

DOWTY ROTOL NEWSLETTER

Issue 10
May 1988



Jim Lightfoot and Bob McKinlay with the plaque to commemorate the new extension

No. 2 Shop Extension

On March 1st the new 17,500 square foot extension to No. 2 Shop was officially opened by Robert McKinlay who is the Deputy Managing Director of British Aerospace's Civil Aircraft Division — Airbus.

The opening ceremony was attended by the Mayor and Mayoress of both Cheltenham and Tewkesbury, representa-

tives of our customers and the press. After the opening address and unveiling of a set of A320 landing gear the guests were invited to examine the facilities in No. 2 Shop.

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Message from the Managing Director

The 1987/88 financial year is now over and we have managed to exceed our sales target. My congratulations and thanks go to employees for their efforts in making this achievement possible. Full details of our performance last year will be published when the results are available.

Particularly pleasing is the rise in our order book

which has crept past £200 million, an all time high. This reflects the reputation that we have built up over the years with our customers. This will be put to the test this year as we bid for orders on the Airbus A330/A340 and the European Fighter.

We face very strong competition but I am sure that through our combined efforts we can succeed.

Current Performance

Sales Turnover

Detailed below is the regular update on our Sales turnover.

Month	Target	Achieved
January 1988	£ 9,924,000	£ 9,958,000
February 1988	£10,195,000	£10,396,000
March 1988	£10,737,000	£13,711,000
3 months total	£30,856,000	£34,065,000
12 months total	£118,416,000	£118,900,000

The 12 months total for the 1987/88 financial year, ending in March 1988, shows that the sales we achieved were slightly above our target. Despite being £2½ million behind our target at the end of February we managed to recover the position by an excellent performance in March. The Company is intending to hold briefings for all employees about our financial results last year and our plans for the future.

Order Book

Month	Orders Received	Total Outstanding
January 1988	£ 9,707,000	£187,018,000
February 1988	£ 9,018,000	£185,640,000
March 1988	£29,459,000	£201,388,000

Major Orders

The major orders received in the period January to March 1988 were as follows:

Project	Equipment	Value of Order
Mc Air AV8B	Hydraulics and Landing Gear	£6,122,700
Fokker 50	Propellers and Landing Gear	£6,078,500
Saab SF340	Propellers	£3,003,200
BAe 146	Landing Gear and Flaps	£1,148,100
Panavia Tornado	Hydraulics and Landing Gear	£1,042,400
Saab JAS39	Auxiliary Drive Equipment	£ 838,000
BAe Hawk	Hydraulics	£ 677,300
Piaggio P180	Landing Gear	£ 604,200

One of the orders recently received is for 100 sets of composite bladed propellers for the SF340 (pictured below). This brings the total orders received to 500 sets. To date approximately 300 sets have been delivered and we are on programme with the balance. The latest order is the first stage of a follow-on contract which we hope will amount to 400 sets in total.



Saab SF340 with DR composite bladed propeller

Wheelchair Appeal Succeeds

We are pleased to report the success of the appeal, launched in the September Newsletter, to raise £1,600 to buy an electric wheelchair for local youngster

Richard McKinnon.

The appeal was organised by APEX Chairman Dennis Neale, and the collection was boosted by a sponsored bicycle ride to Bristol by Phil Brookes, and a £250 donation from the Company.

Richard, who suffers from Muscular Dystrophy was presented with the electric wheelchair by Dennis and Phil in the Main Canteen on 3rd February 1988. The wheelchair will give him the freedom to get around and he quickly learnt how to use the controls.

Thanks, from Richard and his parents, go to all those who contributed to this appeal.

The picture shows Richard with Dennis Neale (left) and Phil Brookes (right) and other employees who assisted in the appeal.

