TDARS NewsLetter

Issue 226 Nov. 2007

www.TDARS.org

Programme

www.telfordhamfest.co.uk

November 14 Affil. Soc. Contests discussion 07/08. Who's going to join in ?

November 21 Surplus Equipment Sale. Family entertainment.

November 28 Video Evening. Hubble Space Telescope DVD

CHANGE OF VENUE TO LITTLE WENLOCK VILLAGE HALL FROM HERE ON !

December 5 Open Forum Evening. Welcome to the new Society HQ !

December 12 Mince Pies and Mulled Wine. Repeat of popular event last year.

December 19 Christmas Dinner—Allscott Inn. Price same as previous two years held!
Please use enclosed Booking Form

December 26 On-The-Air 144.600 MHz +/- 25KHz. 8pm onwards monitoring.

January 2 2008 Why not start the new year at the new Club QTH ? + C.M. etc.

January 9 G3BJ Don Beattie—Guest Speaker—recounting his experiences earlier this year as 3B7C in St Brandon Island in the Indian Ocean.

January 16 Society Project: DDS Oscillator & Frequency Meter

January 23 Club visit by Salop ARS (To be confirmed)

January 30 Magnetic Loop Antennas

February 6 Open House and Committee Meeting. Possibly temporary HF antenna

February 13 Society Project: Pt 2

February 20 Under-a-Fiver Construction Competition (£5 loosely interpreted!)

Editorial

It's been a very eventful month for TDARS members and the Society as an organisation. Events and decisions in August were happening behind closed doors—and none of us had a clue. Three months later we are about to leave Bank Road Community Centre for good and take our business elsewhere. Quite a rapid and unexpected exit after more than 23 years 'on the bonk'.
The search for new premises has been quite a chore; I have visited at least 15 venues, but few offered much more than a meeting place for members, and one place put forward could only offer to empty the bar for our convenience. Like so often in these circumstances, it was a series of coincidences (fate?) that led us to our new meeting place at Little Wenlock. Simon (G0UYE) was doing some installation work in the village, and as usual got chatting to the locals. One thing led to another, and now the permanent move is imminent.

Uniquely, Little Wenlock Village Hall offers us all three main ingredients: First, a presentable, ground floor meeting room for all our normal activities, with an adjoining hall for those special occasions. Modern en suite kitchen facilities to keep Gordon, Derek and everyone else happy. Secondly after an interview with the Board (well, actually the Village hall Committee), they agreed to let us put up two antenna masts, for our microwave propagation beacons (GB3ZME) and the repeater (GB3TF) antennas, subject of course to normal Planning Permission. Little Wenlock is the second highest village in Shropshire! Thirdly they have a large, properly boarded upstairs loft area that we can use to store our equipment—especially that used to loan out to Members on a weekly basis. It has a folding ladder door, which we propose to replace with something a little more substantial, and use regularly for access.
I find this new venue absolutely amazing—more than we could have hoped for. I hope we will now make our contribution to the local community, and strike up many lasting friendships, and continue to be a thriving and successful Amateur Radio Society for many happy years to come.

A special word must be saved last for June, our caretaker at Bank Road for many years. She's been fantastic—always bearing a smile and always so accommodating and willing to put herself out for us. A special presentation is being bought for June: Long may she enjoy her retirement.

MIV

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THANKS for Newsletter input from M0TAW, M1RKH, M0RJS, G8UGL, G4EIX, G0EYX

QTC? News & Information

Telford HamFest was an outstanding success. Attendance was slightly up (about 700 people) and all exhibitors' space was sold. One well-known publisher failed to make it—it seems like an extended senior moment on his (their) behalf—but it cost us about £130. The new car parking arrangements were excellent, and there were only a few grumbles about the extra walk for some visitors. As well as an outstanding event in our calendar, it gave all concerned a just sense of pride in the achievement of the day. No one got bit, either ……. Back for more next year.

