No.47 Q3 2023

Rochester Avionic Archives Newsletter

Chris Bartlett, Curator

I was cataloguing the Calendars in our Archive and found some lovely pictures. It is a shame that these have been discontinued. Desk Diaries and probably Engineering Notebooks have almost certainly gone digital. Recently I was approached with some Order Books from a lady who had managed the Canteen Stores at Rochester back in the day when they weren't outsourced and I hope we can keep an example. The site plan below is a lovely example of the old ski ll of producing schemes by drawing, cutting and sticking. We have kept examples of how presentations were prepared on overhead slides and we have managed to keep Slide Rules in the Collection as they were the ubiquitous tool of the Engineer.

At the Warton Heritage they have a Draughting board in the Heritage Centre to show how those skills were used,

All these items tell a story but once everything is placed on a computer, I wonder how future generations will read the current story?

Yet another plan for the Rochester site.

The very modern composite drawing is undated but as the original aerial view has GEC Avionics on the towers it would imply it was the mid-80s.The original restaurant building to the East of the site looks to have been retained with a long-covered walkway into the Factory/Office buildings. Surprisingly the Hangars are still there isolated in the middle of a large empty space. Possibly it was thought that these were historical 'Listed' Buildings. The acres of green lawns, lakes and trees are delightful!

The sketch was produced quite innovatively by overlaying a tinted paper cutout onto an aerial view of the site.

Curator: Chris Bartlett, Deputy Curator: Ann Jackson, Secretary Geoff Harvey
Tel: 01634 203321
e-mail: info@rochesteravionicarchives.co.uk *Website:* www.rochesteravionicarchives.co.uk

Artists

Joseph Lubbock (1915 - 2019)
Joseph Guy Lubbock was born at Chelsea, London on 20 May 1915, Joseph read engineering at Cambridge, before working on early examples of computers and during the Second World War, helped assemble the Spitfire and, with Sir Barnes Wallis, the Wellington bomber. He also served with the Royal Engineers as a bomb disposal expert. He was employed at Borehamwood from 1948-1953 and helped develop a range finder that could detect bombers overhead and guide missiles to explode on impact.
In 1963 he moved to Suffolk to pursue his art. He produced 15 books, the last two of which were printed commercially. In the first 13, the prints were from copper plates.

This picture is not from a Company Calendar but see Catalogue No. P0277

Rowland Hilder OBE (1905 – 1993)
Rowland Frederick Hilder was born in New York but following the outbreak of World War 1, Hilder's English father decided, in 1915, to return to his native county of Kent, England.
As a student with little money he cycled into Kent and discovered the Shoreham Valley in the North Downs This interest in the countryside began a lifelong passion for drawing landscapes in both pencil and watercolour, initially of Kent, "The Garden of England", and the Thames with its sailing vessels and old buildings. He was commissioned by GEC Avionics in 1987 as the illustrator for the Company Calendar.

See Catalogue No. P0276

Mark Bromley (1960-)
At some time he worked for British Aerospace as an illustrator for their in-house magazine. He was commissioned by BAE Systems as the illustrator for the Heritage Calendar from around 2002 up to around 2019.
These Calendars were very popular and made a nice gift at Christmas time.

See Catalogue No. P0275

Elliott Instrument Board c 1916 at The Science Museum London
(Science Museum Cat No. 1923-984)

Metal Instrument Boards were fitted in Aeroplanes from 1914 to 1916 after which it was considered preferable to mount the instruments on a wooden Dashboard. The following instruments are fitted: a revolution indicator of the centrifugal type to measure engine speed, an altimeter and an air speed indicator of the liquid manometer type.

Family links

A large organisation with such a long local history is bound to have generations who have continued to work in it. Elliott to BAE Systems is no exception and a few names are mentioned here.

