Edition 13 June 2009

Messier-Dowty
SAFRAN Group

landingmatters

INTERNAL NEWSLETTER Messier-Dowty Gloucester

4000th set of single aisle gears!

This week we reached another phenomenal milestone with the delivery of the 4000th set of Airbus single aisle main gears for the A320 family of aircraft.

MSN 4000 are A319 main gears destined for the airline TAM in Brazil.

Introduced in 1987 the A320 family has received more than 6,000 orders to date. The first 1000 sets of gears were delivered in 12 years, the second 1000 in 4 years, 3 years for the third 1000 and just 2.5 years for the fourth 1000 – exactly the challenge the single aisle team set itself back in December 2006.

Any predictions for set 5000 ??

Chairman's Visit

In February M-D Chairman Pascal Sénéchal continued his annual programme of site visits with an extensive tour of the complete site. Every employee had an opportunity to hear Pascal give his views on the challenges for the coming year.

In his feedback at the end of the visit the Chairman commented that he was very pleased with the visit, the level of interest shown by everyone and the progress that we have made with recent investments. He made particular reference to how good it was to see an increased use of visual management techniques throughout the site.

In thanking everyone for their contribution, Mike Platt commented "A lot of preparation went into this visit and the result is a positive reflection on the site, highlighting the investments and improvements that have been made. We need to continue this work and, when the Chairman visits again later in the year, be ready and able to demonstrate that we continue to improve our performance."

Lean Sigma – lots going on!

TRAINING

As part of the global Messier-Dowty Lean Sigma business improvement approach, the Gloucester site is aiming to have completed the training of 72 Management Belts, 9 Black Belts and 65 Green Belts. As at the beginning of June we have completed the training of 51 Management Belts, 4 Black Belts and 30 Green Belts.

In February the Lean Sigma Black Belt trainees from all our sites met at M-D Montreal for the last four days of their 16 days training.

In the first week of June, a new group of Management Belt trainees completed the first two days of their four days training.

Left to Right: Dave Parsons, Andy Baker, Neil Kenyon, Kim Toomer, Karl Brazier, Nigel Woodford, Sylvie Darrieumerlou, Karen Jones, Lorcan Law, Helen Newman, Andy Fardon, Greg Nash, James Black (Renault Consulting).

POLICY DEPLOYMENT

Green Belt Dave Brown presents his project to the site Policy Deployment Committee. The committee meets fortnightly and is focused on implementing the SAFRAN+ business improvement programme (formally known as Action V).

Left to Right: Andy Cook, Mike Platt, Pat Thomas, Chris Wilson, Mike Jones (Black Belt), Rachel McGlothlen, Richard Ashford, Greg Smith, Dave Brown. Other committee members who were not present on this occasion are Matthew Sexton, Bob Hawkes, Andy Baxter, John Roberts, Neville Kite and Nigel Woodford.

EXAMPLES OF PROJECTS PRESENTED TO THE POLICY DEPLOYMENT COMMITTEE

Inventory Reduction – Andy Barlow, Production

Spares Delivery on Time – David Johnson, Production

Left to Right: Damien Brochard (Bidos), Gilles Panczer (Renault Consulting), David Lopes (Safran Conseil), Myriam Lagarde (Montreal), Pascal Hitier (Bidos), Luc Oberti (Bidos), Anurag Verma (Toronto), Rejean Fortin (Montreal), Fabrice Roos (Velizy), Anne-Sophie Domenget (Toronto), Mike Jones (Glos), Francois Desbiens (Montreal), Andy Barlow (Glos), David Johnson (Glos), Graham Faulkner (Glos).











NCR and Rework Reduction on EFA Slider & Main Fitting – Graham Faulkner, Engineering

Design for Re-engineering, Supplier Re-selection & Assembly Value Added – Mike Jones, Supplier Development

Upper Cardan Pin – Removal of Tooling Spigot – Ian Tandy, Manufacturing Engineering

Over-purchase Reduction – Emilie Castera, Purchasing & Procurement

Repair Concessions - Phil Bedwell, Customer Services

A320 Main Fitting Production Salvage Process – Steve Beard, Production

Bogie Beam Bush Sub-Assembly – Dave Brown, Production

Airbus Project Control & Information Management – Kay Boreham, Programmes

Manage Training Suppliers – Ryan Moxom, Human Resources

EFA Slider Leakage – Carl Redmond, Quality

In Service Investigations – John Bloomfield, Customer Services

Flanged Bushes – Dave Bevan, Engineering

Cincom Upgrade – Karen Jones, Production

1000th A330/340 main landing gear despatched

In February the 1000th set of Airbus A330/A340 main gears was completed and despatched from Gloucester to the Airbus aircraft assembly line at Toulouse, to be fitted to a Swiss Air A330-300 aircraft.

