

Chelmsford Amateur Radio Society

Affiliated to the RSGB.

Club Call Sign: G0MWT

President: Dick Brocks G3WHR

Chairman: John Bowen G8DET

Secretary: Charles Shelton G0GJS

Treasurer: Brian Thwaites G3CVI

Newsletter No. FOUR HUNDRED

May 1999

100

200

300

400

AND STILL GOING STRONG

WELCOME TO THIS 400TH EDITION OF OUR NEWSLETTER. AS YOU WILL SEE BELOW IT STARTED LONG AGO AND HAS DEVELOPED SOMEWHAT SINCE THE EARLY DAYS. HOWEVER ONLY 12 OR SO DIFFERENT EDITORS HAVE TOILED MONTH AFTER MONTH TO BRING YOU UP TO THE MINUTE NEWS AND STORIES. THE FIRST NEWSLETTER WAS PRODUCED IN JANUARY 1966. THE CURRENT EDITORS OWE MUCH TO THE PREVIOUS INCUMBENTS ROY AND ELA WHO SET THE HIGH STANDARD WE TRY TO MAINTAIN. WE HOPE YOU AGREE WITH THE SENTIMENT EXPRESSED IN No. 100 OF MAY 1974; THAT THE NEWSLETTER HAS INDEED 'PROVED ITS WORTH'.

CHELMSFORD AMATEUR RADIO SOCIETY
NEWS SHEET NO.1

January 1966

ANNOUNCEMENT

This news sheet replaces the monthly circular which has been used for many years to inform members of the Society Meetings, and Special Events only. It will be distributed free to members for an experimental period of three months.

CHELMSFORD AMATEUR RADIO SOCIETY
NEWSLETTER NO.200.

October 1982.

CHELMSFORD AMATEUR RADIO SOCIETY
ONE HUNDRED
THREE HUNDRED
Chelmsford Radio Society.

January 1991

... and brings us to October ...
... important meeting to ...
... year.
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Next Meeting
at 7.30pm, at Marconi College, Arbour Lane, Chelmsford, with a talk on "GB2CCS, its pros and cons" by Roy Martyr, G3PMX, and John Greenwood, G3KRZ. It is surprising what facts have come out of this event.

Newsletter
As you will have noted from the heading, we have reached the One Hundredth edition of the Newsletter. It was first introduced on January 1966 for an experimental period of three months. I should think by now that it has proved its worth.

To celebrate Guglielmo Marconi's 100th birthday, the Chelmsford Amateur Society decided to establish a special event station in the Che- se of his station, which was gratefully accepted. Most of the station for their marvelous and had very good coverage from the world was established and, Marconi's ...
... Summe

NEXT MONTHS MEETING.

Yet again we are able to call on the expertise of our very own Club members to provide another evening of enlightened technical knowledge and practical know-how.

Already this year, starting with our computer meeting in February, experienced members were able to share their computer competence with others just starting or about to start in one of the newer technologies. Murray G6JYB, Jan G7UVP and Chris G0IPU were amongst those who passed on useful tips and surely there were others

The March meeting brought us interesting talks by Tom G4INM and Ken G3PMW with in depth experience in one of their own specialities namely QRP and synthesizers. Murray G6JYB took the floor again finished off that evening warning us of the current virus problem and how they might be avoided. Most recently of course at the April meeting we enjoyed the fine presentation by Harry G5HF on the ever present topic of the 'Weather' and all that entails.

Now it is the turn of Tony G4YTG to give us a further in depth discourse on Antennas. Tony is able to draw on his professional background and a long interest in amateur radio aerials of very many types and frequency ranges. He will tell us about HF, VHF, UHF and on, be they long wires, short wires verticals, horizontals, yagis, loops, halos etc etc with maybe the accent on VHF and above. All can be assured that whatever their interest

Tony's knowledge and practical know-how of designing making and using antennas will provide another absorbing evening, next Tuesday May 4th at 7.30pm. Be there!

And if that is not enough, we have no doubt what-so-ever the Constructors competition next month will produce further technical skills from within the membership of The Society.

