

Deliveries of new aircraft have increased over recent years to 1,400 in 2013. More than 900 of these were narrowbodies. How these deliveries are split between owned and financed, and which organisations are financing them is examined.

Aircraft deliveries & fleet development in 2013/14

Large numbers of new aircraft deliveries will be expected in parallel with the global economic recovery. Since *Aircraft Commerce* last reviewed commercial aircraft deliveries in May 2012 (see *The development of the commercial fleet during 2011, Aircraft Commerce, April/May 2012, page 4*), annual new aircraft deliveries have increased to more than 1,400 compared to 1,100 during 2011. Throughout 2013, however, some 650 mainly older generation aircraft were parked, and are unlikely to return to service. This trend of increased deliveries is likely to continue for some time, although the rate of increase appears to have stabilised during the months to May 2014.

This article will examine the fleet evolution of in-production aircraft from narrowbodies, which continue to represent the largest portion of deliveries, and regional jets (RJs) through to widebodies. *Aircraft Commerce* will also review how these aircraft have been financed and what trends are emerging for lessors, aircraft finance banks and other sources of funding over the past 18 months. This includes the continued trend towards more leasing solutions for airlines and the role that traditional aircraft finance lenders increasingly perform in funding lessors.

Narrowbodies

Narrowbodies continue to form the largest portion of the commercial aircraft market, and this is reflected in the portion of new aircraft deliveries. More than 900 of the total 1,400 aircraft delivered (see *table, page 7*) were single-aisle airframes; about two-thirds of the total. This is the largest portion over the past decade. It not only reflects the continued dominance

of the 737NG and A320 families, but also the dominance of those types among low-cost carriers all over the world. Moreover, as will be seen later, a large number of narrowbodies are entering the Chinese domestic market.

737NG family

Most 737NG deliveries in 2013 were for the -800 variant, with only 17 and 66 deliveries for the -700 and -900 variants entering service. The 737-700's and -900's lower popularity is reflected in the way they were financed. Since lessors favour aircraft with strong liquidity, it is unsurprising that no -700s went to lessors, and only 15 of the -900s did.

Although more A320 than 737NG family aircraft were delivered in 2013, the 737-800 just pipped the A320 by two with 353 units. The main operators of new 2013 aircraft were Chinese carriers, which cumulatively received 109 aircraft. This represents 30% of 737 deliveries.

Of all aircraft produced, 193 were taken by lessors and 160 were financed by other means (see *table, page 7*). For transactions where financing lessors can be identified (*Aircraft Commerce* was able to identify 116 leased aircraft), the biggest lessors were GECAS (18 aircraft), SMBC Aviation Capital (16), ILFC (15) and AerCap (12). Other significant lessors that took delivery of at least five aircraft included Avolon (6), ALC (9), Aviation Capital Group (8), AWAS (5), BBAM (5), BOC (10) and Jackson Square (5).

A total of 14 aircraft were financed by means of so-called Japanese operating leases (Jolco). French banks led a number of such tax-driven financings, with Jolcos for six and four aircraft arranged by Credit Agricole Corporate Investment Bank (CACIB) and Natixis. BNP Paribas also arranged Jolcos for Turkish Airlines.

Of those financed by other means, *Aircraft Commerce* was able to identify 133 out of 160. Of these, the largest portion (70) were financed for US carriers United and American using enhanced equipment trust certificates (EETCs).

Citi, Goldman Sachs and JP Morgan were the lead banks on 41 aircraft for American. French banks were also active in this market, with Natixis leading on 21 aircraft and CACIB leading eight aircraft for United as part of a package including other Boeing aircraft.

Smaller numbers of aircraft were financed by export credit. Again French and US banks were the principal arrangers in this category.

Commercial loans were provided for 35 aircraft, with ING lending against nine aircraft. BNP, DVB, ICBC and KFW were also significant commercial lenders.

