

Landing Gear *Link*



The House Magazine of
Dowty Aerospace Landing Gear Ltd., Gloucester
Issue 7, April 1994

On 9th March it was announced that the necessary approvals to establish the Joint Venture between the Dowty and Messier landing gear businesses had been obtained.

This followed the signing of an agreement last December by T.I. and SNECMA. The combined Messier-Dowty business will have a customer list which spans all the world's major aircraft manufacturers.

Commenting on the establishment of the Joint Venture, Sir Christopher Lewinton, Chairman of T.I., and Monsieur Gérard Renon, President of SNECMA said; "The benefits of bringing our landing gear businesses together have been increasingly apparent during negotiations. We are delighted that the substantive regulatory and tax clearances have now been obtained, enabling us to put into effect a joint venture which will create a world class landing gear business, capable of serving the global aerospace market and meeting the requirements of our customers worldwide".



MESSIER-DOWTY

Also featured in this copy of **LINK**:

Pages 2 & 3	Summary of 1993 Results	Page 5	Isao Completes Secondment	Page 7	Explorers Show Expertise
Page 3	Financial Progress in 1994	Page 6	Customer Care Drive Launched	Page 8	Messier-Dowty Management Structure
Pages 4 & 5	Apprentices Help Disabled Swimmers	Page 7	Visit to Russia		Welcome to Geoff Smith
Page 4	High Capacity Aircraft		One From The Archives		New Appointments
Page 4	Manual Handling		Maurens Country & Western Club		

Summary Of 1993 Results

SALES Sales in the 1993 financial year (January to December) were £79,067,000, some 11% down on the target of £88,607,000.

This shortfall was mainly caused by cutbacks on the A330/340 programme and the A320 programme.

The chart below shows how our total sales were split between O.E.

(original equipment), spare details, spare units and development.

93% of our original equipment sales were for civil aircraft and 7% for military. Spares sales were more evenly split; 51% civil and 49% military.

Shown at the bottom of the page is a chart which gives a breakdown of our

original equipment sales and illustrates the importance to us of the Airbus programmes.

PROFIT Profit achieved for 1993 was below the forecast level. The main cause was the shortfall in sales although this was offset to a large degree by the cost saving measures we took.

DELIVERY PER-

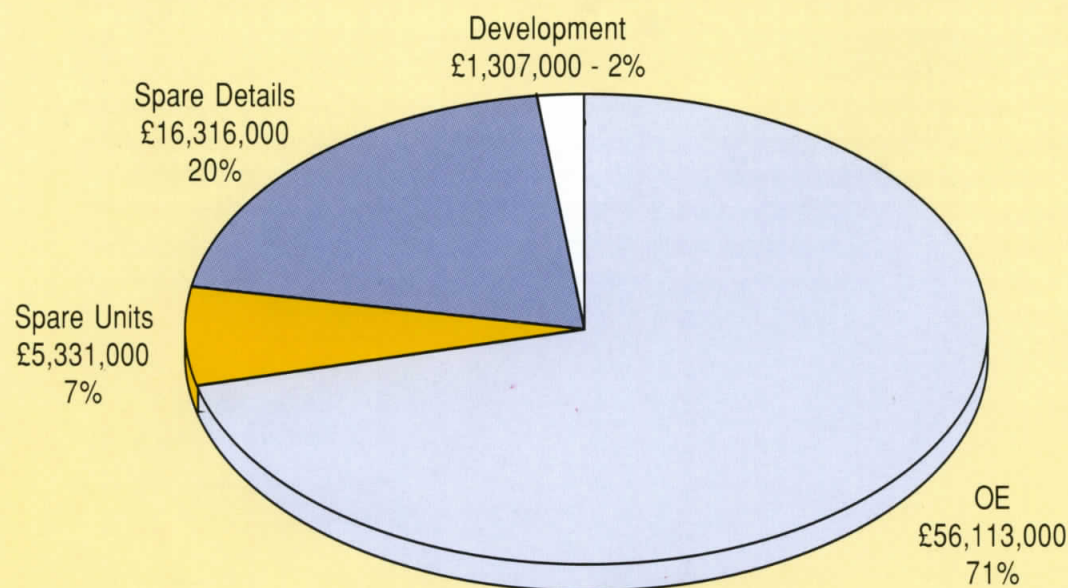
FORMANCE One key measure of our performance is the ability to deliver our equipment to customers on time. The chart right shows our original equipment delivery performance throughout 1993 measured by the percentage of on-time deliveries.

