ON FLYING AT NIGHT

BY

ALAN MALONE

The idea of flying single-engine airplanes at night divides the flying population into those who do, those who won't, and those who sometimes do, but would prefer not to. There is also probably a small group who would prefer to fly at night, for reasons I'll try to enumerate.

The pilots who roll their eyes and shudder at the idea of flying at night in a single-engine airplane include most of the mechanics I've known, men and women who deal with the seamier side of operating airplanes, an unfortunate part of their profession. They and many other pilots make the obvious point that making a forced landing at night is an iffy proposition.

My first exposure to night flight was during my training as a private pilot. My instructor had me take off and go out to the practice area east of our home airport, then just fly around a little bit and get used to the difference between day and night visual cues. He pointed out the lack of definition of objects on the ground and also the reduced capacity to see weather hazards. These were the usual, run-of-the-mill points that instructors always pass on during the initial night lesson.

He had me make a guess as to the direction of the wind and turn the airplane into the wind, as closely as possible. Then he had me close the throttle and extend full flaps. We were flying a Cessna 150 at the time, and 40^{o} of flaps allowed the little bird to

slow down to around 40 miles per hour without stalling. He had me hold on to the slowest speed at which I could retain control and notice how slowly we were descending. His contention was that, with any luck, we could probably survive a return to earth in this condition, barring collisions with large trees, brick walls, steel-beam buildings, or deep ditches.

He was preparing me for what is called a "worst-case scenario," an event unlikely to happen, but a possibility in the great scheme of things. When we assess the risks vs. the rewards of flying after dark in a single-engine airplane, we should probably consider the fact that forced landings are rare these days in well-maintained airplanes. We also have a great deal of detailed information about nearest airports, thanks to modern GPS technology; and from an altitude of 5000 feet or more, we could potentially make it to an airport 7 miles or more from the position at which the problem becomes critical. In this case, the higher you're flying the more likely you are to be able to glide to an appropriate airport, rather than having to run the risk of an off-airport landing at night.

Although most of my flying has been done in the daytime, I have had some memorable experiences while flying at night. My wife and I used to fly up to northern Arkansas to a place called Eureka Springs for a fall get-away, along with some other aircraft owners who met us up there for a delightful annual boogie. Since we could extend our little vacation a day by leaving after work on a Friday, we often made the trip after dark.

One of the first of these trips was in our Piper PA-16 Clipper, an airplane that had only rudimentary navigational capability apart from sectional charts, a compass, and a stop watch. I remember being somewhere near the mid-point of the

trip when I looked up through the windshield and saw the Big Dipper, big as life, looking back at me, framed in the windshield. I thought at the time that if I could keep this constellation centered, I probably wouldn't be far from my destination when it was time for us to get there. How many people have the opportunity to use celestial navigation in a Piper Paper Clipper?

Another time we were coming back home from the north-west, and the night was so clear that we could see the lights of New Orleans shining up at us from beyond Baton Rouge. And the first time we flew to Chicago, we started to see all the signs of dawn in the middle of the night, as a high overcast reflected the lights of that huge metropolis down on us for nearly the last hour of our flight.

A third episode I remember started one summer afternoon when we were proposing to leave for Del Rio, Texas, about 60 miles west of San Antonio, in our 172. When we got to the airport, we discovered that an afternoon haze had reduced the visibility to about 4 miles. The weather man said there were occasional level 3 and 4 thunderboomers out there hiding in the clag. I told my wife I didn't want to go right then, and she wondered what I was worried about. "I don't see any thunderstorms," she said.

"You're not going to see any thunderstorms any farther away than 4 miles," I replied. Then I asked, "How close are you willing to fly to a level 3 thunderstorm?"

So we developed "Plan B." We'd go home and go to sleep and set the alarm for around 2:00 the next morning. Then, if things had improved, we'd make our way west in the cool

nighttime air and still get there in time for breakfast with our nephew and his family.

So that's the way it happened. We had a nice smooth ride, although we couldn't see anything. And we got an unexpected bonus when we came up on Houston. Usually the controllers over in that neck of the woods refuse to work with little puddle-jumpers like ours, claiming to be seriously saturated with traffic, and unable to work the flight through their airspace. But at 4:00 A.M. they let us in the front door and worked us through, just like quality folks. You'd think we were flying one of Boeing's pride and joys.

