LANDINGMATTERS

Messier-Dowty employee newsletter

Edition 6, 2006

A340 MLG installed @ Bristol

We have been working with Airbus UK and @Bristol to install an A340 Main Landing Gear within the @Bristol interactive science centre as part of our customer relations activity with Airbus UK.

In parallel, as part of the exhibition development activity, we are continuing to work with Airbus and @Bristol to create a supporting integrated system to make the landing gear feature more interactive. We hope that through this display and through @Bristol, we can encourage more young people into science and engineering as a skill.

The landing gear is displayed in the North Gallery, next to a new exhibition celebrating the Brunel centenary, and we encourage you to visit Explore @ Bristol and take pride in the contribution we've made.

Explore @ Bristol is the first of it's kind - a true 21st century science centre combining the best of hands-on activities with the very latest multi-media techniques. In Explore@ Bristol science is brought alive through stunning visuals and over 170 interactive experiences.

All Messier-Dowty staff can get 2 tickets for the price of 1 to Explore @Bristol. Simply show your Staff ID pass at the ticket desk of Explore @Bristol on Bristol's Harbourside and you will get one person in free when buying one full priced adult ticket (Valid until 31 December 2006).

For those interested in visiting the capital city, there is also a Messier-Dowty landing gear on display in the entrance of the London Science Museum.

CONTENTS

Your articles.

Your pictures.

Your magazine.

one team

PROGRAM UPDATES

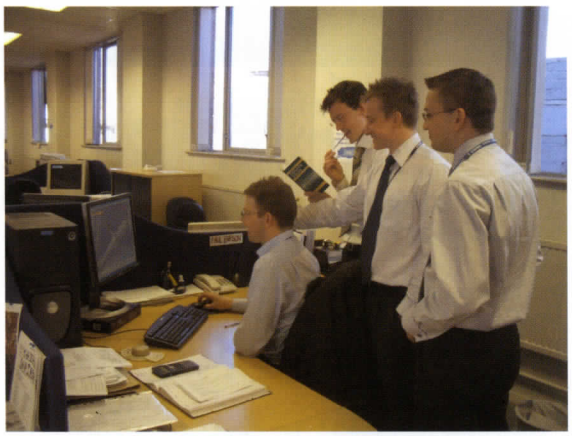
A350 Gloucester IPT

Earlier this year, we were selected by Airbus for the supply of the A350 MLG and the Integrated Program Team (IPT) that will deliver the program is in place and working within the Airbus Programs IPT in Gloucester.

The A350 IPT was set up in Gloucester during the program bid phase and then co-located and strengthened in January 2006. The IPT is headed up by the A350 Program Director, Chris Morgan.

The team is co-located in the Gloucester Engineering Block with dedicated members from the main business functions including Engineering, Customer Services, Production, Quality and Estimating.

The cross-functional approach has created a strong team framework amongst the A350 IPT members. Through weekly meetings and information sharing a culture of open communication is encouraged with common program goals. The benefits have been clearly visible as the team is working cohesively both internally and with Airbus UK, to create integrated program plans with clearly defined deliverables to achieve the challenging targets set by the A350 program.



On a personal note the major benefit is having all the team members in one place and the synergy this creates. The team can easily be bought together to contribute to the decision making process at any time. This ensures all the functions' inputs are taken into consideration when making key program decisions. Externally it has contributed to creating a positive relationship with Airbus UK of shared responsibility and ownership.

The next major milestone for the A350 Program is PDR (Product Design Review) with Airbus UK in May and June 2006.

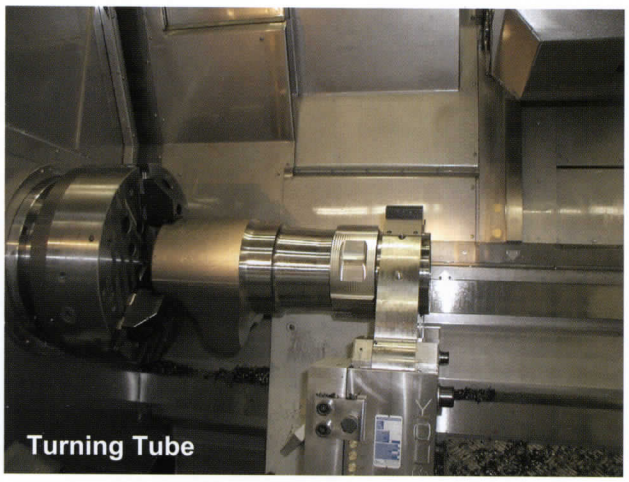
At the time of going to press, the A350 team are working with Airbus to develop potential landing gear solutions for proposed aircraft level changes (for example an increased maximum take off weight range) to meet airline requirements.