DATES FOR YOUR DIARY

May 4 Club Meeting Talk on Antennas by Tony G4YTG

May 9 MARS Drayton Rally Drayton Manor Park

May 16 Dunstable Downs National Boot Sale Luton

May 30 East Suffolk Wireless Revival Ipswich

May 30 Bury Radio Society Rally Mosses Centre Bury

May 30 Maidstone Mobile Rally YMCA Sports Centre

May 30 Waters & Stanton Open Day. Hockley. 10AM

June 1 CONSTRUCTORS COMPETITION

July 6 CARS TABLETOP SALE (See page 5 for details)

The Lunar Module was landed with 32k of memory.

What will the future bring? I predict in not too long a time this Newsletter will either be downloaded from the CARS Web-Site (thanks Wally) or a personal e-mail. You will then be able to save it to your own file and print it out in print size 12, or even 14, if so required. Think of the saving (thanks Fred) of stamps, envelopes, printing and more to the point - the effort.

In closing, I must acknowledge the efforts of all the Writers, Editors and Publishers who have made this monthly event so enjoyable, thank you all.

Chairman's Address

In welcoming you to the 400th issue of the CARS Newsletter I would like to invite you to consider the changes which have taken place in Amateur Radio from Issue 1.

At the time of Issue 1 there was very little professionally produced amateur radio equipment, what there was, was expensive, big & bulky. Like most of the items I have designed or built it was "good for 40 years". The Japanese entered the market and we now have palm held radio/processors, which have a most fantastic specification, when working. Most faults are solved by binning it. Surface mount PCBs are good for the production line but not for faulting in later years; the IC chips may not even be available. So entered the Black Box and home brew changed direction.

AM has given way to SSB on HF while on VHF and UHF, FM is predominant. Who would have thought what Armstrong invented (in the USA) and adopted by the BBC for high quality VHF/FM broadcast, would be so popular with amateurs.

The rotary tuning dial gave way to the linear scale, the numeric read-out and now the radio is tuned from either a LCD (or similar) screen display or from a personal computer (PC).

Code transmissions (CW) gave way to speech, which has given way in turn to digital (packet, digimode). Slow scan TV has become faster and with colour.

Many CARS members reading this have home computers with processing powers in excess of an IBM Mainframe in the 1960s.

Newsletters , Then and Now.

As noted earlier , the newsletter as we now know it, was started in January 1966 by Tony Dix G5IX. Before that a monthly circular was used to keep members in touch. Tony was in charge until issue 35 when Jon G8CYI took over and carried on for nearly two years. Issue 58 saw John Greenwood G3KRZ in the chair again for almost two years. Next in line came Jim G3VDB, his reign covering the issues 82 - 90. A long occupant of the hot seat was Bill Pechey G4CUE , his efforts lasting for well over 6 years. Bill was assisted in his task for the first three years or so by Les G4CUT.

After some fourteen years of production Andrew Mead G3KQE our current deputy chairman took charge at issue 171. With his second issue he introduced one of the present mainstays of the newsletter; the report of the 'Last Months meeting'. This innovation allows absent members to gain a taste of missed meetings, it is also an historical record of the Club's activities. With issue 225 the pen passed to Ian Maslen G4BYR. Ian stayed for a year or so and then issue 242 saw the doyens of editorship Roy G3PMX and Ela G6HKM. During this time keyboards, almost as we know them today, were coming into general use. Throughout this period of some 12 years Roy and Ela changed to and kept up with, modern technology and at all times set a very high standard of production which your current editors try hard to maintain. Sorry to say no pictures as yet and not much colour until now. But watch this space!

PRESIDENT'S ADDRESS.

The Future of Amateur Radio - and it's nothing to do with technology! Dick G3WHR

Whenever my parents brought me to Chelmsford I would always drag my father towards New Street. No it wasn't Marconi's, that was still far in my future, the sight that fascinated the young G3WHR was the display of radio components in the window of the Radio Service Co. There was no other shop like it; I can't remember the actual components but there would have been valves and their bases, transformers, capacitors and rf chokes in black moulded casings. Looking further into the shop there were shelves stacked with boxed valves displaying their various manufacturers names and identity codes. Visions such as Mullard, Marconi, and Brimar. Eventually I pestered my parents to enter the shop and inquire about the parts necessary to make a crystal set. Following some successful construction I soon returned to acquire the circuit and parts for a two valve radio. This caused the demise of my crystal set because some of the parts were needed for the new radio. The Radio Service Co was never cheap so some of the items such as the loudspeaker and knobs had to be unscrewed from old domestic radios that had ceased to function and had been donated by family friends.

