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FEATURES

DEPARTMENTS

FRONT COVER: Airshow season brings nostalgia for the Christian Eagles Aerobastic Team, featuring Tom Poberezny, Gene Soucy, and the late Charley Hillard.

Winner of the National Flight Standards Service Excellence in Public Awareness Award

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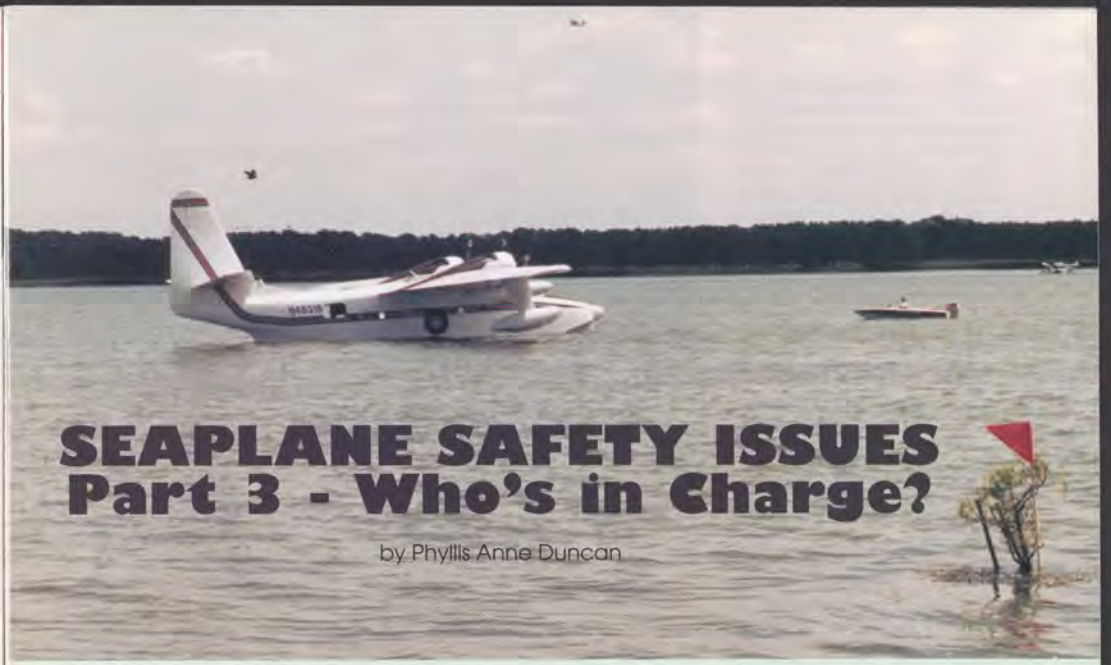


SEAPLANE SAFETY ISSUES Part 3 - Who's in Charge?

by Phyllis Anne Duncan

Parts 1 and 2 of this three-part series appeared in the March and April 1997 issues of FAA Aviation News and dealt with seaplane accidents over a 13-year period and issues of seaplane noise, respectively. For a copy of either or both issues, please contact Ms. Brenda Howard at (202) 267-7065 or send your name, address, and request to the address on the inside front cover or to the e-mailaddress Phyllis.Duncan@faa.dot.gov .

When on the water, is a seaplane an aircraft or a vessel?

The answer may seem obvious to those of us in aviation. Once certificated as an aircraft, a flying entity is always an aircraft. But when that aircraft is equipped to touch down and operate on water, it has some characteristics of a water-going vessel.

So, do the FAR or nautical rules apply? What about local regulations?

The answer may be either or all three, depending upon the jurisdiction. Jurisdiction has proved to be one of the most vexing situations for seaplane operators in recent years, and, as with the noise issue, it may not truly be an aviation safety concern though it represents a public safety concern to local officials.

There are a number of reasons why this jurisdictional confusion occurs, and a recent report, compiled by the Seaplane Pilots Association (SPA) and based in part on FAA data, identifies the causes of the confusion well.

Why, you may ask, is the FAA concerned with jurisdiction, since its mandate is quite clear? Because the various jurisdictions occasionally conflict and overlap, FAA is concerned that local governments may try to restrict access to seaplane bases established or maintained with federal funds. Safety is our overall concern, but the connection between safety and jurisdiction may seem tenuous. For us, safety pervades all aspects of any operation of an aircraft, and a seaplane, for example, "carries" our safety concern with it, no matter what jurisdiction it enters. And, if seaplane pilots have a better understanding of jurisdiction and how to work with the various jurisdictional entities, they may not be tempted to operate beyond their experience; i.e., into far-flung areas where, if a problem arises, help is a long way away.

What we will try to do with this article is explain how and where the various entities get their authority over seaplane operations. With understanding comes acceptance—or a determination to challenge an unjust restriction. Understanding runs both ways, however, but if you understand from where the local "water cops" believe that they derive their police power, you'll be able to deal with that authority.

We in the FAA support the premise that if you're properly certificated, current, and proficient, why shouldn't you have access to water landing areas?

Causes of Jurisdictional Confusion

- The seaplane's versatility—its ability to operate in a regime where other aircraft can't—is

what attracts many pilots to its operation. Yet, this versatility also contributes to the confusion of jurisdiction. By virtue of the fact that the aircraft floats on water, it is quite literally capable of operating on any water landing area. When on the water, its "life" as an aircraft may take second place to its "life" as a vessel. And depending upon the water landing area, the seaplane/vessel may be subject to state, local, regional, and federal regulation. Bolt on amphibious floats, and you've now got a craft that can operate on any land airport as well as any water landing area, even in the IFR system. Great, right? Not everyone sees it that way. The point is that this versatility is the seaplane's greatest boon and maybe biggest curse, depending upon your point of view.

- Second, the issues of community growth, ecology, and safety involve overlapping jurisdictions as well. We have pretty much shown from Parts 1 and 2 that often when a jurisdiction raises the issue of safety it is as a catch-all for other concerns. Perhaps a community is experiencing growth and sees the lucrative tax situation in waterfront homes where a seaplane base is currently located. "Safety" may be used as an excuse to limit or close off a seaplane pilot's access to potentially valuable areas. Truthfully, you don't have to be a so-called "tree-hugger" to want to have clean waterways, and there are certainly far more smoke-belching boats on the water than seaplanes. Again, local authorities may cite a convenient concern with the local ecology to limit seaplane access to waterways.

- Third—and this ties in with the second instance above—water and the land adjacent to it are resources under constantly increasing pressure from two different sides: those who oppose development and want to keep the area as pristine as the Pliocene and those who advocate development to the maximum. Again, there is probably a happy medium in there, but both sides can equally pressure local jurisdictions to restrict seaplane access. The cornerstone of development is putting a resource to its "highest and best use," and many may not see seaplane operations as achieving that ideal. As SPA says, "...seaplane activity may find itself displaced simply on the basis of not being valuable in comparison to some other uses."

- Fourth, many jurisdictional authorities overlap and even conflict. In a country of one federal government, 50 state governments, and thousands of county and city governments, it is easy to see how authorities can overlap and conflict. Seaplane activity is often caught in this jurisdictional web. The FAR apply anytime the seaplane (aircraft) is operating. Typically with a land plane, the time spent taxiing or positioning at a land airport is considered "operating." The same can be said of a seaplane on water, but while on the water another set of federal regulations apply. If the local natural resources authority has set certain requirements, the seaplane is subject to them as well. The matter comes down to the question that is the title of this article: Who is in charge? The PIC? The FAA? The county of whomever?

- Finally, we come full circle to the definition of a seaplane when it's on the water. Aircraft or vessel? It can be both or either depending upon what it is doing at the time. If aircraft operated only on land airports, the jurisdictional lines are quite easy to draw—it's the FAA without question. When you increase the capability of anything, it becomes subject to additional authorities that can overlap.

Perhaps as seaplane pilots we can put this into a better perspective if we develop a better understanding of just which authorities apply to seaplanes and why.

Federal Authority

It might seem to us pilots that the only federal authority we deal with concerning aircraft is the FAA, but when a seaplane is the aircraft, that is not always the case.

Without going into a long and involved U.S. government/ civics lesson, we'll try to summarize where the basis for these authorities comes from. First, there is the Commerce Clause of the U.S. Constitution, which gives the U.S. Government the power to regulate interstate commerce (Article 1, Section 8). Legal interpretations of this power have included the navigable waters of the U.S. "Navigable waters" can mean rivers flowing between states and lakes that straddle state borders, as well as bodies of water entirely within one state. As per SPA, "The U.S. Army Corps of Engineers interprets this phrase [navigable waters] to include almost any water body with 'present, past, or a potential presence of interstate or foreign commerce.'"

