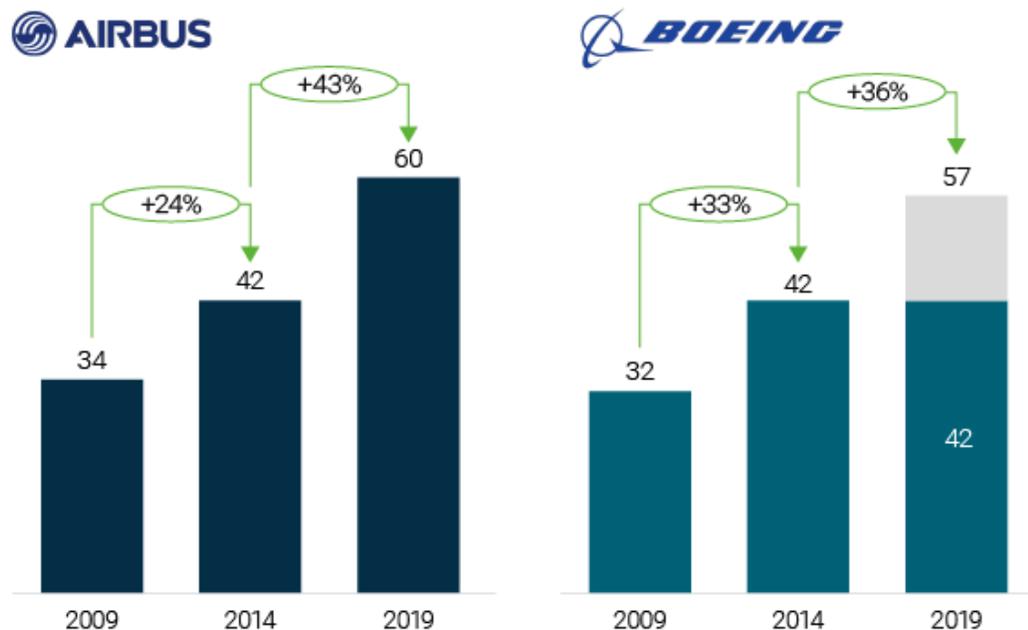


BOEING 737 MAX HIATUS CAUSES TURBULENCE IN GLOBAL AEROSPACE SUPPLY CHAIN

The AlixPartners A&D Minute

The Airbus A320 family and Boeing's 737 line are at the heart of the global aerospace supply chain. Bustling demand from airlines for the two competing jetliners over the last few decades set a frantic pace for the entire production ecosystem. And this beat grew at an even more furious pace in the last decade, trying to satisfy the seemingly insatiable appetite for narrow-body aircraft (figure 1).

FIGURE 1: PRODUCTION RATE EVOLUTIONS OF THE AIRBUS A320 AND BOEING 737 FROM 2009 TO 2019



Source: Airbus and Boeing press releases

Note: The gray area in Boeing's 2019 bar reflects the gap between the 737's planned and actual numbers

Airbus's 2010 launch of the A320neo was a major accelerator in the market as airlines could not pass on an aircraft capable of delivering up to **15% fuel burn improvement**. Boeing followed that lead by launching the 737 MAX in 2011, going on to build a backlog of more than **4,500 aircraft** before the two crashes changed everything. In December 2019, Boeing announced it was going to **stop 737 MAX production**, and the hiatus is now effective. Current production rate stands at zero. What does this mean for the global aerospace apparatus?

