



SAFRAN

magazine

SEPTEMBER 2008 – No. 4
THE SAFRAN GROUP MAGAZINE

SPECIAL REPORT

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7 essentials

At the end of June 2008, the eagerly awaited Airbus Military A400M was rolled out in Seville, Spain. Safran companies are playing a pivotal role in this major defense program.

A400M ROLLOUT

editorial Safran, a global player

JEAN-PAUL HERTEMAN
CHIEF EXECUTIVE OFFICER, SAFRAN GROUP

By divesting our mobile phone business to a French investment firm last July, Safran is clearly refocusing on its core businesses. We can now devote our full attention to consolidating and building our positions in aerospace, defense and security.

This proactive strategy is reflected in two major agreements with our long-standing partner General Electric: one will extend our CFM International joint venture for another 30 years, while the second expands our equal partnership to include engine nacelles. These agreements symbolize the excellence of our transatlantic relations, which provide a decisive advantage in our markets.

"Become more competitive and innovative"

At the same time, in Europe we bolstered our leadership position in the market for identification solutions with the acquisition of the Dutch company SDU-I, allowing us to offer a more comprehensive array of ID technologies.

The global economic environment is strained, to say the least, and that includes the aerospace industry. But over the last three decades air transport has grown twice as fast as the world economy, despite three major oil shocks. As a manufacturer, we have to deliver the technical and economic solutions needed, and not feel sorry for ourselves. I am sure that once again we will be able to overcome these difficulties by becoming even more competitive and innovative.

The Safran Group started down the international path a number of years ago. Our businesses in different regions of the world are growing, bringing us closer to customers and allowing us to take advantage of more advantageous cost structures. In this issue, Safran Magazine takes a closer look at both North America – already home to some 15% of our consolidated workforce – and China, which generates 15% of our aerospace sales.

GE AND SAFRAN RENEW PARTNERSHIP FOR ANOTHER 30 YEARS



© Eric Drouin/Snecma

At the Farnborough air show in July, GE Aviation and Snecma (Safran Group), parent companies of CFM International, signed an agreement that extends their 50/50 partnership to the year 2040, and expands it to include associated services. By extending their collaboration, the two partners are placing CFM on the path for long-term success in the market for single-aisle jetliner engines.

"Our industry is in the midst of perhaps the most challenging times we have ever faced," said Jean-Paul Herteman, Chief Executive Officer of Safran. "In the early 1970s, the GE/Snecma partnership brought customers the benefits of high bypass turbofan technology, reducing

fuel burn by 20 percent compared to the low-bypass engines they replaced, while introducing a new standard in reliability. We are now in a position to bring that same magnitude of improvement to the industry for the next 30 years." CFM International will develop a new generation engine, LEAP-X, which by 2016 will reduce fuel burn by up to 16 percent compared to the current CFM56 Tech Insertion engines powering Airbus A320 and Boeing 737 family aircraft.

"The relationship between GE and Safran today is the strongest it has ever been," said David Joyce, President and CEO of GE Aviation. "Together, through the LEAP-X engine, we are bringing an advanced

suite of revolutionary technologies to market that will take the next generation of single-aisle aircraft to a whole new level of fuel efficiency, while also reducing NOx emissions, carbon emissions and noise. We understand the pressures the airlines are under. As we have in the past, we will deliver for the future."

The two aircraft engine manufacturers signed the original agreement in 1974 and created CFM International as a 50/50 joint company. CFM International is by far the leading supplier of aircraft engines, delivering more than 18,500 CFM56 engines for commercial and military applications to nearly 500 operators around the globe to date.

GE AND SAFRAN TEAM UP ON NACELLES AND THRUST REVERSERS

GE Aviation and Safran announced an agreement at the Farnborough air show in July to create a joint venture for the development, production and support of engine nacelles for the next generation of single-aisle commercial jets. Aircelle and Middle River Aircraft Systems, subsidiaries of Safran and General Electric, respectively, will each own half of this new entity, which will address new business opportunities with all engine and aircraft manufacturers involved in the single-aisle jetliner category.

