

Operating the A318 at London City Airport (LCY) by Captain Tony Payne, British Airways (lecture given to RAeS Loughborough Branch on Tuesday 18th February 2014)

Captain Payne presented a detailed overview of the planning and execution of a unique and fascinating operation that has taken on the leading British Airways flight designations BAW001 to BAW004. These call signs have been 'reserved' for daily return flights between London and New York throughout the airline's history. Recently they have been applied to the most sophisticated and smallest capacity of the airline's services.



A British Airways A318 at London City Airport (LCY)

Twice daily on weekdays, and once each Sunday, a return schedule is operated between London (City) Airport (LCY) and New York (Kennedy) Airport (JFK), using BA's two Airbus A318 aircraft. These are an adaptation of the nominally 90-seat short-haul A318 airliner. The BA configuration provides seating for 32 long-haul business (club) class passengers. In addition the BA variant of the A318 is relatively over-powered, having 25,000lb thrust CFM56-6 engines. Crucially these engines have a lower idling thrust than the engines normally fitted to this aircraft.

The operation has several unique and demanding characteristics that arise from using the London City runway. Capt Payne outlined the crew pre-flight processes, showing the flight-plan and fuel management aspects, weather briefing and North Atlantic Track System (NATS) in which operations take place. The aircraft cruises at Mach 0.78 (compared to Mach 0.82+ for most other traffic) and tends to use flight level FL390 (39,000ft) within the airspace. The London City 1,508m runway limits the maximum take-off weight, as restrictions imposed by the aerodrome licence restrict the useable take-off run to 1,199m. This in turn restricts the fuel load to 4.5 tonnes when carrying a full complement of passengers. This amount of fuel is adequate to reach Shannon, on Ireland's west coast, where the aircraft can refuel.

Aircrew (from Heathrow) and cabin crew (from Gatwick) assemble at London City Airport as passengers arrive in the departure terminal. This is located close to London's financial quarters and also provides a short process time (check-in 15 minutes with no hold baggage, 20 minutes otherwise). The crew completes formal checks on a dedicated stand, and passengers arrive from a dedicated lounge (or late-arrivals are escorted) and embark quickly. There is no push-back and the aircrew complete start-up and taxi-out time is minimal. Extra diligence is required to manoeuvre such a relatively large aircraft on the available paved surfaces. Video and slides were used to illustrate the brisk acceleration, and climb-out. The aircraft turn north (to Brookmans Park) and then proceed either west (to Compton) or more northerly, staying below most other local traffic until clear of the London area.



Plan of the cabin showing the 'bed' seat layout. There are 2 cabin crew members.

The 75-inch pitch seats offer comfort, but there is no in-flight entertainment. Instead, an iPad is distributed to each passenger, and there are on-board data services which they can access using their own equipment.

A voice-link is not provided, hence distraction is minimised. The ambience BA aim to provide in the cabin is equivalent to that of an executive jet.

The refuelling stop at Shannon could be a nuisance, instead it offers a benefit for passengers in the form of pre-clearance through US Customs. This formality is completed during the short time it takes to refuel the aircraft (around 30 minutes). The aircrew is changed since this ensures that, in the case of delays, there is less chance of flight-time limitations being exceeded. With a typical fuel load of 18 tonnes (the maximum is 19.5 tonnes) the aircraft is soon heading directly towards New York. The customs pre-clearance means that the aircraft is a 'domestic' arrival, ensuring quick processing of passengers at New York. It also means that, if necessary, the aircraft can divert to any local US non-customs airport.

The presentation gave the audience a clear understanding of the approaches to JFK, especially runways 22L and 13L. The latter has a curved approach from the Cansarie waypoint. This approach has strobe run-in lights in the suburbs close to the runway to guide the crew. Captain Payne showed video of a visual night-time approach.

The eastbound flight is direct, overflying Shannon, as a tailwind is usually assured. The planning of this journey is often possible with 17 tonnes fuel load but, as westbound, up to 19.5 tonnes can be planned. A subtle consideration is that US Jet A fuel has a lower freezing point than European Jet A1 (-40°C against -47°C), and the aircraft wing tanks, being less deep than larger airliners, can suffer a critical amount of cold soak. This means that the track or altitude will occasionally be changed to minimise fuel viscosity risks. ETOPS (extended twin operation) requirements can also affect the track choice since it is necessary to ensure the proximity to diversion airports, which can be as far south as Lajes (Azores) or as far north as Keflavik (Iceland)).

The culmination of the eastbound flight is the most challenging operational process, as the short runway at LCY requires a steep (5.5°) approach path. The presentation outlined the use of spoilers (No.3 and 4 on each side), these being extended to 30° after full-flap was set, to ensure a stabilised approach path. Procedures used are Cat 1 compatible, and require a 500ft decision height (DH) – this is relatively late on the approach (about 1nm from touchdown) - and diversions are rare, but preferred diversion airport is London (Gatwick).

A video of an approach onto runway 09 at LCY, turning over London, manoeuvring onto the final approach at about 5nm, and starting the steep descent around 3n.m. from the runway provided a compelling view of the challenges, and illustrated the satisfaction it must provide for a crew.

The vote of thanks from Goff Tearle complemented Capt Payne for a wide-ranging presentation that had held the attention of everyone present. The audience of about 180 fully agreed.



A flight-deck view approaching runway 27 at LCY (Canary Wharf is visible left of the centreline)