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HEGEMONY IN EUROPE:
PART 2 -- THE INTRICACIES OF ECONOMIC COMPETITION

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(NOTE: THIS IS PART 2 OF A TWO-PART PAPER ON HEGEMONY IN EUROPE)
(PART 1 IS SUBTITLED "THE SUBTLETIES OF POLITICAL COMPETITION")

Europe's weapons industry started shortly after the North Atlantic Treaty Organization (NATO) went into effect. In those early years, however, war-ravaged Europe was dependent on America?s undamaged industrial might for military supplies. When European industries eventually reached a reasonable production capability, US industries engaged them as subcontractors.

A. EXPLOITATION AND DISSENT

During the late 1970s and early 1980s, some European officials perceived the United States as being insensitive to European economics. There was too much emphasis to buy American, they claimed. When German defense minister at the time, the late Manfred Woerner, pointed out that "some of the advanced technology weapons will have to be bought in Europe with development here too." He went on to say: "There are many US weapons emerging on the technology list. Unfortunately, when we can't swallow everything the US offers, there is then a crisis in alliance."[1]

Early in 1985 the Reagan administration launched a new program to bring European allies into cooperation with the Strategic Defense Initiative (SDI). Talks were immediately started with NATO members, especially West Germany and Britain, on how European countries could share in SDI research and bid on contracts. Although SDI participation was ostensibly open to US allies, Europeans felt they were not getting fair treatment. Then director general of Britain's SDI Participation Office, Stanley Orman, told the United States: "You?re not an easy nation to deal with," and cited cases where bid deadlines had expired before Europeans could obtain visas and export license approval.[2] In other instances the US paired European and American companies only to have the proposal request classified top secret, which squeezed the foreign partners from participation.

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[1]Cited in *AW&ST*, 21 May 1984, p. 124.

[2]*AW&ST*, 19 May 1986, pp. 24-26.

These examples epitomize the manner in which America has exploited European economic and technologic capabilities. But things began to change during the latter 1980s and into the 1990s. European industries grew stronger while the US economy weakened as a result of the cold war arms race and deficit spending. With the gradual emergence of European unity began a strong drive, spearheaded by France, for Europe to become independent of US influence.

1994 saw a continuation of French-led efforts to restructure European industry. When the British showed interest in buying US attack helicopters and military transports, Serge Dassault, president of the French aerospace industries trade association, said: "If we are serious about Europe, we need concrete action, and European governments must financially support their own industry rather than US competitors." Dassault had earlier called for a Buy European Act and the leveling of tariffs against American military equipment. He also blasted Sweden's July 1994 decision to buy the US Advanced Medium-Range Air-to-Air Missile rather than the French Mica: "It's damaging [to Europe] and it's scandalous."[3] Things came to a head on 10 November 1994 when the US unilaterally ceased to enforce the arms embargo against Bosnia and withheld related intelligence information. Sir Dudley Smith, president of the Western European Union's (WEU's) parliamentary assembly, was prompted to declare: "The US dominates the NATO command structure in the Adriatic areas, and the withdrawal of US ships and aircraft makes a mockery of the embargo operations. WEU must be fully ready to fill the breach and respond to the challenge." Smith continued: "This example also proves just how much Europe needs to be autonomous where intelligence gathering, satellite reconnaissance, and logistic support are concerned."[4] America's unilateral withdrawal demonstrates that the US will pull out of future coalition agreements if pulling out suits American needs. The WEU is determined to obtain independent command, control, communications and intelligence capabilities.

B. EUROPE'S POTENTIAL MILITARY MARKET

Europe's $170-billion military market looks tempting to American industries, and they are not inclined to back away easily. Competition is becoming keener, especially from France which has the third largest weapons industry in the world.

Europe's military budget for 1994 is broken down as follows (in equivalent billions of US dollars):

France	$48.0	
Britain	35.0	
Germany	27.9	
Italy	14.6	
Southern Europe	17.7	(includes Spain, Turkey, Greece, and Portugal)
Scandinavian countries	12.2	(Sweden, Norway, Denmark, and Finland)
Netherlands	7.0	
Switzerland	3.6	
Belgium	2.8	

[3] *Defense News*, 12 September 1994, p. 6.

[4] *Defense News*, 14 November 1994, p. 1.

Austria		1.7
Luxembourg		0.03
		======
	TOTAL	$170.03

Central Europe, (including Poland, Czech Republic, Hungary, Bulgaria, Romania, and Slovakia) have plans for purchasing military equipment but are unlikely to follow through because of economic constraints and uncertainty in NATO's Partnership for Peace (PfP) program. The Baltic countries of Latvia, Lithuania, and Estonia are a potential market, but not yet too promising.

C. EUROPEAN JOINT VENTURES AND MERGERS

Germany, Britain, and France are the three paramount pillars of Europe's arms industry. They account for three-quarters of the European spending on research and Development. German Chancellor Kohl's pro-American stance has kept US-German relations strong and has moderated discussions on the US role in Europe. Britain has also been a strong ally of the US where British economic interests are concerned, although that alliance is waning. Nevertheless, for many years there has been a movement in Europe to break the technological dependence on American products. France spearheaded this push for greater European independence in weapons and technology -- not only to supply European needs but also to compete more vigorously in world arms sales. French industries have taken the lead in forming partnerships and mergers with British and German counterparts. It is in this manner that the various businesses acquire the strength and finances to compete on the international market. Sweden is another country which has potential for French mergers, but it is presently ostracized because it bought tanks and missiles from the US instead of France. Some specific European joint ventures and mergers are:

1. VBM/GTK Modular Armored Vehicle.

France's Groupement des Industries de l'Armement Terrestres (GIAT) is teaming with Germany's Mercedes Bentz and Krauss-Maffei to produce the VBM/GTK modular armored vehicle (known in France as the Vehicule Blinde Modulaire and in Germany as the Gepanzertes Transport Kraftfahrzeug). Investment in this program could exceed US$15 billion over 15 years. Full scale development could begin in 1995 for first deliveries in 2002. The VBM/GTK vehicle is intended to eventually replace all main battlefield armored vehicles of both countries, including personnel carriers, command vehicles, communications vehicles, and fire support vehicles. The VBM/GTK will also be available for export.

