

Marconi Veterans' Association Newsletter

2024 Chairman's Foreword



by Brian Izzard, Chairman

Another year zooms by ...

ast year I noted that it had been a year of political turmoil (or should I say 'change') in the UK but this year has been relatively calm apart from Grant Shapps having had five cabinet jobs in a year - hardly time for a welcome pack and a leaving do. At the other end of the scale, Veterans may well remember the famous five-year plans that many of us were subjected to - does anyone remember one that wasn't completely out of date in six months? Thankfully, inflation seems to be on the way down and interest rates have peaked. However, I wonder how the political landscape will change by the end of 2024!

Sadly, we have ongoing wars in Ukraine and the Middle East, but this has also been the year of natural disasters. Earthquakes in Morocco, floods in Europe/Libya and wildfires across many parts of Europe and North America many inevitably linked to climate change. I was particularly sad to hear of the fires in the Hawaiian island of Maui which I have visited on vacation a couple of times. There is a huge Banyan Tree in Lahaina which was originally planted in 1873 and has a foliage circumference of about 450 metres. It is a very popular tourist attraction and wedding backdrop. I well remember using it as a sunshade and it is not far from the beach where I made my one and only attempt at surfboarding - I did manage to get vertical once for about five seconds. Lahaina's Front Street provided endless shopping, eating and night life and is steeped in history. Both the street and the tree have been wiped out, but I read that the tree is already showing signs of recovery.

On a recent cruise I was looking forward to visiting Signal Hill in St. Johns Newfoundland where Marconi is reported to have received the first transatlantic wireless signal (the letter 'S' in Morse code) in 1901 using an antenna suspended 500 feet by kite. Marconi returned to the site in 1920 to test 'longrange' audio transmission and succeeded in reaching the ship SS Victorian over 1200 miles away in the Atlantic. It is surely mind blowing to realise how far we have come in the past 100 years as I sit down to watch a live sporting event on the other side of the world in highdefinition colour television. Sadly, the St. John's port of call was cancelled for 'operational reasons' whatever that means - probably the port fees were too high.

However, I did manage to visit the Maritime Museum of the Atlantic in Halifax Nova Scotia which has a permanent display devoted to the Titanic disaster on April 15, 1912. Perhaps the most poignant artefact was a pair of leather children's shoes from a 19-month -old British fair-haired toddler, originally referred to as the Unknown Child, Body No. 4. Later DNA testing resulted in the child being positively identified as Sydney Leslie Goodwin with his headstone being upgraded in the nearby Fairview cemetery after a proper funeral.



Radio Room Halifax Museum

The Museum also included a radio room where members of the public could try out their Morse skills and it is also a HAM radio station VA1MMA where someone was busy making radio contacts. Of particular interest was a Marconi Canada CSR 5A/CM11A HF Transceiver (pictured) which the staff believed was still in working order.

Reunion News ...

Judging by comments from your Committee and Veterans, the 2023 Reunion went well and attendance from Veterans and Associates increased slightly from the previous year. Getting to Pontlands proved to be a challenge since the council decided to resurface the approach road that morning and apparently did not notify the venue or anybody else for that matter. What did we do before SatNavs! Your secretary has apologised for his lack of planning and foresight and has assured me it won't happen again

I felt that the quality of the meal and service provided was very good and we have duly booked Pontlands for our 2024 Reunion which will be held on Saturday 20 April. The usual invitation will be mailed to all our current members in addition to full details being posted on our website. For those of you who have not attended recently, Pontlands Park Hotel is located close to the former Marconi Research Laboratories in Great Baddow.

The theme for the 2024 Reunion will be Radar orientated and I am pleased to welcome Alan Matthews as our President for 2024. Alan started his Marconi career in 1952 as a Student Apprentice which is the same route as I followed albeit some 8 years later.

Our guest speaker will be Dave Lowry who had considerable experience with the S600 Air Defence Radar and saw service in the Falklands.

Our 2024 coaster will also have a Radar theme.

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And Finally ...

My predecessor Peter Turrall (and our Patron) continues to be involved in Marconi events and he recently joined one of our regular Management Committee meetings and provided some thoughts about increasing MVA membership levels.

Once again, I must thank Leonardo UK for assistance with our newsletter printing and postage costs. This ongoing support is invaluable and very much appreciated.

I could not fulfil my role without the support of the Management Committee and particularly Colin for all his hard work as Secretary and to Mark for his diligence in keeping our website up to date.

See you all at our next Reunion on 20 April 2024

Secretary's Soapbox



by Colin Fletcher, Secretary

t's never easy to write these articles for a number of reasons, which can be easily identified. Firstly, there is the question of how to start the article in an interesting way, the equivalent of an Alfred Hitchcock 'McGuffin'. Then of course there is writer's block, a formidable adversary. And finally, not forgetting what the content should be. The last is a difficult one; it must not duplicate aspects of the Chairman's article, although there will be an inevitable overlap.

I feel it is fair to say that after the disruption caused by events beyond our control, the Annual Reunion has settled down and is almost mechanical to run, just tick the boxes as we go. 'Almost' that is the key word (see the article on the 2023 Reunion). Hopefully that is how it appears to the membership outside of the Committee. Mind you there are

some tricky items below:

- Venue and Menu Pontlands is proving a popular venue with decent menu choices;
- President and Guest Speaker with a diminishing membership this is always a challenge;
- Theme for the Coaster.

The 2023 Coaster celebrated the role of women in the Marconi Company. It can't be emphasised enough how important their contribution at most levels in the company has been.



- Winifred Sayer, who participated in the first regular entertainment broadcasts prior to the historic Dame Nellie Melba broadcast;
- Elizabeth Beeson the daughter of the landlord of the Cock and Bell, who worked with the Eckersley engineers at Writtle;
- Not forgetting the countless women who worked on the shop floor.

On a final note I wish you all a happy and healthy 2024 and may we meet up once again at the annual Reunion on 20 April 2024 at Pontlands Park.

Coaster Swap

Do you have any missing coasters from past years? Then contact the Secretary for price and availability. We have a healthy stock of coasters for 2020, 2021, 2022 and 2023. Would you like a set of 4 or 6 coasters from different years, or perhaps you are looking for gift ideas.

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Web Site and Newsletter

by Mark Watson-Lee Website: **www.marconi-veterans.org**

With the Newsletter I am entirely dependant on what members have submitted to me over the year. At the end of August I had only a few articles, so the secretary sent out a prompting email to all members. We had a good response so by October I had a good collection of articles, in fact I now have more articles that can be fitted into the 2024 Newsletter, so a few will instead be in the 2025 Newsletter.

Thank you to Eric who does the proof reading.

If you have any article suitable for the 2025 Newsletter please email <u>newsletter@marconi-veterans.org</u> or send to the Secretary.

Meeting the Marconi Family

by Peter A.T Turrall MBE

A few years before Sir Robert Telford retired as Managing Director of GEC-Marconi Limited, he called me to his office and asked if I would take over the responsibility of being the contact for the late Guglielmo Marconi's daughter Princess Elettra who was living in Rome.

As I was at that time Marconi Communication Systems Director of Publicity, my first meeting with Princess Elettra and her Mother Marchese Maria Cristina the widow of Senor Guglielmo Marconi, was at the IEE (Institute of Electrical Engineers) conference in London when I was a member of the IEE Committee putting together an international meeting lasting a whole week at IEE Headquarters.

I was Chairman of one of the Committees on the first day of the Conference and in the audience was Marchese Marconi and her daughter Princess Elettra. It was not until after the first half of the meeting

concluded and during a lunchtime break, I was able to have conversations with the various speakers who I had introduced as Chairman and had come from countries all over the world, that I was able to have conversations with Marconi's widow and daughter.

Following the Conference I arranged for the Marchese to come to Chelmsford where she visited BBC Essex at their new headquarters in London Road and officially opened the Radio Station and also visited a number of other places in the Chelmsford area associated with Marconi Units.

I was able to visit Rome sometime later and to be entertained at the home of Marchese Marconi at a very splendid area of the City. During this visit I was able to gain knowledge of the family and in particular that Marconi's widow the Marchese, was the daughter of the Master General of the Swiss Guard whose duty was to control the members of the Guard and of course guard the Pope. The residence where the Marchese was living was effectively a Palace and now as I write this story the home of the Marchese daughter Princess Elettra.

Princess Elettra no longer has a husband but her son Prince Guglielmo who recently married an Italian lady, is living close by. Mother and son speak excellent English and during my subsequent visits to Rome, I have been taken by them to many places of interest and also to see some of the early equipment designed by the founder of Marconi's Wireless Telegraph Company Limited, Senor Guglielmo Marconi. In particular my visit to the Italian Post Office Museum in Rome was an outstanding example of the early work of Marconi.

I still maintain contact with Princess Elettra by monthly telephone conversations and all being well, by the time this Newsletter is printed, she will have visited Chelmsford once again and be entertained by Anglia Ruskin University. Although I will not be with Princess Elettra on this visit, I will be in contact with her and her son who is accompanying her. No doubt she will visit Writtle where I organised the creation and installation of The Marconi Window in the Parish Church opened by Prince Guglielmo in 1992.

