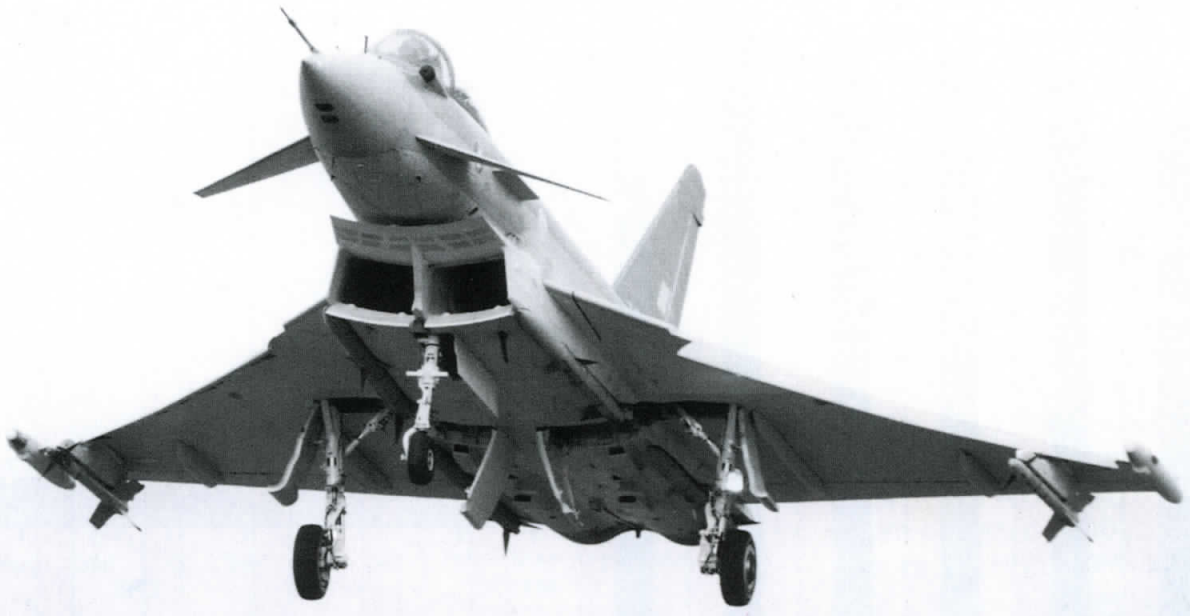
Landing Gear Link

DOWTY

The House Magazine of
Dowty Aerospace Landing Gear Ltd., Gloucester
Issue 8, August 1994

Eurofighter Maiden Flight



The first two prototypes of EUROFIGHTER 2000 have successfully made their public debuts. The first, DA01, flew on 27th March from DASA's flight test centre at Manching in Germany and the second, DA02, on 6th April from BAe's facility at Warton.

This is a significant milestone in a programme that has not been without its delays, controversy and uncertainty.

The new fighter is designed to be able to beat any of the world's most modern warplanes, with the exception of the F-22. However, the F-22 is claimed to be twice the price.

The development programme will continue with each aircraft completing up to an estimated 4,500 hours of test flying. The third prototype, DA03, is excepted to make its first flight later this year from Alenia in Italy. All seven prototypes will be flown by 1995. Here at Gloucester, the landing gear test programme is continuing.

Orders for the aircraft are expected to be made in 1995. This will focus the debate on the workshare of production between the partner countries, as to whether the share of production will be allocated in line with aircraft ordered. Germany has significantly reduced its requirement while the RAF continues to estimate a need for 250 aircraft. The provisional requirements for the other partner countries include: Germany 140, Italy 130 and Spain 87.

EUROFIGHTER is expected to enter production in 1996 and enter into service in 2000.