Britain and France are considering a joint venture on development of the next-generation light wheeled armored vehicle, and Germany will undoubtedly be brought in. The announced goal is to merge Britain's Tracer vehicle with the VBM/GTK vehicle. Britain made a proposal for such a merger on 2 February 1995.

Dutch and German defense ministers met on 25 November 1994 to discuss a joint venture in developing four prototype light reconnaissance vehicles. Netherlands wants to be a pilot nation for future development of such vehicles. How this could compete with the VBM/GTK vehicle is not clear.

2. Horizon Frigate.

France, Britain and Italy on 11 July 1994 signed a memorandum of understanding pertaining to a new-generation air-defense frigate. Called the Horizon project, this common naval vessel will have a new anti-aircraft system called the Principal Anti-Air Missile System (PAAMS). The three participating shipyards are GEC Marconi Naval Systems (Portsmouth, England); Direction des Constructions Navales (Paris, France); and Orizzonte SpA, a joint subsidiary of Fincantieri (Genoa, Italy) and its corporate parent, Finmeccanica (Rome, Italy). The projected "in service" date for Horizon is 2002.

3. Eurofighter-2000.

Germany is teamed with Britain, Spain and Italy to develop the Eurofighter-2000 aircraft, previously known as the European Fighter Aircraft which began in the mid-1980s. Britain and Germany each hold 33 percent of the program. Daimler Benz Aerospace AG (formerly Deutsche Aerospace), Germany's largest military supplier and aerospace manufacturer, is the German contractor. Final cost proposals will soon be launched with the hope of receiving firm procurement orders in 1995. The estimated overall cost of the program is equivalent to US$55.8 billion.

Britain, which is straining to keep up its share of Eurofighter costs, has sent out feelers about whether NATO countries might participate in the US Joint Advanced Strike Technology (JAST) program. JAST aims to develop by 2010 a family of affordable next-generation fighters for all branches of the military, and could be a strong competitor to Eurofighter. If Britain did switch to the JAST program it could be fatal to Eurofighter.

France is not a partner in this venture and is also looking ahead regarding a new fighter aircraft. While verbalizing a preference for European cooperation, French officials are also tempted by the JAST program. If France is serious about European cooperation, and does join the Eurofighter program, it would boost that effort considerably. However it might be that France is not such a "Buy European" purist when the economic pendulum swings the other direction.

Britain has built a prototype which first flew in 1994. Britain plans to order 250-300 aircraft. Germany, which considers the program not relevant in the post-cold war era, has cut its planned buy from 250 to 140.

4. Eurocopter.

Eurocopter is a French-German helicopter company based in Paris and Munich. It announced on 7 October 1994 that the French government had contracted in three areas, totaling the equivalent of US$245.6 million -- US$151.1 million for 1995 alone. The three areas are: (1) US$47.2 million for spare parts during 1995, a 60 percent jump over 1994 orders; (2) US$103.9 million for 14 new helicopters to be ordered in 1995 (6 Fennec light helicopters for the army, 4 Daughin helicopters for the navy, 2 Cougar utility helicopters for the Special Forces Command, 1 Cougar for search and rescue missions, and 1 Cougar to carry the Horizon battlefield surveillance radar); and (3) US$94.5 million during 1995 and 1996 for France's share in developing the four-nation NH-90 utility helicopter (see below),

Eurocopter is competing for a Netherlands buy. An earlier Dutch government purchased Eurocopter's Cougar, rather than the US-built Blackhawk. Now a new Dutch administration has reversed the "Buy European" policy and accepted bids from four countries on its new attack helicopter. Competition is now narrowed down to Eurocopter?s Tiger helicopter and the AH-64

Apache made by McDonnell Douglas Helicopter Co. of Mesa, Arizona. Quantities are expected to be either 30 Apaches or 34 Tigers, plus mission simulators, spares, and training. If the Apache is approved, it will be the first buy of Apaches by a European member of NATO.

The Netherlands Defense Ministry chose the Apache on 16 December 1994, the originally-scheduled decision date, but the Economics Affairs Ministry has delayed its decision to investigate the Tiger offset package which exceeds the US$747 million value of the Tiger contract. In this offset package, Eurocopter promises to allow the Dutch aerospace industry "over the long term to reinforce its know-how by becoming a single-source supplier for components of Europe's two biggest helicopter programs: the Tiger and the NH-90."[5] The offset package calls for participation of over 80 Dutch companies for the production of at least 1,200 helicopters. Dutch Prime Minister Wim Kok also backs the Tiger because it is European-made.

Eurocopter's Tiger is also competing against three other companies for the British army's US$2-billion buy of some 100 attack helicopters to replace its existing Lynx system. Besides Tiger and the AH-64 Apache, the competing helicopters are the AH-1 Venom (also called the Super Cobra) manufactured by Bell Helicopter (Fort Worth, Texas) and the A-29, Mark-9 helicopter manufactured by Agusta (Cascina Costa, Italy). A decision is expected in mid-1995. The Dutch decision will likely influence the British decision.

Eurocopter will start the pre-production phase of the Tiger in late 1995, to install tooling and order long-leadtime items in order to meet the Dutch and British schedules. France has allotted the equivalent of US$113.4 million for the 1995-1997 pre-production phase, and Germany will produce a like amount. This commits both countries to follow through with production but, over the next ten years, Spain intends to buy over 50 new attack helicopters while other prospective markets lie in the Persian Gulf region.

The Israeli air force had planned to buy two of Eurocopters's Panther helicopters. Israel announced in February 1995 that the order will be increased to some undisclosed number. A US branch of Eurocopter in Grand Prairie, Texas -- called American Eurocopter -- will apparently install avionics systems in the first two. Israel will call the Panther Atalef , a Hebrew word for bat.

