



(From left to right) Jim Lightfoot, Managing Director Dowty Rotol, John Eldridge, Director and General Manager Product Support Division, Bob Folley, Executive Director PSD, Colin Maher, Systems Co-Ordinator and John Jamiesson of the PSD Computer Implementation Team.

Product Support Computer Goes on Stream

Early in February, the Product Support Division of Dowty Rotol successfully inaugurated a computer system for handling sales and stock control. Installation of the PSD system, based on a McDonnell Douglas M9420 Computer, commenced over 12 months ago. Since then the software has been under development to meet the Division's requirements. The implementation of this project is being handled by a team, selected from key areas of the Product Support organisation, working closely with McDonnell Douglas Information Systems personnel.

The February date was targeted in September last year and was achieved despite various unforeseen problems arising in the intervening period. The initial phase includes order registration and acknowledgement, applicable pricing, stock control and re-provisioning recommendations of new unit orders. By early April, additional facilities for handling detailed spares orders will be available and, later in the year, repair and overhaul activities will be added taking the Product Support Division towards complete computerisation.

Current Performance

Sales Turnover

Detailed below is the regular update on our Sales turnover showing the value of sales in the 3 months to January 1989:-

Month	Target	Achieved
November 1988	£11,633,000	£11,406,000
December 1988	£ 9,972,000	£10,226,000
January 1989	£10,362,000	£11,802,000
3 Months Total	£31,967,000	£33,434,000
10 Months Total	£105,174,000	£108,155,000

Order Book

Month	Orders Received	Total Outstanding
November 1988	£21,882,000	£235,220,000
December 1988	£ 8,209,000	£233,203,000
January 1989	£16,293,000	£237,694,000

Major Orders

Project	Equipment	Value of Order
AV8B	Landing Gear, Hydraulics	£12,158,500
Submarine T471	Hydraulics	£ 3,267,382
Fokker 50	Propellers, Landing Gear	£ 3,221,424
BAe 146	Flaps, Landing Gear	£ 3,211,700
BAe ATP	Landing Gear	£ 1,205,316
A310	Hydraulics, Landing Gear	£ 690,000
Hawk	Ram Air Turbine, Hydraulics	£ 512,000

Super Sherpa



One of the orders highlighted in the last newsletter was for components for the Super Sherpa. The Super Sherpa is manufactured by Shorts of Belfast and can be used to carry a wide variety of freight or alternatively it can carry up to 30 passengers. Shorts' first customer for the Super Sherpa is the United States Airforce who have placed an order for 10 aircraft.

The USAF will use the Sherpa to ferry aircraft parts between bases. It can also carry larger items of freight including vehicles.

Dowty Rotol supplies the main and nose

landing gears and associated hydraulics (drag brakes and retraction actuators). We also supply 14 other components for the aircraft hydraulics system including reservoirs, accumulators and three way selectors. The equipment we supply for the Super Sherpa is identical to that supplied for the SD330 and SD360 aircraft, and consequently there have been no design costs incurred in winning the contract.

To date we have firm orders for 40 aircraft sets worth £3.4 million. Deliveries commence in May 1989 at a rate of 1 per month.

