NEWSLETTER

Issue 65 *SUMMER 2004*

BAE & BAC Retired Management Staff Association

CHAIRMAN'S REPORT

One of the more significant items that has arisen since the AGM is a meeting your committee has had with Iain Gray (Managing Director Airbus). He had expressed a desire to meet and talk with us following contact made over the return of Concorde to Filton. I outlined to him the aims of the RMSA which embraces communication, social events, and pension matters. Our means of communicating with the BAE Pensions is through the Pensioners Consultative Committee, via our reps (Peter Aze & David Moakes), this is mainly done through Area 8 meetings (once a quarter) when we join with Plymouth, and more recently Marconi and the Royal Ordinance have become members. We have little or no means of talking to Airbus. Mr. Gray explained that he joined the company in 1979, and therefore knows many of the employees on site. He thought that it was important that the Company keep in contact with past employees, as they are the very reason that the company is as it is today. He then tabled a presentation of the airbus structure and showed its relationship to the shareholders and EADS (European Aeronautic Defence & Space Co.). Airbus became operational on 1st January 2001 as a single company with two shareholders, EADS (80%) and BAE Systems (20%).

The pension Scheme is wholly administered by BAE Systems and not by Airbus. He informed us that Paul Barrington was working 100% on Airbus but was Pensions Manager and therefore the main link with BAE Systems. Paul reports to Malcolm Fiddler.

It was pointed out to him that Retirement Seminars had lapsed so that associations like ours did not have a link with retiring personnel, and as a result did not have a means of recruitment. Since that meeting I was invited to a seminar, which proved very successful, and we recruited at least 4 new members. We have invited Mr. Gray to our Christmas Lunch and to meet annually with the committee. The meeting was considered to be a success as a good deal of additional information was exchanged.

(Continued on page 2)

In This Issue	Page

PENSIONERS WEB SITE

We are pleased to advise you that we now have a web site.
Our friends from Plymouth have created and will control a site dedicated to the provision of information on the activities of the Area 8 committee, with space allocated specifically to the activities of the associations within the Area 8 catchments...our organization, the Filton retired employees and of course the Plymouth retired employees.
The website is in its infancy and as time passes the web site may be expanded to include related organizations.
The website is currently intended as a complement to the Area 8 Newsletter and we will watch with some anticipation to see how it develops.
For those who have internet access the website can be viewed at the following address:

http://www.bapas.org.uk

Ed.

(Continued from page 1)

As those present at the 2004 AGM will know the committee's proposal for changes to the status of membership was passed unanimously, these changes will commence January 2005 and the required alterations to the Constitution will be presented to the 2005 AGM. Tug Wilson will explain how this will affect members during this year in subsequent newsletters.

One other item that concerns your committee is the lack of response to the Short Break in October to Torquay, It is difficult to know why this is, perhaps the regulars are becoming older and less able, perhaps Torquay was not too attractive, but whatever the reason David has had more work to do, the result of which he explains elsewhere in this newsletter. The Day Out to Cardiff was as usual first class, even the weather tested David to the limit, but he won, we were under cover for all the storms. Write to you all again in the autumn edition.

Frank.

BAE CARDIFF

In the 1960's Guided Weapons (Bristol) operated a factory in Cardiff in order to supplement Bristol's manufacture of Bloodhound Missiles. The factory closed after a few years when missile production was completed.

When the writer was enjoying the recent coach trip to the Cardiff Bay Development, he was amazed to see elaborate and frequent signs indicating the route to BAE CARDIFF. His first thoughts were that he had neglected to remove the signs to the 1960's factory. However, a Welsh speaking friend subsequently pointed out that "BAE CARDIFF" translated to "CARDIFF BAY" in English.

John Bartlett

Tale of a Target

It is an obvious but often overlooked fact that a guided weapon needs targets to perform against during development. The early X T V's (Experimental Test Vehicles) made at Filton during the 1950's in the BLOODHOUND programme were no exception, and a number had to be flown at a variety of targets in order to assess their performance as homing missiles, and to measure the miss distance and the instance of proximity fuse triggering.

The simplest of the targets was thought to be a static radar reflecting sphere with the appropriate echoing area. The target was to be held at a fixed height over a known grid reference, offshore from the Ministry Testing Range at Aberporth in Cardigan Bay. Safety would not allow a crewed vessel to remain at anchor under the target during a firing trial.

The solution was to use a sea-going barge fitted with the necessary gas charging gear and a winch for a bog-standard barrage balloon. Attached to the tethering cable several hundred feet below the balloon was the 9 foot diameter, thin walled, aluminium spherical target (made from two ends of a scrap Britannia pressurised cabin).

This whole contraption had to comply with Trinity House and other regulations, to permit docking and deployment by tug from and to Fishguard harbour. I will not labour the finer points reference navigation, anchorage, rendezvous, geometry and timing etc; but it will be obvious by now that the original concept that this target apparatus would be simple was way off the mark. The exercise was a typical "*she grew like Topsy*" event, frequently encountered in those early days. However all was achieved and a number of successful trials conducted.