Eurocopter has also agreed with the Russian helicopter company, Mil, on a joint venture to develop a new transport helicopter. The joint venture company will be called Euromil and will be based in Moscow. Eurocopter owns a 25 percent share in Euromil. The other 75 percent is owned equally be Mil Moscow Helicopter Plant, Kazan Helicopter Plant in Kazan, and Klimov Corporation based in Moscow.

In another expansionist move, Eurocopter has opened a subsidiary in South Africa. Known as Eurocopter Southern Africa, it is located at Lanseria Airport near Johannesburg. Company officials claim this new subsidiary will not conduct military business but will compete for civilian needs in sub-Sahara Africa.

5. NH-90 Helicopter.

NATO helicopter Industries is developing the NH-90. The four partners are Eurocopter (France and Germany) of Paris; Agusta Helicopter of Cascina Costa, Italy; and Fokker Aircraft of

[5]*Defense News*, 9 January 1995, p. 4.

Amsterdam, Netherlands. The four countries have made firm commitments for 726 helicopters. A 1.37 ECU (US$1.7 billion) development contract was awarded in September 1993. Center fuselage for the first prototype of the NH-90 was delivered for final assembly in October 1994. Costs are divided among the four governments, Eurocopter, and Fokker.

NATO Helicopter Industries plan a TTH-90 tactical transport version for 90 million French francs (US$16.9 million). The NH-90 basic utility version is priced at US$15 million. First deliveries of the TTH-90 should begin about 2001 or 2002. The 9.5 metric ton aircraft will compete with the US UH-60 Blackhawk and the Eurocopter Cougar.

6. EH-101 Helicopter.

Britain and Italy are teamed together to produce the EH-101 heavy lift helicopter. Westland Helicopters of Yoevil, England and Agusta of Milan, Italy are the companies involved. However, the Royal Air Force is pressuring the British Ministry of Defense to select the US Chinook, built by Boeing Company of Philadelphia, for the next battlefield utility helicopter buy worth 1.5 billion pounds (US$2.3 billion).

The RAF, which already operates 32 twin-rotor Chinooks, favors the Boeing helicopter which is larger and can carry 10 tons compared to 4.5 tons for the EH-101. But the EH-101 is later technology. more agile, and has better night-flying capabilities. The EH-101 unit cost is slightly less but the expense of setting up a full support infrastructure would make it more expensive. Also, it would take 20-25 EH-101s to fill RAF requirements, whereas those requirements can be met with 10-15 Chinooks. Therefore, costs and specifications favor the Chinook, but the EH-101 is more politically charged. Sale of the EH-101 to the British government is a confidence-building prerequisite for export. A number of large EH-101 sales to other countries would be lost if the Chinook is chosen.

7. Future Large Aircraft (FLA) Project.

Eight European countries (Britain, France, Germany, Italy, Belgium, Spain, Portugal, and _____) have joined to design a Future Large Aircraft (FLA) to meet Europe?s requirements for military transportation and rapid response forces. It will be produced through a subsidiary of the four-nation Airbus consortium. The FLA will be larger than the US-built Hercules C-130 and will be able to carry key equipment which is too large for the Hercules (i.e. the Multiple Launch Rocket System and the Warrior armored fighting vehicle). However, it will cost almost twice as much.

Britain pulled out of the FLA project in 1989 but now expects to rejoin during the second half of 1995. British Aerospace plc of Farnborough, England hopes to take a 20 percent share in FLA development, and is pressuring its government for financial backing of its 600 million pound (US$961 million) commitment. Britain's long-term modernization plans are expected to favor the FLA when it is available. At that time Britain could buy 40-50 FLAs to replace older C-130 Hercules and VC-10 transports as well as tankers.

In the short term, Britain has ordered 25 Lockheed C-130J transports at a cost of US$1.3 billion to meet immediate needs, in spite of pressure from France and Germany to delay that decision. But Britain required that Lockheed place contracts worth at least one billion pounds (US$1.56 billion) with British companies, at least 10 percent of which are directly on the new C-130Js. Thirty six British companies are participating in building the aircraft, and will continue to participate for all

future C-130 orders. Future worldwide sales could amount to 80 aircraft which would be worth some 2.3 billion pounds (US$3.6 billion) to British companies.

Ironically, in early 1995 Lockheed and British Aerospace were again pitted against each other in a replacement for Britain's Nimrod anti-submarine aircraft, although Loral ASIC of Portsmouth, England and Dassault Aviation of Vaucresson, France are also in the bidding.

Meanwhile, executives of Spain's civil and military aeronautics group, Construcciones Aeronautics SA (CASA) of Madrid, want a bigger slice of the FLA project. Although CASA owns nearly 4.2 percent of the Airbus consortium, its executives say their technical expertise and production capability qualifies them for 15-17 percent of FLA work.

8. Medium-Range Air-to-Air Missile (MRAAM).

Britain on 2 February 1995 expressed interest in collaborating with other European countries for a new MRAAM.

9. Other Franco-German Business Alliances.

Eurobridge Mobil Brucken GmbH is a Franco-German company co-owned by Dornier's (a Daimler Aerospace subsidiary in Bonn) Bonn division and Constructions Industrielles de la Mediterranee (Paris). It has recently obtained a 100 million German mark (US$65.3 million) order from the German army -- its first contract -- for ten 40-meter (132-foot) and ten 45-meter (46-foot) folding bridges. Work is expected to be divided between Germany (65%), Eastern Germany (15%) and France (20%). Delivery will be in the 1996-1999 time frame.

In January 1993 the German Aerospace Research Establishment and the French national space agency announced establishment of a Franco-German hydrogen rocket propulsion research facility at Lampoldshausen, Germany.

France's Groupment des Industries de l'Armementy Terrestres (GIAT) will team with some German-government-appointed company to study the next-generation Franco-German tank. Other companies, like Britain and possibly Spain, may join this Franco-German partnership.

One of the largest European mergers took place during December 1994 between Daimler Benz Aerospace (formerly Deutsche Aerospace) of Munich and Thompson CSF of Paris. They merged the Thompson-Brandt Armaments Unit of Thompson CSF with the Wirksystem division of Daimler Benz into a joint company called TDA Armaments headquartered in Velizy, France. Thompson CSF and Daimler Benz Aerospace have also merged their missile propulsion activities into another joint venture called Bayern Chemie. The two companies are also merging their satellite and tactical missile divisions.