This significant milestone marks a twenty year period from initial selection in 1988, first gear delivery in 1991, entry into service in 1993, through to a mature program delivering currently, eight sets per month.

Airbus Long Range Program Director, Darren Waite, said "A tremendous amount of work has been put into this program by a great number of people at many of Messier-Dowty's worldwide operations. The progression of this program through the multiple variants developed has been both challenging and also a significant learning experience, invaluable as we advance towards A350. Congratulations and thanks to all the MD teams who contributed to the success of this excellent achievement!"

2009 Innovation Contest is launched!

Innovation at SAFRAN is not about Nobel prizes, it's about sharing good ideas with others and acting upon them. The Innovation Contest is open to all employees, individually or as a team (max of 6 people) and is intended to reward innovative projects and good ideas. ALL ideas have value, as long as they improve our contribution to the business.

Entry forms are available all year round via the Intranet Business Improvement pages / Innovation Contest / the Contest / How to take part: http://md-intranet/innovation/index.jsp

Look out for more details via Headlines and Intranet.

Re-positioning of the large Wohlenberg lathe

within the Large Landing Gear Machine Shop

THE LARGE WOHLENBERG LATHE (LT 18P) HAS BEEN SUCCESSFULLY REPOSITIONED AFTER 20 YRS ON THE SAME SITE. THIS IS TO ALLOW FOR THE SECOND WFL MTL MACHINE TO BE ACCOMMODATED WITHIN THE LARGE LANDING GEAR MACHINE SHOP

After 4 weeks of planned downtime for the move, ten A320 main fittings have now been manufactured to the required quality standards to support the Main Fitting Programme.

Thanks go to our colleagues in Medium Landing Gear for the support they gave us during this move. By adjusting their programmes they were able to turn the fittings on their machines during their downtime.

The original site of the lathe is now being prepared for foundations to be dug ready for the arrival of the next WFL MTL due in July 2009

A Centre of Excellence

Latest manufacturing investment at Gloucester

The latest £1.8 million WFL Mill Turn Lathe was installed in Gloucester's Large Landing Gear facility in January after a record six week commissioning, from installation to on-stream production.

In line with ongoing investment plans to maintain Gloucester's state-of-the-art manufacturing capability, the new Mill Turn Lathes will meet the increasing requirement for machining large titanium components.

The new machine is earmarked for Boeing 787 truck beam production. However, with the 787 volumes not as yet reaching previously anticipated levels it was vital for the Gloucester Operations Team to make full utilisation of their new asset.

With the decommissioning of one of two old 7-axis machines and the short term down time of the other, some extremely quick thinking and rapid reconfiguring of the new WFL enabled the re-alignment of large main fitting and bogie production. Fully utilising the new WFL with Airbus bogie production instead of the planned 787 truck beam, enabled the other machining centres in LLG to accommodate the load from the two 7-axis machines, relieving the potential bottleneck of A330/340 bogie manufacture.

Through this rapid reaction and full utilisation the new WFL machine, on-time deliveries at Gloucester have been maintained.

Andy Baker
Manager Large Landing Gear

New Welding Research

Welding technologies have long been present in aerospace industry, showing great benefits in manufacturing processes of large and complex components, such as aero-engine shafts, discs and blades. In 2008 Messier-Dowty initiated research into the feasibility of advanced welding technologies for use in the fabrication of landing gear components.

The Gloucester site is the focal point for all Messier-Dowty welding research activities. These activities are covered by two major Research and Technology programmes and partially funded by the UK government:

- Integrated Wing Advanced Technology Validation Programme
- Next Generation Composite Wing programme

Continuous Drive Rotary Friction Welding (CD RFW) and **Electron Beam Welding** (EBW) are the two most promising technologies currently being evaluated.