The new joint venture builds on more than 35 years of partnership experience by General Electric and Safran, via CFM International, a textbook case of cross-border

collaboration. The new joint venture will call on the existing design, development and production capabilities of Aircelle (Safran) and Middle River Aircraft Systems (GE). These two companies offer highly complementary engine nacelle product lines and technical expertise. It will also draw on General Electric's and Safran's deep knowledge of avionics, power electronics and actuation systems, all of which can be applied to engine nacelles for next-generation aircraft.

MORE

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Sagem Défense Sécurité, long-standing partner to MBDA

On May 14, 2008, Sagem Défense Sécurité (Safran Group) signed a collaboration agreement with MBDA, the world's leading manufacturer of missile systems, concerning the AASM modular air-to-ground weapon and infrared guidance for tactical missiles. In particular, MBDA France will be in charge of export sales of the AASM, developed by Sagem Défense Sécurité, thus providing comprehensive solutions that meet the needs of today's armed forces. The agreement on infrared seekers extends a fifty-year collaboration between the two companies.



© François Robinet/Dassault Aviation

A HOST OF CONTRACTS FOR SNECMA SERVICES

Snecma Services (Safran Group) announced six CFM56 engine maintenance contracts during the Farnborough air show in July. Airlines from Russia, France and Tunisia opted for engine maintenance, repair and overhaul (MRO) services by Snecma Services, whose close ties to the engine manufacturer provide an edge in this competitive market. Snecma Services also signed an engineering support contract with Royal Air Maroc, the Moroccan flag carrier, involving the permanent remote monitoring of engine performance.

SAFRAN magazine

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CITIZEN PRESS

Printed by

Imprimerie Vincent, certified
IMPRIM'VERT, on PEFC accredited paper
ISSN 1960-7164

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Cover photo

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SAFRAN

SAFRAN REVAMPS ORGANIZATION

The aviation sector is undergoing deep changes spurred by the imperative goal of developing less fuel-hungry aircraft, the increased role of system suppliers, with aircraft manufacturers focusing on their core business of systems integration, and customers' growing demand for integrated services.

Safran is revamping its organization to meet the needs of this changing market. Hispano-Suiza is creating the Safran Power division, consolidating the Group's power electronics activities to stake out a position as the world leader in "more electric" aircraft technologies, a key to higher performance. At the same time, Hispano-Suiza's engine control systems entity will be transferred to Snecma to reinforce the unity of aircraft engine development programs.

A new Safran Electronics division is being created as part of Sagem Défense Sécurité, to strengthen unity in this critical area, and enhance the visibility of Safran's broad expertise in electronics. The new division will count some 1,500 specialists from different Group companies.

Snecma Services is merging with Snecma to create an optimized structure offering both new engines and associated support services.

At corporate level, Safran is setting up a new business development division and a materials and processes division. All of these changes, pending consultation with labor organizations, are designed to provide solid foundations for the Group to meet the upcoming challenges in its fast-evolving sectors.

SAGEM SÉCURITÉ LOGS STRONG GROWTH



© Gérard Vuillon/Safran

SAFRAN ACQUIRES A SECURE PASSPORT PRODUCER

On June 29, 2008, Safran acquired SDU-Identification, a Dutch company specialized in the production of secure passports and ID documents. This addition will allow Sagem Sécurité (Safran Group) to offer a complete array of ID technologies, and take a leading role in the market for ID documents, which is headed for strong growth. Sagem Sécurité is already the world leader in biometric ID solutions, and an acknowledged specialist in secure electronic transactions, based on biometric and smart card technologies.

Since April 2008 Sagem Sécurité (Safran Group) has signed nearly a dozen contracts with governments in Africa, Europe and Asia. Sagem Sécurité offers state-of-the-art identity solutions, in particular its automated fingerprint identification system, or AFIS, chosen for example by the Côte d'Ivoire. The Safran Group company will supply systems and manage population and voter

registration operations in conjunction with the Côte d'Ivoire's National Institute of Statistics and Independent Electoral Board. Some 6,000 AFIS stations at 11,000 sites will be used to register citizens and update voting lists based on individual biometric data. Based on this list, Sagem Sécurité will then issue 11 million high-security ID smart cards, and 9 million voter cards.

Other contracts won by Sagem Sécurité will help solve criminal cases in Malaysia and Botswana, by analyzing fingerprints, and ensure the security of visas and passports in France and the United Kingdom.