Recently we were visited by George Rouse who is the Grandson of Barrie Rouse the designer of the mosaic on the wall of the Corsair Building. One of the team who assembled the 77,000 pieces of the mosaic was Mark Haskett whose Grandfather was Fred Haskett after whom the Haskett Trophy was named.
The Site Development team are still exploring whether this mosaic can be saved but otherwise we have asked if it could be photographed and a wall sized replica put on a wall in our new Museum. One of the key issues apart from the delicate task of recovering the mosaic is where to place it within the site.

We also discovered that the Grandson of Sir Leon Bagrit worked at Borehamwood for some time.

Another Queen's Award

In 1972 Elliott Flight Automation applied for the Technology Award for the COMPACT Automatic Test Equipment and in 1973 for the Navigation Weapon Aiming System (NAVWASS), but both failed to win. In 1974 as Marconi-Elliott Avionic Systems Ltd the Company applied again for a Head Up Display Weapon Aiming System but that also failed. However in that same year they also reapplied for the NAVWASS for the Technology Award and that was successful.

In 1967 Elliotts had been awarded a major contract for the design, development and integration of a NAVWASS for the RAF's new Jaguar aircraft.
The Jaguar was designed as a close air support aircraft for supporting ground troops in daylight. The NAVWASS enabled the pilot to navigate and fly at low level and high speed to acquire and accurately attack targets.
The system included an E3R inertial platform, Digital Computer, a Head Up Display, Projected Map Display, Horizontal Situation Indicator and various cockpit control panels.
Unfortunately the RAA does not have any Newspapers for this period so we cannot see what sort of ceremonies were held.

The Company was given a glass block engraved with the category of the award. In this case " The Queen's Award to Industry 1970". Note that as in the early award the 'E' for Export' or 'T for Technology' is not placed in the centre of the logo.
A certificate or scroll is also awarded but has not survived into the RAA archive.

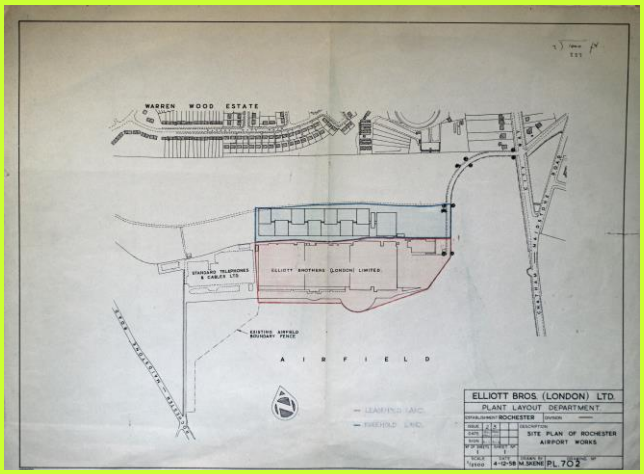
The Jewelled Badge

We have been contacted about a GEC Avionics pin badge with three gem stones confirmed as two diamonds and a ruby. The Badge was given to Bob Whelan who used to work for GEC/BAE in both the UK and US and the inquirer suggests that it looks like it was given for 25 years' service. The Editor replied that it was definitely not given by GEC who were notably parsimonious with their presentations, but was possibly a present from a customer to him.

The Drawings Register

The RAA acquired a couple of Plan chests full of drawings dating back to the early days of the Company on the Airport Site. One of the team has recorded all of these and catalogued them for the first time. Apart from the interesting drawings showing the site development we found odd documents like a local map which covers the WWII period. Chatham Dockyard is not marked on this map for obvious reasons, but left as a blanked out area which rather seems to highlight it rather than to hide it!

The drawing on the right from 1958 shows where the seven Towers would have been built on the woodland site North of the old Shorts Factory. Interestingly this new land was acquired freehold whereas the Shorts buildings were still leasehold.
The old Pobjoy Engine factory was now owned by ST&C and was making Cathode Ray Tubes In 1960 the Brimar valve and Cathode -Ray Tube Division of Standard Telephones and Cables was acquired by Thorn Electrical Industries Ltd. A new company was formed under the name Brimar Electronics Ltd. Most of the CRTs for all the company's Head Up Displays have been purchased form Rank Brimar.