Also featured in this copy of *LINK*:-

Half Year Results Summary

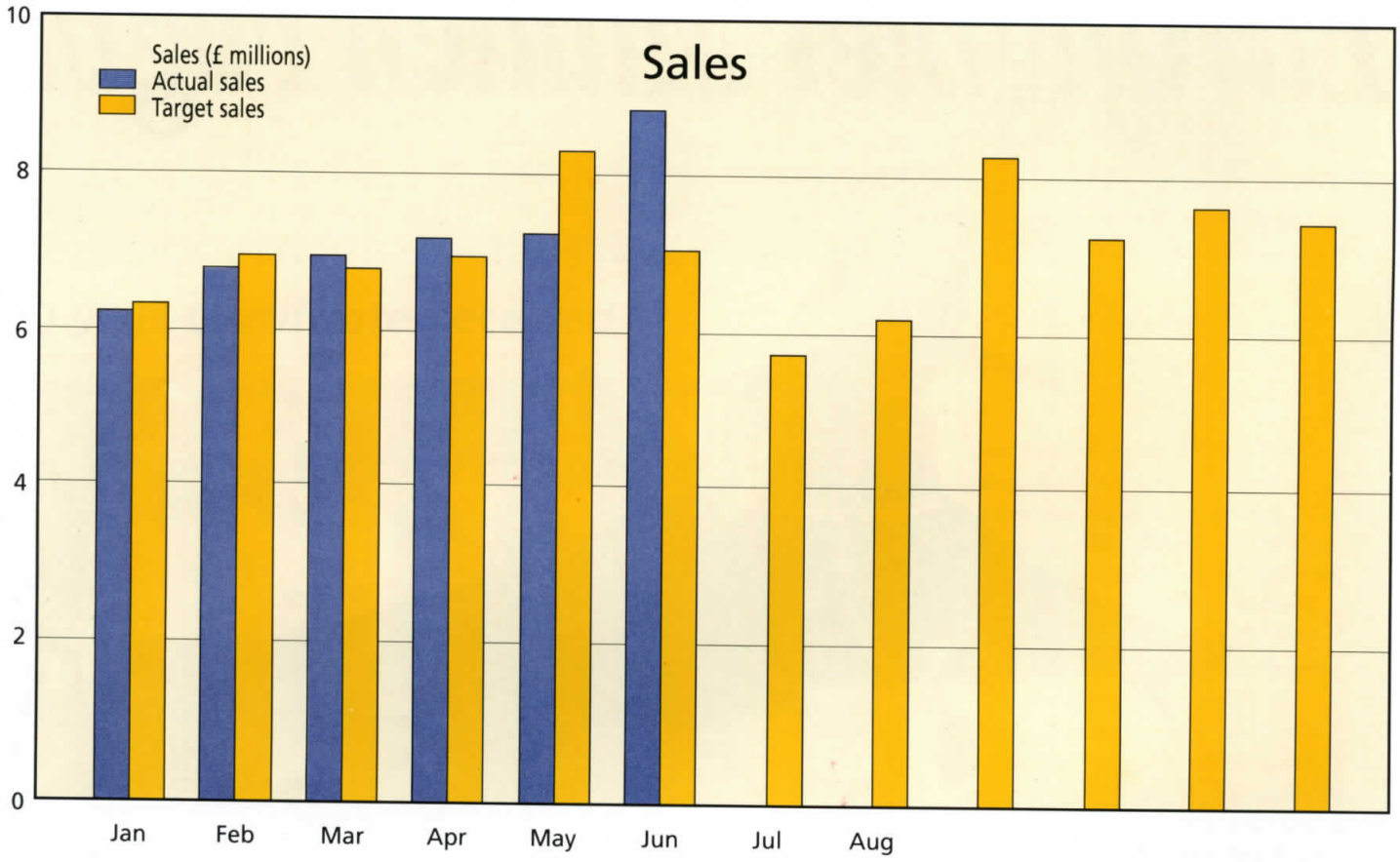
At the half-way stage of this financial year we are meeting our key financial targets.

Sales in the period January to June were £43,476,000, £848,00 above target.

Profit was £331,000 above target and our cash performance was good as a result of our efforts to reduce inventory and a below forecast level of capital expenditure.

Our order book at the end of June stood at £178.1 million. In early June we received a follow on order for 34 sets of A330/340 main gears valued at $38 million. This extends our order book on this programme through to March 1997.

The chart below shows our actual sales against target.



Schools Link

Congratulations to three 'A' Level Students at Churchdown School who have been selected to represent the U.K. in the European Young Scientist Competition. Their success was the result of an investigation they carried out into 'hydrogen embrittlement' on ultra high tensile steels used on our landing gear.

The three are pictured here with Professor Heinz Wolff who judged the U.K. entrants.

