

LANDING MATTERS

Messier-Dowty employee newsletter

CONTENTS

- 2 Welcome... Tim Rice
- 3 Program News
RAeS Aero Challenge
- 4 Focus on Airbus Single Aisle
- 6 Research and Technology
Overview
- 7 WEAFA Conference
- 8 Chairman's Visit
- 10 Flying in the A380
Singapore Airshow
- 11 A Day in the Life of...
Operational Offload
Technology Workshop
- 12 Protecting our Innovations
Employee success
- 13 Technology Update
- 14 Airbus Assembly
Improvements
Employees at Play:
Full Steam Ahead
- 15 Involvement in the
Community:
Whitecross School,
Playdays Playgroup,
The Milestone School
- 16 Employee News:
Retirements and departures
Matched and Hatched

Pascal Sénéchal visits Gloucester



Your articles

Your pictures

Your magazine

Gloucester welcomes Tim Rice



Prior to his appointment at Messier-Dowty, Tim was Managing Director of the UK Division of Messier Services. Before that he worked for Spirent Systems (formerly Penny & Giles Aerospace), where he reached the position of Executive Vice President. Prior to that he was Commercial and Product Support Manager at Dowty Aerospace Wolverhampton, which became Smiths Aerospace, with a period before that at American Express. Tim's career began here at Dowty RotoL in 1977 as an Engineering Apprentice, gaining a BSc in Mechanical Engineering at Coventry and later an MBA at Warwick University.

Tim is a Chartered Engineer, Fellow of the Royal Aeronautical Society, Member of the IMechE, Council member of the SBAC and Director and Council member of WEAFA.

Tim, quite an interesting and varied career path?

Yes, actually I have returned to where my career first started back in 1977 as an Apprentice in the old Tech Block, which is now no more, with my first real job being a stress engineer.

My family connection with the site stretches back further, as my mother worked here in the 50's as Secretary to the Production Director, when the site was still RotoL.

It is my third time back in essentially the same company, although each time under different ownership. Initially of course it was Dowty, my second visit was under TI and now Safran. Each had its different approaches but fortunately the current French parent is more long term in its thinking than the previous owners!

What was the highlight for you during your period at Messier Services?

Firstly, building a close knit team to run the Gloucester R & O business.

Secondly, capturing the growth that the business has seen in the A320 market over the last couple of years.

Thirdly, branching the business out into consulting work to advising BAE on setting up an MRO capability in Jeddah, a multi million contract and part of the offset obligations for Typhoon.

What is your initial impressions of Messier-Dowty after your first few weeks in office?

Certainly we have some challenges but also huge opportunities. The potential business is very significant but the challenges are delivering the products, and reducing costs to make acceptable profits. In the short term we have to manage the capacity and deliver on time.

Your role has 2 hats, MD of the Gloucester site & GVP of the Airbus & European BU. What do you see as the specific challenges for the site in particular and also for the BU?

We have demanding customers and we have some major issues in the business to address and we must ensure long term profitability. In reality the difference between the challenges for the site and for the BU is not that great.

In terms of location, from a site and BU point of view, with our main customer located just down the road at Filton, it is both logical and appropriate for me to be based here at Gloucester.

There is also a third hat, as I have the role also of UK Safran National Executive, which involves liaison and co-ordination of the other UK based Safran companies.

What do you think will be your main priority in the short term?

Short term program priorities include resolving the material and supply chain challenges facing both twin and single aisle programs.

For the A350 program, it is working with Airbus to come up with a good product from both a technical and business point of view.

For the A400M we need to conclude some challenging negotiations with the Customer.

From a site perspective, with the amount of production work we have with Airbus and 787, our short term priority is managing the deliveries, making sure also that we do not lose sight of the lower profile programs and spares activity.

Do you have a particular message for the Gloucester employees?

We are all part of the same team, and we have to pull together to secure both our short term and long term interests.

And now Tim a few questions about yourself:

What do you like doing in your spare time?

Family and rugby are the main things that occupy the spare time I have.

I'm married and have two children, one girl of 15 and one boy of 12, so a lot of my spare time is spent as the resident taxi driver!

However, as season ticket holders, both my wife and I do try to get to Kingsholm for all of Gloucester's home matches.

When do you feel happiest?

When Gloucester win!!

What do you consider is your main characteristic?

Taking a balanced and pragmatic view of things.

What quality do you look for or prefer in your fellow man or woman?

Having respect and consideration for other individuals.

If you could be someone else, who would that be?

I'm perfectly happy being me.

And finally, if not the new MD at Gloucester, what would you choose to be or do?

Probably a Pilot!

Interviewed by Pete Hall

EUROFIGHTER Update

In mid-January, the first Tranche 2 Eurofighter (G50029) took off on its maiden flight from Military Air Systems in Manching, Germany. This is an instrumented production aircraft, which will be used for test flights with the aim of



January 2008

The first Tranche 2 Eurofighter Typhoon, Instrumented Production Aircraft Seven (IPA7), taxiing in following its first flight at EADS, Germany.

achieving international certification of the Tranche 2 Eurofighter aircraft by April 2008.