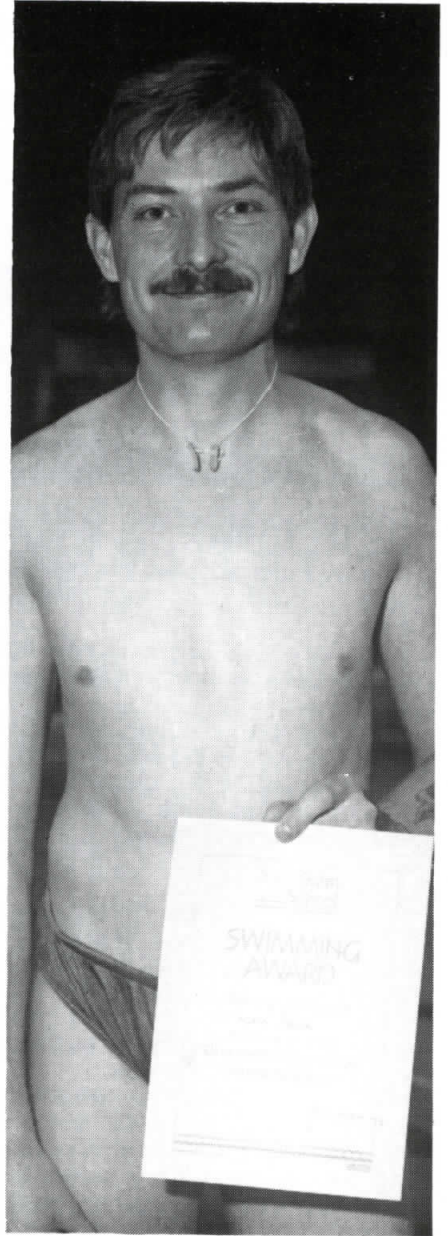
Charity Swim

Whilst most of us were getting into the Christmas Spirit on 23rd December, Kevin Smith from our Progress Department was steadily stroking his way towards raising £850 for charity.

Kevin had a major operation on his spine in May 1988 and when he heard that a sponsored swim was being organised for the Cheltenham Cobalt Unit he jumped at the chance to show his gratitude.

Kevin and several hundred others embarked on a testing 48 lengths of Barton Pool in Gloucester. "Swimming is good exercise for me and I saw this as an opportunity to help a good cause. I had a few butterflies in my stomach to start with but I soon got into a rhythm", said Kevin.

Our picture shows Kevin displaying his certificate of achievement by the side of Barton Pool.



Military Visit



No, Ron Wren is not embarking on a new career! Recently, a party of 25 Army students from the Royal Military College of Science (RMCS) visited the factory on an 'Industry Awareness' exercise. The students, all Majors or Captains, are on an extensive technical course.

First Aiders Trained

Nine employees have recently completed an on site training programme, consisting of 10 half day sessions, to qualify as first aiders.

The role of first aiders is to supplement the service provided by our Medical Department. To assist in recognition they have been provided with an identification badge and a first aid kit.

Pictured right with Sister Betty McQueenie are Alan Miles (Repair), Roger Sterry (Drawing Office), Alan Price (Fabrication), Mike Hale (Training), Tony Nicholls (Despatch), Roger Lambert (Development) and David Tallon (Development).

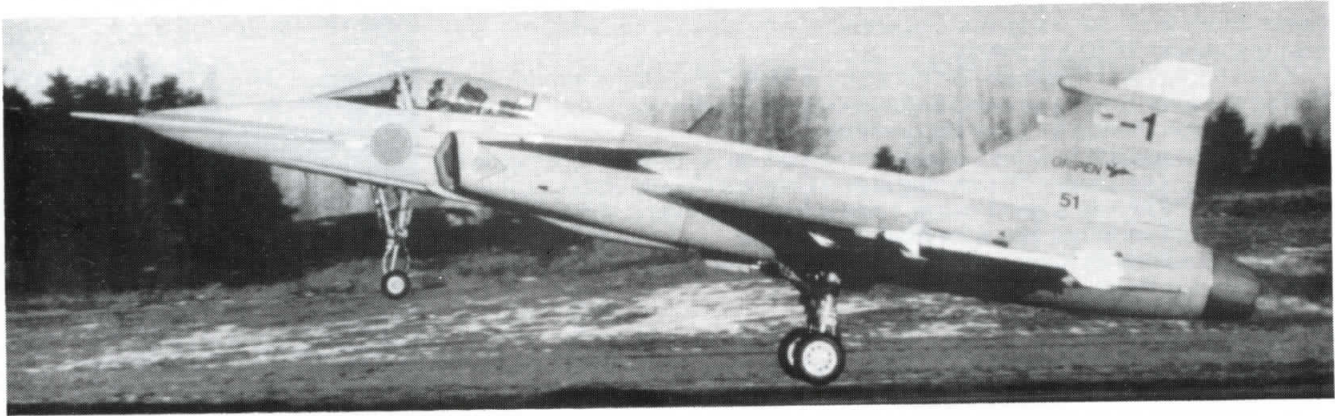
Derek Swadling (Repair) and Colin McGrath (Plating Shop) also completed the course. These first aiders now join our existing team of Aubrey Hillman

(Inspection), Gordon Hanks (Toolroom), Peter Smith (Methods) and Glenn Chapman (Product Support).