2023 Reunion

hey hey! The day

by Colin Fletcher



V V dawns and the Reunion is back on course and on its usual date after the wobble caused by the pandemic and associated lockdowns.

The 2022 Reunion went well, so now the running of the event seems to be falling nicely in place; it's a lovely day and won't be as blistering as July 2022. All set for a great day and looking good Major Tom. Really?

Unfortunately it was not going to be without challenges (you know how that translates in management speech). Firstly, Claire had phoned to say that she was unwell. However she had prepared the raffle tickets and envelopes for the tables and would have them sent in by courier – her partner. (A vote of thanks to Claire for that). Secondly, the 'powers that be' had omitted to inform Pontlands that roadworks would be taking place that day.

Consequently this required some swift decisions from those involved. The first was to ask Pontlands to delay serving by 30 minutes so as to allow members, after experiencing delays, to arrive and settle down before dining.

Unbeknownst to the Secretary, his wife was outside directing Reunion traffic through the diversion allowing them to arrive at Pontlands.

Meanwhile back at the Reunion the Management Committee along with the President and Guest Speaker assembled for the annual photograph.

As the time for the Reunion Lunch to start draws nearer, the number of attendees is rather low. A quick decision is made and Pontlands are asked if it would be possible to delay the start by

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Left to Right: Back Row: Brian Izzard (Chairman), Alan Pamphilon (Guest Speaker), Chris Neale (2023 President), Gillian Drake, David Frost, David Roscoe, Chris Gardiner, Mark Watson-Lee (Newsletter editor), Barry Powell, Christine Powell (Member), Seated : Colin Fletcher (Secretary), Peter Turrall (Patron), Eric Peachey (Vice-Chairman), Val Cleare.

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30 minutes. Credit to Pontlands they agreed. However, this was not the end of the matter. Murphy's Law strikes and before one could say 'full house' the numbers in the marquee increased. Another quick word with Pontlands; could the start be brought forward by 15 minutes. No sooner said than done and the Reunion started with only a short delay.



The luncheon commenced with the Top Table being introduced by the MC Veteran David Frost. Brian, our illustrious Chairman, gave his welcoming speech, whilst the first course was being served to all tables barring the Top Table, which was served at the termination of the Chairman's speech. Brian also requested articles for this Newsletter, which has

received an excellent response as can be seen by the size of this edition.

Following the meal coffee is served to a cheerful ensemble as can be seen from a photographic selection of the Veterans and Associates.













And while everyone is in a relaxed mood the ...

Speeches

A s always the speeches followed the repast. Firstly our President for the year – Veteran Chris Neale proceeded to recount past experiences before introducing our Guest Speaker Alan Pamphilon.

Alan, a Veteran and local historian, gave a short history of the English Electric Valve Company from its roots in the 1930s up to its current incarnation as Teledyne e2v.

Raffle

The Speeches were followed by the excitement of the annual raffle, which if not for Claire Lucas would not have happened. In spite of being unable to attend the Reunion, Claire had prepared the tickets and envelopes for the tables. Along with the regular prizes of hampers, jams, bottles of alcohol also *(Continued on page 5)*





2023 Reunion

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included, for the third year running, matching sets of table mats and coasters for 2023– the table mats were a larger version of the coasters.

Note: Should any Veteran or Associate wish for a set of four or six tablemats for any year, please contact the Secretary for prices and availability. secretary@marconi-veterans.org

AGM

The AGM this year was quickly dispatched in the usual speedy fashion as there were no special resolutions. The usual resolutions of accepting the finances and re-electing the Management Committee were passed by the Veterans present.

Thus ended the 2023 Reunion.

Photographs courtesy of Graham Chorley. More photographs can be seen at the Association website https://www.marconi-veterans.org

Do you want to book a table for colleagues (minimum 8, maximum 10) or sit with someone you know? Please let the Secretary know when completing a booking form for the 2024 Annual Reunion.

Godfrey Isaacs and the BBC

by Tim Wander

 ${\displaystyle N}$ ow the centenary of the BBC has all but passed – and I think it is fair to

say with something of an underwhelming whimper – many ideas were pitched and rejected and as one BBC producer remarked, the BBC had many things it doesn't want to look back on.

Recent research by David Prosser at the University of Bristol

has challenged the traditional historians' view of the formation of the British Broadcasting Company in the summer of 1922.



It is accepted that the success of the experimental Dame Nellie Melba's radio concert in June 1920 (and subsequent concerts from Lauritz Melchior and Dame Clara Butt from the Marconi New Street Works in Chelmsford) was followed by a large radio amateur's protest at that station's closedown. This led to the formation in February 1922 of Britain's first scheduled radio station, call sign 2MT, operated from the village of Writtle in Essex by Captain Peter Eckersley. His success, and the rapidly growing popularity of the station led to the request from up to 50 companies to establish their own broadcast stations across the country.

It's a great story. There are even several most excellent books about it all.

The prevailing view has always been that at this point in mid-1922, for reasons of 'administrative ease' and to avoid the 'chaos' across the Atlantic, the Postmaster General 'solved the problems of radio interference by persuading rival manufacturers to invest jointly in one small and initially speculative

broadcasting station'. It was then left to John Reith, the BBC's first General Manager who took up his post in January 1923, supported by Peter Eckersley as Chief Engineer, to build the company and develop the notion of public service radio broadcasting in Britain.

It is now clear that the idea for a single broadcaster, operating across Britain, came not from the Postmaster General, but from the Marconi Company. On 18th May 1922, thirty-nine members of the wireless trade were invited to a key meeting at the GPO's headquarters near St. Paul's in London. They were all keenly aware that the future of a new industry rested on their shoulders and that failure might mean, as one participant noted, this 'whole delightful enterprise which fascinates everybody and which promises good business, will end in a fizzle and disappointment'.



Marconi with Isaacs

This meeting is one of the most significant events in the history of British broadcasting and took place behind closed doors. Although the meeting was chaired by Sir Evelyn Murray, the Secretary of the Post Office, it is Godfrey Isaacs, the Managing Director of the Marconi Company, who emerges from the pages of the meetings transcript as the dominant force in the room. At Isaacs' suggestion, twenty companies

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indicated at the outset 'a desire to have licences'. With broadcasting to be allowed in only eight cities, the technical challenges were evident and the meeting had a lengthy discussion regarding mutual interference, transmitter powers and how slots might be divided between the different broadcasting companies (with their times registered at the Post Office) and operated. The Post Office was always prepared to issue multiple licences, including suggesting that London could be served by up to four different stations on the outskirts, with the Marconi station, 2LO, in the centre. Eventually, Isaacs drew their attention to the 'commercial aspects of this question, which may possibly lead to a much easier solution of the technical side'. He also suggested after the initial outlay it will cost not less than £50 per day to run each station. Isaac's then proposed that the new broadcasting stations should be run under just one management so that they could be properly coordinated, ensuring that there would not be more stations than were necessary, and that they would be most economically and efficiently operated. His idea was that 'a separate entity' in which all who have licences shall be invested, should run all the stations and should also appoint the management for those stations.

Isaacs further suggested that firms taking part should commit to the scheme for a period of two or three years. Welcoming the proposal, Murray indicated the armslength approach the Post Office intended to adopt over British radio broadcasting: 'I do not commit myself to detail and I do not know that it is our business to concern ourselves with those details'. The advantages for Marconi's competitors were clear and in the next few exchanges the foundations of British broadcasting were laid. Hugo Hirst, the Chairman of the General Electric Company agreed with Isaacs, stating that he would have made a similar suggestion 'merely from the business man's point of view'.

Only Metropolitan Vickers the Manchester-based company formed out

of British Westinghouse and still associated with its American former owner, resisted the idea of a single provider and called for competition to maintain 'the best type of programme, the best type of music', otherwise standards might slip after a time. Isaacs made clear that he didn't believe a 'transmitting station can be erected to work efficiently' without using Marconi patented technology, which he would only make available to a single scheme, thereby ending the debate.



Isaacs and Marconi

It is now clear that both British politicians and the public were fed exaggerated fears of 'chaos' on American airwaves in the spring of 1922 in order to restrict transmitter licences to 'bona fide' manufacturers, to the exclusion of other potential applicants. New research shows that the Post Office also actively disseminated misleading information about the development of commercial broadcasting in America, either purposely or unwittingly, and in doing so cemented the case for both public funding and a ban on advertising.

Even so, the Post Office entered the 18th May 1922 meeting prepared to licence several manufacturers, under some pressure from Metropolitan Vickers, (who had started testing their own station 2ZY the previous day), and others. But what emerged was a single broadcaster operating at arms-length from the Post Office, providing a 'public service' with national content shared between regional stations, funded by a licence fee with advertising prohibited. This is the exact moment the BBC was conceived and these plans for 'public service broadcasting' predate Reith's arrival by at least six months.

