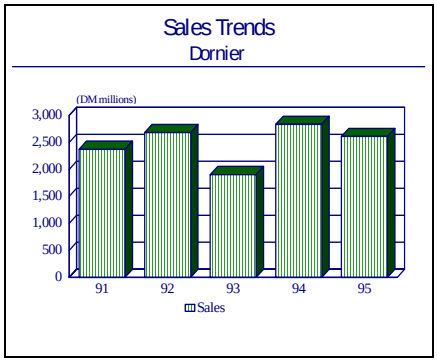
Dornier GmbH - Archived 3/1998

Outlook

- In June 1996, Fairchild Aircraft acquired an 80-percent stake in Dornier Luftfahrt.
- Under terms of the deal, Fairchild Aircraft will acquire nearly all of Dornier Luftfahrt's operations including the Do 228/328 regional aircraft.
- Fairchild plans to cut the workforce, while keeping manufacturing jobs in place through 1999 at least.
- The acquisition is expected to be beneficial for both companies.



Headquarters

Dornier GmbH
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Telephone: (49) 7545 80

Dornier is one of Europe's most famous manufacturers of aircraft and has a long legacy of activity in various fields of aerospace endeavor. The firm began operation as a subsidiary of the Zeppelin-Werke Lindau GmbH, which was responsible for the manufacture of the famous Zeppelin rigid airships. Dornier (which was the "Do" division of Zeppelin) became independent in 1922, and after this time, Dornier became one of the principal aircraft manufacturers in Germany. Throughout the years of the Second World War, Dornier was a major producer of combat aircraft. During the war the firm produced notable bomber, reconnaissance and night-fighter aircraft.

After the Second World War, Germany was forbidden to manufacture armaments and aircraft. Therefore, Claude Dornier relocated to Spain and designed the Do 25, which ultimately evolved into the Do 27. This aircraft was initially manufactured by CASA, and Spanish-built versions were designated CASA 127. The Do 28 Skyservant, a redesigned twin-engine aircraft, was next introduced. The Do 28 was manufactured in large numbers and has come to see operation throughout the world.

In 1985, Dornier GmbH relinquished a 66-percent share interest to Daimler-Benz AG, Germany's largest manufacturing firm. After the foundation by Daimler-Benz of Deutsche Aerospace AG (DASA) on May 19, 1989, Deutsche Aerospace assumed a 57.5-percent stake of Dornier GmbH shares, as well as 100 percent of MTU Motoren- Und Turbinen-Union GmbH.

In 1996, Daimler-Benz Aerospace sold an 80-percent stake of Dornier Luftfahrt to Fairchild Aircraft. DASA still controls 20 percent of Dornier.

For further details on Dornier's parent company please refer to the reports on **Daimler-Benz** and **Daimler-Benz Aerospace** located in this binder.

Structure and Personnel

Prior to June 1996.
Werner Heinzmann
President and CEO, Dornier GmbH

Hansjörg Kränzle
President and CEO, Dornier Luftfahrt

Product Areas

Prior to 1996, Dornier GmbH's business activities were combined in the Space Systems Group and Defense and Civil Applications Group of Daimler-Benz Aerospace. The activities of Dornier Luftfahrt GmbH were concentrated in the Regional Aircraft Division and those of Dornier Medizintechnik GmbH in the Medical Systems Division. Dornier's main operating divisions were as follows:

1. Dornier GmbH
1.1 Dornier Luftfahrt GmbH
1.2 Dornier Medizintechnik GmbH
1.2.1 Dornier Medical Systems Inc
1.2.2 Acoustic Imaging Technologies Corp

Dornier's Space Systems activities encompass space science, earth observation and meteorology, communications and navigation, microgravity systems, orbital systems, transport systems, and ground support infrastructure systems.

Dornier Luftfahrt GmbH is responsible for Dornier's involvement in aircraft programs. This includes commuter/utility aircraft, widebody aircraft, reconnaissance, surveillance and training systems, fighter aircraft, rotorcraft, and infrastructure programs. This operation was sold to Fairchild Aircraft in 1996. However, as part of the deal DASA continues to hold a 20-percent share in operation.

