



Rochester Avionic Archives Newsletter

From the Curator,

On February 14th I was invited to the RAF Museum at Cosford for the formal handing over of the EAP aircraft to the Museum by BAE Systems. You may recall that the RAA had been able to provide a number of pieces of equipment, notably the Head Up Display, that had gone missing over the years between Warton and Loughborough.

Our new website is still not ready, but we are using the time to properly analyse the way we catalogue items as the original template was introduced over five years ago when things were a lot less complicated. We were sorry to see our Link Director Rob Lindsay leave the Company; he was lucky to be able to take early retirement. So, many thanks Rob for all your support. Our new Link Director is Ian Brimelow who has an equally long record in the Company and moreover already looks after the local Branch of the Royal Aeronautical Society. We share our offices with Ron Twine who is the Curator of the local RAeS Archive and we look forward to even closer collaboration.

For those of you on the Rochester site please go and look at our display of Helmet Mounted Displays in the Restaurant display cases. Our thanks go to Nigel Kidd for a supply of 'Heads' to put them on.

The Open Day is on the 5th July and we are already planning our stand based on the products made at Rochester for a number of important aircraft programmes.

Chris Bartlett

EAP Handover

It was a good ceremony marred by atrocious weather and yours truly getting drowned walking back to the station! The hanger roof was clattering up and down in the gale and we could just hear Chris Boardman give his speech. It was great to renew acquaintance with the Jaguar FBW and, of course, TSR2. The exhibition was superbly presented and well worth a visit. The Cold War Hanger was fascinating covering all sorts of aspects of that time, so it was not just for aviation enthusiasts. I met Mary Stopes-Roe, born Mary Eyre Wallis, the daughter of Barnes Wallis. She married Harry Verdon Stopes-Roe who was the son of Marie Stopes, the women's rights and family planning pioneer, and he was the younger brother of Alliot Verdon Roe, aircraft manufacturer and the first Englishman to fly an all-British aeroplane. It was also good to meet up with Dave Eagles and Chris Yeo two of the test pilots from EAP. The cake was good, but had only a slim resemblance to the real EAP! (*Curator*)



Dave Eagles and Chris Yeo. Test pilots on the EAP



The EAP in its new home at The RAF Museum at Cosford

The EAP Cake! →



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Feedback



The INDivision team on NCS1 From Newsletter 11

A bit more about Naval Compass Stabiliser NCS1

Mike Broome sent in a few notes about this picture.

'I think they were all from the production dept. The guy on the RHS of the NCS1 picture is Stuart Moat a Test Technician at the time, the guy next to him was still there a few years ago, so may still be! Les Williams (who died last year) was a Project Leader on the NCS1 Engineering Design team. He was the Gyro expert in the team. Dick Amos was his Project Manager for many years working alongside Mick Annis and me.'

Mick Annis (a Field Service eng. from 1986 to 2005) has also been in touch and confirmed the name of Stuart Moat. Rochester. Mick was the Project Engineer for the system both at home and aboard. Ted Bristow was also at one time the Project Manager.

We still have not managed to get part of an NCS1 into the Museum (*Curator*)



The picture from Newsletter 12 entitled handover of the AQS901 in March 1979

'The AQS handover'

This looks like a picture either mistitled or taken on a walk-around at the time (*Curator*)

Jack Milner has done some research with Fred Mackley on this and come up with the following-

'Re the N/Letter picture & the names of left to right; numbers 1 thru 9:-

1. Mike Bingham
2. Roger Stewart
3. Nick Honner who went to Atlanta
4. Andy Gibson
5. Not known
6. Gordon Walker
7. Not known
8. Simon Frost (went to Fairey Aviation & ending up as a Director)
9. Simon Hellyer



Odd Film from Newsletter 12

We found this film of the Glacier Metal Company but did not know of any connection with the Company. Again John Coomber has come up with a link.

'I can remember that we did use their sintered bronze bearings in the days of the VC-10, but I cannot remember where. Also in the VC-10 Throttle Actuator it had a slipping clutch with which the Flight Engineer could manually override the motor driven throttle control cables that controlled the engines. Initially the clutch was made with a PTFE embedded plates, but they were proved to be unsatisfactory due to the hydroscopic properties of the PTFE and it was not possible to set accurately the load/force at which point the clutch would slip, so we changed the material to a sintered bronze on a stainless steel backing plate, which was the same concept as the slipping clutch on a caterpillar tractor and I think these may have been supplied by the Glacier Metal Company. We also fitted them to BAC-111. Frank Wood or Frank Eastwick may know more.'