From March 10th-14th 2008, the four core Eurofighter Nations (UK, Germany, Italy and Spain) came together for the first time for a

combined exercise to demonstrate the interoperability of Eurofighter and its air-to-air capabilities while training with, and in mock combat against other fighter aircraft types. During the week of exercises, Eurofighter flew in formations of up to twelve aircraft, against fighters such as the F-18 and Mirage F-1. The event, codenamed "Typhoon Meet" was held at the Moron Air force base near Seville, and a total 20 Eurofighter aircraft took part.

As of the end of 2007, just under 140 Eurofighter aircraft had been delivered to the armed forces of the Eurofighter Nations (including Austria) and the aircraft had logged more than 29,000 operation flight hours.

Clare Owen



Eurofighter Typhoon of Spain and RAF in formation at "Typhoon Meet" in Moron



RAeS Aero Challenge



The 2008 Aero challenge was held on the 22nd of February at the Royal Aeronautical Society, with graduates from Messier-Dowty attending for the first time.

The Aero Challenge is an annual one-day event co-ordinated and hosted by the Young Members' Board of the Society. The competition is structured similarly to television's University Challenge, with teams of four going head to head to answer aerospace themed questions. The challenge starts with each team participating in three heats, with the best teams going forward to a series of knockout rounds.

The teams were randomly divided into four groups with each team facing the other teams in their group. Messier-Dowty were drawn against the 2007 winners as well the eventual 2008 runners-up, so unfortunately did not progress to the knock-out stages.

While teams are not answering questions they work on their entries in an 'Egg Race' that is run in parallel to the main competition. This year's brief was to design and manufacture a vertical takeoff aircraft able to sustain flight for as long as possible.

The winning entry achieved a flight time of 5 seconds; Messier-Dowty achieved a respectable flight time of 1 second, with most teams failing to record a time. The event was a great team building exercise and thoroughly enjoyed by those who took part.

Kevin Foreman

BOEING 787 Update

The 787 main gears for aircraft 3 and 4 are now being assembled at Gloucester. The main gears are now assembled complete, apart from the wheels, tyres and brakes, which are fitted at our facility in Everett.

Up to aircraft 6, the gears will be flight-test instrumented which, on completion of flight testing, will be retrofitted for customer use. These gears will initially have steel side and drag braces, which will later be exchanged for composite braces.

Drop testing of the main gear has been completed successfully at the CEAT Test Facility at Toulouse and the fatigue gear has been delivered to the Gloucester Test department for photoelastic survey prior to fatigue testing.

Pete Hall

Focus on...

AIRBUS SINGLE AISLE

A320 LANDING GEAR DELIVERY RATES TOP 34 SHIPSETS PER MONTH

Having delivered more than 3,500 A320 LG shipsets to date, the A320 program is Messier-Dowty's largest program. The A320 has racked up 6112 orders with some 3400 aircraft delivered to over 200 operators*.

In the next twenty years Airbus predicts that there will be a demand for deliveries of some 16,000 new more efficient single-aisle passenger aircraft to accommodate traffic growth and airline fleet replacement needs.

In order to meet a growing demand for single-aisle passenger aircraft Airbus is boosting its production rates. In March Messier-Dowty reached a new milestone as it stepped up to meet new production rates of 34 A320 LG shipsets per month. Airbus is looking to further increase production rates to rate 36 by year-end, with the aim to achieve rate 40 by December 2009.

In an interview held with Colin Thornton, A320 Program Director, and members of the A320MLG IPT, the team explained how this will impact the business.

*Source: www.airbus.com
as of Feb 29th 2008



How is Messier-Dowty preparing for the A320 program ramp-up?

"Every M-D site is adapting its capability to meet the growing volumes by a combination of investment, offload and improvement. In addition the supply chain is increasing its capability and in some cases additional suppliers are being introduced," states Colin. "A major part of the global strategy is the development of the Suzhou II plant," he adds.

What will this mean for Gloucester?

Alex Ball, Value Stream Manager commented, "From a Gloucester manufacturing point of view we will need to accommodate the increase in

assembly of the A320MLG and secure the current volumes of main fittings. We must build in some contingency options to cater for unplanned events like machine/process breakdowns and utilise 'best practice' from the lessons learnt from our sister sites to optimise our manufacturing capacity."

Once we assemble the MLG what is the next step in the process?

We deliver the gears to the Airbus final assembly line (FAL) in Toulouse and Hamburg. Airbus recently added a third FAL for the A320 in Tianjin, China, in recognition of the huge market potential in Asia.



A320 Assembly Team

When will Messier-Dowty begin delivering A320 gears to the Chinese FAL?

The first delivery of an A320 MLG to the Tianjin FAL will take place in May this year.

The program ramp-up will create both opportunities and challenges for the business, will it not?

Colin continued, "Yes, while an increase in production rates highlights the phenomenal success of the A320 program, cost becomes even more critical."