Dornier Medizintechnik is responsible for Dornier involvement in medical systems and technologies. Development and manufacturing work is undertaken in kidney lithotripters, biliary lithotripters, ultrasonic diagnostic equipment, laser technology, and other medical technologies and systems. This operation was sold to an industrial partner in 1995 according to DASA.

Facilities

Daimler-Benz Aerospace, D-81663 Munich, Germany. Telephone: 49 (89) 6070. This was Dornier GmbH's parent organization.

Dornier, Postfach 1420, D-7990 Friedrichshafen, Germany. Friedrichshafen, in southwest Germany, is the administrative headquarters of Dornier GmbH. Dornier System GmbH, which is responsible for space activities, is likewise located in Friedrichshafen.

Dornier Luftfahrt, Postfach 1103, D-82230 Wessling Germany. Dornier Luftfahrt GmbH handles the production of the Dornier 228 and Dornier 328 regional aircraft as well as providing various aerospace services.

Dornier Aviation (North America Headquarters), 22455 Davis Dr, Suite 100, Sterling, Virginia 20164. Telephone (703) 444-8300.

Corporate Overview

Dornier is a highly active participant in numerous space system programs as well as the Do 328 regional/ commuter aircraft.

New Products and Services

Dornier did not announce any major new products or services during 1996.

Plant Expansion/ Organization Update

No new major plant expansions, modernizations, or organizational changes have been reported by Dornier in the past year.

Mergers/Acquisitions/Divestitures

Stake In Dornier Sold. In June 1996, Fairchild Aircraft acquired an 80-percent stake in Dornier Luftfahrt through the formation of Fairchild Aircraft Holding, a joint venture company in which DASA retains 20 percent. Under terms of the deal, Fairchild Aircraft will acquire nearly all of Dornier's operations including the Do 228/328 regional aircraft, Airbus components manufacturing business, an international logistics group, and the company's maintenance and overhaul work. DASA will retain the unit's Airborne Warning and Control Systems (AWACS) maintenance unit. Daimler-

Benz initiated the move out of the regional aircraft because of the massive over capacity in that industry of which both Fokker and Dornier were a part.

Satellite and Missile Twin Merger. In late 1995, DASA and Aerospatiale's plans to merger their satellite and missile businesses were formally singed. These two new companies formed from the merger will be called European Missile Systems and European Satellite Industries. ESI will be based in Munich, with a German chairman and a French co-chairman, while EMS will be headquartered in France, with a French chairman and a German co-chairman. Each company was expected to be founded in late 1996. Prior to the founding of the cross border companies, DASA spun off its activities in these areas into LFK Lenkflugkopersysteme GmbH (Guided Missile Systems) and Dornier Satellitensysteme GmbH. The former consists of the space systems operations of Dornier.

However, the German government's support for the plans appeared to be waning and Aerospatiale was delaying much needed restructuring. DASA has reportedly put the plans on hold until the final outcome of the Thomson-CSF takeover battle. DASA may abandon its Aerospatiale-based missile and satellite merger in favor of a possible Matra-Thomson teaming.

Medizintechnik Sold. During 1995, DASA sold a majority interest in Dornier Medizintechnik to a partner for an undisclosed amount. The move was undertaken as part of a restructuring effort focusing DASA on its core capabilities.

Dornier Family Loses Voice. While remaining a significant Dornier GmbH shareholder, the Dornier family was prompted to divest itself of a voice in the decision-making processes of the organization in the wake of a funding dispute with Daimler-Benz regarding development of the Do.328 regional turboprop aircraft.