VHF NFD 2007. As most of you know, after a run of 6 years in the Winners' Spot, we slipped to second place in the Mix 'N Match section of the results table.
A worthy opponent took our spot - the De Montford Univ. group who won last year's Restricted Section. They operated down in the south-east as G3SDC/P (JO02ST), their usual site. Adjudicated results as follows:-

50 MHz 7th.(Open) 118 QSOs, 81433 pts. (118644 pts claimed; ouch ! 22 QSOs disallowed, mainly due to mix up between hand and computer logging))
70 MHz 3rd (Restricted) 60 QSOs, 14046 pts. (15753 claimed)
144 MHz 4th. (Restricted) 253 QSOs, 51393 pts. (55038 claimed)
432 MHz 4th. (Restricted) 67 QSOs, 11799 pts. (13121 claimed)
TOTAL: 2475 score (normalised against 1000 per band / per section top-scorer)
Placed 2nd. Thanks once again to all those who made the effort in July up on the Mynd. Also to Jim UGL, Dave EIX and Mike 'NKC (plus myself) who prepared the SDV logs.

FOR SALE: As part of a process of rationalising our Club equipment prior to moving venue, there is quite a bit up for grabs. There will be more to follow, and it may well be worth your while to come to the next TDARS surplus equipment sale (November 21st). Here's for starters:

Kenwood TS 680S + PSU. HF (100W) plus 6m (10W) £300
Trio TS811E Multimode 70cm Tcvr £220
SWR bridge - cheap & cheerful HF £10
Lowe HF125 SW receiver with optional keypad £180
Variable LV power supply - 3A ? £5
Avo 8 testmeter with prods. £25
Altai LV PSU 5-7A. £15
Strumech Tower P60 with ground plate. Complete winches etc. Offers.
Cushcraft 5 ele 6metre beam £60
HF Tri-bander beam £85

A useful note from Dave, G4EIX: "I've been playing with my **SDR board** and the various software updates. The settings take a good while to get right.
I was quite surprised how well it was working today. The 40m band segment was full of signals and the DSP worked a treat. Mind you, there was a contest on. There's an mp3 attached (On Dave's e-mail msg: Ed) of a station calling CQ. You can hear the band is lively. " Don't bin it just yet !!

The Birth of International Telegraphy: Brunel to Marconi

By Richard M1RKH and Friends : Part 1

It's not immediately apparent, given our focus on Marconi and his achievements in wireless telegraphy, that a huge amount of effort had gone in to creating the whole wired telegraphy infrastructure that existed before he set up shop in Poldhu in Cornwall.

Wired telegraphy had already been around for a long time before he experimented with the electromagnetic waves theorized by Maxwell and others. There were many huge conglomerates forming out of this new technology that allowed "instant messaging" around the Country. For these companies it was becoming essential to connect themselves with other parts of the world and more importantly for the British, with the other members of the empire. What this led to was another wave of innovation as we bridged the gaps between continents.

Cornwall was a logical place to start. It has a huge coastline looking out onto the Atlantic and has the most Southerly parts of the UK. Porthcurno in particular became the location for the first under sea telegraphic connections spanning as far as Australia and India. This was by no means just a technological feat, it spanned many disciplines both civil and maritime and made use of the best minds of the day and spawned some of the early megalithic corporations that have evolved into names we are familiar with today.