There is however, a final episode to this story. We made front page banner headline news in the Welsh Press when the tethering cable was cut through by a homing test vehicle. The cut was a few feet below the sphere. I will leave it to the imagination of the reader to picture the resulting chaos created by the now free-drifting target. The national grid line maintenance engineers, air traffic controllers, police, the R A F and the Aberporth Range Safety Officer plus a few sheep farmers, all lost their sense of humour that day.

Grev Beale

An Exciting Flight

Early in 1962, in addition, to Concorde project work, part of my time was spent on a proposal for a NATO STOL transport, the Bristol Type 224, which was master minded by Kevin Cheverton. This machine was to be powered by two Bristol Pegasus engines together with two mid-wing pods each containing four RB17s mini - lift engines.

In order to give us some experience of loading and Para dropping large/heavy loads, Kevin organised a visit to Boscombe Down. I remember Kevin, Reg Stone and myself being there, but my memory fails me on the rest of the team. (perhaps Jeff Broadhurst and Finlay Harrow?) At Boscombe Down, we were allowed to crawl over a Hercules transport and to get some idea of the method of loading very heavy military vehicles etc.

After lunch, we boarded a Blackburn Beverly for a Para drop flight somewhere over Salisbury Plain. For those not familiar with the Beverly layout, it was a large unpressurised transport powered by four Bristol Hercules piston engines. The fuselage consisted of a double deck pod, with the flight deck above the freight hold. The empennage was carried on a boom extending from the upper deck and could accommodate some seats. The rear loading doors of the aircraft had been removed and a "concrete army tank" complete with parachutes had been loaded and lashed into position on launch rails. The team was asked to sit on the floor with backs to the front bulkhead ahead of the tank. There were no seats or safety harnesses. We were in for a very noisy surprise too, because we were all used to our smooth turbine powered Whispering Giant and there we were, sat in this open ended clattering monster without any noise insulation whatsoever. Anyway, it took off and climbed steadily to about 3,000 feet and found the drop zone, whereupon the army drop sergeant ordered us to stand up on each side of the tank facing outboard and to hold onto the fuselage frames. Again, no safety straps, so we held on very tightly indeed.

The drop sergeant released a drogue chute which pulled the "concrete tank" out of the pod like a cork out of a bottle and the Beverly. suddenly lightened by several tons, soared upwards at some crazy angle so that we were gazing out of the cavernous hole at the back and watched the multiple chutes open. It was all very exciting! The drop sergeant clattered down through the hold in his hobnailed boots and swung out over the open end to watch the drop all the way down. (He had a parachute on).

During the descent back to Boscombe Down, I climbed the ladder up to the flight deck and sat behind the pilots where there was one last surprise, because after touchdown, the left hand pilot pulled a device up from the centre console, the top part of which folded sideways over his legs and became a tiller for nose wheel steering. Crude but effective! I was more used to a neat little handgrip on the side consoles of our Bristol Britannia.

This exciting flight would not be allowed these days with the current health and safety regulations without everyone having a seat and safety harness.

STAN LOCK

WELCOME TO NEW MEMBERS

Since our last Newsletter, we have acquired the following new members

Mrs M J Baird
Mrs S G Bendall
Mrs G Brand
Mr & Mrs J R Britton
Mr & Mrs J D Davies
Mrs J E McLean
Mr & Mrs R L Newman
Mr & Mrs D J Olsen
Mrs M E Verrier
Mr K M Wickson
Mrs V J Wilde

We extend a warm welcome to you, and hope that you will participate in the Association's activities and meet up with old colleagues and friends.

OBITUARIES

It is with sadness that we report former colleagues known to have passed away since the publication of our last Newsletter:

Mr L G Holland

Mr E Roberts

Both the above departed in an earlier year but we have only been notified since the last Newsletter

Our sympathy is extended to all next of kin and the families

BRISTOL BAC and BAE RETIRED MANAGEMENT STAFF ASSOCIATION

Minutes of the 24th Annual General Meeting - 12 March 2004

Held at the BAWA Centre, Southmead Road

Opening Address

The Meeting opened at 10.05 attended by approximately 80 Members.
The Chairman welcomed all Members, Joint Members and Guests. Coffee and refreshments would be available after the meeting and, if time permitted, a talk by 'Help The Aged'

2. Apologies

5 apologies had been received prior to the Meeting and a further 1 was offered from the floor.

3. Minutes of the last Meeting

The Chairman referred the members to the Minutes of the AGM included in the Newsletter. In the absence of any comment from the floor he asked members to approve the Minutes.
Carried unanimously.

4. Matters Arising

There were no matters arising that were not covered by the Agenda.

5. Obituaries

Sadly, since the last AGM the following Members have died: J L Crowder, G J Forbes, F W Verrier, E G Herbert, R A Bendall, R E Cooper, Mrs M Macoun, I Sellwood, P E Wright, N E Wills, E F T Matthews, I L Rye, W A Pleass and E Roberts. During the year we learned of the death in a previous year of L G Holland.

