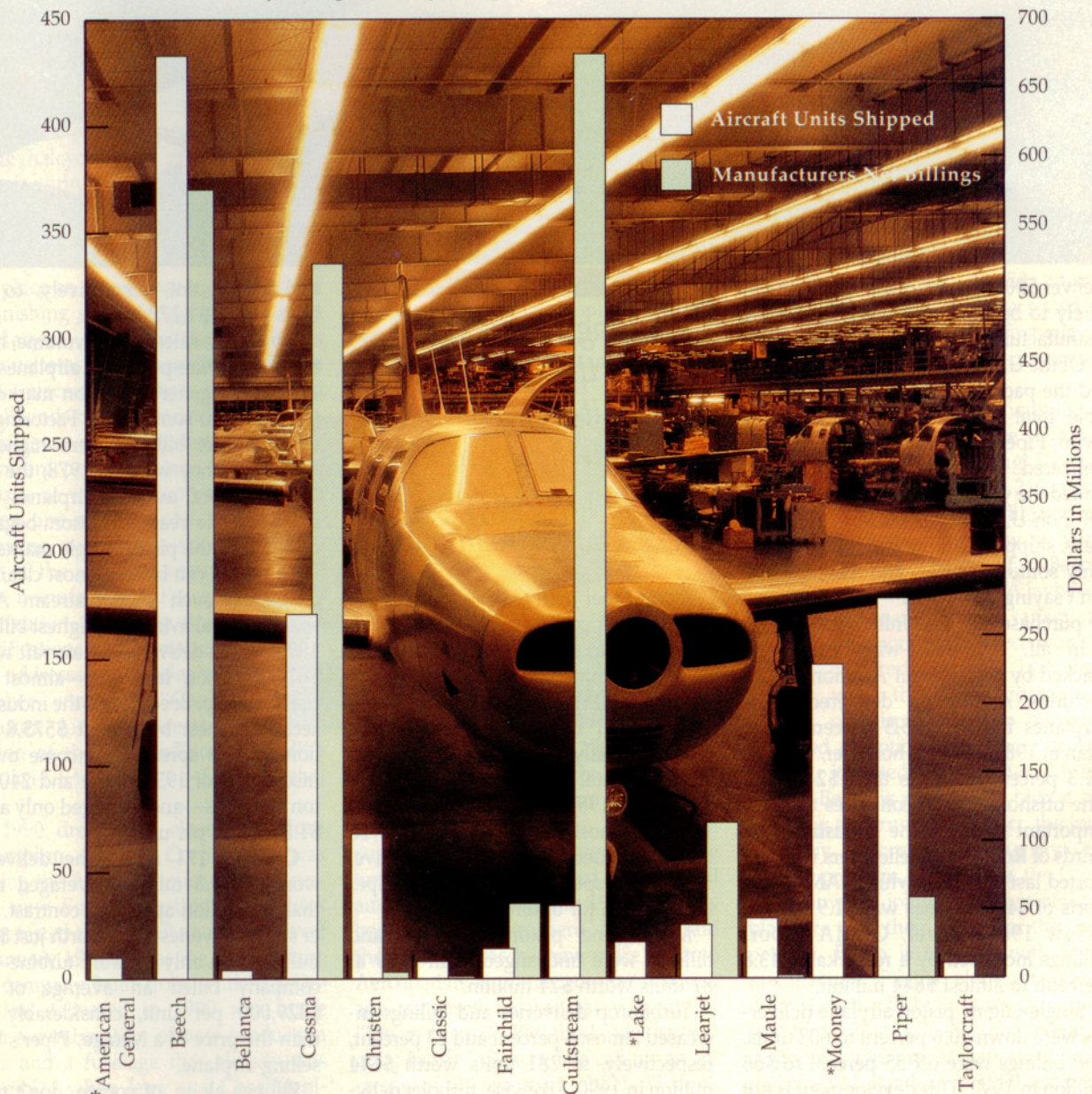


THE STATE OF THE INDUSTRY

Don't worry; it's not as bad as it looks.

Once again in 1990, the most successful model of piston-engine aircraft—from the standpoint of units delivered—was not an airplane at all. It was Robinson Helicopter Company's R22, whose 384-unit count would have been even higher had it not been for a strike at Textron Lycoming that delayed engine deliveries. Robinson expects to



*Billings not provided by manufacturer. Source: GAMA.



Aerospaziale Tampico

deliver 500 R22s this year, a margin not likely to be equaled by any fixed-wing manufacturer.