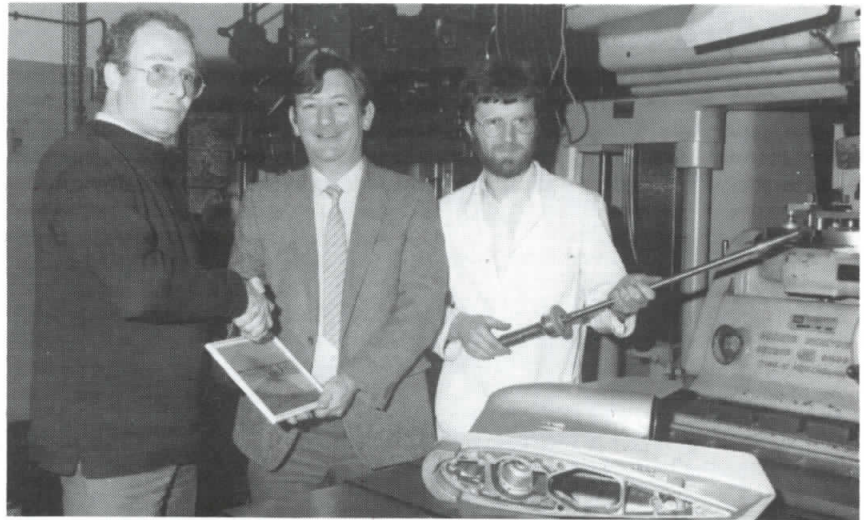


Rotol to the Rescue

We recently answered a call for assistance from the Severn Area Rescue Association. The association runs a rescue service from Gloucester to Avonmouth. After years of use the engine of a 1½ ton rescue boat was badly in need of repair.

The Rescue Association is a self funding organisation and often has to ask for assistance from local employers. We were pleased to be able to help and a damaged gear box and drive shaft were delivered to the Toolroom. The bore of the gearbox had been badly damaged by worn metal from a bevel gear. Stuart Edgeworth used a jig borer to bore oversize and a sleeve was then put in and bored back to size.

The reconditioned gearbox and shaft were handed back to Robin Colkutt of the



Rescue Association at a presentation in the Toolroom. The picture shows Toolroom Manager, Gordon Pearce, (centre) receiv-

ing a picture of the rescue service's boats from Robin. Stuart Edgeworth (right) is holding the reconditioned shaft.

Update on Youth Training



In the November 1986 Newsletter we welcomed to Dowty Rotol eight trainees who had started a two year Youth Training Scheme in office skills approved by the Manpower Services Commission. Of the eight original trainees three are still undergoing training, three have found employment within the Dowty group, and two have obtained jobs elsewhere assisted by the training they received at Dowty Rotol. As part of their schedule the trainees attend a one week Adjustment to Industry residential course at Cowley Manor run by the Gloucester Association of Boys Clubs.

Despite the occasional problem the scheme has generally been a success and a further two trainees started in September last year. Sara Livingstone and Denise Adams are pictured left with Site Training Executive, Roger Goldby and his Secretary, Betty Griffiths.

Roger has asked us to thank those

employees who have assisted in the training of these young people.

Open Day

Dowty Rotol is planning to hold an Open Day on Saturday 24th September to give employees an opportunity to show their family and friends what we do here. As well as a factory tour it is intended to stage a variety of competitions, displays and activities on the sports field.

Company Secretary, Ian Bailey-Scudamore, is co-ordinating the organisation and he has already set up a committee, representing a cross section of employees, to assist in making sure everything runs smoothly. Ian will be pleased to hear from any employees who have suggestions to make about possible activities for the Open Day. Full details will be given to employees nearer the date.

