

SOUTHERN CALIFORNIA THRUST. The story begins with a device to automatically increase the thrust on an aircraft's good engine(s) after an engine failure. The purpose is to limit the normal all engine thrust to improve engine life by using less than full rated thrust for takeoffs; but in the event of an engine failure, without the automatic system, there would be insufficient thrust from the remaining engine(s) to meet the engine out climb gradient criteria. The FAA called this system ATTCS for Automatic Takeoff Thrust Control System, but one manufacturer called it ART for Automatic Reserve Thrust and there was another name I don't recall.

Tom Foxworth was a member of the Air Line Pilots Association (ALPA) Airworthiness and Performance Committee (A & PC) and had been the former chairman. He was a Princeton graduate in Aeronautical Engineering and a pilot for Pan American; also the world's leading authority on the history of the great air races, being the author of "The Speed Seekers", the definitive work on the subject. He represented ALPA as representative to the International Federation of Air Line Pilots Associations (IFALPA) and the International Civil Aviation Organization (ICAO). Tom had taken an absolute position against the ATTCS, having written an article about it and had obtained an IFALPA position against it at the latest convention; all without consultation with the rest of the committee. This position caused considerable concern for Boeing since they had three aircraft delivered to Hughes Air West with the system which was to be used for operation out of Mexico City in lieu of putting JATO (jet assisted take off) rockets on the aircraft.

As it happened, the Airworthiness and Performance Committee was meeting in Washington when this all came about. Tom was not present. During the meeting, a call was received from Jim Gannett, a Boeing test pilot whom the committee dealt with from time to time, informing us of the IFALPA position (just taken) and their problem. Jim asked if there was any way ALPA could accommodate the system. The committee considered this request and came up with a list of several conditions, limiting the authority so as to not unduly increase the risk for all engine takeoffs and a requirement for an off switch which became the most objectionable item. Our reasoning was that the system would not be aware of operating conditions and there would be cases where a crew would want the maximum rated thrust from all engines for a takeoff, but without an off switch, in the event of an engine failure, the ATTCS would over-boost the remaining engine(s) which could result in subsequent failure(s). This condition did expose a weakness in the logic for its use since it would be a simple matter for flight crews to use fully rated thrust when the conditions required. However, the engine manufacturer would write down the engine life warranty for each use of fully rated thrust and there was no way the Hughes Air West pilots were not going to use the system regardless of our position. Reduced thrust takeoffs were already an industry practice so there was little real difference.

Boeing and the A & P Committee agreed on the terms, but this caused a considerable problem for the A & PC. For ALPA to make this agreement with Boeing we would have to non-ratify the IFALPA position within six months or it would automatically become an ALPA position. As it happened, Tom for all of his intelligence was politically naive and had just embarked upon a legal action against his Master Executive Council (MEC), the highest authority for the ALPA pilots on Pan American. A pilot may not serve in any position representing ALPA without his MEC's approval, so Tom's approval was revoked. This left the A & PC and me in particular, as chairman, with the problem of going to the ALPA Executive Committee and asking for their non-ratification of the IFALPA policy which our man had just achieved, and also attending the next IFALPA Airworthiness Study Group as U.S. Representative, replacing Tom. Tom was very well liked in this group and it was a difficult meeting.

In settling this matter with Boeing, there was a meeting in Phoenix where Boeing presented performance data substantiating their position. As it was generally difficult for ALPA to get this kind of

data we were delighted to have it. I began to reverse engineer some of the numbers and discovered that the engine out climb gradient for a B-727 at 400 feet in the required configuration was only 2.55 percent and not 2.7 percent as required by the regulations. Upon query to Boeing, the answer was not convincing, so on a trip through Los Angeles, I called Bob LeSuer in the certification branch of the Western Region of the FAA and asked if perhaps Boeing had been allowed a density altitude correction. He immediately said no, because the regulation said the gradient was required at each point. My trip was going on to San Diego and back to Los Angeles for a layover so I called Bob again when I arrived back at Los Angeles. He said he was wrong and that my guess was right.

Some time later, I was at Boeing with the evaluation committee of the B-767 and on a break I had yanked a Boeing engineer's chain by saying I didn't mind so much that Boeing had gotten density altitude correction to 400 feet, but I felt it should be disclosed. Upon this, he said "Oh, we call that Southern California Thrust; we were working the numbers on the DC-9 and found out Douglas got it so we asked for the same thing."

So, despite the conflict of signals regarding the ATTCS, ALPA could not have planned more carefully, if we had had the foresight to do so, to ferret out the truth about Southern California Thrust; and if we were going to have ATTCS anyway, we did get some protections out of the deal, which proves that even a blind hog finds some acorns. Aside from this example, there are a number of other cases of relaxing interpretations of the certification regulations, some of which will be pointed out later. What you read is not necessarily what you get.