So there are definite advantages to making a trip at night. The air is usually smoother, since the sun is not there cooking up convective cells. There's less traffic, and it's generally nice and cool in the summertime. If you can make your trip using IFR, you'll probably have a very pleasant trip.

The downers about night flying are pretty obvious. You can't see as well at night. That means that it's somewhat more important to organize your cockpit and to make sure that, if you drop something important, like your Holiday Inn pen, you have a spare nearby. Groping around in the dark for something you've dropped is probably not the most productive way to spend time at night. I don't think I've ever flown in an airplane that didn't have at least one inop light bulb. In this age of LED lighting, however, that problem may be fading into history.

If you're flying VFR at night, it's harder to see where the clouds are. In well-lit areas clouds show up like black voids in the middle of the background light; but it's not clear where the

boundaries are, and you'll sometimes find yourself in the clag without knowing it was there.

If you have the temerity to venture out at night when there are thunderstorm cells in the area, I hope you don't think you'll be able to identify them by their lightning discharges. Those big flash cube cells that give off almost continuous light make reflections on the surfaces of surrounding clouds, and it becomes impossible to distinguish these reflections from active lightning within those other clouds. So you may find yourself not being able to tell whether to zig or whether to zag if you're depending on your eyeballs to keep you out of the stuff. VFR, night, and thunderstorm cells are a very dangerous mixture, in my opinion. IFR, night and thunderstorms can sometimes be even more of a hazard, if you're in the middle of the clag and can't even see the lightning ahead.

With the advent of NEXRAD in many general aviation airplanes, and on some IPAD apps that many pilots are now carrying, you've got some advantages that earlier pilots didn't have; however NEXRAD is a mechanical gadget, subject to error and mechanical breakdown. And always remember, it may be giving you information about where the precip was, up to ten minutes ago, not necessarily where it is right now. NEXRAD is better than nothing, but it's far from perfect.

There's good news and bad news about airports. On nice nights with lots of visibility, you can often spot the rotating beacons at airports much sooner than you'd pick up a good view of the runways in the daytime. But, unless you're borrowing some operating altitudes from the IFR pilots' procedures, you'll sometimes find unlit obstructions sticking up into your airspace

as you arrive and depart. It becomes important to follow glide path guidance from the ground, meaning ILS or WAAS glide slopes and/or visual approach lights, such as VASIs. Those facilities aren't just for the big boys. If you haven't acquainted yourself with how they work, grab an instructor and get some indoctrination about obstruction clearance in the vicinity of airports.

My wife and I like to go into the Smokies in the spring and the fall, and we sometimes come up on our destination in the late afternoon or early evening. I usually opt for landing at a big, flat airport like Knoxville, a place with radar service and many instrument approaches, rather than continuing up into the hills to Gatlinburg-Pigeon Forge, if it's too dark to keep track of where the sky leaves off and the rocks begin. It takes an extra hour or so to drive up to the condo, but I think the added safety is well worth the slight increase in travel time.

Another area of concern, of course, is the condition of the pilot. In most cases, our bodies and brains are accustomed to sleeping at night and being awake in the daytime. So it's possible that your hypothalamus, or whatever controls those bodily rhythms, says, "Time for beddy by," right in the middle of your night flight, and tries to put out your lights. Make sure you've had enough rest before any flight, and don't plan to stay up late flying if you've had a stressful day. A night in a nice motel is a small price to pay for the security of having a fresh brain doing the thinking.

Clearly, making trips at night in single-engine airplanes is not an undertaking for beginners, be they VFR-only pilots or IFR equipped-and-qualified types. If you contemplate making

some trips at night in the future, get with another pilot, preferably one with an instructor certificate, and get your feet wet close to home.

Leaving the ground involves some degree of risk, no matter when you do it. At night that unavoidable risk is increased by some amount. Take a careful, objective look at those risks and make a decision about whether or not they fit within the limits of your risk tolerance. Then either go and enjoy the nighttime hours or set yourself a no-night-flying limit and plan your affairs so that night flying will be unnecessary. Making those types of commitments in advance to yourself and your passengers greatly simplifies the go/no-go decision-making and will add to your enjoyment of travel by light airplane.