It was not the Post Office that proposed the BBC. It was **Godfrey Isaacs**, Managing Director of the Marconi's Wireless Telegraph Company, Limited. **The man** who made the BBC.

Post Script

And working with Allan Pamphilon I was pleased last year that we managed to get Godfrey Isaacs a Blue Plaque now affixed to the New Street works.



They only went for a P.... by Peter A.T. Turrall MBE

A special visitor to Marconi Communications in the Spring of 1981 was HRH The Duke of Kent. Preparations for this visit had been made several weeks before and the various destinations within the Company premises where the Duke was to visit was well arranged and ready by the actual day.

The Duke landed by Helicopter on the playing field adjacent to the English Electric factory in Waterhouse Lane, Chelmsford and was taken by a Company car to the New Street site where he was met by the then Managing Director of MCSL Mr. Paul Robinson. Following a few

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introductions to senior staff, the Duke was escorted to Building 720 accompanied by the Managing Director as well as Company Directors and photographers.

The Duke was shown various stages of manufacture of High Power Television and Radio Transmitters as well as meeting Company personnel and apprentices. The undersigned as Director of Publicity, having been introduced to the Duke, went ahead of the party through Building 720 to ensure everything was ready for the Duke to see and also, to maintain a strict timescale for the visit as the Duke following lunch, was to visit other parts of the Marconi units in the Chelmsford area and time was important.

After approximately ten minutes, I was approached by one of the Special police detectives who were stationed in various parts of the premises, requesting me to hold up the visit for five minutes, as an emergency had arisen outside of the building. Having nipped back to advise the MD to delay the visit, he was not very pleased but I insisted he must accept this request. In due course the visit continued and the Duke with the MD and several senior Directors left the building and proceeded to the Luncheon Club for a well prepared lunch before embarking back to Waterhouse Lane and visiting other Chelmsford based Marconi establishments.

Whilst the Duke and Senior members of the Company were having lunch, I had the opportunity of discussing with the Detective, the reason I was asked to delay the Duke and Managing Director from exiting Building 720. They advised me that during the time they were keeping a watch outside of Building 720, they saw two people walking along the adjacent railway embankment carrying something on their shoulders . They shouted to them to stop, but they took no notice. The Detectives told two uniformed police who were guarding the entrance to the factory to go and chase these two men. There was a problem on

how to get up the Railway embankment. No ladder could be found in the area and the boundary fence between the factory and the railway line was over eight feet high topped by a string of barbed wire and would be difficult to get over. Somebody decided to go to the Gents Toilet, which was right opposite the fence, and lifted up the Duck Boards which were on the floor and placed them against the fence allowing the policemen to climb up them and over to the railway embankment.

Meanwhile, the two people on the railway embankment had disappeared into a large adjacent bush. When the policemen got to the bush, they asked these two men what they were doing. They got a very indignant answer from two Irish railway labourers. "What's it to do with you mate" we were only having a pee"

A very true story which at the time caused a lot of amusement to the staff waiting in the yard. This was their lunch hour and all this had taken place in front of them.

Fuse Tester

by Jez Cunningham

Maybe just a little recollection from my time working for Marconi in New Street (1973-1978).

I worked in Building 46, initially for Jimmy Gould on HF naval radio systems (ICS3) and then for Mick Cranmer on broadcast transmitters (250 kW long wave).

In the lab there were many useful little bits of homemade test equipment, of course built into Eddystone die-cast boxes. One in particular was a fuse tester - the top was covered in fuse holders of all different shapes and sizes. There was a push button labelled 'Test', a red light and green light.

The red light was labelled 'Fuse is dead' while the green light was labelled 'Fuse was good'.

Yes, inside the box was a power supply that charged up a big electrolytic

capacitor, and when the test button was pushed, it fired a latching relay to light the appropriate indicator, and at the same time discharged itself (quite explosively) through the fuse.

Hence the label 'Fuse was good'.

Baddow in Wartime

by Alan Hartley-Smith

Collowing recent discoveries of sources of information about the WW2 'Y Service', it has become possible to construct an outline description of the activities carried out at the Baddow Laboratories after they were taken over, and why by all three military services, for the duration of the war.

It has been known that Baddow became the home of the so-called 'Inter-services lonosphere Bureau' under the leadership of T.L. Eckersley, but not exactly what that was formed to do, and what roles it actually played during the whole course of the war. This is now partially unearthed.

The Y Service

he 'Y Service' was initially formed to 'listen-in' on enemy radio communications, but it was quickly realised that in addition to the message content it was possible to extract further information from the identity of the sender, their manner of working, the characteristics of the method of transmission (plain speech or morse code), the affiliation of their location and their service unit, as well as the transmission characteristics of the actual radio signals, which is where the skills and capabilities of the Baddow Bureau were called upon. This came under the banner of traffic analysis.

So a series of 'Y stations' were set up world-wide and equipped to monitor all German, Italian, and eventually Japanese, military units, and manned by selected personnel from all three Services, both male and female – the WAAFs and Wrens were strongly involved. By recording received signals in

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a variety of ways then correlating the types of extracted data over a period of time it became possible to build up a surprisingly useful picture of the nature, disposition and intended actions of enemy forces over a wide area, frequently in advance of they themselves actioning it. That allowed the intelligence teams to make predictions on future activity. There were several principal units at which information was correlated, merged, and new ways and methods of approach devised, the output then passed on for formal and deeper examination by the Government Code and Cypher School at Bletchley Park to decipher, to enable Allied Forces to formulate appropriate defensive and offensive actions. Baddow provided very specialised services concerning the behaviour and stability of the transmitted radio signals which affected how, when and where messages could be received, from unintended recipients to advising preferential channels to monitor.

The following more detailed descriptions derive from two sources – a personal story of a player in the intelligence war, and detailed articles researched and written by a fellow member of the Defence Electronics History Society; both of these are acknowledged and credited with due thanks.

Aileen Clayton was in the right place at the right time, being fluent in German, joining the Women's Auxiliary Air Force in the summer of 1939, and becoming a major player in the Y Service. She has recorded her story, and that of her compatriots, in a book 'The Enemy is Listening' and it is from this publication that the following information is derived; it is commended as an essential read for anyone interested in this aspect of the war. In the book's foreword by Air Chief Marshal Sir Fredrick Rosier it is quoted as 'a tribute to a tenacious and gifted band of men and women'.

In addition to the main function of supplying Bletchley the Service provided local warnings of impending raids, often

identifying the target and the leader of the attackers. It also assisted in radar directing, and carried out the breaking of low-grade cyphers. It was initially staffed by expert German and Italian speakers, with other languages added as the war moved to the East.

Initially the input material was WT morse traffic followed by non-morse and Radio Telephony on VHF from pilots to-andfrom ground control, and air-to-air, on the 40Mhz frequency band, recording time, actual frequency, call-sign together with a translation, including the incidental and revealing informal pilot-to pilot chatter.

Their initial location for R/T interception was at Fairlight on a cliff-top in a van with telephone links, but no accompanying DF, near RAF Hawkinge. They were equipped with civilian receivers – Hallicrafters - plus an oscilloscope with a simple aerial array. There were also two main stations at Cheadle and Chicksands, and their duties were to obtain the German Air Force order-of-battle, its strength, movements and if possible intentions.

They maintained a liaison with the Royal Navy to provide R/T data from e-boats on short-wave. They later moved to West Kingsdown, and became integrated with the filter room. Recognition of previous interceptions enabled anticipatory action, and a series of new coastal intercept stations - Home Defence Units – were set up to monitor inland stations for bombers.

Cheadle was concerned with medium and high frequency W/T plus a D/F network – No 61 WU. They also monitored the presence of navigation beams on 30Mhz frequency which resulted in more VHF traffic. These were Knickebein (crooked leg), then X-Geraet. The Wireless Intelligence Development Unit flight then set up jamming countermeasures.

They were visited by the science team, including T.L. Eckersley, from Baddow, to assess their operation. The German central organisation expressed irritation over the apparent malfunctioning of the system and this resulted in open pilot communication which was then monitored. The disruptions caused greater use of traffic over the air and a new intercept station at was set up at Chicksands.

As the war moved away from Europe so did the Y Service having proved to be a significant player in the provision of intelligence.

Radio Finger Printing (RFP), Tina, Range Estimation (R/E)

Paul Marks is well-known to DEHS members as a meticulous investigator. In his latest research, he takes on the challenge of tracking the history of Radio Finger-Printing (RFP). This and the other additional interpretations of the intercepted signals enabled even more detailed discovery of information about the enemy. His full paper, of which this is a brief extract, has full details.

RFP was a technique developed to detect the characteristics of individual W/T transmitters, to add to other intelligence on the location of enemy units. Instigated as a laboratory project at the RN Signal School during 1938.

Tina looked at the precise Morse-keying habits of specific operators, weighted towards the Admiralty but both the RAF and the Army were involved as it had potential uses by all three services and the broader intelligence community. However, the Admiralty set the pace throughout the war.