10. Other Anglo-French Business Alliances.

The Satory division of France?s Groupement des Industries de l'Armement Terrestres (GIAT) of Versailles, and the Farnborough-based Royal Ordnance division of British Aerospace (London) are forming a common subsidiary for the manufacture of small arms and ammunition -- their current interest is in developing case-telescoped ammunition. But, together with Royal Ordnance's German branch (Heckler & Koch in Oberndoff), the new subsidiary with 10,000 employees and annual sales equal to US$1.9 billion could become one of the world?s largest weapons and ammunition makers. The merger agreement should be completed in late 1995. Germany may join at a later date.

British Aerospace is also merging its rocket propellant and explosives business, Royal Ordnance, with those of Paris-based Societe Nationale des Poudres et Explosifs (SNPE).

Another pending British Aerospace merger is between its tactical missile division in Farnborough and Matra Defense and Space of Velizy, France. Matra's parent company, the Paris-based Legerdere Groupe, has held merger discussions with British Aerospace since 1993, and in March 1995 they were reported within weeks of an agreement. This joint venture will create European missile sales of one billion pounds (US$1.59 billion) annually with each partner contributing about equally.

The Dynamics Division (Stevenage, England) of British Aerospace Ltd has combined with Euromissile (Paris) and other European companies to develop the Trigat long-range anti-tank missile.

In May 1993, Short Brothers (Belfast, N. Ireland) formed with Thompson CSF (Paris) a joint-venture company called Shorts Missile Systems Ltd to produce very-short-range air defense systems.

Thompson CSF (Paris) also has a joint venture with GEC-Marconi Defence Ltd (Stanmore, England) to develop next-generation fire control radar for fighter aircraft.

Thorn EMI Electronics Ltd (Crawley, England) is collaborating with Thompson CSF (Paris), as well as German and US companies, to develop the Cobra artillery-finding radar.

General Electric Company plc (London), parent company of GEC-Marconi, now derives 30 percent of its profits from cooperation with France on various civil and military projects.

GEC-Marconi is collaborating with Dassault Electronique SA (St. Cloud, France) in developing electronic warfare decoys for both county?s navies.

11. French Domestic Sharing.

Matra and Aerospatiale, France?s two largest missile manufacturers, are sharing three new ventures. The two companies are co-contractors on the basic French Apache missile to be used by French and German Air Forces to attack runways. Over 200 missiles are currently on order for a cost of 4.5 billion francs (US$846 million). This Apache has a range of 150 kilometers (93 miles) and is planned for 1997 availability. Matra has a 60-percent share in the development contract and Aerospatiale ha 40 percent.

The first new venture is a long-range cruise missile known as Arme de Precision Tiree a Grande Distance (APTGD). Matra Defense and Space (Velizy, France) is the prime contractor. A complete development plan is to be submitted by January 1995. Development and production costs for the French Air Force to buy 100 missiles are estimated at 7 billion francs (US$1.32 billion). This Apache derivation will have a range of up to 400 kilometers (248 miles) with a single 400-kilogram (880-pound) warhead and a homing infrared sensor for terminal guidance. First deliveries are scheduled for 2001.

The second new program is a bunker-busting (hard-target) version of the Apache which is also competing for the British Conventional Air-launched Stand-Off Missile (CASOM). It will also have a single 400-kilogram (880-pound) warhead designed to attack hardened high-value targets, such as command posts and ammunition bunkers from a range of 240-400 kilometers (124-186 miles). The French Air Force intends to buy some 300 of these missiles. It is believed that Matra and Aerospatiale are combining on this weapon which will be available in 1999. French officials hope it will attract foreign partners. development costs should be less than a billion francs (US$183.9 million).

Another new program is a supersonic anti-ship missile dubbed ANF. Aerospatiale Missile Division at Chatillon, France is the prime contractor. The ANF design makes use of off-the-shelf hardware. It will use the ramjet engine from the Air-Sol Moyenne Portee (ASMP) nuclear air-launched missile made by Aerospatiale, and an improved version of the subsonic Exocet anti-ship missile's homing sensor. The supersonic warhead to be used was jointly designed by Aerospatiale and Daimler Benz Aerospace (formerly Deutsche Aerospace) of Munich, Germany. Development costs are estimated at under 2 billion francs (US$367.8 million) and deliveries could be made eight years after the contract is awarded. However, this program also requires detailed feasibility studies which, it is hoped, will attract foreign investment. Besides the French requirement, this missile will also meet the needs of Britain and Germany. The three countries combined have an initial requirement of 1,000 missiles.

12. Israel is an Added Competitor.

In addition to all-European weapons consortium, Israel is also competing for a slice of the European arms market. Since the Middle East peace initiatives, many European countries -- particularly France and Britain -- are broadening arms trade and defense ties with Israel. But that is not the limit of Israeli ambitions. Discussions are taking place with eastern European nations as well as countries from South America and Asia. Eastern European orders, alone, from Israeli forms are expected to reach US$100 million in 1994.

The above list of joint ventures is not comprehensive, there are other major areas in which French-dominated WEU activities are trying to reduce European dependence on US technologies.

D. EUROPEAN BALLISTIC MISSILE DEFENSE (BMD)

In January 1993 it became known that the WEU was moving to become Europe's coordinator for defense against tactical ballistic missiles. Citing the growing Middle-East missile threat, the WEU Technological and Aerospace Committee said: "Europe can no longer postpone working out a joint approach to anti-missile defense, otherwise it will risk being left dangerously far behind in relation to evolution of the threat."[6] The WEU wants other options than the US system. However, on 30 November 1994 the WEU's parliamentary assembly unanimously voted to cooperate with the United States "on a basis of equal partnership in development and production" of a multi-layered defense against ballistic missiles.[7] This resolution is not binding on the WEU Council of Ministers, its top executive body. Nevertheless, mainly due to economic considerations, unfolding events indicate that Europe is heading toward such a partnership.