The first two columns are the averages for 1992 and 1993 and show an improvement from 72% in 1992 to 96% last year.

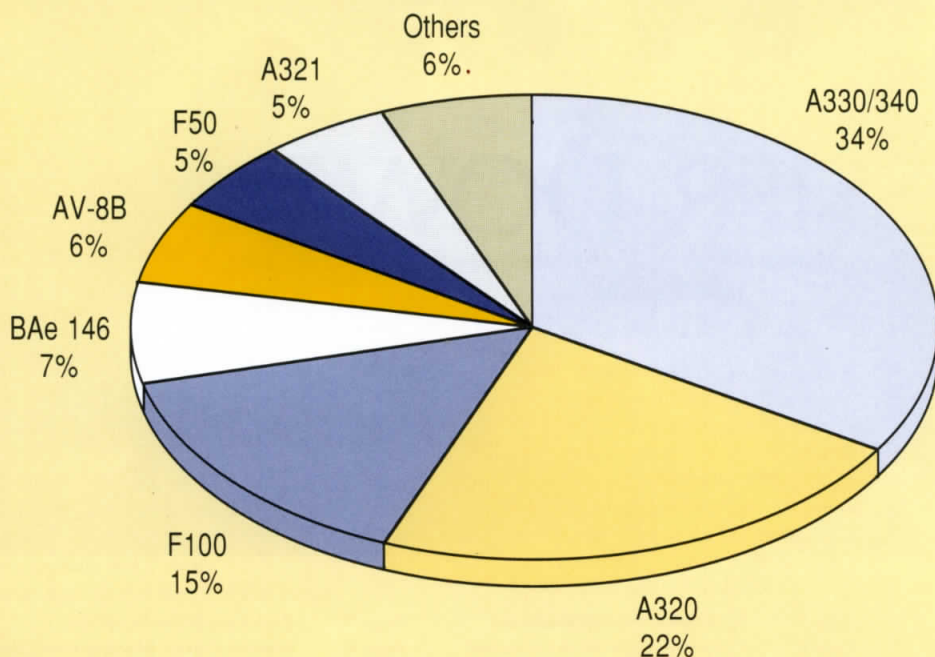
INVENTORY DAYS Inventory days at the end of 1993 were 130 days having fallen from 177 days at the start of the year.

ORDER BOOK Total orders outstanding at the end of 1993 amounted to £173 million. This consisted of £67 million of orders for 1994 with the remainder being for future years.