Over and above direct bilateral financing structures between airlines and lenders, many aircraft finance houses now generate substantial volume by lending to lessors. In many cases bonds are issued that allow lessors to purchase aircraft for onward lease or to refinance existing debt. Towards the end of 2013 Aircraftle, Fly Leasing, and BOC raised substantial funds in this manner. Aircraftle, for example, placed a \$400 million bond in December 2013 for general corporate purposes and aircraft purchases. This was arranged by Citi, Goldman Sachs, JP Morgan and Royal Bank of Canada.

In some cases, lessors also raised debt for aircraft. This includes, for example, both Avolon and AWAS for 737-800s.

The 737-700, which is now only produced in small numbers, was not at all funded by lessors in 2013, while the 737-900 had lower levels of leasing participation compared to the -800. Of the 66 delivered -900s, 15 went to lessors.

During the first four months of 2014, 121 737-800s were delivered, of which 78 were leased. This represents two-thirds of all deliveries in 2014. It is a greater portion than were leased in 2014. GECAS and SMBC continue to be the biggest -800 Lessors this year, with 13 and 11 aircraft. BOC and Avolon have each funded six so far in 2014, but Aercap and ILFC have reduced their exposure to one aircraft each.

While the number of 737-800s produced so far in 2014 is relatively constant compared to 2013, the rate of increase for the -900 is substantial with 28 delivered so far this year compared to 66 for the whole of 2013. Of these, eight have gone to lessors, which is a similar proportion to 2013.

Some significant 737-800 financings have been completed in 2014, including 10 for THY as a mix of commercial loans and Jolcos. A number of financings have also been completed for GOL in Brazil.

On the lessor side, AWAS is seeking funding for three 737-800s for Lion Air. BOC, Aircraftle and Intrepid have also issued bonds in 2014, and Aercap has issued bonds for its acquisition of ILFC.

A320 family

Airbus delivered more narrowbodies than Boeing in 2013 with a total of 486 units. Most (351) were A320 variants, but 100 new A321s also went into service. The balance was a smaller number of the now less popular A319 (35). Of all the A320 types 91 went to Chinese carriers. This is a slightly lower portion than for the 737-800.

Although two fewer A320s than 737-800s were delivered, the type had the largest portion of aircraft that went to lessors (217). GECAS alone accounted for 28 A320s in 2013, and AWAS and SMBC Aviation Capital for 16 each. ICBC received 13, while Aviation Capital Group and ALC took 10 each. Smaller numbers also went to BOC (7), Avolon (5), Orix (4) and CIT (3).

A number of A320s have also been financed by banks through lessors. This includes a KFW Ipex export credit agency (ECA) -backed loan to AWAS, and CA-CIB-arranged funding for several aircraft to the same lessor.

Aircraft Commerce identified 106 out of 134 A320s not financed by leasing operating lessors. A similar number of Jolco-financed aircraft (10) as for the 737 were arranged by CACIB and BNPP.

French banks also featured strongly in arranging ECA finance for 30 aircraft. This represents double the number of A320s financed through the use of ECAs compared to 737-800s.

EETC financing structures were far less prevalent for A320s, since fewer deliveries went to US carriers where this

NEW JET AIRCRAFT DELIVERIES 2013 & JANUARY TO MAY 2014							
Aircraft type	2013			2014 (1st 5 months)			
	Owned	Leased	Total	Owned	Leased	Total	
Boeing							
737-700	17	0	17	2	3	5	
737-800	160	193	353	43	78	121	
737-900	51	15	66	25	8	33	
	228	208	436	70	89	159	
747-8	20	4	24	5	0	5	
767-300	15	6	21	0	0	0	
777-200	12	7	19	7	0	7	
777-300	47	32	79	20	3	23	
787-8	38	27	52	17	9	26	
	132	76	195	49	12	61	
Airbus							
A319	14	21	35	6	6	12	
A320	134	217	351	41	73	114	
A321	69	31	100	23	23	46	
	217	269	486	70	102	172	
A330-200	28	23	51	10	1	11	
A330-300	30	26	56	14	11	25	
A340-500	1	0	1	0	0	0	
A380	16	9	25	8	1	9	
	75	58	133	32	13	45	
Embraer E-Jet							
E170	4	0	4	0	0	0	
E175	24	0	24	11	4	15	
E190	36	13	49	2	7	9	
E195	8	9	17	3	1	4	
	72	22	94	16	12	28	
Bombardier CRJ							
CRJ700	6	1	7	0	0	0	
CRJ900	17	1	18	9	5	14	
CRJ1000	2	5	7	0	2	2	
	25	7	32	9	7	16	
Sukhoi							
SSJ100	7	6	13	7	2	9	
Total deliveries	756	646	1,389	253	237	490	