Teaming/Competition/Joint Ventures

Stinger Project Group. The Stinger Project Group (SPG), a consortium headed by a Dornier GmbH/Diehl GmbH team, is composed of participants from the Netherlands, Turkey, Greece, and Germany. An agreement between the governments of Germany, Greece, The Netherlands, and Turkey for joint production of the Stinger POST surface-to-air missile was reached in 1987. The original consortium established in 1983 for European Stinger production also included Belgium and Italy, who have since dropped out. Under German lead (DASA/Dornier and Diehl), the consortium began series production of the missile in late 1992 with production expected to extend into the year 2000. The amount of work awarded to each country will depend upon the number of systems purchased. Germany initially was expected to order about 3,000 missiles. In addition, work is ongoing in the effort to adapt the Stinger missile to the Tiger helicopter.

Hindustan Aeronautics. Dornier has licensed Hindustan Aeronautics Ltd, of India, to produce the Do.228 regional turboprop aircraft.

Arianespace. Germany has a total 18.65-percent investment in the Arianespace consortium. German firms involved include Dornier GmbH, DASA/ERNO Raumfahrttecnik GmbH, MAN Technologie GmbH, Dresdner Bank AG, Bayerische Vereinsbank AG, Westdeutsche Landesbank AG, and Girozentralle AG. Dornier investment in Arianespace totals 2.80 percent.

Canadair. Joint development of the CL-289 unmanned vehicle is by Canadair and Dornier of the Federal Republic of Germany. Major Subcontractors include Carl Zeiss Oberkochen, Bristol Aerospace Limited, Marconi Canada, Irvin Industries Canada Limited, Williams International, Bristol Aerojet, Klockner-Humboldt-Deutz, Lear Siegler, Hawker Siddeley Dynamics, and Societe Anonyme de Telecommunications (SAT) of France. Other French contractors involved in the program are Aerospatiale (guidance), SINTRA (ground control), ESD (electronic components), and SOGERMA (technical assistance and crew training). These contractors are also involved in the CL-89 program.

Do 328. Dornier has entered into a number of risk-sharing agreements with various manufacturers for its upcoming 328 project. The major players in this large teaming arrangement involve the following: Daewoo of South Korea has taken a 21-percent stake in the project and is responsible for the aircraft's fuselage shells; AerMacchi of Italy has a 14-percent share and will provide work on the cockpit; and Westland Aerospace of the UK will provide the engine nacelles taking a 5-percent share in the overall project.

EFA. Eurofighter Jagdflugzeug GmbH, Munich, Federal Republic of Germany, a consortium formed in 1986 to manage the EFA program, derives participation from Dornier. The EFA is a next-generation, advanced technology, twin-engine, air superiority combat fighter aircraft. Britain and Germany have each assumed a 33-percent share of development costs; Italy, 21 percent; and Spain, 13 percent. Design teams from BAe, Dornier Luftfahrt, Alenia, and CASA are representing their respective countries in the development of the new design. Each of the four manufacturers will maintain a final assembly line, sharing production without duplication of tooling. BAe will manufacture the front fuselage and half of the right wing; Dornier Luftfahrt is

involved in all the main weapon system development tasks. Additional, workshares have been taken on for overall design, equipment procurement, software development, ground and flight testing, and logistics support; half of the rear fuselage and left wing will be produced by Alenia; and CASA will produce half the rear fuselage and half of the right wing. Full-scale engineering development. Initial deliveries were scheduled for 1996, with a planned in-service date of mid-1996. German participation in the program took a turn in 1992 when Germany announced that it would continue providing funds for RDT&E but bowed out of any production portion of the program.

Daewoo. Daewoo of the Republic of (South) Korea has engaged in an agreement with Dornier to produce fuselage shells for the Dornier 328. The contract has been valued at approximately $150 million.