First aid cover at No. 4 Shop Swindon is provided by the shop floor supervisors.



JAS 39 Setback Follows First Flight



On December 9th last year the first prototype of the new Saab JAS 39 Gripen made its first flight.

Dowty Rotol supplies the secondary power system gearbox, health monitored hydraulics and airbrake valve.

The JAS 39 is Sweden's new light combat aircraft, designed as a replacement for all versions of the Viggen and Draken.

Unfortunately, although the first flight represented a major milestone in the JAS 39 programme and marked the beginning of an intensive flight test period, the programme has since suffered a set back when in February the first prototype crashed on landing at the end of its sixth test flight. The pilot escaped with minor injuries.

The aircraft, the only prototype flying, was destroyed. It is reported that the second of five prototypes is scheduled to make its first flight later this summer, subject to reorganisation of the flight test programme.

Although the reason for the crash has not yet been established, it is understood by the company that Dowty products were not involved.

The first production aircraft is scheduled for delivery in 1992 with all 30 of the first production run to be delivered by 1995. Follow on options exist for a further 110 aircraft for delivery before the year 2000. It is reported the total requirement for the Swedish Airforce amounts to about 350 to 400 aircraft and in addition there is a potential for export sales.

To date Dowty Rotol has received orders for the gearbox, hydraulic equipment and airbrake valve for 6

prototype and 30 production aircraft, valued at approximately £2.5m.

The engine driven gearbox in turn drives two hydraulic pumps and an electrical generator for aircraft services. An air turbine motor is also fitted for flight or ground starting. The hydraulic system for the aircraft represents a major advance in hydraulic health monitoring, construction and electronic control. Components are packaged and complete electronic surveillance provides flight safety and ease of ground maintenance.

Aeronautical Society

The Gloucester and Cheltenham Branch of the Royal Aeronautical Society, has asked us to publicise their activities in the Newsletter. The Society aims to provide a forum for technical discussion about aeronautics, and engineering in general.

The local branch organises a wide variety of activities catering for people with a general interest in aviation as well as professional Aeronautical Engineers. Their programme includes lectures, technical visits, and social events and includes joint meetings with the local branches of the I Mech E and IEE.

Recent lectures have included diverse topics such as Aircraft Accident Investigation in the Royal Navy, Airborne Radar Development, and Carrier based operations in the Falklands. The latest visit was this month to the Williams Engineering Formula 1 Racing Team at Didcot.

Forthcoming events are:
* 5th Sir George Dowty Memorial Lecture on A330/A340 — Advanced Technology at work, to be given by Arthur Howes of Airbus Industrie on 6th April.

* Visit to RAF Brize Norton on 30th May.

* Visit to the Aeronautical Research Association in Bedford in June.

Meetings are generally held in the Dowty Cinema at Arle Court. Further details about events and society membership are available from Mike Lander (Ext 1834) or Mike Chance (Ext 1711).

Suggestions Co-Ordinator Appointed



We are pleased to announce the appointment of Terry Long as Suggestions Co-ordinator with effect from Monday 3rd April.

Terry's job will be to improve our Suggestions Scheme and encourage more ideas to be put forward. In particular he will be working to ensure that suggestions are investigated, and replied to, promptly. Full details about our new, improved Suggestions Scheme will be published in the near future.

Terry will report to the Company Secretary, Ian Bailey-Scudamore. This reporting relationship was deliberately chosen to maintain a degree of neutrality for the Suggestions Co-ordinator.

Terry has been with the company for over 23 years. He joined as a Craft Apprentice and then became a Fitter in Experimental. He moved to Assembly Methods in 1978 and has worked in that area up until his recent appointment.

