



Despite its bulk and weight, AOPA's Max Karant found the three-jet Boeing 727 shown above an easy, pleasing plane to fly. He was particularly impressed with in-flight quietness and engine-out stability that is provided by tail-mounted jet engines

New View Of A Man-Size Jet

PILOT Editor finds new Boeing 727 heavy jet transport easier to fly in some respects than many general aviation light twins, but high-speed low-altitude flight keeps all eyes busy

by MAX KARANT • AOPA 18

Is the jet transport the deadly monster it is made out to be by Jet Age proponents of more and more control over all the airspace? Are its flight characteristics such that all other aircraft must be penalized, and their use inhibited, because of the constant hazard that is present whenever a jet transport is in the air?

We've had two looks at the nature of this kind of flying recently. In the first, I flew a round trip coast-to-coast in the jump seat of a United Air Lines DC-8 but, because it was a regularly scheduled passenger flight, I was not permitted to touch the controls. In the second, which was most recently, I actually did get to fly a three-engine Boeing 727 for a half hour during a routine test flight at Seattle.

There are certain basic conclusions that seem quite clear as a result of these two exposures. At low altitudes the pilots of the jet transports must certainly keep their eyes peeled at all times, particularly if they neglect to slow down these planes. But there's no question whatever in my mind that they can see where they're going, and they can see and avoid other traffic, just as we do in our "old-fashioned" airplanes. If they permit their speeds to stay relatively high—and these speeds can be as high as 500 m.p.h. during the descent to approach altitude—the men in the jets' cockpits are very busy, as they should be. Everyone's working at watching for other traffic, including the flight engineer and sightseers like myself.

Except for this low-altitude speed, which the pilot can control as he sees fit, the jet transport is, if anything,

easier to handle than many of its piston-engine predecessors. The contention that these whistling giants can't be slowed down safely is simply untrue. The one approach I made in the Boeing 727—which weighed approximately 80% of its maximum gross at the time—was at 112 knots. This is hardly the performance of a deadly monster that requires that the airspace be cleared for its exclusive use.

There certainly are times when the jet pilot can use help from Big Brother, the FAA. These are the times these airplanes are operating at or near their normal cruising speeds. But these speeds are invariably in level flight, and at altitudes between 25,000 and 45,000 feet—hardly a place you'd expect to find swarms of miscellaneous aircraft.

Up there is the positive control airspace, which many FAA "empire builders" are determined to bring down to 8,000 or 10,000 feet from its present 24,000-foot floor—"in the interest of the safe and efficient use of the airspace," of course. Their justification has for years been the jet transport, hence AOPA's more-than-passing interest in the true nature of these airliners.

Apparently, I'd soaked up enough Jet Age propaganda to have found myself anticipating all sorts of horrendous things, once I got behind the controls in the left-hand seat of the 727 I had the good fortune to fly for a while. The plane was one about to be delivered to All Nippon Airways, and bore Japanese registration JA-8302. The ship was being flown on its second acceptance flight test, to see that all the bugs reported on its first test flight had been corrected. In the left-hand seat was F. J. "Doc" Salisbury, Boeing produc-

tion flight test pilot; in the right-hand seat was Clayton L. "Scotty" Scott (AOPA 3057), chief of production flight test.

A number of Boeing employees went along for the ride. Our gross weight for takeoff was 127,500 pounds, 83.3% of the plane's maximum gross for takeoff of 153,000 pounds. I rode in the jump seat, behind Salisbury. We took off in 23 seconds and climbed out at 160 knots indicated airspeed. The angle was so steep that you had to crane your neck out the rear corner of the side windows to see the ground at all.

Though the day was CAVU, we were on a full IFR flight plan throughout the flight. This is company policy and also an FAA requirement for positive control airspace, inasmuch as we climbed to 31,000 feet to conduct tests scheduled for this flight.

We weren't going any place in particular, just flying around the Seattle area performing the tests. One item made a strong impression on me: the FAA's almost continuous jabbering of instructions, apparently an important part of the positive control game they seem to love so dearly. At my request I got the pilots to ask if there was any other traffic around, just to see if all the annoying instructions were necessary. There wasn't. Yet the FAA controllers did so much yacking at our plane that it actually interfered with the test flight. I asked the Boeing pilots if this was something new or special. They said it's been that way ever since the system went in at Seattle, that it's been a considerable nuisance, but that they don't complain "because we have to live with the FAA."

After they completed the scheduled

(Continued on page 46)

(Continued from page 44)

tests on JA-8302, Salisbury climbed out of his seat and motioned me into it. Scotty, in the right seat, said I should try all the things I'd been asking him about, to find out for myself how dangerous and deadly a jet transport actually is.

It's so quiet in the cockpit you converse in normal tones, and the overhead radio speakers can deafen you if you turn up the volume. So Scott and Salisbury just sat there giving me occasional suggestions of things to try. What happens with engine failure? They told me to pull off first one engine, then two, then the third. Probably because they are clustered in the tail of the 727, there was no yaw whatever. Not only that, the engines are so far behind the cockpit that you can't hear the difference either. The only quick way to tell if an engine is off is to keep an eye on the three little instruments in the panel just above the throttles that show the percentage of power of each engine. With the three engines pulled back to idle, incidentally, the ship continued to fly as it had been at cruise, and the first you notice the difference is when you slowly begin to lose altitude.