technique is more widespread. As such, only 23 aircraft were financed through EETCs, including 14 at jetBlue and six for British Airways (both transactions were arranged by Citi). CACIB also participated in this structure with three units forming part of a larger portfolio.

For commercial loans, certain banks outside the usual sphere of aircraft finance were prevalent in lending against 37 aircraft. Qatar National Bank and Commercial Bank of Qatar led with 10 aircraft. CIT Bank also lent against five aircraft, rather than providing funding as a lessor. ICBC and BNPP-loan financed A320s. BNPP, for example, co-arranged eight A320s for LATAM Airlines, while French banks were also active with commercial loans for jetBlue.

Given the leasing community's appetite for liquid aircraft types, the balance between leased aircraft, and those financed by other means, was reversed for the A321. Only 31 of 100 units were funded by Lessors. ACG was the biggest lessor of A321s, with five aircraft. GECAS was noticeably light on the type having taken only one aircraft.

By contrast, it is perhaps surprising that 21 out of 35 A319 deliveries were financed by lessors, since the type is not considered their favourite aircraft. Avolon and CIT were leading players with four and three aircraft respectively.

In the first four months of 2014, 99 A320s were delivered, which represents a slight reduction over production rates in 2013. This may reflect a slight increase in



A321 production rates over the period when 44 units were manufactured, and represents an increase over the 100 made in the whole of 2013.

Similarly to the 737-800, two-thirds (65) of all 2014 A320s aircraft have gone to lessors. So far in 2014, AWAS and SMBC Aviation Capital feature strongly among lessors with 10 and nine deliveries. Chinese lessors have also taken a significant portion, with ICBC and China Aircraft Leasing taking five and three aircraft each. ICBC leased all five to Aeroflot.

In 2014 to date, KFW has arranged further loans to AWAS, BOC and Avolon. CA-CIB has also provided a loan to Hong Kong Aviation Capital for a lease to Jetstar. There have also been a number of bilateral direct loans. For example, Natixis and DBJ have arranged four ECA-backed A320s for Air China, while CA-CIB has provided commercial loans for Air Asia.

In 2014 the proportion of leased A321s has also exceeded 50% of delivered new aircraft, with lessors taking 23 of 44. ALC and ACG have been the biggest participants with five and four each. ALC leased four of these to Thomas Cook, while ACG leased to a variety of airlines. CIT has leased three to American.

Lenders have also actively participated. KFW has lent on two A321s to Jackson Square for leases to Finnair, and has also completed a direct loan on two further aircraft for jetBlue. The largest transaction in the market this year, however, is for nine A321s for LATAM on a commercial basis. In addition to CA-CIB and Natixis, Commerzbank and Societe Generale are co-arrangers.

Furthermore, the trend for leasing

A319s continued during this period with seven of 11 deliveries being made to lessors.

Widebodies

Widebody deliveries have also risen in recent years. The increase has not been linear, however. Since 2000, most years saw about 200 widebodies built and delivered per year (*see table, page 7*), with a dip towards 150 in the years immediately following 9/11. There was an increase of almost 50% in deliveries for 2012 and 2013. This represents a net increase of over 100 new aircraft per year.