With an increasing number of A320s in-service one of the challenges for Messier-Dowty must be to forecast and deliver spares on time to support in-service fleet and overhaul programs?

Alastair Bailey, Commercial & Logistics Team Leader, explained, "The spares business is hugely important for Messier-Dowty. Last year marked the start of the second overhaul phase for aircraft delivered in the late 1980s/early 1990s. This is now coinciding with the first overhaul of newer aircraft leading to a huge rise in activity. We are gathering data from the fleet and airline operators to allow us to plan for this rise and

anticipate market demand. Data we obtain from the second overhauls this year will enable further improvements to be made in the coming years. We are striving to improve on our current spares delivery through provisioning and supply chain support to the current program and ensure we are in a strong position for future bids on the next generation single aisle aircraft." Simon Harris, Assistant Chief Engineer added, "Behind the scenes, both inside and outside of the A320 IPT, the engineering and customer services teams provide around the clock support to the growing fleet to keep them flying."

Kristy Worgan

ACHIEVEMENTS

- On-time delivery of MLG since July 2006, reducing level of quality escapes
- Delivery of 3,500 shipsets to Airbus
- Production ramp-up to 34 sets per month from March 2008

CHALLENGES

- Deliver OE ramp-up to rate 40 with no quality escapes
- Deliver an increasing number of spares parts to support in-service fleet and overhaul programs
- Increased cost of raw materials

A look to the future

Both Airbus and Boeing are planning to develop a new single-aisle passenger aircraft to meet new environmental challenges. According to the media the earliest that any new single aisle replacement is likely to be launched is post 2015. To date our performance on the current A320 single-aisle program puts us in a good position for future single aisle programs in that we have proved that we can meet Airbus requirements in providing a robust, reliable and affordable product. However it is vital that we continue to meet the Customer requirements and that we prove that we can step up to the challenges that we will face over the next few years. Our current program performance is a stepping-stone to the future!



A320 IPT

Research & Technology

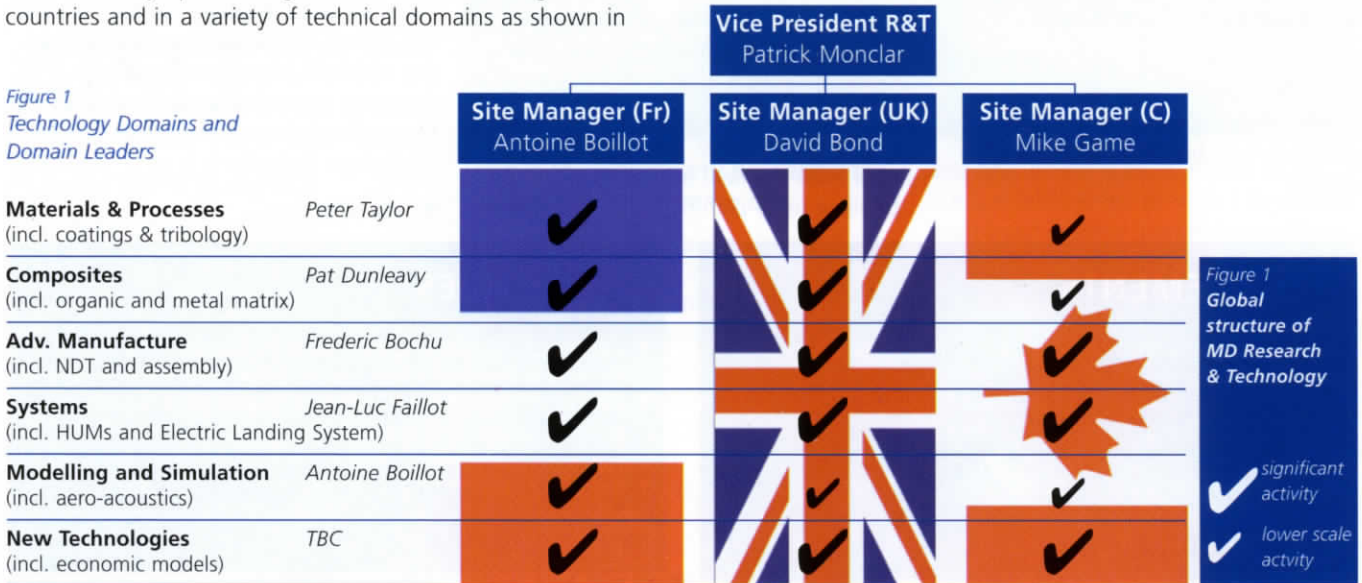
Global structure and technology domains

R&T activities are central to the ongoing success of the companies in the Safran Group. They provide a means of introducing new technologies and lead to new applications or markets and enable group companies to maintain a solid competitive position in a technologically advanced industry.

Messier-Dowty operates a global R&T team working in three countries and in a variety of technical domains as shown in

Figure 1. The domains represent core or emerging technologies in which Messier-Dowty needs to maintain or develop an expertise. Decisions on how to develop these competencies are made by a combination of R&T management and Technology Domain Leaders. R&T site managers are responsible for implementing the technology development strategies at a local level.