6. Chairman's Report

This year has been the usual collection of events that I will leave to the respective committee members to detail for you. One event worth noting was the return of Concorde. When, after some negotiation with Mr Berry, the Co. discovered that the RMSA and the Tuesday Club existed they offered 120 places to cover both organisations for the buffet lunch on the Friday. I offered to make all the necessary arrangements to cover both organisations, the Co agreed to pay the postal costs. 88 members expressed interest from the RMSA and 4 from the Tuesday Club so we did not use our allocation. The event was very successful and provided a platform to meet many old colleagues not seen for some time. Ted Talbot gave an interesting talk, the buffet was good which all added up to a very successful event The actual return of the aircraft was on the following Wednesday when the Co. first offered to allow us a coach for a payment of £200 plus five places in the marquee. This was contested because the Evening Posts guests were free. Thanks went to David Welsford for looking after the coach arrangements. Those who attended were very satisfied, Concorde made a good landing. We can only hope that storage arrangements can be made speedily. During the year your committee have dealt with the usual problems and fortunately Mrs Dorothea Bartlett agreed to replace Mrs Mary Aze who had to stand down for family reasons. We thank Mary for her valuable albeit short service on the committee. Peter Aze and the Officers of the now defunct Management Union donated to the RMSA the sum of £300 from their almost unused fund. The committee and members expressed their thanks to Peter and Officers of the fund. Another revelation by our Treasurer revealed that by the year 2009 the RMSA finances could be in poor shape unless steps were taken immediately to rectify the situation. To this end the committee have published proposals in several newsletters that are the results of our detailed discussions in Committee. This proposal, apart from insuring our future financial situation, will improve communication between the Members and the Committee. We were often unaware of the deaths of Life Members until many months, sometimes years after. BAE Systems have also refused to supply us with a list of those members who have died claiming that it would be a breach of the Data Protection Act. Your committee is pleased to report that Mr Iain Gray (Managing Director-Airbus) has agreed to meet the committee on 1st April 2004 where we hope to inform him of our aims and objectives and, in return, to gather the latest information about the Co. and its organisational structure. Finally I would wish to thank the Committee members for their support but in doing so I would like to remind Members that we need new younger blood on the committee and would like to hear from any volunteers. Finally I would again wish to thank all Committee Members for their continued support throughout last year.

7. Treasurers Accounts

This year, surprisingly, has seen an increase in our reserves and it is understandable if members question the concern of the Committee for the future finances of the Association, so let me explain. The inclusion of a payment slip in the Autumn newsletter prompted a number of Members to get their 2004 subs to me before the end of 2003, some even paying for years ahead, in all I received £148 in advance subs, the paying in slip is proving very successful. We also benefited from a generous donation from the BAC discretionary fund, which many of you will have read about in the newsletter. This donation added considerably to the donations of £28 made by members. The £418 could easily have been a loss. With the reserves being in excess of £3000 at the moment it is proposed to keep the annual subscription at £2 for 2005 and should afford a sigh of relief to those paying by standing order. A few members have reported that their standing orders have been refunded. After investigation it was proved that there was no record of a payment and members affected were advised to contact their own banks.
The Committee wish to record their thanks to BAWA for continuing to provide free accommodation for all our meetings and to Airbus for printing the newsletter without charge thus saving the association a significant outlay.
The Committee also expressed their thanks to Gordon Hastings and Cary Needs who make sure that the accounts are correct. The accounts were presented to the meeting for approval Proposed Lewis Clack, Seconded Tom Coombe, carried unanimously

8. Proposed Changes to Membership

The present breakdown is as follows: (01.01.2004)

Life/Honorary Members	315
Ordinary Members	182
Associate Members	10
Joint Members	30
	537

(compared to 01.01. 2003 Membership of 520)

Following an in-depth assessment of the long term finances of the Association, it was decided that remedial action should be taken as soon as possible.
The Chairman drew the attention of the meeting to a proposal by the Committee to change the status of the Membership that has been published in the last two Newsletters.
The Proposal is:
(a) That Life Membership will cease within the Association. Those who have recently obtained Life Membership will be considered to have paid five (5) years in advance, and then to resume their annual subscription.
(b) Members who have enjoyed Life

(Continued on page 5)

(Continued from page 4)

Membership for more than Five (5) years will be asked to resume their annual subscriptions from January 2005.
(c) In addition to the above, we also propose to upgrade our Associates to full Membership with the appropriate subscription of £2.
The Chairman also pointed out, supported by Peter Aze from the floor, that with everyone paying subs it would be far easier to keep track of Members, especially in the event of bereavements.
A question was raised from the floor (Roy Isaacs) about Members living abroad say in Canada, New Zealand and Australia, would they have to start paying again? The Chairman ruled that we would consider this in committee.
Peter Aze seconded the proposal and it was presented to the Members for approval.
Carried unanimously.
The Chairman told the Members that a change to the Constitution would be necessary and this would be presented to the Members for approval at the AGM in 2005

9. Pensions

Peter Aze and David Moakes are the **Pensioners representatives.** Area 8 continues to function and issues its own Newsletter. Peter Aze from the floor said that although some progress had been made, there were still difficulties in communicating with the Co. and lack of minutes from the PCC meetings. Area 8 has its own Website as has The Co. The PCC meeting in March was the first joint meeting to include 2000 and ROC. The PCC may now only meet every 6 months. The next addition of the Pensioners Update is to be a joint effort. Tony Dudman has agreed to stand down as Chairman of the PCC, RMSA to write a letter of thanks to Tony.

