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MESSIER-DOWTY **Link**

The House Magazine of Messier-Dowty Limited

Issue 16, November 1996

Bumper Issue!

including:

Nimrod Success



Special Supplement – Farnborough '96 Review



**Rugby and
Football Teams
in action**

Stalag & Tech Block Site Development



FULL STORIES REVEALED INSIDE

New Landing Gear for Nimrod 2000

Messier-Dowty has been selected by BAE to supply the new landing gear system for Nimrod 2000. This follows the announcement in July that the BAe Nimrod 2000 had been selected as the Replacement Maritime Patrol Aircraft for the Royal Air Force.

The landing gear will be fitted to the 21 aircraft being rebuilt to Nimrod 2000 configuration from existing Nimrod airframes. As part of this major programme the entire inner wing and centre box structure is being replaced with newly designed sections to accommodate next-generation turbofan engines, additional fuel and new main and nose landing gear units. Additionally, the existing mechanical steering system will be replaced with an electronic equivalent with dual cockpit controls.

We will design, manufacture and integrate the complete landing gear system, which will be optimised to meet the specification required for the new aircraft. As the Nimrod 2000 is considered to be a new aircraft development by the MoD, they require full Integrated Logistic Support similar to that on EFA.

The latest computer-aided design technology will ensure that the new landing gear for Nimrod 2000 provides



an appropriately advanced system for what will be the most capable aircraft

of its type in service and with an RAF service life extending over 25 years.

EUROFIGHTER BOOST, TOO!

The military side of the business received a further boost during the Farnborough Air Show with the latest news on Eurofighter.

UK Defence Secretary, Michael Portillo, confirmed Britain's firm commitment to proceed with the Production and In-Service Support phases of the programme. Formal go-ahead of the 4 nation programme will follow when similar announcements are made by the partner governments which are expected by the end of this year. However, recent reports in the Press refer to Germany's hesitation to commit themselves due to budget constraints.

Domestically, we remain active in the development phase primarily with fatigue testing of the main landing gear. Part of this will be undertaken at a test facility in Spain. The production standard of landing gear will differ to that produced for development aircraft as a consequence of planned increases to aircraft mass. The UK will buy 232 of a planned requirement of 620 aircraft excluding any potential export needs.

First flight of the production aircraft is programmed to be April 2001 with a landing gear production requirement to support that scheduled for April 1999. Entry into service with the RAF is likely to be in 2002.

Doing It Better

In the last edition of **Link** we highlighted the Customer Awareness programme which has been launched. Steve Beard has now run 18 workshops involving 236 employees. Steve spoke to **Link** about some of the follow-up actions that have resulted from discussions in the workshops.

■ GEOMETRIC TOLERANCES:

Concern was raised in one workshop about the potentially serious effect of not understanding the geometric tolerances used in manufacturing.

"A team drawn from Engineering, Manufacturing, Processing, the Laboratory and Quality have now held their first meeting to address this problem", Steve told us.

■ PREVENTATIVE MAINTENANCE:

"Although plans were in place and a lot of good preventative maintenance had been carried out

across the site, in some areas the plans had begun to slip", Steve explained. As a result of this being highlighted in one of the Customer Awareness workshops, data on key machines is now being collected. Working with the Planning Department, plans are being put in place to build on the hard work already achieved by members of the maintenance teams.

But it isn't only the Customer Awareness programme that is responsible for improvements around our site.

■ WHITE BOARDS:

The introduction of white boards into LLG-Assembly was featured in the March edition of **Link**. These are used to record any problems encountered during a build. These have now been used in Medium Landing Gear to solve problems recorded over several builds of the A330/340 side stay.

NEW MC60



Pictured above is the recent £750,000 investment in a further horizontal machining centre situated in Large Landing Gear. This is our third machining centre of this type, purchased to cope with increased work loads on this type of machine. With twin pallets and a boring and facing-head capability, the MC60 will be used mainly for precision steel parts, principally for Airbus, but also for Falcon gears.

If you know of any other jobs which might benefit from the introduction of a white board, contact Steve on extension 1662 or tell your supervision.

The End of an Era

You may have noticed that the shape of the Gloucester Site is changing!

A large area to the west of the Site has been cleared in readiness for the new car park. Work is now well underway to demolish the Tech Block and Stalag. It is exciting that there is investment being made in improving the fabric of the Site, but it is with sadness that some of our longer serving members of the team watch these buildings disappear.

Ken Beer, Assembly Engineer, is one of the longest serving employees on Site, having joined us in 1953. Ken is pictured here next to Stalag before its final demise. Ken actually remembers Stalag being built.



"I started with Rotol in April 1953 in the design office situated in the 'Red Block' as it was then. It was in about May or June that year when the building was completed. It was built and used as a machine shop initially, for the many Government and MOD contracts which we had at that time".



Beyond the Black Hut! The site of the new car park.

Link also spoke to Pete Barton who started his Apprenticeship during the building's years as a machine shop. "When I first started I can remember the shop which was full of capstan lathes and about 20% of the operators were female. It was mainly gear boxes which were being produced for such aircraft as Britannia, Viscount and many others."

Les Humphries, Material Controller, originally joined us in 1958, and also remembers the time when the building was full of female capstan lathe operators. Working in the Mailing Office at that time, Les took the post into Stalag everyday. He may therefore have wished for some earlier legislation on sexual harassment! "Walking into Stalag in those days," says Les, "was a very alarming experience for a young boy!"

Link asked Ken when Stalag became an office area, and how it came by its name. "In 1959/60 as the MOD contracts finished, the machines were removed and the building was converted into the Production Offices. The people from the huts across the road (South Works) moved in, and brought the Stalag name with them from their previous camp style accommodation."

There are many others on Site who have recollections, both good and bad, of life inside these buildings and, to them, this really is the end of an era.