Phil Smith
Program Leader
A350 Main Landing Gear IPT

A400M at Gloucester

The Airbus A400M Nose Landing Gear is being designed and assembled at Gloucester for delivery to the final assembly line at EADS/CASA in Seville, Spain.

There are currently 21 engineers and representatives from program management, quality, operations and customer services in the IPT full time, located in the upstairs office at the end of the Airbus Assembly shop.



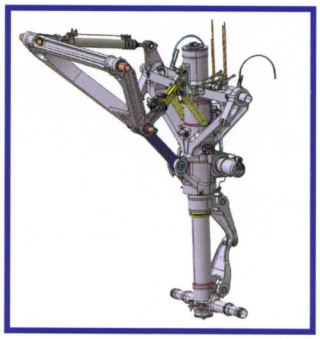
Turning Tube

Chief Program Engineer, Pierre Cottenceau said, "The A400M program is a big challenge for Messier-Dowty Engineering because it is a brand new landing gear configuration and because our scope covers the complete landing gear system. The Gloucester site is largely involved with the design of the nose landing gear and the strength test of the six-wheel main landing gear, amongst other things. These activities are performed in a complex international environment, involving Vélizy Design & Test Engineering, the customer in Madrid and a wide range of suppliers & sub-contractors in Europe and in the US. I am looking forward to seeing the first nose landing gear in the assembly shop!"

At the end of April, the first swarf was cut on the turning tube for the Systems Rig Unit.

A major program milestone, the Critical Design Review (CDR) has passed (green) in the beginning of May. This is the formal acceptance by the customer of the design for manufacture.

David Johnson
A400M Lean Leader



Models of the A400M Nose Landing Gear

ADVANCES IN TECHNOLOGY

LK Coordinate Measuring Machines

Two new large LK co-ordinate Measuring Machines have been purchased for the Gloucester site (LK is the name of the company providing the machines). Delivery and installation is to be completed for the end of May 2006 with one being located in the Large Structure machine shop and one in Medium Structure machine shop.

The new CMM's will provide much needed additional functionality and performance improvements with capabilities like analogue continuous contact scanning.

The programming and operating software all work with 3D CAD models and the systems have full simulation and collision detection routines for offline programming.

The new CMM's form part of the solution designed to specifically satisfy the Inspection expectations of the Boeing 787 contract, the 787 Model Based Definition process requires us to perform Inspection using the 3D authority data without the need for any 2D Drawings.

Pete Willis
Manufacturing Engineering

The picture above shows the first CMM in readiness for the preliminary tests to verify accuracy before being despatched.

TECHNICAL DATA

Volume
X axis : 4000mm
Y axis : 2000mm
Z axis : 1500mm

Volumetric Accuracy
MPEe<.025 mm
Repeatability < 3 microns

FIDIA High Speed Machine (Y2K411)

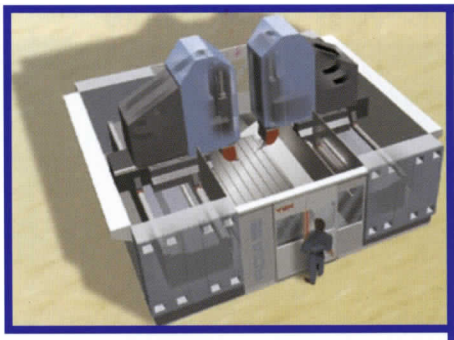
This will be the first machining centre with full 5-axis machining capabilities on-site at Gloucester. Its location is in the Large Structure machine shop.

It consists of a combination of two K411 basic systems sharing the same work-piece table. The work piece table will have two additional indexer units fully integrated within the CNC's (Computer Numerical Control) and will consequently add another live axis to the machine.

These 2 CNC's will allow for independent and different milling part-programmes ensuring total safety for each machine's working area. Both machines will be equipped with a continuous bi-rotary head.

Advantages:
- Better surface finish
- Improved component accuracy
- Reduced downtime

Germain Forgeoux
Manufacturing Engineering - Development



TECHNICAL DATA

Linear axis travel:
X: 4200 mm (165")
Y: 1100 mm (43")
Z: 1000 mm (39")

Linear axis speed:
X Y Z: 24 m/min (944.8 ipm)

Acceleration: 4m/s²
Tool magazine: No of

Work-piece table:
Length 5000 mm (197")
Width 2200 mm (87")
Loading capacity 30000 kg

Both Machine Weight: 64000 kg
Max spindle speed: 24000 1/min
Max spindle power: 55 kW

Process Group: 787 Titanium Heat Treatment

The Boeing 787 landing gear Truck Beam and Inner Cylinder are manufactured from Titanium alloy 5-5-5-3, namely MTL3103 (5 Aluminium - 5 Vanadium - 5 Molybdenum - 3 Chromium Titanium Alloy) forgings.