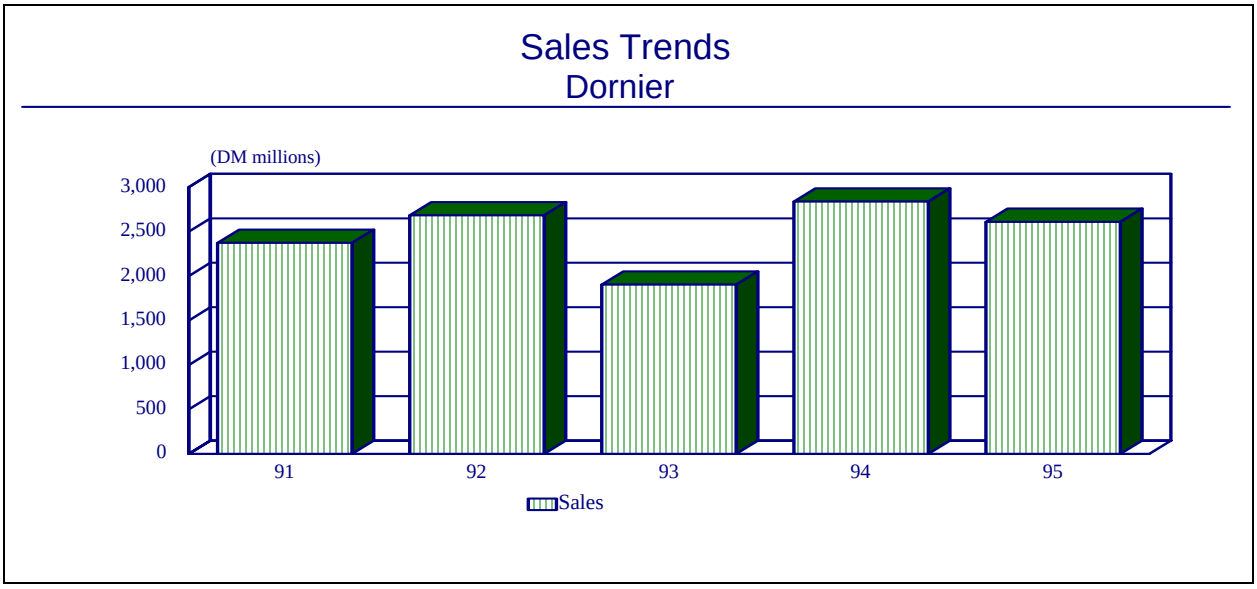
Thomson-Brandt/Aerospatiale/Dornier/Diehl. A team consisting of Thomson-Brandt/Aerospatiale and Dornier/Diehl has proposed the Modular Bird with Dispensing Container, a system in a small 3.4-meter version with a maximum weight of 720 kilograms and a large 4.2-meter version with a weight of 1,400 kilograms. Both versions are to share maximum commonality of components. The development of this system is dormant, but the technologies developed from the development regimen could perhaps be used in additional projects.

Eurobridge Mobile Bruken GmbH. At the end of 1992, Dornier's Defense and Civil Systems sector formed a joint company with French partner CNIM called Eurobridge Mobile Bruken GmbH. This new entity will engage in the production of folding bridges primarily for the German armed forces. The current bridge in production which has already been successfully tested by Germany has a load capacity of 110 tons and can be transported on standard trucks with only a small crew involved for set-up. This bridge may also draw sales from the civil sector in the future.

Financial Results/Corporate Statistics

Figures prior to 1993 are from Dornier's last published annual report dated 1992. Current figures are from the Daimler-Benz Aerospace 1995 annual report. US dollar figures, in millions, translated as a 1994 average at the rate of US$1=DM 1.4331.

Y/E December 31	1991	1992	1993	1994	1995	1995
(DM millions)						US$
Net Sales	2373	2683	1903	2838	2610	1821
Net Income	-3	-53	NA	NA	NA	NA



Industry Segments

A breakdown of Daimler-Benz Aerospace's sales by corporate division for the years 1991 through 1994 is given below. Figures for Dornier have been restated to conform to company's latest accounting procedures.

SALES BY CORPORATE DIVISION	1991	1992	1993	1994	1995
(DM millions)					
DASA AG	5464	3617	3189	2998	2329
Daimler-Benz Aerospace Airbus	-	4551	4248	4091	3191
Fokker	-	-	3381	2087	2707
MTU	3559	3609	3127	3038	1694
Dornier	2215	2354	1903	2838	2610
Eurocopter	-	1241	1064	998	937
TEMIC	-	337	732	980	0
Other Companies	1100	1567	982	364	1569
TOTAL	12,338	17,276	18,626	17,394	15037

Strategic Outlook

Although the name will live on, the company that once was Dornier has been broken up and disseminated. As part of an overall restructuring of DASA, Dornier's operations were sold off so that the parent company could better concentrate on focusing its operations. Following DASA's withdraw of financial support for Fokker, the next logical move was to exit the regional aircraft industry itself and divest itself of Dornier.