On the subject of schools, we have recently visited six schools in the area for the purpose of establishing links for work

Teams Trained to Tackle Complaints

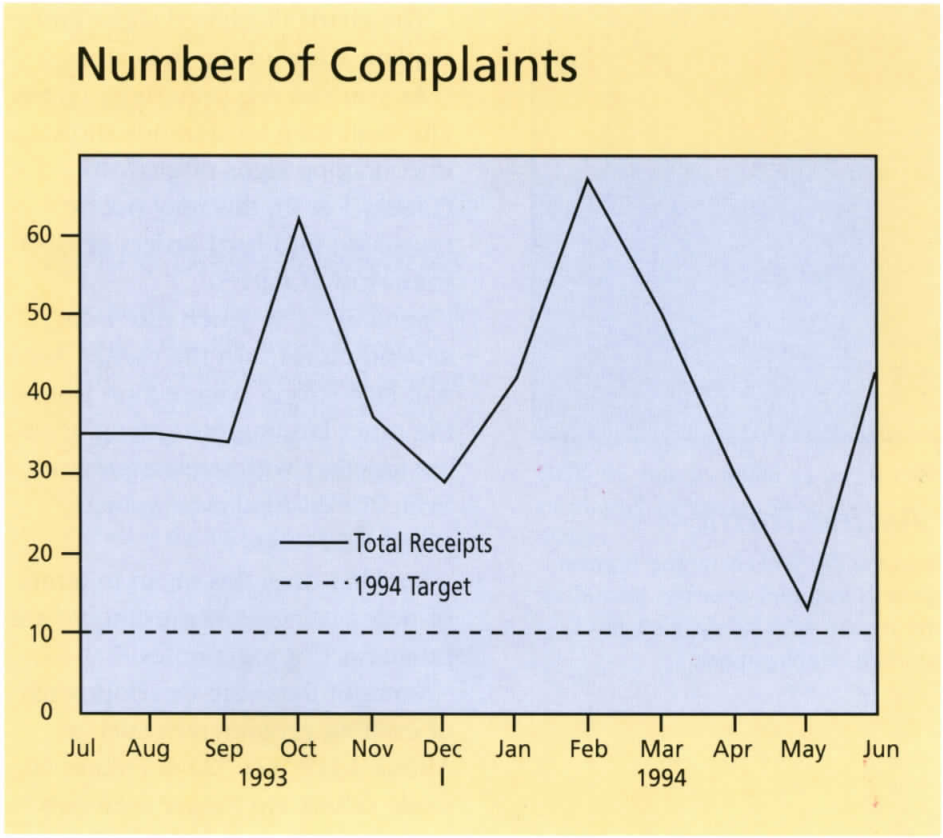
Two new teams have undergone training in team building and problem solving techniques to enable them to investigate and deal with customer complaints.

In April, a team of three fitters and an inspector from Large Landing Gear Assembly spent a morning learning new techniques and skills. To their credit, Large Landing Gear Assembly are currently lacking any complaints to investigate. But team members, Bob Daniels, Andy Kimpton, Adrian Gibbs and Alan Godwin are planning to put their training to good use by looking at quality problems and tooling issues in their area.

In May, a team was launched to look at problems arising from outside purchases. Known as the PICC Team (Purchased Items Customer Care Team), Mark Stephenson, John Wedley and Mel Burford have already identified a number of areas for immediate investigation or action, including:

- identifying information sources for customer complaints on purchased items e.g. Warranty database, Quality database.
- making suppliers aware of the team and its aim.
- using causal analysis to target particular problems or suppliers where appropriate.
- reviewing how complaints are answered both internally and externally.
- liaising with Planning on the Supplier Rating System.

The aim of the customer care drive is to reduce the number of complaints received companywide from customers to 10 per month by the end of 1994. The chart shows our progress over the last 12 months.



experience and other activities. The schools are Cheltenham Bournside, Chosen Hill, Churchdown, Saintbridge, Sir Thomas Rich's and Newent.

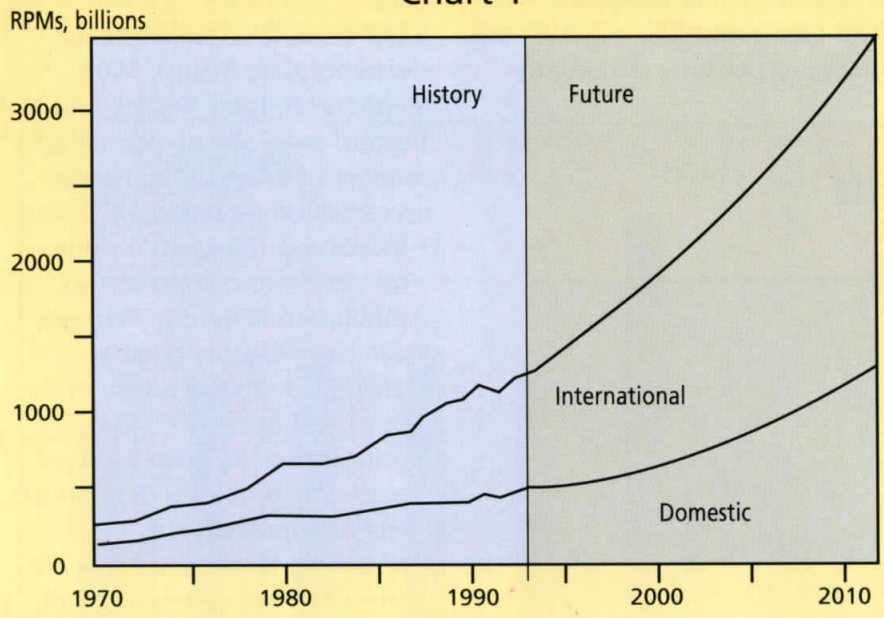
Whilst all schools are looking for local employers to offer work experience, we have selected to assist these six schools based on location and previous experience of working with these schools.