The Commerce Clause is also the basis for federal regulation of air traffic. So, we can see already that a seaplane on the water is now subject to two separate federal authorities, not to mention the U.S. Coast Guard. These three entities—the FAA, the Corps of Engineers, and the Coast Guard—have varying levels of control over seaplane operations, so let's discuss each of them.

FAA

The FAA regulates (as if you didn't know) the following:

- Aircraft noise levels
- Airport security
- Air travel competitive practices
- Air traffic
- Aircraft certification
- Pilot and mechanic certification

Operations of seaplanes at some point fall under all or most of these areas, but FAA becomes involved locally only when municipalities seek to restrict seaplane landing areas that have been developed with federal funds. There have been cases, however, where the FAA has appeared as an "expert witness" to explain seaplane safety issues to local governments even when federal funds were not involved.

USCG

Navigation on the water, enforcement of federal laws on the high seas, and enforcement of federal laws in waters over which the U.S. has jurisdiction is the mission of the U.S. Coast Guard, and this jurisdiction is based on the definition of "navigable waters" of the U.S. Coast Guard regulations cover:

- Water navigation
- Vessel safety
- Required vessel equipment
- Vessel inspections

There have, of course, been notable conflicts when Coast Guard vessels legitimately stopped and inspected seaplanes and cited operators for improper personal flotation devices. This situation was worked out between the FAA and the USCG and is no longer a problem.

U.S. Army Corps of Engineers

The history of this authority is long and involved where it concerns the navigable waters of the U.S. The Corps of Engineers has built dikes and dams, levees and reservoirs, and many other civil works projects in addition to its combat engineering duties. The basis for their authority in local areas is the same as the FAA: If federal funds are provided by the Corps of Engineers, it has authority or control.

The responsibilities of the Corps of Engineers is included in Section 10 of the Rivers and Harbors Act of 1894 and are too numerous to list here. Suffice it to say that when a seaplane is in the navigable waters of the U.S., the U.S. Army Corps of Engineers can have authority over it.

State Control

As if three federal entities weren't enough, states often exercise control over waters that don't fall under federal jurisdiction but do fall within state, county, or local lines. Most of the current access problems have arisen with local governments. In a microcosm of the U.S. Constitution, state and local governments derive their authority from state constitutions or local charters, which usually have a basis in state laws; i.e., state law allows local governments to issue charters from which the local government derives its authority. Just as state laws must be consistent with federal laws, local laws cannot conflict with state or federal law.

For many local governments the removal from federal law may be great, and although they may enact local regulations concerning public health, safety, and welfare, sometimes those rules pertaining to waterways in their jurisdictions may conflict with federal authority. Usually, we don't know about it until a seaplane tries to land on some county's reservoir and upsets the local bass fishermen, one of whom may happen to be the sheriff.

Local governments enforce these laws through police powers granted them by the states. "Police power" usually covers:

- Development of comprehensive plans
- Drafting of zoning ordinances
- Lake and river vessel speed limits
- Building permits
- Enforcement of ordinances

Much to the dismay of many seaplane operators, these three levels of jurisdiction—federal, state, and local—are not necessarily progressive. That is, the relationships overlap or conflict rather than having a large federal "umbrella" that encompasses the state "umbrella" which encompasses the local. A seaplane pilot may operate according to the FAR and the nautical rules of the road but find him- or herself up against the county's natural resource police. The other point of contention is that local governments tend to exercise a broad interpretation of what their police powers encompass. Sometimes they construe police power as their having complete jurisdiction over anything that affects the public health, safety, and welfare of its citizens—as interpreted by the local sheriff.

This broad interpretation of police power is where opposition to seaplane operations is most evident. Just as all politics are local, most limitations to seaplane operations are local. The most common incidence is the enforcement of water speed limits or establishment of zoning laws and ordinances that restrict seaplane operations.

Because of the wear and tear on docks and pilings and bulkheads of marinas and waterfront homes, many local areas set "no wake" zones or establish speed limits that a boat or per-

sonal watercraft can easily achieve. Trying to water taxi a seaplane at six knots a pilot knows is not always possible; however, the local natural resource policeman does not understand the sometime restraints on seaplane maneuverability. The local community's lack of familiarity with seaplane operations means that the laws they enact for what they legitimately feel is public safety may not be enforceable on other aspects of the public.

Politics as well plays a large part. If one city council member has been disturbed by the noise of a seaplane operating near his or her waterfront retreat, that person may not be favorable toward any seaplane operation. Again, as we've seen, because of the local government's public safety mandate, they may fall back on safety as justification for restricting access.

Seaplane pilots may have to become lobbyists in order to rectify a great deal of misinformation and downright ignorance about seaplane operations.

How Do I Find Out More About Who's in Charge?

I wish I could tell seaplane pilots there is one resource they can go to and obtain jurisdictional information about every single water landing area in the U.S. This is impossible for a number of reasons, principal of which is that the information is constantly changing. There is no one place where every single local government rule and regulation is archived along with every single state or federal law. Also, information is generally provided on a voluntary basis. A rule of thumb advanced by the SPA and accepted by most federal and state jurisdictions is that if motorboating is permitted on a body of water, it is reasonable to assume that you can land a seaplane there.

SPA publishes an excellent resource that goes a long way toward providing that needed jurisdictional information. Every three years SPA publishes its "Water Landing Directory," which contains descriptions and sometimes illustrations of water landing areas that have been submitted to SPA for publication. Most importantly, these descriptions include many local restrictions to seaplane operations, e.g., prescribed times of operations, areas where operations are prohibited, noise abatement procedures, etc. This is analogous the FAA publication, the *Airport/Facility Directory* (AFD), which also may contain information on water landing areas, mostly seaplane bases.

There are other, commercial publications that describe airports and seaplane bases, and a seaplane pilot may have to consult a number of these sources before he or she finds the information needed. Even then, if none of the published sources contains information about an area you have been interested in flying into, you may have to call the local jurisdiction and discover what you can about local rules. Of course, that phone call may open a can of worms with the local government.

Consider the following suggestions about how to deal with that.

Levels of Jurisdictional Authority

Organization and Basis of Authority	Examples of Authority
Federal - US Constitution	
FAA	• Aircraft Noise • Airport Security • Air Travel Competition • Air Traffic • Aircraft Certification • Pilot and Mechanic Certification
Coast Guard	• Water Navigation • Vessel Safety • Required Vessel Equipment • Vessel Inspections
Corps of Engineers	• Federal Civil Works Projects
State - State Constitution	
Legislatures	• Statewide Legislative Guidance • State Funding for Statewide Issues
Local Government	• Comprehensive Plans • Zoning Ordinances • Lake and River Vessel Speed Limits • Building Permits
RPOs	• Strategic Planning that Transcends Local Boundaries

Suggestions and Recommendations

Because many of the disputes between local governments and seaplane operators are just that, local, and because no federal funds are involved, the FAA cannot step in and require a local government to change a law it has enacted within its authority. Our role is to continue to certificate the airmen and the aircraft to the appropriate standards and to ensure that aircraft operations, including those involving seaplanes, are conducted safely and within the regulations.

What the FAA can do through its Aviation Safety Program is ensure that seaplane pilots maintain a commitment to obtaining experience and proficiency, which makes them safer operators. When seaplane pilots can point to a stellar safety record and assure local governments of their commitment to regular, recurrent training through the SEAWINGS portion of the Pilot Proficiency Award Program and demonstrate that their seaplanes have been maintained by professional mechanics who have enhanced their knowledge through the Aviation Maintenance Technician Award Program, the local government's restrictive rules may be rescinded or at least mitigated.

It might be as simple as saying, "Be a good citizen," especially if you want to land your seaplane at a location other than where you live.

So, there's our requisite push for FAA's Aviation Safety Program. SPA has outlined some recommendations for seaplane operators to help improve relations with the various governmental jurisdictions.

1. Influence local jurisdictions at the regional, state, and federal levels.

SPA suggests that "the seaplane community...adopt the concepts of federal preemption and state authority over navigable waterways." Seaplane operations and federal/state authority are not necessarily contrary to each other.

The federal authority comes from the U.S. Constitution, and we all know what changing that involves. SPA suggests instead that seaplane operators concentrate on state governments because of their closer relationship with local entities. In cultivating these relationships, seaplane pilots need to bear in mind that although the characteristics of flying a seaplane from region to region may differ little, there is a wide disparity in regional concerns and issues. There may not be one single approach that will satisfy all local governments.