Figure 1
Technology Domains and Domain Leaders



The R&T process

One of the key roles of R&T is identifying the needs and possible technological solutions for future programmes (currently focused on the single aisle replacement opportunity). This requires a significant amount of forward planning. Most projects are done in collaboration with other industrial partners and academic institutions with part-funding provided from national governments or the European Commission. Funding is only available at set times and applying for funding involves setting up, or joining a consortium of partners, writing the project proposal and then waiting to find out if the bid has been successful. This can all take over a year to complete.

R&T projects work to mature emerging technologies in generic applications to what is known as Technology Readiness Level 6 (Figure 2). This measure of technology readiness was originally devised by NASA and aids planning of technology development programs. Further development of new technologies from Test Rediness Level (TRL) 6 to TRL 9 (in-service) is undertaken in product specific programs.

Small-scale projects run for 2-3 years with larger ones typically running for 4 years. So from start to finish it can take over 5 years to get final results after identifying the need for a piece of research. This is why we are already working on new technology for application to the single aisle replacement aircraft, which are not due to enter service until perhaps 2015.

Figure 2 Technology Readiness Levels
*Full TRL requires modelling/analysis/ prediction development in line with experimentation

Technology Readiness Level	Where this work is conducted within M-D projects portfolio	Description (interpretation of original NASA levels)
TRL 1	UNI	Basic principles reported
TRL 2		Feasible technology application identified
TRL 3		Analytical & experimental proof-of-concept
TRL 4		Technology/Component validation in lab *
TRL 5		Technology/Component validation in relevant environment *
TRL 6	R&T	System model demonstration in a relevant environment *
TRL 7		System prototype demonstration in relevant environment *
TRL 8		System "flight qualified" through analysis/test *
TRL 9	IPTS	System "flight proven" in-service

Research & Technology

UK activities and team

Current research activities at Gloucester include projects investigating new designs for future aircraft, application of new materials and coatings, novel manufacturing processes, health monitoring and development of electrically actuated landing gear as summarised in the table opposite.

Dave Bond



Figure 3
UK R&T Team

Project Name	Project Lead	Development activities
TATEM	Julia Payne	<ul style="list-style-type: none"> Understanding of LG Health Usage Monitoring systems integration into aircraft Shock-strut servicing condition monitoring capability
Integrated Wing	Paul Trowbridge	<ul style="list-style-type: none"> Application of High Strength Stainless Steel & Composites Analysis and costing methods Residual stress NDT measurement system (MAPs)
NGCW-HIVOL	Germain Fourgeoux	<ul style="list-style-type: none"> New manufacturing & machining methods Costing methodologies to support "Design to Cost" Improved understanding of tribology of pin-loaded joints Emerging NDT methods
ELGEAR	Satish Pandya	<ul style="list-style-type: none"> Development of electrically actuated landing gear system Design of landing gear for future aircraft concepts
NACRE	Geoff Cumner	<ul style="list-style-type: none"> Investigation of "low-noise" concepts and design processes
ALCAS	Julia Payne	<ul style="list-style-type: none"> Design implications of composites wing technology to LG
Hard Landing	Julia Payne	<ul style="list-style-type: none"> Justification of need for Hard Landing Detection system Development of second generation HLDs
Acoustic Emissions	Tim Baker	<ul style="list-style-type: none"> Evaluation of AE systems for early detection of fatigue cracks on test components

WEAF ANNUAL CONFERENCE

In February Messier-Dowty participated in the West of England Aerospace (WEAF) Annual Conference held at Weston-super-Mare.

This is a forum attended by leading industrialists from the DTI, SW Region Development Agency and other Government and Educational bodies.

The conference is an opportunity to bring together both the medium and larger size aerospace companies and primes with the aim of developing the South West as a strategic region for the aerospace business, creating and maintaining a world class supply chain in the area.

Pete Hall



Pascal Sénéchal mee



ts the Gloucester Team



Flying in the A380

Well you wouldn't think that after spending 12½ hours on a plane you would be looking forward to getting on to another plane for a further 7½ hours. This was the situation that my wife, Jenny and I faced when we were lucky enough to be flying to Australia on Christmas Day 2007!

The second leg of our journey with Singapore Airlines was to be on the 'World's biggest commercial airplane', the A380!

There seemed to be an buzz of excitement in the departure lounge and I must say that Singapore Airlines certainly put a great deal of thought into the logistics of loading so many passengers by loading off 2 floors and having everything well signposted.

Approach into Sydney



Once on board the seat spacing and layout, even in economy, were very comfortable. Unfortunately the stewardesses would not allow me to experience the business class or even the suites, maybe next time!

Take-off seemed very slow and I thought we'd never get off the ground but we did, without incident.

During the flight the cabin was very quiet, maybe because the engines are so far away, but at least it meant that you could enjoy the play on demand in-flight movies (of which there were plenty). The entertainment system was very impressive.

