



Aircraft Values Book

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Editorial

Re-purposing, restructuring, re-evaluating – these are terms in our industry we hear all too often in this Covid inspired world we now live in. The re-purposing is quite easily explained and has involved this new phenomenon of temporarily converting otherwise underworked passenger aircraft into temporary freighters. As practical evidence, EVA Air has recently been flying a Boeing 777-300ER between London and Paris full of medical equipment instead of passengers that it would usually carry between Heathrow and Bangkok/Taipei. IBA has been approached on several occasions and asked to opine on whether conversion to temporary freighters affects market values of the aircraft. Our answer to that is no, it is a short term investment but at least serves as a consoling means of keeping the aircraft flying and with good intent behind.

The re-structuring and re-evaluating have undoubtedly had a greater influence on trading values of aircraft. By way of further example, during the past 12 months, Air France, Hi Fly, Lufthansa, Malaysia, and Thai have all confirmed removal of the Airbus A380 from their fleets; and with this has come a deterioration in demand and market conditions for this once flag ship aircraft. As readers will no doubt see, the Airbus A380 market value drops and divergence from base value in this edition are noteworthy to say the least.

Other wide bodies with heavy market value reductions and distancing from base value include the Airbus A330-200 and A330-300 and Boeing 777-300ER. All three types sold well for their respective OEMs, but unfortunately they have also been on the receiving end of operator re-structures and fleet re-evaluations. While -P2F freight conversions are either in place for the A330s or just around the corner for the 777, unfortunately they do little for values of the passenger feedstock.

The return of the Boeing 737-8 MAX and -9 MAX to service should really be big news; however we cannot help but think that all aspects of the industry, from OEM, investors to appraisers alike, have been coy, perhaps deliberately so, in reaction to the lifting of the grounding. This is how IBA sees it; Naturally, we welcome its return, and we think the “early return” operators such as Gol, American Airlines, SCAT and Aeromexico among others, have been smart in quietly bringing their aircraft back; allowing the flying public to ease back its confidence in the aircraft. There is still a long way to go in terms of re-activating hundreds of other Boeing 737 MAX; but for IBA, so far so good. None of this augurs much for market values of the Boeing 737-8 MAX or -9 MAX, which as you will read on our values pages, are quite notable in being below base value. Why? Firstly the Covid influenced trading environment has not exactly been conducive to healthy pricing when transactions are reported. Added to this there have been a number of Boeing 737 MAX cancellations, and some young aircraft are being rejected such as the few examples at Norwegian.

The competing Airbus A320/A321 Neo series appears so far to have been one of the more resilient aircraft families in terms of market value performance and its position relative to base value. Nonetheless, even strong performers such as the Airbus A320 neo family have not been entirely spared the challenged market; as IBA has seen for itself for example with the Airbus A320/321 Neo fleet at the troubled LATAM grouping.

The Boeing 737-800, Airbus A320ceo and Airbus A321ceo still make up very much the nucleus of the current narrow-body fleet. Despite their continued popularity, market values and lease rates have seen some sharp declines. With the Boeing 737 MAX gradually coming back to service and trading of Airbus A320/321 ceos proving more challenging, lessors are now inducting much younger Boeing 737-800s for -P2F conversion and we see similar trends occurring for the Airbus A320 and A321ceo as their respective -P2F programmes gain more impetus.

Other trends IBA has seen across narrow bodies and wide bodies is airlines re-negotiating leases on some rather young aircraft, moving over to power by the hour programmes as they struggle to keep up with normal market monthly lease rental payments during this period of low utilisation.

Gravitating towards the regional sectors, the value trends IBA has observed, produce something of a mixed bag. Resilient types include the Airbus A220-100 and A220-300, with a reasonably stable performance from the Embraer 190/195E2 as well. IBA has seen relative stability in the Embraer 175 market and as such their levels of value volatility have been comparatively low. Matters have not looked quite so good for the Mitsubishi/Bombardier CRJ700 and CRJ1000 though where trading prices are likely to weaken further.

We wind up this editorial witnessing what must be the most destructive effect a force majeure has ever had on aircraft values. It seems clear that despite the global rush to vaccinate huge populations during the course of the year, traffic will still be well off pre pandemic levels and trading will continue to be as challenging as ever. IBA will do its utmost to keep abreast of recording transactions and the associated lease rates and values that arise from them. We thank you for your support, feedback and openness in sharing transaction data and hope you enjoy this revised format.

Many thanks from IBA's Valuation Team.