Of the U.S. fixed-wing builders, Beech led the pack in 1990, posting a respectable total of 240 piston singles and twins; Piper followed with 167; Mooney delivered 147, all singles. All others ended the year in single or double digits. Of non-U.S. manufacturers, Aerospaziale shipped 202 piston aircraft, but only some of those—and the company isn't saying how many—were delivered to purchasers in the United States.

In all, U.S. fixed-wing companies tracked by the General Aviation Manufacturers Association delivered 1,144 airplanes in 1990, 25.5 percent fewer than in 1989. Billings, however, were up 11.3 percent, to more than \$2 billion. The offshore market continues to be an important one for the industry: Two thirds of Robinson's helicopters were exported last year, and while GAMA's exports of 442 airplanes was 21.9 percent below 1989's level, GAMA export billings increased by a remarkable 43.8 percent, to almost \$844 million.

Single-engine piston airplane deliveries were down 40.6 percent to 608 units, and billings were off 35 percent to \$68 million in 1990. This development is not as disheartening as it first appears: Re-

Billings alone don't make the bottom line, and it is impossible to know how profitable many of these companies really are.

call that Piper delivered 562 piston singles in 1989 compared to 113 in 1990; that one-year spike tends to mask the true performance of this market segment. Had Piper been able to sustain 1989's level of activity in 1990, we would actually have seen a slight increase in total piston single deliveries. As it is, in 1989 piston single deliveries were up almost 47 percent over 1988, so last year's decline is entirely relative. And the prospect of a re-energized Piper leaves room for optimism.

Multiengine piston deliveries and billings were unchanged from 1989 at 87 units worth \$24 million.

Turboprop deliveries and billings increased almost 5 percent and 23 percent, respectively, to 281 units worth \$644 million in 1990. Likewise, turbojet deliveries and billings increased 7 percent

and 11 percent, respectively, to 168 units worth \$1.272 billion.

Obviously, sales of low-volume, high-margin turbine-powered airplanes are driving the general aviation market, as they have for some years. Factoring out inflation, net billings were higher in 1990 than they were in 1978, the year 17,811 general aviation airplanes were delivered, the year the bottom began to drop out of the piston-single market.

The trend can be seen most clearly in companies such as Gulfstream Aerospace, general aviation's highest biller of 1990, which delivered 34 aircraft worth \$674.4 million last year—almost \$20 million a pop. Beech, with the industry's second highest billings at \$575.8 million, had to spread its income over a mixed fleet of 193 turbine and 240 piston airplanes—and averaged only about \$1.3 million per unit.

Cessna's 171 all-turbine deliveries, worth \$521.8 million, averaged more than \$3 million apiece. In contrast, Piper's 178 deliveries were worth just \$58.5 million, and only 11 were turbine—the company billed an average of just \$329,000 per unit, considerably less than the price of a Mirage, Piper's best-selling airplane.

Billings alone, of course, don't make the bottom line, and it is impossible to

know how profitable many of these companies really are. But it seems clear that there is greater profitability in the high end of the market. Business is business, after all.

We can be thankful, therefore, for the American Generals, Bellancas, Christens, Classics, Lakes, Maules, Mooneys, and Taylorcrafts that continue to produce light single-engine airplanes in the face of relatively slim profit margins and a potentially ruinous product liability environment. We can be glad, too, that Beech continues to recognize the importance of its role in the piston airplane market and that Piper keeps plugging away. And we can welcome relative newcomers, such as Aerospatiale, which, while producing airplanes offshore, help stimulate the market for American engines, avionics, and other components and bring healthy competition to the marketplace.

The halcyon days of light airplane manufacturing may be past, but there's nothing to brood over. We must turn our attention instead to the future, to increasing student pilot starts, to the need to replace an aging fleet and replenish a diminishing stock of high-quality used airplanes. As Robinson's success demonstrates, in the general aviation marketplace of the future, there is room for all kinds of aircraft, and today's leaner, meaner manufacturers are poised to take advantage of whatever opportunities are offered. In the following pages, we take a look at the plans of some of these manufacturers. For more information, including aircraft specifications and manufacturers' addresses and telephone numbers, consult the "General Aviation Aircraft Directory" section of the 1991 edition of *AOPA's Aviation USA*. —Seth B. Golbey

As 1990 drew to a close, **American Champion Aircraft Corporation** was putting the finishing touches on its second new Super Decathlon. The FAA flight tested the aircraft and signed it off in January 1991. It was the first airplane the company built from scratch; a Decathlon delivered in 1990 was made from a combination of new-production parts and a fuselage that already was assembled when Jerry and Char Mehlhaff bought the rights and tooling to the

Decathlon in 1989. The main difference in the new Decathlon is the metal-spar wing, which AC developed and tested. Plans for this year call for a target production of one airplane a week. Early delays involving the purchase of instruments and other subcontracted supplies have largely been resolved. AC also plans to build a metal wing for the Scout, which will be offered as a retrofit,



and to start Scout production soon. Citabria production is slated to start this summer.