1. Britain's BMD Study.

The British government has awarded an 18-month contract to the Dynamics Division (based in Stevenage, England) of British Aerospace Defense Ltd. to study options, cost and performance of systems to provide Britain's future defense against ballistic missiles. The Dynamics Division will lead a team consisting of GEC-Marconi (Stanmore, England), Hunting Engineering Ltd. (Ampthill, England), Siemens Plessey Electronics Systems (Chessington, England), Thorn EMI Electronics Ltd.

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[6] *AW&ST*, 18 January 1993, p. 25.

[7] *Defense News*, 5 December 1994, p. 4.

(Hayes, England), Lockheed Missiles & Space Company (Sunnyvale, CA, USA), TRW Space and Defense Group (Rodondo Beach, CA, USA), Matra Defense-Espace (Velizy, France), and CoSyDe (a Thompson CSF/Aerospatiale joint venture, Paris, France).

2. Future Surface-to-Air Family of Missiles (FSAF).

Since 1992 Aerospatiale of Paris and Rome-based Alenia Corporation have been working together on an ATM concept called Aster. Germany was also encouraged to participate. Now France and Italy have equal shares in the Future Surface-to-Air family (FSAF) missile program. Alenia and Aerospatiale have joined with Thompson-CSF, also of Paris, to manage the FSAF program. They have formed a joint venture called Eurosam, which is half owned by Alenia.

Eurosam told the WEU that a French anti-tactical missile (ATM) system could be developed by 2000 for a sum of 50 billion francs (US$10 billion). Current Eurosam efforts focus on a ground-launched version of France?s air-launched medium-range missile (Sol-Air Moyenne Portee). The ground-launched version is called Sol-Air Moyenne Portee/Terrestre (SAMP/T), which utilizes the Aster ATM.

This new FSAF missile will use the SylverAce vertical missile launcher developed by Otobreda -- a joint venture of Ruelle and OTO-Melara, of La Spezia, Italy. The first prototype was delivered to the French defense ministry?s shipbuilding directorate in late 1994. SylverAce was originally designed for France's new Charles De Gaulle nuclear-powered aircraft carrier but can be on other ships down to patrol boats. It is also compatible with Standard, Sea Sparrow, Sea Wolf, and Barak missiles, and can be modified for ASROC and Harpoon missiles. The SylverAce can be installed in less than an hour and can fire eight missiles. Combining eight launchers gives a capacity of 64 missiles which can be fired at the rate of six per second.

How the FSAF program will be affected by Italy joining the the MEADS program (discussed below) is not presently known. Possible MEADS will be a later-technology generation than FSAF.

3. Medium Extended Air Defense System (MEADS).

Germany has been a partner to France in many ventures. But Germany also has ties with the US which it is reluctant to break. The field of missile defense is one example. To salve its relationship with both countries, Germany has successfully maneuvered a multinational approach to ATMs, rather than join the Franco-Italian FSAF program.

Germany has purchased Patriot missiles from the US and Germany?s Telefunkin System teckhnik of Ulm has been working with the US Raytheon Corp. on the multimode seeker for the Patriot Advanced Capability-3 (PAC-3). Germany's Dornier GmbH is also a subcontractor to Lockheed on the Pentagon's Theater High Altitude Area Defense (THAAD) missile system. Then in August 1993 government-to-government talks began on merging the US Army's Corps Surface-to-Air Missile (Corps-SAM) with Germany?s Taktische Luft Verteidigunds System (TLVS) air defense concept, to start replacing Germany?s Hawk air defense system in 2003.

It was inevitable that France be brought into this partnership. First of all, France would not like to see a closer relationship between Germany and the US without having some say in the matter. Secondly, Paris-based Aerospatiale has been working on a replacement for France?s Hawk air defense system while Daimler Benz Aerospace (formerly Deutsche Aerospace) of Munich is the contractor for TLV. Since the merger of Aerospatiale and Daimler Benz Aerospace is expected to be formalized in 1994, combining the two Hawk replacement programs makes sense. On 2 February 1995 the three

nations signed an agreement for the joint development phase of the Medium Extended Air Defense System (MEADS). Italy also joined the venture at the time and signed the agreement. MEADS is expected to incorporate the technology and mobility aspects of Corps-SAM in conjunction with subsystems developed by other partners.

In response to fears that the US will be the dominating partner in this team, Daniel Berhtault of the French Defense Ministry said: "We have made it clear that times have changed, and that we will not accept being subcontractors; we will be equal partners, and the type of organization we will adopt will preserve this status."[8]

The MEADS program steering committee, its ultimate authority, will be chaired by a European with an American deputy. The program will be managed by a US-based agency with NATO status, headed by an American with a European deputy. Fifty percent of the program definition phase will be financed by the US, 20 percent by France, 20 percent by Germany, and 10 percent by Italy. If Britain joins later, it will receive part of the European share so that European participation never exceeds 50 percent.

Five US companies want a piece of the action -- Hughes Missile Systems Company of Tucson, AZ; Lockheed Missiles & Space Company of Sunnyvale, CA; Loral Vought Systems Corp. of Dallas TX; Martin Marietta Corp. of Bethesda MD; and Raytheon Corp. of Lexington MA. This will become four companies after the Lockheed-Martin Marietta merger, and they will be divided into two teams for the project definition phase competition. Only the winning US team will work on MEADS.

Five European companies will be involved with MEADS: Aerospatiale of Paris, Thompson-CSF Inc. of Paris, Siemens Aktiengesellschaft of Munich, Daimler Benz Aerospace of Munich, and Alenia of Rome. from this consortium, two teams will be formed to participate with US two partner teams during competitive bidding for the program definition stage. Regardless of which team wins, each European company will have a fifth of Europe's 50-percent share of MEADS work.

The winning team for the project definition phase will be selected in October 1995. It is estimated that this three-year phase will cost several hundred million US dollars. The projected price for 100 complete MEADS systems (50 for the US and 50 for Europe) is US$20 billion over 15 years. MEADS is to be operational in 2005.