Finally, we are pleased to report that we have recruited 5 young people to join our Apprenticeship Scheme starting this August.

Business Opportunities

New Business prospects have been thin on the ground in recent times, with cut backs and delays in our main programmes. However, this is against a backdrop of long term trends which indicate a general upward movement in air traffic.

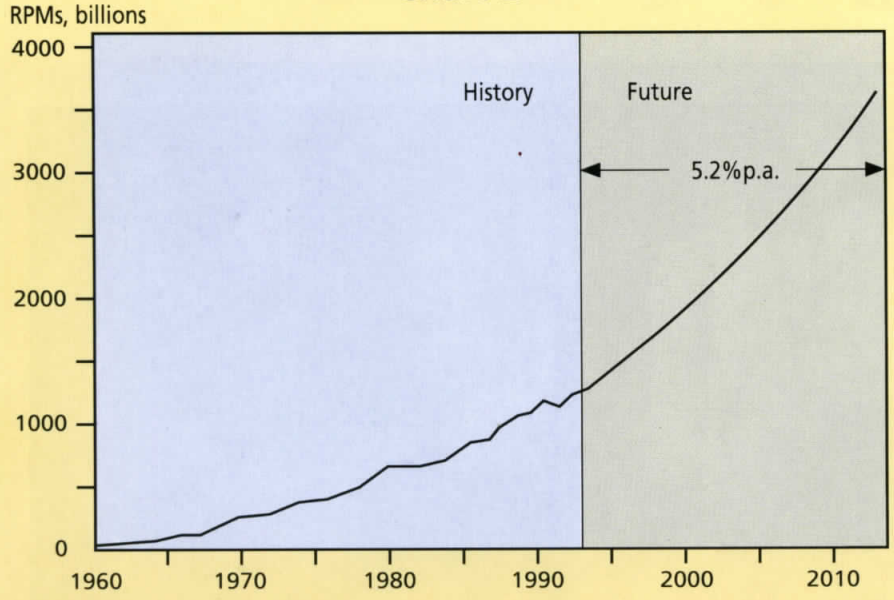
Chart 1



International Vs. Domestic Airline Traffic

- International travel will grow faster than worldwide domestic travel. This is due to rising incomes, growing international trade and an increasing leisure market.
- Asia-Pacific will show the highest growth in travel over the period as the region is in its early stage of tourism development.

Chart 2



World Air Travel

- World air traffic is forecast to grow by 5.2%p.a. over the next 20 years. At this rate, as the chart shows, passenger traffic will almost triple by 2013.
- You will notice the dip in 1991 when the Gulf War and recession combined to create the first time that air traffic was negative (-4%) in a year.

Obviously, we can only view these figures as "indicators", but the industry in general does use them as a "barometer" for planning future business strategy.

The charts illustrated show and explain a few of the indicators.

As you can see from these charts, although long term trends show encouraging signs of growth (Charts 1 & 2), this may not be translated into hard orders or cash tomorrow (Chart 3).

Similarly, if & when the order situation does turn the corner, we will face strong competition from the other landing gear manufacturers together with intense pressure from our customers to reduce prices and costs.

So what does this mean in terms of new business? At present we are pursuing 17 programmes.

Some of these are developments of existing programmes such as Airbus A319, 321 322 & Fokker 60, while others are longer term new projects such as the Airbus/Boeing new large high capacity aircraft and SCT supersonic aircraft. There is also the regional turbo prop market, with a host of constructors all trying to decide who to team with. The result will probably be one or two regional type European aircraft, such as CASA 3000/Jetstream 71 and one from Fokker/DASA/Alenia.

