FREIGHTER TREADS

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AN UPDATED TRENDS IN THE FREIGHTER INDUSTRY, P2F CONVERSION, MRO & AEROSPACE



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SHIFTS IN AIR CARGO DEMAND IMPACT A321, A320 FREIGHTER CONVERSION INVESTMENTS

Asia-EU air freight is rising, while Asia-US demand faces uncertainty. This could lead to more diverse trade routes, as supply chain shifts and e-commerce growth drive trans-Pacific freighter demand to new markets. Freighter Trends also learnt that the 321-200 type freighter offers many incredible benefits in the form of lower carbon footprints, flexibility, frequency, access to a wider range of airports—one of the biggest benefits is found for regional routes where last-mile delivery capabilities to smaller airports not fit for widebody freighters mean a competitive advantage to air cargo companies. This benefit is doubly advantageous when compared to standard freight services which are ill-fit for rapid demand fast delivery times. There is always room for new alternatives. The A321-PCF model offers load flexibility, lower OEW, and great revenue potential- all backed with proven reliable 24/7 engineering support. Here are the details

How do imbalanced trade flows between Asia and Europe, along with current trade regulations, affect trans-Pacific freighter demand?

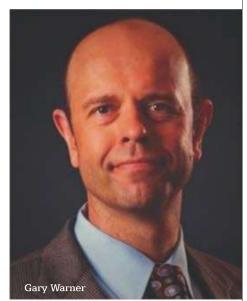
Gary Warner, Precision Aircraft Solutions -While there has been a significant increase in Asia-EU air freight volume at a time when Asia-US air freight is facing an uncertain market, these changes do not necessarily equate to a decrease in trans-Pacific freighter demand and may instead result in more diversification in trade routes. Current and evolving geopolitical situations and trade regulations may make long-standing routine routes less financially rewarding, but supply chain diversification in order to avoid US-tariffs could be a boon to already growing markets. Many countries around the world are experiencing e-commerce expansion; coupled with shifts in manufacturing hubs or warehouse storage centers, trans-Pacific freighter demand may simply relocate rather than decline.

Mike McConnell, CEO, C Cubed Aerospace - While more of a widebody question, generally, there may be a second variable in tariffs which have become a bit volatile

in March. If that indeed applies here, the question is will tariffs retard the organic growth we have seen in Pacific or European air cargo demand, independent of imbalanced trade flows? It is too soon to answer that question.

Pascal Parant, Group Chief Commercial & Marketing Officer VALLAIR Group - The imbalanced trade flow between Asia and Europe is as legendary as the well-known imbalance in the green bean and flower market between Europe and Kenya. While the butterfly effect is a theory that sometimes proves true, trans-Pacific trade is equally unbalanced.

However, at Vallair we see other challenges on the Asia-Europe freighter routes. There is a significant imbalance between airlines that can overfly Russia and those that cannot. We have seen several legacy carriers cutting or drastically reducing their routes to China. Additionally, extended flight times are reducing the belly freight capacity of aircraft, while at the same time, ecommerce has never been more important. As a result, the freighter market from Asia to Europe remains strong, whereas Europe-



to-Asia traffic is a different story. That said, I don't see a clear connection between these factors and trans-Pacific freighter demand.

What are the implications of the growing A320 and A321 freighter fleet, and is there room for new alternatives?

Gary Warner - The 321-200 type freighter offers many incredible benefits in the form of lower carbon footprints, flexibility, frequency, access to a wider range of airports—one of the biggest benefits is found for regional routes where last-mile delivery capabilities to smaller airports not fit for widebody freighters mean a competitive advantage to air cargo companies. This benefit is doubly advantageous when compared to standard freight services which are ill-fit for rapid demand fast delivery times. There is always room for new alternatives. The A321-PCF model offers load flexibility, lower OEW, and great revenue potential- all backed with proven reliable 24/7 engineering support.

Mike McConnell - There is always room for alternatives, especially with improved features and benefits like C Cubed's conversions. Plus, there is a natural





alignment to the fleetwide choices made by operators, (Airbus or Boeing) creating Airbus narrowbody growth. The question seems to reflect the current snapshot of market conditions and capacity. Looking through a longer lens, we firmly see the Airbus narrowbodies being widely sought after throughout the next five years and on.