2. Solicit Support

SPA suggests that providing a "statement of support" to state, federal, and local authorities will assure those authorities that seaplane operators recognize and respect the authority they exercise over seaplane operations.

3. Obtain Legitimacy Through Planning

Local governments usually have planning commissions whose responsibility it is to develop comprehensive usage plans for land, transportation, and water in their respective jurisdictions. SPA suggests that seaplane operators assure input into these comprehensive plans so that aviation, and specifically seaplane aviation, is included and addressed in a fair and equitable manner.

4. Use State Law as a Tool

SPA's report states a basic premise that some of us tend to forget: Laws are there for our use as well, and "using them to meet goals is not considered un-American." Many states have enacted laws that affect and support a unique segment of their constituencies, and aviation is a significant enough portion of a state's economy to warrant laws that benefit it. Seaplane operators can work through state aeronautical or transportation departments to assure that seaplane needs are met through state transportation laws.

5. Find a Friend

We have, of course, had a great deal of attention paid to so-called influence-pedaling in political campaigns, but seaplane operators can "find a friend" in state legislatures and perhaps cultivate a relationship based on the camaraderie of aviation. With two-thirds of a million pilots in the U.S., there is bound to be at least one pilot in a state legislature. Seek that person out and advise him or her of the issues, again emphasizing the seaplane community's dedication to safety. Not every state in the country appreciates seaplane operations as, say, Washington state, Alaska, Minnesota, or Florida, among others. Where seaplane operations are not prevalent, education of public officials plus a commitment to safety are the only ways to assure continuation of access.

6. Be Active.

This ties into the last sentence above, but a strong, united challenge to restrictive local regulations is essential to assuring access by seaplane operators and is actually part of the governmental process. SPA suggests that all will not be well if the seaplane community adopts an attitude of "do nothing"—sort of, "If I say or do nothing, nothing will happen." What may happen is that local governments may interpret the silence as lack of interest. As SPA's report says, "...if your seaplane activities...are safe and appropriate in your best judgement, fighting actively for them is also appropriate. If you wait for the ax to fall, it probably will."

Conclusion

Because general aviation is one of the country's "hidden" assets, a larger burden of responsibility falls on general aviation pilots to operate responsibly and safely. Within general aviation, a similar burden of responsibility falls on seaplane pilots.

There may be a perceived element of unfairness. After all, there are far more boats than seaplanes, causing far more noise, creating far more pollution, and having far more accidents, and nobody seems to restrict their access. Some states are starting to require training and certification for boaters, though not on the same scale as pilots. This makes for an interesting and educative contrast when dealing with local authorities, who may equate—out of ignorance—the "hot dogging" operator of a personal watercraft with the pilot of a seaplane.

Municipalities may seem more accepting of boats than seaplanes, possibly because of a lack of knowledge about the seaplane's versatility, utility, and safety. We seaplane pilots have to get past the feeling of unfairness and educate people about our operations. Education is an incredibly powerful tool, and seaplane pilots may have to live up to not only their safety responsibilities but to the need to educate the uninitiated about the challenge, the excitement, the sheer beauty of this unique and wonderful aspect of aviation.

Rest assured that we in the FAA will do our part to help you stay safe and to step in where local governments interfere with federal authority.

The rest, as always, is up to you.

To obtain copies of the SPA Report, "Seaplane Compatibility Issues," contact SPA at 421 Aviation Way, Frederick, MD 21701-9920; (301) 695-2083. There is a charge for the report and for copies of SPA's "Water Landing Directory." Parts 1, 2, and 3 of this series are based on the report, "Seaplane Compatibility Issues," prepared for SPA by David Ketchum, President of Airside in Bellevue, WA. The noise portion of this report (covered in Part 2) was prepared by Bob Hamilton of Vashon, WA, and Aron Faegre of Portland, OR.

FEATURE

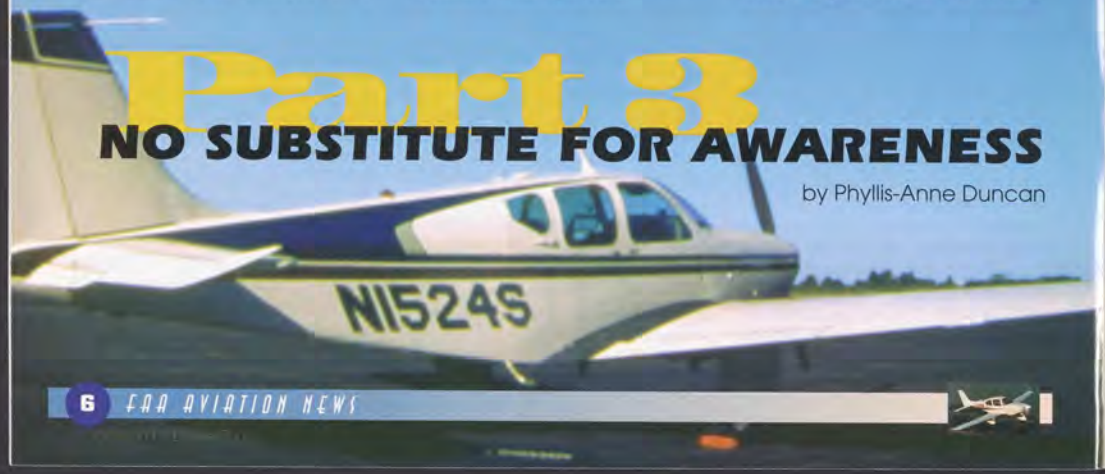
OPERATIONS AT NONTOWERED AIRPORTS

Traffic advisory practices add safety to operations at nontowered airports

Part 3

NO SUBSTITUTE FOR AWARENESS

by Phyllis-Anne Duncan



FAA Advisory Circular 90-45F, Traffic Advisory Practices at Airports Without Operating Control Towers, states fairly early on that, "There is no substitute for awareness while in the vicinity of an airport." We add for the purposes of this article, "There is no substitute for TOTAL awareness, etc."

What is "total awareness" in the vicinity of airport?

Using all senses that provide you information about the traffic in the vicinity of an airport, particularly one without an operating control tower—or "nontowered airport."

The regulations require us to use only one sense—we have to see and avoid other aircraft. The use of both eyes and ears doubles your awareness, and you may hear what your eyes have "missed."

Part of "total awareness" is also the use of a bodily function that is not one of the five senses but something that we use everyday without hesitation. Yet, it seems sometimes when we are near an airport, we are struck mute.

What I'm talking about is speech. Your voice, out over the airwaves in the vicinity of an airport, could—along with your ears and eyes—save you from a ground collision or a near midair collision, a traumatic occurrence in and of itself. It could also save you from a worse trauma, a midair collision.

For Example...

Several years ago, an instructor in the Washington, DC area had a student with her whom she was readying for his private pilot checkride, and as part of the preparation the instructor was putting him through a simulated practical test. It was mid-afternoon on a weekday, and it seemed they were in the only airplane around. Nevertheless, the radio was tuned to the airport's UNICOM frequency (also the airport's Common Traffic Advisory Frequency—CTAF), and the student was making all the appropriate broadcasts. The radio was working; they knew this because the UNICOM operator acknowledged their "radio check" and several of their broadcasts. The student had re-checked transmission and reception again after leaving the traffic pattern for some airwork then returning to practice takeoffs and landings. No one else was announcing his or her presence at the nontowered airfield east of Washington, DC.

After several successful takeoffs and landings of all types, the instructor decided to introduce an emergency for the student —an aborted takeoff. The instructor knew this could be done safely at this airport because years ago her instructor had done it with her there. The instructor also knew at what point on the takeoff roll she could call for the abort and still have plenty of runway left to rollout on. The student and instructor had discussed aborted takeoffs and had practiced them before.

The instructor called for the abort, and the student handled it just fine, calling out the steps and taking the proper actions, including announcing on the CTAF that the aircraft was aborting a takeoff. At this particular airport, the taxiway entrances were few—only two turnoffs, which were both behind the aircraft after the abort. The student announced on the CTAF that he was back-taxiing on the runway and began to turn the aircraft around.

Bearing down on them was a light twin. The instructor took over the aircraft and steered it toward the grass at the side of the runway. The twin rotated and passed over the Cessna 152, causing both instructor and student to duck out of reflex.

"What did I do wrong?" was the student's first question, worried that he might have done something wrong or might not be recommended for his flight check.