Suggestions Success

Dowty Rotol entered two suggestions in the competition held on Friday 3rd March to find the Dowty Group Suggestion of the Year.

The first was submitted by Experimental Fitter, John Ryland. His idea was to eliminate the cables and terminal blocks from the backplate assembly on the Grumman Tracker propeller. John suggested that the de-icing wire harness should be connected directly to the backplate rather than through a terminal. This suggestion came joint second place and earned John a further £250 to add to the £1,000 he had already received from Dowty Rotol.

Our other entry was a suggestion from Phil Lane in the Metal Blade Shop. Phil's idea was to prolong the life of flexes which run from motors to polishing buffers, by greasing them. This entry came a creditable fourth in the Group competition. Phil received an award of £500 from Dowty Rotol for his idea.

The first prize of a holiday for two in Bali was won by a suggestion from a Dowty Mining employee regarding valve manufacture.



John Ryland receiving his £1,000 cheque from Andy Stevens, Executive Director — Works, and Mike Handley, Experimental Manager.



Phil Lane at work polishing blades.

Help Needed for Rotol History

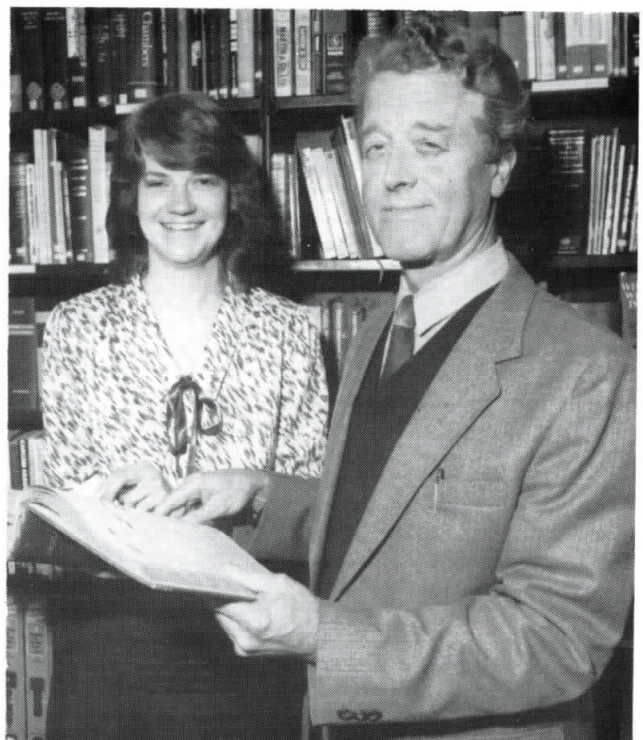
Bruce Stait, who retired early from the Drawing Office in 1986, was attending our Open Day in September last year when he noticed in the programme that the Company had been on this site for 50 years. He wrote to our Technical Director, David Davis, and suggested that the history of Rotol should be recorded before memories became too faded. The Company agreed to this idea and Bruce volunteered to undertake the task himself.

Bruce is now collecting material about the history of Rotol between 1937 and 1959. He is interested in hearing from current employees or their friends and relatives who were employed during this period. Bruce is particularly interested in "human interest" stories and would like to hear about any interesting or humorous anecdotes, however minor. He is also looking for any historical photographs which could be copied for publication.

Any employees who feel they can assist Bruce can obtain a brief questionnaire from the Technical Library or Personnel Department which asks for basic details about their recollections.

This is not the first literary venture undertaken by Bruce. In the 1970's he published a book called Rivenhall — The History of an Essex Airfield. This told the history of a second world war airfield which Bruce lived near to during his youth.

The picture shows Bruce with Librarian, Hilary Saxby, examining archive material in our Technical Library.



Action Taken on Warranty Problems

With the numerous new products we have launched in the last three years, a significant warranty problem has emerged. In many cases very small problems were not discovered during the development test and certification programme. This means that some equipment delivered, and in service with the airlines, is not performing adequately. As with any new product, we are committed to correcting the problem and fulfilling the original order to our customer's satisfaction. Every effort must be made to ensure that the aircraft is kept in operation while a cure is found.