DASA originally acquired Dornier in the late 1980s and it had been a sore spot for the company for most of that time. Overall Dornier and DASA (and for that matter Fokker) were not a good match German aerospace giant. As one company executive put it, DASA learned the hard way that a large aerospace company should not build turboprops.

Following its sale, Dornier Luftfahrt now operates under the auspices of Fairchild Aircraft of the US, itself a manufacturer of turboprop aircraft. Prior to the acquisition, Fairchild's only current product was the 19-seat Model 23 Metro regional/commuter twin turboprop. The acquisition has allowed Fairchild to supplement this older technology aircraft with the new technology 30-34 seat Dornier 328.

Although Fairchild has expanded its product line with Dornier Luftfahrt, the company must move quickly to reduce costs. Under its current plan, Fairchild plans to cut the workforce and move some indirect administrative functions out of Germany, while keeping manufacturing jobs in place through 1999 at least. The company will consolidate marketing, sales and support functions for Dornier with those for Metro aircraft in the USA. The goal for Fairchild is to reduce substantially the $9.75-million cost of the Do.328.

Overall, the acquisition is expected to be beneficial for both companies. Fairchild gets a bigger share of the market, albeit with some risk, and Dornier will find itself managed by an organization that has some excellent experience in the business. Once Fairchild gets a handle on costs at its new operation, Dornier is expected to perform quite well in the next century.

With Dornier now owned by Fairchild Aircraft this report will no longer be updated.

Prime Award Summary

Information not available.

Program Activity

Some important aerospace and government programs currently underway at Dornier are listed below. The briefs are intended to provide a listing of programs that are of major importance to the company. For detailed information or analysis of specific aerospace and defense programs or equipment, please refer to the appropriate FORECAST INTERNATIONAL binder (for example, AIRCRAFT, MILITARY VEHICLES, WARSHIPS, MISSILES, ELECTRONICS, and GAS TURBINES). The following is an outline of the company's business interests:

- Aircraft
- Civil and Military Fixed-Wing Aircraft
- Missiles
- Space Systems
- Systems Integration
- Unmanned Vehicles

Aircraft Programs

Airbus

Dornier participates extensively in the cooperative Airbus Industrie structure. Daimler-Benz Aerospace Airbus GmbH of Hamburg is a division within the Aircraft Group of Daimler-Benz Aerospace, 80-percent owned by Dornier parent Daimler-Benz. Dornier is an important player, contributing several assemblies for the Airbus A320/A321, including the wheel well, tail cone, outer landing flap, and cargo compartment paneling. Dornier participation is also included in the A330/A340 development program. Daimler-Benz Aerospace Airbus, whose share of the Airbus Industrie consortium stands at 37.9 percent, handles final assembly of the A321 at the Hamburg facility.

Dornier Do.228

The Dornier Do.228 is an unpressurized, 15-20 passenger, twin-turboprop regional/commuter, utility and special purpose military transport aircraft. It is used as a short-range regional/commuter or executive passenger aircraft. Additional applications include commercial and military freight transportation, maritime and border patrol, airborne early warning, and signals intelligence work (SIGINT). Dornier developed the Do.228 after an original concept for a Light Transport Aircraft (LTA) (18-to-25-seat) was defined. The system was intended to compete successfully in the light utility/ commuter transport market into the 1990s, mainly by virtue of its efficiency. The aircraft would also have applications in freight/cargo and VIP transport, maritime surveillance, search and rescue, and as a military transport. The concept has since been expanded to encompass a family of light transports. In special-purpose markets, Dornier has been aggressively pursuing sales of the Maritime Patrol, Troop, and Ambulance variants. About 40 of these aircraft are in service with annual sales running at five per year. Production is projected to continue through the end of the century. Through 1995, Dornier sold 230 Do 228s and delivered 224.