Definitions and Assumptions

ISTAT Definitions

All the data contained in this publication is in accordance with ISTAT definitions, which are included below.

Base Value is the Appraiser's opinion of the underlying economic value of an aircraft in an open, unrestricted, stable market environment with a reasonable balance of supply and demand, and assumes full consideration of its "highest and best use". An aircraft's Base Value is founded in the historical trend of values and in the projection of value trends and presumes an arm's-length, cash transaction between willing, able and knowledgeable parties, acting prudently, with an absence of duress and with a reasonable period of time available for marketing.

In most cases, the Base Value of an aircraft assumes its physical condition is average for an aircraft of its type and age, and its maintenance time status is at mid-life, mid-time (or benefiting from an above-average maintenance status if it is new or nearly new, as the case may be).

Market Value or Current Market Value (if the value pertains to the time of the analysis) is the Appraiser's opinion of the most likely trading price that may be generated for an aircraft under the market circumstances that are perceived to exist at the time in question. Market Value assumes that the aircraft is valued for its highest, best use, that the parties to the hypothetical sale transaction are willing, able, prudent and knowledgeable, and under no unusual pressure for a prompt sale, and that the transaction would be negotiated in an open and unrestricted market on an arm's-length basis, for cash or equivalent consideration, and given an adequate amount of time for effective exposure to prospective buyers.

Fair Market Value is synonymous with Market Value, and likewise Current Fair Market Value is synonymous with Current Market Value, because the criteria typically used in those documents that employ the term "Fair", reflect the same criteria set forth in the above definition of Market Value.

The Aircraft Values Book contains Current Fair Market Values and Base Values for various aircraft based on the current "standard specification" as discussed in the Methodology section below.

Rating Score

The IBA ratings are a result of several factors, both qualitative and quantitative in nature. The qualitative and quantitative factors are primarily based on an assessment of the aircraft types' attributes. The main issues affecting an aircraft type's rating include: future residual values, impact of a weak market on values and re-marketability. There are several market factors that influence the aforementioned issues and these include; technology of the aircraft, operator base, fleet size, order backlog, remaining useful life, freight conversion potential, market share, maintenance cost, specific fuel consumption, greenhouse gas emissions and general market acceptance. All of these factors have been taken into account by IBA to determine the rating for each aircraft type. The rating scale ranges from A++ for a low risk asset to E-- for a high risk asset as follows:

Aircraft Values Book Methodology

The Aircraft Values Book has been constructed around the following criteria:

Scope: Modern technology passenger jet aircraft with an entry into service date of post-1980 or within six months of publication of the Aircraft Values Book.

Method: Determination of values includes account of replacement price, age, market condition, depreciation based on resale history and useful economic life. Aircraft are considered within the market segment to which they belong and compared with the competitor aircraft in the segment.

Assumptions:

average annual new price escalation (inflation) for forecasting of 1.5%

alternative assumption of 0% inflation provided for future values within "AVB 2021A" sheet current / balanced market condition with balance achieved at levels perceived appropriate for today's market

each aircraft type depreciates over a fixed economic lifetime

standard / mid-time maintenance condition

good /average physical condition

typical utilisation

configured for typical passenger service

standard / average specification unless otherwise indicated

NB: Depreciation matrices are validated semi-annually against the latest available data.

Standard / Average Specification

When an aircraft is new to the market the values are based on the initial ("basic") specification as published by the manufacturer. This specification will include items such as aircraft weights, engine manufacturer and model, seating configuration and avionics fit, to name a few. However, as production and orders develop, airlines and lessors will select various options. It is usual, as the aircraft program matures, for the level of specification typically ordered to become more advanced. IBA considers the most typical ("standard") level of specification recently ordered to be that which is most relevant for determining the aircraft values in this book.

For aircraft that are no longer in production, the level of specification most prevalent in the market, across the whole of the type's fleet, is considered to represent the "standard" level of specification and IBA's values are based upon this standard. Aircraft with inferior or superior levels of specification when compared to the "standard specification" aircraft, will attract negative or positive value adjustments to the values shown, as appropriate.

Definitions and Assumptions continued

Aircraft Status Definitions

Information regarding general status and information of the aircraft type is given for comparison purposes. Every effort has been made to convey correct technical information.

Two types of market reference charts have been included. These charts detail the statuses of each aircraft type by typical seating category. The effective date for all data in this issue (Issue 21A of the Aircraft Values Book) is 8th February 2021 and has been sourced from IBA's InsightIQ.

