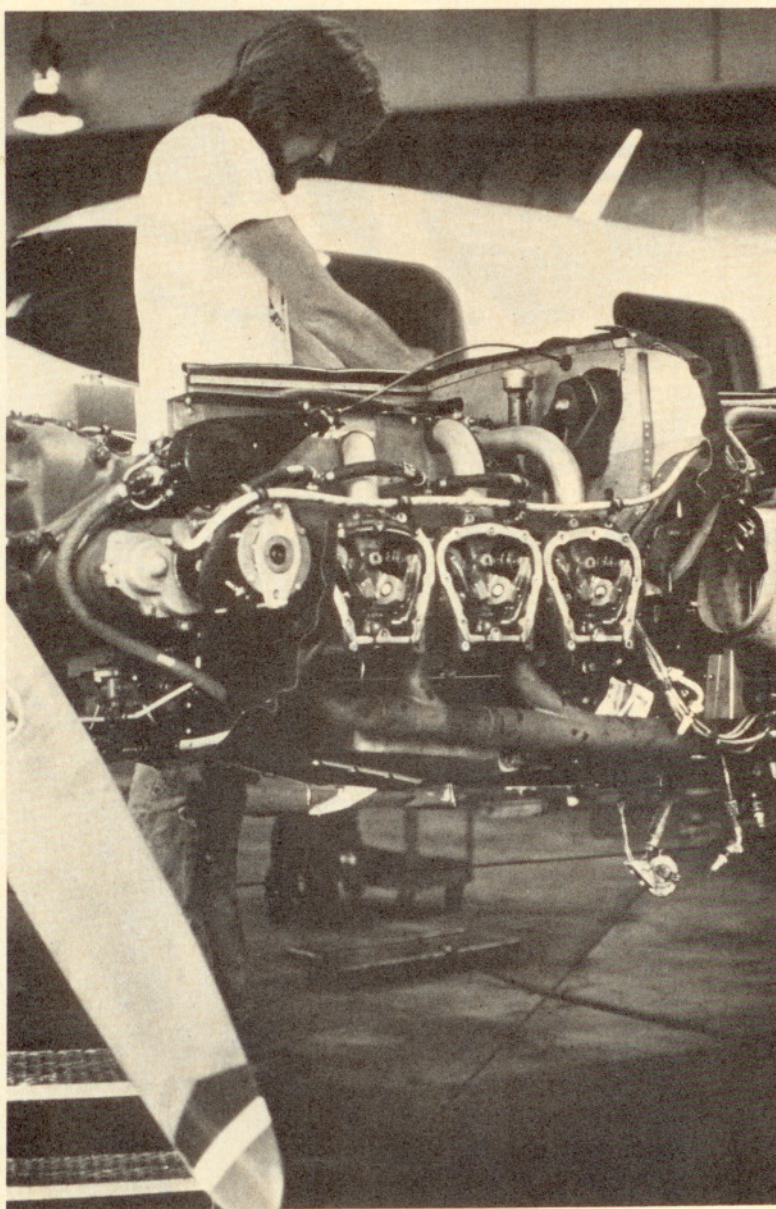


Progressive Aircraft Inspection

It's mandatory for some aircraft and "dealer's choice" for others. But is it good for you? Read on and see

Photos by Alan R. Ehrlich.



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■ ■ When it comes to a maintenance inspection program, what's best for your aircraft? What's safest? What method is more economical, in terms of man-hours to perform the job, if cost is a factor? And what's more time-saving in terms of aircraft down-time?

There are, of course, varied ways in which inspection is performed on general aviation aircraft. And there are varied reasons as to why one or the other of these varied ways is utilized.

For instance, there is the 100-hour inspection, which can be performed by an A&P mechanic. There is the annual inspection, which must be performed by the A&P, only in this case he must be an AI—meaning he must have inspection authorization.

And then there is progressive inspection (also referred to as programmed inspection and performed in increments of 25 or 50 hours, or any increments approved by the FAA) with the same inspector requirements as the annual. This form of inspection—on a periodic basis—is a requirement for large (over 12,000 pounds) and turbine-powered multi-engine aircraft.