Dornier Do.328

The Dornier Do.328 is a twin-turboprop, pressurized 30-33 seat regional/commuter transport aircraft, currently under development. Dornier initiated Do.328 systems development in 1985 and publicly announced their next-generation 30-passenger, commuter/regional transport in May 1987. Dornier estimated development costs of its new, pressurized design at nearly $400 million through 1993. The launch of the Do.328 was put in serious doubt over a funding dispute between the Dornier family and Daimler-Benz, the major shareholders of Dornier GmbH. The dispute was finally resolved, after the aircraft had already been launched and canceled. The second launch of the Do.328, which was announced August 4, 1988, resulted in a first of flight of the Do.328 in 1991. Daimler-Benz committed to financing the Do.328 with the supply of $162 million. In return, the Dornier family gave up complete industrial control of Dornier GmbH to Daimler-Benz and its right to participate in future decision making and product planning. In return, the remaining Dornier family members would not have to invest any additional funds to finance the Do.328 project. As of December 31, 1995, firm orders totaled 95. Through 1995, three prototype, and 50 production standard aircraft had been produced.

Eurofighter (EFA)

Dornier is also active in Eurofighter GmbH, the consortium established to design develop and manufacture the Eurofighter. Eurofighter participation is divided as follows: Federal Republic of Germany, 33 percent; United Kingdom, 33 percent; Italy, 21 percent; Spain 13 percent. Design teams from British Aerospace, Dornier, Alenia, and CASA are included in the program. Supplementary electronic systems for the **Tornado IDS** fighter bomber have also been supplied by Dornier to Panavia, the manufacturer of the Tornado.

Missile Programs

FIM-92 Stinger

The FIM-92 Stinger is a shoulder-launched, infrared or infrared/ultraviolet homing antiaircraft missile. In April 1983, the formation of a European consortium (to be led by the Federal Republic of Germany) to produce Stinger was announced. A Memorandum of Understanding was signed to this effect by the Federal Republic of Germany, Greece, Italy, Netherlands and Turkey in December 1983, with the Federal Republic of Germany being the pilot nation for the program. In mid-1985, the team of Dornier/Diehl was chosen as the licensee. This is called the Stinger Project Group (SPG) and was granted a license in October 1988 by the US government. Production of the Stinger by this group was scheduled to commence in 1989, but was delayed to 1992. Dornier handles final assembly, while Turkey has set up a new firm called Roketsan and is investing $2 million for production of the missile. Since 1978, the Air Defense Systems Division of General Dynamics (since sold to Hughes Aircraft Co) has delivered more than 16,000 Stingers and Stinger has become one of the company's most successful, and profitable, products. Similar profitability and success is forecast for the European participants in the Stinger program, as the system has been proven in combat to be highly efficient. Some 12,000 missiles are expected to be manufactured by the Federal Republic of Germany, the Netherlands, Greece, and Turkey. The Federal Republic of Germany was initially believed to be the biggest potential producer with 4,500 systems, but Turkey is understood to have increased its original requirement to 4,800. The Netherlands has a requirement for about 1,700 Stingers. Turkey will perform approximately 40 percent of the European Stinger production. The Federal German Armed Forces will introduce the Stinger under the designation Fliegerfaust-2 (Aircraft Fist-2), and will replace the present inventory of FIM-43 (Fliegerfaust-1) Redeyes.

THAAD

This is a theater tactical ballistic missile defense system. Lockheed Missiles & Space Company, Sunnyvale, California, USA, is the prime contractor for the THAAD development effort. Dornier is a major subcontractor working as a consultant on the system's transporter erector. The demonstration and validation phase has commenced. Tests of this missile continued through 1995; an operational prototype is to be deployed by 1997. A full THAAD system will not be operational until after the year 2000.