The instructor replied that most likely the hapless student hadn't done anything wrong. Anyway, she turned it into a lesson on collision avoidance.

"What do you think caused this?" she asked, and they discussed how probably the pilot of the twin had not been monitoring the radio and did not realize that they were still on the runway. The student went home sobered and a little shaken, and the instructor waited a number of hours for the twin to return.

In a conversation with the twin's pilot, she determined that he had, indeed, left the radios off, for no good reason, admittedly. Besides, what was the problem? There had been no accident.

This long example simply shows that while eyes looking out for other aircraft to avoid works well, ears listening for a traffic advisory might have made the twin pilot delay his takeoff until hearing a "clear of the active" announcement. There would have a been a lot less excitement all around.

Mike Fright?

The reasons why people can't or won't talk on the radio at nontowered airports are varied. Of course, it's easy to say you don't have to talk on the radio at a nontowered after all. Or "It's too noisy and distracting." Or "I don't want to add more chatter to an already congested frequency."

Perhaps it helps to think of talking on the radio at a nontowered airport not as a one-way event but as an exchange of information. You're not only telling someone where you are, but that someone else may be listening and, better yet, may respond to let you know a vital piece of information—his or her location in the pattern.

Some people can be as loquacious as anyone in social situations or with their families, even on the telephone, but when they hold a microphone up in front of their faces, they freeze. No one wants to sound like an idiot on the radio where other pilots are listening, and that could intimidate them enough to keep them from talking. This, fortunately, can be overcome with patience and practice. I had a student who would break into cold sweats at the thought of actually talking on the radio, so we practiced and practiced on the ground with an unplugged mike. We listened to radio communications at other airports—towered and nontowered—and finally he decided this was kind of cool. He got to the point where he didn't want me to help anymore, and his voice would drop an octave as he spoke—we called it his "airline captain's voice." Whatever—it worked for him. This is an adversity that most can overcome. Of course, listening doesn't require you to speak, but remember for communication to be successful, one must listen and speak.

But What Do I Say?

An interchange between pilot and controller is fairly straight-forward. A great deal of this communication is repeating clearances or instructions, and many people have less trouble with this than transmitting in the blind at a nontowered airport. The AC we mentioned above outlines traffic advisory practices, and we'll summarize them here. The *Aeronautical Information Manual* (AIM), paragraph 4-1-9, also includes information on traffic advisory practices at nontowered airports.

But before we talk about what to say, let's back up to something extremely important—identifying the frequency you should broadcast on.

Each airport without an operating control tower has a **Common Traffic Advisory Frequency** (CTAF) designated for it. The CTAF may be the frequency of the tower when it is operating—at airports with towers but where the tower doesn't operate 24 hours a day. It may be the frequency of the flight service station (FSS), if there is one on the field, or it could be the airport's UNICOM or MULTICOM frequency. The CTAF for an airport is published in the *Airport/Facility Directory* (AFD), on aeronautical charts, on instrument approach procedures, and on standard instrument departure (SID) procedures.

AAS from FSS

At airports with an FSS, pilots can receive the airport advisory service (AAS) from the FSS. This advisory will provide you with the wind direction and velocity, favored or designated runway, altimeter setting, known traffic (the unknown traffic being those whose opted not to use this service), NOTAM's, airport taxi routes, traffic pattern, and instrument approach procedure information. However, the AAS does not function as positive control—these are simply advisories, not all of

this information may be available all the time, and there is no requirement to talk to the FSS at the airport. So, while you may be gleefully chatting away with the specialists, don't forget to use that other sense to see and avoid pilots who may not be so communicative.

When inbound, establish two-way communications with the FSS at least 10 miles from the airport. Report your altitude, aircraft type, and location relative to the airport. Indicate whether you intend to land at the airport or are merely overflying. If you are landing, now is the time to request the airport advisory.

When departing an airport with an FSS, report to the FSS on the CTAF that you're about to taxi, when you enter the airport's movement area, and when you taxi onto the runway—and which runway you're departing from. Once airborne you can advise the FSS on the CTAF the aircraft type, full identification number, type of flight planned, etc. Remember, other pilots approaching the airport or overflying it may be listening. Your broadcast on the CTAF will get them looking for you, and if they see you, they can avoid you.

Example of AAS Phraseology:
Inbound:
"Vero Beach Radio, Centurion six niner delta delta, one zero miles south, two thousand, landing Vero Beach. Request airport advisory.
Outbound:
"Vero Beach Radio, Centurion six niner delta delta, ready to taxi, VFR, departing to the southwest from runway 22. Request Airport Advisory."

Note, too, that the number of airports with active FSS's on the field is fewer and fewer each year. Consequently, you need to consult current information to establish the CTAF for an airport.

Self-Announcing Position or Intentions

A new pilot may feel the silliest when he or she "self-announces," but self-announcing on the published CTAF is the best and perhaps the only way to let others know what you're doing at a nontowered airport.

Practice approaches at nontowered airports can offer a unique situation where the wind direction may indicate the use of a runway opposite the direction of the published approach. Pilots on practice approaches should announce on CTAF:

1. When leaving the FAF inbound

2. When established on the final approach segment or immediately upon being released by ATC

3. Upon completion or termination of the approach or upon executing the MAP

Aircraft departing the airport where practice approaches occur frequently must, of course, look out for aircraft on the approach, listen for aircraft transmitting practice approach intentions on CTAF, and broadcast their own intentions on CTAF.

Frequency Congestion

Frequency congestion is most commonly cited by pilots at nontowered airports as the reason why they don't bother to "self-announce." They just can't get a word in edgewise. However, if all pilots followed recommended standard phraseology, everyone would have ample opportunity to get their message across. In a few succinct phrases, you can broadcast your position and intentions to other pilots, and they will be able to identify easily if you are traffic relevant to them or not. When you hear a "self-announcement" in the proper phraseology, you, too, will be able to discern all the information needed to assist you in your traffic scan. Part of effective scanning is knowing where to look.

Communicating on UNICOM or MULTICOM

UNICOM is what pilots at nontowered airports are most familiar with. MULTICOM is the frequency to use when there is no tower, FSS, or UNICOM, and it is commonly referred to as the "air-to-air" frequency. Your response when broadcasting on MULTICOM will most likely be from other pilots in the traffic pattern.

If you adhere to the following six steps, your inbound or outbound communications on UNICOM or MULTICOM will reduce frequency congestion, provide sufficient information to those listening, and enhance safety.

1. Select the correct CTAF. 'Nuff said about that already.

2. State the identification of the UNICOM station; i.e., the airport which you're using. This could be the most important part of the transmission when you have several airports in an area on the same UNICOM frequency. Other pilots need to know precisely which airport you intend to use. Suggested practice is to begin and end each announcement with the airport's name.

3. Speak distinctly. AC 90-42F also says to speak "slowly," but I don't want that misinterpreted because other people are waiting to use the frequency. Speak slowly enough that your words are not slurred together but quickly enough that others won't be agitated over the time you're taking. A good cadence will come from listening to others and with practice. (I'm from Virginia, which is technically the South, but northern controllers have accused me of drawling while southern controllers have said, "Whoa, you're talkin' too fast for me!" Sometimes you can't win.)

4. When inbound, call UNICOM or on MULTICOM about 10 miles from the airport, report your altitude, aircraft type, n-number, location relative to the airport, and whether you're landing or overflying. Request wind information and runway in use. When departing an airport, request wind and runway information before beginning your taxi-out. UNICOM operators from the airport will usually say "local traffic in the pattern" when they respond to either an inbound or outbound announcement, but if you don't hear that, you can always ask how many are in the pattern, bearing in mind that this can and probably will change any minute.

5. When inbound, report when you enter downwind, base, and final.

6. Report when you turn off the active runway after landing, indicating to others in the pattern that the runway is available for use. When outbound, announce that you are departing the runway in use and indicate whether you're remaining in the pattern or departing the area.

Examples of Suggested Phraseologies:

Inbound, at least 10 miles from the airport:
"Frederick UNICOM, Cessna eight zero one tango foxtrot, 10 miles southeast, descending through (altitude), landing Frederick. Request airport advisory, Frederick."
Then,
"Frederick Traffic, Cessna eight zero one tango foxtrot entering downwind/base/final (as appropriate) for runway one niner, full stop (or touch and go, as appropriate), Frederick."
Finally,
"Frederick traffic, Cessna eight zero one tango foxtrot, clear of runway one niner, Frederick."