The Truck Beam is manufactured here at Gloucester and the Inner Cylinder is made at Bidos. The heat treatment for both parts is processed through Gloucester Thermal Process Department, this was successfully carried out in February this year for the first parts.

Eventually the forgings will be delivered rough machined and heat treated by our Russian supplier VSMPO.

These represent the biggest titanium parts heat treated by Messier-Dowty to date.

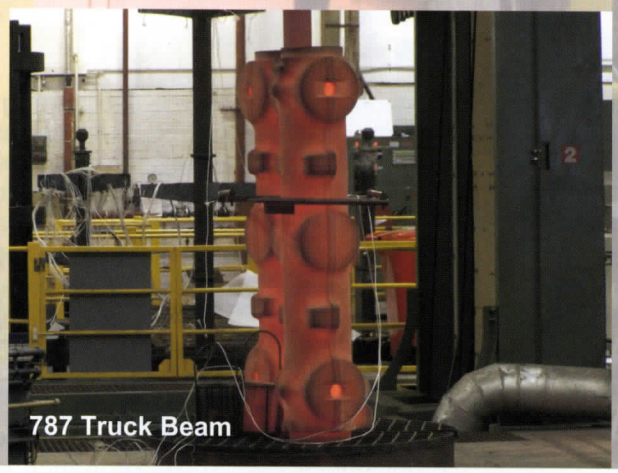
The heat treatment of these parts consists of a Solution & Aging treatment, which can take up to two days to complete.

Depending on the forger's results, each part requires a slightly different heat treatment to the others and has to be treated individually. This is different to the way we process most materials, consequently although we have the capacity to process two Truck Beams or Cylinders at a time they may have to be treated one at a time.

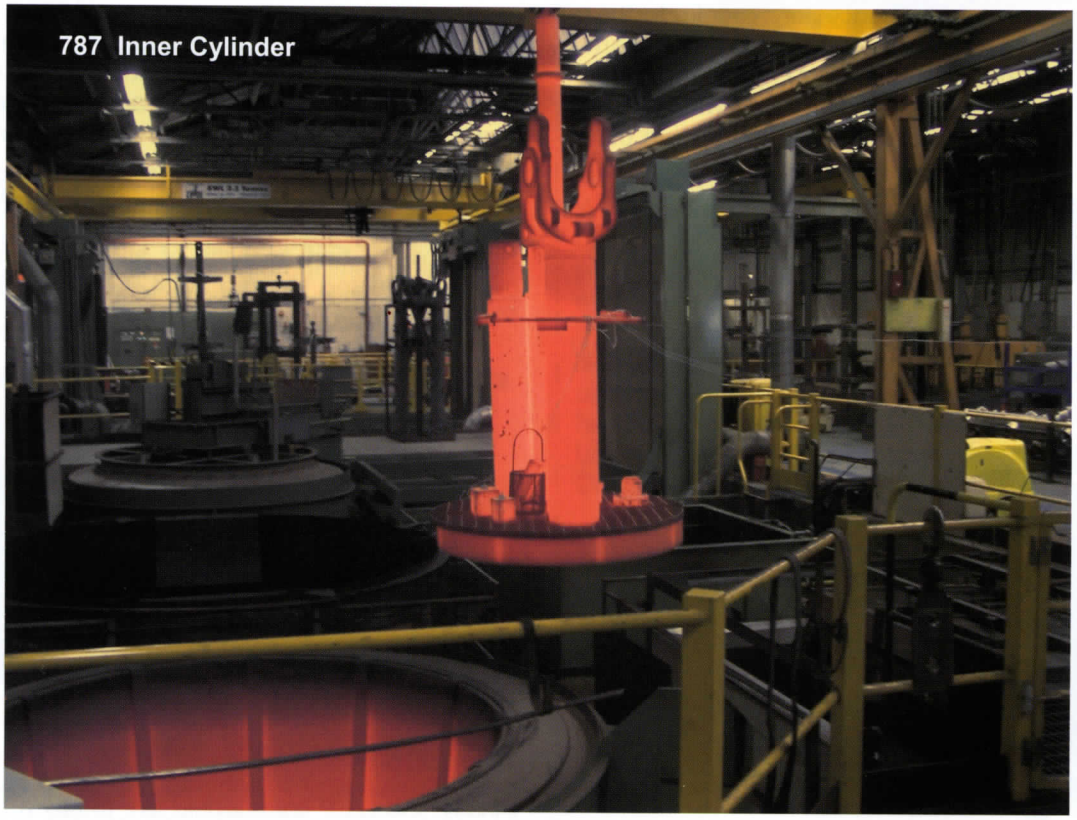
This new material and process requires us to learn and adapt our methodology to meet these requirements. The use of titanium, because of its lightness compared to steel, is increasing in aircraft design along with the use of composite materials for further weight reduction

Mike Lichters
Materials & NDT - Processing

The photos for both the Truck Beam & the Inner Cylinder were taken after the parts had been removed from the furnace after the solution heat treatment stage and prior to the final aging treatment.