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A400M ROLLOUT



© EADS

For its rollout in Seville, the new Airbus A400M military transport plane was welcomed by King Juan Carlos of Spain. The new plane has already booked 192 orders, and is scheduled to make its first flight in October.

The A400M includes contributions from ten Safran companies. Safran, along with partners in Europrop International (EPI), is in charge of developing the TP400-D6 turboprop for this four-engine plane.

Other Group companies are playing leading roles on the landing system, wiring and cockpit. The Airbus A400M is a multirole aircraft, providing troop and military equipment transportation, as well as medical evacuation ("medevac"). It can also handle low-altitude cargo drops.

Successful first flights for the Superjet 100

The new Superjet 100 regional jet produced by Sukhoi of Russia made a successful maiden flight on May 19 at Komsomolsk-on-Amur, Russia. Powered by twin SaM146 engines co-developed by Snecma (Safran Group) and NPO Saturn, this aircraft will be available in different versions carrying 75 to 95 passengers.

Other Safran companies participating in this program are: Messier-Dowty, for the landing gear; Hispano-Suiza and Techspace Aero for engine equipment; Aircelle, Microturbo, Sofrance and Technofan. With more than 100 orders already booked, the Superjet 100 will provide a breakthrough for Russia in the booming regional aviation market.



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RESEARCH. The European aviation industry is conducting ambitious research programs to meet today's pressing environmental challenges. One of the most important is Clean Sky, officially launched on February 5, 2008.

CLEAN SKY: AVIATION GOES GREEN

“Clean Sky is a seven year research program,” notes Marc Ventre, chairman of the program's management committee and also Executive Vice President of Safran, Aerospace Propulsion branch. “It's based on an innovative public-private partnership, funded equally by industry and the European Commission. Clean Sky will help meet the ambitious objectives set by ACARE (Advisory Council on Aeronautics Research in Europe), especially reductions of 50 percent in CO₂ emissions, 80 percent in NO_x emissions and 50 percent less noise for aircraft hitting the market in 2020, compared with 2000.”

Clean Sky is based on six major Integrated Technology Demonstrators (ITD): three concerning the aircraft itself (commercial jets, regional aircraft

and helicopters), and three concerning cross-functional areas (engines, systems and eco-design). Technology demonstrators will be built and tested on the ground and in flight. There is also a “Technology Evaluator”, which will quantify the combined environmental impact of the technologies developed through the ITDs.

This program was developed by 12 European aviation companies, including Safran, Airbus, Thales and Rolls-Royce, which direct it in conjunction with the European Commission. More than 70 companies and organizations have been identified as “associate partners”. Additional partners will be invited to join the program based on proposals submitted over the next seven years.

A lead role for Safran

Safran is one of the leading participants in the Clean Sky program, with nearly all Group companies playing a role: Aircelle, Hispano-Suiza, Labinal, Messier-Bugatti, Messier-Dowty, Sofrance, Technofan, Snecma,

FRANCE'S STRATEGIC ADVISORY BOARD FOR CIVIL AVIATION RESEARCH

The French Minister for Ecology, Energy, Sustainable Development and Town and Country Planning has created the strategic advisory board for civil aviation research, or CORAC (Conseil stratégique pour la Recherche Aéronautique Civile). Players in the aviation sector agreed to create this organization at the Grenelle environmental summit meeting in 2007. CORAC was founded to define and implement the research actions and innovative technological solutions needed to meet the European environmental objectives set by ACARE for 2020 (see article opposite). Safran is represented by CEO Jean-Paul Herteman, who will be on the CORAC steering committee.

VIEWPOINT

ROLAND KRAFFT,
DEPUTY DIRECTOR OF R&T, SNECMA

Snecma: hard at work!

Snecma is co-director of the engine ITD. What are you working on?

The engine ITD comprises five demonstrators, including one under our responsibility: the “open rotor” design, with counter-rotating low-pressure turbines directly driving non-shrouded propellers, or fans. Snecma has been working for many months on preliminary project studies. The overall architecture has been defined, but we still need to address a few critical technical points. Over the next year we will be designing several preliminary projects to determine the different advantages and disadvantages, before making our final technical choices.

Who is participating in the project?