Delivery

Aircraft has been received by an operator from the aircraft manufacturer.

Retired

Airframe permanently removed from service.

Active

Aircraft currently in active service.

Parked

Aircraft placed into short term storage (inactive for less than three months and more than two weeks).

Stored

Aircraft placed into long term storage (inactive for longer than three months or inducted to long-term storage facility/program).

In-Service

Aircraft currently in Active, Damaged, Parked, Retained or Stored statuses.

Storage Ratio

The percentage of the In-Service fleet currently being Parked or Stored .

Disclaimer

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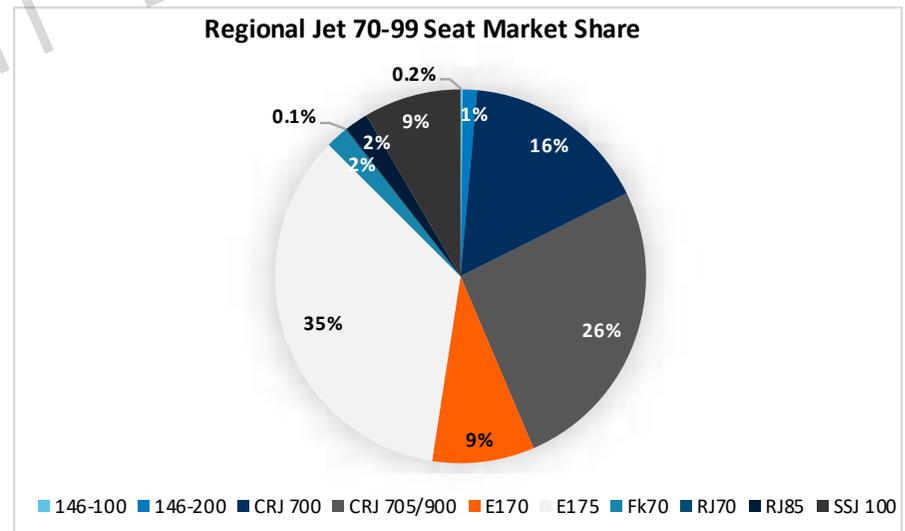
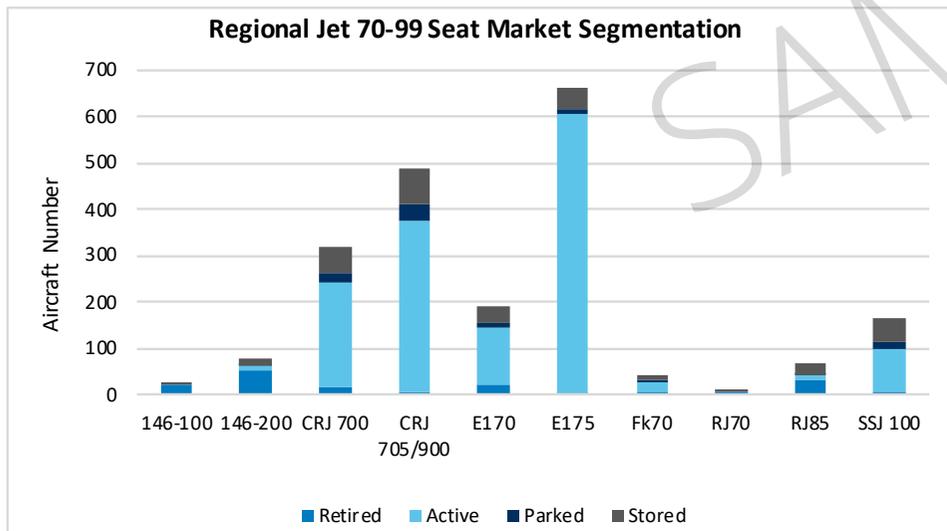
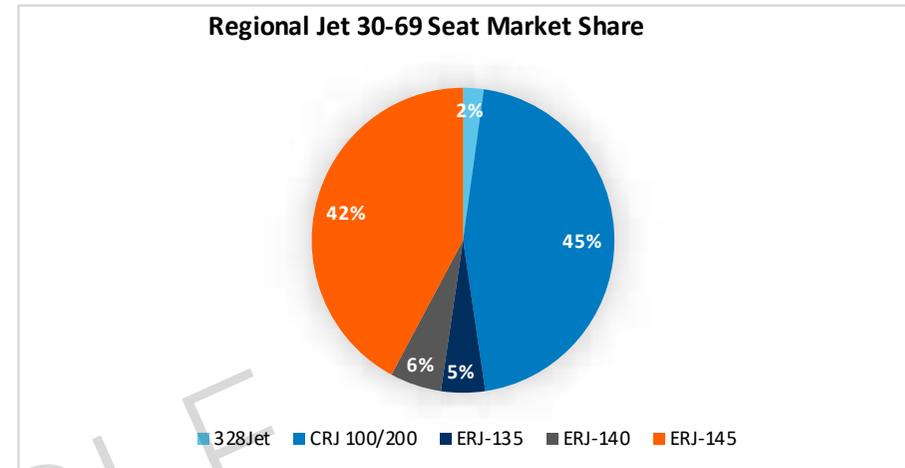
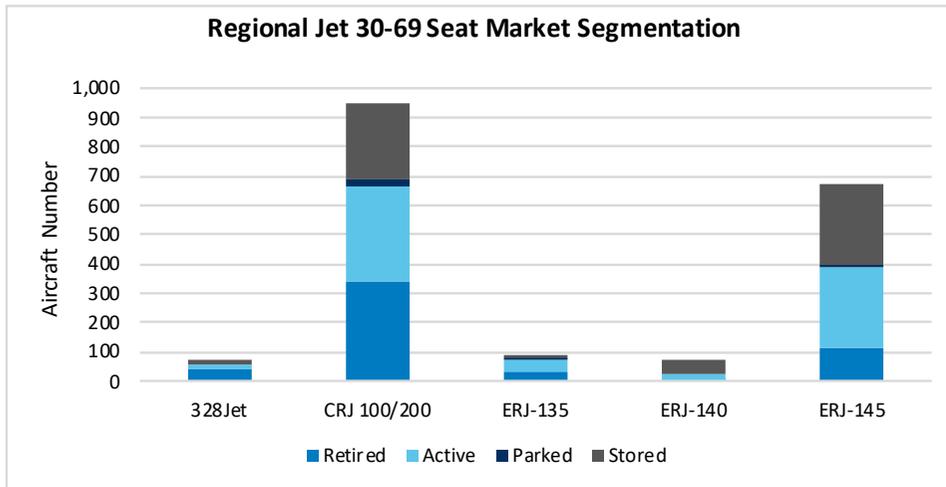
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Sample charts