Landing in Sydney was, thankfully, uneventful and very smooth.

All in all it was a very good experience and at least I can say, I think, "I am the first Messier Dowty employee to fly on the A380 Superjumbo!"

Jon Morrison



SINGAPORE AIRSHOW

Messier-Dowty participated in the inaugural Singapore Airshow in February at the brand new show site and was attended by Pascal Sénéchal.

We exhibited an A320 main landing gear on the SAFRAN group stand alongside Messier-Bugatti and Messier Services.

One of the new Singapore Airlines A380s was the star attraction in the show's flying display.

The show was reported to be a huge success and 40% larger than the previous airshow held in Singapore.

Pete Hall

Operational Offload

Operational offload has become an essential part of production at Messier-Dowty, with many of our parts being processed outside by external suppliers. These range from proprietary processes, NDT and early machining operations of some parts.

During the last 12 months it has been necessary to make some major changes to the offload process, with the introduction of HVOF, B787 and other new programs. This has resulted in the offload team having to change, to cope with these new demands. Rate increases across the site have also increased the number of batches processed through the department.

In Aug 2007 the offload team successfully relocated to their own warehouse. This relocation has led to a quick process to move work in and out of the site, with a slick mechanism for booking in and out. By relocating the offload team to their own department, offload suppliers have a dedicated goods in and out area.

In addition to relocating the department, we have made some significant benefits to the business by

expanding our PMOS (Processing, Machine and Offload System) database throughout 2007, to now include all but one of our offload suppliers. This system is used to provide electronic



forecasting and tracks work when outside of the business. The system also monitors their delivery performance back into Messier-Dowty. The PMOS database was created and updated by members of the team, who achieved this in addition to maintaining their normal work routine.

Another benefit to the business was the work done on transportation costs. Transportation costs have been significantly reduced, even though the amount of work being despatched has increased. In summary the team were

offloading twice as much work at the end of 2007, with no noticeable increase to transport costs due to the cost saving activities they performed earlier in the year.

The team has had particular successes with some key suppliers who are now achieving 24hr turnarounds. There have also been significant improvements in the final processing of critical parts on A330/340, which has dramatically helped to achieving an on time delivery. Whilst at the same time negotiating to reduce premium payments that were previously the norm.

During the next 12-24 months we anticipate the demand on the offload department will increase and the changes we have made in the last 12 months are in anticipation of any future ramp up.

Thanks go out to the entire logistics department who have helped achieve our changes throughout 2007 and to the quality department who helped us write a procedure for the offload process.

Karl D Brazier



TECHNOLOGY WORKSHOP

In February the first Aerospace and Advanced Technology Forum was held on-site at Messier-Dowty, Gloucester. The intention of the IMF Members group is to promote and raise awareness of technical developments within the Metal Finishing Industry and to provide a central hub for the organisation of lectures, seminars and practical sessions. The Group is centred within the South West region and includes members from Airbus UK, the IMF, Messier-Dowty, Messier Services, Kohler Mira and Poeton Industries.

Neil Kenyon Process Group

The ideas and innovations of Messier-Dowty staff have always been a fundamental part of our success as a company. Protecting our ideas through patents, trademarks or registered design has become increasingly important in recent years to ensure the bright ideas of our people continue to maintain our company's position as a world leading aerospace company.

In recognition of the value of the innovations generated daily by our people, the company made a decision in 2007 to introduce a scheme to financially reward employees' inventions. The reward scheme has potential to payout to employees up to £3400 for each invention.

You may be asking what defines an idea or invention that is worth protecting? Simply, your invention must:

- be new.
- have an inventive step that is not immediately obvious.
- be capable of being made or used in an industry relevant to the SAFRAN group.

Ideas and innovations can be collectively referred to as Intellectual property (IP) and protection of our IP gives us many rights:

- If someone else uses the IP without permission, such as a competitor, legal action can be taken to stop them.
- IP can be sold, just like physical property.
- We can licence the IP to one or more people.

So if you have had to solve a problem whilst doing your job or have always thought that we could do something a better way – you probably have generated a concept for a product or a process that should be considered – and even if it cannot be protected you may

Full details of the scheme may be found at

http://md-intranet/filesserver/mdintranet/hr/general/PatentsRRscheme_13_Sept_07.doc



PROTECTING OUR INNOVATIONS

still be eligible for a financial reward simply for identifying the opportunity.

So how do you go about getting this reward? The process is very simple – employees or team of employees who believe they have an idea worth protecting need to complete a short invention declaration form (see intranet link below). The idea is then reviewed by the site Intellectual Property Committee (IPC), and if assessed as being of value to the company an initial reward of £350 may be made to the inventors. The IPC will then assist the inventors in producing a patent application and further rewards may then be made should the idea successfully be patented.