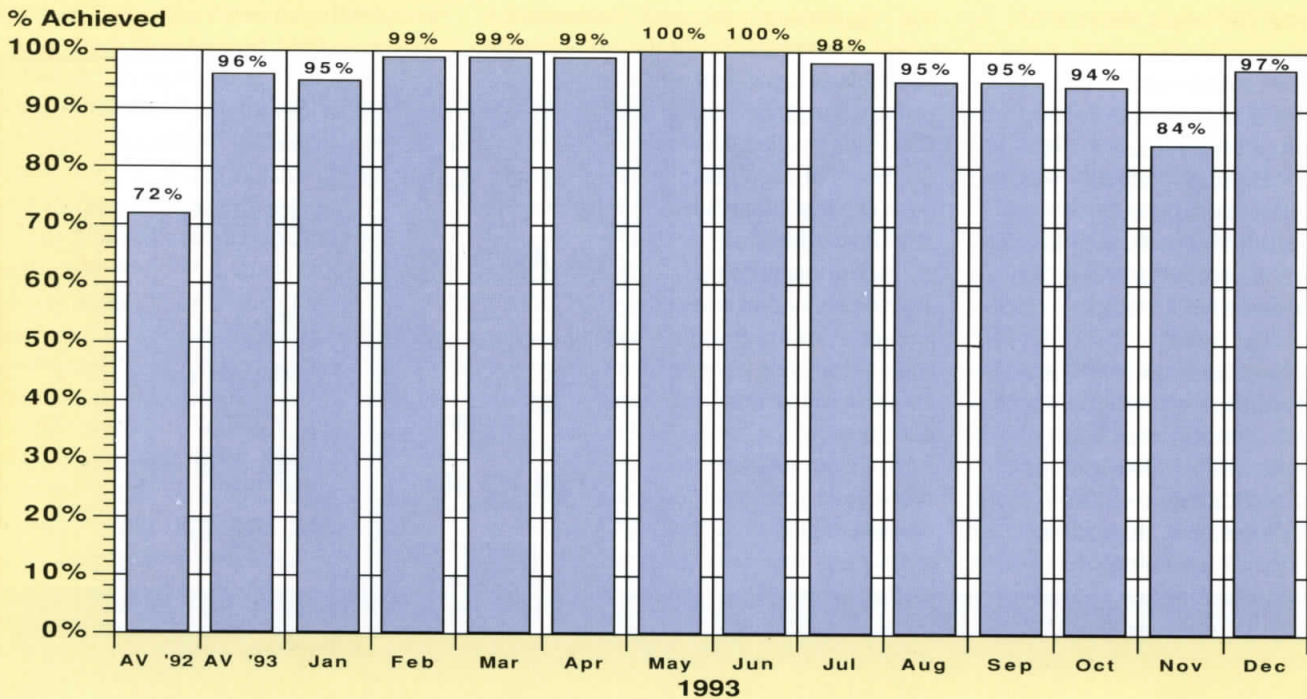
1993 Financial Results Total Sales £79,067,000



OE Sales Breakdown By Programme



OE Overall Delivery Performance



Financial Progress In 1994

Sales Shown below is our sales achievement against target in the first two months of 1994.

	Target	Achieved
Jan 1994	£6,286,000	£6,260,000
Feb 1994	£7,019,000	£6,807,000

Sales were below target because of a

shortfall in original equipment sales. Spares sales are on target so far this year.

Profit Profit achieved in January and February this year was in line with the forecast.

Orders The value of our outstanding order book at the end of February was £175 million. Of this, £62 million was for 1994, £78 million for 1995 and

the remainder for future years.

The main orders received in the first two months of this year were as follows:-

Programme	Order Value
B.Ae 146	£1,478,000
Fokker 100	£ 656,000

Apprentices Help Disabled Swimmers

Last autumn we were approached by the National Star Centre at Ullenwood who asked us to refurbish a hoist for them. The hoist is used to help disabled students transfer from their wheelchairs into the swimming pool. Originally built in 1979 by our apprentices, the hoist had several cracked welded joints and severe corrosion of the main cross-member.

The picture shows apprentices (from left to right) Jamie Anderson, Paul Hamblett and Alex Ball with the hoist back in position following refurbishment by a group of our apprentices.



High Capacity Aircraft

To satisfy future air traffic demands the Airlines predict that they will require an aircraft larger than those flying today.

Studies now being carried out centre around a 600-800 passenger, wide body aircraft, with a range of 7000-10,000 nautical miles, probably weighing over one million pounds.

(Only one other aircraft, the Russian Antonov An 225 has ever taken off weighing more than 1 million pounds)

Initial designs envisage a 600 seat single or multi deck aircraft for which various cross sections have been discussed with airlines. Designs also allow for a quick change of cabin configurations because, in a global airline, an aircraft travelling predominantly westbound requires a daytime atmosphere, while one flying eastwards requires a configuration more suited to rest and sleep.

The launch date could be 1997, with entry into service by 2005 and an anticipated market of 500-600 aircraft sales by 2010.