Pascal Parant - The A321 freighter fleet is expanding, but Vallair has recently noticed an operator returning

a significant portion of its fleet due to a lack of market demand. While there are conversion slots available, the number of suitable aircraft is limited. Passenger demand remains so high that it is often more profitable to extend leases, or transition aircraft to another passenger airline, rather than convert them to freighters. The market isn't quite there yet, but we know it's only a matter of time.

Once major freighter operators



begin replacing their 757s, the demand for A321 freighters will be huge. In my view, the A321 is the only suitable candidate to take over the current 757 freighter market.

Nicole Sarno, Head of Freighter Marketing of Embraer - From a global perspective, we see different regions with potential to grow their volumes from turboprops aircraft and catch up with the intra-region demand, such as Europe and Asia

Pacific. At the same time, the potential to replace aging aircraft is still there, specially in Latin America. With the E190F being now certified by FAA, EASA, and ANAC, it opens up a new possibility for these operators to restrategize and modernize their fleet.

What is the outlook for the widebody freighter market, specifically regarding A330 freighter conversions?

Mike McConnell - I don't claim expertise in the widebody segment. However, given that the A330 could be a B767 mid-size competitor and the B767 does not seem to ever go away, it is plausible that this class of freighter takes share from the ultrawidebody and long-range segment. Especially as the B767 is flying domestically quite a bit, not relegated to only over water ops.

Pascal Parant - While conversion slots are available, the aircraft themselves are not. Starting in 2018 and even more so during COVID, the A330 was considered a "dead horse," with many predicting its decline. However, manufacturers have faced ongoing supply chain and production challenges, making the A330 an increasingly valuable passenger aircraft to keep in service. Market values are now well above base values

Additionally, engine OEM issues have turned engines into highly soughtafter assets as long as they have green time. Turnaround times (TAT) for maintenance can exceed a year, with the longest delay often being the induction slot. Instead of being converted, some aircraft are being dismantled for their engines, further limiting the availability of suitable aircraft for conversion.

The A330 converted freighter is an outstanding aircraftversatile, well-suited to various markets, and ideal for e-commerce freight operations at secondary airports. It offers a better payload range than the 767 and is easier to fill than a 777 or 747. It is also the best and most natural replacement for the ageing A300F fleet. Compared to the 787 and A350, the A330's metal fuselage makes it easier to convert into a freighter than new-generation composite aircraft. This should ensure it enjoys a long second life.

How do you see the expansion of A321F and 737-800F conversion lines in Asia amidst limited resources and rising costs? Mike McConnell - The growth we are seeing now and into 2026 is led by the



FREIGHTER TRENDS

NARROWBODY FREIGHTER CONVERSION OUTLOOK

Asian markets, both wide body and narrowbody. It only makes sense that conversion capacity grows in that region to meet the continued demand. Most of the conversion MROs have focused on the medium wide body segment so the narrowbody is the logical next step for growth opportunities.



Pascal Parant - There are significantly more 737-800 conversion lines than A321 conversion lines. However, the two aircraft do not target the same market. Currently, lessors of 737s and A321s make more money leasing them as passenger aircraft than converting them into freighters. This

is a temporary situation that will naturally correct itself during the next downturn. Some predict that OEMs will take until at least 2030 to resolve supply chain and production issues to meet fleet replacement and market growth demands.

The freight market is also constantly evolving. Twenty years ago, newspapers were printed centrally and distributed via night mail. Customer habits have changed news is now largely digital. Contracts once required physical signatures; today, everything is electronic. Amazon was in its infancy two decades ago; now, it operates its own airline. All of this has reshaped the cargo market.

What will be needed in the next decade? I don't have a clear enough crystal ball to say. However, one thing remains certainthe alignment of the three critical factors (market demand, aircraft availability, and slot availability) is never perfect. That's what makes this industry so unique, dynamic, and competitive.

Is the growth of e-commerce driving increased freighter demand in the express market?

Gary Warner - Absolutely, and the increase in demand is reaching far and wide. Emerging markets combined with the expansion of established e-commerce markets are heavily influencing a surge in demand for more frequent shipments. While wide-body freighters are also benefiting from the demand, narrowbodies in particular benefit due to flexible

loading options, and the last-mile capabilities discussed earlier.