R/E was a highly technical method of assessing the distance to a transmitter using knowledge of the ionosphere and dovetailed with direction-finding. Note – probable major interest at Baddow.

Expected purposes of these additional sources:

Navy: primary role was locate and help track mobile units – vessels. U-boats became a desired target as the scale of the threat they presented became apparent. Plus help with identifying the source of transmissions where D/F was poor, linking static sites and transmitters.



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RAF: call-signs. Seems to have been more of a traffic analysis aid throughout.

Army: call-signs. Again, seems to have been more of a traffic analysis aid throughout.

Foreign Office: used to ensure that decoy transmitters for double agents had correct characteristics. The files have only rare fleeting mentions of such activity.

In each case it assisted with call-signs (creating cribs for Bletchley Park) and traffic analysis, adding to the intelligence picture.

The Y Service listening posts were either coupled with Radio Direction Finding (RDF) installations or worked in conjunction with existing RDF inputs, and it is known that the design and manufacture of these was carried out at Chelmsford, and that their operation and use was also a major interest at Baddow. Unfortunately the timing of this investigation has come too late as the last known remaining member of technical staff from Baddow who was involved, Roy Simons, died last year. So we now have to rely on what published material we have, and in this instance the Marconi Revue is the most likely source.We have a link to a library with a large collection

(https://americanradiohistory.com/ Marconi Review.htm) so we are appealing for volunteers to comb through these for relevant material and list this for closer examination.

On the Shoulders of Giants

by Barry Powell and Colin Fletcher

Hi, I'm Barry. I qualified as a veteran in 1998 having completed 25 years service, attended my first Reunion in 1999, joined the Management Committee in 2000 and enjoyed a 14 year stint as Secretary before handing over to Colin Fletcher.

Like many, I turned up at my first Reunion, enjoyed the craic, a few beers and a nice meal without realising the amount of work that went into ensuring the day was a success. I think it appropriate that I reveal the secrets to a perfect Reunion.

First, there is the planning. For the 2023 Reunion, this started in January 2022 when we decided on the Date and Venue so it could be included in the Newsletter. Our Chairman asked the Committee to table suggestions for President and Speaker at the next meeting.

Our next meeting was in February when these suggestions were discussed and a President and Speaker were provisionally selected.

In April, these selections were confirmed with formal invitations to be issued.

Following the 2022 Reunion, we held a detailed review into what went wrong (not much), what went right (almost everything) and what could be done better (there's always something). We then reviewed the arrangements for the 2023 Reunion making some minor tweaks. Then, our discussions turned to the theme for the coaster with suggestions invited for the next meeting.

Since Covid, all our meetings have been via zoom except the December one. This has its advantages (some of us have to drive to Chelmsford, difficult to find a suitable venue) but also disadvantages (easier to discuss some things face to face). We find that this mix of on-line and face to face works well and intend to continue with it for the future.

At the December meeting, the coaster theme was decided. There were initial discussions around the menu selection, ticket pricing and a possible change to the day of the Reunion. It was decided to conduct a survey of those receiving the newsletter to see what was felt about changing to a Friday or Sunday to achieve a lower cost/price.

Between the December and January meetings we received an initial design for the coaster. There were some changes proposed to this design which were incorporated in the final version. Our January Meeting saw us confirm this design and decide on the quantity to be ordered. We also discussed the menu, deciding to conduct a poll via email. This gave rise to the selected menu (so if you didn't like it, it's not my fault).

The April Meeting, this is the biggie! The Reunion arrangements were reviewed (for the umpteenth time). Duties were allocated/confirmed (MC, Merchandise sales, Absent Veterans, Loyal Toast etc.). Raffle prizes were organised. Secretary reported ticket sales. Committee arrival time set. Fingers crossed that nothing goes wrong in the 3 weeks before the day.

All the above was just one item on the agenda of our meetings. Other items include noting the passing of Veterans (regrettably many) and signing of new (regrettably few), reviewing our finances, participation in various relevant exhibitions etc. and the Newsletter amongst others. Our meetings generally last around 90 minutes.

Then there's the implementation.

When I joined the Committee, Bernard Hazleton was Secretary and he had the Reunion running like a well oiled machine. However, Bernard was not a computer man and his system was paper based and laborious but it worked! When Bernard announced that he wished to retire and I agreed to take over, I worked with him for a year. His system was logical, easy to understand and worked well. But I could see many areas where it could be computerised to reduce the work.

Firstly, I moved the membership database from DBase to an Excel spreadsheet so I could extract information into the Reunion spreadsheet.

Then I created a spreadsheet that duplicated the input side of Bernard's system and provided the outputs automatically without any manual effort.

As the years passed, I have tweaked things to provide instant access to various information that would have taken Bernard hours to do.

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- The List of attendees builds continuously as tickets are sold.
- There is a list of those who attended the previous year but have not yet bought a ticket (helps with chasing).
- A list of the number of Veterans for each 'Company' (helps with table planning).

All the time, I have tried to work to the principle of 'If it ain't broke, don't fix it' only try and make things easier.

I'll now hand over to Colin who can talk of the changes he has made. I am proud of the fact that I managed to bring things into the 20th Century but Colin has moved us into the 21st Century.

Colin here. Firstly, a big Thank You to Barry.

I became a Veteran after meeting Peter Turrall in, of all places, the waiting area of the GP's surgery. Peter, always on the ball, asked why I was not a Veteran and before I could say 'There's no place like home' I was whisked away to the MVA. To continue...

'What have I done?' That was the first question I asked myself after the 2017 Reunion.

I was currently on a run down to retirement at the end of 2017 and thought to myself 'I need something to keep me occupied during retirement'. Meanwhile at the Reunion a little bird whispered (?) in my ear that Barry was looking for someone (anyone?) to take on the role of Secretary. Fortified with several glasses of house red, I cast aside my shyness and approached Barry and volunteered to take on said role. 'Alea iacta est'. Before I knew it I was on the Committee as the Apprentice for the office of Secretary.

So began a year's apprenticeship under Barry's guidance. Barry explained the mechanisms of being Secretary. Over the years Barry had created a straightforward method. Through all of it Barry emphasised 'Do it your way'. (This will happen, but first learn and understand the system before making changes – if it ain't broke, don't fix it!).

The baptism of fire began with the 2019 Reunion. It started with the invitations and Newsletter to be printed and posted. This meant contacting Leonardo and arranging for the printing of over one thousand Newsletters and associated cover letters and forms. In addition a request for stationery and postage.

The newsletters are printed; and now begins the traditional ceremony of 'Envelope Stuffing'. The Committee members congregate and stuff the preaddressed envelopes with a copy of the Newsletter, the covering letter and invitation and the form for Subscription and Reunion. The envelopes are sorted according to destination and conveyed to the post room at Leonardo. Here they are sent Worldwide. The majority are in the UK but there are some which reach the other side of the world.

Meanwhile the design for the Coaster has been agreed and an order placed.

Sure enough, a week after the Newsletters have been sent out, the replies start arriving through the letterbox. Most are completed forms with a cheque and some with messages from those members unable to attend. Sadly some are returned unopened.

Regular trips to the bank to pay in cheques were occurring, sometimes three times a week.

The **2019** Reunion was the first that I organised/arranged/monitored. Unfortunately there were complaints about the service at the Reunion. This did not bode well for the future. Never mind we shall soldier on.

2020 arrives with an uncertain future. Although the newsletter has been printed and posted and cheques are pouring in, the Covid lockdown strikes. The 2020 Reunion is cancelled. It couldn't happen at a worse time. 2020 was the centenary of the historic Dame Nellie Melba broadcast from New Street. Suddenly the task of organising refunds or credits for the Reunion payments becomes necessary. That year we lose Veterans to Covid, including our Treasurer Don Mott, 2019 President John Bower and others.

During this dark period the following events force changes:

- Zoom emerges from the shadows to enable contact between friends and family. This also allows MVA Management Committee meetings to take place. This reduces the need to travel to meetings and becomes environmentally friendly. In addition meetings can be recorded, which speeds up meetings as there is little need to take notes for the minutes. However it does mean the Secretary attends the meetings in triplicate; once for real and twice while writing the minutes.
- Hamptons is sold and will no longer serve alcohol. This forces a change of venue.
- The new venue is prompted by the CH Tower at Baddow being granted protected status, and brings Pontlands into focus. Pontlands is close to the CH Tower and the Baddow Research site – ideal for next Reunion.
- The payment system for subscriptions and Reunion tickets is enhanced by allowing Members to pay by bank transfer, which greatly reduces the need for cheques.
- Following a survey the number of newsletters is reduced from over 1,100 to approximately 300. For some time newsletters were being sent out with only 25% response.

2021 arrives with Covid still a threat. The Committee decides to hold the Reunion in September and gradually return to the April date by holding the 2022 Reunion in July. It is at the 2021 Reunion that tickets now have special dietary information printed on them.

