

BOEING UNVEILS RE-ENGINEED 737

MAX



After months of uncertainty over how Boeing would respond to the rising challenge of the Airbus A320neo, the US manufacturer settled the debate in August 2011 by launching the MAX – a re-engined version of the 737.

BY: Tom Gregson ILLUSTRATIONS: Boeing

ALTHOUGH BOEING GAVE EVERY SIGN until as recently as this summer's Paris Air Show that it was seriously considering an all-new design, the voice of its 737 customer base came through loud and clear. After testing the waters with a potential "New Small Airplane", Boeing decided the pros of re-engining the tried and trusted 737 outweighed the cons of developing a more costly, and risky, new jet. The result is the MAX, which was approved by the Boeing board of directors following commitments for 496 aircraft from five customers, only one of them so far identified as American Airlines.

The MAX family will consist of the 737-7, 737-8 and 737-9, equating to the current generation 737-700, -800 and -900. The main difference will be the LEAP-1B engine, a smaller version of the advanced new LEAP engine already in development by CFM International for the A320neo and the Chinese C919. Unlike the Airbus twinjet, which is also offered with the Pratt & Whitney PW1100G geared turbofan, the MAX will only be available with the LEAP.

BOEING'S MOVE sets the scene for a battle royal in the coming years with Airbus for the vibrant 100- to 200-seat market. While this sector has long been the backbone of the commercial jetliner industry, it is currently experiencing an unprecedented explosion in growth. To cope with demand, Airbus and Boeing have set 42-per month production targets for the A320 and 737 respectively, with Airbus likely to go even further. Yet Boeing is aiming to take the lion's share and MAX is destined to play a key role in its plan to grab 70% of the market by 2030, bringing in expected sales of 23,370 units valued at USD 1.95 trillion.

However, it is Airbus that currently holds the lead. By its own admission, Airbus has been pleasantly surprised by the success of the Neo which, with close to 1,100 orders and commitments by late September 2011, has attracted almost twice the number it hoped for at this early stage in the contest. Furthermore, with a tar-



“ We want to limit the scope of work with this airplane. We’re going to make this the simplest re-engine possible, only the engine and a few other small things.”

JIM ALBAUGH, CEO, BOEING COMMERCIAL AIRPLANES

geted service entry of late 2015, Airbus has an almost two-year lead over the Boeing competitor.

At the same time, the response from Boeing's customers has been equally dramatic, although the longer term outcome of the marketing war will inevitably depend on Boeing's ability to deliver on its performance claims. These hinge on a predicted 7% operating cost advantage over the competition and a 4% lower fuel burn than Neo. However, as of September, few details of the MAX design, or even the configuration of the LEAP-1B engine and its all-important fan size, have been revealed by Boeing.

A HUGE PART of Boeing's game plan with the MAX is keeping things simple and maintaining commonality with the existing family. "We want to limit the scope of work with this airplane," says Boeing Commercial Airplanes' CEO Jim Albaugh. "We're going to make this the simplest re-engine possible, only the engine and a few other small things." These "things" include a re-design of the aft fuselage to make it easier to make and maintain, as well as lighter. The relatively short list also includes some sys-

tem upgrades, including a move to fly-by-wire spoilers, as well as more advanced high-lift devices and other wing improvements.

PART OF BOEING'S DILEMMA with MAX is to know where to stop. The sales success of the 737 Next Generation, and its current backlog in excess of 2,100 orders, speaks for itself and makes it more difficult for Boeing to evoke wholesale change with the introduction of the MAX. Yet the spiralling cost of doing business and the launch of the fuel-efficient Neo demanded a significant response from Boeing which has targeted a 10% to 12% fuel-burn improvement over the existing 737.

As a key part of the compromise, Boeing is sticking with a virtually unchanged flight deck, so cross-training 737 pilots for MAX will be easier. The bulk of the aircraft systems and structure will also remain unchanged, making it easy and relatively seamless for current 737 customers to absorb the newcomer into their fleets. Boeing is currently planning for a service entry around 2017, which will astonishingly be almost 50 years since the introduction of the first 737 in 1968! ◀