Outbound:
"Frederick UNICOM, Cessna eight zero tango foxtrot at (location on the airport) taxiing, request airport advisory, Frederick."
As you taxi onto the active runway:
"Frederick traffic, Cessna eight zero one tango foxtrot, departing runway one niner, remaining in the pattern [or 'departing the pattern to the {direction},' as appropriate], Frederick."

This phraseology is good for either UNICOM or MULTICOM, but it is particularly important when on MULTICOM to repeat the name of the airport at the end of the transmission. As you become more accustomed to this phraseology, you will find ways to eliminate words and still get the message across.

DESIGNATED UNICOM/MULTICOM FREQUENCIES

Frequency	Use
122.7	Airports without an operating control tower
122.725	Airports without an operating control tower
122.750	Air-to-air communications and private airports (not open to the public)
122.8	Airports without an operating control tower
122.9	MULTICOM: activities of a temporary, seasonal, or emergency nature
122.925	MULTICOM: forestry management and fire suppression, fish and game management and protection, and environmental monitoring and protection
122.950	Airports with control tower or FSS on airport
122.975	Airports without an operating control tower
123.0	Airports without an operating control tower
123.050	Airports without an operating control tower
123.075	Airports without an operating control tower

Note: Wind direction and runway information may not be available on 122.950.

SUMMARY OF RECOMMENDED COMMUNICATIONS PROCEDURES

		Communication/Broadcast Procedures		
Facility at Airport	Frequency Use	Practice Approach	Outbound	Inbound
UNICOM (no tower or FSS)	Communicate with UNICOM on published CTAF (122.7, 122.8, 122.725, 122.975, 123.0) If unable to contact UNICOM self-announce on CTAF.		Before taxiing and before taxiing on the runway for departure	10 miles out. Entering downwind, base, and final. Leaving the runway.
No tower, FSS, or UNICOM	Self-announce on MULTICOM, 122.9	Departing FAF (name) or on final approach segment inbound		
No tower operating, FSS open	Communicate with FSS on CTAF	Approach completed/ terminated		
FSS closed, no tower	Self-announce on CTAF			
Tower or FSS not operating	Self-announce on CTAF			

Conclusion

Again, a direct quote from AC 90-42F sums up this article best: "Operations at airports without operating control towers require the highest degree of vigilance on the part of pilots to see and avoid aircraft..." Sometimes your ears can assist your sight, and sometimes your voice can help others "see" you. Safe operations at non-towered airports require us to stay alert and aware, to expect the unexpected, and to use the CTAF.

There is no substitute for total awareness.

The National Oceanic and Atmospheric Administration (NOAA), the United States Coast Guard (USCG), and NASA recently installed 406 MHz emergency locator transmitters (ELT's) on seven aircraft. The aircraft include a NASA DC-8 research plane, two NOAA P-3 "hurricane hunters," and Coast Guard command, search, and recovery aircraft. The seventh plane is a twin-engine *Aero Commander* that is flown by NOAA at low altitudes in remote areas to measure the water content of snow packs.

This "pace-setter" action is intended to demonstrate U.S. government support of 406 MHz ELT's in the U.S. general aviation fleet. The 406 MHz ELT's are commercially available and can be installed in general aviation aircraft on a voluntary basis.

"We're excited about the installation of this new technology," said Ron Wallace, Search and Rescue Mission Manager, at NASA's Goddard Space Flight Center, Greenbelt, MD. "We hope that other general aviation plane owners will follow our lead and update their own beacons."

ELT HISTORY

Installation of 121.5 and 243.0 MHz ELT's in the general aviation fleet was mandated by Congress in the 1970's to aid in locating missing aircraft. The 121.5 MHz ELT's were originally designed to be detected and located by overflying aircraft and fixed radio receivers, but spaceborne instruments are now the primary sensors. Soon after the implementation of the ELT installation requirement, it was discovered that many distresses were not being detected. Consequently, NASA initiated a research and development program to determine if ELT signals could be detected and located from space.

The NASA research program, which was conceptualized and originally developed at Goddard, has proved to be successful and has played a vital role in saving lives. The program has evolved into what is known today as the Search and Rescue Satellite-Aided Tracking (SARSAT) System. This system provides for location of the old-technology ELT's (121.5 MHz) as well as the new 406 MHz ELT's.

INTERNATIONAL PROGRAM

NOAA now operates the SARSAT space and ground segments for the United States. Internationally, the system is known as COSPAS-SARSAT

and includes Russian satellite instruments that operate in the same manner as the SARSAT system. Some 28 nations are now participating in the program providing both ground and space segment equipment.

ELT's SAVE LIVES

More than 6,100 persons have been saved because of the satellite system, in both aviation and maritime incidents, since the first space instrument was launched in 1982.

BENEFITS OF 406 MHz ELT's

A NOAA study found that converting the general aviation fleet to the newer 406 MHz ELT's would result in saving more than 130 lives a year that would otherwise be lost in aviation accidents.

Another significant benefit of converting the general aviation fleet to the newer 406 MHz ELT technology would be a dramatic reduction in needless search efforts and wasted resources expended each year by government and volunteer search and rescue groups finding and deactivating thousands of inadvertent 121.5 MHz ELT activations. Hundreds of thousands of dollars and thousands of search hours are expended annually searching for non-emergency, inadvertently activated 121.5 MHz ELT's. In addition, rescuer lives could be saved because searchers have been killed during these "non-emergency" 121.5 MHz ELT searches.

The problem is that rescue units must treat each inadvertent 121.5 MHz ELT signal as a "real" emergency search until they can prove otherwise. Unfortunately, the only way to do so is to actually search out and locate each ELT. In contrast, the unique digital signal of 406 MHz ELT's provides positive identification of each ELT that allows searchers to quickly identify the specific aircraft or, in the case of maritime units, the vessel involved. With just a few telephone calls, searchers can determine whether the activation was inadvertent or a real distress alert.

Because of inherent system delays in alerting using 121.5 MHz technology, alerting delays of up to several hours can occur after a 121.5 MHz ELT is activated. This can be a critical life-saving time lost before search and rescue forces can be mobilized.

This system delay and the number of inadvertent false alerts (about 97 plus percent) with no quick way to verify the identity of the ELT owner or to check if the signal is a true emergency signal are two of the reasons search and rescue organizations would like every 121.5 MHz ELT owner to upgrade to the newer 406 MHz ELT technology.

SARSAT

SARSAT is part of an international satellite system for search and rescue. It consists of satellites in polar orbit and a network of Earth stations which provide alert and location information to appropriate rescue authorities, anywhere in the world, for maritime, aviation and land users in distress.

The SARSAT instrumentation is carried aboard the NOAA (TIROS) series of weather satellites. When a distress beacon is activated by a marine vessel or by an aircraft crash, the SARSAT instrumentation receives the signal and transmits it to NOAA, in the United States, who then notifies the U.S. Air Force or the U.S. Coast Guard rescue coordination centers for appropriate action.

As with the older 121.5 MHz aircraft ELT's, the newer satellite-compatible 406 MHz ELT is turned on when an aircraft impacts the ground. Once activated, it periodically sends a short signal burst which is received by the satellites. The satellite retransmits the information to ground stations located around the world. These ground stations calculate the location of the crashed aircraft from the data received by the satellites. The location, along with the ELT's identification code, is then sent through a communication network to the nearest rescue coordination center for action. The process is entirely automatic and takes place in minutes. In the U.S., the ground terminals are located at Guam, Hawaii, Alaska, California, Texas, and Puerto Rico.

These locations provide full satellite coverage of the entire U.S. search and rescue area of responsibility designated by the International Civil Aviation Organization (ICAO). The U.S. communication network node, or Mission Control Center, is operated by NOAA at Suitland, MD.

The U.S. Rescue Coordination Centers are operated by the Air Force and the Coast Guard at several locations throughout the Country.

406 MHz ELT SIGNAL BURST

The burst signal transmitted by the newer 406 MHz ELT's contains a digital identification code that is unique to each unit. This identification code is the key to information contained in a registration data base. This database contains a detailed description of the aircraft and the ELT, plus several emergency points of contact.

This information enables the rescue coordination center to make an immediate phone call to the 406 MHz ELT owner, a relative, or someone who may know the owner's whereabouts. It also allows quick access to flight plan data. Being able to identify the owner of an activated 406 MHz ELT also means false ELT activations can be cleared up without calling out the rescue forces. In addition, being able to identify the owner of a 406 MHz ELT involved in an accident allows the rescue coordination centers to obtain information that can help speed up response time and minimize search time.