Tech Block and Stalag prior to demolition

But the future is bright. When the derelict buildings have been cleared, the site will be improved immeasurably, with the new car park and additional investment made to improve the appearance of the remaining buildings.

Gary Ventures to help Overseas Youngsters

Gary James from Medium Landing Gear has travelled to the Dominican Republic to help improve education facilities for young people.

Gary and his wife Clare joined venture scouts and leaders from the 41st St. George's scout group travelling to La Hoya to build two extra classrooms for the village school.

The aid project has been agreed through consultation with the Community Partners Association, a charity which aims to help



communities help themselves through education and community awareness.

The main beneficiaries of this project are the people of La Hoya. The new classrooms will improve the education facilities of the area in two ways, firstly, as the number of children attending the school increases, classrooms will be available. Secondly, the classrooms can be used for adult



education and act as a focal point for community life in the village.

During the trip, which was in August, Gary gained firsthand experience of some of the problems encountered by developing countries, as well as an insight into the political, economic and social life of people living there.

Pictured (above) is Gary and (right) a group of children watching their new classroom take shape

Putting Something Back

As part of our on-going commitment to the Prince's Trust Volunteer Scheme, John Ord from Engineering was asked if he would like to take part in this year's project. The scheme aims to assist personal development while at the same time helping the local community. John enthusiastically took up the challenge and spoke to Link about his experience.

"I embarked on the 12 week Prince's Trust Volunteer Scheme with little idea of what to expect. The scheme is aimed at 16 to 25 year olds, and the leadership bias on the course is designed to transfer as quickly as possible from a team leader employed by the Prince's Trust, to leadership from within the team. In addition all tasks are proposed, organised, and conducted by the team.

"The course is structured into 4 main elements: A team building exercise, a team project, an individual placement, and a team challenge. In addition, there were several day courses, ranging from discrimination to goal setting. Arriving on the first day introduced me to the amazing breadth of backgrounds from which people come. A motley crew if ever there was one!

"The team building exercise was conducted as a week long residential at the Bracelands Adventure Centre in the Forest of Dean. The emphasis here was on building a degree of trust into the team and improving communications. In particular we went caving and abseiling at Symonds Yat, as well as bivouacking overnight in the Forest. There's nothing quite like a torrential downpour to motivate you to achieve a task!

"Next was the organisation of a team project. We opted for a two week project at the Grange School Tuffley,



Children of Longford School with Prince's Trust volunteers



A tree of knowledge, built by John

carrying out renovation and repair work as well as building a display unit for the entrance hall based on the school emblem, an oak tree. There were a few late nights to complete the project on time, but a real sense of achievement when we presented our work to the parents and children of the school.

"My individual placement was spent at The Haven in Gloucester. This is a day centre for pre-school children and their parents who are homeless or in temporary accommodation. My

responsibilities included caring

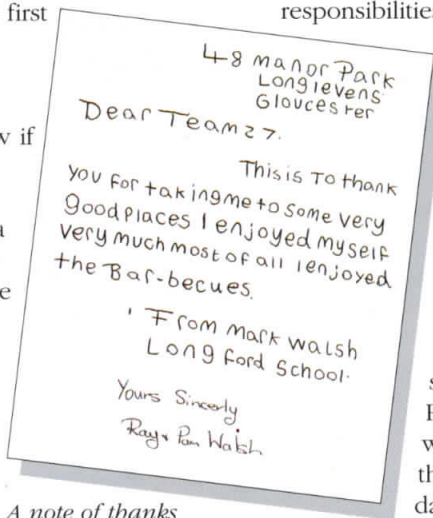
for and feeding the children at mealtimes, and assisting in the delivery of furniture to underprivileged families in Gloucester.

"This was the section of the Prince's Trust which I enjoyed the most, as each day my work was having a very worthwhile and

tangible effect on others.

"Finally, we carried out the team challenge. Longford School in Gloucester caters for children with learning difficulties, and we had arranged to take ten of these children out for a week of activities including ice skating swimming, and visits to a farm and a safari park.

"Planning had gone on throughout the course, and with help from a £50 donation from the Company we raised just over the £600 we had budgeted for the week's activities. We were rewarded with a very exhausted yet grateful group of children. Overall, the course was an excellent test of communication



A note of thanks from one of the children says it all

and team skills. All of the tasks which we planned were completed in full, on time, and under budget! I left the course feeling I had put something back into the local community while building on my own interpersonal skills, and would highly recommend others to participate if they get the opportunity. My thanks to David Wood and Human Resources for getting me involved!"

Waste Not, Want Not!



Tracy Hobbs (left) with Hilary Green

We like to consider ourselves as manufacturers of high quality landing gear. But in the process of achieving this worthy goal we also produce a less worthy bi-product – WASTE.

Waste costs us money both to produce and to dispose of. Much goes into landfill sites and the UK is running out of suitable space for this. What are we doing to stop producing waste or, if we must produce some, what recycling do we do?

- packaging materials are being re-used
- printer and toner cartridges are being re-cycled.
- aluminium cans are being collected

Sometimes we can even make money from our unwanted bi-product. We collect swarf from the machines and sell it. We have also started a pilot scheme in a number of areas to collect general non-confidential office paper and cardboard. In the last 2 months we have collected:

- 1 ton of paper
- 3/4 ton of cardboard

The paper and card is collected in green bins which are supplied free of charge along with skips and pallets by a company called Printwaste. The bins are emptied by the cleaners each day and we receive payment as a result of the sale of the recycled paper. The success of the pilot scheme means that the idea is being expanded to the rest of the company.

So keep a watchful eye open for little green bins appearing in your area soon!

This special Farnborough Supplement has been produced for distribution across all Messier-Dowty sites.

Also included after the Farnborough Review is a feature report on the recent inter-site rugby match between Gloucester and Bidos.

MESSIER-DOWTY

FARNBOROUGH '96

Review

A history of technological innovation

An array of landing gear across the decades, from the 1930s to the present day, was the tangible proof of the Messier-Dowty theme at Farnborough '96 – "We supported you then... and we're supporting you now".