The Rochester Airport site of BAE Systems- Mergers and the business goes global,

By 1961, the Aviation Divisions of Elliott Brothers (London) Ltd. employed something like 3,000 people mainly in the factories at Borehamwood and Rochester. They were divided between two major sections within the company—a Guided Flight Group at Rochester and a Radar and Communications Group at Borehamwood. Four new Divisions were formed within the Guided Flight Group in 1961: Gyro Division, Precision Test Equipment Division (PTED), the Environmental Research Laboratory and Airborne Computing. PTED later became Flight Support Equipment Division (FSED) which combined PTED with Automatic Test Equipment Division (ATED). The Environmental Research Laboratory later became Flight Automation Research Laboratory (FARL). There was also a Training Centre at Hopewell Drive down in Chatham.

All these Divisions had a part to play in the developing business. The research Division FARL was established in the Flying School and was to prove particularly valuable in flowing new ideas into the product divisions.

Also contributing to these aviation interests were the company's servo-components division, the relay division of an associated company, Associated Automation Ltd, and another associated company, Black Automatic Controls Ltd. The growth in the number of Divisions devoted to aircraft equipment led to the formation in 1962 of a dedicated management company called Elliott Flight Automation Ltd at Rochester.

The building of the three Tower blocks was commenced in 1961 and these were completed in 1966. The Towers were of a unique design at the time being cantilevered out from a central core and on a really windy day and with a corner office one could feel the whole structure gently bouncing. The construction also included three adjoining ground floor assembly areas. The buildings were leased originally but are now owned by the Company.

The Company was beginning to expand rapidly and acquiring a reputation in electronic systems and diversifying into the emerging avionics business although that was a word not used at the time.

In 1961 the original Elliott-Automation Ltd acquired Firth Cleveland Instruments Limited and established itself in the new Treforest factory estate now as Elliott (Treforest) Limited. Elliott-Automation formed a subsidiary company in Luxembourg, Elliott-Automation Continental S.A., to concentrate and develop the group's main interest in the Common Market.

The Company was obviously doing well because in the October 1961 a pair of William IV Silver Candelabra were presented to the City of Rochester to mark the occasion of the 900th Anniversary of the granting of the City's Charter.

By the mid-60s Elliott Bros had grown internally, and through licensing and acquisitions, to be a substantial organisation of some 35,000 employees and over 100 specialised companies in almost every type of industry. In 1966 Elliott Automation had realised the need to have its own semiconductor plant and accordingly established such a facility at Glenrothes in Scotland. This required huge capital investment and in 1967 the company became vulnerable to a take-over.

In July 1967 English Electric made an uncontested bid offering of three of its ordinary shares for every 10 Elliott-Automation units. This put the Elliott equity at around £37m. The merger was said to create the largest technological complex in Europe with a combined turnover of £150M in the common business areas.

The Paris Air Show of 1967 was the last one where Elliott-Automation presented. At Farnborough in September 1968 English Electric, Marconi and Elliott-Automation combined forces on a common stand even though the merger was not fully ratified. This was the beginning of an almost constant change of name for the Company.

The Rochester Airport site of BAE Systems will be continued in the next Newsletter.

A snippet from the Medway Survey of the Airport

As a result of the wartime bombing, the initial phase of works at the Innovation Park Medway involved investigations to determine the potential for unexploded ordnance (UXO). In September 2021, a magnetometry survey of the site was conducted which detected a total of 361 anomalies potentially indicating the presence of UXO, some of which were investigated further. This yielded a range of metal objects including plough shares, metal cans and hand tools. Fragments of decommissioned pipe-bombs (see the picture on the far right) were also recovered, and some bomb craters were identified. One very surprising find was a Kinder egg toy (one of the Magic Sport collection, issued 2005), which let off a very high magnetic signal!