MIM-104 Patriot

Dornier manufactures mobile, extendable antenna mast groups for the Patriot air defense system, additional units of which were delivered in 1991. Mounted on a truck, the system raises four parabolic antennas to a height of 34 meters, thus establishing radio relay links between air defense forces. The antenna mast group is suitable for both military and civil applications.

Space System Programs

Ariane Boosters

Dornier provides the propellant tanks for the second stage of the Ariane 4 expendable launch vehicle, currently in production, and is providing the tank bulkheads for the larger Ariane 5, which will debut in the mid-1990s. Arianespace intends to manufacture eight Ariane 5 vehicles per year, which corresponds to 24 tank bulkheads. The company is also responsible for the Ariane 5's Speltra, an external support structure for double or triple payloads.

Columbus

The Columbus program involves fixed and orbiting Space Station modules. EuroColumbus, Bremen, Germany, is overseeing the design and development of the Columbus laboratory. The company is jointly owned by Daimler-Benz Aerospace (51 percent), Alenia Spazio (33.4 percent); and Matra Marconi (15.6 percent). Columbus Space, a consortium specifically formed to design and develop the Columbus orbiting system, and which will later manage the laboratory, will be 80 percent controlled by EuroColumbus. Other companies involved in the Columbus program include DASA/ERNO Raumfahrttechnik GmbH, Space Systems Group, prime contractor; British Aerospace Plc, Space Systems Division (Polar Platform); and Dornier System GmbH (also part of DASA). Alenia Spazio is building the attached laboratory. Development phase - C2/D - approved in November 1992 for the attached laboratory, now scheduled for launch in 2000, although 2002 is a more reasonable date, and Polar Platform, slated for a 1998 launch. Development of the Columbus Free-Flyer has been postponed.

DFS-Kopernikus

Dornier supplied the ground-based control system for the DFS-Kopernikus commercial communications satellite operated by the Federal German Postal Administration (Deutsche Bundespost). The agency uses DFS-1 for carrying television programs, while DFS-2 is tasked with providing TV/telephone/data transmissions and

ComLink services for Germany. DFS-3 was launched in October 1992.

ERS

The European Remote Sensing (ERS) satellite is an ice, coastal and ocean monitoring spacecraft. The Global Ozone Monitoring Equipment (GOME), slated for deployment aboard the ERS-2 satellite, is under development by Laben, Dornier, Zeiss, and TNO. The ERS-2 satellite was launched in April 1995.

ESA Polar Platform

The European Space Agency (ESA) Polar Platform program is developing a series of Earth resources satellites. Dornier is the MERIS (medium resolution imaging spectrometer) prime contractor under this program. MERIS, used for ocean color monitoring, is one of several instruments onboard on the first Envisat satellite. These satellites are in development; Envisat-1 is scheduled for launch in 1998, Metop-1 in 2000, Envisat-2 in 2003, and Metop-2 in 2006. Envisat launches will take place aboard Ariane 5 expendable launch vehicles, Metops aboard Ariane 4s.

Explorer

Explorers are a series of science satellites. NASA and the German Ministry for R&D (BMFT) signed an MoU in September 1982 for cooperation on an astrophysics mission, the Roentgen Satellite (ROSAT). BMFT provided $60 million to finance ROSAT, which uses a high-resolution x-ray observatory to study x-ray emissions from nonsolar celestial objects. The main instrument consists of a wolter-type x-ray telescope supplemented by an XUV wide-field camera. BMFT provided the spacecraft and x-ray telescope. Dornier built the spacecraft. NASA provided a high-resolution imaging detector and launch services. The Science and Engineering Council of the UK provided the XUV camera. GSFC managed the US portion; the German Aerospace Research Establishment handled the German portion. ROSAT had been scheduled for launch by Space Shuttle in 1987, but was later launched in June 1990 by a Delta launch vehicle.