A typical example is the overspeed governor on the F.50 propeller system. In service this unit has performed differently from anything experienced on engine launch tests and hence the hydraulic relief valve design must be modified. We have also discovered, within the valve, incompatible materials leading to the valve sticking. During investigation of these problems on a returned unit it was noted that the bearing bushes in the gear pump were eroded. Further tests showed this was due to high pressure jetting of the oil in the pump. More changes to material and design! You can imagine the difficulties involved in containing these problems, and the various modifications, with aircraft being delivered to operators at a rate of 3 per month.

Right now we have a number of such problems and in total we have approaching 600 units of various types in the plant, all requiring modification or repair.

To oversee the high priority units within this load, Martin Akerman — previously a foreman in No. 1 Assembly — has been promoted to the post of Warranty Controller. His role is to improve the systems for dealing with warranty returns and set targets to cause the minimum inconvenience to customers. "Our major problem is that of delays — delays in administration,



investigation, engineering, strip reporting, kit marshalling and other areas", says Martin. "We need to make every effort to return warranty units to customers in an acceptable time and in a satisfactory condition. It is our collective response that will determine the amount of confidence our customers have in us. This, in turn, will affect our chances of winning new orders in the future".

The cost of warranties in the current financial year will be considerable. Some of the problems that we have are due to the need to design close to the limit of our experience. However, others have been the result of insufficient attention to detail. Clearly we can and need to do better. We should always remember that satisfying the customer is number one priority, and respond accordingly.

Training Moves to Rotol

Reorganisation of the Dowty Group Training Department is taking place from 1st April. In future individual companies, and not Dowty Group Services, will be responsible for the training of apprentices. The exception to this is sponsored students, taking degree courses, who will continue to be employed by Dowty Group Services.



The picture shows Roger Goldby with first year apprentice Hayley Morse.

Existing apprentices will be transferred to the company where it is intended they will be placed on completion of their training. New apprentices will be recruited and employed directly by individual Group companies.

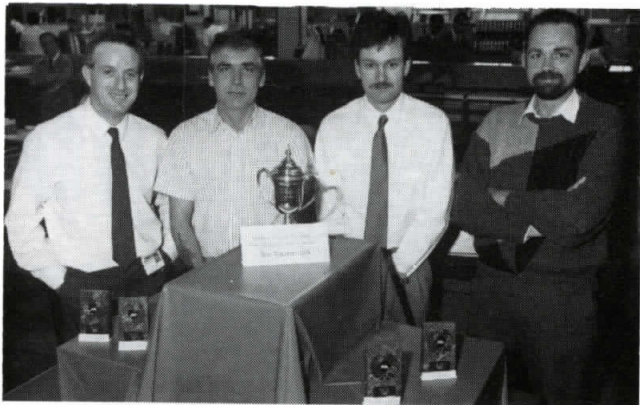
The Apprentice Training Centre on South Works will be taken over by Dowty Rotol. We are pleased to welcome to the company, Roger Goldby, Site Training Executive, and his staff who currently run the school for Dowty Group Services. Roger will now report to Doug Knott, Personnel Manager. Most of the apprentices undergoing training in the Training Centre are currently destined to join Dowty Rotol. In future we shall be training only our own apprentices, although we may do some first year training for other Dowty Group companies.

Young people who join our apprenticeship scheme at 16 are recruited as Engineering Apprentices and spend their first year learning basic craft skills in the Training Centre. Craft apprentices then complete a further year in the Advanced Machining Centre after which they move to production areas to complete their training as skilled craftsmen. Throughout their apprenticeship they attend a day release course at college.

Technician and Technician Engineer apprentices pursue a different route. After their first year in the Apprentice Centre they undergo training in various departments throughout the company. Technicians attend college on a day release basis to obtain an H.N.C. qualification whilst Technician Engineers are given block release to qualify for an H.N.D.