French manufacturer **Aerospatiale** sold 204 general aviation aircraft in 1990, but the company is not saying how many of those went to U.S. customers. Trinidads headed the list, with delivery of 76 normally aspirated and 14 turbocharged airplanes. Some 64 Tampico Clubs, 48 Tobagos, and two TBM 700s also were delivered. "I think the



company came of age in 1990," Director of Marketing Bill Monroe said of the conglomerate's American arm, Aerospatiale General Aviation. "We've been paying our dues over here for a long time." Aerospatiale started selling small aircraft in this country in 1985 and now boasts 250 owners here. Monroe said the industry has become more open to Aerospatiale airplanes, and press coverage increased in the last year or so. "We're excited. We think we have a great future." Sales goals call for an increase of 20 percent in 1991. "I think that's realistic," said Monroe.

"We're in an accelerating mode," reported an upbeat James Cox, president of **American General Aircraft Corporation**. "We delivered 10 airplanes in the last quarter. We delivered eight in January." The first AG-5 Tiger rolled off the AGAC production line late in 1990, but the first 10 had been delivered before the year was out. Cox said the company's goal was to be producing one airplane a week by the end of this month. "Our game plan is a very simple strategy: We're intent upon getting the Tiger production squared away," Cox said. "We would like to be delivering our 105th airplane some time in July." A portion of that production will be dedicated to restocking training fleets; the Florida Institute of Technology has ordered 15 aircraft. In another development, AGAC recently signed a joint agreement with the Tbilisi Manufacturing Association of the Soviet Union to begin building the out-of-production GA-7 Cougar twin. The airplanes will be built at the Tbilisi plant in Soviet Georgia under AGAC supervision and will be equipped with 160-horsepower Lycoming O-320 powerplants. The first Cougars are slated to roll off the Soviet line in the first quarter of 1992, with a first-year production goal of 100 airplanes.

Beech Aircraft's winning of the U.S. Air Force's Tanker Transport Training System (TTTS) contract for 211 modified business jets will keep the production line busy for years to come. The modified Beechjet, dubbed the T-1A Jayhawk, will be used to train tanker and transport pilots. Beech won the coveted contract last year when the USAF ordered just one airplane. It soon, however, exercised an option for 14 more. In December, it opted for another 28 airplanes. Beech is planning to bid on another big government contract, the Joint Primary Aircraft Training System (JPATS) program. In that case, the USAF and Navy will jointly purchase 880 airplanes to train their pilots. For the competition, Beech is teaming with Swiss manufacturer Pilatus. Under the agreement, Beech will build a modified version of the Pilatus PC-9, a single-engine turboprop. On the civilian side, Beech delivered 11 Starships in 1990 and plans to build about one a month in 1991.



Cessna Citation X

Certification of the enlarged 1900 airliner, the 1900D, was scheduled for early this year. First delivery will occur in late 1991. But the company's biggest seller was the venerable F33A Bonanza, with 126 sales. The A36 was number two, with 70 sales. The 58 Baron racked up 33 deliveries. The perennially popular King Air, in its several renditions, accounted for 120 total deliveries.

"It's tough to stay in business these days," lamented Donald Jensen, president of **Bellanca, Incorporated**. The company produced four Super Vikings in 1990 and is working on three more. "Plans are for one a month [in 1991], whether that happens or not. Things aren't looking too good," said Jensen. Meanwhile, the company is manufacturing windmill blades for wind generators, along with reupholstering and painting older Bellancas, to pay the bills.