ISO

The ISO is an infrared astronomy satellite. Aerospatiale, Space and Strategic Systems, Cannes-la-Bocca, France, is the ISO prime contractor and is responsible for design/development of the telescope equipment. Other European firms have contributed to the ISO's construction. Officine Galileo is supplying attitude sensor equipment, while Fokker Space & Systems has been tasked to design, manufacture and test the ISO's attitude and orbital control system. The German Ministry for Research and Technology (BMFT) selected DASA's Dornier as industrial prime contractor for the development and manufacture of the satellite's extremely sensitive Isophot photopolarimeter. Ferranti Defence Systems Ltd's Navigation Systems Department is supplying a gyro package. The ISO was scheduled for launch aboard an Ariane rocket in September 1995.

Radarsat

Radarsat is a synthetic aperture radar remote sensing satellite. Dornier is supplying high-power amplifiers for the spacecraft, which was launched in January 1995. Radarsat will provide remote sensing in the areas of ice reconnaissance, coastal surveillance, land use mapping and agricultural and forestry monitoring. The Radarsat program is in advanced development. The first satellite was launched aboard a Delta expendable launch vehicle in September 1995.

Spacelab

Spacelab is a habitable orbital scientific laboratory. DASA-ERNO Raumfarhttechnik GmbH, part of Daimler-Benz Aerospace, is the prime contractor for the Spacelab program, responsible for overall system design and testing. Dornier is working as a major subcontractor, having developed the IPS, FO Camera, EC and LSS. Spacelab is currently operational; the most recent Spacelab mission took place in October 1993.

Unmanned Vehicle Systems

CL-289

The CL-289 reconnaissance drone, manufactured by Canadair with the help of several French firms (including Aerospatiale), is one of the important military programs under development with the participation of Dornier. The company supplies the airborne digital computer for the CL-289. This system provides the necessary mission data for the drone's reconnaissance flight. Series production and delivery were completed in 1991. The first production unit of the specially developed aerial imagery interpretation facility was delivered in the first half of 1991. The facility, which is installed in a telecommunications shelter, features optical and electronic assemblies and a high-performance digital map workstation. The production contract provided for the delivery of 45 units by October 1993.

Geamos/Seamos

Do 34 Peewit/Kiebitz/ARGUS/PRIAMOS

These are tethered and untethered drone platforms being developed by Dornier. Development is continuing as part of a private Dornier effort, but also related to the NATO Group 35 joint study program. These programs have gone through a number of development phases and names. The original effort started under the Kiebitz program, also called ARGUS I, and was aimed at land applications. This program entered suspended development following

extended troop evaluations with the German army. Dornier is continuing the development of the basic technology through the ARGUS II/PRIAMOS project, which is now known as the Geamos and Seamos efforts. With the official evaluations complete, the tethered program has been replaced with an untethered version originally designated ARGUS II, but also referred to as PRIAMOS. The PRIAMOS designation was followed by Geamos (land-based) and Seamos (sea-based). Test flights of the Geamos system began in 1989, while similar trials for the Seamos began in 1990.

Drohne Anti-Radar (DAR)

Kleindrohne Anti-Radar (KDAR)

This is a radar suppression drone program. Full-scale development has been approved by the German government and will be completed, but procurement is not presently planned (by Germany). The first fully guided flight test was completed in January 1993. Competitive evaluations have been completed. With the consolidation within the German defense industry, Dornier has taken over full responsibility for the development of the Drohne Anti-Radar. The concept definition phase was commenced in 1988. Initial fielding was previously anticipated for the first half of the 1990s, prior to the German decision to forgo procurement. The program had been delayed due to budgetary shortfalls within the German Defense Ministry.

Panzer Abwehr Drohne

The Panzer Abwehr Drohne (PAD) is an anti-armor attack drone. The Panzer Abwehr Drohne (PAD, but also referred to as the Kampfdrohne des Heeres) is being developed by Dornier. Due to budgetary shortfalls, the Panzer Abwehr Drohne program has been delayed once again. No formal request for a PAD system has been issued. No specific time frame has been provided concerning when the PAD will enter full-scale development. Considering the changes in the threat scenario since the fall of the Warsaw Pact and the Soviet Union, and the high cost of reunification with former East Germany, this delay could be substantial.

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