The Training Department are not solely involved in apprentice training. They also perform a wide range of activities including induction training for new employees, organising pre-retirement courses, CNC training, advising employees on evening classes and the training of overseas students.

Raconteurs Triumph

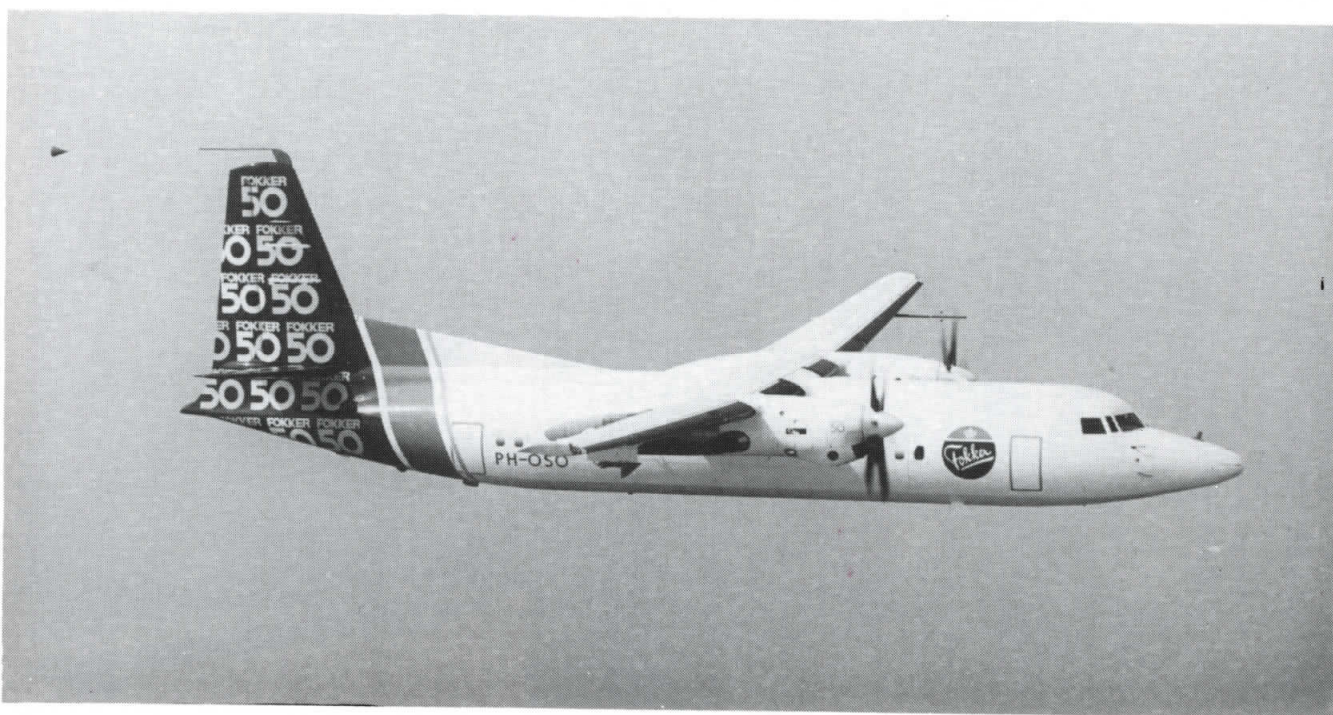


The Interdepartmental General Knowledge Quiz 1989 was held in the Social Club on Friday 17th February. Twenty eight teams answered general knowledge questions covering a wide variety of topics including Sport, Music and the week's Newspapers.

Question Master Alex Herbert fired questions at the participants for over 3 hours. Each team member filled in an answer sheet which was collected at the end and the points were then totted up. "The Raconteurs" from Production Engineering won with 87 points, closely followed by the "The Thick Set" from PSD with 86 points.

The picture below shows the winning team with the Cup and individual mementos. Left to right, Kelvin Tustin, Mike Mutton (Captain), Colin Timmins and Ted Snow.