Throughout the years, Messier-Dowty businesses have pioneered landing gear technology, with many innovative concepts to provide solutions for advancing aircraft design.

From the Gloster Gladiator's internally sprung wheel of the 1930s to the massive main landing gear for the Airbus A340 of the 1990s, Messier-Dowty's display captured the interest of engineers and enthusiasts alike.

With Messier-Dowty sited alongside "TI Group in Aerospace", there was a seamless join between the two stands and visitors, including a number of VIPs, flowed naturally through the displays.

Officially opening Farnborough '96, Michael Heseltine, UK Deputy Prime Minister, used Messier-Dowty as an



example of the way forward on European integration, when he spoke of the importance of restructuring the European aerospace industry in order to improve our chances of being competitive.

Tony Edwards, Chairman and Chief Executive of Messier-Dowty International, stressed the major

Main picture (above) shows the theme of the stand, emphasising Messier-Dowty's fine history of technological innovation. Pictured (left) is Messier-Dowty's chalet used for customer hospitality.

involvement of Messier-Dowty in the aerospace industry:

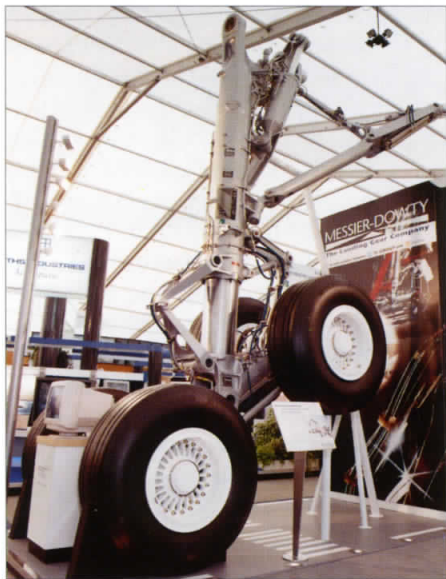
"Our presentation at this year's Farnborough Air Show emphasised Messier-Dowty's commitment to the aerospace industry, and the critical role that we have played in aircraft construction from the 1930s to the present day.

Aircraft orders announced at Farnborough represented over \$75 million worth of business to Messier-Dowty.

Our profile was enhanced by the strong presence of our two parent groups at the show".

A History of Technological Innovation...

Each gear on display had a story to tell...



Your worldwide partner in landing gear...

- Affordable
- Complete design, development and manufacture in North America and Europe
- Fully integrated systems
- All types of landing gear
- Innovative engineering solutions
- Forefront of technology and materials R & D
- Over 60 years of technological innovation and expertise
- Global customer support network

The captions that accompanied each display, telling the story, are shown below and opposite...

The internally sprung wheel

George Dowty's unique internally sprung wheel established Dowty as a specialist aircraft equipment supplier. The original wheel first supplied to Kawasaki in Japan, utilised rubber compression springs. A subsequent development of the internally sprung wheel, fitted to the Gloster Gladiator and Westland Lysander, incorporated Dowty's first liquid spring. This was the first successful compact high pressure shock absorber.

The Gloster Gladiator was the last bi-plane fighter to be ordered by the RAF. It entered Fighter Command service in 1937, and will be best remembered for its role in the defence of Malta.

The Westland Lysander entered RAF service in 1938 and served in Europe and Burma. The internally sprung wheel contributed to the aircraft's ability to operate from very rough surfaces under all conditions from thick mud to desert sand, which gained it fame as a special duties aircraft.

Gloster Meteor main landing gear

The Gloster Meteor was Britain's first operational jet fighter and first flew in 1943. It entered service in 1944, defending Southern England against the V1 'flying bombs' and later served on the continent of Europe. Post war, the Meteor was further developed to become the main RAF jet fighter in Europe, the Middle and Far East. A few Meteors remained in use on training duties until the mid 1970s.

The Meteor's main landing gear was the first to shorten on retraction, allowing it to be stowed in a smaller wheel bay in the aircraft wing. This design principle has been developed further over the years to greatly reduce the space needed for retracted landing gear on a wide variety of commercial and military aircraft.

Gloster Javelin nose landing gear

The Gloster Javelin was the world's first twin-jet delta-winged fighter when it made its maiden flight in 1951, and was the last Gloster aircraft built for the RAF. It became the standard RAF all-weather interceptor during the 1950s and served in Europe, the Middle and Far East. It was finally phased out of service in 1968.

The Javelin's nose landing gear features a 360 degree steering/moving body actuator. It was one of the longest nose gears ever produced for a jet fighter, and was designed to permit easy ground manoeuvring for this particularly large and heavy fighter.

AVRO Vulcan main landing gear

The four-engined AVRO Vulcan was the world's largest delta-winged jet aircraft and formed the mainstay of the RAF's nuclear-armed strategic V-Bomber Force from 1957 until the early 1970s. It then became the primary long range, low-level attack aircraft in Strike Command and in 1982 performed the longest range bombing raids in history during the Falkland Islands conflict.

The Vulcan main landing gear, designed in the late 1940s used a multi-wheel bogie beam to spread the aircraft load. It also featured the first type of articulating bogie landing gear on a military aircraft. A similar principle is seen on today's Airbus A340 main gear.

BAe-Aerospatiale Concorde nose landing gear

The Anglo-French Concorde remains the world's only fully operational supersonic airliner. The prototype first flew in 1969 and Concorde has now been in daily commercial service with British Airways and Air France for over 20 years, cruising at Mach 2.

The Concorde nose landing gear was the first on a commercial aircraft to be fitted with electro-hydraulic steering. This was a particularly challenging design requirement for a commercial nose landing gear on which a high level of reliability and safety was required.