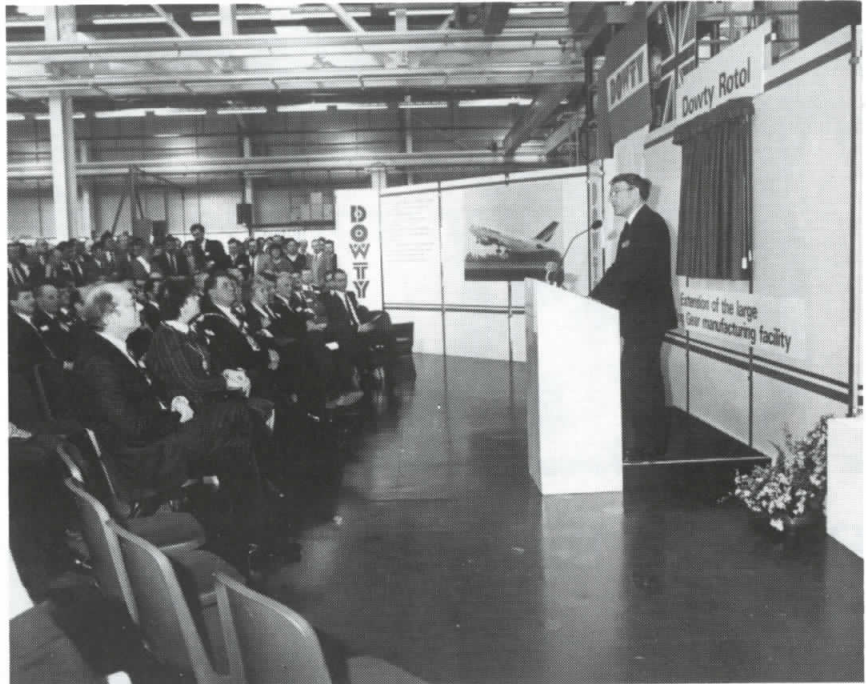
No. 2 Shop Extension

No. 2 Shop was purpose built to handle the manufacture of the main landing gear bogie, drag stay and folding side strut for the Airbus Industrie A310. It was opened in the Autumn of 1980 and was designed and sited to accommodate expansion to deal with the production of future generations of large landing gear. The shop became fully operational in mid 1981 and has to date produced 142 aircraft sets of A310 landing gear in collaboration with Messier — Hispano — Bugatti.

In 1984 we won a contract to supply landing gear for the A320. Design leadership on this programme presented a number of major problems such as the size of the A320 main fitting. This is the largest single piece ultra-high tensile steel landing gear component ever produced. In addition the programme requires that we deliver eight aircraft sets a month by 1990 and this is only possible by significantly reducing our lead times.

To meet these challenges the extension to No. 2 shop was built at a cost of £1½ million. A further £5½ million has been invested in new plant including special purpose machine tools, inspection equipment, and assembly and processing facilities. The object was to provide the best large landing gear facility in Europe.

Building work on the extension was completed on time in November last year. The first new machine tool, a Droop and



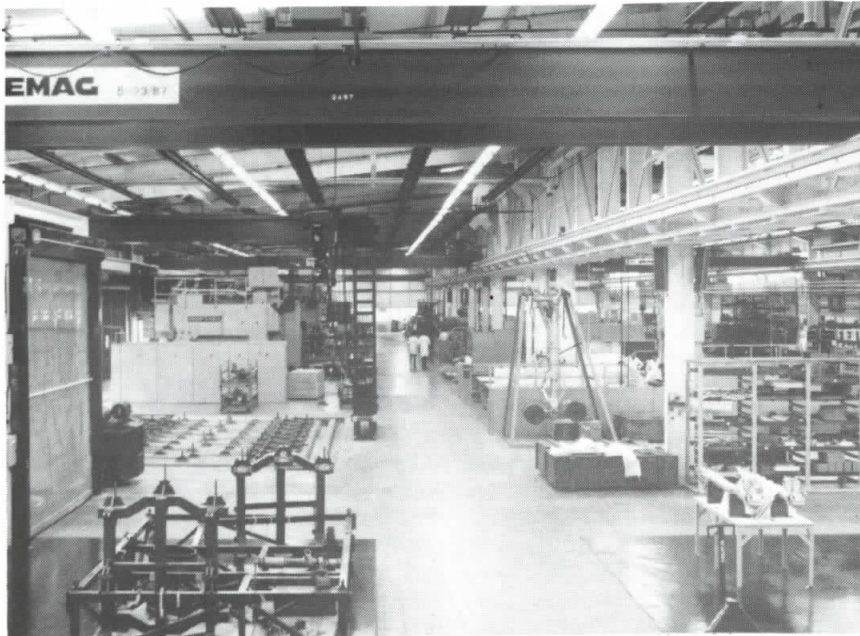
Bob McKinlay speaking to the invited guests and employees before the unveiling ceremony.