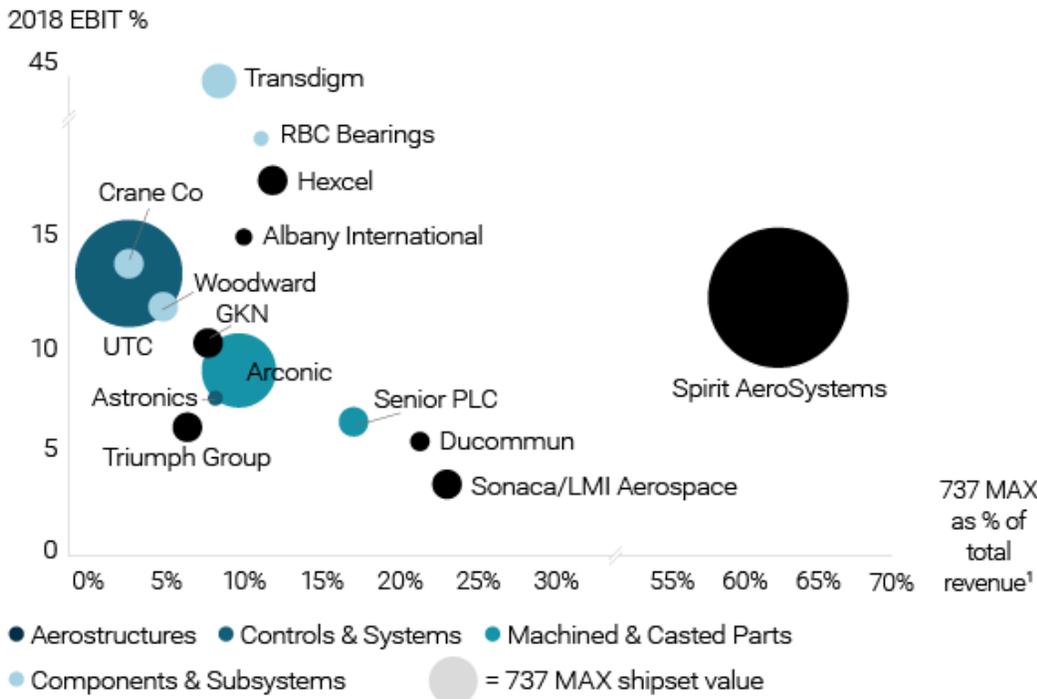
AN ALREADY-STRESSED SUPPLY CHAIN

The aerospace supply chain has experienced accelerated growth driven by the narrow-body market surge. Aerospace suppliers, especially for equipment and systems, were traditionally very profitable, significantly more than aircraft original equipment manufacturers (OEMs). In recent years, however, OEMs have successfully managed to recapture a larger share of the commercial aerospace profit pool, thanks to cost reduction and redesign programs.

Every supplier fought hard to secure or extend its share on narrow-body programs, as this would secure revenues and jobs for the coming few decades. This aggressive competition soon translated into increased financial pressure as large investments into machineries, people, and dedicated plants were required to support the ever-increasing production rates. Some of these suppliers became more fragile, with weaker balance sheets. However, their position on the 737 or A320 programs and the resulting predictable revenues were something they could – literally – take to the bank.

Since the 737 MAX production stoppage, things have changed radically. For some suppliers, this program accounts for 10-20% of overall revenues and 20-35% of overall profits (figure 2).

FIGURE 2: EARNINGS AND REVENUE EXPOSURE FOR SELECT 737 MAX SUPPLIERS



1. Estimate done assuming 737 MAX production rate at 57 aircraft per month
 Source: Data from CapIQ, Company annual reports, press releases, earnings calls, investor presentations; AlixPartners analysis

Senior PLC, for instance, is supplying a **\$350,000 shipset per aircraft**. At a production rate of 57 shipsets per month – which had been **originally planned for 2020** – this would have resulted in \$240M in annual revenues. Assuming a six-month stoppage, the supplier stands to lose at least \$120M in revenue.

Stopping such a massive supply chain is a big deal that will have ripple effects all the way down to the smaller suppliers. Tier 2 and Tier 3 suppliers are usually smaller and less financially solid companies. While Boeing is likely to support direct suppliers and maybe some lower tier ones, it may have less visibility on the health status of a supplier that is critical to operations but located farther down the chain.

Without support, most of these lower-tier suppliers are likely to be forced into quickly putting **drastic measures in place** to limit impact on financial results. This will translate into headcount reduction, which comes with the risk of losing trained production and engineering talent or furloughing a significant part of the workforce. Holding off on new investments, capital expenditures, and maintenance support, reducing overheads, and carefully managing cash will also be on the menu.