For the youth of today things seem very different. The electronic wizardry that surrounds us is normally very reliable so there are no domestic visits from the serviceman to repair a fault, hence no chance to see inside. There are warnings on the back of most equipment stating 'no user serviceable parts'. When equipment is replaced, normally because of obsolescence, there is nothing in the old equipment that can be recycled. It is all surface mount components and specialised integrated circuits. It is not even screwed together, just plastic clips and glue. There's not much in modern equipment to excite or fascinate a youngster and a display of modern radio components in a shop window would require a strong magnifying glass to be visible.

As for communicating over long distances by radio, well if you want to call New Zealand from the meat counter of your local supermarket to discuss the quality of a joint of lamb you don't need a multi-kilowatt hf rig - just your cellphone.

So we must become more active in encouraging youngsters to take an interest in amateur radio. Already we are in danger of becoming an aging organisation with shrinking numbers. It's said that bums reserve seats, it is equally true that signals on the air reserve frequencies. Our frequencies are vital, without them there can be no amateur radio.

Some of our members have already put a lot of time and effort into teaching groups of youngsters about radio, and have achieved some notable successes - may they continue and more power to them.

By now, nobody can be unaware that we are approaching 'The Millennium'. Bugs, Dome, and Booze aside, one of the Essex Millennium Festival themes is youth with Master Classes planned so that young people can learn a range of sporting and cultural activities. I have attended some of the preliminary meetings and I hope that our club will be able to support the youth theme with benefit to us all. However, why wait until next year. If you think that you have a good idea for encouraging youth into amateur radio then tell a committee member, better still come to one of the Wednesday meetings.

VICE-PRESIDENT'S ADDRESS.

All Change - Harry G5HF

Anniversaries are usually occasions for celebration, but this Newsletter should also be a time to ponder our progress and to make plans for the future. From small beginnings - I remember when Chelmsford amateurs gathered in a small room over F E Smith's shop in Moulsham St. to listen to G5RV and we numbered less than ten people - our Club has grown in size and stature to a thriving organisation. Thanks to Roy and Ela (G3PMX and G6HKM) whose dedication and hard work set the standards which we are trying to uphold, we now have well attended meetings, an excellent newsletter and above all a friendly and enthusiastic membership. So where do we go now?

In the early 1930s when I was first involved, amateur radio was strictly controlled (suppressed?) by the General Post Office, who seemed to be jealous of our knowledge which, they thought, would damage their business. Now we have much greater freedom to pursue our hobby in many different directions, ranging from a simple greeting with friends to highly technical developments like digital radio and TV. The early amateurs constructed all their own equipment, even components, but now that we can buy professional equipment made to a high standard our energies are directed in many different directions combining radio with computers, satellites, model control and even cars and homes.

Radio frequencies are now involved in applications which do not require an amateur licence such as baby alarms, radio controlled cars and aeroplanes. Sometimes we even suffer from a clash of interests in the form of interference, but this is where our knowledge of radio can and should be able to help.

The world is changing rapidly at all levels and although many of us regret the passing of old customs we must, in the end, take note and adapt. Otherwise, as Darwin pointed out, we become extinct!

All clubs suffer unavoidable loss of membership from time to time. To stay still you have to make progress and I believe we must attempt to interest a wider group of people than traditional radio amateurs. Anyone involved with radio devices should be able to join us and perhaps eventually be enticed into the radio amateur radio movement. This particularly applies to young people who get bored listening to 'old timers on their nets' and, who knows, we might even get them to learn Morse!

WATERS & STANTON OPEN DAY.

Sunday May 30th 1999

Waters & Stanton are opening their doors yet again to the public for this the ninth annual event. It takes place at the shop at 22, Main Road Hockley, Essex. It starts at 10am and all are invited. They are offering free parking, free food, free drink, free entry, and a free raffle. I regret to say there is no mention of free rigs though. Having said that there are no doubt some worthwhile purchases to be made, as Club members who have been in previous years will testify. As well as their own stands, well known equipment suppliers will also be in attendance as will the RSGB and popular radio magazine publishers. The usual auction will take place during the afternoon.

Letter From America.

Letter received from W8ZPX by Wally G3MCO after a QSO back in 1976.