Rein seven axis machining centre, was installed and in operation before the official opening. A Droop and Rein six

spindle gantry milling machine has since been delivered and a Giddings & Lewis Fraser G60 RTZ machining centre is due for delivery shortly.

Through this investment in modern technology we have a dedicated manufacturing unit housing machining, polishing, inspection, assembly and despatch facilities under one roof.

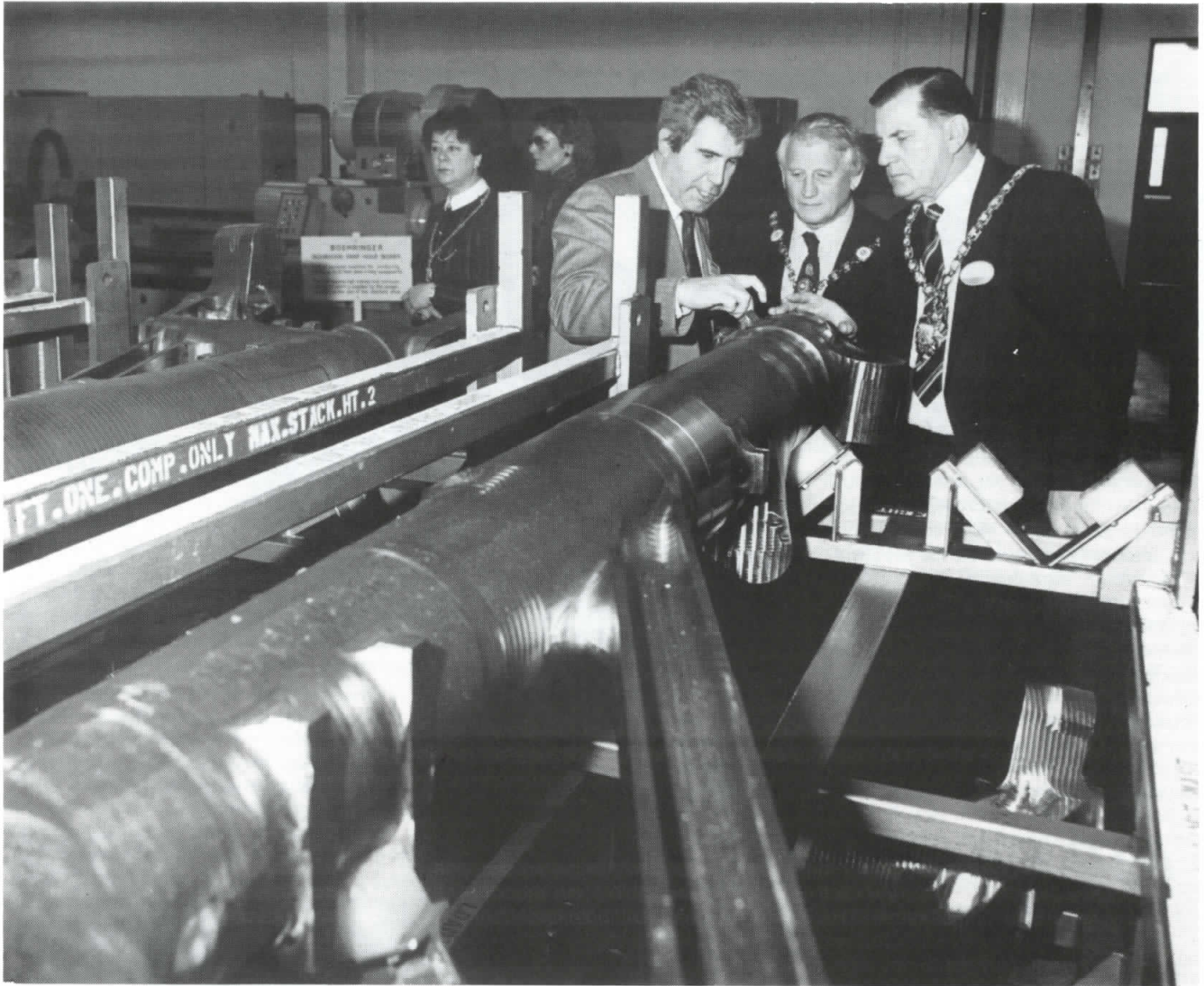
Military landing gear programmes currently make up the largest share of our sales but this will reduce significantly because of reduced expenditure on military aircraft. We need to compensate for this loss by civil aircraft programmes such as the A320. Our current production programme for A320 is three aircraft sets per month and deliveries are on schedule to British Aerospace, Filton. The extended No. 2 Shop, and the steps we have taken to reduce lead times, give us the capacity to build up to the required eight sets per month by 1990.



