

The Single-Engine ATP

You don't need a twin
to qualify for the Ph.D.
of aviation

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There is only one way to fly an airplane: as well as it can be flown. Unfortunately, most pilots don't fly that way simply because they don't know how; they haven't had the training.

Perfection in flight is an elusive, impossible dream. But jousting with this particular windmill is justifiable because of the increased proficiency that results from disciplined practice. One step toward the achievement of perfection, although not necessarily a prerequisite, is the attainment of advanced ratings and certificates.

The highest certificate to which a pilot can aspire is, of course, the Air-

line Transport Pilot Certificate. (Years ago, this was a rating and was referred to as an ATR; today it is more properly called an ATP.)

Simply because one pilot has more ratings or a higher-grade certificate than another doesn't necessarily mean that he is a better pilot. Sometimes the opposite is true. But the possession of an advanced certificate does prove that a pilot has at least met the minimum skill, knowledge and experience requirements of that certificate. Perhaps there are some private pilots who can fly instruments as masterfully as an ATP, but they have not spent the time

and energy to prove it during a stressful flight test.

The ATP demands finely honed instrument skills and a demonstration of being able to exercise keen judgment while under pressure; it is the Ph. D. of aviation.

Since this certificate represents the tallest peak in the aeronautical mountain range, it was not surprising when Jack Chrysler called one stormy night to ask if I'd help to prepare him for the ATP.

Chrysler, who was a better-than-average instrument pilot, had just returned from a flight across the country

that had required a greater variety of actual instrument conditions and procedures than he had ever before encountered. And he wasn't satisfied with his performance.

Chrysler is one of those motivated pilots who is intolerant of mediocrity; he was not content with simply being a good instrument pilot. He wanted to become an ATP.

At first, I tried to discourage him because one doesn't simply hire an instructor, practice a few hours and then take a flight test. Preparation requires dedication to a program of intense training, unending study and uncompromising perseverance.

But Chrysler was willing to sacrifice his usually frenetic business schedule and devote himself to the attainment of this goal. He would not accept "no" for an answer.

Next, I inquired about his logged flight time. Did he meet the experience requirements for an ATP? These include 1,500 hours of total time consisting of at least 500 hours of cross-country time, 100 hours of night time and 75 hours of instrument time. (There are several variations of this requirement if the applicant has been a bona fide copilot or flight engineer.)

Yes, Chrysler met these requirements . . . and then some.

Since I am incapable of refusing to fly with a friend—even in the right seat—I agreed. I was curious, however, to see what breed of aircraft Chrysler would provide for the training. Would it be a Super King-Air, a bizjet or something equally exotic? Well, I must admit to having been caught off guard.

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Chrysler wanted to use a Cessna 182.

Without having fully recovered from the shock of his suggestion, I picked myself up from the floor, located the dropped telephone and recalled that, yes, a pilot can get an Airline Transport Pilot Certificate with a single-engine class rating.

Although there is no practical use

for a single-engine ATP (because no U.S. air carrier uses single-engine airplanes), the flight test does require the same degree of proficiency and professionalism as is required of a Boeing 707 or Lockheed 1011 captain. The name of the game is skill and ability, not mechanical complexity. The FAA justifiably believes that if a single-engine pilot can demonstrate such a high level of instrument competence, he should be granted a certificate as a testimonial to his ability. Besides, maybe American or United Airlines will someday employ single-engine aircraft in passenger-carrying service. Nothing is impossible.

(Although an ATP certificate is required of an airline captain, it is not required of copilots. A first officer working for a scheduled air carrier need only have a commercial pilot's certificate and an instrument rating. He isn't even required to have a multi-engine rating, even though he serves as second-in-command of a DC-10 or Boeing 747.)

While discussing ATP certificate requirements, this would be a good time to clarify some popular misconceptions. Before a pilot can command an airplane tipping the scales in excess of 12,500 pounds (maximum allowable takeoff weight), he must pass a flight test in that particular type of aircraft. He is then awarded a type rating that becomes a part of his pilot's certificate. Such a rating is required for each type of "heavy" aircraft a pilot intends to command. Almost all such types are multi-engine aircraft, such as the Boeing 727, the DC-3 or the B-29. However, a few single-engine aircraft also are heavy enough to require type ratings (such as the Grumman TBM).