On the Military front we are still pursuing build to-print type work for the UK attack helicopter programme and for the landing gear on the RAF's C-130J requirement. Both of these programmes are offset work where a percentage of the aircraft's manufacture must be placed in the UK.

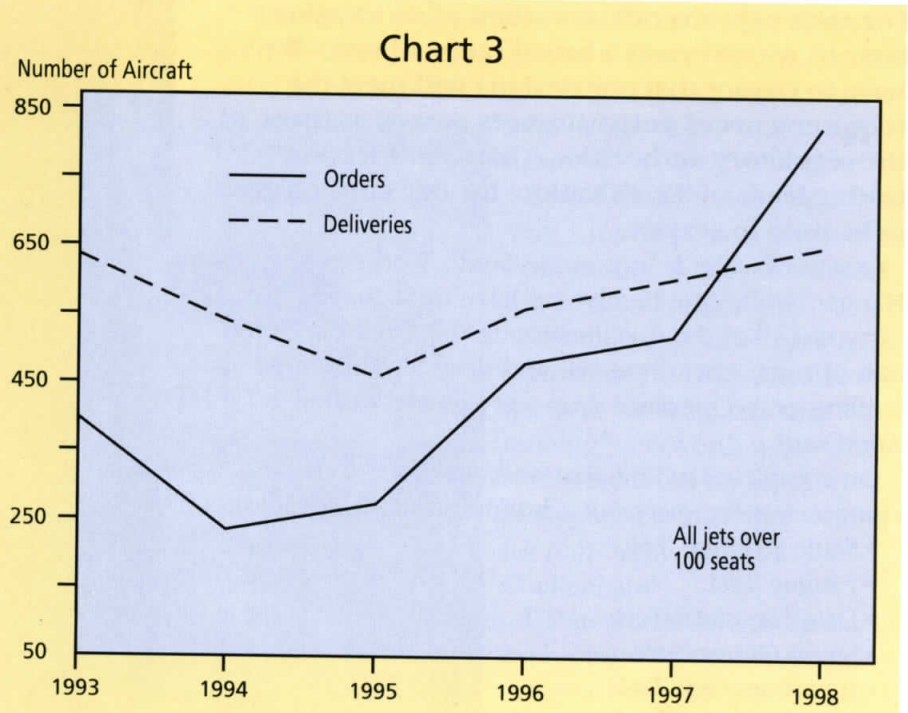
Note: RPMs - Revenue Passenger Miles are the number of passengers, times the number of miles they fly.

In competition with the C-130J is the new European military transport programme the Euroflag FLA. Again, we are actively pursuing this which would be a new landing gear programme, and include full design, development & manufacture.

As these programmes progress they will be featured in future editions of ***LINK***.

Airline Orders/Deliveries

- However, as you can see from this chart, a steadily growing rate of traffic growth, indicated in previous charts, will not translate into any good news in the short term.
- Aircraft deliveries will not start growing again until 1996/97. This is because the industry is still in the process of shaking out the over capacity due to the over-ordering of aircraft by the airlines in the late 1980's.
- As a result, airlines are not expected to start re-ordering aircraft in any quantity until 1996 onwards.



Lockheed C-130J

Testing, Testing, One, Two, Three

For each new aircraft or variant of an existing aircraft we carry out a broad range of tests. We have to ensure that our designs will meet the requirements of our customers as well as those of the regulatory authorities. This 'Qualification' testing leads to 'Certification' for our landing gear to be used in service.