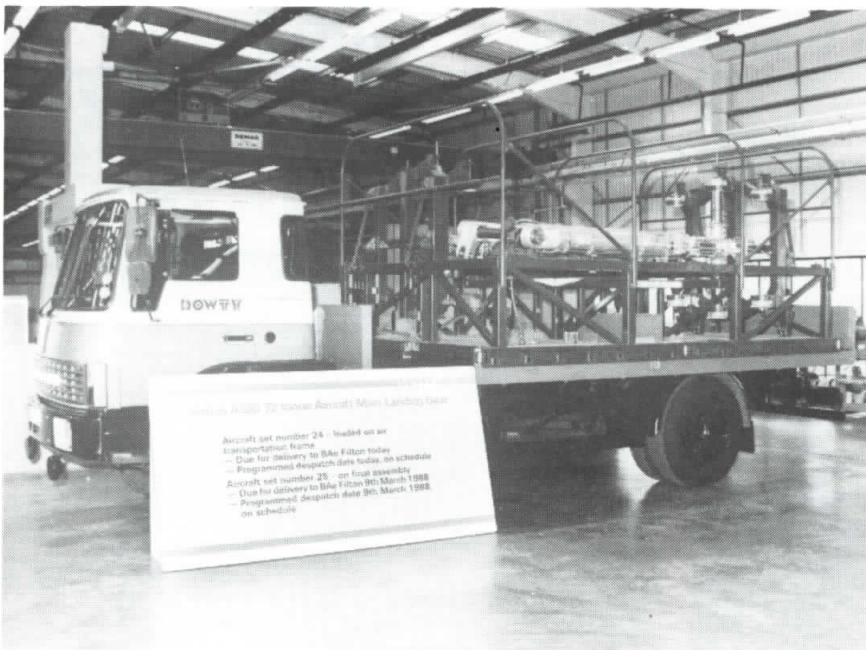
Inside the recently extended large landing gear manufacturing facility, 51,000 sq. ft. in area.

Dowty Horticultural Show

Employees are advised that this year's show will be held in the Cheltenham Town hall on 23rd July 1988. Schedules are now available from David Soley (extension 1239).



Gary Wakefield (left) discussing A320 main fitting with the Mayors of Cheltenham (right) and Tewkesbury (centre).



A320 aircraft set 24 shown in its air transportation frame awaiting delivery to BAe Filton.



Landing gear set 22 for the A320 aircraft, the first of the 72 tonne landing gear shown as it is lifted from its assembly frame.

Computer Demonstration Room Opens

Our Systems Department has set up a computer demonstration room to provide an information and advisory service. Within Dowty Rotol we have an increasing number of computer systems in use, covering a wide range of applications and running on a variety of machines ranging from large mainframes to personal computers.

The idea behind the demonstration room is to show to potential users within the company the computerised information which we already have available and how this can be transferred between the various systems. This will help to make better use of our existing facilities and avoid any unnecessary duplication. Training and advice on a variety of personal computer programs can also be provided and the demonstration room will be used to hold presentations from potential suppliers.

