Propfan:

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the price factor
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wo airliner manufacturers are pre-paring to sell propfan-powered aircraft into the civil air transport
market. If both of them go ahead with all the proposed products they will be fighting for orders in a marketplace sector which contains six competing products: Boeing's 7J7 and the company's latest 737 deriva-tives; McDonnell Douglas' MD-91, MD-92, MD-94X, and the MD-80 series (including the MD-88s, which can have propfan engines fitted to replace their turbofans); and finally the Airbus Indus-trie A320.

There may be quite considerable differ-ences among the aircraft in this group, but two things put them ultimately in a fairly small market sector: size and total ownership cost. Then again, one economic factor more than any other has the power to exaggerate the differences to the point where costly new technology begins to show clear advantages over the cost-offset, cheaper-to-buy older machines. That factor is the price of fuel.

If fuel prices remain low, the simple argument would appear to be that the commercial advantage is to be had from continuing to sell successful, long-running lines like the 737 and MD-80 with

Boeing says that its all-new 7J7 is what carriers wanting propfan-powered airliners

should buy. The Douglas Aircraft Company has its money heavily on its derivative MD-91/92, even though it could pursue the all-new option
in the MD-94X. Who is right? David Learmount reports from Seattle and Long Beach.

updated, efficient turbofan engines, because they can be sold at low prices and yet make money for the manufacturers. Airbus, of course, if it wanted to be in this market sector at all, was forced to innovate. Boeing's response is that the European consortium will never reap commercial returns on A320 sales at the prices it is obliged by competition to offer, no matter how many A320s it sells. Propfan engines, geared or ungeared, may have spectacular fuel efficiency, but

that is partially offset by higher weight, higher cost, design penalties in dealing with the problems of cabin noise and blade safety, and airline caution towards the unknown reliability of a new product. So, to guarantee commercial success, propfan makers and mounters would be grateful of a fuel price rise.
Will there be a fuel price rise? No, say almost all the industry analyses, including market outlook studies by Boeing and McDonnell Douglas themselves. At least, not a rise that anyone will really notice. Boeing's latest study has airline jet fuel cost in real terms remaining exactly at its current level through the year 2000. No-one can see from where another oil crisis might come, unless it is brought about by war or major disaster, because energy use per unit of World Gross Domestic Product is declining, and even though total energy use is rising slowly, petroleum use is rising even slower—about 1 per cent to 1 - 6 per cent a year.

Over-supply continues; and this is at a
time when two major oil exporters, Iran
and Iraq, are exporting less than usual
because of their conflict. Finally, Saudi
Arabia, formerly Opec's most powerful
price controller, has abandoned its policy

Above Boeing has released this artist's impression of its 7J7. Note the winglets, and the application of area rule (which also helps propeller c near the engines. Top opposite Proposed new-technology systems for the 7J7. Below opposite 7J7 programme. Far right 7J7 cabin cros

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