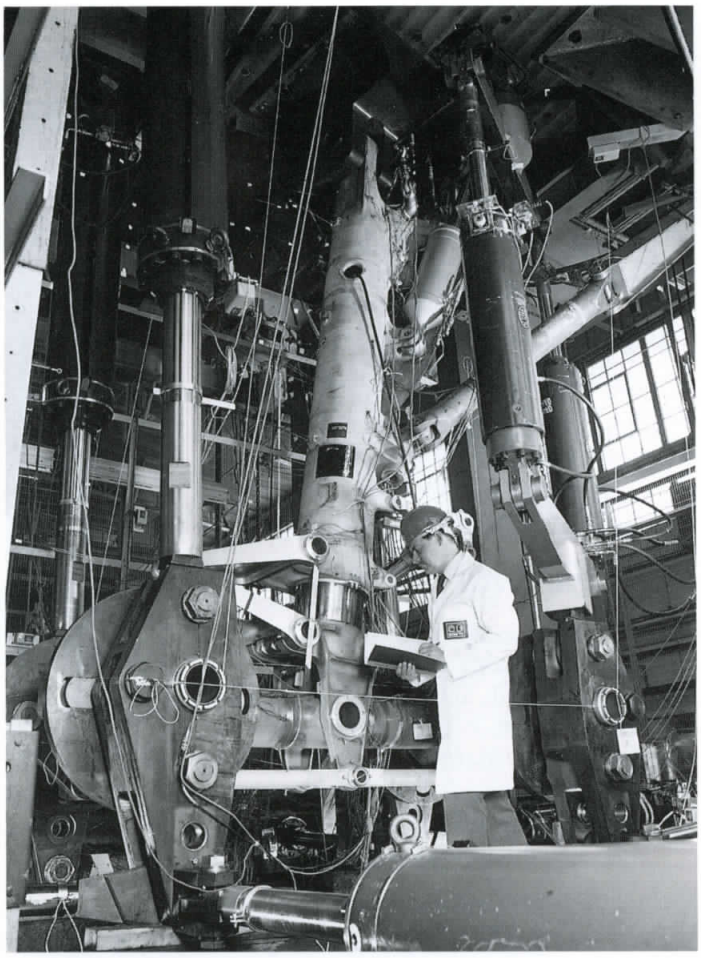
Our test facility is located on South Works in No 6 Hangar. Within the hangar we have the capability to carry out all of the qualification testing with the exception of some environmental and drop tests for large landing gear. Our large drop test rigs are located at Arle Court.

On complete landing gear and, if required, detail components we carry out a number of tests including:

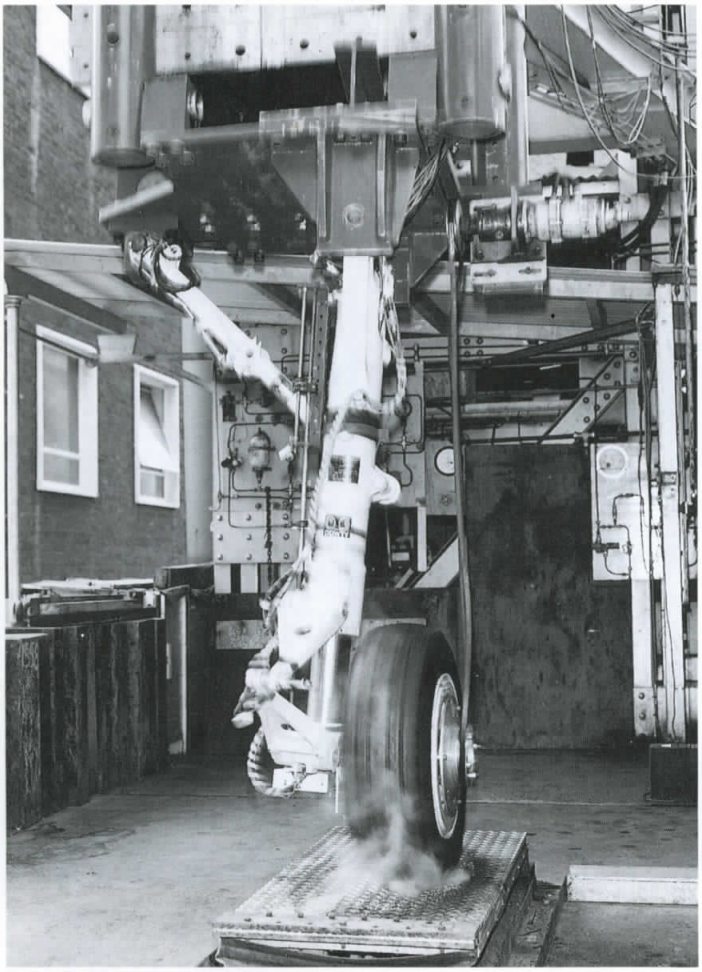
- Static Strength Test.
- Fatigue Test.
- Drop Test Seal Tests.
- Strain Gauge Surveys.
- Environmental Tests.

To enable us to do these tests we have a highly skilled team of 18 engineers and fitters within the Test Department.

The team works closely with the other Engineering Department teams, the Customer Account Managers and our Customers. Activities and responsibilities are shared amongst the team, with almost everything being done 'in house'.



Airbus A340 Main landing gear undergoing fatigue test.



Eurofighter 2000 Main landing gear on droptest.

In addition to the qualification tests the Test Department also assists other areas of the company with calibration, electrical and electronics support, test rig design and production acceptance testing.

Some of the testing activities can expose the company to extremely high financial risk. A prime example is fatigue strength testing.