CD RFW is a completely mechanised, solid-phase process. There are no manual interventions required and metal melting does not occur, avoiding problems such as solidification cracking and shrinkage, which are typically associated with fusion type processes. The process can effectively be split into the following two steps:

1. One component is rotated relative to, and in pressure contact with the mating component (see figure 1). The friction produced, given the rotating speed and pressure, produces heat at the weld surfaces, creating the conditions for joining the metals. (figure 2)
2. The weld is formed by the application of a forge force during or just after the completion of heat generation. (figure 3).

The process is capable of producing high integrity joints in many metals and alloys, and is capable of rapid joining of tubes at a reasonable production cost.

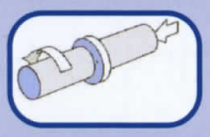


Figure 1: Schematic of RFW
(image courtesy of TWI)

Figure 2: Typical appearance of CD RFW
(photo courtesy of ThompsonFW)

Figure 3: Typical macro-photograph of CD RFW weld cross-section

EBW is a fusion process, which uses a highly focused beam of electrons as an energy source and is directed at the metals to be joined in a vacuum chamber (The vacuum is required to prevent beam dissipation and power loss). As the electron beam hits the metal it causes almost instantaneous local melting, which develops into a "keyhole" through which the energy can be delivered deep into the materials being joined (figure 4). The instantaneous melting of the metals allows the components to 'fuse' together and form a joint when cooled (figure 6).

The potential advantage for adopting EBW is versatility – A single EBW machine can be used to make circular and linear joints, ranging from thin to thick sections, in a number of different positions and orientations. And additional advantage is that EBW seems to exhibit less effect on the surrounding metal of the welded joint compared with **CD RFW**.

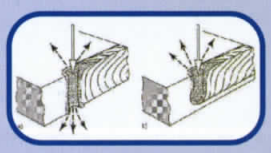
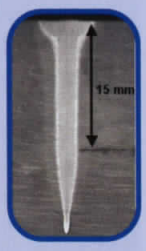


Figure 4: EBW process "keyhole" penetration mechanism a) full penetration and b) partial penetration
(Image courtesy of TWI)

Figure 5: Typical appearance of EBW

Figure 6: Typical macro-photograph of EBW weld cross-section



Messier-Dowty is currently investigating suitability of the **CD RFW** and the **EBW** technologies application on materials commonly used in landing gear manufacture, such as ultra-high strength steels, stainless steels and titanium alloys, as well as newly developed alloys that may be used in the future. Studies carried out to date show promising results - high integrity joints achieving parent, or near-parent metal properties.

Utilising **CD RFW** and **EBW** in the manufacture of landing gear structures could lead to the possibility of lower cost manufacture, shorter lead-times and significantly less waste.

The benefits from welding as opposed to machining a component from a solid forging are that nearer to net-shape input materials can be used, which would reduce the cost of material purchased and reduce the amount of machining required to form a component. Welding also allows the utilisation of smaller more simply shaped forgings to be joined to create large and complex components.

Figure 7 and Figure 8 illustrate two conceptual designs that maybe appropriate for future manufacture, showing how the above-mentioned benefits could be realised by manufacturing larger components from a subset of smaller easier to manufacture parts and welding them together. These concepts together with weld quality, joint integrity and manufacturability are currently being evaluated as part of Messier-Dowty's future technology research,

Written by Andraz Vatovec, for further suggestions for technical focus topics or to comment on anything in this article please contact Ben Hodgkinson.

Figure 7: Main fitting Concept showing potential Welded Joint Locations
(Design property of Messier-Dowty)

Figure 8: Sliding Member Concept showing potential Welded Joint Locations
(Design property of Messier-Dowty)

Congratulations to the employees celebrating 30 years service

Graham Bradley, Frederick Fairs, Clive Locke, Mark Wasley, Wayne Woodward, Ian Makin, Malcolm Hayne, Kenneth Moore, Guy Jones, David Smith, Alan Locke, David Addis, Stephen Bayle, Robert Little, Mark Morgan, Kenneth Porter, Brian Ritchie, Jiva Yakub, Andrew Murdock, David Windridge, Alexander Greig, John Moore, Robert Cornock, Colin Gittings, Graham James, Brian Keavy, Graham Long, Stephen Overthrow, Peter Martin, Sheila Meek, Alan Collins, Christopher Embling, John Schuck and Tessa Baxter.