10. Social Events

The Social Secretary recapped on the 2003 Social Events, i.e. Spring Day-Out on Cotswold tour, Summer Day-Out to Colyton, Seaton and Sidmouth, and the Christmas Lunch (voted the best ever).
The programme for 2004 will be as follows:
(a) Cardiff Bay that includes sightseeing trips. Wednesday 5 May (Very few seats left)
(b) Somerset Surprise, Dunster, Garden Centre, Museum and lunch in the Blackbrooke Tavern, Tuesday 20 July
(c) Short Break to Torquay October 14th to 18th. This year we are using an alternative Coach Co. namely, Rover Travel.
The Chairman proposed a vote of thanks to David and his wife for organising the social events and sincerely hoped that David will continue as social Secretary even though he has expressed a wish to stand down next year.

11. Newsletter

Newsletter Editor thanked the members for their contributions but asked them to continue with historic stories and up to date tales
The Chairman proposed a vote of thanks for the excellent work Bill has done producing the Newsletter.
Carried unanimously.

12.Memorabilia

Any members who have memorabilia should hand these into any member of the Committee.
It was hoped to see the Concorde open for viewing by the end of April via Coach trips.

13. Election of Committee

In accordance with the Constitution the following are obliged to retire:
Mr C F Webb, Mr C S Wilson, Dr T Coombe Mr J Poad, Mrs E Poad and Mr J Bartlett. The 6 retiring members have been nominated for re-election:
Proposed en bloc Mr J P Tyler, Seconded en bloc Mr D Welsford.
Carried unanimously
The meeting was also asked to confirm Mrs Dorothea Bartlett, who had joined the Committee as a co-opted member early in 2003, as a full member of the Committee.
Proposed Mrs Welsford Seconded Mrs M Aze.
Carried unanimously.

14. Election of Account Examiners

Mr G Hastings and Mr C Needs have agreed to continue as Examiners.
The Chairman asked for Messrs Hastings and Needs to be adopted as Examiners for 2004, Proposed Mr J Bartlett. Seconded Mr R Isaacs.
Carried unanimously
The Chairman asked the Members to thank Mr Hastings and Mr C Needs for their continued support.

15. A.O.B.

Mr Napthene, from the floor, asked if the time of future AGMs could be changed from 10.00hrs to 10.30hrs. The Chairman agreed to discus this in Committee.
The Treasurer asked members if they knew a lady called Marilyn Keel who had paid her subs by standing order but was not a member of the RMSA.

The Meeting closed at 11.05.am.

An interesting talk by 'Help The Aged' followed; Information leaflets were available for distribution.

Mr C F Webb **Chairman**

J P Tyler **Secretary**

Matter of Interpretation

When I take a long time...I am slow. When my boss takes a long time…he is thorough.

When I don't do it...I am lazy. When my boss doesn't do it…he is too busy.

When I do something without being told...I am over-stepping my boundaries . When my boss does the same thing…that is initiative.

When I take a stand...I am stubborn. When my boss does it…he is being firm.

When I overlook a rule of etiquette...I am rude. When my boss slips a few rules…he is being original.

When I please my boss...I am apple polishing. When my boss pleases his boss…he is co-operating.

When I get ahead...I am lucky. When my boss gets ahead…that's hard work.

Ed

BRABAZON AND ON (Part 1)

Inevitably, during a career of forty two years in aviation, there are many moments of great elation and of course some of unrelieved gloom. One of my most memorable experiences occurred when I was privileged to do what very few people have done – to fly in formation with the mighty Brabazon aircraft.

About six months before the projected date for the first flight, all personnel in the Flight Research Department were required to specify their holiday dates to ensure an adequate level of technical support. I was not directly connected with the project but nevertheless was as anxious as the next man to ensure that I did not miss the big event. My best guess, however, turned out to be wrong. As it happened I was on my way to a gliding holiday in the South of France when this momentous flight took place.

Stopping overnight at the Hotel du Midi in Nevers, and hearing nothing on the radio; I dashed at first light down the hotel steps towards the nearest newsagent. Coming up the steps was a Frenchman complete with newspaper. The Brabazon was spread across the front page with the headlines

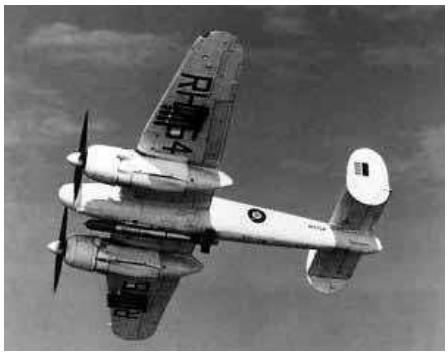
"She Flies! The Mighty Brabazon."