Also, a type rating is required for every turbine-powered airplane (excluding turbo-props), even those weighing less than 12,500 pounds.

A pilot does not need an ATP to obtain a type rating. Private and commercial pilots are equally eligible. So, if a wealthy private pilot feels the urge to unload his wallet for an L-1011 type rating, he'd be legally qualified to fly as pilot-in-command of that aircraft during noncommercial operations.

Nor is an instrument rating required; the pilot would be limited, of course, to VFR flight. Imagine, a VFR private pilot commanding a DC-10. You see, anything is possible.

A pilot with an ATP—even a single-engine ATP—enjoys a few fringe benefits. For one thing, some insurance companies offer him reduced rates. This is logical. The ATP-rated pilot has demonstrated proficiency beyond that

required of a private or commercial pilot with an instrument rating.

Also, more employment doors are open to the ATP. This is like the familiar story about the personnel manager faced with two equally qualified applicants, but only one has the college degree. Guess who gets the job. Credentials, after all, are impressive; they demonstrate a certain ability to accomplish.

The most rewarding aspect of an ATP, however, may be the inner pride one feels in knowing he has become a more skillful, safer pilot.

Although the ATP applicant must possess a first-class medical certificate issued within the previous six months, he need never again obtain one unless planning to exercise the privileges of an ATP. But many—even private pilots—submit to first-class medical examinations every two years. Since they must visit the medical examiner any-

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way, why not get a thorough checkup (including an EKG) instead of the relatively cursory "can-you-exhale-warm-air" type of exam associated with the third-class certificate?

Some pilots contend that the flight test for a single-engine ATP is little more than a glorified instrument check ride. Not so. Although many of the maneuvers are the same, much more precision, complexity and heads-up thinking are required. Consider, for example, the instrument-rating applicant being asked to shoot an ILS approach; passing requires only that neither of the ILS needles be allowed to reach maximum deflection.

Such sloppiness is not afforded the ATP applicant, who must keep the needles within "one dot" of the bull's-eye. He must also anticipate a simulated ILS component failure and be able to continue the approach utilizing the remaining nav aids, revised minimums and possibly a different missed-approach procedure.

Most FAA inspectors agree that an

applicant for an instrument rating need only demonstrate that he can safely perform fundamental IFR procedures. The ATP applicant, however, must be prepared for a wider variety of contingencies. How many instrument pilots, for example, have ever been asked to hold on an outbound course of a radio beacon?

The ATP applicant also can expect to demonstrate an IFR approach to circling minimums followed by a tight, close-in circle at MDA to another run-

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way. He also should anticipate flap and landing-gear malfunctions, engine and electrical fires, smoke removal procedures and a host of other emergencies that private pilots should know how to handle but often do not.

Anyone aspiring to a single-engine ATP also must learn about air carrier operations. You see, there's this written examination to overcome. Like other FAA pencil-and-paper contests, passing requires a 70% score. The exam format is identical to those presented to private and commercial pilot aspirants. But that's where the similarity ends. The questions deal with flight operations at about Mach .82 in the vicinity of flight level 350. The applicant must be able to navigate and theoretically operate a Boeing 727 under a variety of conditions, compute the jetliner's weight and balance, and adroitly use his crystal ball to forecast en route weather between the surface and the lower limits of the stratosphere.

The FAR questions deal primarily with Part 121, which is alien to most lightplane pilots. You won't have to know a thing about right-of-way rules or light signals, but you'd better know the difference between Class A, B, C, D and E cargo compartment fires, how much supplemental oxygen must be available for a flight carrying 122 passengers above 25,000 feet, and under what conditions a local law enforcement officer may carry his loaded .357 Magnum aboard your flight.

Although much of the required knowledge seems like esoteric nonsense to the average private or commercial pilot, there is some useful spin-off. The ATP applicant also will begin to appreciate some of the operational complexities faced by airline crews.