The Cable Laying Ships

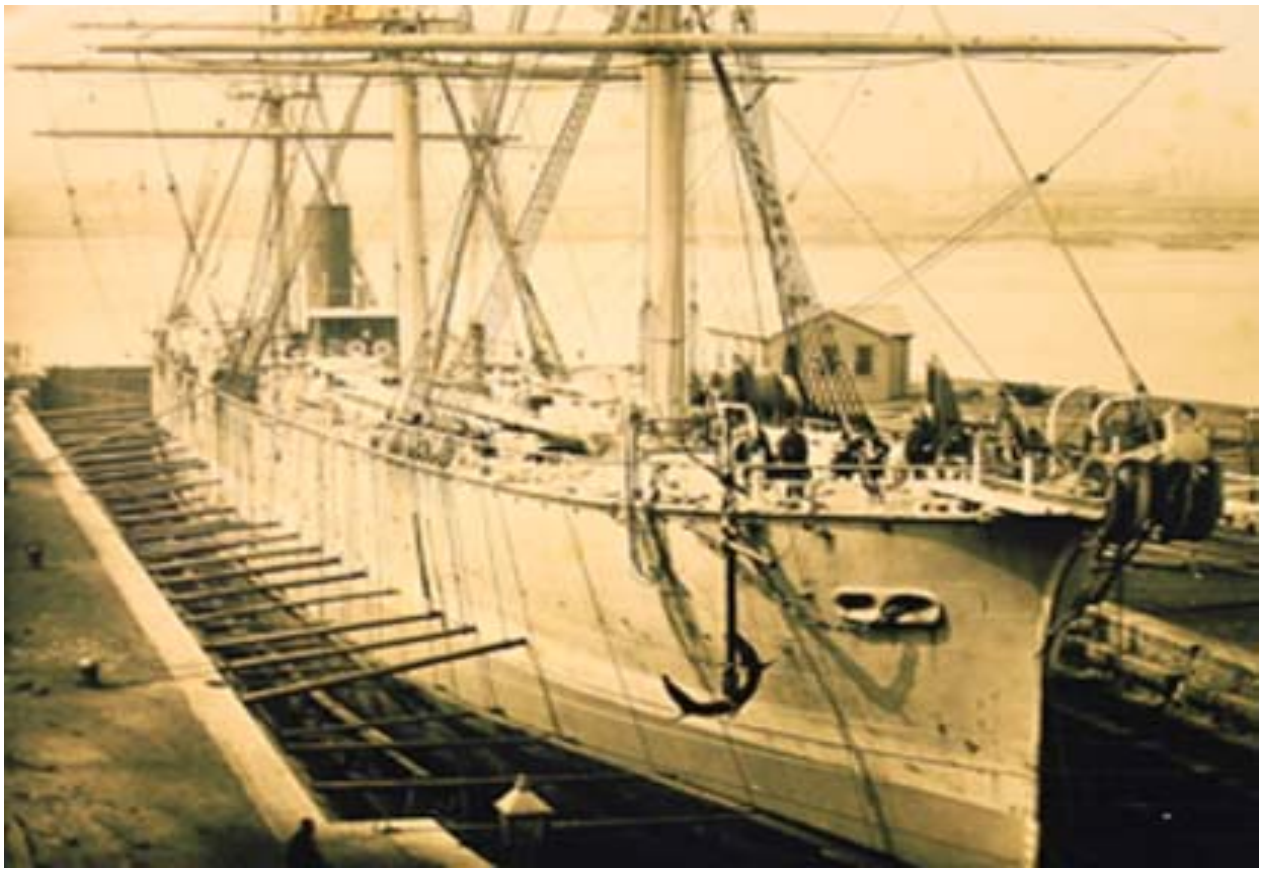
One name comes up – Isambard Kingdom Brunel, pictured to the right. He was one of the most influential Engineers of his time, if not of all time. He became Chief Engineer of the Great Western Railway at 26 and was responsible for over 1000 miles of British railways (in this case railways includes the track, tunnels, viaducts, stations). The first ship to be built of Iron was his creation; the SS Great Britain was launched in 1843. No one thought it would float, but his calculations stood and it didn't sink.

15 years later the ss Great Eastern was also one of Brunel's ships, and was later to be part of the undersea telegraphic business. Brunel died shortly after the launch of the Great Eastern.

Bad health, stress and debts had led to his health slowly deteriorating.

The Great Eastern was twice the length of the SS Great Britain (which herself had been the largest ship of the time), weighed 12,000 tons; the propeller alone weighed in at 36 tons and was 5.5m across. The hull was held together with 30,000 metal plates which took 200 rivet gangs to assemble. For safety she had a double hull, three feet inside the outer shell. The engines powered two paddle wheels and also the huge prop at the back and that is not to mention the 6 masts for which there were also sails they could use.

She was built 300 ft from the high water mark in the Thames and sideways on to the water. Brunel had compensated for this with the design of a system of hydraulics and slipways, but with money running out they were forced to abandon this and try to drag her to water along basic runways with chains and winches. At launch she moved a few inches. Two months later she was floating in the Thames in 1858, seven years after the job started.