I unashamedly grabbed it from him, and when I explained my association with the project, he warmly congratulated me.

Shortly before going on holiday I had completed several flights as observer in Brigand RH798, the purpose being to investigate the temperatures in the hydraulic system. These were only marginally satisfactory in temperate conditions and would require some improvement for operations in Malayan tropical conditions. In our haste to complete these urgent tests we, most unusually, loaded the camera with sufficient film for the whole series. I remember carefully monitoring the flashing warning-light which confirmed that the camera was running satisfactorily throughout.

On my return from France I was shocked to be told that all this work had been abortive as the film had snapped during the first flight! Worse still a lot of the instrumentation had been stripped from the aircraft before this failure had been discovered. The problem had arisen due to the camera warning-light being operated by a micro-switch on the take-up spool. We immediately modified the camera to reposition the micro switch on to the unwinding spool. However, the tests had to be repeated, but this was accompanied by a stroke of great good fortune for me.

In the early stages of flying any prototype aircraft it was essential to establish the Position Error Correction (P.E.C.) for the Air Speed Indicator System. This entailed compiling a table of corrections (+ or – a few knots) to be applied at various speed increments. The errors were brought about by variations in aerodynamic effect on the static vents. To carry out a full RED was a very time-consuming business, involving as it did positioning several alternative vents and choosing the one which gave the optimum results. The "master" figure was sometimes obtained by a trailing static vent; a small "bomb" unreeled on a hose from a winch on the underside of the aircraft. However, it was usual to obtain a quick-fix by flying another aircraft alongside with a known calibration. Brigand RH798 was seconded to



this task in conjunction with the required repeats of the hydraulic tests. This would be the Brabazon's third flight. When these plans became known I was inundated with requests to carry cameras, because of course up to this time not even our own Publicity Department or even the Media had been given this opportunity. So, apart from being armed with the Department's Robot and Leica 35mm cameras, and my girl friend's Brownie box camera, I received a visit from the pilot Mr. Pegg himself! He produced a huge brass camera complete with bellows and large handles, with a request to obtain as many pictures as possible.

The Bristol Evening Post recorded the events of that fascinating day – the take-off of the mighty Brabazon followed shortly afterwards by a Brigand Fighter-Bomber. It was a superb autumn morning, a Saturday, and huge crowds lined the roads and every vantage point in the area, especially the golf course.

We waited cross-wing on the taxi-track to see the huge aircraft leave the ground right alongside us, heading, unusually, towards the A38 trunk road. As we followed and roared up over the A38 the huge crowds could be seen waving and I remembered thinking "My God, I'm getting paid for doing this!" Soon the silver thread of the Severn came into view and we took up station, climbing steadily, a respectful mile or so behind our colleagues.

As we headed through huge drapes of purple and silver clouds over the Welsh mountains my pilot, Mr. Hugh Statham (later to die tragically in the Britannia) was requested to take closer formation for the start of the checks. Incidentally, the speed checks were not my concern, a special observer, Harry Powell, being on board to carry out these, while I busied myself with the hydraulic tests. It would be necessary to stabilise both aircraft as close as possible to a predetermined schedule of speeds while the indicated airspeeds were compared.

The initial speeds were much slower than those at which the Brigand would normally operate, and apart from a lot of unpleasant yawing and wallowing we were deafened by the continued operation of the undercarriage warning horn indicating that the gear should be lowered at such low speeds. The tension being experienced on the Brabazon flight-deck could easily be sensed, our pilot being alternately encouraged to "Hurry up and stabilise" or "Keep your distance."

It was an unforgettable sight, the sun gleaming on the beautifully burnished fuselage, the Union Jack brightly illuminated on the fin, and the shirt-sleeved figures of Pegg and Gibb clearly visible going intently about their business. I busied myself with the cameras as best the turbulence, heat and excitement would allow.

Mr. Pegg's camera was new to me. The half plates were mounted in beech

(Continued on page 7)

(Continued from page 6)

wood carriers, two per carrier. The required sequence was to insert the carrier into the camera and withdraw a sliding flap to uncover the plate. The shutter was then operated, the plate recovered and the carrier withdrawn and reversed to allow the procedure to be repeated.
With the pre-occupation of the hydraulic tests it was becoming extremely difficult to remember the exact point reached in the camera sequence! The prospects of me becoming a second Charles Brown seemed to be rapidly diminishing! After about an hour we had done all we could and with a final wing-waggle made our way back to Filton in plenty of time to witness the awe-inspiring landing an hour or so later.
My photographic efforts were mediocre at the best. One or two plates showed exceedingly good cloudscapes but with no aircraft. However, others compensated for this by revealing two Brabazon's flying in formation!
Strangely, one of the most attractive pictures was produced by the Brownie box!