Margaret Thatcher Newsletter 12

Tim Taylor responded that Margaret Thatcher did indeed try the Helmet Mounted Display on. He said that he saw a picture in a Newspaper.



TSR2

An Elliott Bros Air Data Unit Static & P-S installed in the TSR2 at the RAF Museum Cosford
The Part No is 3D1116-A-2 and the Serial No. is 010/64 EX7 an experimental or development number.
The date is 1964.



Scot Rate Gyro (More Feedback)

I found a Scot Rate Gyro for sale on eBay but too expensive for us to buy. The drawings in the Company Library had Brian Wade's name on them and he has offered some comments.

'I do remember a project called Scot Rate Gyro. The old Gyro Division produced many Rate Gyro products which were all variations of a basic product. When Gyro Division got absorbed with other divisions during the late eighties and Nineties all drawings were brought into the one drawing office. I ran this DO right up to when I retired in 2002.

Scot was must likely just a bit of badge engineering, only minor changes from a existing Rate Gyro system.

I would have thought it was produced in the early nineties, this would explain the 229 drawing number, as the ADD 229 number was the only divisional number used from about the early nineties and was still in use write up to 2002 when I left.

I don't think it was part of any other project just a unit produced on its own.

If I can remember the Engineer in charge I believe it was Bob Small, I know the surname is correct, but he must have retired by now. I don't think many were produced and what they were used for.

The pictures do look like a typical Gyro Div Rate Gyro unit, I don't remember that colour but that may have been a Scot requirement.'

These Scot Rate Gyros are for sale on eBay. The Drawing No is 229-057594 I was puzzled that a Gyro system has a 229 number and the case is pale blue which was the colour I associated with equipment for the Royal Navy. However the seller says 'ex RAF'. Other snippets are: it was made in about 1988 and there may be a connection to Scot Electrical Products of Chicago.



← Some of the proposals to modernise the Rochester site from the 1980's. If only!



The Rochester site in 1971 →

New Museum at Rochester Airport

Medway Councils' Masterplan for the airport and its surroundings was ratified by the full Council on the 23rd January 2014.

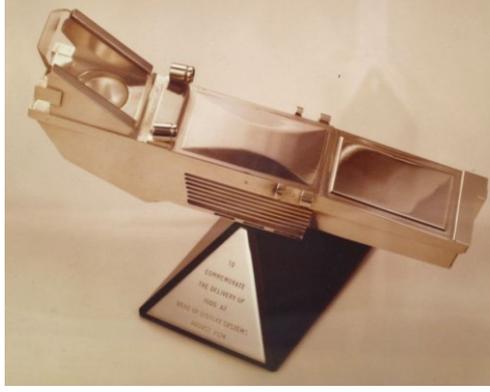
Rochester Airport Ltd now need to apply for planning permission for the new runway and infrastructure works. The Masterplan does identify 'provision of a new aviation heritage attraction to encourage more visitors to Medway' but there has been no recent approach to myself about the plans. (Curator)

From the Collection

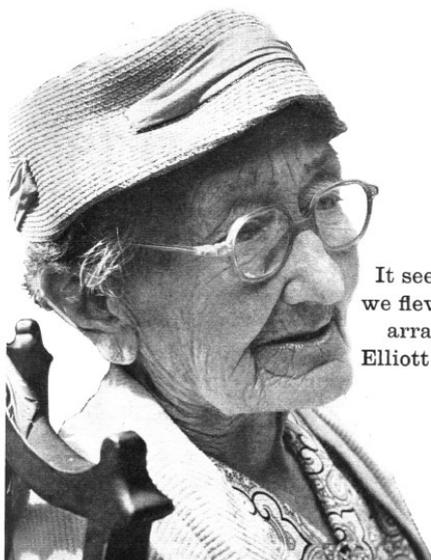
These instruments were donated by Ann Jackson and were found induring the clearance of her late Father's effects.

		
<p>Beam Approach Instrument Type3 Model S47 Air Ministry Ref 10Q/4 Beam Approach Indicator, Stores Reference 10Q/4. These were used in the Avro Lancaster and other four engine bombers such as the Halifax and Whitley. This one has Sangamo-Weston and Standard Radio marked on it.</p>	<p>WWII German Luftwaffe Military Fighter Plane Altimeter HOHENMESSER FL22317 Contact Altimeter used on WWII Luftwaffe JU87, JU88, Bf110 and Ar234. Calibrated 0-6000metres. Made by Hersteller : R.Fuess in c.1943.</p>	<p>Mk.XIV altimeter as fitted to late Spitfires, Meteor, Vampire etc.. Marked Mk.14A and Gloster Meteor. The Altimeter was made by Kelvin & Hughes Ltd in 1957 but the design was unchanged for many years.</p>