Pictured above are the employees who were able to attend the awards ceremony

Congratulations!

We would like to congratulate the employees who have recently completed the 18-month Messier-Dowty Ltd International Graduate Development Scheme.

(From left to right) Suresh Bansal is working in the Airbus & European Business Unit as an A350 Configuration Controller & Program Administrator; Jean-Philippe Villain-Chastre is currently based in Purchasing as a Buyer; and Bosun Olajide is now working as an Engineer in the Airbus Long Range Team A330/A340 MLG.

Camilla Craven-Jones, Human Resources

Messier-Dowty IS Department assist African Schools Charity

Earlier in 2008 the IS department was contacted by a charity called "IT Schools Africa" and asked if we had any old computer equipment that we could donate. IT Schools Africa is a Cheltenham based charity dedicated to assisting schools that have a shortage of textbooks and learning material. By donating computers to schools, teachers and pupils are able to download curriculum material free of charge from the internet and provide children with access to IT technology.

By donating this equipment we are also helping to preserve the environment, as the equipment is used to end-of-life and then recycled to high environmental and legal standards.

I am happy to report that on the 20th Nov 2008 Phil Perry and Neil White delivered our first shipment to "IT Schools Africa". We managed to provide them with:

14 x laptops - HP & Compaq; 4 x servers - Dell; 38 x desktops - Elonex; 22 x monitors - various; 11 x printers - Dell

For more information please see their website at: http://www.itschoolsafrica.org/

Doug May, IS Manager

RAeS Fellowship for Mike

MD Mike Platt presented with a Certificate of Fellowship of the Royal Aeronautical Society by Capt. David Rowland, RAeS President.

Messier-Dowty wins 6-a-side Football Tournament

Congratulations to the Messier-Dowty Team for winning this year's competition held at Cheltenham Town FC. The squad of seven comprised captain Andy Matthews, Pete Craig, Jonathan Sequin, Kevin Foreman, Cyril Gomez, Daniel Kendrick & Owen Thomas.

In the group stages the team finished top of their Group and in the knock out stages, were triumphant in the quarter-final, semi-final and final, each occasion winning on penalties!

Pictured is Andy Matthews scoring one of the winning penalties and the Team with the cup.

Ringing the Bells

The art of English Change-Ringing on bells has been developed since the 17th century and is practised all over the world. Several employees of Messier-Dowty are bell-ringers, including Pat Hickey (pictured), who is Tower Captain at Badgeworth, and Tanya Sabin. Most people in this country are familiar with the sound of church bells and images on Christmas cards of monks flying up to the ceiling on the end of a rope, although that only happens very, very occasionally, when something goes wrong!

Although it is called an "art", and it sounds musical, bell-ringing involves a lot of mathematics and engineering. The "music" is actually generated from mathematical patterns, restricted by the amount one can change the speed of a bell weighing up to several tons swinging through approximately 360°, by pulling a rope that may be 60 feet long or more, passing round a wheel attached to the bell. Bells have been cast in approximately the same way, from the same bronze alloy (22% tin, 78% copper), for centuries and like landing gear, a combination of materials is used to optimise the assembly. The Engineering may not seem very high-precision today and much of the frame is usually oak, with other woods in various places, which flexes as the bells swing round.

At Badgeworth Church, the supporting frame moves several millimetres whilst the bells are swinging, making the bells difficult to ring and an appeal has just been launched to replace the frame and re-fit the bells. The oak frame, dating from 1791, will be replaced by steel, but most of the new bearings, wheels and other fittings will be almost the same as before: a feat of traditional engineering that can last for centuries.

Tanya Sabin, Laboratory

Flying Start Challenge

Earlier this year three of our Messier-Dowty Graduates Owen Mills, Daniel Kendrick and Mubashir Hussain formed part of an industry wide team to organise the annual Flying Start Challenge.

This is an initiative to raise the profile of Engineering careers to schools and their students in Key Stage 3 (11 to 14 years old).

The Finals Day event was held at the Fleet Air Arms Museum in Yeovil and the task for the students taking part was to design, manufacture and test a hand launched glider.