The Reunion is a success. The Pontlands staff are helpful and efficient at all levels of the organisation and along with the feedback encourages the Committee to

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continue booking Pontlands for future Reunions.

2022 The July Reunion sees the introduction of a Card Reader for Merchandise payments.

2023 and the Reunion is back to the regular April slot.

2024 ???

Working on Jorn

by Malcolm G D Mack

he following are my memories of working on the Jindalee Over the Horizon Radar Network (JORN) Project Phase 3, both in Australia and the UK, from August 1991 to January 1999. The opinions and errors are mine. By the end of this time my promotion progress in what had been GEC Marconi Radar and Defence Systems had peaked and was going downhill as the Company was run down, and my 'sell by date' was approaching. It was a case of survival until escape through retirement was possible; that was to be another 10 years. Readers of this article may consider the contents as being selfindulgent. However, they are a record of events which don't have any great significance to those who weren't there, but reflect some personnel involved, and activities at a lower level than those usually recorded in the history of a project.



In April 1989 I finished working as the S723 Trials Manager on the Martello S723 Project, following the handovers to the customers, RAF and RDAF. E W G (Ron) Cummings, who had been the Project Manager, retired from the Operations Department of Air Space

Control Division. John Mackinnon ACD Operations Manager sent me to work for Bob Ditchfield, Contracts Manager on the BACCHUS Project; where Peter Bain was the Project Manager. After 6 months of sorting out various engineering tasks on the contract for Bob, I was released to assist Roger Towell for a month, on the planning for 743D Projects, specifically the KAWAL Project. In October 1989 I was the Bid Manager for the Captain's Combat Aid Project. From the October to February 1990 I worked with Malcolm Richardson, John Bentley and David Loydall on the compilation of the bid, where Roger Basquill was the Sales Bid Dept. contact. From February to April 1990 I worked on the LATCC RAPDS Bid as the Project Bid Manager, although responsibility for the Bid lay with the Sales Department.

In April 1990 I was working for Dave Hope in the 743D Development Project Management Department of the Air Space Control Division as the Project Manager 743D for Site Commissioning. I exchanged the position with Don Ashmore, as I became the Project Manager 743D Development Models in April 1991. Setting up and building a half spine and operations cabin development equipment in the PCTA at WRW with Ray Wombwell. I was also involved with Gary Minors in the reutilising of the software rig equipment based on the BACCHUS test rigs. It was decided that the S713A spine owned by RAFO at Rivenhall, would be useful for the Development Engineering Department, under Jim Mason, to prove various engineering developments for 743D. Thus I brought the spine back from the Royal Air Force of Oman, rather than use the spare S723 spine from MOD. At this time I shared an office in M Building with Cormac Duffin, who was one of the Project Progamme Managers on one of the three 743D Projects (KAWAL, MUSK and DELTA).

In June 1991 I was passing the desk of Vic Turner whose job it was to recruit personnel for JORN, and he had a chart of positions, open on his desk. Taking a passing interest in his predicament at that moment; the person who had been allocated the Documentation Manager job, had just said that they didn't want to go to Australia; I volunteered to go there myself. After some discussion with John Pearce the JORN Contract Manager; and after I had discussed this with my wife, it was decided that we would go with the whole family of three children.

On 21st August 1991 we flew from Heathrow to Melbourne with Mike Ashton and Charles Lynas-Gray, and were picked up at the airport by the representative of the Company's relocation team. We were taken to Station Pier Condominium in Port Melbourne, where we were to be given six weeks residence. The following days we were taken out to various parts of Melbourne to find some rental accommodation. Neville Jessop took us to Melbourne Zoo at the weekend. The requirement for our eldest daughter to go to school pushed us into an early decision with respect to taking on rental accommodation in Glen Waverley.

Work was at 35, Winterton Road, Clayton in a Telstra (Telecomm Australia) building where John Pearce was General Manager GMSPL Pty. HF Division (Australia), and Keith Hainsworth the Finance Manager. They had both taken up residence near the Telstra JORN Project Director Bob de Boer and his team, for running the Project.

Other members of the team with their personnel were based in 22, Winterton Road, Clayton with the Telstra Engineering teams. They were Roger Basquill C/SCSC Manager, Brian Daniel Signal Processing Manager, Arthur Feist **GMSPL HF Division JORN Project** Manager (came later to be based in 35, Winterton Road), Ian Gillis Requirements Manager, Neville Jessop Configuration Manager, Ron Kelly Quality Manager, Terry Soame Engineering Manager, Fallon Stewart System Manager and John Whittingham Contracts Manager. Later on, 22, Winterton Road was found to have an asbestos problem, and the Marconi personnel were moved out to 6, Winterton Road into a Marconi only building.

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Other UK personnel who came out to Australia (not mentioned elsewhere in the text, and not a complete list) were E (Ted) Aldous, Jim Backus, Grant Cartiledge, Jim Chapman (2nd General Manager later arrival), Paul Clissold, Allan Coxson, Mike Darby, Glen Dickel, Adrian Dickson, Steve Foyle, Dave Gauld, Jonathan Griffith-Jones, Sue Hardy, Tony Hardy, Debbie Hayes, Julian Hellebrand, Paul Holt, Mike Jenkinson, Aidan Joy, John Kyan and Hitesh Pabari. Anton Rech, George Robinson (3rd General Manager later arrival), Abdul Sawar, Tony Smith, Andy Starritt, Denis Stringer, John Sutton, H M (Jim) Waddell and John Whitcombe.

Four GMSPL HF Division Australian personnel worth mentioning, with whom I had a large interface were George Breen, ILS Consultant, and Tony Olejnicki, EMC / EMI Consultant; as well as Bob Sykes, ILS Manager, who came to the UK as GMCSL JORN Programme Manager. Mark Parker was the IT operative for the Company.



My job was initially to set up the communications systems with the UK, the ISDN link and the Facsimile distribution system. I was also involved in technology transfer as per the contract in the form of work procedures.

I had the unenviable task of reading the engineering specifications being generated to ensure that they were in the correct format, configuration, spelling, grammar, syntax etc. before I handed them over to my counterpart Jake Romijn in Telstra. It was not my job to comment on the engineering content or the efficacy or standard of the

engineering. Now I have always considered myself to be a reasonably practical and pragmatic person, but I could not actually envisage what the design was in many of the contexts that I read, and how it related to anything else. The Requirements flow down from the Military Standard approach seemed to distort the whole notion of a practical working design. These were early days and the standard did improve. Later, I even wrote some specifications myself, only because the system engineer involved, Dave Gauld, had been given an impossible number in the timescale allotted.

Part of my job was to train an Australian to take over from me. Neville Jessop and myself interviewed a few candidates, and we chose a young graduate Erika Gortva. I eventually was moved by Arthur Feist across to help Telstra about 18 months into my 4-year contract.

JORN was probably the most interesting engineering project that I ever worked on. I learnt a considerable amount about subjects that I never dreamt of experiencing in a European environment. Some of these which won't set the world on fire, are as follows :-

Termites:- The Australian Standard lists over 300 members of the species. Their habitats and bad habits.

Noise:- The parameters of adiabatic noise on circuitry in the context of power generation.

Dust:- There are Qty 4 test dusts for calibrating filters.

Flora:- There is a vine in Western Australia whose roots seek out underground cables and strangles them to death.

Fauna:- Parakeets, Lorikeets, Cockatoos – Depending upon which part of the continent, some attack overhead cables. Telstra had a test bed for cables in the bird cages up at Healesville Sanctuary.

Wombats:- Natures bulldozers, that undermine buildings.

This all before we get to spiders, snakes and crocodiles.

JORN did suffer a major problem from the outset, and that was instituted at the planning stage. It had an unrealistic implementation timescale of six years imposed upon the Project by the Australian Government. It was plainly obvious to those who had worked on similar projects of such size, scale and complexity, that double the length of time was more likely. This was to prove to be the outcome as JORN went operational in 2003.

There were a considerable number of PhDs on JORN, not just from Marconi but also Telstra. I know one had his degree in upper weather patterns, and another worked on the effects of wind turbines on radar waves. At one stage in Australia I could count six that I knew, and I worked for a short while for Dr Andrew Michelaides in 22, Winterton Road, Clayton, Melbourne. We also had our own:- Brian Daniel, Alan Hartley, Jim Parry, Brent Summers, can't remember the other name. Always felt that they should have been kept in a darkened room, pulled out when required, and then refiled until needed again; rather than letting them loose on a continuous basis.