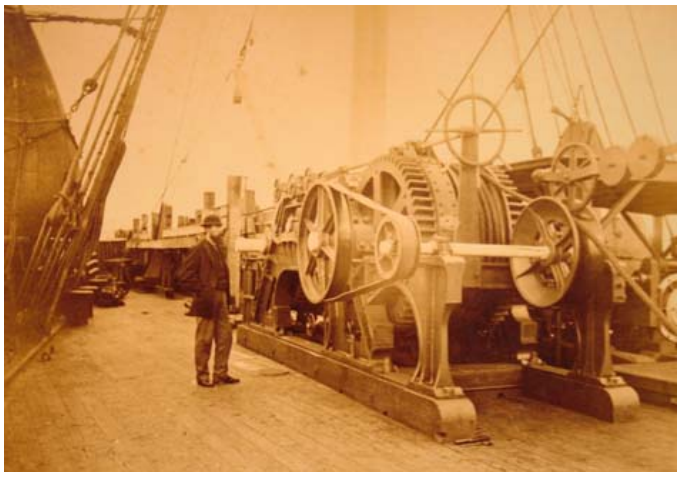


The SS Great Eastern was turned to use as one of the first cable laying ships. Much of the local Mediterranean stuff was however done in smaller vessels such as the Hibernia as show above. To lay the cables they needed huge ships which could carry huge amounts of cable as they had to try to limit the amount of joints, where sea-water could leak in. The decks would be stripped back to create cable tanks where (in the case of the stretch over to Newfoundland) 2000 miles of undersea cable were stored. The first successful cable was laid in 1866 from Valencia in Southern Ireland to Hearts Content in Newfoundland.

This wasn't the first time though. In 1865 there was a failed attempt when two small ships had attempted to splice their ends mid-atlantic, only to fail. The Great Eastern was used to drag these ends up with grappling hooks and splice them together on board.

In total she laid over 26,000 miles of cable: 5 transatlantic cables, mended four, and laid others to Bombay, Singapore, Australia, Madeira, Brazil and many others, with the landing place for the cables shifting from Ireland to the mainland of the UK, in particular Porthcurno became a central point for these cables to be landed and enter into the British telegraphy system. In one jump the world was now a smaller place and new monopolies would play themselves out.

In addition to storing the cable on board, lots of equipment was needed on deck to manage the cable. The cable needed to be fed off ship very carefully to avoid twisting or stressing it, otherwise it could snap or split, go open circuit or allow salt water in. Obviously crossing the Atlantic involves laying down huge amounts of cable vertically from the ship to the sea floor. These had to be supported by giant buoys, gradually removed as progress was made, without them (and sometimes with them), the ship was very unstable. Since the goal was to lay these single stretches there was no opportunity to return to port, it was a one way trip with all the provisions and man power needed for the time at sea.



Underwater Cable Technology

Great efforts were placed on the construction of the cables used to carry wired telegraphy under the Oceans. They obviously had to be laid in great lengths, and also when laying them down over deep water had to support the weight of cable underneath them to the sea floor and be resistant to sharp rocks and abrasion. Strength obviously one factor, and water-proofness another. Sea water is a pretty good conductor and they went to great lengths to stop sea water ingress. Shown to the left are three types of cables, the brass implement second in from the left is a grappler used to retrieve cables. The leftmost cable is a recent one, showing how little actually changed in the construction of the cable.

Insulating the copper core was a material known as Gutta Percha. This is a resin from an Indonesian Gutta tree. After processing it is a good

insulator with the properties of being flexible and moldable while warm, hardening as it cools. It was used in preference to Indian Rubber the other well known insulator of the time. The construction of each cable shown above is similar. The central core is one or several twisted copper wires, surrounded by Gutta Percha as an insulator. The Gutta Percha is surrounded by a layer of an overlapping spiral of brass strip. This was not used as a conductor, but to protect the gutta percha from some marine animals that would try and dig it out of the cable. Outside the brass tape is a thick layer of Hessian, soaked in a mix of tar, pitch, linseed oil and beeswax. Strength and mechanical protection was provided by galvanized iron wires wound in like rope, further covered in the Hessian gunk. As joining skills progressed, sometimes multiple drops were made of different thicknesses of cable, particularly nearer the shore where thicker cables were used to reduce wear and tear of the tidal shore ends.