787 Truck Beam

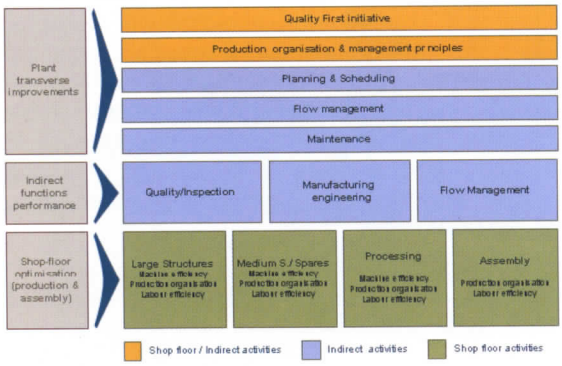


787 Inner Cylinder

Landing Matters Editorial Committee: Heidi Beal, Peter Hall, Thomas Bouchez, Sarah Powell, Pank Patel, Steve Adams, Mike Lichters, Paul Harrison, Christine Clarke, Pete Willis

Lean Accelerator to Improve Performance (LAIP): the first 6 weeks

The LAIP project was launched at the beginning of February 2006, with a series of workstreams looking at a wide range of activities throughout the factory here at Gloucester.

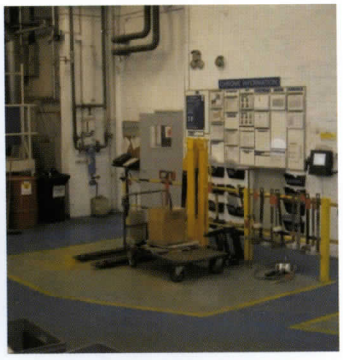


What's been started?

An area of critical importance to the site is **Planning**. Because of a combination of the huge lead times we face for materials, plus a general worldwide shortage of the grade of metals we require, planning is becoming an ever-harder activity. For Gloucester, a short-term action plan has been implemented to investigate capacity issues throughout the process, and we are currently establishing the medium-long term planning principles that are required to cope with this pressure.

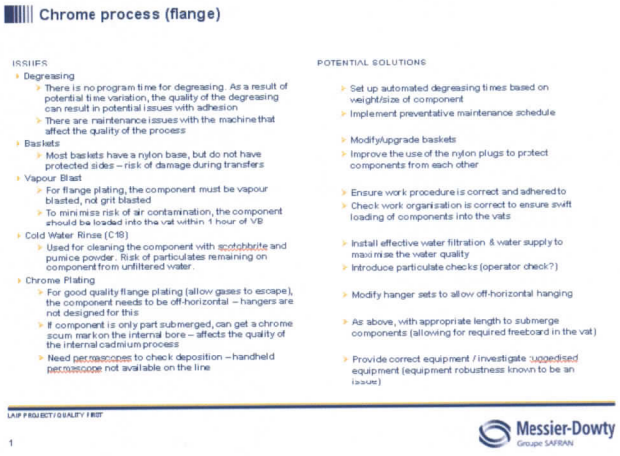
Given the age and critical importance of a large proportion of the equipment on site, **Maintenance** is absolutely fundamental for Gloucester. Thanks to the hard work of Claude Cocquery (who has been seconded to us from Snecma Motors), we have made huge steps forward in understanding where we currently are, and what we need to do to improve our maintenance management. Claude has so far implemented data collection for Large and Medium Structures and Processing, and will be moving on to develop a site-wide Total Productive Maintenance (TPM) plan.

The **Quality First** action plan has started in Processing. The first actions were in Surface Finishes, where a 5S activity was launched.



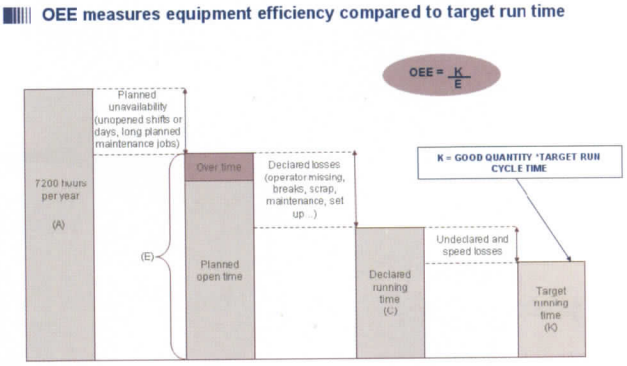
5S Activity – Before & After Red Tags

A sustained cleandown & audit process is now in place for Surface Finishes, and a Quality First team has been set up for the area. In addition, the Quality risks have been mapped out for the chrome & nickel lines, and this will be used to develop further actions to support the Quality First team.