The main driver for the airlines' requirement for such a large aircraft is the forecast growth in air traffic,

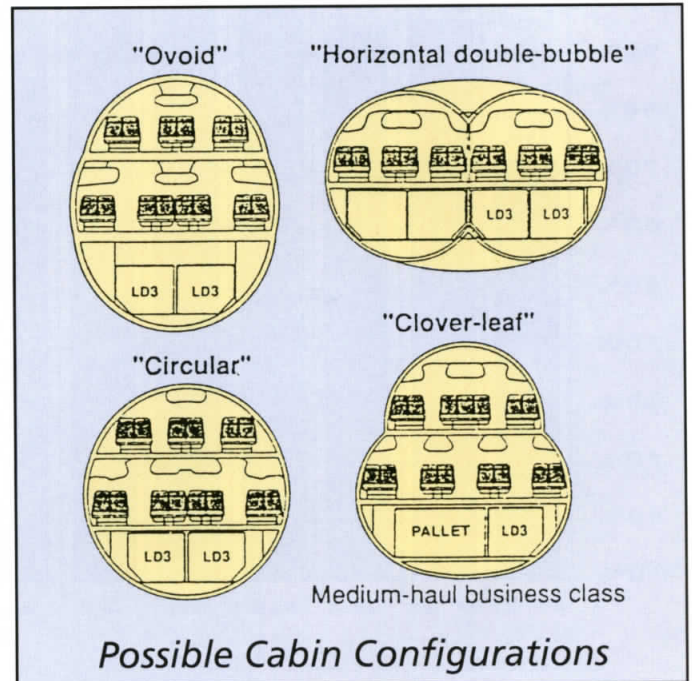
particularly the rapid growth in pacific rim air travel, combined with increasing congestion at the major international airports of which Heathrow is a prime example.

Forecasts predict a doubling of air miles by 2005 & tripling by 2010. In addition airlines are seeking a 10-20% reduction in aircraft operating costs for a new large aircraft compared with the 747.

However with the worst post-war recession in the airline market, individual aircraft constructors are reluctant to commit themselves to such a programme, expected to cost \$10-15 billion in research & development.

But, the consolidation of the airline industry around a few, giant airline groups gives the customer much greater say in future product decisions.

If the airlines have a requirement, the pressure is there for the constructors to produce the aircraft.



This has led to much discussion of collaboration and joint studies between the world's leading aircraft constructors.

Boeing is currently studying the joint

Manual Handling Is Main Accident Cause

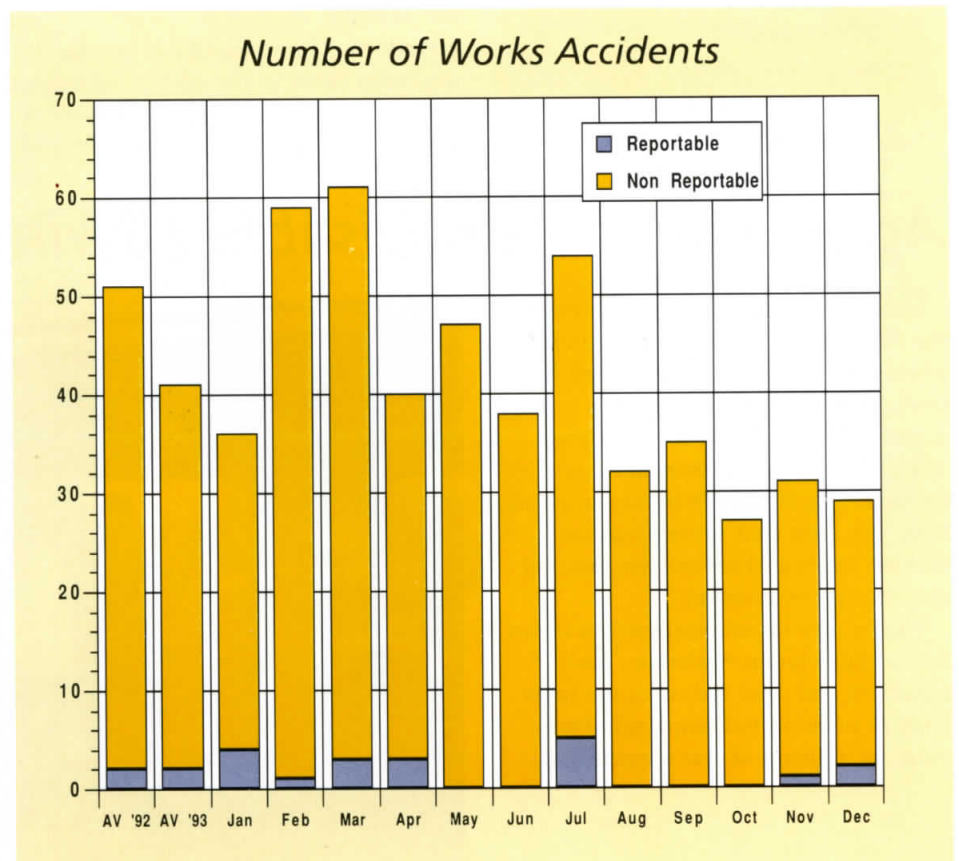
One of the activities of our Safety Committee is to monitor the number of accidents which occur on site.