The room contains a variety of the different types of terminals used in the company and a personal computer. These are linked to a network cable which runs through our major departments. This network gives a single terminal, or personal computer, the potential to connect to the major systems we use. Information can also be extracted and transferred to a personal computer. Strict



safeguards are obviously enforced to protect any confidential or personal data.

Further information about this service can be obtained by contacting Adrian Armstrong on 1346 or Martin Thomas on 1480. They can also answer any general

enquiries regarding computer systems.

The picture shows Adrian and Martin making the final preparations in the demonstration room which is situated in the Systems Department on the ground floor of the Administration Block.

ATP Due For Delivery

This month British Aerospace is due to deliver the first Advanced Turboprop (ATP), Britain's latest airliner, to its first customer — British Midland Airways.

Equipped with Dowty Rotol main and nose landing gears together with associated hydraulics, the ATP's UK CAA type certificate is validated to the latest European Joint Airworthiness Requirement standards. This BAe believes, will give both BAe and their customers real advantages.

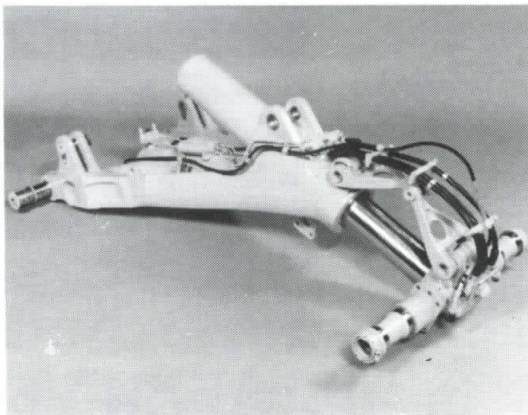
Current orders for the airliner include 20 firm and four options from four airlines. Dowty Rotol has initially received orders for 40 landing gear sets with nine sets

delivered to date and further orders anticipated in the near future.

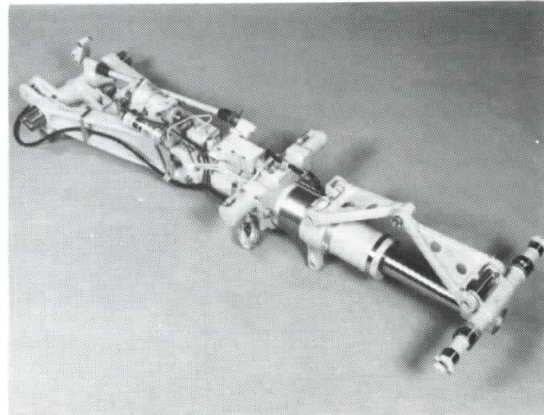
The ATP gears use the latest technology light alloy for maximum protection from stress corrosion and to minimise equipment weight. Design features both in the unit

structures and ancillary fittings have been incorporated to assist with ease of maintenance and low cost of ownership.

The picture above shows the ATP in British Midland colours and Dowty Rotol's nose and main gear are shown below.



ATP Main landing gear



ATP nose landing gear

Focus on Plating Shop

In some people's minds a plating shop conjures up the idea of an unwholesome place that should be avoided and situated as far from civilisation as possible. Although this may still be the case at some companies Dowty Rotol can boast a plating shop where, in recent years, steps have been taken to introduce modern plating technology.

Coupled with this has been a significant improvement in the skills of the workforce which has been necessary to cope with the demands of plating ultra-high tensile steels to exacting design requirements. An effort has also been made to make the shop a cleaner and safer place in which to work.

The Plating Shop is where we carry out the surface finishing operations on the components we make. In simple terms this involves changing the surface of the metal to give it a different property. This either protects the surface or changes it into a harder, smoother, or more slippery surface without altering the other properties. This is achieved by coating the component with a thin layer of cadmium, chrome, bronze or copper by immersing the component in a tank filled with chemicals and passing an electric current through the tank.

