

Flying the Airbus

A380



Captain Gib Vogel

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CHAPTER 1

PRE-FLIGHT

The flight crew pauses by the steps of the Airbus A380 before boarding and, as they glance up at the massive fuselage, they briefly contemplate the enormous size of the aircraft. With a wingspan of 79.8m (261.8ft), a height of 24.1m (79.1ft) and a length of 73.0m (239.5ft), it looks big and stubby on the apron. The Airbus A380 is 4m (13ft) wider and 1m (3ft) shorter than the Boeing 747, and is the biggest commercial airliner in the world. It has an incredible maximum take-off weight of 570 tonnes (561imp/628US tons), compared to the 397 tonnes (391imp/438US tons) of the passenger-carrying 747-400, a maximum range of 8,200nm (15,200km) and a maximum altitude of 43,000ft.

FLIGHT PLANNING

Two or three hours before arriving at the aircraft, in a comfortable hotel room, the captain of this flight, Skybird 380 from London Heathrow to Dubai, would have logged on to the Internet to access the flight plan for perusal. Around four hours before scheduled departure, the flight planning department at the airline's home base in Dubai would have chosen the most suitable routing and filed an Air Traffic Control (ATC) flight plan for the trip. This plan would also have been filed with the first en-route air traffic control centre, the Central Flow Management Unit (CFMU) at Eurocontrol, which, in turn, would have forwarded it by telex to the other air traffic centres along the route, in Romania, Turkey and Iran.

Route-search computer programs, such as Lufthansa's 'LIDO', British Airways' 'STAR' and Continental Airlines' 'Phoenix', display the most cost-effective routes for nominated departure and arrival airports. Flight routing costs, such as fuel, aircraft time and air traffic control charges, are included for consideration, but excluded are variable costs, such as catering and amenities, staffing and landing fees. Fuel cost, however, is the overriding factor, and on long-haul flights it accounts for 90 per cent of total basic flight routing costs (75 per cent on short-haul flights). Essentially, air traffic control charges are time based – the longer the over-flight, the more the airline pays – and vary across Europe. For example, on the flight described in this book, the charge for over-flying the Slovak Republic was US\$400, while crossing Romania cost US\$1,700.

Winds aloft along the route are also an important factor in the calculations,



An Airbus A380 on the apron. The enormous passenger aircraft towers over everything in its vicinity.

as they affect flight time and, consequently, fuel burn. With the high cost of fuel, it is not surprising, therefore, that the shortest flight-time route is usually the best option. Having selected the most cost-effective routing, the dispatcher checks the en-route weather for significant forecasts and the relevant Notices to Airmen (NOTAMS) to verify the suitability of the routing. NOTAMS are published by national aviation authorities and list abnormal circumstances that may affect flight through their respective airspaces, alerting pilots to such situations as inoperative radio beacons, closed airport facilities and specific airspace closures for military exercises and similar activities.

Also collated by the dispatcher is information prepared by the airline's traffic specialists on the expected load, including passenger and cargo distribution, and the aircraft serviceability status, which is provided by engineering central control. These items, plus the weather reports, NOTAMS and copies of the ATC flight plan, flight log and fuel log, form a flight planning briefing package that is uploaded to the Internet for pilot access. A copy of the package is also sent to the airline's departure dispatch office, in this case in London.

In the airline's London office, the local dispatcher confirms the availability of the selected route with Eurocontrol and checks the allocated take-off time, known as the 'slot time'. To co-ordinate aircraft joining the busy airway system aloft, all flights departing European airports are allocated a slot time with which the pilots are required to comply. If the selected routing is unavailable, or if the allocated slot time creates an excessive departure delay, another suitable route would be requested from the Dubai dispatch office and a fresh flight plan filed. Surprisingly, these slot times are planned months

Pre-Flight

in advance, as airline schedules are predetermined; the allocated slots are then fine tuned on the actual day of departure.

Weather is also checked by the captain, using terminal aerodrome forecasts (TAFs), which give forecasts for the coming twenty-four hours for all the required en-route, destination and alternate (diversion) airports. For this flight, the captain observes that no adverse weather is reported for the night-time arrival at Dubai. The city's weather is usually clear, but occasionally morning fog or sandstorms occur, and subsequently the low visibility can be a cause for concern. Dubai airport charts, produced by Jeppesen, form part of the Electronic Flight Bag (EFB) on the flight deck and give the minimum visibility required for the arrival.

The captain scans the NOTAMS for anything that could have an adverse effect on the flight. Information is presented for the entire route and can be extensive, but pilots become skilful at picking out notices of concern as they glance through the many pages, saving, perhaps, an hour of reading. Any notices concerning the departure, destination and alternate airports are scrutinized a little more carefully, however, while the remainder of the NOTAMS can be read in more detail during the cruise.

Fuel Requirement

When deciding the final fuel figure, factors such as possible delays resulting from busy traffic at arrival time, air traffic control procedures, or poor destination or en-route weather need to be considered and may require extra fuel to be carried. For example, delays can be expected when arriving at Heathrow during the peak evening period, thus justifying the carriage of additional fuel. Pilots are aware of the high cost of fuel, however, and endeavour not to uplift more than necessary. Taking additional fuel can be not only costly, but also wasteful, as on long flights it is expected that half the extra fuel will be burned just carrying that extra fuel. That is to say, for every extra 1,000kg of fuel loaded, 500kg will be burned off in carrying the extra weight on a long flight, leaving only 500kg for use at the destination.

To prevent airlines from taking too little fuel, however, aviation law dictates that a minimum amount must be carried for each flight. The minimum fuel load comprises:

- *Burn-Off* – Fuel used for the flight.
- *Contingency Fuel* – Additional fuel to safeguard against unexpected circumstances, equal to 5 per cent of the burn-off (this may be reduced to 3 per cent if approved by the local authorities) plus sufficient fuel to reach a mandatory alternate airport.
- *Reserve Fuel* – For holding.
- *Taxi Fuel*.

The Zero Fuel Weight (ZFW) – the weight of the aircraft, crew, passengers, baggage and cargo, but without fuel – of the A380 for this particular flight

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