The introduction of the 787 partly explains this increase, since it alone accounted for 46 aircraft in 2012 and 52 in 2013.

777-300 production also increased from 40 units in 2010 to 60 in 2012, and then 79 in 2013. The 777-300 accounts for most of the remaining widebody deliveries.

In contrast, Airbus widebody production has remained broadly stable. The A330-300 continues to be popular with slightly increased rates despite the forthcoming A350. This is largely offset by slightly reduced numbers for the A330-200. Meanwhile, the A380 build rate remains broadly stable for the time being.

777

During 2013, 98 777s were delivered, of which 79 were the newer larger-capacity -300 variant, while the balance of 19 comprised the -200.

Widebodies in general have been less attractive to lessors than narrowbodies,

Deliveries of 787s have now exceeded 60 aircraft per year. Almost half are being financed under operating leases, some are being funded with EXIM-backed loans, and others are being financed with EETCs.

given that fewer widebodies are in service, and the operator base is narrower, but lessors nevertheless accounted for a significant portion of 2013 deliveries: 32 of the new 777s were taken by lessors. Since the transition of widebodies between lessees is more complex and costly than for narrowbodies, because interior configurations in particular differ more, the average term of a widebody lease is longer.

From a leasing perspective, many of the financing providers are in the narrowbody sector, but often with different numbers. BBAM leased five 777-300s in 2013. BOC also leased five aircraft in the same year. Avolon, ILFC and Fly Leasing were also active with two aircraft each. Guggenheim, a smaller lessor, concentrates on widebody aircraft and took three aircraft in 2013, while DAE Capital in Dubai leased three 777-200s.

A number of financings were provided to lessors for 777s in 2013. Examples include DVB Bank's provision of a commercial loan to Intrepid which leased an aircraft to Thai, and a large ECA-backed transaction arranged by Goldman Sachs and CA-CIB to VEB Leasing, which leased six aircraft to Aeroflot.

Of those aircraft financed by other means, 20 Boeing widebodies were financed for American with an EETC structure arranged by Morgan Stanley and JP Morgan. A major loan transaction for 777s was arranged by Natixis and PTA Bank (the Eastern and Southern African Trade Development Bank), including PDP finance for Ethiopian.

In 2014 to date, the portion of leased 777s has been lower compared to 2013: only 23 777-300s and seven -200s have been delivered. Only three were leased to Aeroflot, Ethiopian and Air China. BOC added the latter unit for Air China, and GECAS leased one to Ethiopian.

All others are owned by their respective operators. Goldman Sachs and CACIB featured for ECA finance on four 777s. Standard Chartered has funded two aircraft for Bangladesh Biman under an ECA-backed structure, and one as a finance lease for Cathay. Emirates has also received two 777s, one of which was a CACIB-arranged finance lease, and the other a lease.



787

The 787 saw a production run of 65 units in 2013, which were delivered to a variety of new operators of the type in batches of four to eight aircraft. While ANA took delivery of a further six, China Southern took eight and Air India received six. Hainan and Japan Airlines also took six each. In Europe, British Airways (BA) and Thomson (TUI) each received four, while LOT and Norwegian each took three units. In North America, only United took two deliveries.

27 aircraft are recorded as being financed by operating leases. This is a high portion of the total, but includes six classified as leases to ANA, which were in fact leased from ANA Holdings.

Otherwise, ILFC leased three aircraft to LOT and Thomson leased two from BBAM and one each from Orix and MCAP. BBAM also leased a further two to BA. The Norwegian aircraft were also leased from undisclosed lessors, so that most of the aircraft in Europe were financed by leases.

For 787s financed by banks, Apple Bank featured with an EXIM-backed ECA loan for three aircraft while Deutsche Bank and Investec provided commercial loan funding for three aircraft at Air India. Additional aircraft appeared in EETC portfolios arranged by Citi.