Airbus Industrie A300 nose landing gear

The first European Airbus, the A300, introduced in 1972 the concept of a wide body commercial transport for short and medium haul routes. By the late 1970's the A300 was recognised as the quietest, most efficient airliner in its sector of the market and it rapidly became an international best seller. Still in production, in greatly improved form, more than 735 A300/A310s have been ordered to date, and the Airbus family has grown to seven aircraft types.

A History of Technological Innovation...



World leaders in landing gear systems...

- In service on over 14,000 aircraft making more than 20,000 landings/day
- Supporting 70 airforces, 250 airlines in 90 countries
- Supplying over 20 of the world's major aircraft constructors

Messier-Dowty has been responsible for the design, development and manufacture of the main and nose landing gear systems for all aircraft from the Airbus Industrie stable.

Eurocopter Dauphin main landing gear

This French multi-role helicopter is in production for a wide variety of commercial and military roles from executive and commuter transport to coastguard patrol, search and rescue, border surveillance and military utility operations.

Messier-Dowty produces landing gear for a wide range of helicopters including the Alouette, Puma, Super Puma, Agusta A129 and Tiger. The landing gear is designed to absorb high aircraft sink rates without damaging the structure and, on the Super Puma, Messier provided the first crash resistant landing gear.

Dassault Rafale nose landing gear

Rafale is one of the most advanced multi-role combat aircraft flying today. It features outstanding manoeuvrability, a heavy weapons load and a design which enables it to perform a wide variety of front line duties from air combat to low level attack. The aircraft's shape and materials have been designed to provide a high degree of low observability, or stealth.

Reaching beyond the normal functions of a nose landing gear, Messier-Dowty's system for the carrier-borne version of Rafale not only incorporates the catapult

bar and its operating mechanism, but also the unique 'jump strut' technology in the shock absorber to give the aircraft extra lift at take-off. Rafale's landing gear, nose and main, is especially strong to enable carrier operations under all conditions with a full weapons payload.

Bombardier Global Express main landing gear

The Global Express, which made its debut only last week, is the newest long range business jet and will be capable of flying non-stop for over 6,500 nautical miles. It is expected to make its maiden flight this month and to enter service in the fourth quarter of 1997. With highly efficient next-generation turbofan engines, the Global Express will also be one of the fastest business jets available with a maximum cruising speed of Mach 0.89.

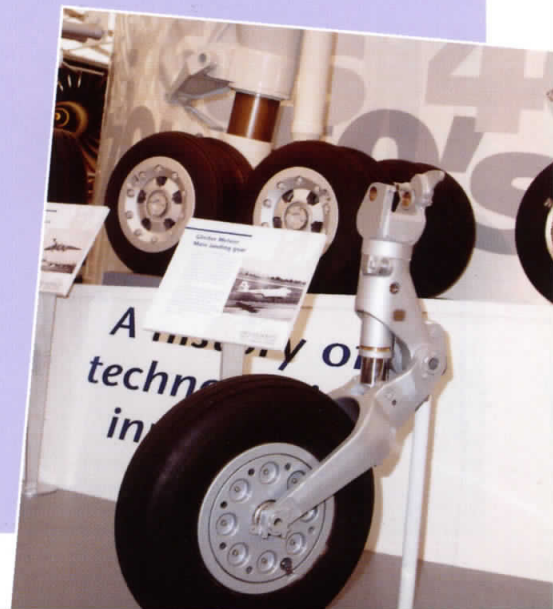
The Messier-Dowty integrated landing gear system is the most complete package ever supplied for a business aircraft and includes the main structural and hydraulic components, wheels, brake system, nose wheel steering and electronic controls. It incorporates numerous advanced features such as 'steer-by-wire' and 'brake-by-wire' and uses ultra high strength steel for major structural components.

Airbus Industrie A330/A340 main landing gear

The four-engined Airbus A340 is the largest commercial jet airliner to be built in Europe and was the first wide body aircraft to feature advanced electronic

'fly-by-wire' flight controls. The largest member of the Airbus family, the A340 is currently one of the longest range airliners in service in the world. Over 300 A330's and A340's have been ordered to date.

The main landing gear for the A330/A340 is one of the largest landing gear assemblies in commercial service. Machined from one complex forging, the single ultra high tensile steel main fitting is attached to an articulating bogie, which effectively increases the length of the gear. A shortening mechanism allows the landing gear to be retracted into a reduced stowage volume within the aircraft fuselage and wing.



Focus on People...



1 Tony Edwards, Chief Executive of Messier-Dowty (centre), introduces HRH Prince Edward (right) to Sir Christopher Lewinton, Chairman of TI Group (left).



2 Farnborough '96 was an ideal opportunity for the Chairmen of Messier-Dowty's two parent groups to get together. On the left, Jean-Paul Béchat, President of Snecma and on the right Sir Christopher Lewinton, Chairman of TI Group.



3 Gathered around the Messier-Dowty landing gear on the latest Airbus A319, the Farnborough team who made it all run smoothly – with a smile! Left to right: Ruth Evans, Mary Jackson, Marie-Claudine Thérin, Pauline Harmer, Marie-Pierre Ennoui, Sue Easton, Emma Harrison, Rose Loveridge, Winnie K-Tan, Gail Sterry, Ann Currie, Debbie Oliver, Alex Phillpott and Mina Amlani.



4 HRH The Duke of Kent in conversation with Andy Stevens, Managing Director of Messier-Dowty Ltd (left).



5 HRH The Duke of Edinburgh is welcomed to the Messier-Dowty stand by Tony Edwards (left) and Dominique Paris (centre), Chief Operating Officer of Messier-Dowty.



6 Senior management of Messier-Dowty lined up for the camera (left to right): Michael Steel, Jacques Bouhelier, Brian Walsh, Sir Christopher Lewinton, Jean-Paul Béchat, Dominique Paris, Tony Edwards, Bob Wasson, Geoff Smith and Bruno Van Parys.



7 Tony Edwards in conversation with the Rt. Hon. Michael Portillo MP, Secretary of State for Defence, in front of Messier-Dowty's Airbus A340 main landing gear display.