The chart right shows the number of accidents, however minor, reported each month to the Occupational Health Department. The first two columns on the left hand side show the average number of accidents per month for 1992 (51) and 1993 (40).

The blue area shows the number of reportable accidents. These are the more serious accidents which involve people being unfit for work for more than three days.

The biggest single cause of reportable accidents is manual handling. In 1992 we had a total of 18 reportable accidents of which 10 were due to manual handling. Out of 15 reportable accidents in 1993, 7 were due to manual handling.

It is for this reason that one of our major safety priorities is to assess the risks of hazardous manual handling operations and take steps to reduce these risks.



development of a "super jumbo" with the four Airbus partners; BAe, Aerospatiale, Deutsche Aerospace and CASA. Both Boeing and Airbus are also conducting their own separate studies for a new large aircraft. In addition discussions have taken place with other potential partner companies in Russia and Japan.

The "European" (Airbus & Airbus partners) initiative is the A3XX where an integrated team are aiming at agreeing an aircraft definition based on individual studies from each of the partners & Airbus itself.

The "Boeing" initiative is the NLA. This ranges from a 747 re-wing, cheaper solution with early entry into service but based on old technology, to a completely new aircraft.

In addition both Boeing and Airbus Partners are working together on definition studies and conducting market research to establish the requirement for a very large Commercial Transport aircraft and the feasibility of global collaboration.

Our Marketing and Engineering departments and our colleagues in Toronto are actively pursuing each of these projects. We are supporting Boeing with in-company technical assistance and Engineering are conducting trade studies of alternative landing gear configurations for Airbus & the Airbus partners companies.

The landing gear configuration currently being studied comprises four main gears each with six wheel bogies.

Two of the main gears are likely to

be fuselage mounted with two, taller gears being wing mounted. Some or all of the main gears will have steering to assist manoeuvring.

The main gear will not be significantly taller than the A340 although the bogie will be bigger to accommodate the six wheels.

The reason for the use of six wheels per gear is to ensure that the new aircraft, although much heavier, does not exceed the runway loading of a 747-400. This, together with the steering of the main gears, will ensure compatibility with existing airports for landing and manoeuvrability around existing taxi ways. This is essential to allow a problem free entry into service without the need for major changes to airport infrastructure.



Airbus Industrie's concept for a future 600-seat aircraft.

Isao Completes Secondment

Pictured with his friends and colleagues at Gloucester is Isao Kikutani prior to his return to Japan after completing 12 months here at Gloucester.

Isao will now continue his career at Nabco in the Development department.

At his farewell presentation, Isao thanked everyone for their help and friendship during his stay.



Customer Care Drive Launched

An initiative has been launched to reduce the number of complaints we receive from customers.

To be a world leading business we have to keep our customers satisfied. Where problems do arise with the equipment we supply we need to find the cause and take action to prevent

the problem happening in the future. The best way to do this is by involving teams of people to investigate complaints using problem solving techniques.