My job with Andrew was to write a report on the status of Requirements for the Site Facilities. I should say at this point that the Facilities in Telstra were run by Jim Dunlop as manager, Ulf Kazenwadel was the buildings engineer and Ross Bolden was the Electrical Engineer. This was a small team given the scale of the project and work to be done, but they were long time Engineers from Telecomm Australia days, who were well versed in what needed to be done. I suspect that there had been some internal Telstra battles between the Facilities team and the new way of doing things from the System Engineering side; of which Andrew was a system manager. Thus in true 'Yes Minister' style I had drawn the short straw to be the external reviewer to be used to overturn an entrenched position between two competing sides. Although in general, the engineering of individual items couldn't be faulted, the systems

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side left some room for improvement. The means to do this was to expose the weakest point, and this was Requirements flow down to the site facilities. This was like looking for opal in the outback; you know it is there somewhere but actually pinpointing the exact seam, where the water has trickled down from the surface through cracks in the earth is guess work, and requires a lot of earth moving. Thus the Requirements were at the top levels but very little work had been done in assigning these to the lower levels. This is what I put in my report, giving some examples. Jim Dunlop had in the meantime been replaced as manager, Telstra could be pretty brutal in the form of Bob De Boer the Project Director; and Rod Cunningham was given the job. So the first reaction of a bureaucratic organisation under scrutiny; which I recognised immediately, having been a member of the Civil Service in the Post Office Telephone Engineering Dept., was to undermine the evidence. When that fails, in true 'Sir Humphrey' fashion, you undermine the person. I am afraid the Australians can be quite confrontational, and so after a bit of an email battle which escalated to the highest level, I was removed from the argument for an internal Telstra solution to their problem. A progressive organisation would have had me connecting the requirements to the equipment and buildings, rather than have me monitor the problem. However Telstra held no grudges, and even offered me a job, unfortunately personal circumstances meant I had to return to the UK. When I left Australia at the end of my contract in August 1995, I even received a letter of thanks for the work that I had undertaken on their behalf. John Whittingham GMSPL HF Division Contracts Manager told me at the time, that it was the only one thing that the Company had done right in Telstra's eyes. A couple of years after I came back to the UK, Rod Cunningham and his wife came to see me when they were in the country on holiday, to say that there was nothing personal in the battle.

The subject of adiabatic noise came to the fore when Telstra decided to save money by amalgamating the Diesel Generator Building with the TX Building. On most military installations these are usually kept separate for fire, noise, pollution, smell, heat, electrical interference and security considerations. Can't remember the number of main generators, but as you can imagine there was an awful lot of power required to service all the Transmitters and Air Conditioning. My own opinion is that the Commonwealth of Australia should have built solar farms near the sites, and then they could have at least run the domestic (and the beer cooler) and office facilities from these, and perhaps some of the equipment when not on full power. In the long run that would have saved them more money and would have provided a better environmental payback; instead of shipping tons of diesel to the outback.

The question of vibration and noise to the whole structure was raised as to the effect on the Transmitters' electronic circuitry. This led to an upgrading of the Generators' mounting suspension and dampening; and a separation of the Generators' mounting slab from the TX slab within the building. Another issue identified at the same time by GMCSL was interference from the electronic sparking caused by the pantographs on the passing trains at New Street.

However I am not sure whether adiabatic noise is the correct definition of the process that was happening, but was the description that was used at the time. The actual mechanism of transfer of vibration/noise into the electronic circuitry was not defined either. Whether this was Gaussian noise or White Noise or any of the other coloured noises that that can exist was not defined either. Nor was the exact part of the Transmitter affected specified and whether the problem was causing an effect on the atomic structure of the components was also not specified.

Obviously GMCSL were not going to parade this problem.

I should say that I haven't been to any of the Longreach or Laverton TX & RX sites.

I have been to the TX and RX sites of the RAAF 1RSU at Alice Springs. I was sent there with a Telstra engineer, I think in 1993, after I had been to DSTO in Salisbury, Adelaide with Terry Soame. This was an assessment of a job for which GMSPL HF Division and Telstra wanted to bid. Our host was Squadron Leader Graeme Meyer who eventually worked in GMSPL HF Division.

The Telstra Installation Design Department was based in Adelaide and consisted of Rod Cunningham who was the Manager, Rick Battilana, Mark Borgas and Elmer Varga. In January 1994 I came to the UK with them to visit the Design Authorities in Marconi Radar and GEC Marconi Communications Companies. The visit was repeated in December 1994 for an update on the design progress.

On my return to the UK in August 1995 I assisted Bob Todd in producing Interface specifications. I then started work as the JORN PCTA Manager within the Systems Engineering Dept., setting up the infrastructure for testing JORN equipment at Elettra House. Chris Saywell from Field Services was the technician who assisted, before being sent to Turkey. Ron MeGee from the Production Department came to assist. John Crozier who was the Carpenter from the Company's Maintenance Department, worked building a large plinth for the RRB racks in which we were testing the RX equipment. He couldn't have been more accommodating to the whims and changes of design that we had to go through to get the right pressure and flow of cooling air from the gash old fans that we had liberated from someone else.

Air Commodore Max Brennan, Director General JORN Project, came in September 1995 to open the JORN PCTA at Elettra House.

A HPA TX was installed by Nick Richards, Chris Lodge and Jim Waddell in the JORN PCTA at Elettra House. Although we were near the main railway line, we were obviously not as close as at New Street. Also as we had RX Equipment in the near (Continued on page 14)



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vicinity, we built a large Faraday cage around the whole TX, which was effectively a room within the main room that was isolated. Chris Lodge tested the emission environment, and I think we were satisfied with the solution that we had installed. Thus we didn't suffer from the problems that have already been mentioned.

In 1996 the JORN contract was amended and GEC-Marconi Projects (Overseas) took on additional responsibility for the implementation of more of the hardware. From this change I was given the design for the fitting out of the Qty.60 Receive Site Bunkers. This was within the reorganised Sub system Prototyping team, initially run by Alan Batchelor, and then replaced by Kevin Bishop.

The RX Bunker internal design was refined using the Prototype Bunker at Elettra House. This was fitted out and built by Mick Worby under the instruction and guidance of myself and GMCSL IDO. I remember the problems I had with the internal design of the Bunker in meeting the signal to noise figures, and providing isolation for the GMCSL RXs. At the time I was reporting to Anthony Lysiak in GMCSL. Most of the equipment in the Bunker worked on DC to keep the interference levels down. The Bunker Control Data Distribution (BCDD) provided control of the RXs, and the Bunker Power Supply provided DC power. The figure for the thermal noise threshold of -128 dbm seems to be in the region that we were trying to obtain in the design of not only the RXs but inside the RX Bunker as well. The RXs were part of a system environment, and so there was no point in achieving this figure for the RXs alone, without providing that environment. Thus the screening for the RXs and the special testing of cable; since the choice of cable was extremely limited as to what would meet the requirement; plus having the flexibility for termination in a cramped installation. There was separate cable trunking installed for the LO cables, from that for the power cabling.

The temperature of the internal RX Bunker was also critical in this equation, and two air conditioning units were installed in their own compartments of the Bunker structure as supplied by Telstra. We had only one air conditioning unit at Elettra House. The air intake for the bunker was in the form of a fibre glass chimney, to maintain a low metal profile and avoid spurious reflections on the RX Sites.

Unfortunately, GMSPL HF Division Systems Engineering and Telstra Systems Engineering, between them had failed, through Requirements Analysis and Specification, to provide a means of distributing the DC to the BCDD, LO System and RXs, plus other equipment. Nor was there a system for earthing and shielding, EMC & EMI seemed to have been forgotten in the bickering between the two. There was also no alarm mechanism for display. So, I had to design a Unit for DC Power Distribution, fusing and alarms. This was not called a Unit, but a Panel, otherwise it would have required the full JORN treatment. Since the Panel was not signalled as a Configuration Item (CI) it was not given a JORN Identification No., and thus was not subject to the involvement of ILS for MTBF, MTTR, etc. All the other gobble-dy -gook of Budgeted Cost of Work Scheduled (C/SCSC - Cost / Schedule Control System Criteria); Requirements Analysis; Requirement, Functional and Test Specifications; plus reviews by layers of management, who spouted loads of wonderful meaningless words, and added little value, were all circumvented. Half a dozen drawings, knocked up in a week through the GMCSL IDO, soon had production underway. The Form, Fit and Function of the Unit was effectively hidden amongst all the drawings for the Bunker. Luckily the management of GMSPL HF Division were either too embarrassed to create any waves; or more likely they hadn't even noticed. Although I seem to remember that I received a complaint that I hadn't used the main Design Office for the Bunker design; which would have cost twice as much and taken twice as long.

With respect to the RXs, a Faraday cage with mounting back plate had to be built for each of the 20 RXs in the 20 Bunkers behind each RX array. We were effectively taking 'off the shelf' equipment and upgrading its performance through external protection. Afterall, no one serious about EMI / EMC puts D Type connectors on their equipment. The Production Bunker shell was manufactured for Telstra by a Company in South Australia, to drawings that had no internal dimension tolerances. A request to visit and measure the internal dimensions and fixings of the Production Bunker was rejected by the GMSPL HF Division management in Melbourne. The RX mountings therefore had to be designed in cyberspace on a three-dimensional frame along three walls, using the Prototype Bunker. By sheer luck the design was a couple of millimetres out for the difference between the Production and Prototype Bunkers, The problem was overcome by placing washers between the front face of the mounting frames and Bunker mounting bars.