8 Roger Freeman MP, Chancellor of the Duchy of Lancaster, takes a look at one of Messier-Dowty's advertisements with Tony Edwards.



9 Al Fenwick (left), Vice President of TI Group Inc, Washington DC, and Geoff Smith (right), Managing Director – UK and North America, Messier-Dowty, with Paul Kaminski, US Under Secretary of Defense.

The Farnborough Air Show, like its Paris counterpart, is an international forum for the world's aerospace industry. The many meetings that are held at the Show would otherwise take months to arrange, a high cost and thousands of air miles to achieve. And, because of its importance, it also attracts many VIPs whose visits provide a great boost for the Show's public image and appeal. Then there are the people within the Company – both staff and management – whose efforts made the Show the great success that it was.

Focus on People...



- 10** Geoff Smith gives a briefing to Cheryl Gillan MP, Parliamentary Under Secretary of State for Education and Employment.
- 11** Anglo-French alliance – Mary Jackson (left) from Gloucester and Marie-Pierre Ennoui (right) from Bidos teamed up to welcome visitors to the Messier-Dowty stand.
- 12** Geoff Smith, together with Martyn Hurst (right), Messier-Dowty's Director of Product Support, in conversation with James Arbuthnot MP, Minister for Defence Procurement.
- 13** One of the many delegations visiting the stands was that of the European Chiefs of Air Staff, hosted by Ron Nailer, Director of Business Development, TI Aerospace (centre background).
- 14** Andy Stevens, Managing Director of Messier-Dowty Ltd (left), explains the features of the new Bombardier Global Express main landing gear to Michael Scholar, Permanent Secretary, Department of Trade and Industry.

Historic Lift-off at the Science Museum...

On the eve of the Air Show, Messier-Dowty and Dowty Aerospace held a cocktail reception in the Flight Gallery of the London Science Museum.

The reception was steeped in aviation history appropriately linking it with the theme of Messier-Dowty's display at the Show. With some 350 people in attendance, our week was off to a flying start.



Behind the Scenes... Vital Customer Support



Throughout the show, Messier-Dowty's product support engineers maintained a base in the flying area to provide the crucial back-up for Messier-Dowty and Dowty Aerospace products, to ensure they were always in peak condition for the demanding flight displays.



(Left) Alain Leccia of Messier-Dowty's Customer Support Centre at Vélizy checks over the nose gear of the Dassault Rafale

(Far left) Dean Wheeler, Messier-Dowty Product Support Engineer specialising in Eurofighter 2000, gives the aircraft's landing gear a thorough inspection with Adrian Harling of BAe, before its next flight display

In the News...

A variety of media was at our disposal to heighten our profile to the target audience at the Show and to increase awareness of our presence. As well as achieving coverage in the editorials and news columns of the Show Dailies, Messier-Dowty ran an advertising campaign based on the series launched at Farnborough '94. "We supported you then... and we're supporting you now." A one minute Messier-Dowty commercial also appeared on the Farnborough Television station FI TV '96 during the trade days.

Flight Daily News
6 September 1996



Advertising campaign based on...
"We supported you then... and we're supporting you now."



Every picture tells a story

Messier-Dowty's chalet is doubling as an art gallery thanks to the Guild of Aviation Artists, whose paintings have pride of place on the walls. The Messier-Dowty link is that all 20 aircraft depicted are fitted with the company's landing gear. Messier-Dowty chairman and chief executive officer Tony Edwards (left) is "pictured" with well-known aviation artist Michael Turner, president of the Guild, beside a painting of the Sea Fury.

The speed at which the U.S. aerospace industry is rationalizing following the end of the Cold War is an example to its European counterparts on how to adjust to new circumstances, UK Deputy Prime Minister Michael Heseltine told a news conference here yesterday. On a related subject Heseltine, himself UK defense secretary at the time the Eurofighter project was launched, said he believed the EF2000 program is very important in terms of achieving the integration of the European industry.

"They (the U.S.) are now putting their companies together very rapidly to achieve the efficiencies which are on offer and we have to move at the same speed," Heseltine said.

There were "encouraging signs" and a general awareness now in Europe that it needed to be done, he added. Even within Eurofighter, he said, "We are still in a situation where small com-



UK Deputy Prime Minister Michael Heseltine

Heseltine cited the Bae-Matra missile merger and the Messier-Dowty venture in landing gear as examples of the types of full-scale, international, intra-European mergers that have to take place.

Similarly, the more integrated the European industry is, the better it will be able to take advantage of the "huge opportunities" expected when rising aerospace industries along the Pacific Rim begin seriously seeking partnerships. Regarding yesterday's

decision from the other three partners "as quickly as we can get it." But he conceded this was likely to take "some time."

On the specter of any partner dropping out of the four-nation venture, he noted that "ever since we began the Eurofighter negotiations in 1983 we've had that question of 'what if?'"

"I can remember very bleak moments when the program was going to fall apart." Citing one particular crisis when German Defense Minister Volker Rühr suggested that Germany was about to pull out, Heseltine said, "I never thought for one moment the Germans would do that and I don't believe it now."

The deputy prime minister who, when minister of defense, had overseen the negotiations that led to the huge Al Yamamah arms deal with Saudi Arabia, said he hoped that Britain would build on relationships that now existed and



Messier-Dowty's parent groups, TI Group and Snecma, were strongly represented at Farnborough '96. TI Group's stand was located alongside that of Messier-Dowty, whilst Snecma had a major presence in the French pavilion in Hall 1.

Farnborough Programme

Messier-Dowty, a joint venture between the TI Group plc of the UK and Snecma of France, is now the world leader in the design, development and production of aircraft landing gears. With over 14,000 aircraft in service equipped with its landing gear systems, making a total of more than 20,000 landings every day, the Anglo-French joint-venture company has firmly established itself as the market leader since the merger between

Gloucester – Bidos Return Match

The week end of 4-6 October saw Gloucester hosting the return rugby match with Bidos. Some of you may recall last November a party from Gloucester travelled to Bidos for the inaugural match. Several months of planning went in to organising the weekend for our French colleagues.