If you have some ideas for inventions and want to discuss them with relevant members of the IPC your site contacts are:

- Phil Spiers (MANENG)
- Phil Hopkins (Engineering)
- Rachel McGlothlen (HR)
- David Bond (R&T)
- Laurie Thompson (Legal)

INVENTORS REAP REWARD

The Intellectual Properties Committee was launched in Gloucester last year to encourage and reward employees who create patentable ideas for Messier-Dowty. In January this year, the IPC made its first awards to Steve Smith, Richard Lang, Marty Inns, Robert Menezes and Ian Bennett (pictured above left to right) who collectively have created 12 ideas which have either been or are in the process of being submitted for patenting. Each idea attracted a payment of £350 per inventor and could potentially attract a further payment of up to £3050 once the innovation, alignment to business strategy and economic value of each is assessed by the committee.

Inventions included various elements of a bogie positioner unit, a frangible pin-within-a-pin design and two ideas for axle steering.

IPC Chairman, David Bond, said, "I am very pleased to see us rewarding employees whose inventiveness will help to take this business forward."

Congratulations to Ian, Rich, Rob, Martyn and Steve!

Dave Bond

Congratulations to Laura Wiacek

Laura obtained an AQA Certificate in Introduction to Counselling Concepts.

The course provided an insight into counselling, its concepts and methods. The course required Laura to practice basic counselling skills and learn the underpinning theory. She completed both practical assessment and an exam, achieving a result of 90% – joint highest mark! Well done!

Technical Focus

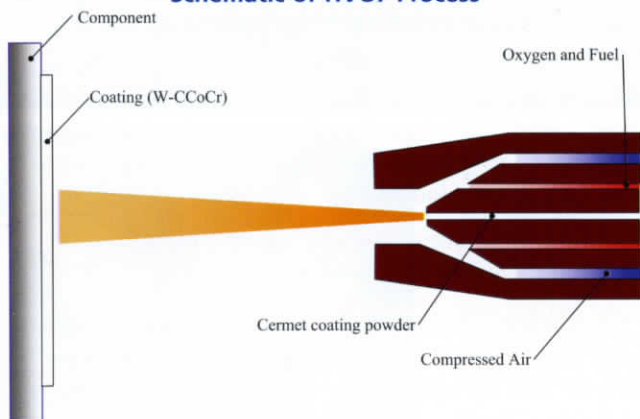
HVOF Coatings

What are they and why are we using them?

Many of us have heard the term HVOF banded around the site lately, especially if we are close to the Boeing 787 program or A350XWB. But what exactly is all the fuss about? Here we try to explain a little bit about this new technology and how we are adopting it at Messier-Dowty on our newer programs.

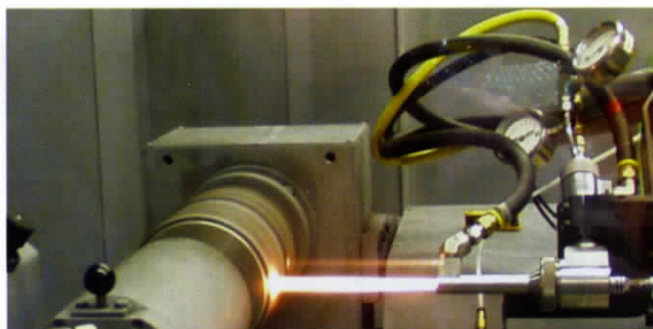
HVOF stands for 'High Velocity Oxy-Fuel'. It is a thermal spray process for applying coatings at very high speed and temperature onto components, and is now quite well known to the aerospace industry. Primarily the process was developed for high wear applications in gas turbine engines. However as the technology has matured it has expanded to cover a much wider range of applications and coatings, and is now being used outside of the aircraft industry.

Schematic of HVOF Process



The HVOF process works by feeding oxygen and fuel into a manual or robotically controlled gun. The fuel and oxygen combust, and the resulting high pressure accelerates the combustion products through a nozzle to produce very high velocity (1000m/sec) flows. The chosen coating is injected into the flow in powder form, and the stream is directed at the substrate (the component to be coated). As the coating particles accelerate towards the substrate they soften in the flame, but do not become molten. The particles impact on the surface of the substrate, their high kinetic energy resulting in a bond to the parent material and to adjacent coating particles. The result is a coating that is very dense and well adhered to the substrate.

HVOF coatings (usually cermets – ceramic/metallic composite) can be designed specifically for an application or use. Messier-Dowty is currently using Tungsten-Carbide / Cobalt / Chrome (WCCoCr) in all of our HVOF applications. Tungsten carbide provides a hard wearing surface, Cobalt constitutes a matrix



to hold the Tungsten Carbide together, and Chromium supplies some additional corrosion protection.

The HVOF process results in very high-density coatings with effectively zero porosity. They also result in coating-to-substrate bond strengths in excess of 80MPa. Because the coating particles bond using their kinetic energy rather than thermal energy there is a resulting lower heat input to the parent material which removes requirements for subsequent stress relief.