Certification of **British Aerospace's** BAe 1000 business jet is planned for this fall, with deliveries set to commence before the end of the year. The BAe 1000 is the latest rendition of the venerable HS-125 series of airplanes dating from the 1960s. The company delivered 18 of the current generation of the model, the BAe 800, and it has commitments for 21 1000s. The BAe 1000 is an enlarged and improved version of the 800. Besides working on the Model 1000 last year, BAe also introduced the BAe 700-II, an upgraded version of the BAe 125-700. The company takes the Model 700 aircraft it receives on trade, upgrades them inside and out to like-new status, then resells

Cessna plans to deliver about 120 Citations this year and about the same number of Caravans as last year.



Cessna Grand Caravan

them. Two orders for the 700-II have been received. 1991 will see the delivery of the 216th BAe 800. That will be a new record for the company. The most of any one of the series produced was the 125-700, of which 215 were made. The 800th airplane in the 125-series also will be delivered this year.

The first flight of **Canadair's** newest

product, the 50-passenger RJ (Regional Jet), is set for April. Certification of the airliner is scheduled for second quarter 1992. The RJ is a stretched version of the Challenger 601-3A business jet. Sales of the Challenger dropped slightly in the company's fiscal year, which ended January 31. Twenty-three were delivered last year, compared to 27 the year before. But according to a spokeswoman, the company did very well in what was considered a very difficult year, especially in late 1990 with war and a recession threatening. Sales in the Pacific Rim region remain strong. Foreign deliveries now equal those to the United States. Canadair plans to deliver 22 to 24 aircraft in 1991. Brian Moss, president of the Challenger division, said several enhancements for the 601-3A will be announced later in the year.

The value of **Cessna's** order backlog topped \$1 billion at the end of 1990, the highest level in a decade and \$140 million higher than in 1989. The reason is the company's enormously popular mid-size Citation business jets and the rugged Caravan I single-engine turboprop. All in all last year, Cessna delivered 101 Citations (56 of them Citation Vs), 66 Caravan Is, and four Caravan IIs.

The order backlog was for 286 airplanes at the end of the year, down slightly from 297 in 1989. Cessna plans to deliver about 120 Citations this year and about the same number of Caravans as last year. The fuselage of the first CitationJet, the company's smallest entry, was mated with its wing in late January. The new Williams FJ-44 engines for the airplane were to be delivered in late February. First flight is scheduled for April 9. Certification is planned for November 1992, with deliveries a month later. Programs for the larger Citation VI and VII also are on track. The Citation X, billed as being "faster than any commercial jet but the Concorde," will have its first flight in March 1993. Deliveries are



Commander 114

MIKE RIZER



expected to begin in mid-1995.

Work is still under way at **Commander Aircraft Company** to revive production of the 114. "There's not a whole lot I can tell you," said Roy Pickens, vice president for operations. "We will not have our first airplane out until the fourth quarter of this year." The company's "engineering prototype," a used 114A refurbished to look like the new 114B, made some trade-show appearances in 1990, but problems with suppliers and funding have delayed production of the new model. "Seems like about every stumbling block you can come upon, we've found," said Pickens. On the bright side, Commander has completed its service modification facility.

Classic Aircraft, which sold eight YMF-5 biplanes in 1990, plans to come out with a new version of the three-seat Waco this year. The YMF-5 Super will have roomier front and rear cockpits to allow for more comfortable commercial operations. For uses such as sightseeing, two passengers normally are placed in the front cockpit, while the pilot flies from the rear. According to Sales Manager Donald Kettles, the YMF-5 Super is scheduled to be flying in March, with certification to follow in May. The company hopes to sell 10 airplanes this year, but Kettles added, "It's really strange how the airplane business has just slowed right up."

"We aren't complaining, considering

what's been going on," Verdean Heiner, vice president and marketing administrator at **Christen Industries**, said of business in the last year. Christen delivered 68 airplanes in 1990, including 42 Huskies and three models of Pitts Specials, the most popular being the S-2B, with 22 aircraft sold. But things started to slow down at the end of the year, with the economy moving toward recession



LEARJET

Learjet 60

and the nation moving toward war. "After the war had been going for about a week, our phones started ringing again," Verdean said. "I'm upbeat. I think '91 is going to be as good as '90 was. . . . I think maybe what you'll see is a little increase in Pitts and a slight decrease in Huskies."

Dassault-Falcon Jet delivered a combined total of 34 Falcons last year. At the request of its operators, Falcon is adding a smidgen more power to its jumbo biz-

jet, the 900, and calling it the 900B. Each of the 900B's three engines will provide 4,750 pounds of thrust, compared to 4,500 pounds for the 900. Operators of the 900 may opt for a field modification to bring their aircraft up to the 900B performance level. The company also is taking orders for its new airplane, the Falcon 2000. The first year's production is sold if all the options turn into orders.