For **Flow Management**, one of the biggest issues for the business at the moment is the visibility of the WIP throughout the factory. We are working to develop a 'WIP visibility tool', which will use the information from both MRP and external suppliers, and present it in a much more user-friendly way. In addition, we're working on the development of the team, and understanding how they can best deliver their mission statement of *'100% On Time Delivery to the point of use at the required quality'*. Team Leader interviews have been completed in Flow Management, and we are close to completion of the Strategy and Tactics policies.

Overall Equipment Efficiency (OEE) is an extremely useful measure of equipment performance, and allows both effective problem solving and implementation of corrective actions, as well as providing a powerful tool for production management.
Obviously the important element is analysing the data collected and developing actions. In Medium Structures, a first analysis of all the downtimes has been conducted on the ML42T (No 1 Shop) and PN61M (Pin Group).



Finally, the LAIP team would like to say a huge thank you to everyone for their tremendous support for the project so far, and whilst we have a tough target, we've all made a fantastic start!

Brian Wiggins, Manufacturing

50th Anniversary of Residential Service Engineer Support at BAE Systems Warton

In October 1955 British-Messier & Dowty Rotol dispatched Service Engineers to English Electrics Warton to support the Lightning Development. Over the years the company name may have changed, but the level of commitment and support provided by British-Messier, Dowty Rotol, Dowty Aerospace Landing Gear and now Messier-Dowty Ltd in supporting Landing Gear Equipment has remained constant.

Service Engineers have provided an initial point of contact to ensure product integrity pre and post aircraft delivery, plus embodiment of Modifications, Rectifications and Technical Liaison Support of landing gear equipment fitted to various military aircraft programs such as Lightning, Buccaneer, Canberra, Hunter, TSR2, Jet Provost, Strike Master, Jaguar, Tornado, Harrier, EAP, Eurofighter, Nimrod & T45 at Warton, Samlesbury and Brough Sites.

Several Product Support / Service Engineers have played a major roll in supporting landing gear equipment at Warton:

Edgar Wrench	October 1955 to July 1985
Richard Nicholson	August 1966 to May 1970
Steve Barnes	1973 to1978
Ian Mowat	February 1979 to June 1985
James Collington	July 1985 to June 1987
Ron George	1986
Steve Mitchell	September 1996 to September 1997
Roy Millington	February to April 1987
Rob Davis	June 1987 to December 1989
Alan Daughtrey	June to September 1997
Derek Pittaway	August 2003 to 2006

Dean Wheeler
Current Resident Product Support Service Engineer
(since April 1987)

HS&E Department

SMOKING CESSATION GROUP

Following the success of the first 'smoking cessation' group, a number of employees have expressed an interest in another course being organised. If you want to give up smoking and would like to participate in this group, please forward your name to us.

The Smoking Cessation Group

The NATIONAL BLOOD TRANSFUSION SERVICE visited here on 24th April 2006. These sessions are very popular and we frequently have to turn people away. If you would like to give blood, please let us have your names as soon as possible. The dates of the next sessions are – **20th July and 4th December 2006.**

MANUAL HANDLING COURSES

We are trying to reduce the number of accidents on site caused by lifting and carrying. In 2005, 55% of all accidents on site were caused by manual handling. If you would like to attend a short course to update your skills on manual handling, please let your Team Leader / Manager / Training Department know.

March saw the launch a campaign throughout Messier-Dowty for 'Living Without Accidents'. This campaign will focus on a whole series of initiatives to promote cultural, managerial, behavioural and physical changes to the way we work and live our lives more safely.

ANGELA GREY 1951
KIM TOOMER 1587

M-D
HSE
Living without accidents

A day in the life of ... Craig Coleman, Application Support Analyst

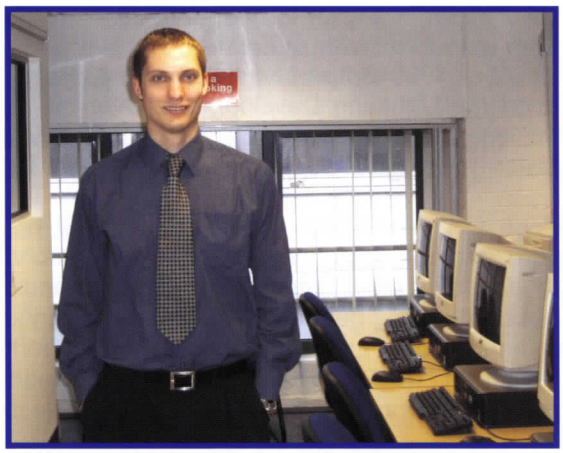
Working as part of an Information Systems department supporting IS Systems deployed world-wide, is exciting and full of new challenges. This has certainly rung true for supporting the SOLAR system, Spares Organisations Linked Across Regions, which as its acronym suggests is global, bringing together several sites into one IS System.