The Cable Entry Panel for each Bunker was designed with lightning protection, a waveguide beyond cut-off, RFI filtering and gaskets to withstand a nuclear war. The gaskets had to remove the slight bending and rippling of the external surface of the Bunkers and the flatness of the Cable Entry Panels. The original intention was to keep the design of the Qty 60 Panels the same, but a change in the Local Oscillator system forced the design of different editions of panels subject to where they were positioned in the chain behind the RX array. There was a sun shield fitted above the Cable Entry Panel to minimise the degradation of the cables outer sheathing from the sun's infra-red and ultra violet rays.

The Times LMR cable that was used within the Bunker I had specially tested by GEC Marconi Baddow Laboratory, to ensure it would meet the insulation and isolation requirements. Accurate phasing of the different cable lengths, caused by equipment positioning, had to be

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calculated and built into the provision of the drawings. I think Qty.30 Kilometres of cable was ordered by John Taylor in Melbourne.

The RX Bunkers internal design went into production, after I had visited GMSPL Sydney Factory for a week in June 1997; and meeting with John Taylor from Melbourne and Ralph Bellamy from GMSPL Sydney Factory Production. Following which I continued to support the design when back in the UK.

I moved on as the JORN Melbourne Integration Facility (MIF) Design Team Leader from December 1997 - July 1998. This job was as the Team Leader for the Company response to meet Milestones 1 & 2 of the MIF contract. Generation and provision of system interconnection design and installation data for the Tx, Rx, Tx FMS, Rx FMS, Rx ATE (Automatic Test Equipment) sub-systems & associated sub-systems within the Rx Bunker. The outcome was to put together a package of files (Qty 23) for RLM, of a hardware design for the Melbourne Integration Facility. In total there were Qty 69 Lever Arch files, one package to GMSPL HF Division, one to RLM , one to ourselves in Chelmsford. The design was like a JORN PCTA at Elettra House but in more detail and much bigger to cover the complete system. The resultant delivery of Qty 69 folders of data was to schedule, although against tight timescales. This achievement was recognised by the presentation of an ICAS (Individual Company Award System) award.

From August 1998 - Sept.1998 I was the Team Leader, with Peter Shelley, in Elettra House responsible for building the four Rx Frequency Management Systems hardware test systems, FMS Ionosondes Equipment, to meet programme milestones. Followed by the commissioning of the sub-systems, involving hardware fault diagnosis, analysis and repair, and software build verification. At this time RLM Engineers started to appear at the Elettra JORN PCTA before they moved onto Australia. My last job on JORN was as a RRB Integration and Test Engineer from October 1998 - January 1999, in the RRB (Receive Radar Building) Integration and Test team with Dave Walters and Nigel Thackray. Utilising the hardware test systems, and then the RX Building VME Bin software testing, we carried out regression testing and verification of software builds to meet the milestones for the various RRB sub-systems. The software builds were carried out by the team working for Bruce Hood. The mathematics for the algorithms were carried out by Adam Maclean.

The design at Phase 3 of the JORN Project that we passed on to RLM was far nearer completion as a working entity than our management wanted to recognise. The GEC Management no longer wanted to play on JORN, and bought themselves out of the contract. What frightened them was the potential cost of the overall system software development. The Marconi Radar Projects Company had been so hollowed out in depth by the Bean Counters extracting the last pip, there was no longer any engineering capability left. It was a mere shadow of the IUKADGE days. However this decision was expedient for both sides, as the Australian Government DOD and Telstra, as main contractor, could use this to divert attention away from their joint failure, by the blame culture of bashing the POMS, and letting the American Cavalry come to the rescue and pay for the system. One example of the disinformation can be seen on the JORN Wikipedia site, where it states that GEC Marconi did not have the experience for software development. This is patently wrong given the Company's involvement in large MOD turnkey contracts over the years. What this should say is that the Company did not have the present capability, nor the willingness to take on this job, and the contract risk assessment review had shown that the Company had extracted what it wanted from the JORN contract. Its experience of previous software contracts showed it was time to pull up the stumps.

I understand RLM (Lockheed Martin Tenix) at Phase 4 of the JORN Project put together a complete software bureau in South Australia which developed the overall software, and maintained JORN. It's wonderful what can be achieved with limitless resources. This is now carried out by BAE Systems (Australia) as Phase 6 of the JORN development and update is carried out.

At the termination of the Marconi Projects JORN contract in January 1999, having worked on the JORN Project for seven and a half years, our names went on a list for redeployment or scrap. Luckily I finished on a Friday and started work on the Monday for Ray Wombwell, who was Systems Manager on 743D for the Greek Pilion Radar.

Working for Dick May

by Martin Gebel

worked for Dick May, Procurement. Manager, and friend, on & off 1985 to 1990.

He taught me my trade and became a close friend. He had many good lines, but was fond of saying;

Look at me under the ethics & corruption clauses/processes.

- 1) I am a Procurement Manager
- 2) I have a Swiss bank account
- 3) I drive a Mercedes
- 4) I have a Rolex watch

But....

The watch came from Hong Kong. The Mercedes is 15yrs old. And my wife is a Swiss national...

RIP Dick

Working for The Home Office

by Martin Gebel

When I joined SCD, in Billericay, in the early 1970s, I found this was an expression used a lot. Obviously it sprang from use in New Street, as most of the staff had served there in some

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capacity. As an 18yr old I was constantly impressed by the amount of 'Government Work', being carried out.

I was to discover that it meant 'work for you'. Later, I heard tell of small, private, production lines, in the New St workshops, producing trumpet mouth pieces (properly chromed) and brass cribbage boards.

Later, as a Contract Officer, I chased people for particular production jobs they were always very busy, but would always find time for any car component refurbishment.

My initial role there, was as a "Process Operator - finishing". A paint sprayer, to anyone else. After I had been there a few weeks and my work was seen to be acceptable - prior to a training session in Mick Martins' paint shop, at New Street people would bring odd things to paint. Most of the paint was either matt black (pp 1321-01-16 - where did that come from?) or oyster hammer finish. Both of which were mixed, with a catalyst and any excess thrown away, before going home, when the paint guns were all cleaned out, before the next days work. The "odd things" were usually; tools, mowers, car or motorbike, wheels and components. Well, as the paint was to be dumped, anyway, I could not see the harm in it and the item was left to air dry overnight.

The "odd things" were "a test".

As new designs in isolators/circulators came along, new finishes were required and I was given both black and green hammer finishes to spray. This made a change and I did a few test pieces, for the DO and Development dept. They looked good. Around that time, the Company sold off its electric office heaters, for a couple of quid - we had central heating fitted - and a steady stream of these came to the paint shop, for a freshen up, before going home! Then it was coming up to Xmas and several children's bicycles, came in for a quick sandblast and respray. One of the people who brought me car components to spray, was Peter Loweth, our then Export Sales Engineer. Strangely, some eight years later, this was a role I had and Peter was then my boss, the overall Sales Manager. Peter was rebuilding a 105E Ford Anglia and fitting it with an Escort engine - this I know, as Peter kindly gave me the previous engine, a 1340cc "Classic" motor, when my own engine lost its rings.

Peter supplied me with some light-adgrey paint, primer & undercoat and then some strange shaped pieces of aluminium, which had been cleaned back to the metal. This was correctly primed with chrome etch primer, for aluminium, undercoated, then top coated. It made a change to paint different things. Every Monday, there would be a cardboard box of parts - some masked.

This went on for a while - no questions after all, I had a working engine . Then a few bigger parts arrived, which looked suspiciously like an aircraft wingtip and tail plane - because they were!

The penny had dropped, Peter was restoring a DeHaviland Chipmonk, an ex -RAF trainer and I was painting it, in works time. No-one seemed to mind. My chargehand, Bill Peek and my production superintendent, Robbie Simms, all thought it was quite funny. When I helped Peter through the factory, with a masked and freshly painted canopy (and I was whistling the "Dambusters" theme tune), no-one batted an eye-lid or even noticed (to quote a phrase, "Billericay was like that").

Some 12 years later, at my wedding, at Little Burstead church, Peter treated my wedding guests to a series of low level passes and aerobatics, in the same aircraft.

A good paint job!

Obituary: Gordon Hancock by Colin Fletcher

S ad to report E. Gordon Hancock died in 2023. Although not a veteran, E. Gordon-Hancock was very much a character. I first met Gordon-Hancock (as he was known to everyone) when working in the Software Engineering Department. It didn't take long before I heard of an anecdote that Gordon-Hancock had once claimed for a light aircraft on expenses. I asked him about this and he confirmed the story. He was working in South Africa commissioning remote sites and had worked out that flying between sites would be cheaper and faster than conventional transport. (He had a pilot's licence). I recently heard that the aircraft was sold at a profit. I hope this is true.

Oh yes, what did the E stand for? Why Everard. What other name could be fitting for a tough character?