First flight is scheduled for spring 1993. Certification and first delivery will take place in late 1994. The 2000's fuselage will be as wide as that of the 900, but it will be shorter.

As it did last year, **Gulfstream Aerospace** is scaling back production figures for the G-IV business jet. Only about 25 will be produced in 1991, compared to the 34 spawned in 1990. However, that production estimate may be revised upward because of an exceptionally strong January, according to a spokesman. Despite a tumultuous time early

last year, things at the plant have settled down now that Allen E. Paulson is once again the owner. He and investors purchased the company back from Chrysler Corporation in mid-1990. Paulson is leading a program to quiet the older G-IIs and G-IIIs. His plan for an "aft fan" turbine will allow the airplanes and their Rolls-Royce Tay engines to meet Stage 3 noise requirements. For those who want to further improve their older models, Gulfstream is offering to re-wing them

with the more efficient G-IV wing. And for those willing to put up about \$8 million, the company will install the G-IV's efficient Spey engines, but that option is not proving to be very popular with customers. Meanwhile, work with the Soviets on a supersonic business jet continues. The design calls for a twin-engine airplane, as opposed to the original design for a trijet. The Soviets hope to be flying a prototype by 1994.

Like many other business jet manufacturers, **Israel Aircraft Industries** reported steady international sales in 1990 but a slightly softer U.S. market. The builder delivered nine Model 1125 Astras in 1990. Results for 1991 are expected to be about the same, but they could be higher, according to a spokesman for the U.S. company, Astra Jet Corporation. Already in January, four airplanes were delivered. IRS is considering a "companion aircraft" to complement the Astra but gave no details.

"We've come out with a new model of the Renegade called the Sea Fury," said Bruce Rivard of **Lake Aircraft**. The 250-hp Sea Fury (270 hp for the turbocharged model) is a beefed-up Renegade intended for charter and patrol work. The company, which introduced the new model in October 1990, had delivered one normally aspirated aircraft by the end of the year, and a turbocharged airplane was scheduled for February delivery. Lake sold 17 airplanes in 1990, and Rivard expects "more of the same" this year. The foreign market looks more promising than domestic sales, he noted.

For the first time in recent memory, the future of **Learjet** is not clouded. For a number of years, it either has been for sale or under the control of companies that know little about the business of building airplanes. That changed last summer when Bombardier, parent company of Canadair, purchased Learjet. Since then, investment in Learjet has increased markedly. Meanwhile, work on the improved Learjet 31A is continuing, with certification planned for June. At the other end of the scale is the Model 60. Certification of this follow-on to the venerable Model 55 is scheduled for late 1992. The production schedule calls for delivery of about 30 airplanes this year.

"We now have the tri-gear certified, and it's in production," reported Don Merrill, director of sales at **Maule**. The company has delivered three 180-hp MXT-7 tricycle-gear versions of its MX-7 short-takeoff-and-landing utility airplane and has three more about ready to go, said Merrill. In 1991, the company plans to build a 235-hp MXT-7 and a turbine-powered version of the tri-gear

would build a new aerobatic aircraft, the EFS. Targeted for the USAF Enhanced Flight Screener program, the airplane also will be available to the civilian market. The EFS, the prototype of which was rolled out in February, is rated for +6/-3 Gs and will sell for about \$200,000, according to Tim Mott, Mooney sales manager. The USAF is expected to choose an aircraft for its trainer

program in the fall and award the contract in December or January. Already, however, there is plenty of interest in the EFS for civilian use. And several foreign governments have made inquiries about it. "We're going to have some fun with this project," said Mott. "The engineers are excited. For once, we're under budget and ahead of schedule." There were other changes at Mooney in 1990.

The company ceased production of the Porsche-powered PFM, citing a lukewarm reception by buyers and the resultant decision by Porsche to stop building the powerplants. Mooney will continue to offer full support for the existing PFM fleet, however. The company also stopped marketing the TSE (252), although it will build one if a customer wants one. Another development was the adoption of new designators for the

Mooney line, further complicating the task of telling them apart; the 201, for example, now is the MSE. Mooney sold 140 airplanes in 1990, and Mott expects to sell about the same number in 1991. And this year may hold yet more surprises, Mott said mysteriously. "There is something in the wings,"—no pun intended. "But I can't tell you about it." Stay tuned.