Chrysler passed the written exam after three days of concentrated study at Accelerated Ground Training in Santa Monica, Calif. And that's when the fun began (for me, not him).

Our first flights together consisted of elementary IFR exercises: approaches to stalls, slow flight, steep turns, partial panel, etc. After more review and several approaches, the rough spots had been removed and my “student” progressed to where he could once again pass an instrument check ride. And then the pressure was applied. He had to learn every procedure in the book—and then some.

After nineteen more hours of intense training, Chrysler became surprisingly comfortable with just about everything I could throw at him. Our time together was drawing to a close and I felt certain that our next flight would find him prepared and competent for the FAA check ride.

One major requirement of the ATP applicant is the ability to exercise keen judgment under fire. During our final training flight, I was curious to see how well my applicant would cope with an unusual problem that one of my instructors had presented to me for “graduation.”

“Jack,” I began, my sardonic voice raised to overcome the din of power and airspeed, “you’ve been under the hood practicing timed turns, stalls and other maneuvers for more than a hour. Since the nav receivers have been off the entire time, do you have any idea where we are?”

“Don’t tell me you’re lost,” he quipped. “Seriously, no . . . I’m not even sure we’re right side up.”

“Jack,” I said slowly and with deliberation, “listen carefully. I’m only going to give you these directions once. Afterwards, you’ll be on your own. Okay?”

Chrysler relaxed slightly, grateful for at least a moment or two of straight and level flight that required only perfunctory attention and control movements.

“Your manifold pressure gauge indicates 23 inches,” I continued. “I’m going to decrease engine power by one inch of manifold pressure every minute until, eventually, the throttle will be fully closed. You’ll have no control of power whatsoever. This is to simulate the performance-eroding effects of steady ice accumulation on the airframe and propeller. Your mission—and you must accept it—is to land safely before time runs out and you are no longer able to remain airborne. And, by the way (oh, how I hated myself), any airport of your choosing has zero-zero weather. You may use all available nav aids except the DME. And no fair calling for radar vectors. Do you understand?”

Chrysler’s hood nodded and his voice muttered something unprintable. I started the problem by retarding the power to 22 inches.

Before another inch had been removed, Chrysler had turned on both VOR receivers and plotted a fix. He also

called ATC (me) and obtained clearance for a temporary and shallow climb. His intent was to grab all the altitude he could, while he could.

The intersection of the radials placed the Skylane 17 miles northeast of the nearest airport equipped with an ILS. Chrysler quickly turned on the ADF and made like a bird dog to the outer compass locator. Conserving altitude as best he could, he reached the final approach fix at 2,300 feet agl, executed a nifty and abbreviated tear-drop reversal and intercepted the glide slope at 1,500 feet, just like the approach plate said he should.

With little engine power remaining, Chrysler knew he had to execute a flawless approach; there wouldn’t be a second chance. His biorhythm curves must have been peaking that day because he did an outstanding job of keeping the ILS needles in the bull’s-eye all the way down to Category II minimums (100 feet).

Chrysler also had the foresight not to use flaps during the approach. Otherwise, there is no doubt that he would have undershot the runway threshold, considering the little power available.

At 50 feet agl, I told Chrysler to hold his heading and halve his sink rate. Seconds later, the 182 plunked ungraciously onto the concrete only a few feet right of the centerline.

It was a superb performance and I was proud to recommend him for the ATP flight test.

Chrysler hurdled that final obstacle

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and ultimately proceeded to add a multi-engine rating to his ATP certificate. Of late, his attitude has been somewhat unbearable, but considering the accomplishment, he has a right to some salubrious frivolity. (Rumor has it that he recently ordered a pair of custom-made p.j.’s with four gold stripes emblazoned on each sleeve).

So, if a pilot’s funds are limited and he can’t afford to rent a Boeing 707 or a DC-6, he can arrange for an adequately equipped single (a Cessna 150 will do), a qualified instructor and undertake the challenge. The training requires devotion, tenacity and a certain degree of masochism, but in the end he will be amply rewarded with considerably more skill and IFR awareness; he will be an ATP. □