Dear Wally,

When I realised you were from Chelmsford, I had to write to you. I arrived at my base (Boreham) around October 1943 and was in the UK until August 1944 then to Cherbourg to a captured German base. I repaired all types of electronic gear used in planes at my base. We were 12 miles away(?). (I had to walk from Chelmsford to base one night I might add.) Anyway, I have nothing but an atlas to look at and it is very poor. Yes, it was B26s (Marauders), I played in a dance band at the base, and often went to other bases to play, this in addition to my day job. I was a ham then (since 1939). I remember all the balloons hanging over the city, blimps or whatever you call them Wally. I visited a ham in Chelmsford, at his house, he owned a men's clothing store (Laurie Fuller G6LB). His wife had been drafted to work in a factory. Myself and another ham were invited for tea and cookies and talked to other fellows there, non-hams I think.

I sometimes operated one of the many American Forces Network radio stations there. We used a 200 watt Xmtr, designed in early 30s. The studio line came from London and we had a Marconi antenna. I remember one night I was at the station and 'The Shadow', an American thriller was being broadcast. Well...the boys from the British Army searchlight crew and others were supposed to warn me when an air raid was near to cut the xmtr....well, they didn't that night and two one-ton HE bombs landed 1/4 mile away from me; naturally I cut the carrier, turned off the light headed for the trench. I was in such a hurry I got my left shoe on my right foot and my right shoe on my left foot. Hi Hi! When I later visited the ham in Chelmsford one of my friends was furious -he was listening to 'The Shadow' when it was cut off.

There was a pub in the village outside our base and an 800 year old church with tombs in the floor and walls which were 4 feet thick. I also remember visiting a church in Chelmsford that had bell-ringers. When I was 11 years old, I played the chimes (bells) in St. John's Episcopal church in Savannah, Georgia (my original home).

There was a large wooded framework with large handles, looking like plough handles and you pulled down about 8", I think, and the bell rang, you grasped the the next handle and likewise, until you played the church tune. Only one person used to play the chimes. My father was chime master at that time (1932) I played weekly, or was it Monday, Wednesday. And Friday? Memory plays tricks on one, Wally. (I am 55 yrs.old now).

I hope this letter makes sense. I probably am writing in circles. I seem to remember the very large rocket barrage in Chelmsford, that sent dozens of rockets at the Jerry planes, and once the shrapnel from one of them came whizzing near me as I laid in a ditch during an air raid. I was on commando training when D-day hit, it was most secret. I remember a baker and a milkman from Chelmsford were on the field hours before the invasion and security had confined them in the guard house and they were furious, not knowing what or why. After daybreak, probably 8am, our planes came back shooting all kinds of coloured flares and every one was told

what had happened, even the baker and milkman were happy. (*This was Boreham and the story is still legend there - WM*)

I don't remember what places I visited except Ipsquick(sic). I went to London a lot and we went to Bournemouth 3 weeks before we grouped and left. Many dozens of ships in our convoy and the ship behind us hit a mine. I remember very vividly all the devastated bases, towns in France. You couldn't believe it Wally. Funny..... After getting into France, no more air raids, they seemed always to be after England. I remember the buzz bombs as my best buddy, a ham also, lost his mind and was shipped back to the U.S. He is OK now and writes me. Am glad I never got to be around the V2. I remember sleeping in the tube in London. Yes, there were many bases near, I used to think every 6 miles but I am surely wrong. (*More like 10-12 miles, WM*) All the planes we used in England were put in a graveyard in the desert 29 years ago. (*what would we give for a Marauder now ! - WM*)

Rig here runs about 750 watts input(cathode current) but I actually about 300 watts out on CW and have a swr of 2-1 and means I lose about 25% of power . At frequency, 3-Element Tribander (up 30 ft) is tuned to get 400 watts out on a Bird wattmeter. I turn beam in the cheapest way I can. I use a motor and gear reduction piece I got in a junkyard in 1946 here. It used to open bomb-bay doors on a bomber. I turn 21ft. of 1.25" water pipe, which has 9ft of 1" pipe inside. Co-ax runs inside both and I use a home-made thrust bearing made of a water pipe union. I filled it with 0.125" ball bearings, tapped 4 holes and inserted screws to keep it from slipping. A 0.25" thick alu. plate 1.5 X 1.5ft sits on two large concrete blocks...(*it all gets a bit convoluted here,- WM*) I've used it for beams since 1956, I had three separate Yagis then. I want a 50ft tower to put this Mosley CL33 on - maybe next year or so. Better say 73 es cheerio Wally... Paper is running out. Cuagn sn.
(signed) Frank W8ZPX

Radio Authority Proceedings.