We start the fatigue test before an aircraft enters into service. It represents the kind of loads experienced during towing, taxiing, take off, retraction, extension and landing and braking. A safety factor (usually 5 or 6) is used. So to represent one aircraft landing we go through the entire loading spectrum five or six times.

There is a limit to the speed at which the tests can be run and even though we run them 24 hours a day, the A330/340 'F' standard Main Landing Gear fatigue test is not due to complete until April 1995. Although we keep ahead of the aircraft in service in terms of flights, the fatigue test could identify a serious problem with a component. We may then need to retrofit components on aircraft in service - an extremely expensive business. Throughout the test more and more aircraft are being delivered to customers increasing the number of retrofits that we might need to do. Therefore the longer the test takes, the higher the financial risk to the company. Now you know why the Test Department always wants everything delivered yesterday!

Congratulations Marathon Man!

For many of us, running to catch a bus is enough to finish us off. As for the thought of running 26 miles..... but that is just what David Symes, Machinist, did when he took part in this year's London Marathon.

One of 36,000 runners, David finished the course in 3 hours 16 minutes. He regularly trains with the Cheltenham Harriers, many of who had chosen to run in the marathon. David decided to run for charity and managed to raise £300 through sponsorship for Gloucestershire's Cloud 9 Fund.

Cloud 9 aim to send seriously ill and physically handicapped children on the holiday of a lifetime to Disneyland in California or Florida.

David described his race to ***Link***. "I took it steady at the start and took on lots of water - Dehydration can cripple you later in the race, causing severe cramp and dizziness", he explained.

"I soon got into an even stride and stuck to a 7½ minute mile pace for most of the race. I started to feel tired in my legs at 20 miles - and then I didn't dare stop just in case I couldn't start again!"

David found the crowd to be very supportive and enjoyed the opportunity to take in some of the famous London sites. "Running past Buckingham Palace on the last 100 yards of the race made all the hard training well worth while", he said. So did the bottle of champagne which was waiting for him on his return to Cheltenham!

David would like to thank everyone who sponsored him this year. He now plans to try to improve his course time in 1995's London Marathon.

Good Luck, David!

An exhausted but triumphant David (Number 858) crosses the finishing line.

Local RAF Win Rugby

At the end of April, the Dowty Rugby Football Club met the R.A.F. Innsworth R.F.C. for a friendly match on our sports fields to help foster links between the two clubs.

In the first half, the two teams were relatively well matched. However, in the second half the visitors' superior fitness enabled them to forge ahead to secure a decisive 47-15 victory.

A pleasant evening was spent in the clubhouse establishing new friendships. Our team managed to redeem its pride by winning most of the evening's beer games.

Dowty RFC will have the opportunity for revenge in early September when a return match is planned.

The picture shows Tim John, Cell Leader, in action.

Steve Strikes Out For Victory

Back in April, 7 teams representing all the local Dowty companies met at Puckrup Hall Golf Club to battle in the inter-company Horton Cup Open Golf Challenge.

Captained by Dennis Barnard, Senior Engineer, we achieved a respectable 4th with a score of 207 points. However, Steve Prosser, Production Planner, shone in the individual prizes.

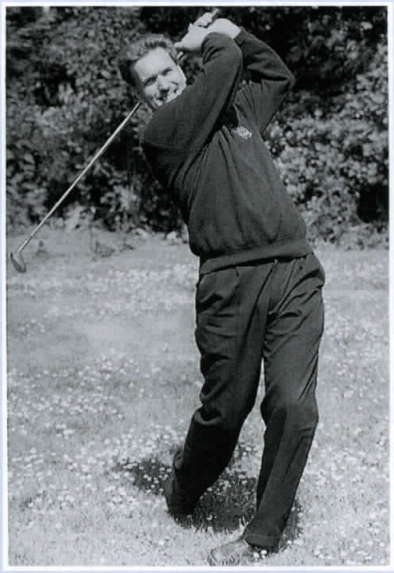
Steve played a round of 35 points when receiving a stroke allowance of only 2! This converted to a gross score of only 71. This was truly exceptional given the atrocious weather. With torrential rain and a bitterly cold wind, most professional tournaments would have been cancelled.

Steve was eligible for at least 4 of the individual prizes but, as the rules only allow one prize per competitor, he opted for the 'longest drive'prize of a complimentary round of golf, donated by Puckrup Hall.

Dave Tallon, Fitter, also won an individual prize for the best individual score of 16 points on the back nine.