There were some significant 787-8 transactions in the market in the first half of 2014. SMBC Aviation Capital, to date largely involved in the narrowbody market, is mandated for five aircraft at Air Europa. Bank of India has completed a bridge loan on two for Air India, and GECAS has completed two for TUI Travel. The largest published transaction

in the market, however, is an EXIM-backed loan for Kenya Airways for nine aircraft. Lenders to this are Afreximbank, Citi and JP Morgan.

747-8 and 767-300

Other Boeing widebodies were delivered in smaller numbers, comprising 24 747-8s and 21 767-300s. The majority of both types were delivered as freighters. Only Lufthansa (5), Cathay Pacific (3) and Korean (1) took passenger 747-8 variants, whereas Cargolux and Nippon Cargo each took delivery of three freighters. AirBridge Cargo and Atlas also received two aircraft each, while Cathay and Korean also took freighter variants.

Little information is available on sources of funding and financing. Helios leasing, however, provided the two aircraft for Atlas.

Similarly most 767s were delivered as freighters, with only 9 of 21 as passenger-configured aircraft. Of the passenger variants, four went to LAN in Chile and the remainder went to Air Astana, MIAT and Uzbekistan Air. All the freighters were delivered to UPS (8) and Federal Express (4).

A330

107 A330 were manufactured in 2013, almost equally split between the -200 (51) and -300(56) variants. Along with the 777, the A330 continues to be the most popular widebody aircraft.

The -200s were delivered to a broad operator base in 2013, with little concentration to any one carrier. China Eastern (8) was the largest recipient, with no other airline taking more than five. Five aircraft were also delivered as multi-

The 737NG was the second most numerous aircraft type delivered in 2013. More than 80% were the popular -800 variant. 737NGs were financed with operating leases, Jolcos, by EETCs, export credit, and commercial loans.

purpose military aircraft for use as air tankers and troop transporters for the UK Royal Air Force.

A330-300 deliveries were even more diversified, with no single operator taking more than five aircraft. The type was particularly popular in the Asia Pacific, however, with Singapore, Thai, Malaysian, Air Asia X, Philippine Airlines and Asiana all taking one to five deliveries.

The split between leased and owned units for both variants reveals an almost even distribution, with 23 and 26 aircraft of each financed by lessors in 2013. Of the 49 leased aircraft, BOC was the largest lessor with six aircraft comprising a mixture of both variants. ALC and Intrepid also took multiple aircraft of each variant. By contrast CIT and GECAS only funded -300s, and Guggenheim only one -200.

As might be expected, a number of aircraft were funded through export credit, with CACIB and KFW leading six ECA-backed loans. CACIB also featured as a commercial lender, as did DVB and Commonwealth Bank of Australia (CBA). Citi and Morgan Stanley also included the type in EETC financing for US Airways.

In 2014, 36 A330s have been delivered so far, although the production rate of the shorter -200 variant has slowed considerably to 11 units. The A330-300 remains a strong contender for lessors, with 11 of 26 aircraft funded by operating leases. This reflects the wide operator base that the type now has, and that there is also a proven secondary market. The aircraft is also popular in the ACMI market. BOC has leased three to Iberia and CIT has provided two for Cebu Pacific, while Intrepid continues to feature with a lease to Philippine Airlines. Standard Chartered also features with a finance lease of two to Cebu.

A380

In 2013, 25 A380s were delivered, with Emirates continuing to take more than any other operator. A number of new carriers, including BA, took delivery of their first aircraft. Thai received three units and Malaysian and Korean each took two.

Nine of the 2013 aircraft were leased. Emirates continued to take a mixture of

The A320 family accounted for the largest number of deliveries in 2013, with 486 aircraft. A similar array of financing techniques used for the 737NG were used.

leased and owned aircraft, while BA leased two from BBAM, and Malaysian also chose leasing for their two aircraft. Air France and Lufthansa each financed an aircraft using a BNPP-arranged Jolco. Four of the Emirates aircraft were also Jolco-financed through CACIB.

