



## ***Impact of One Engine Inoperative Procedures in Obstruction Evaluation Aeronautical Studies***

**Background** - In mid-2014, the FAA posted the following NPRM: 14 CFR Part 77 [Docket No. FAA–2014–0134] RIN 2120–AF90; “Proposal To Consider the Impact of One Engine Inoperative Procedures in Obstruction Evaluation Aeronautical Studies”

This action proposes to establish a new policy that would consider the impact of one engine out procedures in the aeronautical study process conducted under existing 14 CFR part 77 criteria when the airport operations potentially affected by a determination of no hazard are able to use a dedicated one engine out flight path.

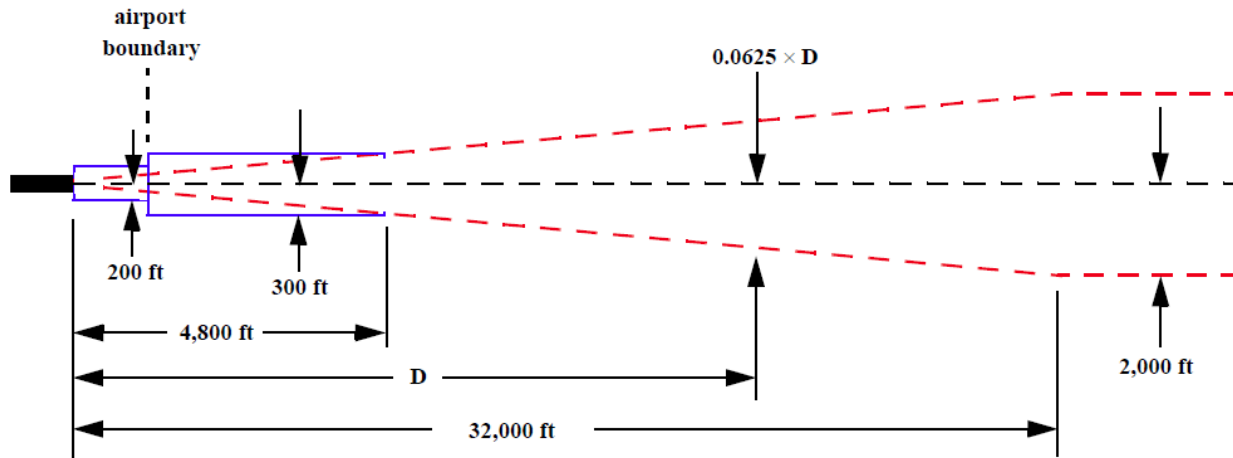
Since this NPRM was posted, Boeing has received a number of inquiries from airports and their consultants requesting access to various Airplane Flight Manuals (AFM) for use in developing one engine out departure paths for their airports. Boeing only provides the Airplane Flight Manuals (AFM) to the aircraft operators and their associated regulators. Please note that newer versions of the AFMs do not contain the aircraft performance sections, as the performance sections are now computer based programs.

**Discussion** – Boeing’s Airport Compatibility Engineering Group has been participating with ACI-NA on the one engine inoperative (OEI) issue. In general, only the manufacturer or the aircraft operators can do the performance analysis to support developing the OEI surfaces for actual flight conditions. Yet as is known, many operators treat this information as proprietary data. Consequently, an airport with multiple aircraft operators may find it challenging to develop a single path. What we have offered to ACI-NA and FAA is that for airports which can support a straight out departure, then they should use only the most critical surface for two engine airplanes, which is the 62.5:1 slope commencing at Reference Zero (35’ above the takeoff surface). The 62.5:1 slope was based on the twin engine min FAR second segment gradient requirement (2.4%) and subtracting the net to gross delta for obstacle clearance (0.8%) to come up with a minimum second segment gradient requirement of 1.6%. This is the most conservative of the slopes and we are not aware of any air carrier airports in the US that do not have two engine airplane operations (737/A320/777/A330/787/etc).

To assist identifying which obstacles to consider for the OEI path, the following diagram is the obstacle accountability area (OAA) for a straight out departure (or less than 15 degree from centerline), per AC 120-91:



## Obstacle Accountability Area (OAA) for a Straight Out Departure



For any OEI paths involving turning departures, we are recommending that consultants/airports work with our Jeppesen team on developing those procedures. The point of contact at Jeppesen is Mark McCabe and his contact info follows:

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The Jeppesen team can provide support on the straight out paths as well.

You can also contact us if you have additional questions:

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