

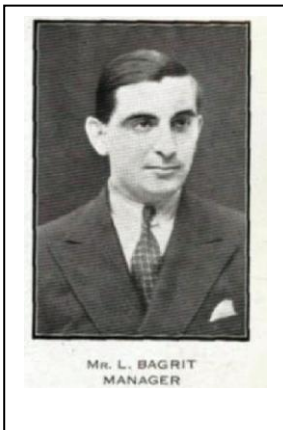


# Rochester Avionic Archives Newsletter

## From the Curator

**We have very nearly archived all the older newspapers and put PDF files on the Website. This has been a massive task and due to the hard work of our small band of volunteers. At present we have just commissioned the next update to the Website which will be to put the Company Brochures on-line and while we are at it to tidy up some of the glitches on the Website. Our subcontract lady is still ploughing her way through the old handwritten Log Books of negatives to give us a searchable database and this is already proving useful. Meanwhile the film scanning goes on but we can actually see an end to this. We are also in the process of converting the Videos to DVD. New items for the collection are naturally slowing down but they still trickle in. We were told that the RAA will have to move out of the Corsair Building next year but we don't know where to yet. Every time we move the task gets bigger!**

Chris Bartlett



## The Website

[www.rochesteravionicarchives.co.uk](http://www.rochesteravionicarchives.co.uk)

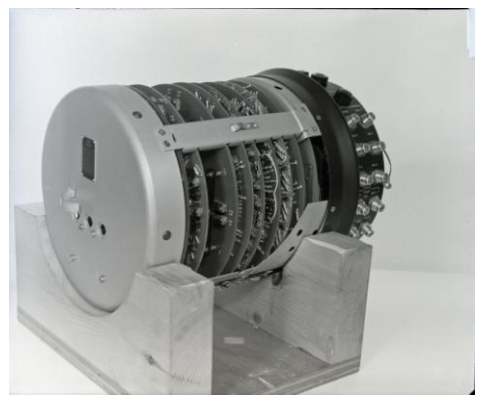
We get all sorts of enquiries through the Website. These quite often are strange requests from dubious countries for spare parts for company equipment or repair manuals. Someone wanted pension advice and then there are the real gems where people seek information on a Company product. There was an enquiry about an Elliott Sun Dial and an old Altimeter and one for information about Fred Haskett. We recently had contact from a Director of The Herbert Group Ltd, a family run concern founded in 1760. Sir Leon Bagrit was at one time their General Manager and the picture on the left was taken in about 1930. He then set up his own company B&P Swift and in 1947 acquired a virtually bankrupt Elliott Bros eventually turning it round into a profitable concern.

## The Archive of Negatives

Here is a rather nice picture of the Buccaneer Strike Sight Electronics Unit from around 1960 open to show the circuit boards.

The symbology was generated within the 'dustbin' Waveform Generator unit in analogue fashion on cards reminiscent in shape of an artists palette. Symbol shapes were held in the Waveform Generator and displaced by d.c voltages derived from the data inputs. The system was quite advanced with the capability to drive a second display unit but symbols could only be changed by replacing the circuit boards. The unit operated at 33Hz; only just fast enough avoid flicker but the P1 phosphor fortunately has a reasonable persistence. Later Waveform Generators began to use printed circuit boards. This was one of the earliest applications of silicon semiconductors in place of thermionic valves (vacuum tubes) for symbol generation. The Electronics Unit was pressurised at about 15psi and this was done using a basic bicycle pump. After pressurisation the EU was carried into the Gentleman's toilets where there was a conveniently large sink into which the unit was immersed for some hours to check for leaks!

The first two HUDs were made over a Christmas holiday substantially by Harry Eagles and Arthur Vigar. The Buccaneer HUD was manufactured and further developed by Elliotts continuing up to a Mark III version with a total of 375 systems made; it was given a 'fit and forget' title by the Navy.



The RAA holds two Buccaneer Strike Sight PDU (a Mk I and Mk 2) and one EU

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## The Film Archive



The latest batch of films is mostly of Bird Strike tests or Helmet Wind Blast tests but we did discover some odd films entitled HUD Weapon Aiming which actually seem to be of a number of Middle Eastern gentlemen having tea. I wonder if any of the old marketing folk can explain this?

The film on Elliott rastergraphics is of interest as some of the earliest work by FARL and we have a nice publicity film of FARL at New Road with impressive up beat music.

## From the Collection

### Concorde Autothrottle Computer 1965-1971



Computing circuits and power packs which constitute the Concorde automatic flight control system were packed into eight basic computers ( 2 off each) namely:

- Autopilot and Flight Director Pitch Computer
- Autopilot and Flight Director Azimuth Computer
- Autostabiliser Computer
- Autothrottle Computer
- Electric Pitch Trim Computer
- Warning and Landing Display Computer
- Safety Flight Control Computer
- Item Computer

The computing circuits were split into modules which are arranged in stacks either side of the chassis assembly. These stacks were located together by plugs which also provide a means of inter-connecting the individual modules and connecting the modules to a mother-board mounted on the chassis. These mother-boards were connected to the cableforms which run to the rear aircraft connectors and front test connectors. The box was physically segregated in to command and monitor computing areas to preclude common failures. The solid state logic switching circuitry was incorporated in the centre segregation spline. The electronic implementation was based on standardised micro-electronic linear computing elements with external components to set gain and transfer functions. Electromechanical integrators were eliminated and digital integration was used when long term storage of datums was required. All switching was solid state except where total electrical isolation or filament drivers were involved.

The computers included built-in test circuitry which was aimed at satisfying airworthiness requirements prior to



This Transistor Amplifier was made by Elliott Bros probably in the early 60's but we have no details other than a Part No. 3C5161.A2 and Serial No. 2066. Can anyone help?