A coach was despatched from Gloucester with a small welcoming party to meet the French at Gatwick on the Friday afternoon. After a much delayed journey they arrived at the hotel at around 7.30pm.

From there they went to Arle Court Clubhouse for a game of skittles, together with a buffet and copious amounts of local beer and cider. The plan was to try and put them off their game due to hangovers – but it didn't work!



(Above) The victorious Bidos team and (below) the Gloucester team



The Saturday commenced with a guided tour of Gloucester Cathedral and its surroundings. This was followed by an impromptu shopping trip, as it appears that Doc Martens are very expensive in Bidos. This was followed by a guided tour of the factory, lunch and the game, which was played at the Sports and Social facility at Staverton.



Return Match – Second Half!

Ah yes, the game! Suffice to say that despite a good initial period of sustained pressure we were unable to breach the French defence. The game was very tight with many close personal battles going on in both the backs and forwards. The game continued to be played to a very high standard throughout the second half with Bidos coming out on top 17 points to nil.

The match was followed by a formal dinner attended by Tony Edwards during which the Trophy and Man of the Match awards were presented by Dominique Paris. Nick Brown from Stores/Despatch, was presented with the Gloucester Man of the Match trophy by Patrick Sequineau, the French Captain, and commented "This has been another tremendous experience and despite losing I felt that we gave a better performance this time compared to last. If we prepare more carefully for the next match there is no reason why we could not win!!"

Following the dinner a disco and dance was held which gave an opportunity for supporters and employees to join the teams to celebrate the occasion.

As the evening wore on, many people were amazed at how well they could communicate despite the lack of a common language!



Mark Tunstall, the Gloucester captain, commented, "Everybody involved in these games firmly believe that they've been of tremendous benefit, with many strong friendships being forged between both players and organisers on both sides. It is hoped that these annual matches will continue into the future."



Farnborough Build-up

Following this year's excellent Farnborough Air Show you will have noticed in the centre of this issue of **Link**, a 'Farnborough Review'. This has been prepared for publication across all Messier-Dowty sites for employees to share in the success of the show.

Within the review, reference is made to the excellent display of exhibits. As these were co-ordinated by the team at Gloucester, **Link** has taken a look behind the scenes at the work involved during the preparation and installation of the exhibits. **Link** spoke to Peter Hall and Clive Locke who delved into both past and present to find this collection of M-D's heritage.

Link What was different about the display this year?

Of the previous Farnborough and Paris Air Shows this year's Farnborough stand proved not only to be the best in many people's opinion, but also the most onerous in terms of exhibit sourcing and preparation.

This year we displayed a range of 11 landing gears from UK, France and Canada spanning the decades from the 30's through to the 90's. The theme of the display was technological innovation and each of the gears on display was selected for its pioneering landing gear technology.

Details about each of the exhibits are included in the Review article.

Link Where did you find the exhibits and what condition were they in?

We started with a preferred "shopping list" of gears representing technological developments through each decade.

We acquired them after many phone calls around a network of aircraft enthusiasts and restorers; museums such as Hendon, Cosford, Duxford, Fleet Air Arm Yeovilton; a number of RAF and MoD bases where old aircraft had been



The Gloucester team (l-r): Clive Locke, Peter Hall, Chris Staite and Phil Barker

used as "gate guards"; constructors such as BAE, Aerospatiale and Dassault; together with assistance from our colleagues at Vélizy, Bidos and Toronto. We actually acquired too many!

The condition varied from one extreme to the other. On one occasion we were presented with a box of rusty metal which apparently used to be a landing gear. Conversely, we collected a Meteor leg from Martin Baker (*that's right, the ejector seat people and no it wasn't for a new form of ejector seat with landing capability!*) still in its crate, ex Dowty, looking brand new, following refurbishment some years ago. Ironically, one of the exhibits we collected, the Vulcan, which was lying abandoned on a pallet at Cosford, was originally part of the display in the Arle Court Exhibition Hall.

It presumably had become surplus to requirements some time ago and was donated to the museum.

Also during the process of refurbishment, we had to approach a number of equipment suppliers for a variety of components to complete the exhibits. The companies included: BAE, British Airways, Dunlop, Michelin, Titeflex, Patonair, Ultra and Messier-Bugatti. To all those organisations who helped us, we owe our thanks.

Link What difficulties did you encounter during the design of the stand?

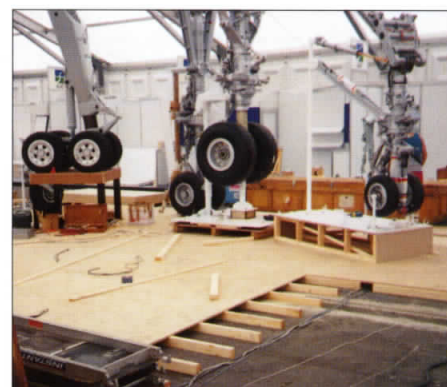
The first problem was pre-show, trying to agree the stand design and layout before we knew the final line up of gears and the size and shape of the gears. In addition, the intention was to display the exhibits on a sloping ramp which was to give the appearance of a mock runway, with all the wheels flush to the surface. As everything was mounted directly to the floor this meant the finished height of each gear was different and was critical to its exact position on the ramp. Positioning was to be so critical for calculating the heights that we created a full size layout of the stand in the closed off section of the

canteen. At this stage, the size of the task was such that we enlisted the able assistance of Phil Barker and Chris Staite from 5 Shop. After much head scratching and measuring the exhibit supports were designed, produced and welded together.

Link That was the theory, what about when you came to install everything on-site?

