

Our ever-observant eagle eye, Fred Horky, noted the mis-identification in a recent Phoenix chapter "Corsair" newsletter of a model labeled as being of the Lockheed Jetstar. When he wrote the editor to let him know of the gaff, he CC'd me as a courtesy. This led to our e-discussion of Lockheed's four-engine executive jet (in USAF use the C-140), in which Fred mentioned the Jetstar's unusual pitch trim system. In it, the entire tail assembly moves, not just the stabilizer. In response, I wrote back to Fred..

"Hmmm ... Another Old Dog Learning New Tricks moment! I spent many years as a docent in the Air Force Museum's Presidential gallery, and never know that the Jetstar's entire vertical stab moved for pitch trim. Interesting."



Fred continued the discussion about the Jetstar:

"... the Jetstar's pitch-trim system is indeed unusual! But while an all-moving tail where the entire empennage of rudder and horizontal stabilizer nods up and down as a unit is UNUSUAL, it's NOT the ONLY airplane ever so equipped.

"In fact, I found others so equipped, and a linkage between them!

"Below: note that the Jetstar's fin and stabilizer assembly (below) pivots on its hinge at the base of the fin, leaving a unique, ever-changing bare metal "stripe" where areas of the fin moving inside the stationary fin fairing are left unpainted, presumably to preclude paint rubs.



“That “stripe” was even seen on camouflaged C-140A Jetstars used for USAF electronic airways facility checking.



“It took some cogitating, but I finally rediscovered another airplane where the whole tail wags up and downas it turns out, a whole series of them.



“That type was an airplane I’ve always admired for its looks and efficiency, the Mooney M20. Other Mooney designs also have the all-moving tail, making it a sort of trade mark for designer Al Mooney.

“To quote Wikipedia: “The empennage of the Mooney M20 is easily recognizable by its unique tail fin with a vertical leading edge. (The tail fin looks as though it is "leaning forward", but it is approximately vertical in level flight, depending on trim setting.) The horizontal tailplane, which consists of fixed stabilizers and trailing elevators, has no trim tabs. **The entire tail assembly pivots at the rear of the fuselage to provide pitch trim.**” (My emphasis added.)



"But surfacing from even deeper in the grey cells were memories from my days over seventy years ago as a small airport "line boy". Back then, as I was "propping" Cubs, pumping gas into Aeroncas, and washing Cessnas, I pipe-dreamed of flying the Mooney Mite. The Mite was an airplane for the wanna-be-fighter-pilotbut out of my Walter Mitty reach! It even looked sort of like a mini-fighterand it had an all-moving tail. The example pictured below is in the National Air & Space Museum collection. (For modelers: Scalemates reports the Mite kitted in 1/48th by Olin in 1949, then Lindberg in the 50^{'s} through 70^{'s}, and finally Pegaso and Necomisa after the kit molds went off-shore.)



"To quote <https://mooneymite.org/features.htm>, about the Mite's trim system: "The "Safe-Trim" system, a version of the patented "Simpli-Fly" system, integrates the trim with the flaps. A single crank, operated with the left hand, moves the entire tail assembly (the fin and horizontal stabilizers). As the trim control is gradually cranked to increase the 'up' trim for landing, the flaps are deployed to the maximum of 16.5 degrees down. That may not seem like much, but they have a wide span and thus are very effective. The L model Mite uses cables to operate the trim, while the LA and C models use push-rods."

But one final phrase in that Mooney link is most interesting (again, my emphasis):

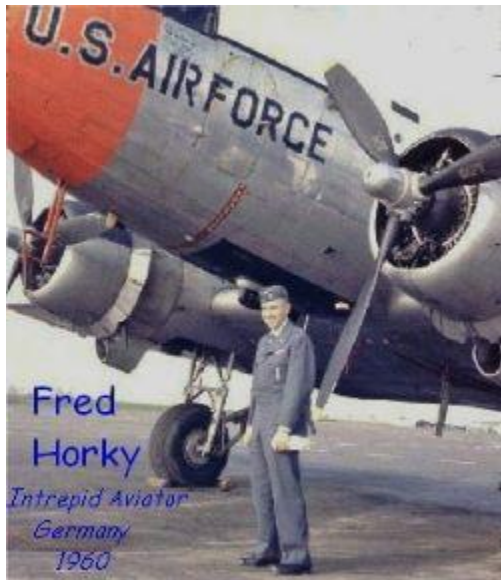
"Al Mooney worked at Lockheed for a time, and left his signature on the Lockheed Jetstar which also moves the entire tail group to trim."

"While there are lots of on-line in Jetstar links that mention its trim system, no reference to WHY Lockheed used Mooney's system. Perhaps it was the easiest way to fit the chosen power package for pitch trimprobably a jackscrew of some sortwhich was too wide to fit in the width of the fin.

"Or maybe it really WAS just that Al Mooney had talked Kelly Johnson into using his system. It's not specifically mentioned in Mooney's bio in Wikipedia (https://en.wikipedia.org/wiki/Al_Mooney) but he is mentioned as the Jetstar's designer when working at Lockheed. And "Kelly" Johnson was certainly was not afraid to approve an unusual design featureif it worked.....

"Everything I've read reported that all who flew the Jetstar really liked it. The two prototypes originally flew as a twin-engine designtwo (Brit) Bristol-Siddeley "Orpheus" engines ...but supposedly they couldn't negotiate a satisfactory engine contract in this country so revised it with

four (smaller) P&W engines. Interestingly, at least the Wiki source on the engine says that Lockheed ..more specifically, Kelly Johnson hisownself....liked the Orpheus engine so much that a twin-Orpheus option was left open for customers!



Hardly a **Jetstar**, but a Grand Old Lady, nonetheless! Fred's signature block picture shows him with his "Douglas Racer" (C-47) on arrival at RAF Bovingdon, just outside of London on a weekend X-C (Cross Country in Military Vernacular) in 1960as a bachelor 1st/Lt!

Ah, the "Good Old Days"