In addition to dealing with Incident Logs that have been reported to the IS Service Desk, our role involves maintenance of the system, and a raft of daily checks to ensure that we provide a reliable service with maximum system availability 24\7. A part of ensuring Solar is available 24\7 involves providing out of hours support; a member of our team is available if there is a problem shipping parts to our customers, who may be in an AOG situation.

The part of my role that I most enjoy is getting the opportunity to work on new system requirements and change requests, such as bringing the new Molsheim warehouse on-line, or implementing new ideas to save SOLAR users' time.

A typical day at month end for me would involve the following:

- Two days of preparation on Friday and Sunday have already taken place, and it is these two days that will hopefully allow the rest of the month end to run smoothly.
- First thing to do is to make available all the reports for Logistics, Commercial and Finance for month end reconciliation and to allow them to fulfil customer requirements. We also provide MOPS to group heads to allow the monitoring of company performance.
- Additional checks are made to ensure all information is complete, correct, and available in not



just Solar, but also those external systems which rely on Solar to provide information to them e.g. MD Ltd Finance.

- Once the actions for month end have been completed, it's time to check what incidents have been assigned to my queue on the I.S. Service Desk, and work through them based on priority.
- A priority 1 may come in, which means that the system is down. Everything else gets dropped to resolve the P1 problem immediately.

After lunch, its time to get going to the airport to be in Velizy ready for tomorrow's meeting to finalise the requirements and to train the finance users ready for the completion of the Bidos to Molsheim project.

Our role also requires constant re-training so that we are aware and can implement new technologies that are required by internal department, and also are often requested for by external customers, sometimes even being written into contracts for the support of certain aircrafts, for example the Airbus A380 project.

Craig Coleman / Steve Adams
I.S.

IS Service Desk Update

Following the recent re-organisation of the Gloucester IS Department into Infrastructure, Projects and Services, we have introduced a new system to help improve our service to the business. This enables us to provide better visibility of calls, their priority and current status.
Initial feedback from users has been positive and of course we welcome any comments, positive or negative, that will help us to further improve our service.

The key points of the new system and how it affects users are:

- Launched December 2005
- The 'Help Desk' was re-branded as the 'Service Desk' to be consistent with our re-organisation.
- All support calls should continue to be directed to the Service Desk (x1514) or, via email to the 'IS Service Desk Gloucester'
- An 'Incident Number' is issued to the user for tracking purposes
- A system generated email is sent to the user confirming the initial call details and also to inform you of closure. Entering your usual username and password can access the incident details.

As further commitment to improve our service to our business users, the whole IS Team has recently undergone a programme of Customer Care Training, and we will progressively be implementing the IS best practice methodology, ITIL for Services Management.

If you have any questions regarding IS Services, please contact:

Peter Daly
IS Service Delivery Co-ordinator

Information Systems

TRAINING

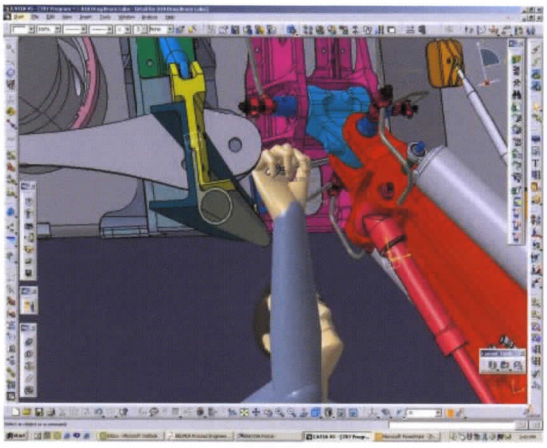
Integrated Logistic Support is launched in Gloucester.

Interview with Pierre Gerbert, ILS Project Manager, Customer Services.

Why have you launched the ILS project ?

Pierre Gerbert: The aeronautical market is changing: the business, once driven by the products, is now equally as concerned with the service provided. Messier-Dowty and Customer Services have identified the following key challenges:

- Challenge 1: Operational availability and maintenance cost, are two new key criteria to be taken into account by the design.
- Challenge 2: Demonstrating the above capability is key to selection on new programs.
- Challenge 3: Profitability of the after market service depends on the capability to build up a profitable business model meeting Airline's & Airframer's expectations.



