Well done all!

70MHz.

We came 2nd on this band but won some of the months, which means we could have been in with a shout with a running start. 11 members active through the year.

144MHz.

This is the big one. We WON this band! From June on we won every month! Well done to the 26 members on this band!!

432MHz.

Not far behind in 2nd again and we won some months. 21 members active this band.

1296MHz.

Just pushed into 3rd place with 12 members on this band, but a long way from 1st.

SHF.

6th on this 'band' (actually 4 bands) with just 4 members active on 2 of the bands.

Overall UKAC series 2017.

HARS came 2nd in the local club section! We should be very proud of that, well done all!

73 Steve G1YBB

Thanks Steve ...Ed

Upcoming Contests		
70MHz UKAC	Thu 18 Jan	2000-2230
SHF UKAC	Tue 23 Jan	1930-2230*
144MHz UKAC	Tue 6 Feb	2000-2230
50MHz UKAC	Thu 8 Feb	2000-2230
432MHz UKAC	Tue 13 Feb	2000-2230
70MHz UKAC	Thu 15 Feb	2000-2230
1.3GHz UKAC	Tue 20 Feb	2000-2230
SHF UKAC	Tue 27 Feb	1930-2230*
144MHz UKAC	Tue 6 Mar	2000-2230
50MHz UKAC	Thu 8 Mar	2000-2230

RSGB UKAC Overall Local Club Standings 2017								
	Club (35 clubs total)	50MHz	70MHz	144MHz	432MHz	1.3GHz	SHF	Total
1	Sheffield & DWS	978	1000	846	1000	1000	743	5567
2	Hereford ARS	1000	727	1000	912	418	238	4295
3	Bolton Wireless Club	357	285	471	519	431	1000	3063
4	Worksop ARS	581	672	621	719	285		2878
5	Trowbridge & DARC	214	217	473	341	157	681	2083
6	RAF Waddington ARC	417	367	304	363	265	18	1734
7	Parallel Lines CG	165	174	95	118	167	399	1118
8	Coulsdon ATS	212	207	174	230	154		977
9	Southport & DARC	207	178	222	174	124	65	970
10	Cheltenham ARA	102	5	74	83	128	511	903

Club Band Standings (top 10 shown)										
	50MHz (29 clubs)		70MHz (26 clubs)		144MHz (34 clubs)		432MHz (32 clubs)		1.3GHz (24 clubs)	
1	Hereford ARS	71457	Sheffield & DWS	46000	Hereford ARS	93941	Sheffield & DWS	68026	Sheffield & DWS	54042
2	Sheffield & DWS	69890	Hereford ARS	33459	Sheffield & DWS	79438	Hereford ARS	62063	Bolton Wireless Club	23266
3	Worksop ARS	41543	Worksop ARS	30891	Worksop ARS	58372	Worksop ARS	48920	Hereford ARS	22604
4	RAF Waddington ARC	29816	RAF Waddington ARC	16902	Trowbridge & DARC	44438	Bolton Wireless Club	35327	Worksop ARS	15392
5	Bolton Wireless Club	25542	Bolton Wireless Club	13116	Bolton Wireless Club	44222	RAF Waddington ARC	24683	RAF Waddington ARC	14295
6	Trowbridge & DARC	15270	Trowbridge & DARC	9976	Triple B ARCG	29341	Trowbridge & DARC	23191	Martlesham RS	12000
7	Coulsdon ATS	15135	Coulsdon ATS	9521	RAF Waddington ARC	28581	Vecta CG	18985	Colchester RA	10356
8	Southport & DARC	14765	Southport & DARC	8195	Vecta CG	26289	Coulsdon ATS	15625	Parallel Lines CG	9000
9	Parallel Lines CG	11765	Parallel Lines CG	7989	Southport & DARC	20893	Triple B ARCG	12064	Northampton RC	8555
10	West Kent ARS	11283	Telford & DARS	7633	West Kent ARS	18045	Southport & DARC	11837	Trowbridge & DARC	8460

Continued from opposite

dependent theory and explanation. In the next years, we predict great psychological impacts to the population examined caused by continuing low solar activity.

Hans D. Crofthill was born in Pie Corner, U.K., in 1964. He conducted studies and received the Ph.D. degrees in behavioral sciences and psychiatry from the Correspondence University of Balkan Mountains in November 2007. His multifaceted research interests include just about everything. Dr. Crofthill is the brother of the eminent natural scientist Ralph E. Crofthill, who recently made the discovery of the astronomic substance Stellulite, which explained the Pioneer anomaly in the theory of relativity, inter alia.

It is not too late!

The management and staff at the Journal HQ wish everyone a great 2018. May you receive many Valentines and Easter Eggs in the coming days and months.

Ed

Club Personalised Merchandise

For availability and prices contact Mike G3LZM (editor@harsjournal.com).



T Shirt

The printed T shirt has your callsign on the front plus your club details.



Cap

The printed cap has your callsign on the front plus your club details.



Mug

This is available printed front and back with your callsign and club detail.

An exotic China version is available.

Articles Wanted!

Please think about submissions/projects you might like to send in or see.

General topics and key words are listed below.

Members projects	Events	Training
Members station	Notices	QRP/QRO
Construction	Help	Illustrations
Items wanted	News	Photographs
Items for sale	DX	Early radio
Hints and kinks	Militaria	Restoration...

... or anything else that you think might be of interest to HARS members. If you have an idea for a submission, but don't know how to present it, feel free to ask for advice.

Please submit anything and everything to editor@harsjournal.com or talk with Mike at the Club meetings.

*73s es GDX, G3LZM
Mike Bush (Editor)*

HARS Members & Callsigns

Terry 2E0DQZ	Ralph G1RLF	David G4OYX	Adrian G8IVO	Keith M6
Andrew 2E0EDO	Steven G1YBB	Stuart G4VMF	Clive G8LNR	Vicki M6BWA
Ron 2E0HWF	Paul G1YFC	Andrew G4XRS	Matthew G8XYJ	Keith M6DVF
Richard 2E0JRS	Peter G3ESY	Nigel G4XTF	Craig M0BUL	Gerald M6GLZ
Cheryl 2E0CHZ	Bob G3IXZ	Steven G4ZWY	Rodney M0JLA	Emma M6IHZ
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Neil 2E0NPC	Stuart G3WRA	Eddy G6UQI	Duncan M0OTG	Alec M6KYX
Wendy 2E0WKQ	David G4ASR	Alan G7RHF	Mark M0RKX	Joseph M6XJT
Ray G0IMV	Richard G4FAD	Geoff G8BPN	David M0RNI	
Tim G0JWJ	Philip G4HQB	Michael G8CMU	Richard M0RPW	
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