OTHER 406 ADVANTAGES

In addition to giving the identity of the aircraft, the 406 MHz ELT's have several other important advantages not provided by the existing units.

- They have better location accuracy, drastically cutting down the area that needs to be searched.

- Rescue response time is much shorter because the improved accuracy allows the rescue response to begin after only one satellite contact, while the older units require at least two separate contacts.

- They have enhanced crash survivability which greatly improves the odds of their working after the crash.

406 MHz ELT's AND GPS

Another significant advantage will result from a recent development. Self-locating 406 MHz ELT's that transmit GPS positioning data in the identification data burst are being worked on. Such units could virtually take the search out of search and rescue. Self-locating 406 MHz ELT's could further reduce rescue time even more because their alert and location data could be relayed in real time through geostationary satellites. Although NOAA's geostationary weather satellites can perform this relay function today, geostationary satellites can't be used to compute a 406 MHz ELT's position like a moving satellite can. The reason is the motion of a polar-orbiting COSPAS-SARSAT satellite allows the use of the Doppler effect to compute the location of a distress signal. Since a geostationary satellite doesn't move, there is no Doppler effect. But a geostationary satellite can provide real-time distress notification while there is usually a wait for a polar-orbiting satellite to come into view of the distress signal.

The delay because of orbital geometry can delay the reception of the ELT signal by the ground stations by an hour or more. But if a self-locating 406 MHz ELT could transmit its location to a geostationary satellite, the alert and location data could be received by authorities within minutes of the distress. And historically, the faster rescue forces can be activated and the victims found, the more lives that can be saved.

SATELLITE RESPONSIBILITY, CONSTRUCTION, AND OPERATION

NASA Goddard is responsible for the construction, integration and launch of NOAA satellites. Operational control of a spacecraft is turned over to NOAA after it is checked out on orbit, normally 21 days after launch. The NOAA satellites carry seven scientific instruments and two for search and rescue.

If you would like more information about 406 MHz ELT's and the COSPAS-SARSAT system, you can write:

NOAA/NESDIS, Direct Services Division, E/SP3, Federal Building 4, Room 0158, Washington, DC 20233.

NOAA, the United States Coast Guard, and NASA all have World Wide Web pages on the Internet dealing with the COSPAS-SARSAT system. You can start with the history of COSPAS-SARSAT at NOAA's Web site (http://psbsgi1.nesdis.noaa.gov:8080/SARSAT/homepage.html). For information about maritime beacons you can visit the Coast Guard web site at (http://www.navcen.uscg.mil/marcomms/gndss/epirb.htm). Doing an Internet search under SAR or SARSAT will link you to many other sites.

FAA AND ELT's

No discussion of ELT's would be complete without reminding everyone working with ELT's, repairing aircraft with ELT's, or flying aircraft with ELT's installed to review FAR § 91.207, Emergency locator transmitters, for the proper operation and performance of ELT's, crash sensors, batteries, etc.

Finally, to reduce the number of false alerts of 121.5 MHz ELT's and to help detect an actual distress alert, pilots and everyone with access to an aviation frequency radio should periodically monitor 121.5 MHz for ELT signals. Pilots should do this check automatically before securing their aircraft after a flight. The ELT signal you detect might be telling the world of your last hard landing. This 10-second check can save others from the risk and trouble of searching for your aircraft's inadvertently activated ELT.

We should all "Be Alert For An Alert."

Editor's Note: This article is based on a NASA news release. We wish to thank Mr. Ron Wallace, NASA/Goddard Space Flight Center; and Mr. Mark Moran, NOAA/NESDIS, for their help with this report.

SURVIVING THE RAMP INSPECTION

by Joel D. Wilcox

Gordon C. Evans Photo

The horror stories abound about FAA aviation safety inspectors arriving at the airport and grounding airplanes left and right, yanking certificates, and smiling in the face of outraged pilots. A small incident is retold second and third hand; superfluous and inflammatory information is added to the point where the story that reaches the pages of commercial aviation publications hardly resembles what actually happened.

Whereas the FAA, as with any human endeavor, has its share of problem employees, those individuals are in the extreme minority, and they are shown quite readily that their behavior will not be tolerated. In truth the tales of widespread FAA abuses of power are, quite simply, myths concocted and promulgated by those with a hidden agenda. What follows is an accurate description of what a typical ramp inspection entails. Like the author, although I've never received one in 18 years of flying, I have conducted the occasional one, with pleasant results all around. We hope this will allay some fears and clarify some confusion about the dreaded "ramp check."—Editor

I don't know how often, on average, the general aviation pilot receives a ramp inspection from an FAA Aviation Safety Inspector (ASI). In my 17 years of flying, I've never had one, and I know many pilots who've flown 30 years and more and never had a ramp inspection. However, since ASI's perform a few hundred "ramps" each year in my state of Alaska, I'm sure there are pilots who feel they're getting more than their fair share. If you've never had a ramp inspection, here's what it's all about.

First, the ramp inspection is almost never targeted at a specific pilot or airplane; that is, unless Air Traffic has called in an unsafe operation, the ASI doesn't leave the office with anything more in mind than an airport. Other reasons to perform a ramp inspection are when a complaint is received or when the inspector him- or herself sees a possible act of non-compliance with the FAR. Otherwise, the inspector's goal is to perform a normal work function as assigned by headquarters or the local office. Inspectors in Alaska are typically charged with performing about 10 inspections apiece each year. Consider the ramp check as something akin to taking the pulse of compliance and safety.

You can expect the ASI to introduce him- or herself to you when you've just returned from a flight or preparing to leave. You won't receive a ramp inspection while you're waxing or working on your airplane; the ramp inspection is an operational inspection in accordance with FAR Part 91.

An ASI may examine the exterior of an unattended aircraft but can't board the aircraft without the knowledge of the pilot/ operator. Sometimes two inspectors perform ramp checks together: The operations inspector specializes in pilot paperwork, while the airworthiness inspector looks at the

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aircraft and its paperwork.

The operations inspector can perform either inspection alone, although he or she is required to coordinate later with an airworthiness inspector in the case of a suspected airworthiness discrepancy. An exception to this coordination would be if the operations inspector found an obviously unairworthy aircraft. In this case he or she must tag the aircraft with an Aircraft Condition Notice. Technically speaking, the Condition Notice cannot ground an aircraft, although it can specify that operation of the aircraft with the discrepancies uncorrected may be contrary to the pertinent FAR or that a Special Flight Permit is required to operate the aircraft.

Before the ASI checks your paperwork, he or she is required first to show you FAA identification. This may be followed a chat about what kind of flying you're doing that day or comments (hopefully good!) about your aircraft. On the one hand the inspector needs to know what kind of flying you're doing, but, then again, many inspectors just enjoy talking about what other pilots are doing.

Next, the inspector will ask you for your airman and medical certificates.

The airman certificate must have the appropriate ratings and limitations for the operation being conducted, while the medical must be current and of the appropriate class.

The FCC radiotelephone license is no longer required, except for international operations. Although you're not required to have your pilot logbook with you, the inspector may ask if it's available. He or she will be looking for a current BFR or completion of a phase of the WINGS program, instrument currency or an instrument proficiency check (if required), and PIC currency (90-day landing currency for carrying passengers).

Much of the aircraft inspection covers paperwork, as well. The aircraft must have the proper airworthiness and registration certificates. Once back in the office, the ASI will do a computer search to make sure the registration certificate is issued to the current aircraft owner. Radio station licenses are the concern of the Federal Communications Commission (FCC), not the FAA, although an inspector should remind the pilot/owner if he or she notices an expired license.

The aircraft must have appropriate markings and placards, a current and approved flight manual if appropriate, and weight and balance information. A thorough check here will also include comparing the equipment listed on the weight and balance form to the installed equipment. If the aircraft has a minimum equipment list (MEL), the ASI will check that it matches the aircraft serial and N-numbers and contains a Letter of Authorization from a flight standards district office (FSDO). If the aircraft is being operated IFR, the inspector will look for a notation in the aircraft log or some other place that shows a VOR check within the last 30 days.

Although an aircraft log is not required to be on board the aircraft, the ASI can ask to see it at a later date. If, for example, he or she noticed that a required ELT was missing from the aircraft, he or she may want to see an entry in the log acknowledging that the ELT would not be missing more than 90 days.

Checking aircraft documents may also mean checking that aeronautical charts appropriate to the operation are available. Finally, the aircraft must have FAA Form 337, Major Alterations and Repairs, for auxiliary fuel tanks installed in the passenger compartment.