In February 2005, Customers Services launched the ILS project to address the above challenges within the Messier-Dowty organisation and for all new development programs.

And today, can we see the first results in MD-Gloucester ?

P.G.: We have won the bid for the A350 MLG, and our customer has recognized that ILS criteria such as Direct Maintenance Cost commitment were key in the competition.

It is up to the A350 ILS team -Karl Brazier (ILS Manager) and Martin Seal (LSA Engineer)- to ensure that ILS criteria are well managed in the trade off process.

How can these objectives be achieved ?

P.G.: The change management process is crucial to achieve the objectives of the ILS project. It is based on a training program, ILS tool box and process, and concurrent engineering tool.

A training program has been arranged for Customer Services (more than 400 hours in 2006 for Gloucester), with the training sessions having already commenced.

The concurrent engineering in Messier-Dowty is based on Catia Smartteam, therefore the ILS team will have a dedicated CATIA/DELMIA workstation for the maintainability analysis using the digital mock-up with models.

The picture above was taken during the ILS Training session in Gloucester .

Milestone School Pool Hoist Project

Milestone School is a school for children with special educational needs.

Some 25 years ago, Dowty Aerospace designed and fitted a hoist over the swimming pool at the Milestone School. Its job was to lower pupils safely and slowly into the pool.

Messier-Dowty were contacted in the autumn of last year and asked if they could refurbish the hoist to its original state. As a result of its time in and out of the swimming pool, it had become rusted and the paint was peeling.

The job of making it as good as new, was that of 2nd year Apprentices: - Darren Devaney, Jesse Cassells-Brown and Andy Sealey in MLG apprentice section.

It was completely stripped down and cleaned during the time it was on site. Each stage of the process had to be recorded in order for it to be put back together again. Every single nut and bolt was replaced with stainless steel parts to prevent any future rusting. Any broken parts were re-furbished, machined and replaced, such as the bolts that hold the bed to the shaft.

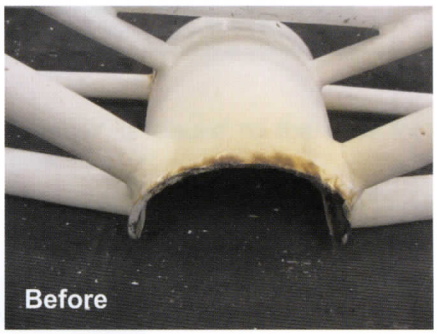
All parts were cleaned to remove any grease and dirt. Whilst the hoist was in several pieces, some parts were sent away to be re-sprayed. All white parts were sent to A and S Metalwork and Fabrication to remove all of the previous paint and be powder coated with a new layer of white coating. Whilst this was happening, the steel piston had any old bronze stripped and was re-plated with new bronze by Martin Trigg-Hogarth at Nu-Pro.

A jigsaw puzzle...

Using all of the photos and diagrams, the next challenge was to put the pieces back together. The hoist was then assembled back at Milestone School where a new electronic system was fitted to update and refurbish the old system - this was made possible with the help of Jaime Staite from Staite Electrical Services.

"On behalf of every one involved with the refurbishment, everyone that gave up their free time and zero expense on donating parts towards the pool hoist we would like to give our utmost gratitude and thanks."

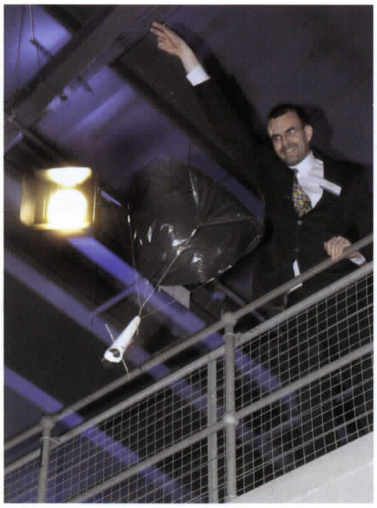
Darren, Andy & Jesse
2nd Year Apprentices



Flying Start Challenge

The Flying Start Challenge, now in its fifth year, went off with a bang down at the Fleet Air Arm Museum last month. Schools from all around the southwest competed to win the prestigious first prize along with glider flights, kindly donated by the Bristol and Gloucestershire Gliding Club, and a £1000 technology bursary for their school.

The scheme was developed to promote aerospace engineering and manufacture and is sponsored by Airbus, Rolls Royce, Messier-Dowty, MBDA, Smiths and Westland helicopters, in conjunction with the University of Western England. This year the finals took place at the Fleet Air Arm Museum and our very own Matthew Sexton and Phil Spiers were pitted against the kids and teachers at designing and building a parachute crush structure and a turbine stage. We are proud to announce that Whitecross School in Lydney, mentored by Messier-Dowty, came first in the competition overall and won the prize for the best glider flight. Many thanks to all the graduates and apprentices who were involved in the scheme throughout the year.



