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Boeing 777 Exit And Redeployment

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Pascal Picano, SVP and Head of Global Marketing, Apollo Aviation Group, details the lessor's recent experiences of trying to purchase and deploy 777 aircraft and specifically the -200, -200ER, -200LR and -300 types.

Apollo Aviation Group seeks investment in assets which we believe are - or should be - highly transferable, such as the Boeing 777-200/ -300 / -200-ER / -200LR. For the past two years, I have participated in an effort to purchase such 777s and so far we have been successful at purchasing only one (1) 777-200ER, for several different reasons sampled below:

- Decisions by the original operator at the time of the purchase or entry into service related to the configuration of



the plane (MTOW, type of doors, IFE, provisioning through-out the plane, etc.).

- Impact of long-term agreements secured early in the operation of the aircraft.
- Interference by an original equipment manufacturer (OEM) which found an advantage in purchasing the aircraft to

gain access to the engines.

- Re-investments which made the transition uneconomical when placed against the revenue profile of the subsequent lease.
- Depreciation policies reserving a large residual value for the engines.
- Tax implications at the time of sale for the owner operator if electing a temporary importation status upon delivery from the aircraft manufacturer.
- Unforeseen accounting requirements based on potential future rulings which would postpone the profit taking on the sale until after the completion of the lease-back if and when the accounting standards ever become the rule.
- Commercial practices by an OEM which blinds us as an investor in relation to expected buy-in and hourly maintenance rates until after:
 - a. the plane was acquired;
 - b. an operator was found; or
 - c. that operator has agreed to a long-term maintenance agreement with that engine OEM
- Regulations which block the registration of aircraft of a certain age in a growing number of jurisdictions.
- Obsolescence, lack of repairs and/or lack of availability for support towards galleys, IFE, seats and other important items when transferring a 12-16 year old aircraft from 2-3 class cabins to 1-2 class cabin (generally 1 class cabin).

All this said, it could also be that as an investor we could not get comfortable with the investment case related to these fascinating aircraft which from a cost per seat basis should be an attractive aircraft to various types of operators that make money if and when the cabin can be densified.

Still most aircraft that are traded, or offered in trade, come out of owner airlines which have acquired the plane from its manufacturer after a high level of customisation excluding the provisioning for possibly a higher density of seats. (An aircraft I recently flew on was equipped with domestic housing light fixtures to provide lights to the middle section of the cabin). The maximum seat counts inside the 777-300s is 550 seats which is extraordinary; they are equipped with bins, PSUs, flight attendant call buttons and lights, but with cold galleys and an “obsolete, unsupported and encrypted” software to manage the simplest IFE (flight attendant call function and light function). In all cases, Boeing has been supportive with technical and commercial support in considering solutions for extending the useful life of the aircraft as opposed to the lack of interest by the manufacturers of IFE, galleys, cabin parts and two of the engine OEMs. The alternative options are all cost prohibitive when setting the re-investment costs against the cash flow profile of the potential leases.

The investment profile is also impacted by the lead times to obtain the delivery of the engineering orders covering the modifications, delivery of the parts (new shipset of seats and other cabin parts) and other service bulletins to perform the installations, which require long-term planning prior to taking redelivery of the aircraft and delivering the aircraft to its next operator: nine to twelve months to redeploy the aircraft which is not economically feasible.

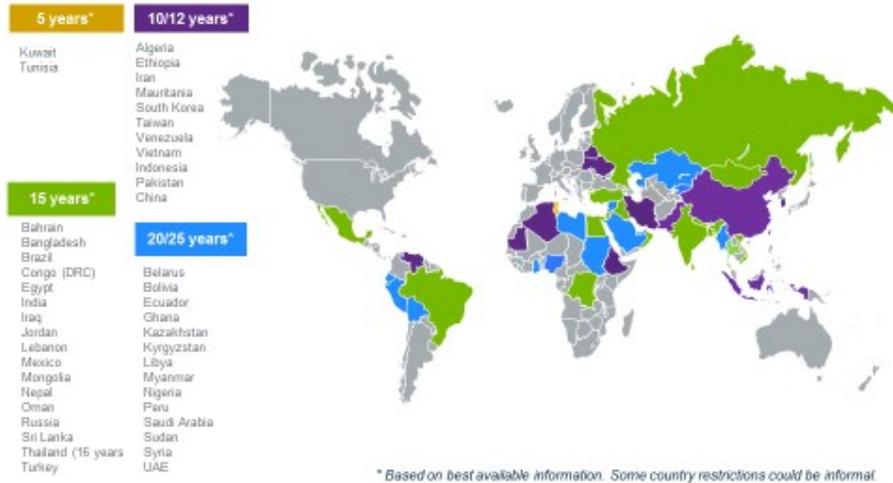
There is hope with the IFE thanks to “streaming” which is useful in regions that are rich in owners of smart phones and tablets, in addition to being economically advantageous when compared with current in-seat IFE systems (hundreds of thousands versus millions of US dollars).

Still, some lessors have been successful at transferring these aircraft between one first tier operator to another first tier operator (mostly 777-200ER powered by GE90 engines) with a long-term lease agreement allowing for the lessor to amortise its re-investment in the cabin over the relatively long-term lease. Other redeployments have been from an owner operator to another owner operator (Singapore Airlines sale to Transaero; Air India sale to Etihad), from an owner operator to a lessee (Singapore Airlines lease to Royal Brunei Airlines; Egyptair lease to Biman Bangladesh) or finally from an owner operator to its subsidiary (Scoot lease to Nok-Scoot ; Korean Air to Jin Air); still relatively few transfers for a fleet of 550 aircraft in operation (excluding 777-300ER and -200ERF), with an average age of 15 years since entry into operation.

Given the ownership structure of the fleet (10 per cent lessors and 90 per cent owner operators), the fleet remains stable, mostly with its first tier operator. It is a chain reaction that can be summarised as follows: the ageing of the aircraft requires reinvestment in the cabin and in maintenance, which in turn makes it more difficult to sell the aircraft. This therefore naturally extends the operation of the aircraft, with the original operator bringing more aircraft to an age beyond which it is impossible for the aircraft to change jurisdiction, owing to arbitrary limits on the age at which an aircraft can be registered, or beyond which the aircraft cannot be registered in a different jurisdiction (see map).

Age-based import restrictions constrain the addressable market for used aircraft

No correlation between aircraft age and safety



Boeing 777s have also been disassembled bringing an unusual revenue profile with over 80 per cent coming from the sale of airframe parts and components and 20 per cent from the engines; mostly fan blades and Quick Exchange Components. As the retirement of more 777s takes place, the expected revenue excluding engine parts has dropped by 50 per cent to less than \$10m net over 24 months.

It is also an unusual situation when the wide-body engine core trade at 80 per cent of the value of a narrow body engine core - that is if and when the core engine trades. The PW4077 and PW4090 have been trading, mostly acquired by its OEM but the TRENT 800 has not been trading making it difficult to understand what residual value these engines may have. In essence, if the assets trade, it allows liquidity which validates and generates investment. Without trading, the investment in the aircraft becomes highly speculative.

Designing an investment strategy requires an extensive understanding of the 777 as a whole and in parts, as well as the economics of the 777 generating revenue as a flyer and the luxury of time to plan ahead. Taking advantage of distressed situations from which to make acquisitions (such as the 777 previously operated by Transaero) may present an investment opportunity. It is beneficial to adopt a dynamic acquisition policy for the major components of the 777 in order to minimise maintenance and associated costs. This enables asset owners to make use of green time engine lease opportunities until there are re-investment solutions to match the shorter lease terms and the creditworthiness of the operators.