4. Norwegian Advanced Surface-to-Air Missile System (NASAMS).

A US-Norwegian joint venture called the Norwegian Advanced Surface-to-Air Missile System (NASAMS) will complete current deliveries of Hawk missile replacements to the Norwegian Air Force in 1997. The Norwegian Air Force is spending 4.1 billion Norwegian kroner (US$599.4 million) for development of NASAMS. Additional systems will then be procured for highly-mobile Norwegian Army units, and for export.

The industry partners are Norsk Forsvarsteknologi (NFT) of Kongsberg, Norway and Hughes Aerospace and Defense Systems of Fullerton, CA. The system will use off-the-shelf components: the Hughes AN/MPQ-64 three-dimensional radar. a command and control unit developed by NFT, and the Hughes AIM-120 Advanced Medium-Range Air-to-Air Missile with launchers. Hughes accounts for about 65 percent of the systems cost, and NFT 35 percent. NASAMS will be able to detect a target at 75 kilometers (46 miles) and engage it at 30 kilometers (18.6 miles).

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[8] *Defense News*, 24 October 1994, p. 3.

NASAM challenges both Eurosam and MEADS in the area of foreign arms sales. By using existing technology, NASAMS will be cheaper and available earlier. It is mainly for defense against aircraft and not very effective for shooting down missiles. Therefore, the most likely customers are those who need immediate replacement for their Hawks, such as South Korea, Singapore, Kuwait, United Arab Emirates, and Finland. At stake is an estimated US$20 billion business potential over the next 20 years. Because of Norway?s strict export laws, the system will be sold internationally by the US partner as the Advanced Surface-to-Air System (AdSAMS).

5. British/Israeli Talks.

British Defense minister Malcomb Rifkind discussed possible cooperation with Israel on theater missile defense during his October 1994 visit to Israel. Israel Aircraft Industries in Lod is the prime contractor for the Arrow ATM which has been mostly financed by the US.

E EUROPEAN MILITARY SATELLITES

In June 1988, the WEU recommended creation of a European Advanced Defense Research Agency. This was a first step toward honing the sophisticated technologic edge required for space ventures. European dependence on US intelligence-gathering became apparent during the Persian gulf war, and the need for European autonomy in this field was strikingly illustrated when the US unilaterally ceased to enforce the Bosnian arms embargo and withheld related intelligence information.

Germany supports France’s vision for an independent European military space capability. Germany expects to invest US$6.5 billion over the next decade (1995-2004) to become a major player in military space programs -- particularly in the area of spy and communications satellites to support German troops sent out of area. A German science satellite was released from the space shuttle Atlantis on 4 November 1994, but malfunctioned a few hours later.

1. WEU Satellite Image Analysis Center.

In December 1991, the WEU authorized establishment of a Satellite Image Analysis Center at Torrejon, Spain. It was funded by 38.25 million European Currency Units (ECUs), the equivalent of US$47.7 million, to conduct a three-year study of spy satellites which would free European nations from reliance on US data. It is staffed by 50 people consisting of photo-interpretation experts and supporting personnel. Photographs to study have been purchased from US Landsat, French SPOT, and European ERS-1 satellites. It is expected that Helios satellites will eventually provide images for analysis (see below). The study is led by Daimler Benz Aerospace’s Dornier division at Friedrichshaven, Germany.

When the charter for the satellite center came up for review in November 1994, WEU government ministers postponed until the Spring of 1995 a decision on whether to make the center a permanent WEU facility. British prime Minister John Major favors relying on US intelligence rather than spending the equivalent of US$6.6 billion for an initial autonomous spy satellite network by 2005, and upward of US$15.2 billion for a full system by 2010. Other countries are also skeptical. Due to a one-year late start, funds are still available to operate the center through 1995.

2. European Spy Satellites.

France has developed the Helios-1 optical reconnaissance satellite with a ground resolution of about one meter (3.3 feet). Spain also has a 7 percent share and Italy 14 percent. The first spacecraft has been assembled at Toulouse, France, and is undergoing tests in preparation for a Spring 1995 launch.

France will also take the lead in a follow-on 11-billion franc (US$2.05-billion) Helios-2 program. Germany has not decided whether it will accept a minor share in Helios-2, but will take a substantial share in the new Osiris radar satellite (see below). France wants Germany to pay for 15 percent of the program but only receive 10 percent of the work, because Germany is a late-comer to the program and should compensate for technology gained on Helios-1. Spain and Italy in January 1995 reversed a previous decision, and have tentatively agreed to participate in Helios-2. Their decision came after Germany made its huge commitment to space ventures and it became apparent that a European space industry is in the offing -- they don't want to be left out although their share would not exceed 10 percent at this late date.

Helios-2 is a two-satellite program. The first one is scheduled for launch in 2001. It will have a ground resolution of 50 centimeters (1.7 feet) and carry an infrared sensor to improve night vision.

In a effort paralleling Helios-2, France will also launch its SPOT-5 civil earth-observation satellites.

France has also been planning the Osiris radar military satellite for the end of the decade. Germany, however, has now agreed to pay 55-60 percent of this two-satellite program. The total cost is estimated at US$2.2 billion. Osiris will require some form of nuclear energy to provide the necessary power for radar. Daimler Benz Aerospace (formerly Deutsche Aerospace) will be prime contractor with France having a lesser share in the costs.

March 1995 is the target date for finalizing the Franco-German agreement on equally sharing combined development of Helios-2 and Osiris. Both countries hope that other nations can be persuaded to participate in these programs.

3. European Communications Satellites.

France and Britain have taken the lead in developing autonomous communications satellites to meet their need in the next century. France plans a 1995 launch of its third Telecon-2C satellite fitted with the Syracuse-2 military payload, and production of a fourth. France is also working on the Stentor satellite to explore new military and civil telecommunications techniques. Meanwhile, Franco-German working groups have been meeting to explore bilateral cooperation in the telecommunications area. In a 2 February 1995 announcement, Britain indicated it wished to collaborate with France and Germany for a replacement to its Skynet-4 military communications satellite.