Only about a dozen full-time equivalent staff at Snecma for the moment, but this could eventually rise to forty or so. The associate members in the ITD are gearing up as well; for instance Volvo and Avio are taking part in the design of turbine parts. We have also determined the work split with other Safran companies: Techspace Aero will be involved in the lubrication

system, Aircelle will work on the nacelle (with Aermacchi), and Hispano-Suiza on the pitch trim electronics for the two propellers.

Companies such as Airbus and Alenia are also taking part, but they have more limited roles. As we move forward, other partners will gradually join the program, based on proposals submitted.

What's the timetable for this program?

Our first milestone is the Preliminary Design Review, or PDR, when we “freeze” the technical concepts. This review will be held as from October 2009. A year later comes the Critical Design Review, enabling us to launch construction of the demonstrator in early 2011. The initial tests, covering about 50 hours on an open-air test cell, are slated for the first quarter of 2013. In addition to checking engine operation, one of the major aims of these tests is to assess its aerodynamic and especially acoustic performance – which is still the main difficulty in designing an open rotor type engine.

Techspace Aero, Turbomeca, Microturbo and Sagem Défense Sécurité. Safran is participating in all ITDs, and is co-director of the engine ITD. “Clean Sky is receiving 800 million euros from the European Commission, a sum matched by the industry partners in the program,” notes Valérie Guénon, head of European affairs at the Group's Research & Technology division. “The entire budget is managed by a jointly-owned company under the authority of a management committee grouping the European Commission, industry and an observer representing the countries involved, who contribute the public funding. The Clean Sky program itself will have an executive director and a



program team based in Brussels.”

Work kicked off following the first meeting of the management committee on May 28 – and Clean Sky is now aloft for the next seven years. ■

CONTEXT. Although the North American economy is sluggish these days, it continues to play a major role worldwide.

NORTH AMERICA: A PIVOTAL MARKET FOR SAFRAN

Over the last three years, the international civil aviation market has shown relatively good health, which has benefited all aircraft and equipment makers. But over and above the record-setting figures (2,800 main-line commercial jets sold in 2007), two major concerns have emerged: the subprime crisis in the United States, impacting credit availability, and especially skyrocketing oil prices, which have considerably increased airlines' operating costs.

The U.S. Department of Defense is also feeling the effect of these developments, according to David Berteau, senior advisor and director of the Defense-Industrial Initiatives Group at the Center for Strategic

and International Studies (CSIS) in Washington, D.C.: "Each ten dollar increase in the price of a barrel of oil adds nearly one billion dollars to the DoD's operating costs." Already, the crisis has resulted in orders being cancelled or postponed.

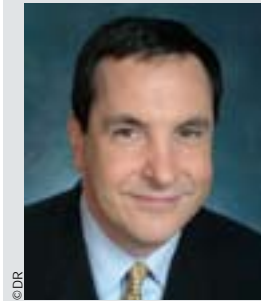
This climate of deep uncertainty has yet to hit the business aviation market, which is governed by different economic rules. Clients in this market – large corporations, wealthy individuals, and fractional ownership users – continue to enjoy good economic health, and the market shows no sign of losing steam. However, North America's traditional domination of this market is starting to slip. The region accounted for nearly half of all global orders in 2007, while it is still home to 70% of the global business aircraft fleet.

In the space market, upcoming transatlantic programs will undoubtedly offer excellent opportunities for companies in this sector.

Hefty spending on defense and security

The North American defense market, primarily driven by the Pentagon,

VIEWPOINT



RICHARD ABOULAFIA,
VICE PRESIDENT, ANALYSIS,
TEAL GROUP CORPORATION

USA, still the leader in military markets

The market forecast is still buoyant for 2008, but what happens if oil prices stay high?

If the price of fuel stays at \$130+/barrel, the effect on jetliner demand will be profound. We will likely see the same "hockey stick" effect we saw after 9/11, although that turned out to be short lasting.

Is North America still a driving force in the international market?

The U.S. airline industry won't take many new planes any time soon. Dreams of a U.S.-driven jetliner deliveries "super-cycle" are truly dead. U.S. business jet demand remains stable, but is diminishing in relation to international customers.

The only market where the U.S. is the most important customer is the military market, both fixed-wing and rotorcraft. This, of course, explains why all European contractors want access to this healthy business.

Do you see any reason for a possible downturn in the booming bizjet market?