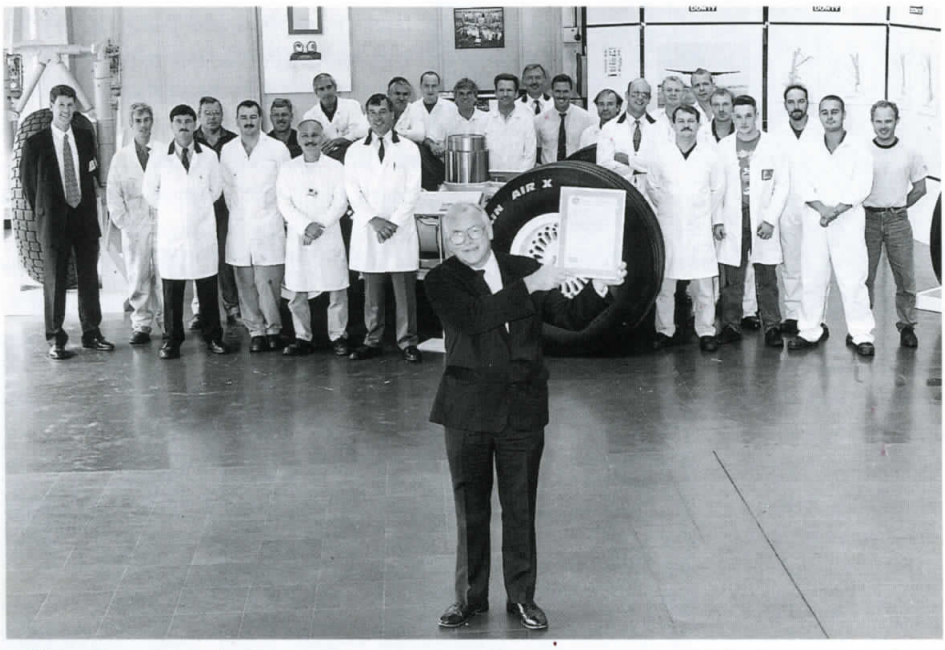
Steve's success continued recently in the Gloucester Golf Club Championship which was held on 12th June. Steve beat 35 other entrants to win his home club's championship by 2 shots over 36 holes.

Congratulations Steve!



Steve demonstrates his winning stroke

ISO 9001 Certificate Received



The photograph shows Peter Bennett and a group of employees with the Certificate presented to the Company by the British Standards Institution (BSI) who carried out the assessment to ISO 9001 in March this year.

This was the result of the efforts of all employees who made sure of success by working to the relevant procedures and demonstrating their knowledge of the requirements during the assessment.

It is not easy to meet ISO 9001 requirements - it depends on continued attention by everyone to what they are doing at all times - it was very pleasing to hear from the BSI team leader that they had not previously been to a comparable Company who had so few deficiencies.

In order to maintain our approval BSI will visit the Company twice every year, so it is absolutely essential that the good work that was put into winning the award is maintained at all times.

The first of their visits is due very soon on 23rd or 24th August. They will want to be sure that the Corrective action that we promised to take, after the March assessment, has been implemented and they will then Audit some areas of the Company.

Congratulations and thanks to all employees and in particular those who were actually involved in the assessment.

Editorial Team: *Peter Hall, Marketing & Sales, Ext. 1815, Rachel Norfolk, Human Resources, Ext. 1297, Doug Knott, Site Services, Ext. 1496*

Joint Venture Signed

The TI Group and SNECMA announced on the 27th July that a completion agreement has been signed enabling the joint venture between TI's Dowty aircraft landing gear business and that of Messier S.A., a subsidiary of the SNECMA Group of France, to be established.

Messier-Dowty International, a holding company owned 50 per cent. each by TI Group and SNECMA, will be responsible from now on for marketing the joint venture's landing gear capabilities to the world's aircraft manufacturers. TI and SNECMA will transfer their respective landing gear businesses and the joint venture will become fully operational from 1st January 1995 consistent with the commencement of the new financial year. Therefore, for the year to 31st December 1994, Dowty's landing gear profits will be exclusively for the account of TI Group, with Messier's landing gear profits exclusively for the account of SNECMA.

Sir Christopher Lewinton, Chairman of TI Group and M. Gérard Renon, Chairman of SNECMA commented:

"We are pleased that we have now agreed the Messier-Dowty merger. This will allow us immediately to provide marketing services and product support to the world's aircraft manufacturers and airlines.

We are confident that the Messier-\Dowty Joint Venture will be well positioned for growth as soon as the recovery in the airline industry is confirmed."