The chart below shows the number of monthly complaints received from customers last year. Shown on the left

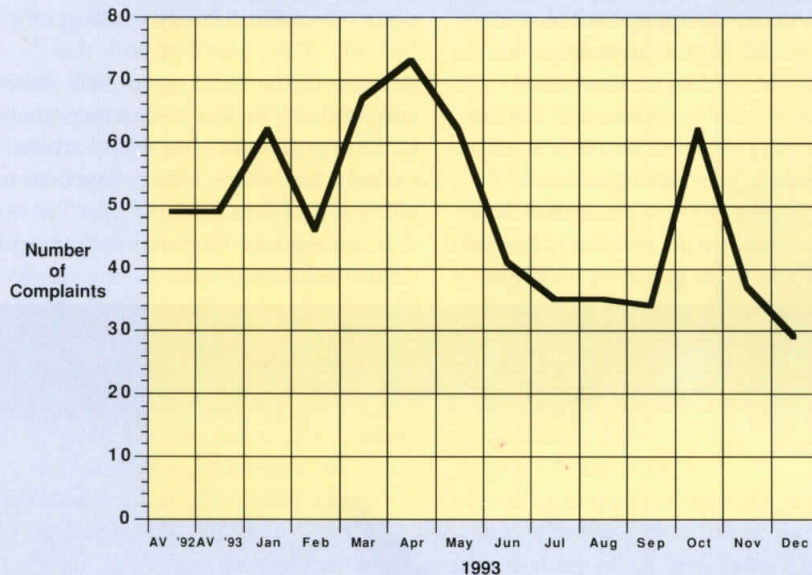
hand side is the average number of complaints per month for 1992 and 1993. From an average of just below 50 we managed to reduce the level of complaints to around 30 per month by the end of 1993.

To build on the good work already done we are taking a number of specific actions. These include:-

- Strengthening the existing complaints team in MLG Assembly.
- Establishing a complaints team in LLG Assembly.
- Improving links between Quality and teams in Engineering investigating complaints.
- Establishing a complaints team to look at problems arising from outside purchases.
- Improving communication between Service Engineers in the field and employees on site here at Gloucester.
- Increasing publicity about customer complaints.

Our aim is to reduce the number of complaints to 10 per month by the end of 1994.

Landing Gear Complaints Received 1993



Visit To Russia

Ian Cosh, Marketing Manager, John Herring, Customer Account Manager and Andy Cooper of DAP recently visited Russia for a week to look at possible business opportunities.

One of their tasks was to visit the three landing gear companies who supply all the equipment for the Russian market. Ian Cosh told us, "The Russian landing gear companies are keen to work with western manufacturers. They have a great deal of experience and are very innovative in their production methods. They don't use large, expensive machine tools that require sophisticated computer programmes to operate. Instead they use much smaller NC machines that are more adaptable. They manufacture smaller parts which they then weld together to form the main fitting or sliding member. So they have developed a great deal of expertise with welding including the use of automatic welding machines and the technology to weld Titanium in an inert gas atmosphere".

Like us, the Russians have suffered from cutbacks in aircraft programmes.



But John and Ian were surprised to hear that they normally enjoy very large production volumes and had made 38,000 landing gears for one type of aircraft.

There are some noted differences between Western and Russian companies. Due to poor supply, bad communication and lack of an industrial infrastructure they tend to make everything they need themselves. Companies also have a diverse benefits package for employees which involves supplying housing, fuel,

bread and schools!

Ian and John found the Russians to be very keen on hospitality and they often insisted on finishing a long day of meetings with formal speeches followed by endless toasts with neat Vodka.

However this did bear fruit as two of the companies signed memoranda of understanding on Repair and Overhaul of Russian landing gear and Proprietary Information Agreements laying a foundation for future business with DALG.

One From The Archives

A reprint from the Rotol & British Messier Quarterley Review 35 years ago this month. How times have changed, or have they?



One of the new games this year was "chair hockey," and the accompanying photograph shows the two teams in action with rolled-up newspapers. The result of the game was not announced, as the ball was lost after about three minutes' play—although the players themselves did not appear to be aware of the fact!

A relay race between two teams of six a side, to find out which team could consume a glass of beer the fastest, was declared void after the replay due to the inability of the teams to stand up after the event. Mention should be made of an excellent performance by Ray Stuart, who seemed capable of taking on the rest of the team alone, if the beer would last out.