Obituary: Jim Cole

James Edward Cole (Jim), CEng, FIET, 1931-2023

by David Cole, Graham Cole



im was born in 1931 to Alick and Dorothy Cole in Streatham, London. (Alick later became manager of MWT's Communications Division). The family moved to Radlett near Watford where Jim attended Watford Grammar School. After a further move to Chelmsford Jim attended Mid-Essex Technical College to study for a London University degree in Physics which he achieved in 1950 at the age of 19. He then joined Marconi and undertook a two-year graduate apprenticeship, including time as a junior engineer in the wooden huts at Writtle in 1952. Colleagues included Colin Lewis, Ken Johnson, George Otley and Rex Willet. Two years of national service followed at RAF Cranwell as a corporal wireless fitter. Jim returned to Marconi

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And then the biggie.



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in 1954, working in new labs at Writtle. He became section leader in microwave communication systems. The photograph below shows Jim in the foreground on the telephone.



He met Barbara at ballroom dancing classes held at the County Hotel, Chelmsford. They married in 1961 and bought a house in Springfield which became their lifelong home. They were active members of the Marconi Auto Club, participating in treasure hunts, night-time rallies, and driving tests at Rivenhall airfield. They had two sons, David and Graham, who both went on to become engineers. Jim enjoyed family life, especially the annual holiday and supporting his sons' interests. He also developed an interest in woodworking, making many items of furniture.

In 1965 Jim switched to manufacturing engineering and became factory superintendent at Beehive Lane works where the Myriad high-speed computer was made. He moved to New Street in 1972 to become manager of the printed circuit plant, where he introduced automation leading to a ten-fold increase in production (10,000 boards per week). His sons remember the Marconi Open Days when the New Street site was opened to the public and they were able to see the printed circuit plant in operation. He became FIEE in 1974 and FIProdE in 1978 (the two institutions are now combined as the IET).

In 1982 he became Divisional Manufacturing Manager, responsible for printed circuit assembly and the introduction of automated component insertion. Later on, as Manufacturing Engineering Manager, he implemented computer integrated manufacture. He was awarded an IEE Premium for a paper entitled 'Design to Manufacture- an integrated information system' based on research into computer aided engineering which he led.

Jim returned to the design function in 1989 becoming Company Chief Engineer, responsible for design to cost, design practices and standards, EMC, concurrent engineering, and design for reliability. His final position was as Company Quality Assurance Manager, from 1993.

Jim retired in 1996, 46 years after starting as a Marconi apprentice. In retirement he enjoyed travelling all over the UK and Europe with Barbara.

He built a 3.5" steam locomotive in his home workshop, as well as continuing his woodwork. When Barbara later suffered poor health he devoted his time to caring for her until she died at home in 2018. Jim seemed to cope well with life after Barbara. He focussed his effort on painting, gardening, keeping fit, and socialising with family and friends. He held several exhibitions of his paintings at Chelmsford Library and donated many paintings for permanent display in the corridors of Broomfield Hospital.

Jim died on 27 June 2023, aged 92, a few days after suffering a fall and sustaining a head injury during his daily morning walk into Chelmsford. He is survived by his sister Anne, sons David and Graham, daughter-in-law Ha and grandson Charlie.

Tribute: Peter Chapman

by Piers Chapman

My dad Peter Chapman was under the spell of Marconi's for much of his life, firstly as a child growing up barely 300 yards from the New Street HQ and factory in Chelmsford, and then working there for the majority of his career. In the 1960s and 70s he travelled extensively in Africa and Middle East doing sales for the Broadcasting Division, then he became the resident GEC-Marconi representative in Cairo, Egypt, and for Marconi Avionics in Nicosia,

Cyprus. He died in 2018 but luckily in 2010 I asked him for his recollections about his involvement with television because I knew he was in on that in the early days. This is his reply. The [[brackets]] indicate notes I've added for context. "You asked about me and TV. After fifty or so years it's not the sort of question you can just answer off the cuff and so I had to think about it; in so doing a number of memories came back that may or may not interest you. [[Dad, it all interested me!]]

My first contact with public broadcasting television came when I joined Marconi's Wireless Telegraph Company's Broadcasting Division a few years or so before Mum and I married [[they married in June 1958]].



Peter Chapman and Joy Marden at the time he first worked at Marconi's, circa 1957. They married in 1958.

I was a Sales Assistant, a clerk. It was an interesting and exciting time to be involved. It was the birth years of the expansion of television; few countries in the world had it. I was fortunate to be involved, in various ways, in the introduction of television in a number of countries, through them buying Marconi studio equipment. In those days the technical equipment required to produce a television programme was extensive and needed a lot of people. Nowadays it can be done with one person sitting in front of the camera and one behind it, or even with the one in front doing it all with a remote control. Some other time I can give you a history of TV cameras if you want it. [[Regrettably we never had that conversation.]]

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Anyway my first significant contribution was to do a lot of the pricing for our offer, it was successful, for one of the first TV stations, it may have been the first, in Australia. To get the bid in on time we worked through the night on a number of nights. Around about this time too, independent television was introduced in Britain. There were a number of franchises; the first being in London and Birmingham. The contractors for these were Associated **Rediffusion and Associated Television** (ATV), this latter being the company for which I later worked. Marconi supplied the equipment for AR and Pye of Cambridge for ATV. AR had the franchise for the London area from Monday to Friday; ATV had the London weekend franchise and also the whole week for Birmingham (the Midlands).

AR was run by an ex-RN officer called Capt. Brownrigg who thought it should be run like another BBC, whilst ATV was run by two impresarios, Prince Littler and Lew Grade who had different ideas. It was said of AR that the Board may not all be gentlemen but, by God, they were all officers! At the same time it was said of ATV that they were all 'luvies'! Initially they both shared a building in Kingsway, the building had been an Air Ministry building, called I think Adastral House, but it was renamed Television House. It was there that I started to work for ATV in 1959.

Before I left Marconi in 1959 I had studied for the National Certificate of Electrical Engineering in the evenings. Because of this I was able to be more

involved in the technical side of customer's requirements than just the 'clerking' bits. Also, to give me experience, I spent time at a TV studio that Marconi owned and operated in Kensington, in St. Mary Abbots Place. At this time there was a big shortage of television facilities and studio floor space - the BBC's Television Centre at Shepherd's Bush was still being built. The BBC rented the studio for some of its programmes, in particular the daily programme "Tonight", presented by Cliff Michelmore. It was a very popular programme and the whole thing was always live. 'St Mary Abbots' or 'Studio M' as it was referred to, was a compact operation and you could be involved in everything. The chap, Dave Chopping, who had the cottage in Ingatestone before us, was the Studio Manager. It was because I knew him that we got Mr. Gaymer's cottage. [[Greenfield Cottage, 1 Green Street, Ingatestone was the Chapman family home 1958-1969, Mr. Gaymer was the farmer-landlord.]]

So, back to ATV. As mentioned I started at Kingsway. Like the BBC, AR and ATV were building new centres; AR at Wembley and ATV at Borehamwood. Both moved out from Television House whilst I was there but ITN continued to operate from there for a long time. Our head-office moved to Gt. Cumberland Place at Marble Arch and the centre of operations was in Foley St., off Tottenham Court Road. My small place in all of this?......To be continued." [[And again regrettably we never got around to continuing the topic, but I'm so glad he wrote the above.]]. Having left in 1959 for ATV, he returned to Marconi's after writing to his former boss Dougie Smee asking for a job there again.

He was offered the job and returned in 1961 at a salary of £825 per annum.

Tribute: Dennis Gooch

by Lance Gooch

D ennis Neil Gooch was born on 21st November 1942 to parents Minnie and Charles. He died on 30th October 2023.

He was a twin, and his brother Lance was first born on 19th November then Dennis two days later 21st November! They lived and grew up in Beehive Lane, Chelmsford.

When Dennis left School he briefly worked for Prudential before joining Marconi's where he stayed his whole life.

Dennis travelled the world for Marconi installing Mobile Communications equipment in over 40 different countries. When he was nearing retirement he worked for GEC in Great Baddow. He was a Marconi Veteran and received his gold watch for his services.

Dennis met Anne at Sandon Youth club and they got married in 1968. They had three daughters, Tracy, Katrina and Rebecca. They also share 5 grandchildren.

V24-13a

In Memoriam

We extend our sympathy to the families of those who have died. *For an up to date list please refer to our web site:*https://www.marconi-veterans.org Menu > Membership > In-Memoriam Notified to our secretary from Nov 2022 – Dec 2023:-

Mr. NR Bennett, Mr. CM Blackboro, Mr. J Brown, Mr. WJ Brown, Mr. PC Bugg, Mr. RS Chadwick, Mrs. G Claydon, Mr. KT Coates, Mr. JE Cole, Mr. KW Dews, Mr. KS Elliott, Mr. NN Faulkner, Mr DN Gooch, Mr. SL Hall, Mr. H Jones, Mr. DJ Kemp, Mr. JA Lancaster, Mr. D Neylon, Mr. KJ Smith, Mr. G Valentine, Mr. P Williams, Mr. JM Willis, Mr. JR Woodgate