Mike McConnell - It would seem that ecommerce is driving most of the growth in all markets. In 2023 85% of all De Minimus ecommerce shipments arrived via air with 15% arriving via truck, sea or rail. Looking backwards, during Covid, the share of express shipments increased to 34% due to capacity constraints. The data suggests that after 2022, there was an increase in the use of dedicated non-express company operated freighters moving traffic across the Pacific.

Pascal Parant - Absolutely. Just look at the trade balance between China and the rest of the world. When consumers buy online, they expect fast delivery. Even with tariffs imposed on Chinese goods under President Trump, consumers in the United States remain too dependent on Chinese products for demand to stop. Currently, importers are in limbo due to uncertainties surrounding tariff classifications leading to a slowdown. However, once new regulations are clarified, traffic will rebound.

Nicole Sarno - E-commerce is and will keep on being an important factor in the increased demand in the express market. According to IATA, Global Cargo-Tonne-Kilometers (CTK) rose 3.2% year-over-year (YoY) in January 2025, marking a year and a half of consistent expansion.



NARROWBODY FREIGHTER CONVERSION OUTLOOK



What is the current status of A320F, A321F and E190F conversions? Are feedstock issues still impacting demand? Gary Warner - The post-COVID resurgence of passenger travel has been elevated for a longer period of time than initially estimated, and remains one of the most significant factors to feedstock availability. The passenger demand compounds the issue of limited engine availability, where supply chain disruptions have made engine leases on their own a lucrative business option. Both factors and the need for increasing new narrow-body passenger aircraft from the OEMs are expected to normalize and match historical levels more closely.

Mike McConnell - Narrowbody retirements and consequently feedstock remains a critical path, along with engine availability. In 4Q 2024 it was forecasted to see 40 freighter aircraft being retired in CY2024 and less than 5 of those were expected to be narrowbodies. From a demand lens, in 4Q of 2024 it was reported that there were 332 undelivered conversion orders and 60% were in the widebody space, leaving 133 narrowbodies on order. Of that number, roughly 60 are Airbus A320 and A321s so the demand appears to continue to be there

Pascal Parant - Yes, we clearly see at Vallair that feedstock issues are impacting demand. Passenger aircraft prices and lease rates remain extremely high, making the total asset cost post-conversion uncompetitive. This year, 7580% of expiring leases are expected to be extended. Additionally, around 850 next-generation aircraft are currently grounded



due to engine issues. JetBlue recently announced that engine overhauls for GTF-powered aircraft could take up to 360 days, primarily due to long induction times caused by capacity constraints.

As a result, airlines are holding onto their aircraft. Those that won't be extended are typically aircraft that are unsuitable for conversioneither too old or with too many hours and cycles.

Many 737-800 owners who converted their aircraft now regret not keeping them in passenger configuration.

Nicole Sarno - We are currently working towards the delivery of the first two aircraft converted by the first half of this year. We expect to have success with this product in the market, as it meets the changing demands of e-commerce and modern trade,

which require rapid deliveries and decentralized operations, driving the demand for faster delivery of shipments to regional markets.

How do you forecast freighter demand for this year, and will the US-imposed tariffs affect the industry? How are lessors responding to this?

Gary Warner - The freighter industry will be navigating this complex, rapidly shifting landscape as it evolves. Flexibility will likely be key, and staying abreast of the changing market will be crucial.

Mike McConnell - For the remainder of 2025, most industry people see a continuation of working through engine availability to power the parked freighter aircraft. Until new aircraft can be delivered to meet the huge airline demand, we may not see a large influx of feedstock to jumpstart the conversion market. In 2026, independent of any geo-political stimulus, we absolutely see a course correction start to make its turn.

Pascal Parant - Currently, less than 1.5% of A320s and 737NGs are available on the market, while across all age categories, 14% of freighters are available. This suggests that 2025 will remain a challenging year for the narrowbody freighter market. SmartLynx has already returned several A321s.

The widebody market is different, as China continues to flood Western markets with goods. However, once shipments arrive at major hubs, parcels are typically trucked to their final destinations rather than being transported on smaller aircraft