The economic downturn and high fuel prices do not seem to be affecting the top end of society. There are no rumors or hints of a business jet downturn, although there are some early indicators of a mild softening. Also, business jet demand is finally globalizing, insulating the market from the effects of the US downturn.

MEXICO AND CANADA: OTHER FACTORS

- Mexico is a hefty market, as well as an impressive industrial base. Labor is skilled and relatively inexpensive, while this country of 110 million inhabitants offers a large domestic market, despite considerable social inequality. Like Washington, the Mexican federal government, its states and various legal institutions have expressed a growing requirement for identification and security systems.

- The Canadian market is more mature, but it has a highly developed aircraft industry, which offers excellent sales opportunities for equipment manufacturers.

has been at record levels since the beginning of the Iraq war. According to David Berteau, however, "Today, the question is what share of the overall budget should go to military spending, and how this amount should be allocated between research and procurement."

The security market, which encompasses both services and high-tech products, seems to be more of a long-term proposition. The U.S. alone accounts for about 45% of the global security market, and annual growth

is estimated at 8 to 10%. Today, the sector is well established, with a clear legal framework and growing awareness of its importance by multinational technology corporations.

One thing is sure: companies that have established a solid presence in the United States will be in the best position to meet global demand. The worldwide security market will undoubtedly follow the development path blazed by the United States, although lagging a few years behind. ■



Five Safran companies provide systems or equipment for the Bombardier CRJ200, especially the landing gear and wiring.

© Richard Cummins

POSITION. Safran has set up operations in North America to meet several needs: production capacity in the U.S. dollar zone, a commitment to earning recognition as a local manufacturer, and closer contact with customers. Good results reflect the success of this strategy.

SAFRAN'S STRATEGY BEARS FRUIT

Seven thousand five hundred employees, three billion dollars in sales... North America is the Safran Group's largest market outside Europe, accounting for 20% of consolidated revenues.

Most Safran companies already operate in the United States, with 3,500 employees providing development, production and support services. But North America is more than just the USA, since both Canada and Mexico are major markets. Canada is home to Messier-Dowty and Turbomeca (Safran Group) production units, with about 1,000 employees. Mexico is also a major production base for the Group, in particular through wiring specialist Labinal, which employs about three-fourths of the 3,000 or so Safran employees in the country.

"In 2005 Labinal had 1,200 employees in Mexico, and this figure has now risen to 2,400," says Jorge Ortega, Chairman and CEO of Labinal North America. "Mexico offers significant advantages, since it's in the dollar zone, with highly qualified labor, but still offers the production costs of an emerging country."

Long-term commitment

Safran companies continue to open new facilities to meet the production needs of major plane-makers in North America, such



Labinal's plant in Chihuahua, Mexico now has 2,400 employees.



© Chris Cone / Messier-Bugatti

The Messier-Bugatti USA plant in Walton, Kentucky makes wheels and carbon brakes for the American market.

as Boeing, Hawker Beechcraft, Gulfstream and Bombardier: Sagem Avionics in Grand Prairie, Texas, Turbomeca Manufacturing in Monroe, North Carolina, and a new facility at the Messier-Bugatti USA plant in Walton, Kentucky.

Other facilities have been expanded, or will be shortly to cope with growing business volume: Turbomeca USA in Grand Prairie, and Labinal in Mexico, which is doubling the floorspace at its plant in Chihuahua and will add another 300 employees by the end of the year. Several engineers will join the Labinal design department.

"Our selection for the Boeing 787 should help us enhance our expert-

VIEWPOINT



© Jean-Christophe Morneau/Creative Center

PATRICK HAYWOOD,
CEO OF MESSIER-BUGATTI USA

Messier-Bugatti expands

WITH THE OPENING OF A NEW FACILITY AT ITS PLANT IN WALTON, KENTUCKY EARLY THIS YEAR, MESSIER-BUGATTI IS DEPLOYING THE RESOURCES NEEDED TO EXPAND ITS SHARE OF THE WHEEL AND BRAKE MARKET FOR MAINLINE COMMERCIAL JETS.

Messier-Bugatti USA opened its new production unit in Walton, Kentucky in January 2008. Covering some 10,000 square meters (108,000 sq ft), the new building doubles the plant's total floorspace. About 50 people are now working in this highly automated facility, which manufactures wheels and brake piston housings and handles final assembly of wheels and carbon brakes. According to Patrick Haywood, CEO of Messier-Bugatti USA, "By increasing our production capacity, we can keep pace with the steady growth in our business, especially in the U.S. market and for Boeing, since we provide wheels and brakes for most of their current line of commercial jets."