PK Comes Into Being

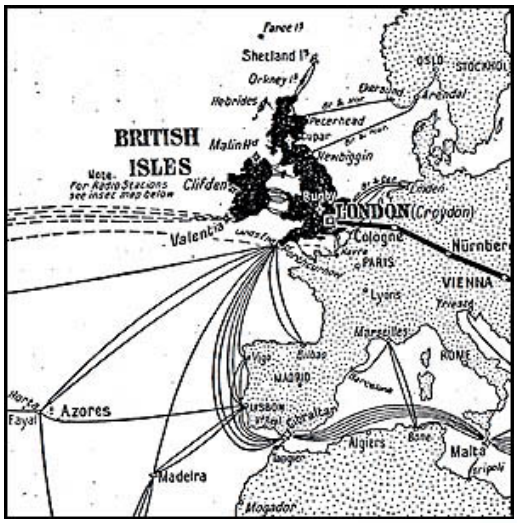
Porthcurno became a natural place to land these cables as it had a sandy, sheltered beach and was about as far South in the UK as you could get. In 1870 a series of cables was opened to link Britain with India and Porthcurno was now in business.

Originally Falmouth had been the destination. This large port seeming ideal because of its infrastructure and construction. However the worry about fisherman and ships anchors was too much and it was decided to move it somewhere more rural.

The picture to the right shows the cables coming into Porthcurno. In later times Porthcurno would still remain an International hub into and out of the UK for all sorts of Telecom and Data traffic. The following picture shows some very well dressed people watching the Fayal cable come ashore.

These Edwardians are watching the arrival of the cable from the Azores on Tuesday 7th August 1906. This is all very relaxed, but with the onset of two World Wars Porthcurno would change from this great example of Edwardian achievement to an incredibly important Communication Centre, acknowledged by the Germans as being a prime target in the invasion plans they would formulate during the second world war.

In time Porthcurno would become a major telegraph station of the Eastern Telegraphic Company with the code “PK” having 14 cables in operation lasting in various guises into the 1970’s as Cable And Wireless where it became their training college between 1950 and 1993. Indeed it is still an important landing point for undersea telecommunication cables.



These days the kind of cables landing here are very different, not metallic but glass. Fibre Optics are made of very high quality silica glass, and use lasers to transmit pulses of light down what is effectively an optical waveguide.

Porthcurno then and now

In the war era, from 1940 Porthcurno was developed more and a bunker was dug into the side of the granite hills (using expertise from the local Cornish tin miners) under orders from Winston Churchill. This was a result of the invasion of France and the realisation that the Germans would be just 80 miles away. Protecting this vital outpost from destruction on German bombing raids was of the utmost importance. At this time the operator of the Station was Cable and Wireless (have you heard that name before….). The cliff face is probably over 30m high at the entrance and the tunnels were dug straight into it, giving it a pretty solid roof. Inside were placed all the facilities needed to maintain, repair, operate and test the cables and transmission equipment, in addition to quarters and canteens. These days Porthcurno has been turned into a very well preserved and presented museum, which is staffed on certain days by ex employees who keep the equipment working. It’s well worth the opportunity to take the tour and purchase some of the books specific to this facility.

If you take a stroll down to the beach, the hut where all the cables were bought up out of the ground is still there and the supports used to support the cables off the ground on the route up to the operations centre remain; easy to identify if you know what you are looking for.

(TO BE CONTINUED NEXT TIME….)

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Book Review by Richard M1RKH

For anyone who hasn't read it I can thoroughly recommend reading "Vulcan 607", I almost didn't put this into my basket at WH Smith.
It is the story of the operation that led to a Vulcan being able to drop 21 X 1000 ton bombs on the runway in the Falkland Islands shortly after the start of the war. However it isn't just the story of a single Vulcan crew, it's the story of all the Vulcans and Victors (the remnants of the V bomber force we maintained during the cold war) that took off to refuel and be standby on the long journey from Ascension Island to the Falklands and how Operation Black Buck pulled together an aging bomber force on the brink of being retired.
What makes this story more remarkable is that the Vulcan is a result of a concept formed at the end of the second World War and first flew in test flights in the fifties.
It's engines are predecessors to Concordes, which gained more notoriety in civilian aviation.
It is a very readable book, easily falling in my three flight category (three short flights to read most of a book) and doesn't present itself as an aviation history book. It has been well researched and presented as the story of the men and crew, in the context of their lives at the time before and while the war broke out.
Following this book I went to "You Tube" to find some movies of the Vulcan bombers doing their classic low fly by (they were designed for under the radar operations at very low height) followed by its full throttle vertical ascent - fantastic, what a machine! You can see the V bombers at the Cosford RAF museum.