In 2014 to date, nine aircraft have been delivered, including four to Emirates, three for BA and two for Lufthansa. Apart from a single aircraft leased to Emirates, all have been financed outside the operating lease market. Geneva-based Novus arranged the latter, with loans from Arab Bank and Samba. There are also a number of mandated transactions for pending deliveries at Asiana, Qatar.

Regional jets

Embraer E-Jet family

Traditionally, RJs form a smaller part of the market, but the larger 100-seat category RJs are now being produced on a significant scale. 94 E-jets were delivered in 2013. The E-190 with 49 units was by far the most popular variant and is now being delivered in equivalent numbers to the popular A330 and 777. The aircraft are also going to a wide range of operators, with the biggest 2103 recipients being Conviasa (7) and Jet Blue (6).

Such a spread of operators means that for the first time, mainstream lessors are beginning to take an interest in such RJs, although Embraer regards the E-190 and -195 as small narrowbodies. While there is still a long way to go before leasing penetration reaches parity with other types, almost 25% of all E-190s were leased in 2013. BOC was the largest lessor with leases to KLM Cityhopper, Jetairfly and Air Astana. China Development Bank also leased a number to China Southern.

Although most E-190s delivered so far in 2014 were leased by BOC, *Aircraft Commerce* would caution that since only nine of this variant were delivered so far, it is still too early to conclude that leasing is yet the dominant form of E-Jet financing. In fact, the E-175 was delivered in greater numbers so far this year with Republic and Skywest taking 14 of 15 aircraft. Of these 4 aircraft were leased.



Bombardier CRJ family

In contrast to the E-Jet, Bombardier's CRJ product line is now declining, with the possible exception of the larger CRJ900/1000; both of these, and in particular the CRJ1000, are being delivered in small numbers. The CRJ900 accounted for 18 of 32 deliveries, with most of these going to Endeavour Air in the US.

Of the CRJ1000 deliveries, all went to Garuda and most were leased by Nordic Aviation Capital.

In 2014, CRJ900 production at 14 units is holding up stronger than in 2013, but all have gone to the same US operator. Production of the CRJ700 has meanwhile ceased.

Sukhoi SSJ100

The SSJ also continues to deliver in small numbers to its principal customers at Aeroflot and Interjet. There were 13 aircraft manufactured in 2013, and nine so far in 2014. Gazpromavia and Lao Central Airlines also took aircraft in 2013.

VEB continues to provide a leasing solution for Aeroflot, but the most significant recent transaction is a completed ECA-backed facility for 20 SSJ-100 for Interjet arranged by Natixis, with Deutsche Bank and Intesa Sanpaolo as principal lenders.

Concluding remarks

This article examined the deliveries of new aircraft and how they have been financed, rather than orders and future backlogs or indeed the movement of used aircraft.

All market categories from regional aircraft to widebodies have grown, but narrowbody products from Boeing and Airbus continue to dominate. This will grow further over the coming years with the pending arrival of the A320 and 737MAX variants.

This demand is likely to be fuelled by the continued growth of low-cost carriers (LCC) on the one hand, and growing demand for short-haul services in developing nations on the other.

Equally, there are risks to these drivers as a recent report by ICF International 'An Alternative Aviation Growth Forecast' suggests. It says that LCC penetration may not continue at the same rate as in recent years in large markets like China. It also points out that growth forecasts take insufficient account of better revenue management, and therefore higher load factors absorbing some of the projected travel demand.

Traditionally the finance community favours the most popular classes of asset. This is unlikely to change, although some lessors and lenders may reduce their exposure, while others may grow faster than the market in general. This favours narrowbodies, which are increasingly seen as a standardised product, if not a commodity.

This creates opportunities elsewhere. While narrowbodies are the asset that most financiers want and the financial crisis has passed, the increased supply of money means that returns are under pressure. This can benefit other categories of aircraft where financial returns for investors or lenders are still greater. **AC**

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