SAAB 2000 DESCRIBED

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Fairchild, its partner in the early days of the Saab 340 (then known as the SF340). Because of its connections with the US research establishment, Fairchild had been able to use NASA to help with design of the 340 wing, for which it was then responsible. "The result," says Saab 2000 engineering director Urban Hellstrand, "was a wing with a medium-speed section having a lower thickness than one would expect for a turboprop commuter."
Windtunnel tests in 1988 proved that the wing would operate efficiently at up to Mach 0.7. It shares the same relative dimen-sions as the Saab 340 wing, but has a 33% increase in area and 15% more span. Spanish manufacturer CASA builds the 2000 wing at San Pablo, near Seville. The first few wings will be taken to Saab by air but, beginning in 1992, they will be trans-ported by road aboard specially designed 27m-long trailers (drawn by Saab-Scania trucks) that will cover the 3,800km (2,050nm) trip in five to seven days. "It was simply the least expensive, most reliable way of doing it," says Hellstrand.

POWERED CONTROLS
Unlike the 340, the 2000 uses an electri-cally-signalled powered rudder — a deci-sion driven by the control requirements of a single engine failure at take-off. Dual computers are at the heart of the servo system, which is the responsibility of Dowty Aerospace in Los Angeles.
Saab looked seriously at the idea of a full fly-by-wire flight-control system on the 2000, but decided ultimately to keep the rest of the mechanical links between the pilot and flight surfaces to retain mainte-nance commonality and, also, because the cost could not be justified. "We knew the basic aerodynamics of the aircraft, so we knew we'd have no problems if we kept to

the original system," says Ahlborg.
The degree of commonality between the Saab 340 and 2000 depends on which standpoint is taken. From a production engineer's point of view, for example, there is about 70% commonality in the cockpit sections and less than 50% on the fuselage and empennage. The wing has little in common with that of the 340 but, according to Saab, the tools and jigs are common.

The design of the cockpit and associated avionics has advanced from the Saab 340 (which, Saab points out, was the first aircraft in its class to have electronic instrument displays). "We felt it would be wise to take another step," says Hellstrand. The supplier is still Collins, although the six-screen Pro Line 4 system (which is detailed on P 15) will give pilots avionics capabilities that are not dissimilar to those of a Boeing 747-400.

THREE PROTOTYPES
The 2000's maiden flight will take place in the first quarter of next year and the flight-test programme begins immediately after. There will be three prototypes, the second and third being sold later as produc-tion aircraft. In March, Saab decided to move flight testing from Linkoping to Skavasta, near Nykoping because of the delays with the JAS39 fighter, flight testing of which is now at peak intensity.
The 2000 has cost about SKr3.6 billion (£360 million) to develop, about a third of which has been provided on a repayable basis by the Swedish Government. The aircraft sells for $12.8 million, about the norm for a modern 50-seat turboprop. That will buy a relatively simple aircraft — one
that in Saab's words "...suits many of our
customers, but not all". Options include a
more comprehensive galley, uprated avion-
ics, including a Category 3 landing system
and a more advanced navigation fit.

"We knew we'd have no problems if we kept to the original system," says Ahlborg (inset)

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