At first sight the Plating Shop appears to be full of complicated lines of tanks containing a witches brew mixture of clear, coloured, bubbling and fuming liquids. In fact each line is a carefully laid out mixture of tanks containing plating chemicals and tanks used for rinsing and cleaning. The majority of tanks are for rinsing and cleaning because the most important aspect of all metal finishing is to produce a superclean surface.

An important part of the cleaning process is grit blasting. The surface of the component is blasted with a controlled jet of aluminium oxide grit in special cabinets. One of these cabinets has recently been modified to provide an automatic motorised operation of the blasting apparatus.

One of the largest facilities in the shop is chromium plating. We currently have 12 chromium tanks of various sizes with the largest capable of plating the major undercarriage components now in production. There are future plans to increase our chromium plating capacity and a new chromium cleaning facility will be installed in the next few months.

Another important facility is cadmium plating. This is used on the majority of our steel parts to provide protection against atmospheric corrosion. During the past 6 months a new set of cadmium tanks and electrical apparatus has been installed in one continuous line.

Coffee Table Idea Triumphs

The Dowty Group Suggestion of The Year Award has been won by Mike Conboy from our Plating Shop. The award was made at a meeting on 15th March when Mike's suggestion was examined along with the best suggestions from other Group Companies.

Mike's idea was to increase the capacity of the Marr oven in the Plating Shop. He noticed that bottlenecks were occurring because the two beds in the oven were fixed together and could not be moved independently. He suggested that the two beds be increased to three and the construction changed so that each bed could be removed without disturbing the other — similar to a stack of coffee tables. The suggestion has been implemented and will be particularly useful in providing increased oven capacity as the A320 programme builds up.

It was decided to select Mike's idea to represent Dowty Rotol following a competition in which we invited employees to put forward their accepted suggestions for consideration. We also submitted for the Group award a suggestion from David Thompson who works in No. 1 Assembly, which was featured in the last newsletter. Thanks also go to Mike Sysum, Colin Amos and Brian Humphries for their participation in the competition.



A large number of components used in Aerospace are made from aluminium alloys. The most common method of providing protection from corrosion for these alloys is called anodising. Aluminium, when exposed to air, tends to form a barrier of aluminium oxide which provides some protection against corrosion.

Anodising uses this principle to great advantage by producing a thicker and more controlled film of aluminium oxide on the alloy. The most widely used method of achieving this in Aerospace is chromic acid anodising because it produces a thinner coating and is less likely to cause metal fatigue problems.

A vital operation carried out in the Plating Shop is de-brittlement. All steels absorb hydrogen during the plating and cleaning operations. If this is not removed the steel becomes brittle and this makes it prone to cracking. To remove all the hydrogen components are placed, after plating, in a low temperature oven and baked, usually at 190°C. This process is essential but very time consuming and is one of the main reasons for delays which occur in the plating shop.

In this article it has only been possible to focus briefly on some of the main operations carried out in the Plating Shop. It should be remembered that over 95% of the parts we make pass through the shop usually towards the end of the manufacturing process. The shop has been described, for this reason, as being at "the narrow end of a funnel of constant activity".

Mike was awarded £500 for his suggestion. He also received a further £750 for winning the Group award and this was made up to £1,000 by Dowty Rotol. The picture shows Mike receiving his cheques, totalling £1,500, from Production Director, Graham Lockyer, at a presentation held in the Plating Shop.



Retirements



Frank Vallender from the Inspection Department retired on 29th January after 27 years service. Frank asked that the proceeds of his retirement collection be donated to the Bristol Royal Infirmary where his wife recently underwent major surgery. Generous workmates, however, decided that they could not let Frank go empty handed and presented him with several gifts including an engraved tankard.

The picture shows Frank and his wife holding a cheque for £200 for the Cardiac Surgical Research Fund.

Don Staff from Design Support decided to call it a day after 40 years service with Dowty Rotol and retired early on 1st April. The picture shows Don being presented with a memento for his service by Les Barker, Executive Director — Engineering.

Our best wishes go to Don and Frank and all other employees who have retired recently.



Appointments



Craig Walsh
Finance Manager



John Lomer
Management Accountant



Nigel Cowie
Assistant Company Secretary