Airbus A220-100

130,000lb, PW1521G IBA Aircraft Rating : B+

Current Market Value & Base Values

Section 1: Airbus
 100 - 119 Seat Commercial Jets
 Predominantly Single-Class Configuration
 IBA Aircraft Rating B+
 Valid for January delivered aircraft in January only
 Values in US Dollars (millions)
 Annual inflation of 1.5% assumed

Year of Delivery	CMV	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
2021	202.85	246.74	212.54	185.44	166.96	157.28	150.42	144.23	138.76	133.94	129.69	125.95	122.67	119.80	117.25	114.98	112.85
2020	205.24	252.17	218.25	190.43	171.95	162.27	155.42	149.23	143.76	138.94	134.69	130.95	127.67	124.80	122.25	119.98	117.85
2019	200.50	246.58	212.66	184.84	166.36	156.68	149.82	143.63	138.16	133.34	129.09	125.35	122.07	119.20	116.65	114.38	112.25
2018	200.87	246.88	212.96	185.14	166.66	156.98	150.12	143.93	138.46	133.64	129.39	125.65	122.37	119.50	116.95	114.68	112.55
2017	201.24	247.26	213.34	185.52	167.04	157.36	150.50	144.31	138.84	134.02	129.77	126.03	122.75	119.88	117.33	115.06	112.93
2016	201.61	247.64	213.72	185.90	167.42	157.74	150.88	144.69	139.22	134.40	130.15	126.41	123.13	120.26	117.71	115.44	113.31

Comments

In terms of in-service operator base, little has changed for the Airbus A220-100, Delta Air Lines and Swiss remain the only operators of the type, the former accounting for the majority of the fleet. The orderbook for the Airbus A220-100 has however changed since the previous update, with Gulf Air officially cancelling its order for ten examples.

On the plus side though, Airbus have expanded the product offering for the A220-100, with the announcement of the ACJ220-100, the corporate jet version of the A220-100. While the ACJ220-100 is unlikely to have any impact on the A220-100 from a residual value point of view, it is nice to see Airbus looking at expanding their offering. Overall, IBA would still like to see the Airbus A220-100 backlog develop, allowing the type to become less of a niche, for the time being however values remain relatively strong given the type is still new to the market.



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