The concept of the Brabazon, luxury and spaciousness akin to the ocean liners, was ill-founded. Packing passengers in like sardines turned out to be the profitable formula. After about two hundred mainly trouble-free flights the final decision was taken to abandon the project. No commercial future could be foreseen for it. It was a sad day for Filton when men from Coley's administered the last rites, the scene being somewhat reminiscent of a huge whale being dispatched with flensing knives. For some years the piece of fin bearing the Union Jack was displayed at the Shuttleworth collection, together with the set of low profile tyres and wheels on which the aircraft was moved, but never flew. During a recent visit these were no longer to be seen, and enquiries did not reveal their whereabouts. Thousands of people at Filton and elsewhere had put their hearts and souls into the project but as so frequently happens in the aircraft industry "Suddenly a cloud takes all away."

Tony Wilkie

EARLY WARNINGS OF SUPERSONIC PROBLEMS (Part 1)

At the beginning of the fifties the Bristol Aeroplane Company had been given the task of designing an all steel supersonic research aircraft, initially aimed at Mach 2 but eventually, with new power plants, to reach Mach numbers near 3. The engines for operating at Mach 2 had already been specified by the Ministry and were to be made by the De Havilland Engine Company. At the same time, away up North the English Electric Company was designing a fighter aircraft to fly at Mach 2, later to become the formidable Lightning.
The Lightning had a basically subsonic Rolls-Royce engine, equipped with reheat to enable it to get there. It did, frequently. The Bristol Type 188 had an engine designed to operate at Mach 2, but not necessarily to get there even with reheat…It didn't. This aircraft was to have aerodynamic refinements to help it along, rather than the brute force of the Lightning and its competitors.
The main body of the aircraft was to have a coke bottle shape to reduce the drag; the air intakes to the engines were to have variable geometry to minimise the drag still further. On the other side of the Atlantic they were publishing reports on power plants that showed similarities with that of the 188, but from their shape it could be seen that they were aimed at Mach 3 from the start. The American aircraft eventually became the renowned spy-plane; the SR 71 Blackbird. The Type 188 eventually joined the ranks of the popular Ministry group under the heading Project Cancelled.

Sexy Shapes.
The coke bottle design for the body, or to give it its more formal name the Area Rule was, as was everything else, in its infancy and the theory for it, to be known as Slender Body theory was in an even more embryonic shape.
A Technibit
The draughtsman was asked to draw cross-sections through the body and wings at angles corresponding to each Mach number and plot the various areas on the centreline of the body. This gave a series of graphs with the appearance of a two-humped brontosaurus. These lines would be smoothed and averaged out, He would then be expected to add or subtract from the areas of the current fuselage to achieve a result as near as possible to the smoothed lines. This series of graphs he presented to the Aerodynamics Office after drawing what he thought was a mean line through the lot
In rising seniority three aerodynamicists (Ted, John Flowers and Mick Wilde) then drew what they were sure a better mean line should be. This was presented to the Chief Aerodynamicist (Bill Strang) who drew his own version; saying that there must be a mathematical theory to avoid all this work… so find it!
This 'final version' was very similar to that drawn by the draughtsman, who left the office with a very smug look on his face.
The draughtsman was back in a very short time "What accuracy do you want?"
Seeing that he had witnessed the highly technical manner in which the final lines had been defined it was deemed politic not to be too severe.
"About five percent"
He then disappeared for at least half an hour, it being mid morning tea break and then promptly returned, holding up the spaghetti of graphs as he lent over the top of the desk. Across the 'final' solution, from the front of the forward hump of the brontosaurus to the rear of the back hump he had drawn a straight line. This would have produced a parallel fuselage, something with which no modern supersonic aircraft could expect to wear if it was to be considered sophisticated. "We will have a better specification of accuracy when we have developed the theory. Call you back!"
"Don't be too long because I will have to book my hours to Waiting Time!"
His was a veiled threat, as there was the usual purge on non-productive 'waiting time'. The theory of slender body drag was in its infancy (and we were unaware that it would not develop satisfactorily for the next decade) so we had to think of something plausible, but satisfactory at the same time. The next day he was told to make it one percent with a maximum skin waviness of one degree. Well, why not?
Two years later as I walked past the open door of the large hangars, variously now called the Brabazon, Britannia, Concorde or Assembly Hangars, depending who was talking and when they joined the firm, I could see a very complex assembly jig under

(Continued on page 8)

(Continued from page 7)

construction. "What's that for?"
"It's the final stage jig so that we can get the correct profile that you required for the fuselage skin. When we spot weld this stainless steel it goes twang as we take it off the first stage jigging so we have to be very careful!"
The production people were beginning to learn that they should have challenged the design rather than accepted the challenge.