These coatings are now replacing the traditional process of hard chrome plating. There are a number of reasons for this. From a safety and environmental perspective the newly launched European regulations, REACH, restrict the use of hexavalent chrome (contained in chrome plating solution), and our customers are also imposing restrictions on its use. From an Engineering perspective, chrome plating also contains inherent cracking in its microstructure, which can, if not considered, propagate through the entire thickness of the plating and result in corrosion of the parent metal and/or detachment of the chrome. Another, Production, issue is that the process of plating larger components can result in a 'dog bone' effect, where the plating thicknesses are variable over larger lengths. This can result in significant post plating grinding work to achieve the finished dimensions for the part.

HVOF is a new process to Messier-Dowty, and comes with its own challenges. It is easier to apply coating to a near-finished size using HVOF; however the use of Tungsten Carbide as one of the main coating constituents can, if not finished correctly, result in a highly abrasive surface and the analogy to cutting tools on the coating surface can be made. This can excessively exacerbate wear on bushes and seals and mating surfaces. The resulting hard coating surface also means that in order to achieve finished dimensions (usually super finishing) diamond grinding wheels are required to machine the tungsten carbide in the coating.

I hope that this article has given a little insight to HVOF coatings; their benefits and challenges. It is intended that this Technical Focus column becomes a regular feature in Landing Matters. If you have any topics that may be of interest please contact **Ben Hodgkinson**.

Many thanks to all the contributors and editors of this article including:

Conrad Harriss (Engineering), Jon Bailey (laboratory), Malcolm Page (Manufacturing Engineering) and Ben Hodgkinson (Commuter IPT).

Airbus Assembly Improvements



Offices have moved out of the shop to allow for future Rate increases on both Single & Twin Aisle derivatives.

The Tearoom has also moved out of the shop environment, which improves health and safety, removes the chance of contamination with components and produces more space in the shop.

Sidestays were brought over in early 2006 and placed in the shop without having the required space. The office and tearoom moves allowed us to increase this area and improve HSE and to introduce a 5's audit. Any unused kit was removed from shop and only Sidestay equipment including Rigs, consumables, etc are based in the immediate area.

Airbus Sub-Assembly Honing from LLG and MLG Machine shops has been transferred into Airbus Assembly so the flow of the components can be maximised. This allows us to have

a more flexible approach inline with main build delivery dates and helps reduce bottlenecks in the machine shops. The area is set-up with height adjustable tables, new technology in bush cutting equipment to be delivered early March and rolled out over a wider variance of components as trials continue to be actioned. Ideas used have been taken from visits and information share between both Bidos and Montreal.

An additional build station has been set-up and is currently being used on the Twin Aisle Build line, which will help with the increase of rates from 6 per month in 2006 to 8-10 per month in late 2007, with a future view of having the capacity for up to 12 per month. Build tables have been moved to allow room for fitting the shock strut, which is additional since Feb 2007. Electrics and airlines were re-plumbed overhead to reduce possible health and safety issues. Areas have been marked out on floor as 'homes' for kit i.e. rigs, lifting equipment, etc, so people know where to look.

The introduction of Master Mover on Single Aisle frames has removed the need for using a forklift in the inspection area. This is also now used to bring in Twin Aisle main fittings into the shop reducing forklift traffic through the centre of the shop.

The inspection area is now divided from the shop floor. An area marked out for transport frames and consumables cupboards were supplied. Each area has their own crane to allow us to inspect four gears at once when required.

The flow line has been improved throughout the shop on both Single and Twin Aisle programs.

In 2008... A new entrance will be set up which will extend the Sub-assembly area by a third. Ovens will be moved back close to the old entrance. Kit will be placed where it is to be used rather than generally around the area. An additional small oven will be obtained for smaller components and a designated cooling off area for components – this will allow us to cool off smaller components improving productivity.

Billy Gill

Full Steam Ahead

Over the last three years I have become involved with a company called the Flour Mill Ltd whose workshops restore old system engines, close to where I live. Over this length of time I helped restore a locomotive with the number 5521. The manager of the Flour Mill owns this locomotive so he was all too happy for someone to be interested in getting the engine running again. In my spare time I helped Geoff Phelps, the foreman of the workshops, to restore the locomotive.

As the manager of the Flour Mill had dealings abroad we always planned to take the engine to Eastern Europe when it was complete. In April we took it to Poland and crewed the engine down through Slovakia to Hungary.

Every year in Budapest in Hungary, the Hungarian railways hold a steam engine grand prix. The Flour Mill usually sends a team to represent Great Britain in the competition.

I participated in this competition in 2005 and 2006. During this competition we have always had to use a Hungarian engine, so this year we had a strong chance of winning as we had our own engine for a change. The challenges included a timed sprint; rescue the damsel; beer can balancing and a blindfolded driver competition. We did very well in all of these challenges and looked set to win, but were just beaten by the Hungarian team.

We therefore took second position in our class.

Tom Halford





Whitecross School visit

On the 5th February 2008 we (Jean-Philippe Villain-Chastre, Bosun Olajide, Suresh Bansal and Kevin Foreman, graduate of 2007) decided to give a tour of Messier-Dowty, and different presentation (figures, engineering and test presentation, apprentice presentation) to a class of 20 students of year 11 from Whitecross School, in Lydney.