The ASI will perform a general inspection to determine the airworthiness of the aircraft. This will include looking at the seats and safety belts for installation and condition and checking the expiration date of the ELT battery. He or she will also want to see than an aircraft identification plate is secured to the aircraft exterior (usually near the tail section).

Whenever possible, discrepancies found during a ramp inspection will result only in an administrative action—such as a letter of correction—and not an enforcement action. The ASI will attempt to work with the pilot/operator and will allow time, for example, for the operator to provide evidence of missing documentation. If no discrepancies are found during the ramp check, the *Aviation Safety Inspector's Handbook* advises the inspector to compliment the pilot or operator.

And that's all there is to it.

Mr. Wilcox is the Regional Safety Program Manager in Alaska.

JUMP PILOT'S NOTEBOOK

by Don Yahrling

William Boettcher photos courtesy of U.S. Parachute Association

For some time, the United States Parachute Association (USPA) has been collecting material from "skydiver drivers" with the intention of creating a jump pilot's handbook. A few drop zones (DZ's) around the country already use something similar with their own flying staff, and USPA hopes the information presented here is just the first wave of a flood of responses from DZ's and jump pilots everywhere. If you're thinking about building some time and experience as a jump pilot, read on.—Editor

This article is not intended to teach you how to fly; if you're an FAA-certificated pilot, you should already know how. Rather it is intended to inform the non- or aspiring jump pilot about the added challenges and techniques of flying jumpers. It also gives jumpers and DZ operators some appreciation for what pilots must go through to meet the needs of skydiving and the safety requirements.

This article is written with the Cessna 182 *Skylane* in mind as the basic aircraft, since it is now, and will probably continue to be for years, the most widely used launch platform for skydiving. A pilot should read the operator's manual for the particular aircraft he or she will be flying. This might seem like a really bizarre thing to mention, but you can be sure that some jump pilots are reading this and convulsing with laughter because they've accumulated quite a few hours flying jumpers and still haven't seen one--the manual, that is.

If there is anything that you do not clearly understand in the operator's manual, ask the aircraft owner or the chief pilot to explain it. Always keep in mind that DZ operators want you to do things a certain way because, of course, you may not own the aircraft and these procedures have been proven to work safely with a minimum of wear and tear over the long haul. If you don't use them and get caught doing something unique, you might just be out of a job—or worse if what you attempted fails to work. The intention is not to scare you, but rather to assure that you fly in a manner that has been found to promote safe and efficient skydiving operations.

Now it's time to get down to business. We've printed in checklist form what jump pilots need to consider on every load. It's by no means everything that it takes to fly jumpers, but it's a sound start. Remember, what you read here is not the only way to do things, but it is one approach.

General Notes

1. All pilots should provide the DZ operator with a copy of his or her pilot's certificate and current Class I or II aviation medical certificate.

2. Assuming you are already checked out in a Cessna 182, you should still take a check ride with the DZ's chief pilot so he or she can explain first hand and in real time what takes place from pre-flight to landing (for you and your jumpers).

3. Every effort needs to be made to fly according to accepted standards of procedure and conduct. For example, the Kay Larkin Municipal, in Palatka, Florida, recognizes the normal left traffic pattern with 1,000 feet AGL as the appropriate altitude for light aircraft. So downwind takeoffs, right traffic, and high or low patterns are not really popular with the airport management, nor are aerobatics or stunting by pilots close to the airport.

4. Keep in mind these two thoughts:

- "If you fly like a fool, expect to be treated as one."

And

- "When everything else is falling apart around you, fly the aircraft first!"

Procedures

If the chief pilot completed the dual check ride thoroughly, you will quickly gain the confidence of your skydivers (and the DZ operator). Here's how the standard procedures go, in sequential order.

° Before Loading: Make sure a NOTAM (Notice to Airmen) is filed and activated and that you check the weather with your closest Flight Service Station.

° Weather: You are the one who needs to know what the current and projected weather is supposed to be for the day (or evening, if you're doing night loads); it's your responsibility to call the closest Flight Service Station and find out. PBS's "A.M. Weather" (although very well done), The Weather Channel, and the like, don't normally satisfy FAA personnel or NTSB investigators as meeting the requirements of an "approved source." Also, learn the peculiarities of the geographic area you are flying in. Things like mountain waves and lenticular cloud forms are just pictures in a book to a jump pilot who has only flown in Florida. And don't forget "density altitude" if you've got a heavy load.

° Weight and Balance: Seasoned jump pilots are really good at estimating sizes and weights of a load, coupled with fuel load, temperature, elevation, and so on. But they got to be that way through time and experience. There should be a sample weight and balance for various loads with the aircraft paperwork that can help here. As for the legendary five- or six-jumper Cessna 182, it's really a matter of whether or not the weight and balance works. But there had better be enough seat belts, done with the proper approvals. Not all FAA Airworthiness Inspectors are easily hoodwinked. And although a strong C-182 can carry five jumpers without difficulty, it may be hard to try to explain away that extra person without approved paperwork during a mishap investigation.

° Seatbelts: Skydivers, as a rule in times past, had a generalized aversion to wearing seat belts, even when they were provided. A great deal of that came from the days of the open-door Cessnas. Most 182's used for jumping these days have in-flight doors, so the odds of a canopy going out the door are greatly reduced. Crashes of jump aircraft in recent years seem to be modifying the obsolete attitude of not using seat belts. And the FAR now say that the pilot will ensure they are donned prior to taxiing. No snivels allowed here.

[Note: The following procedures are specific to the Cessna 182; for jump aircraft of a different make and model, please consult the operating handbook for the aircraft and the chief pilot's or DZ procedures.—Editor]

- Before Takeoff:
  - ° Controls FREE
  - ° Fuel selector on BOTH
  - ° Check mixture FULL RICH
  - ° Prop IN
  - ° Trim SET
  - ° Cowl flaps OPEN
  - ° Jump door SECURE
  - ° Transponder SQUAWK 1200 or dedicated code.

- Takeoff:
  - ° Announce intentions on UNICOM (ground or tower as appropriate)
  - ° Center aircraft on runway
  - ° Advance throttle smoothly to FULL IN
  - ° Lift nosewheel at 60 mph IAS
  - ° Rotate at 75-80
  - ° Accelerate to 105 mph for climb after out of ground effect.

- Climb:
  - ° Reduce throttle to 24 inches manifold pressure
  - ° Reduce prop to 2,400 rpm, or it may require 23 inches and 2,350 rpm when O.A.T. exceeds 85 degrees F. to maintain oil temperature (205 degrees C., or lower)
  - ° Use 80-110 mph IAS for climb.
  - ° Set fuel selector as required.
  - ° Find out where the climb-out area is to avoid other traffic.

- At Altitude:
  - ° Close cowl flaps
  - ° Reduce power to 15 inches

manifold pressure, or as required to maintain altitude
- Prop to 2,200-2,300 rpm
- Stabilize airspeed at 80-85 mph for jump run.
- For formations, the lead aircraft should make the altitude on the base leg and maintain 90 mph for climbout and jump run.
- Don't forget to advise your air traffic control facility that you are about to drop jumpers (usually one minute prior). Also, announce on UNICOM that you are about to drop and declare "jumpers away." Check with the DZ operator on arrangements with local ATC for coordinating jump operations.

- After the Exit: Close the door, but the job's not over just yet. Most places want you to count canopies after the load opens and also keep an eye out for malfunctions and reserves. One drop zone even requires its pilots to put a clock on the jumpers after opening. That one seems a bit extreme and would more properly be the job of the management. Besides, you've got lots to do as it is—things like flying the airplane, watching for other traffic, wishing you had checked the fuel before you took off, and so on. Remember, you are required to advise air traffic control when all jumpers land unless other arrangements have been made.

- Descent:
  - Flaps UP
  - Jump door closed and bolted
  - Cowl flaps CLOSED
  - Initially, set throttle at 15 inches and the prop at 2,200 rpm.
  - Use racetrack patterns with gentle banks. It's okay to let the airspeed build up to the top of the green arc (160 mph IAS) with no bank in smooth air; when turbulence is encountered, drop speed to 120-130 mph IAS and reduce manifold pressure as required (keep the oil warm and don't drop below 10 inches if at all possible!).
  - Descend away from the jumpers' opening area if other aircraft are dropping.
  - Reduce manifold pressure gradually to no less than 12 inches, keeping oil temperature above 150 degrees C.
  - Keep your eyes open for traffic and announce your intentions over Unicom.