Steam Technology

As the design progressed more designers were drafted in to cope with the more complex technology in all areas. One such addition, put in a very responsible position, commenced a review of several critical areas. It was rumoured that his sole significant contribution to his last design was the seat of the toilets. He now wanted to relieve the new 4000psi hydraulic system of the large load imposed on it as the undercarriage was raised by driving it by steam! The steam would be provided from a flash boiler wrapped around the turbines of the engines, thereby putting no measurable load on the engine.
On certain aspects of drawing office activity things could move faster than others. The next morning there was a small gathering around one of the pillars in the drawing office guffawing at a large, well-drawn cartoon hanging from it. As the day progressed word got around and engineers, secretaries and others could be seen wandering in on some pretext or other to have a look. It showed a drawing of the aircraft diving down, cockpit hood drawn back and Godfrey the Chief Test Pilot, with hair streaming back in the slipstream showing a soot-streaked face. His shoulder flash showed his new title - Chief Stoker.
The new man, now referred to as Stevenson's Apprentice, did not last much longer.

Enter the surges

The engines for the Type 188 were the De Havilland Gyron Juniors. They had been specified in the cloistered surrounds of the MoD Procurement corridors and were to be designed to operate at Mach 2. The results from the Number Two test cell at the National Gas Turbine Establishment at Pyestock showed that the Gyron could operate at this condition but only if the turbine stayed on the engine. One test was terminated abruptly when the turbine left the engine and tried to cut its way out of the Test Cell.

A Technibit

In the Gloster Javelin test bed however there were indications that achieving this speed would not be without its troubles. The reheat was temperamental and, even though the Javelin's engine air intake was a smooth, round tube the engine surged. The bangs startled us, as well as the pilot. It did not augur well for the 188 whose intake contained a cone held by five supports, between which are ten auxiliary inlets to open at low speed, behind which are ten spill valves to open at supersonic speeds. There was very little inside surface left to control the airflow. However future extensive wind tunnel testing showed how to get over these problems and provide a better air pattern than that of the Javelin.
So it looked as though the road to Mach 2 would be bumpy but even then it was essential that the reheat system worked consistently, which it showed no signs of doing. De Havilland called for an urgent meeting at Bristol to talk reheat. They were very worried because the installed reheat would light consistently, but as the throttle was pushed to the stops the flame either responded, or went out.
As the De H designer was explaining the problem, the Bristol chairman (Harry Whiteside) called for Frank, the bearded wonder. Frank came into the meeting and was promptly sent out again with the spare set of drawings; no explanation, but a command to "look at that and tell us what you think!" Within half an hour the conference room opened and the beard was pushed through. Receiving a nod from the chairman Frank entered.
"Funny thing" he said "do you find that when reheat is selected and the throttle is pushed forward, then sometimes you get full reheat and sometimes it goes out?" There was silence until the De H designer said a questioning "Yes?"
"Well I'm not surprised as it's built into the control linkage!"
It was now too late to modify the linkage already installed in the prototype for the ground runs scheduled for later in the month. However, after studying the diagnosis, the engine men sent along Asbestos Harry to supervise the runs. This gentleman appeared to be impervious to heat. With the engine running he would stand several yards behind and to the side of the exhaust. He would then slowly lean over towards the jet and have a glancing look at the reheat flame in the jet pipe, his hair flapping in the blast. Ear defenders were not mandatory and were therefore not used. Should there appear to be a problem, he would remove a panel on the side of the nacelle and insert a hand between the skin of the nacelle and the jet pipe to pull the erring lever into its proper position. The aircraft would shudder as it felt the full kick of the reheat thrust. Asbestos Harry would then lick his tingling knuckles and then give the thumbs up signal to whoever was in the cockpit. This had to be classified as an interim fix!

Ted Talbot

Acts 2:38

An elderly woman had just returned to her home from an evening of religious service when she was startled by an intruder. As she caught the man in the act of robbing her home of its valuables, she yelled, "Stop! Acts 2:38!" (...turn from your sin...)

The burglar stopped dead in his tracks. Then the woman calmly called the police and explained what she had done.

As the officer cuffed the man to take him in, he asked the burglar, "Why did you just stand there? All the old lady did was to yell a scripture at you."

"Scripture?" replied the burglar, "She said she had an axe and two 38s!"

Ed

WE ARE SURVIVORS

(For those born Before 1940)
We were born before television, before penicillin, polio shots, frozen foods, Xerox, contact lenses, videos and the pill. We were before radar, credit cards, split atoms, laser beams and ballpoint pens, before dishwashers, tumble driers, electric blankets, air conditioners, drip-dry clothes...and before man walked on the moon.
We got married first and then lived together (how quaint can you be?). We thought 'fast food' was what you are in lent, a "Big Mac" was an oversized raincoat and 'crumpet' we had for tea,...We existed before house husbands, computer dating, and 'sheltered accommodation was where you waited for a bus.