Update on Fokker 50



In previous newsletters we have reported on the events leading up to the award of the Fokker 50 contract and the progress of this order through various departments of the company. The equipment we supply on the aircraft is as follows:

Main and Nose Landing Gears

Propellers

Propeller Control Equipment

Flap Drive Equipment

Passenger Door System

Hydraulics, including steering control valve and undercarriage selection.

The F50 was certified by RLD, the Dutch airworthiness authority on 15th May 1987, and the plane entered service in August 1987. The number of F50's in operation now numbers 47 and total sales amount to 93 with another 29 aircraft on option. An option means that an airline operator has reserved a place in the queue for one of the aircraft but has not necessarily paid any money. The main customers for the F50 so far are Ansett, SAS, DLT, Maersk, PAL, MAS and NLM.

Orders received by Dowty Rotol on the F50 now exceed £27 million and production is planned to run at the rate of 30 aircraft sets per year. Although the F50 operates in a very competitive marketplace its expected production run is in excess of 10 years noting that its

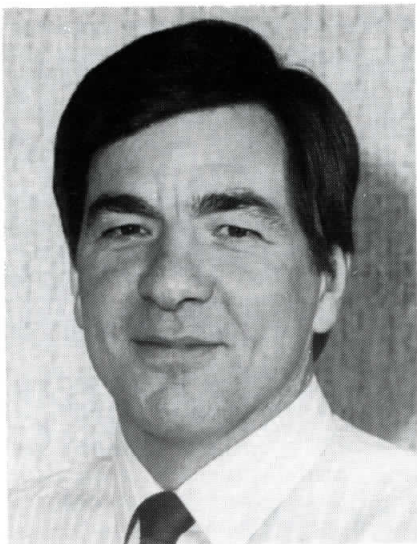
predecessor, the F27 had a production run of 20 years.

This contract is not without its problems. During the design phase we had changes to the specification, such as to the nose undercarriage steering control valve, and we have had difficulty in meeting the very tight specifications on flap positional control. On the passenger door actuator the weight of the door was miscalculated and aeroplanes in service had many problems with burnt out electric motors — a new design is to be made available in June this year.

We have had other technical problems on engine over-speed control and with the propeller electronic control unit. This last unit is new technology, controlling the propellers so that not only are they synchronised, but the blades on the two propellers are actually in phase with each other. This is important in reducing noise and increasing passenger comfort. Being totally new this unit has had its development problems, some only becoming known through the accumulation of flight experience with the operators.

What is important is that the aircraft operators are supported through these difficulties and that we achieve high reliability as soon as possible into the aircraft life.

Appointments



Brian Bailey — Repair Manager

Brian Bailey joined Dowty Rotol in January. He commenced his career with Westland Helicopters in 1959 and held a number of positions in design and quality. He left in 1974 to become Quality Assurance Manager with Leafield Engineering. Prior to joining Dowty Rotol he was Production and Manufacturing Programme Manager with Honeywell Aerospace and Defence Ltd. Brian is married and has 3 daughters.



Caroline Harvey — Financial Controller

After graduating from Bristol Polytechnic with a BA Hons in Business Studies, Caroline trained as an Accountant with Bristol and Weston Health Authority qualifying (ACCA) in June 1986. She then joined Bristol Airport PLC as Company Accountant. Caroline is married and currently lives in Bristol.



Retirement

Len Knowles retired on the 8th March 1989 after 35 years service most of which had been spent in the Heat Treatment Department. The picture shows John Millington, Processing Manager presenting Len with a canteen of cutlery purchased by his friends and colleagues.

Twenty Five Year Awards

Pictured above with Managing Director, Jim Lightfoot, are seven of the eight employees who received awards for 25 years service at a presentation in the Hayden Court Hotel at the end of last year.

The number of employees reaching 25 years service in 1988 was unusually small and reflected a very low level of recruitment in 1963.

Left to right are Dave Stafford, Neville Corfield, Bob Fluck, Brian Farley, Jim Lightfoot, Simon Goodburn, Peter Geuley and Mike Munden. Harry Parry from Experimental also received his award at the same time.