Charles G0GJS has requested that we remind Club members he has available an audio tape of the proceedings of July 1998.

It is recommended that all members should listen to the recording in order to fully appreciate the implications of the matters discussed, as they could have far reaching consequences for Amateur Radio.

Contact Charles G0GJS if you would like to borrow the tapes. Tel. 01245 256654

International Marconi Day - April 24th

Preparations were made on Tuesday 20th April in anticipation of another successful IMD to be held at the Science and Industry Museum Site courtesy of Dr. Geoff Bowles the Museum keeper. Thanks go to Brian G3CVI who has made all the arrangements so far and has been organising the rota of operators for the 24 hour event. Brian and John G3VMJ will be taking care of the not too popular 'night shift'.

Numerous Club members helped to set up the station, carrying out all the usual tasks, such as setting up two antennas and checking their VSWRs etc., plus this time, some high powered drilling. See you all again when the time comes to take it all down again. A full report of the event will be given in next month's newsletter

CONSTRUCTORS COMPETITION - JUNE 1st.

If you haven't already started on your entry, you should have! Avoid that panic situation of completing it half an hour before leaving for the meeting. Lets have some really original entries this year and give the judges something to think about. There's only about five weeks left, so get on with it! Tempus Fugit as they say!

CLUB NETS

The net controller for May is David M0BQC.

There are also two Backnang nets. One is with Peter DK7SP on Sundays at 9-30pm (local time) on 3750 to 3760kHz.

The other is with Alois DL3PD on Tuesdays at midday on 7078+/-kHz.

CONGRATULATIONS

Our youngest member Peter Mead has just passed the Novice exam and is waiting impatiently for the postman to deliver his call sign! He has been on the air already, quite legally, courtesy of Mum and Dad, Daphne G8WQZ and Andrew G4KQE. Congratulations Peter, a magnificent achievement!

MORSE NEWS

Tom G4INM is now helping Bob M1CMY, who is now up to 4 WPM. Feel free to join in, Tom always welcomes newcomers.

While at Picketts Lock, Alan G0LSH took a Morse test and is now the proud owner of a certificate stating that he can do 5 WPM for one minute using his left foot!

TABLETOP SALE - July 6th.

The Club will be holding a tabletop sale on Tuesday 6th July. All amateur radio and allied equipment may be offered for sale. The sale will start at 7-30pm. Tables will cost £3 for Club Members and £4 for non-members. Very large or near junk items are not appropriate and should be offered at the Junk Sale.

To book a table contact Colin G0TRM at the next meeting or on 01245-223835 or e-mail colin@thepages.globenet.co.uk

All local amateurs are invited to attend as either buyers, sellers or just viewers. Everybody welcome. Spread the word.

"HAM RADIO TODAY" - Andrew G4KQE

Members may have seen in the March RADCOM, an advertisement for the magazine Ham Radio Today. What interested me was the free VHF/UHF CD-ROM that came with the magazine. I sent off the required £2-50 to the RSGB and a few days later the magazine and CD-ROM arrived.

On the disk are quite a number of useful little programs for the VHF/UHF enthusiast, although I am sure that some of them will also be of interest to HF operators. There are programs to predict meteor scatter, calculate moonbounce and give details of beacons and repeaters, and there is even a program to control a transceiver.

The programs that I found fascinating were those to calculate beam heading and distance of another station, given the locator square. There are seven of them and they all give the same answers (give or take a mile or two). Each program displays the information in a different way, from simple white text on a black screen, through light blue text boxes on dark blue background, to the most advanced, with a 'windows' environment, where in addition to the heading and distance being displayed, the computer also draws the signal path.

All of the programs on the disk are in both individual directories, for setting up from the disk, and also in zipped form, with both DOS and Windows extraction programs, and all of the programs are shareware, freeware or public domain

What about the magazine itself? Well, I was pleasantly surprised. It is very readable, with interesting articles covering at

least a double page spread. This issue covers such topics as the Australian Flying Doctor Service (very much reliant on HF), an in depth analysis of a new range of aerals, as well as good coverage of a wide range of interests, HF, VHF, Satellite and QRP etc. There are a few adverts, but they are by no means as obtrusive as in other magazines and there are FOUR FULL PAGES OF CLUB NEWS, not the grossly compressed, few column inches that RADCOM sadly pushes to the back of the magazine.