The first part of the installation process is transporting the exhibits to site. This involved three lorry loads of equipment including two 40 foot wagons normally used for shipping A340 legs to Toulouse.

Because the A340 main gear is, by comparison, one of the larger pieces of equipment on display in the exhibition halls, it is important we begin installation as early as possible to ensure the cranes and fork lifts, which are so essential to us for the installation, have good access.



Exhibits, in position, awaiting their runway!

On arrival at the exhibition site, we were faced with a near empty hall and only a few chalk marks to show us our location. From these basic chalk marks and using our trial calculations we had to reproduce the overall stand layout, ramp area and exhibit positions vital for us to ensure the correct final stand layout. Once we have installed all the exhibits the stand contractor builds the stand around the exhibits using, in the main, pre-fabricated sections for which precise positioning was so critical.

We are glad to say the advanced planning paid off as the end result was spot on.



One week later, down it all comes!



A340 during installation

The Avro 7-a-side Football Tournament

In the middle of July we received our usual invitation to enter a team in the annual Avro Woodford 7-A-Side football tournament (Avro is the civil aircraft manufacturing arm of British Aerospace) at the end of August.

Nothing new there you might say, but this year we were asked if we would like to enter a ladies team as well as a mens team. It was felt that this would be a great idea if sufficient support could be found. Louise Simmonds decided to contact all the ladies on site to check out the level of interest, and Ken Jervis and Mike Mitchell were approached to act as coaches/managers.

In all, some 12 intrepid ladies turned out on Tuesday 16 July straight from work, to kick a ball in anger- for the first time ever for many!

After 6 weeks of intensive training, which resulted in many aches and pains, we had a squad with sufficient skill and enthusiasm to give Ken and Mike a degree of confidence that we would achieve a good showing at Woodford. Although it was always good fun, training was taken very seriously, to the extent that for three weeks we hired an astro turf pitch to get used to the surface - besides which it was nearer to the pub for post-training team talks and recuperation!



THE LADIES TOURNAMENT

Four ladies teams had entered the tournament, so a league system was used with the top two teams playing off in the final. Our opening game was against BAe Chadderton. They were a hard, enthusiastic side who really wanted to win, and this caught us unawares. Although our training sessions had been quite strenuous, we had always been very polite to each other, and the aggression of a 'real' game was startling to say the least! Result, a 2-0 loss.

Ken and Mike encouraged the Team that all was not lost and persuaded them to go into the next



game against BAe Woodford and go for it. After a team huddle led by captain Donna Edwards we kicked off with a noticeably different attitude. After 5 minutes Lyn Prystajekyj scored with a superb left foot shot. This led to many somersaults, hand stands and flick flacks which several other teams (including some of the men) adopted as their goal celebration! We won this game 1-0 and went on to the final game of the league against BAe Prestwick. This time, we controlled the game, and two goals from Sue Easton and Lyn Prystajekyj put us firmly in the final against BAe Chadderton.

Determined to make up for the earlier defeat by Chadderton, a very physical match ensued. Despite heroics (or should that be heroinics?) by the whole squad - especially Lyndsey Wellbourne in goal - we lost 1-0.

THE MENS TOURNAMENT

A league system was also used for the mens tournament, and our first game was against Hyde Engineering. Bob Daniels and Stuart Busson both scored to get us off to a flying start with a 2-0 win. Our second game was against BAe Chadderton, who had beaten us in last year's final. This year the game was much closer and ended a 0-0 draw.



Encouraged by this performance we were in high spirits when we went into our third game against arch rivals Smiths Industries. We made a bright start and soon took the lead through a Stuart Busson penalty. After missing several good chances, Smiths



equalized, also with a penalty. The game ended a 1-1 draw. Our fourth game against Dunlop finished with the same result, which was just enough to put us into the semi-final against Prestwick. Despite valiant efforts by the whole team, we found ourselves heading for the bar following a two goal defeat.

All in all, the whole tournament was a great success, with everyone enjoying themselves. The day was characterized by great team spirit, with the mens team being hugely supportive of the ladies, offering advice and encouragement both during and between games. The ladies couldn't offer much to the men in terms of technical tips, but offered plenty of verbal support during their games.

If the men were a little surprised by the enthusiasm of the ladies on the pitch, they were even more surprised at their determination to enjoy the post match celebrations!



6-a-side Football Competition

The second 6-a-side tournament was held at Gloucester back in July.



With the aim of improving relationships with both customers and suppliers, and to raise money for charity, over 32 teams gathered at the Staverton sports field for the day's competition. Teams from our suppliers, British Aerospace and Avro came from all over the UK, plus a team from Messier-Dowty in France.



Despite an excellent performance, Messier-Dowty 'A' narrowly missed qualifying for the quarter finals. However, a massive £1980.50 was raised for CLIC (Cancer Leukemia In Childhood).

Congratulations to Abbey Business Equipment who ended up beating Avro 1-0 in the final.



(Above) Winning team – Abbey Business Equipment!



(Left) Andy Stevens presenting the cheque to CLIC representatives

LRIP LAUNCHED

Most people now understand that LRIP is not some form of company benediction. But do we all understand clearly the purpose of this new warranty programme?

Link spoke to Chris Evans who is responsible for the day to day logistics of LRIP.

"LRIP stands for Long Range Improvement Programmes", Chris explains. "It's an Airbus driven concept and is a retrofit programme covering 125 A330/340 aircraft. It concentrates on bringing the aircraft to a common configuration by introducing approximately 20 modifications. This should improve the reliability of the early long range aircraft.

"Landing gear from ourselves France and Canada will be modified by our own Service Engineers with support from other personnel around the site.

"They will work at strategic locations around the globe, from Toulouse in France to HAECO in Hong Kong. The far east will be supported by the CSC Asia Pacific which is now headed up by Steve Barnes who recently transferred to take up his new post as Technical Manager in Singapore.