Suppliers with a significant exposure to the 737 MAX should urgently assess the potential impact and proactively build a mitigation plan, modelling various scenarios to determine:

- Cash impact and appropriate levers to conserve cash and raise money if necessary
- Cost impact of maintaining ramp-up readiness while trying to reduce cost base
- A resource plan that will allow for a reduction in people costs while protecting key competencies needed for a production restart
- A supply chain visibility and mitigation plan to preserve ramp-up readiness and increase production at a set rate

WHEN WILL THINGS GET BACK TO NORMAL?

Despite the recent increase in communication from Boeing, there is still uncertainty around when 737 MAX production will restart and at what rate. It is still not clear when the plane will get certification to resume flying in the U.S. and other parts of the world. According to the Boeing CEO, purging the existing inventory will take **18 months once deliveries resume**. It may be hard to reach the pre-crisis production rate before the end of 2022, with a rate of 57 delayed until 2023.

When 737 MAX production finally starts again, it will likely be at a rate within the **15 to 25 range**. Boeing, in fact, will also be busy delivering the more than **400 already-manufactured aircraft** to airlines – a time- and resource-intensive task that is likely to constrain the production ramp-up.

For Boeing, increasing production back up will require planning ahead and resynchronizing the global supply chain. Forging and castings work will need to start several months before assembly, and raw materials like titanium that are used in the former process have a lead time of roughly one year. This means that decisions made now by Tier 3 and 4 suppliers will affect Boeing's 2021 production rate.

In the meantime, Airbus could keep increasing its own production, potentially adding to the supply chain pressure.

THE CRISIS MAY TRIGGER A MARKET CONSOLIDATION

Suppliers must quickly assess how to sustain business through this stoppage, how to maintain ramp-up capabilities while preserving cash, and how to potentially take advantage of the delay to improve their overall competitiveness and come out stronger.

Suppliers that don't may become rapidly exposed to serious cash and balance sheet issues and become targets for consolidation. Some are already seeking help. Possible eventualities include:

- **Strategic buyer buyouts:** Competitors with no exposure to the 737 MAX may be interested in helping consolidate the sector and buying participation into the Boeing narrow-body program at a discounted price. Cost synergies may help in the short term and combined resources could be useful in any future production increase.
- **Private equity buyouts:** Besides funding and strengthening the balance sheet, these firms may also provide crisis management expertise (such as, rightsizing the business, cash preservation, etc.) to bridge the gap until the 737 MAX is fully back on track. The equity story seems quite appealing and the horizon for a good return on the investment is likely close to three to five years.
- **Debt financing:** Some suppliers may need to expand their credit lines while breaching covenants on existing debts, resulting in a ratings downgrade. This may open opportunities for 'loan-to-own' investments for private equities and specialized players.

It is in the interest of Boeing and Airbus to preserve the supply chain, and they may have to play an active role in financing the most critical suppliers – either through loans or by accelerating payment of development costs usually recognized at shipset delivery. Not only are Boeing and Airbus most interested in a healthy and stable supply chain, they are also the most able to make investments in expanding production capacities and supporting research and development of new programs.

Aerospace executives around the world are now dealing with several dilemmas:

- How do I get past the cash crunch until volumes ramp back up?
- What planning scenarios should I use and what actions should I implement for each?
- Do I have adequate cash management capabilities?
- Which options for a cash infusion are best for our company?

FOR A DEEPER DISCUSSION ABOUT THE CHALLENGES AND SOLUTIONS ASSOCIATED WITH THE 737 MAX PRODUCTION STOPPAGE, CONTACT:

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These are the moments when everything is on the line – a sudden shift in the market, an unexpected performance decline, a time-sensitive deal, a fork-in-the-road decision. But it's not what we do that makes a difference, it's how we do it.

Tackling situations when time is of the essence is part of our DNA – so we adopt an action-oriented approach at all times. We work in small, highly qualified teams with specific industry and functional expertise, and we operate at pace, moving quickly from analysis to implementation. We stand shoulder to shoulder with our clients until the job is done, and only measure our success in terms of the results we deliver.

Our approach enables us to help our clients confront and overcome truly future-defining challenges. We partner with you to make the right decisions and take the right actions. And we are right by your side. When it really matters.

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