The purpose of this visit was for the students to have an awareness of local industry. In addition, the Messier-Dowty Apprenticeship was presented to prospective candidates.

This tour took place from 10:00 to 14:15, and required some preparation and organization (think about where to go, work on the presentations...) before the day.

On the day, we were helped by 3 apprentices (Matt Roberts, Ben Price and Robert Denton), and one previous graduate (Xabier Landeta Callejo).

The feedback we received from the students and the teachers about the visit was very good. Therefore they were all impressed by the A340 landing gear in Airbus Assembly, by the production in the Large Landing Gear, or by the quench in Heat Treatment, and 1/3 of the students were thinking to apply for the apprentice scheme at Messier-Dowty.

Once again we would like to take the opportunity to thank everybody who helped us during this day and before it, and give us a really precious support.

Jean-Philippe Villain-Chastre Graduate

Christmas Donations

Last Christmas instead of printing and posting Cards the company decided in favour of an 'e-card'. As a seasonal gesture the Gloucester site donated £1000, split between two very worthy local organisations.



Playdays Playgroup

Playdays Playgroup is a community playgroup in Longlevens run by a voluntary committee of mums. The playgroup has been running for over 30 years and has served many Dowty children, including my children and myself. Unfortunately, last year we ran into financial difficulty and a tough summer followed. We would like to thank both Messier-Dowty and its staff for the support and generosity they have shown the playgroup.

I would personally like to thank all those that bought raffle tickets, donated prizes or money and those who bought cakes. You raised a fantastic amount of money for the playgroup, and along with the £500 generously donated by the company, have helped to pay the staff money owing to them and keep the playgroup open for future generations to enjoy.

Rachel Bennett

The Milestone School

The Milestone Special School in Gloucester was delighted to receive their cheque from Messier-Dowty to support their latest project. The school is bidding to become a Specialist Special School. It will specialise in developing communication and interaction skills with their own pupils and provide training and support in this area to local mainstream schools, parents and community groups.

The target is to build a training centre within the grounds of The Milestone School, which will also be available for community use outside of school hours. It will offer a varied programme of training in specialist teaching and learning strategies. Staff will be able to demonstrate specialist ICT equipment and software and will provide a reference library of relevant materials and specialist teaching and learning resources. The school needs to raise £30,000 in order for the Department for Children, Schools and Families to release a building grant of £100,000 and the donation from Messier-Dowty has launched the fund raising drive.

Lyn Dance Head Teacher



Retirements... Over 130 years of service!

After serving 44 years and 6 months, Bob Fluck has decided to retire.

Bob started his working life as a craft apprentice at Dowty Rotol Ltd in September of 1963. After completing his apprenticeship, and getting married, both in 1968, he found himself in the experimental machine shop, working on a Moog hydrapoint NC.

In 1975 he was promoted to junior foreman in number one machine shop on the milling section and in 1980 he was hand picked by Alan Davis to be a senior foreman in number two shop.

With Bob's NC knowledge, he became a pivotal person in the early years of number two shop, in the production of the first A310 gears (first machining operation taking place 1st August 1980) which over the years progressed onto the production of the A320 and A340.

In 1985 Bob was promoted to Superintendent. In the early 1990's, Bob was also the focal person for the training of machinists from Montreal to assist with the opening of their site.

Even after having passed the milestone of his 60th birthday last year and enduring two heart attacks several years ago, he still appears to have boundless energy and commitment in the never ending quest of getting the next gear out of the door.

No matter how hard we try, the vacuum that Bob Fluck will leave in Large Landing Gear will be very hard to fill indeed.



PAUL DAUNTER



Paul retires after 46 years' service

JOHN LINDLEY



John retires after 25 years' service

DULCIE ADAMS



Dulcie retires after 18 years' service

& Departures...

STEVE SHORCOTT



Steve leaves for a new challenge

Matched...

- Congratulations to Sharon Stephens (Human Resources) who celebrated her marriage to Paul Philips on Saturday 26th January 2008.
- Congratulations to Chris Harris (NDT) who celebrated his marriage to Gemma Roberts (daughter of Mike Roberts – Airbus Assembly) on Saturday the 13th October 2007. The ceremony took place at The Dark Barn, Rudford, Gloucestershire.



Hatched...

- Wayne and Anita Hall, celebrate the birth of their daughter Isabelle Carmen Hall, born on Christmas Eve weighing 7lb 5oz, sister to a proud 2-year old brother Oliver.
- Steve Riegler and wife Donna celebrate the birth of their first born, Sydnee Sophia Riegler, weighing 7lb 5oz. Sydnee arrived on Monday 24th March 2008.
- Karen Jones and husband Steve celebrate the birth of their son Luke Thomas, born on 16th February 2008 weighing 8lb 6oz.
- Vicki Paterson and her partner, Phil, celebrate the birth of their son Jamie Robert, weighing 6lb 13oz. Jamie was born on 9th February 2008.



Congratulations to all the proud parents.