The magazine is published by the RSGB and I shall certainly be looking for future issues.

There are very few constructional articles in HRT! - Editor

NOSTALGIC THOUGHTS - Ken G7RFT

As a Marconi engineer with close on 40 years in the Company, I had the opportunity to visit Newfoundland in March 1991 for discussions and consultation in connection with an HF Radar project with the University of St. Johns.

I arrived at a motel in the western part of the city half a day earlier than my colleagues with the unusual luxury of time to fill before meeting our hosts at the University. I decided to visit the site where Marconi had received the letter S across the Atlantic 90 years earlier.

After a free bus ride into the city centre, (I had proffered a \$100 note), I made my way to the coastal site after a 45 minute walk, by which time dusk was approaching and found that the site appeared much as I had seen it in the well known photographs.

Since the tourist season hadn't started, the museum maintained by the Canadian Marconi Company was closed and left to my own thoughts I realised that I had been associated with radio interests for nearly half the elapsed time since transatlantic communication by wireless had been demonstrated by Marconi and his fellow workers.

Since I was contemplating early retirement this visit put my career in the Company into perspective and made me feel very fortunate to have been associated with such a famous Company for such a long time.

MARITIME AREA AND COAST STATION EVENTS - Charles G0GJS.

I visited the BT Somerton (Somerset) station during last week to assist in operating the Radio Officers Association amateur station which had been set up for the Commonwealth Area Maritime Commemoration Scheme and the International Coast Station Event (Our previous Newsletters have published details). BT had kindly allowed us to install three operating positions - based on Kenwood loaned equipments - at their main receiving site for Portishead Radio. They also provided two riggers to assemble two multi band verticals and a trapped dipole. Their enormous ringed rhombic arrays were definitely off limits! Some 82 countries had been worked by mid-week and the other representative Commonwealth Area stations world-wide were much in evidence on the bands which at that point were mainly CW operation. Visitors to the ROA site at Somerton included ex-sea going R/O's some of whom were also former operators at Portishead Radio.

I returned to Chelmsford for the weekend's scheduled International Coast Station Event which was commemorating the closure of many stations world-wide. Amateurs using special event call signs associated with former coastal stations manned rigs and handled QSOs from the amateur community enabling them to qualify for awards. Some 81 stations globally are believed to have taken part. CARS participated using our GX0MWT call on the basis of commemorating the Marconi International Marine 'GTZM traffic' which was broadcast by the Company via the coast stations to all

their R/O employees at sea. Gwyn G4FKH and yours truly G0GJS shared the operating using CW, at our respective QTHs. Gwyn had an excellent time on his beloved 40m band and obtained DX with such stations as ZL2ZLW, ZL2AZ and W8SU on the Saturday and N8FWI, WB2GAI, W3QO, W3MC, ZL2ZLW and VE7ZO on the Sunday. He revelled in the pile-ups - our callsign has much sought after attraction - and totalled 244 stations worked for the two days.

I spent time on 40m and also enjoyed being on the "other end" of considerable pile-ups, but I also invested time in 30m, 20m, 17m and 15m and found them rewarding. My DX included VK5CRS (a former Adelaide coast station which went QRT in 1993), VE3XN, AD6C, NS9X, W9OP, VO1SO and ZB2ZDK in a total of 240 stations worked. Therefore our grand total for the event was 484 QSOs and I know that quite a lot of QSL cards will be required!

SATELLITES & FORECASTING - Harry G5HF

Within minutes of Harry starting his presentation we knew we were to be entertained as well as informed. His flow of information and anecdotes kept alive our interest in a subject which can be somewhat daunting for folk who rely upon fir-cones and damp sea-weed.

Harry considered the importance of satellites in the interpretation of weather data they being complementary to each other. We in the UK rely very much on the forecasters' skill, indeed we are obsessed by the weather as is illustrated by the usual conversation on meeting someone; the opening topic is sure to be the weather.

Our climate is so very variable and Harry cited some examples of thoroughly unseasonable conditions such as rain all day on May 1st. 1978 and we waited till 1989 for a really warm Mayday holiday. Whereas in 1891 Whitsun saw 35 degrees C. to be followed three days later by -6 degrees C. and deep snow. "Obviously" Harry said, "Something had to be done to obtain warning of such events."