But what about other aircraft? Would they benefit by programmed inspection, as against an annual or an inspection every 100 hours? What's best for the "little" airplane, as well as the "big"? What are the pros and cons of these methods?

The PILOT had the opportunity to sit in on an "aircraft maintenance roundtable conference" hosted by Banner Flight, Ltd., at Stewart Airport in Newburgh, N.Y. The subject, of course, was programmed inspection. The participants included owners and operators of small aircraft, FBO maintenance supervisors, and representatives of one air-



craft manufacturer and the FAA.

Their comments, hopefully, will provide some answers to questions most frequently posed by aircraft owners and operators. Following is the gist of their remarks.

According to Ray Dietz, principal maintenance inspector of the FAA's GADO (General Aviation District Office) at Teterboro, N.J., while Part 91 (Subpart D) of the Federal Aviation Regulations requires programmed inspections for large aircraft, "any airplane that is going to be used for hire will fall under the new subpart . . . including the owner-operator or corporation-type operator of lighter planes." But the inclusion of light aircraft "is about a year away now."

The idea behind the whole program, stated Dietz, is safety. "I wouldn't want to weight the cost versus safety, but you could in some cases reduce the cost, in that preventive maintenance would catch things before they happen. If you had a magneto problem, and if you caught that mag on the 50-hour inspection in lieu of waiting for something to happen to it, it would reduce the amount of labor necessary to the repair.

"In the eyes of the FAA," said Dietz, "we're trying to get the public to operate their airplanes and in the doing establish their own maintenance programs. . . . Safety-wise, the airplane is as good at 2,500 hours as it is at 500, under programmed inspection."

Piper Aircraft, like many of the manufacturers, has its own maintenance guidelines based on its knowledge of "how our airplanes need to be maintained," stated Philip Boob, administrator of regional customer services at the company's Lock Haven, Pa., facilities.

"The maintenance program decision,"

continued Boob, "is that of the owner-operator. However, under the regulations, he cannot just arbitrarily do this. He must, through the repair station or the authorized inspector, gain the approval of the local FAA district office for the type of system he intends to use. . . . But the owner and operator is really responsible for the maintenance of the aircraft."

One key point was raised by Bill Eligh, chief inspector of Empire Air Services, Inc., Skaneateles, N.Y., who noted that one of his customers, who owns a single-engine Comanche, plans an extensive trip "and is going to run out of his 50-hour inspection some time on his way home."

Eligh's questions: "Is it necessary before he leaves to perform another inspection? Or should he just keep on going and hope nothing happens?"

The FAA reply: "He has presented an inspection program under a progressive system and he is going to have to follow it." Thus a progressive program can be continued away from home.

Eligh's fleet of progressively maintained aircraft "is growing day by day. We've recently added a Comanche and a Cherokee Arrow. I've little doubt that within the next couple of years probably 65% or 70% of our shopwork will be progressive."

Jim Coward, of Yale Aviation Inc., New Haven, Conn., does quite a bit of student instruction in Piper 140s and 180s. "We have a lot of people flying. . . . We are not required legally to have programmed inspection, but we are very happy with it."

Coward noted that previously some of his aircraft required up to 30 and 40 man-hours for the 100-hour inspection alone—with time charges of \$8 to \$9 per hour. "And there were other things that added on." In other words, each 100-hour cost about \$400 to \$500 for maintenance.

Now that Yale Aviation is operating under the programmed method, "For the last seven or eight inspections we've been routinely under eight man-hours per inspection. . . . Eight hours per 50-hour aircraft, 16 per 100-hour; that is what we are shooting for," stated Coward.

Another "plus" factor he cited was the short turnaround time. "The planes fly a lot and are booked from morning to night, especially the Cherokee 140. Bring the plane in at the end of the day and it is usually out first thing the next morning."