In addition to supplying wheels and carbon brakes for U.S. Air Force C-17 and KC-135 planes, Messier-Bugatti also offers these items on the longer-range Boeing 777 models, the 767-200/300 and the 787 Dreamliner, which will soon enter revenue service. In addition, Boeing now offers Messier-Bugatti carbon brakes on its 737 Next-Generation family. "This new facility in Walton also allows us to add production capacity in the dollar zone, which helps offset the impact of the unfavorable dollar/euro exchange rate," adds Haywood. "Messier-Bugatti now has 43 percent of the wheel and carbon brake market for mainline jets with more than 100 seats, and this new production unit will enable us to continue expanding our share of the market."

ise,” adds Jorge Ortega.

These new production units clearly reflect a long-term commitment to the region, although joint ventures, subsidiaries and the acquisition of local companies can also support growth.

Local presence, a key

“Our development in North America is very pragmatic, based on economic considerations, market expectations and emerging opportunities. We are not closing any doors,” notes Emeric d’Arcimoles, Executive Vice President for International Development at Safran.

In the United States alone, Safran has 30 companies with no less than 42 industrial and commercial facilities. This broad presence is the fruit of long years of work, and reflects a successful understanding of market trends by Safran and its companies. As Emeric d’Arcimoles points out, “Turbomeca,

the world’s leading supplier of helicopter turbines, has been operating in the United States for thirty years. This constant focus on internationalism is a real competitive asset – and it’s also a prerequisite if we want to submit proposals for American military contracts.”

Through Labinal USA in Pryor, Oklahoma, Safran already contributes to prestigious American military aircraft such as the V-22, F-22 and F-16.

“The United States is an open market, but you still have to be ‘local’ to compete for military contracts,” explains d’Arcimoles. “Our operations in North America are also a response to customer demand for greater domestic presence, spanning both production and support. Furthermore, we have to produce in the U.S. dollar zone if we want to sell in this zone.”

At the same time, Safran’s international development does not penalize

its drive to maintain and modernize its production facilities in France or other home markets.

Industrial credibility

Recent contracts won by Safran companies have validated this strategy: engines for the U.S. Army’s UH-72 Lakota helicopters, wheels and carbon brakes for the U.S. Air Force’s C-17 transports (see page 23), wiring for the Boeing 787, and cockpit modernization programs by Sagem Avionics.

“Safran enjoys excellent industrial credibility in North America,” says Emeric d’Arcimoles. “Our high-quality investments, commitment to growth, and careful development of production facilities go hand in hand with our reputation for professionalism and technical expertise. Safran has earned the respect of customers, employees and shareholders alike, because we meet our commitments.” ■



Safran’s site at Grand Prairie, Texas groups facilities for Turbomeca, Sagem Avionics (above) and Microturbo.



In 2005 Turbomeca won the reengining contract for the Coast Guard’s HH-65 helicopters, covering 225 Arriel 2C2 CG turboshaft engines.

MARKETS. Because of its extensive partnerships and investments, Safran has become a major player in the aviation and security markets in North America.

SAFRAN, A NORTH AMERICAN MANUFACTURER

Nothing could better symbolize the collaboration between Safran and the United States than the exceptional success of the CFM56 engine, the fruit of over three decades of teamwork with General Electric through CFM International. Some 19,000 CFM56 engines have been sold to date, and they now power 7,000 aircraft. The CFM56 is today’s best-selling engine for mainline jets (over 100 seats), and more than 2,000 of these engines power U.S. military tankers and special-mission aircraft, making the U.S. Air Force CFMI’s leading customer.