Phil Spiers testing the parachute

Ben Hodgkinson
Graduate currently working in Design Engineering

Charity events

Leigh Valley Light Railway
On the 1st/ 2nd of July 2006, an open weekend will be held in Malcolm Morgan's garden in order to raise money for 2 charities, Crohns In Childhood and The Milestone School. Since the SM32 narrow gauge miniature railway was constructed in the summer of 1995, the family have all been involved in making it a success. The attraction includes real steam powered locomotives and diesels pulling their trains of coaches and freight wagons along the railway. Please contact Malcolm Morgan directly for more information on this relaxing family event.

Band on the Lawn
This year's annual charity event organised by Lyndon Saunders is planned for Friday 14th July 2006. The event, which takes place at the Debenham's sports ground in Estcourt Road, Gloucester, is a great opportunity for family and friends to enjoy an outdoor charity event with live music. Anyone wishing to purchase a ticket or donate a raffle prize, should contact Lyndon directly.

Christmas in Test
At Christmas, Test Engineering raised £145 for charity after deciding to each make a donation instead of sending cards within the department. The money was split between two chosen charities: RNIB (Royal National Institute of the Blind) and the Alzheimer's Society.

Good Luck To...

Messier Dowty vs Airbus Football Match
The Messier Dowty Football Team who will play Airbus UK in an 11-a-side football match at 3pm on Friday 23rd June 2006. This match will take place in the Dowty Sports and Social Club playing fields (Staverton) - as there are no England world cup games on that day, we hope you'll go along and support our team!!

Engineering Rowing Teams
Good luck to the two engineering rowing teams that are taking part in Gloucester Rowing Clubs Annual Regatta. The event takes place on the Gloucester canal near Hempsted bridge on Sunday 4th June. We look forward to hearing the results in the next edition of the magazine.

CONGRATULATIONS TO...

Purchasing strike

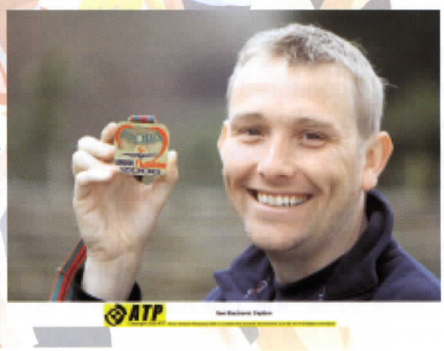
Congratulations to James Dunkerley's Skittles team who defeated the 3 other teams in a competition organised on 7 April between Planning, Procurement and Purchasing. Well done!

Nathan Howell - 1st year Electrical Maintenance Apprentice

Nathan started kickboxing at the age of 5 with a local club. He has achieved 6 British Championships (these are height regulated) and 2 European Championships for his age group. His aim is to win a World Championship these are held every two years. We wish him well!

Charity Marathon

Although injured, Marathon runner John Wedley completed the London Marathon in 4hrs 42 mins and 46 seconds and is now the very proud owner of the Marathon medal as pictured on the right. John raised over £600 for Cancer Research UK in memory of his dad who sadly died from kidney cancer 3 years ago. A big thank you to everybody who sponsored him.



30 years of service

On the 20th April, 15 Messier-Dowty employees celebrated 30 years of service by attending Cheltenham Race Course to enjoy a buffet lunch and an afternoon of racing. Pictured above:

- *Back (Left to right):* Bill Jones, Mark Tunstall, Paul Mumford, Clive Savory, Dean Wheeler, Andrew Burrows, Steve Collinson, Steve Snook and Brian Rossiter.
- *Front (left to right):* Bruce Pudner, Andy Baker, Maggie Howe, Grant Skinner, Christine Clarke, Martyn Bowen, Ian Mowat.

Jo Philips, currently working as part of the Engineering Services Team, was voted "Temp of the month" by Office Angels, the recruitment agency she is provided through. Well done and keep up the good work!

Weddings

Fraser Crease is marrying Victoria Bailey on the 16 September 2006

Sylvie Darrieumerlou is marrying Paul Ritchie-Haydn on 2nd September 2006

Births

Doug and Kathryn May are celebrating the birth of Alasdair James, born on 5th February 2006 weighting 7lb 12oz

Tom and Tracy Siddall are celebrating the birth of Jacob, born on 7th January 2006 weighting 7lb 1oz

A fond farewell...

Pictured on the left is Chris Rawlins presenting Mike Turley with a retirement gift. Mike left the company on 4th May after 17 years of service.

On the right Graham Wood congratulates and thanks John Sparkes for 15 years of service.

We wish them both a long, healthy and happy retirement.