Photo of Derek G0EYX not related to the book review in any way—so don't get too egg-cited ….

WORKING ABROAD

By Jim G8UGL

I thought it might be useful to those of you who may be considering operating abroad what the minimum equipment requirement may be, and what you may be expected to work/hear.

My basic station consists of a FT706, MFJ portable ATU and a homemade wire dipole. The dipole is strung up in the garden with each leg at right angles (the garden being "L" shaped in design). The centre of the dipole is about 13' above the ground, as are the 2 ends. One fixed to a air-conditioning unit the other to a power pole. So as you can see the set-up is no where near ideal.

So what have I worked and heard using the above station design. Well as a few of you already know I have worked back to the UK. Some of the more unusual calls worked were the following: HB9Z –Switzerland, ZB2FX- Gibraltar, T77EB- San Marin LY7A-Norway, HS0ZCW-Thailand, 9K2GS-Kuwait, VU2VWN-Southern India OJ0B-Finland, GM7KFS-Mull of Kintyre.

Some of the countries heard but unfortunately not worked:
Florida, Japan, Australia, Singapore, Iraq, Sweden, Indonesia, Denmark, Hong Kong Kuwait.

These are only a few of the stations worked and heard, I believe with improvement to the antenna system signals would be a lot better.

REMINDER: Paid up Members are welcome to borrow items of Club Equipment, so long as they're returned the following week and the usual "signing out" process is followed strictly. That's a privilege of TDARS Membership. If you can't return it on time, please find someone else who can, or don't borrow it that week!

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"Getting the M3s on the air" - an observation

I read, with interest, Mike's Piece No 1 in the September Newsletter. As someone who has gone through the G3JKX teaching regime of Foundation, Intermediate and Advanced courses and examinations within a 15 month period and in the last 2 years, perhaps my observations might be of use. A word of caution: As is obvious, I am no spring chicken, having built my first 1 valve receiver over 50 years ago and having had a first career in military communications when valves were the order of the day.

Nevertheless, I have been interested since becoming a member of TDARS in why we have so very few M3 members and why so few youngsters show a sustained interest in Amateur Radio. I have recently produced a single sheet questionnaire which in part addresses this question. We have had six completed by those who sat the last M3 exam and hopefully we will have a further 4 this month.

The Foundation Course I believe the syllabus fails in what should be its fundamental aim: To get qualified newcomers on the air, safely and operating within the regulations without causing annoyance to others. Why does it fail? In my opinion:

1. The 'on air' element is woefully deficient in time and scope. Maybe a one-on-one net might be useful - I'm sure we could come up with some workable ideas.
2. The introduction to rigs, atus, psus and antennae should be greatly enlarged. For M3 there should be an emphasis on using rigs of somewhat dated designs where there are smaller menus and more functions brought out onto the front panel. This would greatly reduce the early trepidation in picking up the mike and also offer a surer progression to operating competence. (Cheaper first rigs too).
3. A requirement to produce a log for examination prior to sitting the Intermediate exam might encourage those M3s who are seeking to progress to Intermediate, to become active on the bands at an earlier stage. (Entries should include SWL activity as well as QSOs).

Comment. One of the reasons that some newcomers take the M3 course and exam is curiosity. They have seen/talked to someone and want to know more. Having paid their money they see the course through, sit the exam by which time the novelty has worn off and other interests beckon. There has to be a sustained interest, not just a passing whim, and we will always lose a percentage of M3s to this cause.

Club Assistance I agree with Mike's comments. The less experienced members must be given opportunities to develop their 'on air skills' in a mentoring environment. Competitions, where the prestige of the club is at stake, are not likely to do much in this regard, when the controls will be in the hands of the experts. lesser mortals, while useful in erecting tents and antennas, cooking and logging will not gain experience necessary to join the elite - the idea of a club field day has much to commend it.