Presentation models

	<p>The top item is a rather tarnished model of the F-16A/B model presented on Monday 7th June 1982 to commemorate the delivery of the 1,000th F-16 A/B HUD. At the same time, GD placed the first contract with Marconi under the US Air Force's multi-year procurement scheme. The new order was for 259 shipsets, and was worth \$23 million, bringing F-16 HUD sales to \$188 million so far and assuring production until 1985. The F-16A/B model was bought on eBay by a man who then wrote in and asked for information about it. Needless to say I am very jealous that we did not find it.</p> <p>In August 1974 the 1,000th Head Up Display for the A-7 was handed over to LTV and a number of silver model replicas of the HUD. were made in the Company Model Shop. Unfortunately we hold very few Newspapers for 1974 so I have little information on this presentation. Please have a look in your attics to see if you might have a Newspaper from this date.</p> <p>The RAA does not have either the silver A-7 model or the F-16A/B model. As far as I recall these were made in the Company Model Shop and sent out to be silver plated.</p> <p>We do have a glass model of the F-16C/D Head Up Display. This was donated to Sir John Major in April 1993 as part of an award ceremony to commemorate the delivery of the 5,000th F-16 system and manufacture of the 10,000th HUD. I was able to get it back from Downing Street!</p>
	

FLIGHT International, 29 November 1962



It seems we flew by arrangement with Elliott Automation

Not entirely true, madam. Many important organisations contributed towards getting you safely from there to here. But an excusable misunderstanding—because Elliott Automation is playing a vital and ever-increasing role in every aspect of aviation; in autopilots; air data systems, instruments, inertial navigation systems, airborne digital computers, air traffic control systems, blind landing systems, automatic test equipment. And the crew flew the plane, you know. Elliotts just helped them to do it more efficiently.



The Elliott Micro-miniaturised Auto-stabiliser comprises rate gyro servo amplifier and power supplies at a weight of only 1.1 lb. Used in conjunction with the Elliott electro-hydraulic servo valve integrated with the main power controls the total weight of one control lane is 2.8 lb.

ELLIOTT E A FLIGHT AUTOMATION LIMITED
 AIRPORT WORKS · ROCHESTER · KENT · Chatham 44400
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EA A member of the Elliott Automation Group

FLIGHT International, 10 June 1965



Which navigation system costs less?

From 1965 it is the Elliott E5 inertial navigation system!

The Elliott E5 costs less than £1 per hour to operate. This is less than any other comparable inertial navigator. Its high accuracy (less than 2mm per hour error) considerably reduces the air mileage flown by aircraft so equipped. It is the first platform in the world specifically developed for civil airline use, and its predecessor, the E3, is already flying on routine operations in a Boeing 707 aircraft of British Overseas Airways Corporation.

Developed for fitting to new or existing aircraft the Elliott E5 pioneers the way to economic inertial navigation for all airline operators.

Write for further details to: Inertial Navigation Division, Elliott Brothers (London) Limited, Airport Works, Rochester, Kent, England. Telephone number Chatham 44400.

ELLIOTT EA A Member of the Elliott Automation Group
 Stand 8 Hall B9 Paris Show

From the Negative Archive



An Air Data unit with a Transistor Amplifier in the bottom right-hand corner. Made in about 1963.



Aligning the TSR2 Pilots Display Unit at Sydenham dated 1967

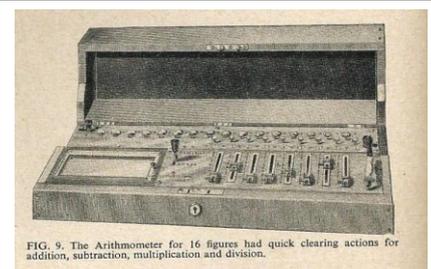


FIG. 9. The Arithmometer for 16 figures had quick clearing actions for addition, subtraction, multiplication and division.

Elliott Arithmometer

It was not until 1820 that the first practical calculating machine appeared. This was the arithmometer, invented by Charles Xavier Thomas of Colmar in Alsace, who lived from 1785 to 1870. The arithmometer could cope with addition, subtraction, multiplication and division. Instead of a keyboard, the machine had a series of slides for entering numbers. For addition, the turn of a handle added these numbers into the row of 'total' dials shown on a moving carriage on top of the machine. A reversing switch enabled the machine to perform subtraction while turning the handle in the same direction. Multiplication was performed by repeated addition and division by repeated subtraction. This Arithmometer was shown in Elliotts 1895 Catalogue and gained an award from The Prudential Insurance Company for the best English made Arithmometer. *The Elliott Journal March 1951 Volume One Number One.*