"The CSCs at Gloucester and Vélizy



LRIP team members gather for their weekly meeting

will support all European fleet requirements. They will also help globally when required as will Alan Daughtrey and Steve Mitchell from our own Product Support Department. Alan will focus chiefly on activities in Toulouse. This is a programme which calls on the help and expertise of many departments to ensure that we achieve seamless maintenance in the eyes of our customers.

"Vital to this project is the flexibility and commitment of our own team. This was typified recently by Derek Pittaway and Steve Mitchell, who at very short notice (and at great cost to Derek's hockey team) flew to Hong Kong to support the programme.

"The first modifications have now taken place and I must thank everyone who has supported the launch of LRIP.

"I hope I can call upon your continued support throughout the life of this project".

Appointments and Farewells

A fond farewell goes to Phil Waters, Senior Materials Engineer, who retired at the end of September after 37 years of service. We wish him a long and happy retirement.



Phil 'at home' in the Laboratory

Late August saw the arrival of five new craft apprentices. Fresh from school, they will spend the first year of their training at Caradon Mira before joining the apprentice section within Medium Landing Gear.

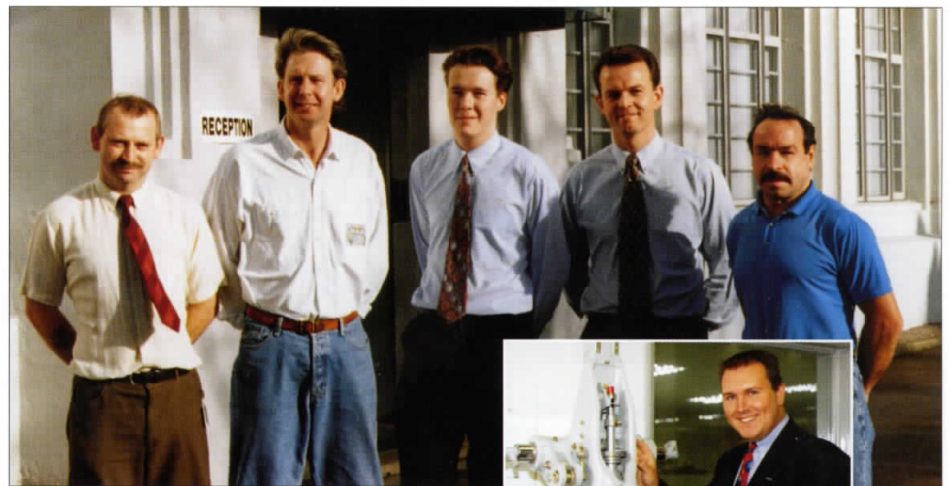


New apprentices (l-r): Robert Wood, David Knight, Anthony Shaw, Lee Brymner and Matthew Dodwell

Ian Perry (below) is the latest addition to our management team, joining us as Project Manager – Business Improvement. He will be managing business improvement projects across the company and I'm sure will soon become a familiar face to us all.



We welcome also (main picture, above right) recent new starters (left to right) Andrew Bullen (Stores/Despatch), John Ruddleston (MLG Assembly),



Stuart Huskisson (Laboratory), Gary Gossage (Test) and Keith Nicholls (LLG Assembly). If some of these faces seem familiar, they may well be! Gary was a Rotal man who moved to Dowty Aerospace Wolverhampton's payroll, and John and Keith are both fitters

who have worked for us before.

Welcome back!

Inset is Dan Godzisz, a recent graduate who joined us in August in Design Engineering.

1996 Course Exam Results

Congratulations go to the following who have successfully passed exams during the last academic year.

Dulcie Adams	French for Business
Alex Ball	BTEC HNC Engineering (Manufacture)
Gary Barnes	IQA B2 Statistics
Steve Beard	Open University - Implementation of New Technologies
Brian Beasley	French for Business
Andy Bromberg	Japanese (Improvers)
Diane Cockshull	French for Business
Linda Collinson	French for Business
Steve Evans	BTEC HNC Science
Andy Fardon	BTEC HNC Business & Finance
Michael Fisher	BTEC HND Engineering (Mechanical/Manufacturing)
Peter Fitzharris	BTEC HNC Business & Finance
Nicholas Fowke	City & Guilds 230 NC/CNC Part Programming
Roger Goldby	French for Business
Paul Hamblett	City & Guilds 230 NC/CNC Part Programming
Luke Hayhurst	BTEC HND Engineering (Mechanical)
Jason Hobbs	BTEC HNC Engineering (Manufacture) - Yr 1
Roy Hughes	BTEC HNC Business & Finance
Norman Hunt	Using Microsoft Office
Bill Jones	BTEC HNC Engineering (Manufacture) - Yr 1, French for Business
Wayne Kent	BTEC National Certificate Engineering
Rory Lipington	BTEC HNC Engineering (Manufacture)
Maureen Lowe	French for Business
Vaughan Mathews	City & Guilds 4351/01 CAD using Autocad
Andy Monaghan	BTEC HNC Engineering - Yr 1
Nicky Morrish	French for Business
Phil Perry	RSA II Computers in the Office
Mike Pictor	BSc Business Computer Systems Major with Computing Minor
Andy Pond	City & Guilds 4351/01 CAD using Autocad
Lyn Prystajekyj	CIMA Stage I
James Roberts	BTEC National Certificate Engineering
Matthew Sexton	Msc in Manufacturing: Management & Technology (Computer Aided Engineering Course)
Chris Smith	BTEC HNC Engineering (Manufacture) - Yr 1
Matthew Shipp	City & Guilds 2240 Electronic Servicing
Nick Stadyk	BTEC National Certificate Business & Finance
Cath Swan	City & Guilds 4351/01 CAD using Autocad
Lyndon Saunders	BTEC HNC Engineering (Manufacture)
Mike Turley	GCSE Maths
David Wichard	BTEC HND Engineering (Mechanical/Manufacturing)
Cleve Wilson	City & Guilds 230 NC/CNC Part Programming