1. Operating is 'habit-forming' - if the practice is not cultivated in the early days, more M3 will fall by the wayside. To counter this and encourage 'stayers' perhaps Elmers could assist with setting up rigs at home QTHs prior to sitting the Foundation exam. This would provide a great incentive to both pass the exam and use the equipment just waiting for the newly qualified to switch on. (It would also ensure that the total system has a better chance of communicating).
2. Perhaps this is a subject where we should seek other clubs' experiences to see if there is something we could pick up on.
3. We live in an ageist society and it must be daunting for youngsters to enter the club domain where the average age is (I'm reaching for the calculator). We need to use our younger brethren to help forge the link.

What are your views? This is a subject essential to the life blood of the Society

73

Tony M0TAW

ENGINUITY PROJECT:

Some time next year, it is proposed to provide a public event where a range of radio/ science/electronic gadgetry will be put on for two or three days at the Enginuity 'Hands-On' exhibition Centre in Coalbrookdale. This is being liaised with the Centre's Director, John Cullen. Ideas to date include: ## Investigating passing a magnet through a coil and plotting results at various speeds ## Having morse sending apparatus in several forms (eg Aldis, sounder, laser beam) ## Geek with hat-mounted colour TV camera wandering about wirelessly## RSGB GB4FUN vehicle on site ## Building a crystal set in modular form ## Voice communications with visible (or laser) light ## A lemon battery cell ## The 'eddy current' experiment ## Working AR88 receiver ## Making a compass ## A noisy spark transmitter. # Plus attractive multi-media displays and a plug for TDARS (of course).

NEW CLUB PROJECT

After several suggestions were made at a recent meeting, the most popular was to make a DDS (direct digital synthesis) oscillator with frequency meter. If you are interested, make sure Richard G0VXG knows as PCB boards are going to be ordered.

TDARS Information and pictures Web Site www.tdars.org

CHAIRMAN: Richard Wilkinson G0VXG (883671)
VICE-CHAIRMAN: Martyn Vincent (255416)
SECRETARY: Mike Street G3JKX (299677)
TREASURER: Jim Wakenell G8UGL (684173)
CURATOR: Derek Southey G0EYX (01785 604904)
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Committee: Richard M1RKH;Mike G4NKC;Simon G0UFE;Chris M0ECM;
Dave G4EIX; Tony M0TAW;
Trophies/Certs: G3UKV, M1RKH
QSL Manager David M0EMM
Assistant Curator: Kevin Hutchinson G8UPF (01746 764556)

Annual TDARS Christmas Dinner at Allscott Inn
Wed. 19th December 2007

Booking Form: Please return by Wed. Dec. 12th latest:

Please use this page to make your Booking ASAP, or by Wednesday 12 th December at the very latest. Pass it, e-mail or post it to Martyn G3UKV. The cost is £15.00 per person, payable on the night. Late cancellations will have to be paid for.

NAME: …… 7.30 FOR 8PM.

MENU	NUMBER REQUIRED
Leek & Potato Soup with garlic croutons and warm crusty bread	
Crispy filo basket with creamy garlic mushrooms & side salad	
Crayfish cocktail on a bed of mixed salad leaves	
Smooth Duck & Port Pate served with Melba toasts & raspberry coulis	
Hot spiced Grapefruit laced with Jamaican rum	
Scottish Smoked Salmon on herby salad, topped Parmesan shavings	
**********	**********
Shropshire Turkey with pigs in blankets & a lemon & thyme stuffing	
Roast Shropshire Beef with Yorkshire pudding	
Scottish Salmon Supreme, oven baked with lemon & dill sauce	
Baked Pork Steak served with tangy Cumberland & port sauce	
Caramelised Red Onion & Sage Tart with red pesto & grilled goats cheese	
Spinach pancakes filled mushrooms & leeks, in a cheese & chive sauce	
8oz Sirloin Steak, with mushrooms, tomatoes & onion rings (£2 extra)	
**********	**********
Christmas Pudding topped with brandy sauce	
Apple & Fruits of the Forest Crumble served with custard	
Mega Chocolate Fudge Cake served warm with ice-cream	
Fresh Fruit Sundae topped with whipped cream & marshmallows	
Lemon Meringue Roulade served with cream	
Baked Vanilla Cheesecake & Blueberries served with cream	

Coffee or Tea with mints served afterwards.
The Allscott Inn is located on the B4394 Road, right next to the closed sugar beet factory, about 3 miles west of Wellington. **Partner & Co WELCOME !**