The engine-out characteristics are so uneventful that it is almost a disappointment. I asked Scotty what would happen if I suddenly shoved the throttles full forward; I'd been hearing of spine-tingling "flame-outs" for years, and the fact that they're caused by mishandling the throttles. He said that was an old hazard that's long since been cured, and that I should just go ahead and shove the throttles open. I did, the three little needles went right back up to 90% power (maximum cruise power), the slow descent stopped, and the airspeed went back up. At 31,000 feet, incidentally, true airspeed worked out to 525 knots (605 m.p.h.).

Well, if I couldn't make a crisis out of mishandling the engines, what would happen if the power boosters on the flight controls failed? Scotty reached up and turned them off. Expecting extremely high pressures just to move the ailerons, I put plenty of muscle into a left turn. The wing went down immediately and I quickly stopped the turn for fear of shaking up the passengers; I've been in the back of big airplanes when pilots have mishandled the controls.

I'd say the control pressures without boost were about the same as those of the DC-3. I'm sure I could have flown the plane back to the airport and landed it, without boost. I made several turns, climbs, descents, and slow flight, with the boosters both on and off. No matter what I tried, I found the 727 simpler to fly, and gentler, than some contemporary general aviation twins with piston engines.

When it came time to return to the field I was fully prepared to give Salisbury his seat back. But both of them said I should stay there and land the ship. That shook me! Once again, my

imagination went to work. I had visions of this Giant Jet Age Transport screaming down toward the runway at some incredible speed, with a pair of Supermen at the controls trying to keep it from destroying itself. My hands began to perspire, and Scotty began to grin. The last test was of the autopilot, and it locked onto the ILS so easily that we both sat with our hands in our laps watching it bracket the two ILS needles.

Then the flight engineer tapped me on the shoulder and told me that he'd computed our approach speed to be 112 knots indicated for our weight and the temperature on the ground. The airspeed indicator has a little white arrow you crank around with a knob, and I just set it at 112.

At about 200 feet Scotty told me to push the autopilot cutoff button and just hold the plane in that attitude and let it touch down. Of course, I began twitching the controls nervously. I suddenly realized I didn't know where the main wheels were, except that they were a block or so behind the cockpit, and maybe 50 feet or so below where I was sitting. It was the same with everything about the 727; you can't see the engines at all from the cockpit, and you can barely see a small part of the wings by straining and looking back.

After a few gentle reminders from Scotty, who still had his hands in his lap, I got the ship back to the normal approach attitude, then just sat there while it settled gently to the runway. It was gentle, too. I felt the main wheels rumbling quietly way back to the rear, and then I let the nose settle slowly to the runway. Next sound was the nose wheel touching—and it's back at the front end of the passenger cabin. The moment the nose wheel touched Scotty reached over and pulled the three throttles into reverse, and told me to use the power brakes. We stopped in less than 5,000 feet. The last thing I noted before the wheels touched was the airspeed: 95 knots.

Instead of a maze of Jet Age booby traps, I found flying the 727 to be an exhilarating pleasure. Scotty and Doc Salisbury finally told me about one characteristic that pilots should watch out for when flying the 727: at cruising speed, if you let the ship get into an inadvertent steep glide or dive, you can exceed the maximum Mach number and you might overstress the ship. But even here, they have a Mach warning instrument that cuts loose in advance of that point and makes such a racket in the cockpit the crew would have to be somewhere outside the airplane to ignore it. At slow speeds the 727 has a stick-shaking stall-warner—and another gadget attached to the controls that actually shoves the nose down as you get to the stall.

While I was still savoring my 727 experience, Scotty and Doc asked me if I'd like "to go somewhere special" for lunch. I said I would, at which point they refused to tell me any more. We went back to the flight operations office

(Continued on page 48)

(Continued from page 46)

at Boeing Field and picked up Sandy McMurray, Scotty's assistant chief of production flight test, and Bob Neprud, Boeing public relations official. We drove back to Renton airport to a little hangar facility on the far end of the field, on the edge of Lake Washington.

These Boeing pilots had been pretty matter-of-fact about flying their jets, but now there was animated chatter and a gleam in their eyes. I soon found out why. The little Renton hangar is called The Jobmaster Company (Box 274, Renton), and it's Scotty's favorite pastime. A former bush pilot in Canada and Alaska, he's always retained his deep love of general aviation. His Job-

master company specializes in whatever plane conversions and STC's happen to interest him. He's presently converting a twin-engine Dornier DO-28 to floats for a Canadian bush operator. After parking the cars, we walked out to one: a Howard monoplane that he had recently gotten STC'd with six seats and floats.

We piled aboard, Scotty fired up the engine, taxied out onto the lake, and took off. After a short flight over that breathtakingly beautiful Puget Sound country, we landed in the Hood Canal and taxied up to the dock at Alderbrook Manor. Both the place and the lunch were "something special." So was my look at the Jet Age. ●