



New Airplane Introductions ©

by Dan Pemble, McDonnell-Douglas /Boeing Field Service Rep. (retired Sept/2009)

A fact that is well understood by experienced aviation professionals is that no matter the manufacturer and airplane type, there will always be “growing pains”, “teething problems”, “learning curves”, etc., as associated with introducing ALL new airplane types into an airline’s fleet! Less-experienced/newer and start-up airlines who don’t understand this will always be less prepared to deal with the consequences when their shiny new airplane has a technical “glitch” and cannot make its scheduled flight!

Following a new airplane’s initial entry into airline revenue service, the length of time required to arrive at a “mature airplane” that performs per the manufacturer’s design intent and airline expectations (and satisfaction) may range anywhere from months to several years! A new airplane is considered to have matured when it consistently achieves and maintains a high “Technical Dispatch Reliability” rating. Technical Dispatch Reliability is defined as: The ratio of the number of flights delayed because of technical faults to the total number of scheduled flights. As simple examples: if 4 flights are delayed out of 100 total flights, the dispatch reliability rate is 96%; that is 96% of all scheduled flight departures are on time; if just 1 flight in 100 is delayed, the dispatch reliability rate is 99%. Many modern-day high-technology commercial airliners will in fact eventually achieve outstanding Technical Dispatch Reliability ratings of 99% and higher!

Each individual airline Customer who takes delivery of a given airplane type has an operation and experiences with that airplane that are unique to most others who operate the same airplane! Certainly some airlines are better at introducing new airplanes than others. Also the initial technical reliability of some new airplanes is better than others.

For a new airplane “launch Customer”, the first time that any technical fault occurs when the airplane enters service, that fault is considered to be a “first-time-unique” fault! Thereafter, each individual additional & different technical fault that occurs for the first time is also considered to be a 1st-time-unique fault. With vigilance and proper recording & tracking of all faults that occur initially on just-introduced new airplanes, it can soon be determined exactly which technical faults are “frequently-occurring faults” versus “less-frequently-occurring faults” and those that are so-called “1-off” (rarely-occurring) faults. Then, the challenge faced by the airline and the manufacturer’s on and off-site Customer Support team is to find solutions to minimize the effects that these faults will have on overall airplane operations; while SAFETY SHALL ALWAYS BE THE CONTROLLING FACTOR, the most immediate and initial common goal is to develop “work arounds” to keep the airplane moving – to minimize the impact of faults on technical dispatch reliability!

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As stated earlier, some airlines do a better job than others in introducing new airplanes! Some (but not all) variables that come into play here are:

- Overall Airline age, experience, & expectations
- Airline management structure and personnel
- Airline degree of training & preparation for new airplane introduction
- Airline maintenance program
- Airline spare parts provisioning & location of parts
- Airline atmospheric environment
- Level of support provided by Manufacturer and Suppliers

I'd like to expand a bit on the last bulleted statement above:

-Field Service Representatives who will be on site at Customer airlines must be adequately trained, have enough general practical experience & knowledge, and be innovative in actually delivering 24/7 on-site technical support when the URGENT need is recognized - in lieu of simply being “clerks” who send messages back and forth to the home-based support organization!

-Manufacturers and Suppliers must necessarily realize that if genuine airline “Customer Satisfaction”, as related to a new airplane is to be achieved, then the Manufacturers and Suppliers must feel the same real & immediate sense of urgency that the airline feels in getting technical issues resolved in the timeliest manner! Obviously, the longer the solution to a significant technical issue is “dragged out” by the Manufacturer and/or the Supplier, the longer it will continue to impact the airline!

As also stated previously, the initial technical dispatch reliability of some newly-launched airplanes may or may not be better than others. Just a few of the reasons for this are:

- A new airplane that is derived from a previously-proven, mature and reliable airplane may achieve better initial in-service dispatch reliability than a totally-newly-designed airplane.
- A Manufacturer's practice of pushing R&D ideas that are not thoroughly thought-out and adequately-proven and tested into the design of a component or as part of an integrated system on a new airplane may indeed have a heavy negative impact on that airplane's reliability.
- Failure of a Manufacturer to understand that faults considered to be “nuisance items” during flight test that were routinely “reset” cannot be handled in the same manner at an airline on an in-service airplane! For airlines, to minimize the impact on dispatch reliability, specific Flight Crew Operating Manual procedures are required to deal with each individual so-called “nuisance fault/anomaly” and often no such procedures are initially available from the Manufacturer.
- Manufacturer's quality issues

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Over time, to permanently resolve issues that have the greatest impact on technical dispatch reliability on a newly-introduced airplane, a variety of actions are normally taken that may include (but are not limited to) the following:

- Design-change action/Service Bulletins issued by the Manufacturer & Supplier
- Additional Airline training
- Additional Airline parts provisioning & parts positioning
- Airline/Manufacturer's operating procedural changes/technical tips
- Airline maintenance program enhancements
- Periodic Airline/Manufacturer technical review meetings to establish a clearer mutual understanding about how & when significant technical issues will be resolved

So, given all of the preceding, there is no question that there are many challenges related to introducing a new airplane into an airline environment. As the author of this article, I have personal experiences in introducing several new airplanes to various world airlines. It is therefore my hope that by sharing some of my own experiences here, perhaps it will be of some assistance and benefit to airlines in their initial stages of introducing a new airplane to their operations.



If you have questions or comments about the contents of this article, please contact me at the following e-mail address and it will be my pleasure to reply back to you!

jetvet@cfl.rr.com