Since it received FAA certification on October 1, **Rinaldo Piaggio** S.p.A. of Italy has delivered two Avanti P180s. Another delivery was scheduled for February. By the end of the year, the company hopes to have a gross weight increase of about 600 pounds, up to 11,500 pounds for the twin pusher turboprop. With the weight increase will come an increase in fuel capacity of about 200 pounds. The company announced last October that it was forming a partnership with aviation businessman Robert Duncan. Under the agreement, a company operated by Duncan will begin assembly of Avantis



MARK TWOMBLY

In 1991, Maule plans to build a 235-hp MXT-7 and a turbine-powered version of the tri-gear airplane.



MOONEY

airplane. Two versions of 420-hp Allison turbine-powered Maules already are in production, the MX-7-420 and M-7-420 amphibian. Other plans for this year include the introduction of a three-blade prop for the 180-hp airplanes and spring gear for the MXT-7. Maule sold 28 airplanes in 1990. "I think probably the volume will be pretty good, once it gets rolling," Merrill said of the tri-gear sales. "We've got some pretty good-sized foreign orders that are just on the fire."

Perhaps the most exciting development at **Mooney** last year was the October announcement that the company

sometime in 1992. The work will be done at Duncan facilities in Lincoln, Nebraska.

Rollout of **Pilatus's PC-12** single-engine turboprop is scheduled for May 1. First flight of the prototype is planned for May 31, according to a spokesman in Switzerland. Under the ambitious schedule, certification is planned for December 1992, first delivery in January 1993, and a total of 35 aircraft delivered in 1993. The company has 27 "paid options" from around the world. Many of the customers currently fly turboprop twins such as Beech King Airs. The customers are seeking the same comfort and performance but want to reduce operating costs, he said. The airplane also is popular with companies in the overnight freight and "just-in-time" inventory control businesses. Some corporations also are interested in combi versions that will allow them to carry passengers and freight to remote sites. Price of the PC-12 is estimated at \$1.76 million in 1990 dollars. Pilatus has been negotiating with several potential partners. No time frame for concluding those talks has been set. Pilatus is teamed with Beech Aircraft for competition to build trainers, based on the PC-9, for the USAF and Navy. Production of the PC-7 and PC-6 continues.

The first **Swearingen SJ30** light business jet was scheduled to fly in the first quarter of 1991. High-speed taxi tests were under way in late January. According to a spokesman at Swearingen Engineering and Technology, Incorporated, an announcement was expected about March 1 noting the site of a production facility for the SJ30. The SJ30 is a six- to eight-seat, swept-wing airplane to be powered by a pair of Williams FJ-44 turbofan engines, the same engines that will be used by Cessna on the CitationJet. The SJ30 is expected to cruise at 450 knots and to have a range of 2,170 nautical miles. The Swearingen spokesman said the SJ30 is the first truly new business jet design in its class in 25 to 30 years. Deliveries of the SJ30



Pilatus PC-12 production facility

Certification of Pilatus's PC-12 is planned for December 1992, with first delivery in January 1993.



Piaggio Avanti P180

are expected to commence in late 1992.

A management shake-up in early 1991 rocked **Taylorcraft Aircraft**, which had just struggled out of bankruptcy in early 1990. Aircraft Acquisition Corporation, which had been op-

erating the company in Lock Haven, Pennsylvania, is no longer involved in the day-to-day operations, according to a spokesman. AAC still holds a minority interest, but now the company is being run by John P. Polychron, the principal behind the major investor, East Kent Capital. Taylorcraft delivered four conventional-gear airplanes in 1990. Certification of a tricycle-gear version of the 118-hp airplane was expected in early 1991. Certification of 180-hp conventional- and tricycle-gear airplanes is planned for later this year. Work also is under way with Edo Corporation on a 180-hp floatplane for possible production beginning this summer.

TBM International received French and U.S. certification of its TBM 700 single-engine turboprop in 1990 and delivered its first two production airplanes. The company plans to deliver 30 airplanes off the French production line in 1991, 18 of them to the United States. First delivery to this country is scheduled for late March. About 75 orders are on the books. TBM is principally owned by Aerospatiale, with a minority interest owned by Mooney Aircraft. If Aerospatiale's proposed purchase of Piper Aircraft is completed, TBM may gain some much-needed production and finishing space in this country. Piper's Vero Beach, Florida, plant is underused, and it owns an empty production facility in Lakeland, Florida.

—Thomas B. Haines and William L. Gruber



Swearingen SJ30 production facility