Does anyone know what this was used for? It is called an Adjustable Gap Transfer Tool. It is marked 50,10.5 and 2.5 Amp and on the label it says 'Pre-Shotter Patent'

## Behind the walls!



In the Corsair Building there is a wonderful mosaic. In about January 1978 Diane Firth said to Barry Rouse the Senior Illustrator "Do me a design depicting Corsair". Not only was a mural required but the whole reception area was designed as well. The simple meaning of the word Corsair is 'Pirate' but Barry found deeper meanings in Hunting, Fighting and Raiding. *'The central figure depicts Corsair with the fighting spirit of the hunter. His embryonic wings emphasise man's age-old dream of flight. The eagle in the sky further strengthens the concept but is held in check by the doves of peace. The bulls ensure continuing production and improved development, two worthy attributes of a company of renown'* Approximately 77,000 mosaic tiles weighing some 700lbs cover 135sq ft. The design was laid in reverse on the floor before being stuck in place by Roy Woolston, Nigel Wallace, Danny Smith and Mark Haskett. On the 9<sup>th</sup> August 1978 the Corsair building was opened by Mr Paul Hare Vice-President of the Vought Corporation for whom the company made the A-7 Corsair Head Up Display system. Some years later, in the late 80's, the mosaic was covered over with plaster board and lost from view. The RAA acquired the descriptive plaque. When the Medway Innovation Centre opened in around 2005 as part of the refurbishment the mosaic was uncovered in all its glory



On the left hand wall of what was the Towers Reception area (entrance under Tower 1) is another old mural dating from the days of Elliott Automation when the Towers were constructed between 1962 and 1966.

*'The mural by Ygal Tumarkin, like much modern art, does not depict a situation or convey a simple message. Essentially it is a work of abstract art. Yet, while the concentric shapes on this large canvas engage the eye with a variety of textural interests, the use of mechanical objects and symbols suggests that it is more than purely visual... In the lower part of the picture the collection of familiar mechanical parts is connected by a wire to the painting's centre. This connecting wire seems to have the function of an umbilical cord, illustrating the birth of the coming world of automation out of the old world of more simple and recognisable mechanical devices. This central circle appears to be the culmination of the sweeping, yet broken, outer horse shoe shape. It contains impressions suggestive of the "printed circuit" and, at the heart of the whole design, the button, an object loaded with significance in the nuclear age.... In its setting this painting gives us pause and reminds us that the button can mean the end of all life, as well as the beginning of a new era.'*

So, now you understand it! This mural is also believed to be covered over and is now behind the Video Conferencing room. (It must have been covered for years although I recall it no one seems to know when it disappeared! Curator)

## Negative Archive



The Towers Reception area in 1983

## Odds and ends

### Some notes from 40 years ago

- Elliots were the largest industrial employer in the Medway towns with over 4000 people.
- The Lewisham site was still in operation with Elliott Nucleonics Ltd
- The company Elliott 503 Computer on the mezzanine floor of Tower3 was in use for payroll and also for the Concorde wiring.
- 1,500 children attended the two Christmas parties. The Pantomime was 'Babes in the Wood-Cowboy and Indian style! This was presented in the Restaurant on the stage by members of the Elliott Social Club. All the children received a Christmas present from the company. This year each party was filmed by the new Elliott Film Unit Pathway Films. Sadly all these films have been lost
- Queen's Award for Export of all products. Exports increased by 50% over the last three years. Lord Cornwallis presented the award.
- This was the era of the Miss Elliott and this year Jack Pateman gave Maureen Harker her sash and robe at the Elliott Fete held at Featherby Road. The Fete included Donkey races and a Mother and Baby competition.
- The Social Club included Archery, Astronomy, Athletics, Camera, Cricket, Cine Film, Darts and Cards, Drama, Golf, Horticulture and Gardening, Judo, Model Engineering, Mountaineering, Netball, Rifle, Swimming, Table Tennis, Lawn Tennis and Tug-of-War.
- Vought Aeronautics threw a thank you party for the performance of ADD on the A-7 HUD contract. The VAD men were presented with true British Bowler Hats , Buttonholes and Rolled Umbrellas!
- This year Elliots claimed 60 Years in aviation ( This year the Company celebrates 100 Years in Avionics and over 200 Years trading!) Elliots prepared an historic exhibition which won second prize in a competition held in connection with the American airline electronic industry.
- Do you remember Lorna McPake. She organised the travel and woe betide you if you did not have the correct invoices or you had changed a flight!!
- The Elliott Netball Team won the Maidstone League.
- Mrs Saunders retired from the Canteen having prepared some 6,000,000 meals in her career.
- The 'Concorde' Pub at Rainham (still there) was brand new in 1969. Richard Cummings and Malcolm Moulton helped produce the Pub Sign scheme and also a large montage of Concorde flying over the Rochester site (*I wonder where that went?*)
- The Industrial dispute between the Company and the Draughtsmen and Allied Technicians Association DATA was rumbling on and eventually led to a strike, mass marches, slogan shouting and mud-slinging with both sides accusing the other of lying! (Sounds familiar especially the quote " In the long run no one will win") Elliots was represented by Don Hunter.
- The men of Airborne Display formed the ADDers Club for men only.
- Salaries were around the £1200p.a. for an Honours Degree entrant.
- FARL fully established at New Road Chatham
- Divisions:- Airborne Display Division, Military Aircraft Controls Division, Transport Aircraft Controls Division, Inertial Navigation, Aircraft Engine Instruments and Aviation Service and Repair, Gyro, Automatic Test Equipment, Airborne Computing and Flight Automation Research Laboratory.