Still another point was made by Joe Smith, also of Yale: "Most of the people who fly our airplanes are students, and the airplanes get a rough workout . . . and so I feel safer flying an airplane when I know that every 50 hours a mechanic has had a chance to let his eyes wander over the airplane."

But there are problem areas, too, and these were cited by Steve Lovejoy, maintenance supervisor for Banner Flight. One hurdle Lovejoy had, relating to inspection of his air-taxi Navajo fleet, involved an excessive amount of paperwork in converting Piper's program to that of Banner Flight to comply with FAA requirements.

Another major hurdle for Lovejoy was that in his nonscheduled air taxi operation "we had no idea of what the utilization of the aircraft would be. Some weeks it was as high as 25 hours. . . . In other weeks it might be as low as one or two hours. From the standpoint of maintenance scheduling, it was a difficult situation."

Thus, continued Lovejoy, the programmed schedule gave Banner "a chance to look at the airplane more frequently and yet keep the time down—an advantage. But we found it to be a disadvantage in having to tie up a couple of men for a day every five or six days. . . . It was more advantageous

for us to tie up four men for three days."

Both Piper and FAA representatives (Boob and Dietz) suggested that the remedy would be to engineer the programmed inspection to fit the situation—meaning that two 50-hour programs might be converted to four 25-hour programs, or whatever.

Arnold Paye, of New Haven Airways, New Haven, Conn., operates a fleet ranging from Cherokees up to the Navajo. Paye, who works "in a very small hangar," found that under the 100-hour inspection his hangar was tied up "two or three days at a time," involving three or more men on the inspection.

Under his present programmed system he can "bring the plane in and put two men on it. . . . In the summertime I could even roll it up in front of the hangar and give the plane a turnaround in a day and a half." His schedule also enables Payne to "still maintain the plane in a good airworthy condition rather than letting a lot of the small stuff add up and then get hit with a 100-hour inspection."

Arnold and Norman Poltenson, of Salina Press in East Syracuse, N.Y., own a Twin Comanche. They've been

involved with programmed inspection for more than a year. And, stated the former, "the guys who are down for great periods of time are the guys who come in for the annuals.

"They come in for the annual; the plane looks like a garbage pail. You open it up and it's filthy beyond belief. It hasn't seen a mechanic for a year because the guy doesn't want to be involved with maintenance.

"Norman and I are both salesmen, and we're in and out on very short notice. . . . The airplane itself is a fantastic sales tool, and we find that if you now go in as we do, about six times a year—we fly 300 hours a year—the less likely there's going to be anything really catastrophic. But if you spread that out to 100 hours, or a year, you've got all sorts of problems—you may be down for a month. Now we're not a big deal. We get in, and get out, in 10 hours."

"Peace of mind" was the thought expressed by Walter Sawallich, of Welsco, Inc., in Wallingford, Conn., who noted that in the past he's "had some pretty horrendous costs." He, too, cited safety as a paramount factor in programmed inspection, as well as down-time, which "is a lot less."

W. "Ed" McIntyre, of Fayetteville, N.Y., stating that he's "brand-new in general aviation," had a Cherokee 140 and then followed up with a Cherokee

180. Both aircraft were subject to the 100-hour inspection route, until McIntyre was advised of the programmed method of inspection.

"We were able to keep our airplanes in great operational condition, both with the 100-hour and now with this [programmed inspection], and we compared the cost." The cost, according to McIntyre, in terms of labor alone—not including parts—was reduced by half through the use of programmed inspection. And the aircraft were in the hangar "for short periods of time" as against two to three days for the 100-hour.

Phil Boob summed up the progressive type of inspection system with but a few words: "We didn't dream up anything new. We are not wizards at Piper. We only took what we felt was a good maintenance system which the military and the airlines were using over the years."

Piper's first adaptation of the system to small aircraft was applied to its Cherokee 140, and it was successful from the cost standpoint. Thus, noted Boob, "It must also be advantageous for the remainder of the airplanes, so why not make it available?"

It is. And from the comments voiced at Newburgh, it means safety, utilization, reliability, and cost savings to the tune of up to 30%. □