We were before day care centres, group homes and disposable nappies. We never heard of FM radio, tape decks, artificial, heart word processors young men wearing earrings. For us 'time sharing' meant togetherness, a 'chip was a piece of wood or fried potato, 'hardware' meant nuts and bolts and 'software' wasn't a word.
Before 1940 'Made in Japan' meant junk, the term 'making out' referred to how you did in your exams, 'stud' was something that fastened a collar to a shirt and 'going all the way' meant staying on a double-decker bus to the terminus. In our day, cigarette smoking was 'fashionable, 'grass was mown, 'coke' was kept in the coalhouse, a 'joint' was a piece of meat you ate on Sundays and 'pot' was something you cooked in.'
Rock Music' was a fond mother's lullaby, "Eldorado' was an ice-cream, a 'gay person' was the life and soul of the party, while 'aids' just meant beauty treatment or help for someone in trouble.
We who were born before 1940 must be a hardy bunch when you think of the way in which the world has changed and the adjustments we have had to make. No wonder there is a generation gap today...BUT By the grace of God...We have survived!

Tom King

Flying Boats

Stan Lock's article on Flying Boats reminded this, even more, grey haired ex-apprentice of the September 1945 intake, of a similar visit to Saunders-Roe at Cowes. My visit was arranged by the then Bristol College of Technology at Leek Lane, to celebrate completion of the Higher National course there. Others might recall Bill Fitton who took Theory of Machines and Theory of Structures, and Ernie Poole who took Mechanics of Fluids there. The students were mostly Bristol Aeroplane Company apprentices, and the visit was made in June 1949. I'm pretty sure that one other RMSA member, Jeff Brackstone, was also on the visit.
At that time they had just attached the wing to the fuselage of the Princess. I clearly remember seeing the Princess flying boat flying over Bristol, perhaps to show it off to our Engine Division employees. I also remember seeing the SR-A1 fighter demonstrated at a Farnborough air display, where it was flown upside down along the runway.
Still on the flying boat theme, I recall ATC camps at the flying boat base at Invergordon during the war, where Sunderland's and Catalina's were based. We were lucky enough to have flights in Sunderland flying boats there. On the first occasion, (July 1943), 3 hrs. 45 mins. of circuits and bumps, but on the second occasion, (July 1944)6 hrs.45 mins. (from my ATC Flying Log). The latter was described as an operational training flight, during which we landed at Sullom Voe in Shetland, also a flying boat base at that time, and later bombed a smoke float dropped on the sea. There were two crews, one instructors and the other trainees. The trainees were Canadian, and I was given a bar of chocolate by one of them. This I hoarded to show my friends at school, since it was wrapped in silver paper which we hadn't seen for years, wartime chocolate being wrapped in greaseproof paper as I remember. My thanks to Stan for bringing back some happy memories.

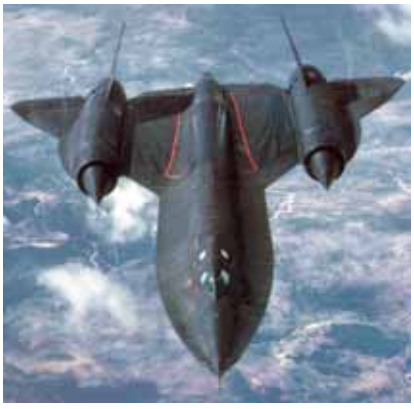
Sinclair Wilson.

From an SR71 (Blackbird) Pilot…….
Los Angeles Centre received a request for clearance to FL60 (60,000 feet). The incredulous controller, with some disdain in his voice asked, "How do you plan to get up to 60,000 feet?"

The pilot responded "We don't plan to go *UP* to it sonny – we plan to go *DOWN* to it."

He was cleared without further question….

Extracted from recent issues of "Aircraft Illustrated" and "Radio Control Model World".



Spring Day-out 2004—Cardiff Bay

The first of this years outings was a comprehensive tour to Cardiff Bay. We picked up the first group at Downend and then on to B. A. W. A. for the rest of the group.

Visitor Centre

Our first scheduled stop was at the Norwegian Church on Britannia Quay which we reached at precisely 10:30 am as arranged, much to the surprise of our Blue Badge Guide for the day!!

A welcome cup of coffee preceded a coach tour of the whole Cardiff Bay Development area which had been described to us in the Visitor Centre. The coach tour ended on the Barrier where the guide explained the purpose and operation of the system.

From the Barrage, we travelled to Mermaid Quay on a Road Train; the driver telling us some of the history of the docks area, including the building of the Norwegian Church where Roald Dahl was christened. We had already heard this fact from the Blue Badge Guide and were to be told yet again by the skipper of the boat that took us on a "Cruise" up the River Ely later in the day.

The Road Train ride ended close to a selection of restaurants for our lunch break.

An hour or so on the boat took us across Cardiff Bay and some way up the River Ely.. During the trip we saw quite a variety of wildlife; Swans, Ducks, Great Crested Grebe, Coots, Black Rabbits and a Fox.

On returning to Mermaid Quay, we had time for a cup of tea before boarding the coach for our return journey.

Once again we had reasonable weather, particularly in view of the heavy rain of the previous day.

All in all it was an interesting day-out and seemed to appeal to everyone. One common comment was that Cardiff appears to have made a great job of developing their Dockside Area and are proud to show it to visitors.

Our next day out is on July 20th...the "Somerset Surprise". This includes two or three surprise venues for coffee, lunch etc.

David Welsford