F. EUROPEAN ARMAMENTS AGENCY.

In October 1993 France and Germany started planning a joint armaments agency which will at first focus on standardized procurement for the Franco-German Corps. But it will later encompass bilateral defense research programs. Some existing joint programs which will come under this agency are the Tiger attack helicopter; the Roland, Milan, and Hot missiles; the Trigat anti-tank missile

program (of which Britain has a 33 percent share); and the next generation of wheeled combat vehicles.

The Franco-German agency was approved at the 2 December 1993 summit meeting in Bonn, Germany. In June 1994 it was placed under the jurisdiction of the WEU in hopes the WEU would be the nucleus of the European Armaments Agency called for in the Maastricht Treaty which established the EU.

At the 14 November 1994 meeting in Noordwijk, Netherlands, of the 13-country Western European Armaments Group (WEAG), defense ministers of the WEU voted to postpone establishment of a European Armaments Agency. They cited four areas for continued study which include the legal and contractual aspects of the agency's interaction with existing international organizations. The WEAG is western Europe's top forum for armaments cooperation. France took over the two-year rotating term a chair of the WEAG in January 1995, and hopes to use that position to pump new life into Europe?s defense industry. A 23 March 1995 meeting in Paris is planned to set priorities for the WEAG.

France and Germany are proceeding with a joint armaments agency anyway, saying they cannot wait for unanimous agreement. One French official pointed out that "the necessary maturity does not exist for governments to accept transferring part of their national jurisdiction to a supranational agency,... It is impossible, in the near term, to set up a single armaments agency with 13 members."[9] France and Germany extended an offer to any WEU member to participate as long as it does not slow down their schedule. The armaments agency is expected to be in place by 1995. It, along with a separate permanent staff that manages the European Long-Term Defense Research program, will form the core of what is expected to eventually be the European Arms Agency mandated by the Maastricht Treaty for European Unity.

On 18 November 1994, officials from Belgium, Italy, and the Netherlands confirmed that their countries will accept the Franco-German offer. Britain also confirmed that it is seriously considering participating in the venture. Denmark, Greece and Turkey oppose creation of a European Arms Agency. Nevertheless, on 20 January 1995 the European Parliament passed a resolution supporting a European Arms Agency which would centralize all European procurement and control arms exports.

Related to this, and preceding it, is the 1987 Anglo-French Reciprocal Purchasing Initiative. Under this agreement firms in either country can bid on programs in the other country. A joint coordinating committee meets regularly to exchange data on contract opportunities.

G. AMERICA'S MILITARY MARKET FOR EUROPE

The Pentagon in 1990 established the Foreign Competitive Testing Program -- a marriage of what previously had been the Foreign Weapons Evaluation Program and the NATO Comparative Test Program. It looks for foreign weapons that have already been fielded which may be obtained cheaper than producing them in the US. A safeguard for American businesses provides that only weapons that are not being produced by US industry will be considered, even though US industry might be developing them.

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[9] *Defense News*, 14 November 1994, p. 31.

On 17 October 1994, Pentagon officials announced 32 foreign projects to be investigated during 1995 to fulfill US military needs. Of those, 21 are European technologies, some from more than one country. They are distributed as follows:

1. Austria.
- Rifle sights for US Marine Corps.

2. Britain.
- Automatic chemical sensor for US Army to detect chemicals on the battlefield.
- Anti-mine charge for US Army to clear paths through mine fields.
- Submarine repair for US Navy to repair submarines while still in the water.
- Miniature explosives detonator for US Navy and Marine Corps. use.
- Airstrip night lights, a night vision device for US Navy and Marine Corps. aviation.
- Advanced short-range air-to-air missile for US Navy and Marine Corps. airplanes.

3. Denmark.
- Electronic warfare system which would enhance the US Air Force's F-16 fighter.

4. Finland.
- Automatic chemical sensor for US Army to detect chemicals on the battlefield.

5. France.
- Automatic chemical sensor for US Army to detect chemicals on the battlefield.
- Satellite ground station for US Air Force to receive satellite imagery at forward locations.
- Warheads to improve US Air Force missiles.

6. Germany.
- Automated chemical sensor for US Army to detect chemicals on the battlefield.
- Anti-mine charge for US Army to clear paths through mine fields.
- Dud disposer for US Navy and Marine Corps. to dispose of unexploded ammunition.
- Modular gun for US Navy ships which can be installed and repaired quickly.
- Sniper rifle for two-man US Marine Corps. sniper teams.
- Scanner to aid the US Air Force surveillance of rockets and ballistic missiles.

7. Netherlands.
- 25-millimeter cartridge for use as a US Army training round.

8. Russia.
- Ejection seat for US Air Force planes.

9. Sweden.
- Anti-armor penetrating ammunition for US Army use against tanks.
- Anti-tank munitions for US Special Operations Forces.

- Advanced aircraft gun made for the AC-130 gunship (a specially-modified Lockheed C-130 aircraft operated by US Special Operations Forces).
- Air-defense ammunition for US Air Force.

10.Ukraine.

- Material manufactured for use in US Navy ships.

There is resistance to the Foreign Competitive Testing Program, however. Some factions of US industry say that purchase of foreign military equipment will erode the US industrial base for weapons manufacture -- the know-how for building certain weapons if worst-case possibilities come true and production had to be resumed. Since the cold war's end the two chief justifications presented to the public and congress for continuing to build weapons is to provide jobs and to maintain the industrial base. This business lobby provides a strong opposition to buying from European or any other foreign firms. For instance, there were strong repercussions when on 25 January 1995 the British Condor V12 diesel engine was chosen to power the US Army's new Crusader self-propelled howitzer.

But when it comes to US controls on exports, industry is the first to complain about any restrictions to peddling its wares abroad. They refer to bureaucratic barriers and ambiguous policies which are preventing US companies from competing on the global market. Nevertheless, the United States is the world's biggest arms trafficker, accounting for 57 percent of all weapons sold on the global market.