The first mathematical analysis of weather data was carried out in 1920 but it was very labour-intensive and time-consuming whereas today "It is all done by computer". At first the data was obtained mainly from populated areas of the world with almost nothing from the major seas or polar regions. Then in 1960 the early satellites began sending back the information required and things have gone on developing from then.

Here Harry showed pictures of the coverage of the two types of satellite.....Polar Orbiting and Geostationary. They "look down" onto cloud, sea and land using Radiometers to measure the reflected radiation and now they send back almost too much data. The modern computers at Bracknell can process 80000 million calculations per second and are providing an automated process from data input to the finished charts. To illustrate this final product we viewed the chart of the day and Harry suggested that the reliability of forecasts these days is excellent for 24 hours, about 80% for 5 days and very good for as long as 10 days.

There followed via Jan's projector (Thanks Jan) an animated sequence of one month's pictures from Meteostat in IR (Radiation at Infra-Red wavelengths) which clearly showed the general West to East movement of weather systems. We were reminded that weather varies according to Lat. and Long., height and time hence the necessity of using computers to handle the four dimensions.

As ordinary folk we are interested in the surface conditions mostly but Harry steered us through the needs of other users of forecasts such as in aviation. With suitable stories to support his narrative he mentioned several instances of upper air disturbance to passenger aircraft such as Jet Streams and C.A.T. (Clear air

turbulence) which can cause discomfort and even danger. A picture of a vertical ascent or Tephigram from Bracknell showed the importance of knowing the state of the airways "in depth". We also saw pictures of an embryo hurricane off the West coast of Africa being dispersed by a jet stream; a gale warning chart and a sea-surface temperature chart which reminded us of our lucky situation in the UK due to the Gulf Stream. Scientists use such information in the study of food for fishes and the interactions of ocean currents.

Fog, we learned, is produced by warm wet air flowing over colder water and the long-forecast terrible winter this last year only materialised in Scotland, the USA and Russia leaving us in the south much warmer than was expected. The unusually warm Atlantic winds produced misty weather but nothing severe.

On screen we saw more charts from the Admiralty at Northwood, from Germany where they use 5 millibar spacing as opposed to our 4. The Geostrophic Wind Scale is to enable one to estimate the wind speed knowing the spacing and the latitude.

Reverting to a general appreciation of older systems of forecasting we heard how the Shipping Forecast has slipped in popularity since it covers such huge sea areas where mainly large ships are likely to go. Commenced in 1925 it appears to be obsolescent and is now replaced by single sea area information.

Suitably laced with tales of Channel experiences there followed a review of the effects of Land and Sea Breezes and then Harry showed how the satellite pictures "marry" together the cloud formations with the frontal systems. He covered the causes of atmospheric instability and the build-up of thunderstorms with icing and high vertical wind velocities.

More "Sat-Pics" of UK and northern European areas from Meteostats illustrated clearly how fog builds up over the relatively cold waters of the English Channel. Both IR and VIS pictures are available at 6 hourly intervals. There was great interest in a chart from Offenbach which showed the Ice Edge in the northern waters.

Harry then gave us details of the equipment required to receive "Sat-Pics" viz: For Polar Orbiters one needs a special receiver at 137 MHz a good antenna and software by JVFX or TIMESTEP together with the appropriate interface. Whereas for Geostationary satellites one needs a dish and mixer at 1691 MHz. and then the same receiver as above used as the IF. For HRPT at 1700 MHz. an expensive digital system is required with auto tracking antennae.

In a most informative digression Harry told us about a "special interest" of his in storms.....The Storm Severity Index is $V^3 \times A \times T$ where V is the wind velocity, A is the area involved and T is the expected duration time. Several astounding diagrams covering hundreds of years gave us some frightening statistics of damage and deaths over the centuries culminating in the recent devastating floods in India and China where millions of casualties have been sustained.

During tea-break Harry played a continuous "Prosat" movie taken from geostationary sources....the quality of this was extraordinary. Question time followed the usual raffle draw and finally the evening closed with spontaneous applause for one of the most impressive "chats" we have been privileged to receive.....THANKS HARRY a winner!!!

Report by Brian G3CVI

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Deadline for the next NL is 20th.May