Do.328 DESCRIBED

than anything else available in that cate-gory, which at present comprises the Saab 340B, Boeing de Havilland Dash 8-100, Embraer EMB-120 and British Aerospace Jetstream 41.

None of these has the Do.328's promised 345kt (640km/h) cruising speed, says Dornier — a main plank of its marketing strategy (other, different-sized aircraft are planned to be faster, however). A high-speed turboprop, says the company, is not only more efficient than a jet at the lower cruise speeds at which a commuter spends much of its time, but will bring its operator shorter sector times than a traditional tur-boprop over longer ranges. Another market-ing point is that, of the competition, only the So.328, EMB-120 and Saab 340 will be (or are) certificated for flight above 25,000ft (7,600m). At its 30,200ft cruising altitude, the Do.328, says Dornier, will be 60kt faster than the next fastest aircraft, the EMB-120. On stages up to 740km, says Dornier, Do.328 block times are only a little longer than for the larger jets — but at considera-bly lower fuel cost. Perhaps more impor-tantly, the 328's higher speed will enable it to be sequenced with jets on airport ap-proach, reducing slot problems and there-fore, says Dornier, saving time and money for the operator.
Vital to the performance is the shape of the fuselage, which Dornier says is close to the optimum, plus careful attention to the shape of wing-fuselage and undercarriage fairings, and the availability of plenty of power through the combination of the Pratt & Whitney PW119 turboprop and the six-bladed Hartzell propellers. The latter rotate at only 1,100 rpm, contributing to the very low internal and external noise expected of the Do.328. The wing itself is an advanced aerofoil, based on the Do.228's. The Do.328 is the first all-German air-

craft to be developed under the DASA banner and is thus an important project for parent company Daimler Benz, which is trying hard to diversify from its Mercedes-Benz automobile business. Mercedes ac-counts for about 80% of Daimler's profits, and there has been little return so far from the aerospace, electronics or financial serv-ices businesses upon which the company is pinning its hopes for the future. Daimler knows, therefore, that the Do.328 has to be successful if it is to convince its sharehold-ers that its move into aerospace was correct — especially as successful resolution of the DAA92/122 issue will require yet more financial input.
The Do.328 was re-launched in December 1988, after a six-month delay caused by negotiations between the Dornier family and Daimler Benz. The aircraft was born, says programme manage Reinhold Birren-bach, as a result of "extensive" discussions with airlines, mainly in the USA. Concen-trated market research in 1986 led to an increase in seating capacity from 26 to 30 seats. "In late 1986, we fine-tuned the Do.328 concept and came up with a fast, quiet, easily maintained aircraft aimed at airlines looking for something really new in the 1990s," he says.
Total firm Do.328 orders now stand at 76 aircraft, with options for another 70, and include the biggest yet, signed in May, for 35 aircraft, plus options for another 25, from Seattle-based Horizon Air. This was particularly significant in a programme that had seen little activity to date, since Hori-zon carried out what it calls "extensive" market studies before settling for the Do.328.

Further large orders for the Do.328 will almost certainly not be seen until there is
an upturn in a market which is generally agreed to be very depressed. •

Attacking
A

t the time the Dornier 328 enters
service in early 1993, Europe
should have moved much closer to
a liberalised air transport system, theoretically improving the outlook for the smaller regional airlines that are in the market for a 30-seater.

The European Commission has already moved deliberately to support the regional airlines, hoping to avoid the situation that occurred in the USA after deregulation where most of the regionals were eventually swallowed up by the majors. "We want to maintain the principle of public service," says EC transport commissioner Karel Van Miert. To give new operators a fighting chance of survival, he has therefore pro-posed a "degree of protection" for operators of aircraft below 80 seats for two years after they begin operations.
Despite the recession, Dornier is optimis-tic about the long term prospects for the new turboprop. "We have had a lot of serious requests on the Do.328," says Joseph Simmerl, Dornier's marketing chief. "It shows that we've got the right concept to address the future demands of the market." Horizon Air's signature last May for 35 328s with options for another 25 was the biggest boost to date for the programme. The other notable order was from Midway Connection which took 33 orders and 40 options — but then the airline's parent, Midway, filed for protection under Chapter
11 of the US bankruptcy act.
According to Horst Steinberg, president of
Dornier Aviation (North America), Mid-
way's future lies in the reorganisation plan
that will be presented at the end of this year.

Innovation in the blood T

hree threads run throughout
Dornier's long aviation history:
innovation, an almost overwhelm-
ing obsession with the develop-
ment of amphibians, particularly in the inter-war years, and a considerable recuper-ative capacity.
The Dornier name lies at the heart of the German aerospace industry. Claude Dornier joined "Luftschiffbau Zeppelin" in 1910, on emerging from university. He was embarking on a productive career. Dornier's talents did not go unnoticed, and by 1913 he was Count Zeppelin's personal scientific advisor. With the out-break of the First World War, Dornier was given the opportunity to test his own designs, focusing on the use of stressed-

metal skin, rather than the "traditional" wood and fabric approach.
Characteristically, the first Dornier air-craft to fly, in June 1916, was the Rie-senflugboot (large flying boat) Rs Ha. The end of hostilities nearly meant a premature end to Dornier's aviation career; by 1922, aircraft manufacture in Germany was prohibited by law. Determined not to be thwarted, Dornier moved to Switzerland to continue his work, then to Italy, where he worked on the Wal Series of flying boats. As the environment for civil aircraft manufacture improved, the "Zeppelin Werke GmBH Lindau" was renamed "Dornier Metallbauten".

Throughout the inter-war years, Dornier continued to produce innovative designs,

including the Superwal Series of commer-cial flying boats and the giant Do.X, which flew with 169 people on board in 1929, a record which was not to fall for 20 years. The company also started to develop light land-based commercial aircraft. Dur-ing this period the Do. 17 was also de-signed. The Second World War saw Dornier concentrate on the development of military aircraft and seaplanes, culminating in the Do.335 Arrow, powered by one tractor and one pusher propeller.
If flying boats characterise Dornier's ef-
forts in the 1920s and 1930s, then, during
the 1950s and 1960s, short take-off and
landing (STOL) and vertical/short-take off
and landing (V/STOL) came to the fore.
STOL utility designs like the Do. 27 and

32 FLIGHT INTERNATIONAL 9 - 15 October, 1991