H. CONCLUSION

As it has been for European unity, France and Germany have been in the forefront of the movement to obtain technological independence through all-European industries. The US has feigned support, or indifference, but remains acutely wary. US companies are being increasingly viewed as competitors, rather than partners. Some government leaders are urging their companies to buy European. And many European industries say that for the US to have access to European markets it must open its own market to Europeans.

Transatlantic rivalry between France and the US has sparked clandestine industrial spying. Although this mutual activity is usually not publicized, it did make media headlines during a French presidential election in February 1995. Apparently to detract from one party's scandalous activity, the French government asked Washington to recall five Americans allegedly conducting acts of political and economic espionage. The five were the CIA station chief, his deputy, two US diplomats, and an American woman. France complained of "dirty tricks" played by the CIA during the past two years.

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GLOSSARY

AH-64	US Apache attack helicopter.
ANF	A new proposed French supersonic anti-ship missile.
APTGD	Arme de Precision Tiree a Grande Distance, a new French long-range cruise missile.
Aster	An ATM being developed by Eurosam.
ATM	Anti-Tactical Missile.
AWACS	Airborne Warning And Control System.
CASA	Construcciones Aeronautics SA, Spain’s civil and military aeronautics group.
CASOM	Conventional Air-launched Stand-Off Missile, a new proposed British missile for which several designs are competing.
Corps-SAM	Army’s Corps surface-to-air missile, a US missile defense program.
Cougar	A utility helicopter manufactured by Eurocopter.
CSCE	Conference on Security and Cooperation in Europe. On 5 December 1994, at its summit conference in Budapest, Hungary, the name was changed to Organization for Security and Cooperation in Europe (OSCE). See OSCE below.
EH-101	A heavy-lift helicopter being designed by Britain and Italy.
ECU	European Currency Unit. The common currency of the European Union, for those members who have accepted it.
EU	European Union (formerly European Community). It has 15 members: Austria, Belgium, Britain, Finland, France, Denmark, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, and Sweden. Norway rejected membership in a 28 November 1994 referendum.
FLA	Future Large Aircraft. A joint project of eight countries: Belgium, Britain, France, Germany, Italy, Portugal, Spain, and _____.
FSAF	Future Surface-to-Air Family of missiles. A Franco-Italian missile defense venture.
GIAT	Groupement des Industries de l’Armement Terrestres, a French weapons firm.

JAST	Joint Advanced Strike Technology, a US program to develop a family of new fighter aircraft for all branches of the armed forces.
MEADS	Medium Extended Air Defense System, a joint-venture ATM program by US and European firms.
MRAAM	Medium-Range Air-to-Air Missile.
NACC	North Atlantic Cooperation Council. The 39 members are: Albania, Armenia, Azerbaijan, Belarus, Belgium, Britain, Bulgaria, Canada Czech Republic, Denmark, Estonia, Finland (observer), France, Georgia, Germany, Greece, Hungary, Iceland, Italy, Kazakhstan, Kirghizia, Latvia, Lithuania, Luxembourg, Moldavia, Netherlands, Norway, Poland, Portugal, Romania, Russia, Slovakia, Spain, Tadjikistan, Turkey, Turkmenistan, Ukraine, United States, Uzbekistan.
NASAMS	Norwegian Advanced Surface-to-Air Missile System, a joint venture between the US and Norway to develop a replacement for the Hawk missile.
NATO	North Atlantic Treaty Organization. It 16 members are: Belgium, Britain, Canada, Denmark, France, Germany, Greece, Iceland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Turkey, and the United States.
NFT	Norsk Forsvarsteknologi, a Norwegian missile firm.
NH-90	A utility helicopter being developed by France, Germany, Italy and the Netherlands.
OSCE	Organization for Security and Cooperation in Europe. Its 52 members are Albania, Armenia, Austria, Azerbaijan, Belarus, Belgium, Bosnia-Herzegovina, Britain, Bulgaria, Canada, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Georgia, Germany, Greece, Holy See, Hungary, Iceland, Ireland, Italy, Kazakhstan, Kirghizia, Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, Moldova, Monaco, Netherlands, Norway, Poland, Portugal, Romania, Russia, San Marino, Slovakia, Slovenia, Spain, Sweden, Switzerland, Tadjikistan, Turkey, Turkmenistan, Ukraine, United States, and Uzbekistan. Macedonia is an observer and rump Yugoslavia (Serbia and Montenegro) is a suspended member.
PAAMS	Principal Anti-Air Missile System. A new anti-aircraft system for the Horizon frigate.
PAC-3	Patriot Advanced Capability-3. A US missile defense program.
PfP	Partnership for Peace with NATO. As of 10 February 1995, 23 eastern European countries and former Soviet republics have been granted this status: Albania, Austria, Azerbaijan, Bulgaria, Czech Republic, Estonia, Finland, Georgia, Hungary, Kazakhstan, Kirghizia, Latvia, Lithuania, Moldova, Poland, Romania, Russia, Slovakia, Slovenia, Sweden, Turkmenistan, Ukraine and Uzbekistan.
RAF	Royal Air Force.
SAMP/T	Sol-Air Moyenne Portee/Terrestre, a ground-launched version of France's medium-range air-launched missile.
SDI	Strategic Defense Initiative, the former US Star Wars program, now called Ballistic Missile Defense.
SNPE	Societe nationale des Poudres et Explosifs, a French explosives maker.
THAAD	Theater High Altitude Area Defense system, a US missile defense program.
Tiger	An attack helicopter being designed by Eurocopter.
TLVS	Taktische Luft Verteidigunds System, a German missile defense program.
UN	United Nations.
US	United States

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VBM/GTK	Vehicule Blinde Modulaire/GepanzertesTransport Kraftfahrzeug -- French and German names of a modular armored vehicle being developed by the two countries.
WEAG	Western European Armaments group. Western Europe?s top forum for armaments cooperation. The 13 members are: Denmark, France, Norway, Turkey, _____, _____, _____, _____, _____, _____, _____, _____, and _____.
WEU	Western European Union. Its 10 members are: Belgium, Britain, France, Germany, Greece, Italy, Luxembourg, Netherlands, Portugal, and Spain.