“You could even say that the Pentagon is Safran’s leading customer in North America,” notes Bernard Teychené, North America territory director at Safran’s



DAVID BOHIGIAN,
U.S. ASSISTANT
SECRETARY
OF COMMERCE

FOREIGN INVESTMENTS, A KEY GROWTH FACTOR

Safran's presence in the United States reflects a global trend towards investments in the world's leading economy. "Foreign investment is a leading growth factor for the American economy," said U.S. Assistant Secretary of Commerce David Bohigian when he visited the Messier-Bugatti plant in Walton, Kentucky for "Invest in America Week". Despite a significant drop in the relative share of foreign direct investment in the last 20 years, due to the emergence

of new economies, the United States is still the leading destination for international investors. Nearly \$200 billion was invested in the United States in 2007, twice as much as in China (including Hong Kong). These foreign investors are primarily motivated by the size and energy of the domestic market, as well as by highly qualified local labor. "More than five million Americans work for foreign companies, and these international investors contribute some 15 percent of our R&D expenditures," noted Bohigian. "These investments have a profound impact on the American industrial fabric, because 30 percent of the jobs they create are in the manufacturing sector, versus only 10 percent for the economy in general."



Messier-Dowty provides the nose landing gear for the F/A-18F Super Hornets deployed by the U.S. Navy.

International Development division. Safran contributes to American military programs, for instance as supplier of engines for T-45 Goshawk trainers and landing gear for F/A-18E/F fighters deployed by the U.S. Navy; engines for the U.S. Army's UH-72A helicopters; and it also reengineered the U.S. Coast Guard's HH-65 helicopters.

Safran enjoys an equally prominent role in the North American civil aviation market, with its customer list including all major airplane and helicopter manufacturers: Boeing, Bombardier, Gulfstream, Cessna, Lockheed Martin, Sikorsky, American Eurocopter and Bell. Just about all airlines in North America call on the Group's engines, nacelles, electronic power controllers, wiring, landing gear and braking systems.

Solid positions

Safran's presence in the security market also goes back a long way, with the purchase 15 years ago of North American Morpho Systems, now Sagem Morpho (part of Group company Sagem Défense Sécurité). Reflecting this booming mar-



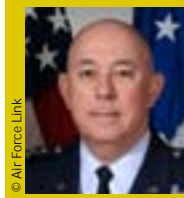
The C-17 Globemaster III military transport features Messier-Bugatti wheels and carbon brakes.

ket, Safran has considerably expanded its operations, with a focus on fingerprint, facial and iris recognition and identification systems.

"Security is a real growth market in the United States," says Bernard Teychené. "Sagem Morpho enjoys an excellent reputation for its biometrics expertise, innovative products and service offerings." This solid position has resulted in a growing number of contracts from governments and government agencies, including airports, the FBI, Department of Homeland Security, etc., as well as

with SNSP (national public security system) of Mexico. For example, the FBI's Fingerprint ID system stores more than 70 million fingerprints and provides identification in less than 20 minutes.

Along with this broad industrial presence, Safran's operations in North America include research and training. For instance, Group companies have signed agreements with prestigious universities, such as Stanford and Virginia Tech, while French regional centers of aerospace excellence have formed partnerships with their North



MICHAEL MOSELEY,
FORMER U.S. AIR
FORCE CHIEF
OF STAFF

MESSIER-BUGATTI GIVES THE C-17 A BRAKE

General Michael Moseley, former U.S. Air Force Chief of Staff, points out that the American armed forces are making increasing use of the Boeing C-17 Globemaster III strategic transport. A total of 198 C-17 airlifters have been ordered to date by the USAF, but "at least eight more are needed to meet steadily growing requirements" according to General Moseley. In addition to its well-known role as a transporter of people and equipment, the C-17 is also used as a flying hospital, outfitted with an intensive care unit that wouldn't be out of place in a fancy hospital. Thanks to a seamless medical transport chain, including the C-17, a majority of wounded U.S. soldiers in Iraq are saved. Furthermore, despite being much larger than the legendary C-130 Hercules, the C-17 can carry out the same spectrum of tactical missions. Its high-tech landing system comprises wheels and carbon brakes manufactured by Messier-Bugatti USA. Carbon brakes by Messier-Bugatti are lighter and more effective, and have enabled the C-17 to increase its maximum takeoff weight (MTOW) by 5%, to about 613,000 lb.

American counterparts.

"Our aim is to ensure the long-term presence of Safran in North America, by creating a real industrial hub with a network of local partners and suppliers," concludes Teychené. "But Safran already has enough economic weight so that we are considered to be a major player in the North American aviation and security markets." ■



Sagem Morpho ID Systems are used by many customers in North America, including the FBI.