Photo: Tewkesbury School, hosted by Messier-Dowty, testing their glider

Shirts for Longlevens

Longlevens U10's recently entered 2 teams, the Falcons & the Griffins into the U10's county festival.

The Falcons qualified for the County Shield finals which were held in Cleave, Bristol in April. The Falcon's won the final against Cheltenham RFC.

Many thanks to Messier-Dowty who contributed towards the new shirts.

Nicola Smith, Finance

Helen completes the Marathon

On the 26th April I entered the Flora London Marathon. I completed the 26.2 mile course in 5hours 10minutes and 54 seconds. The reason for this insanity was that in 1969 my Mom was diagnosed with Multiple Sclerosis. So to mark 40 years of Mom's fight with the disease, I thought I would do something that would challenge me, whilst at the same time raise much needed funds and awareness for this worthy cause.

I obviously had some very personal reasons for running, staggering and crawling around this years London Marathon. I have to admit that I did not always enjoy the last few months; I was wet and cold with black toes and aches and pains. My nightmare has now ended - this is not the case for my Mom and others like her who continue to battle with the disease everyday.

I have created a website for donations http://www.justgiving.com/helenjones111 and I have to date raised over £2,300 for the MS Society which is the UK's largest charity for people affected by multiple sclerosis.

For more information on the work of the MS Society please visit www.mssociety.org.uk

I would like to thank all the people who sponsored me and I have been overwhelmed with the generosity of my colleagues at Messier-Dowty'.

The Multiple Sclerosis Society of Great Britain and Northern Ireland is a charity registered in England and Wales (207495) and Scotland (SCO16433)

Helen Jones, Planning

Supporting Gloucestershire's Young People

Messier-Dowty is a leading sponsor of the 'Gloucestershire Young People of the Year Award's and Mike Platt was on hand to make one of the presentations at this annual prestigious event.

Commenting on the Awards, Mike said "Messier-Dowty is proud to be associated with the Awards. As a business we rely upon the skills, enthusiasm and drive of young people entering industry. It is for this reason that events such as this are so important in encouraging and rewarding the spirit of the young people of Gloucestershire who want to make a real difference, both for themselves and for the community."

Pictured are the 2009 nominees and Mike presenting one of the awards

Proud Parents

Chris Harris and wife Gemma celebrated the birth of their first child, Elliot Andrew James Harris, born on 6th of January weighing 8lb 7oz.

Phil Spiers and Steph celebrated the birth of Albert on 4th April (his twin sisters birthday!) weighing 8lbs 13ozs

Vanessa Wood and husband Gareth celebrated the birth of Austin Baden on 15th April 2009 weighing 8lbs 7ozs

Hannah and Roger Delaney celebrated the birth of Matthew on 13th May 2009, weighing 7lb 11oz.

Sharon Philips and husband Paul celebrate the birth of their first child, Jonathan Michael born on 25th May weighing 7lb 5oz

Matt Claridge and wife Audrey celebrated the birth of Niamh weighing 8lb 1 oz, born on 9th May.

Mike Turley– awaiting arrival!

Newly Weds

Owen Thomas will marry Elizabeth Fox on Saturday 1st August at All Saints Church in Lymington, Hampshire. We wish them a lovely celebration and every happiness for their future together.

Jon Crewe married Emily on 25th April at Pauntley church near Newent. Following their marriage they celebrated their vows with a honeymoon in Thailand. We wish them every happiness for the future.

Retirees

Terry Venn, Large Landing Gear, retirement presentation on 27th March. Terry retired after 46-½ years service. *Working through the ranks and in many departments Terry undertook the positions of Machinist, Inspector, Foreman and finally Team Leader-Quality in Large Landing Gear*

Graham Long, Pin Group, retirement presentation on 12th April. Graham retired after 30 years of service.

John Edwards, Customer Services, retirement presentation, 14th May. John retired after 23 years of service.

Barry Aldridge, Medium Landing Gear, retirement presentation on 22nd May. Barry retired after 23 years of service.

Tony Gough, Procurement, retirement presentation, 1st May. Tony retired after 20 years of service.

John Carrington-Windo, Design Engineering, retirement presentation on 22nd May. John retired after 10 years of service.

Please contact the editorial team with any items for future editions: Peter Hall, Sarah Powell, Ben Hodgkinson & Heidi Beal