Prominent among the entertainment this year was an exhibition of conjuring by Jim Wall of the Project Design Office, which was warmly applauded by the assembled company. Also on the bill

BRITISH MESSIER STAG PARTY

THE TECHNICAL BLOCK Stag Party was celebrated on January 7th at the Royal William, Cranham. Although snow fell heavily all day, it did not dampen the enthusiasm of the forty-odd technicians, who thoroughly enjoyed the traditional round of games, beer and entertainment.

The evening commenced with a knock-out skittles tournament, with a bottle of whisky for the winner. By a harsh trick of fate this was won by Brian Stephens from the M.D.O., the only non-drinker in the company—G.W.B. presented him with the prize.

was a sketch called "This is Your Life" by the Main D.O. Strolling Players, and the usual round of singing by forty well-lubricated throats to finish off another memorable evening.

All those who were fortunate enough to be present will wish to thank the organisers, Ian Golesworthy and Ray Sherbourne, for all the hard work they put into making the party such a success, and we hope that next year's party will prove to be an even greater success—will you be there?

B. A. STAIT.

Maureen's Country and Western Club

In January, Maureen's Country and Western Club moved to our clubhouse.

Maureen Malloy has had a life long interest in Country and Western music. More years ago than she cares to remember, she organised a Country and Western evening to raise money to send a 14 year old boy to Lourdes in France. The evening was so successful that Maureen set up the Country and Western Club.

The club now meets every Friday starting at 8.30 pm. The entry fee is £3 (free to disabled people) with most of the money raised being donated to charity. The club donated over £1500 in 1993 to a range of associations including the Multiple Sclerosis Society, the College for the Blind and the Baby Unit at St. Paul's.

If you would like to help raise money for charity while enjoying a good night out just go along to the clubhouse on a Friday night where Maureen will be pleased to welcome you.

Forthcoming Bands

April 15th	String Band
April 22nd	Campbell Country
April 29th	Mean Business
May 13th	John C. King Band
May 20th	Eileen King Band
May 27th	West Virginia
June 3rd	John C. King Band

