A LUFTHANSA TO MOSCOW

THE first scheduled services between Frankfurt and Moscow by Lufthansa and Aeroflot were operated on February 5. The German airline is operating direct, and is over-flying Czechoslovakia in order to avoid East Germany.

Next move by Lufthansa in this direction, the airline hopes, will be the introduction of trans-Siberian services to Tokyo, which are needed to compete with the other European flag carriers on this route and JAL. But traffic rights have yet to be obtained from the USSR and Japan. The latter in particular is taking a tough line in political bargaining at the moment.

Another objective of Lufthansa is traffic rights in West Berlin; the airline would like to be able to offer international connections to the city, from which it has been barred since the war. The impending admission of German Airlines to West Berlin by the Allied Powers and the improvement in West Germany's relations with the USSR gives Lufthansa some grounds for optimism in this direction, according to observers.

ENTER MERCURY

A POLITICAL row between Malaysia and Singapore followed the announcement, on January 28, that Singapore's new flag carrier is to be named Mercury Singapore Airlines. The choice of name has obviously been designed to retain the initials "MSA" after Malaysia Singapore Airlines breaks up later this year, and to profit from the goodwill attached to the existing airline. But according to Malaysian sources there was a tacit agreement between the two countries that neither would use the MSA name. As a result of the row there is a question-mark over services between the two countries by their respective carriers.

The new company was registered on January 28 by the Singapore Ministry of Finance. The airline's primary objectives include the duty "to be the flag carrier of Singapore and to be prepared to serve as the sole airline for all Singapore's requirements; [and] to take every opportunity for expanding air services provided costs are covered and adequate return on capital is obtained."

The Government statement said that all existing MSA route points except Medan would be served by Mercury. The airline will inherit from Malaysia Singapore Airlines five 707s, five 737s and two F.27s. Three more 707s will be acquired this year.

The total value of assets to be absorbed by Mercury are put at SS180 million (£24.5 million); authorised capital is SS200 million (£27.2 million) and issued capital half that sum. Directors of the company include J. Y. M. Pillay and Lim Chin Beng, respectively Singapore chairman and managing director of the present MSA. Operations are due to begin in the second half of this year.

Airbus aerodynamics

T HE BRITISH CONTRIBUTION to the A-300B, which has now been ordered by Air France and Iberia, with Lufthansa close to a decision, is not inconsiderable. Some 22 per cent of the research and development effort is being channelled through Hawker Siddeley, which has responsibility for the wing. This incorporates an advanced "roof-top" rear-loading section to a greater degree than on any other jet transport, although the concept has been under development for eight or nine years at Hatfield and was partially exploited on the Trident.

Development of considerably more lift over the rear portion of the aerofoil enables a higher lift coefficient to be carried by a wing of given sweepback and thickness than by conventional practice. Alternatives considered, and having the best possible economics when operated on stage lengths in the 350- to 500-mile bracket, which were obviously very much shorter than the maximum stage length required.

The field performance was aimed at being suitable for the routes on which major European operators were already providing services. A limitation was also placed on approach speed, as there was considerable anxiety about the high values of stall margin. This was allowed for by the design of the wing section, the tailplane and the outboard ailerons was also ruled out since the reduced effectiveness and increased adverse yaw of such schemes generally results in dropped ailerons being so much larger in span than conventional ailerons that any increase in 
\[ C_{l_{\text{max}}} \]
results. With a combined spoiler and aileron system maintaining an acceptable ratio between aileron power and spoiler power, it was possible to reduce the outboard-aileron span until the outboard end of the flaps was at 84 per cent semi-span. At the chosen aspect ratio an outboard aileron would have too low a reversal speed for high-speed flight and an unbalanced aileron system could not be used. With the cut-out in the flaps required to pass the engine efflux.

Spoiler-type control surfaces on the wing were also required as airbrakes and as lift dumpers to improve wheel-brake effectiveness.

Much work had been done at Hawker Siddeley on normalised sections of about 14 per cent thickness with a demand for very high lift coefficients at cruise at moderately high Mach number for VTOL transports such as the