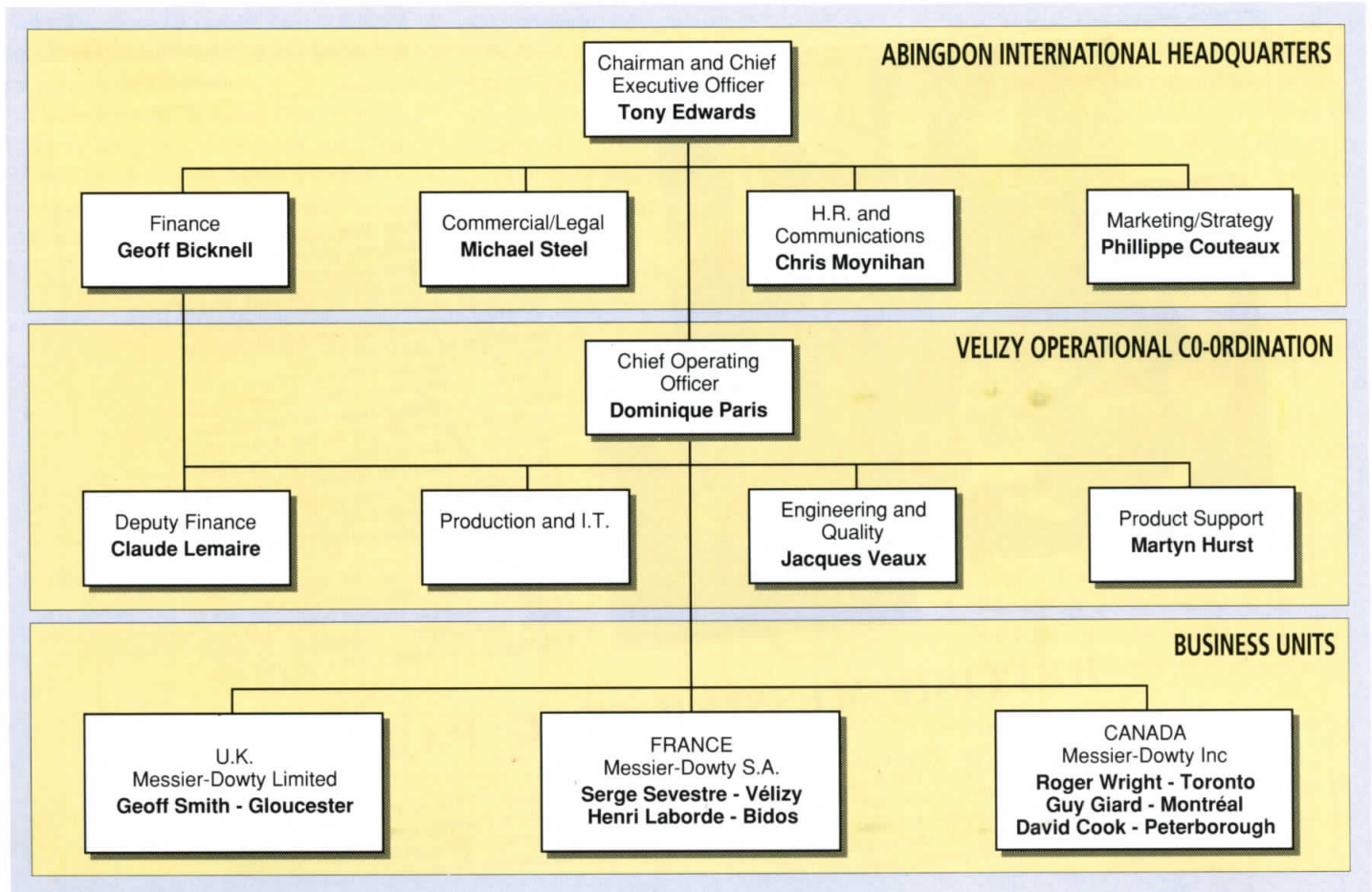
Explorers Show Expertise

Last month, 17 teams met in our clubhouse for the annual battle of the brains - the 1994 Inter-Departmental Quiz.

Top placed Landing Gear team, with a score of 74, was The Explorers (Processing). Team members Mike Gibson, his wife and Neil Hughes were captained by Brian Rossiter. Processing also produced the highest placed DALG team last year.

The team were particularly pleased to do so well as the decision to take part in the quiz had only been made at the last minute.

Messier-Dowty Management Structure



Welcome To Geoff Smith



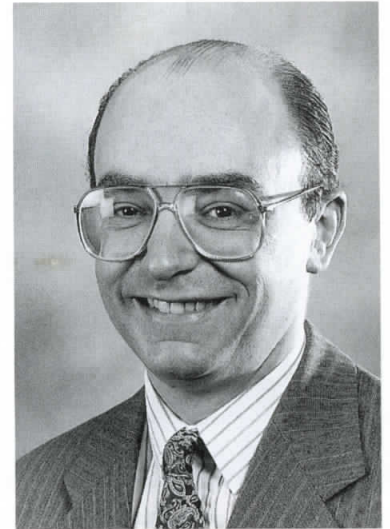
Geoff Smith is taking over from Andy Stevens as Director and General Manager at this site. Andy will be leaving at the end of June to take up a position outside the Group. We wish him all the best for the future.

New Appointments



STEVE GUNYON has joined us as Financial Reporting Manager responsible to Geoff Capps. Steve's appointment follows the move of Richard Wall to a central position in the Messier-Dowty Joint Venture and Richards Cook's move to DAHC as Finance Director.

A qualified chartered accountant Steve previously worked for 2 years in a central role for Dowty Aerospace.



MIKE LEE took up the position of Market Analysis Manager earlier this year, responsible to Martyn Hurst.

Mike joined Dowty Aerospace in 1985 and provided a central market intelligence service with the majority of his activity associated with landing gear. He will continue to provide a service to other Dowty companies and to Dowty Aerospace centrally.