- Before Landing:
  - Do not exceed 120 mph for pattern entry.
  - Fuel selector on BOTH
  - Mixture FULL RICH
  - Prop FULL IN
  - Carb heat as required.
  - If you're below 100 mph IAS, use flaps as needed.
  - Trim for 80-90 mph IAS for downwind and base, 70-80 for final. Slips with full flaps are prohibited by the aircraft handbook and should not be attempted.
  - At flare time, maintain a level attitude until airspeed deteriorates to approximately 50 mph IAS; Hold the nosewheel off as long as possible; easy on the brakes. Let it roll!

- After Landing:
  - Cowl flaps OPEN
  - Flaps UP
  - Transponder OFF
  - Taxi slowly, watching for errant jumpers under canopy and other traffic.

Emergency Procedures

If you experience engine failure while still on the ground, stop! Don't push it. If you should run into problems after you're airborne, here's what to do.

- Engine failure after takeoff:
  - Check fuel selector on BOTH
  - Mixture at FULL RICH.
  - Maintain straight and level if below 400 feet AGL and make a power-off landing.
  - Prior to landing, turn the fuel selector to OFF, mixture to FULL LEAN, mags and master to OFF, and unlatch the doors.
  - Land as slowly as possible, with full flaps, and clear the aircraft after impact.

- Engine failure aloft:
  - Above 1,000 feet AGL, jumpers should be given the option of jumping.
  - From 1,000 feet, you should always be in a position to return to land, if not, you've screwed up.

- Engine fire:
  - Fuel selector OFF
  - Mixture FULL LEAN
  - Mags and master OFF
  - Jumpers should exit.
  - Attempt to extinguish fire by gaining airspeed, but use the fire extinguisher to save your bacon; if you have no luck, point it to an open area and BAIL OUT. As for jump pilot bail out techniques, ask a pilot who is also a jumper, usually the chief pilot. The bottom line is, "If ya gotta go, ya gotta go."

Specialized Procedures

Skydivers ask a lot of a jump pilot, often to a point which the pilot doesn't regard as important. With a little information about how we do what we do as skydivers, the well-informed jump pilot will be able to comply with and understand those rather unusual requests.

- Spotting and Corrections: Skydivers generally like to exit the aircraft upwind of the target (the pea gravel or other landing area is normally used as a reference), with the distance upwind dependent on the wind velocity from opening altitude (2,000-3,000 feet AGL for experienced jumpers, 3,000-5,000 for students, and 4,000-5,500 feet or higher for tandems and canopy formations) to the ground.

Upper winds in many areas really only affect skydiving a few days a year, as most of the jump is spent in freefall with only negligible drift. Normally it pays to get the winds at altitude from the FSS before takeoff or at least en route to drop altitude, especially in some locations with historically strong uppers.

Often, the jump pilot is asked to fly a wind drift indicator (WDI or "streamer") pass, especially before student operations. Fly into the wind, over the target, just as you would a normal jump run. You'll be given corrections by verbal or hand signals to correct left or right, usually in increments of five degrees. Once the jumper throws the WDI, close the door, do a quick 90-degree turn (watch the G's, as the jumpmaster is kneeling; it doesn't amuse your other "occupants" either), level off, and look for the WDI. Make sure the spotter sees it, too, then scan for traffic regularly, beginning a climb to your next altitude but making an effort to position the aircraft so that the jumper sees the WDI until it lands. He or she should then give you a jump run to use.

On jump run, attempt to keep the wings level and airspeed at 80-85 mph since many spotters use the plane as a reference. If you've made the ticket altitude when they climb out, that's all one can ask for. The aircraft is going to descend if you maintain the same airspeed during the climbout; adding power in an attempt to hold the altitude is frequently done with experienced loads, but it can cause difficulties when students are trying to climb outside. Use the aileron to keep the wings level, and try to keep the ball centered. Careful! The left rudder closes the jump door, which is not nice to do with four outside on the step trying to launch a formation, a static line student hanging from the strut, three or four people on a Level I AFF jump, or a tandem pair with video exiting as the door slams down on them.

- Flight Planning: Think about what positions over the ground you want to be in at specific altitudes. The military refers to this sort of thing as "backwards planning." Where do you want to be when the load exits? The answer: Over the exit point (or spot) at the altitude on the ticket. Where do you want to be when you turn onto jump run? You should be a couple of hundred yards short of the pea gravel or other target, at ticket altitude, flying over the peas, into the wind, toward the spot.

- Flat Turns: Jumpers definitely do not want a coordinated check ride-style turn. Corrections while a jumper is spotting are made with the rudder, not the yoke. You'll only get about 15-20 degrees out of the rudder before you eventually have to use an aileron, but that should tell you that the jumper's idea of where the run should be doesn't coincide with your own.

- Jump Door: You--the jump pilot--should be the one to operate it, unless you trust the jumper who is opening it and are sure he or she knows how. The Feds say the pilot has to do it, though. Open the door at approximately 90 mph or less; try not to open it above 120 mph or you may buy an airplane and possibly get to make your first freefall. Close it by briskly pushing on the left rudder pedal. Make sure a jumper, static line or seat belt isn't in the way.

- Students (Static line, freefall, AFF, and Tandem): All students should exit no lower than 3,000 feet or above. At the Palatka Parachute Center, static line jumps are from 3,500 feet AGL, student freefalls are from 3,500-9,500 feet, tandems from 10,500, and AFF jumps all from 11,500 or better with Cessnas. With students, it also helps to get the airspeed down to 70-80 for the actual climbout, then allow the nose to drop slightly and accelerate to 80-90 mph or so as they go.

On instructional jumps, make right-hand orbits for static line and freefall students, allowing the jumpmaster (JM) to observe the student during exit and freefall before closing the door. At higher altitudes (7,500 feet), the jumpmaster will normally follow the student out.

Always check to see that a student jumper's static line is connected prior to opening the door on jump run. The JM shouldn't mind your backing him/her up.

AFF jumps leave as a group, one or two JM's, the student, and possibly a video person. Tandem pairs are attached to each other, though there may be video or still camera folks or a qualified jumper going along to observe.

CRW stands for canopy relative work. These folks get out of the airplane and open their canopies immediately, then maneuver their canopies in order to hook up with each other. They may want no "cut" (or power reduction) for exit but rather a higher airspeed. CRW jumpers may also ask for a downwind or crosswind jump run. Okay, fine, no sweat. You might wish to orbit them at a safe distance until they are down below 3,000 feet to

watch out for other aircraft (or to locate them when they inadvertently land off the airport).

° Demos: Timing is everything during an exhibition skydive. You're normally doing a paid demonstration jump within a specific time frame, so get wherever you need to be early; allow for a slower climb if you've got more fuel on board than usual.

Because many demos are in high-traffic areas, a little extra vigilance is often the hot tip. You may wish to circle the drop area until all jumpers are on the ground. You'll sometimes have an abnormally high amount of radio traffic and have to switch frequencies a lot more, so the workload is usually greater in a demo situation than on an average load at the DZ.

Just the Basics

There's lots to disagree with in this article, and we'll probably hear about it quickly enough. But this information represents just one method of jump flying that has proven itself to be moderately successful for the last eighteen years. However, the author is certainly neither old enough nor bold enough to ignore good advice -- especially about flying.

Thanks for tunin' in! ✈

USPA National Director Don Yahrling, D-4077, is an FAA commercial pilot, with ASMEL, Instrument, CFI and DC-3 type ratings. He's been skydiving since 1967, flying jumpers since 1976, and is also a Master parachute rigger. Yahrling holds USPA's conventional and AFF Instructor/ Examiner ratings, working since 1989 as Director of the AFF Jumpmaster and Instructor Certification Course and has served on USPA's board as a member of the Safety and Training Committee. This article originally appeared in the April 1995 issue of Parachutist.

IN THE HANGAR by Patricia Mattison

WHY DID I BECOME A PILOT?

When I was the proud, albeit frequently penurious, owner and chief instructor of a flight school in Corona, CA, one of the first questions I asked prospective students was, "Why do you want to learn to fly?" I received a plethora of responses to my query, some of which were bizarre. The most peculiar was a student who worked in a mortuary and who said that he "could make more money if I scatter ashes from a plane."

A few of the more straight forward replies were, "So that I can travel on business," or, "I've always wanted to fly," or, "I made a bet with a friend," and so on. One woman wanted to learn so that her husband, who had recently had a heart attack, could fly with her while she was pilot in command. Not so peculiar when you really get down to it. If she didn't learn and fly with him I'll make book on the fact that he would have flown anyway.

Most pilots have an insatiable love of flying and of the aircraft that take them into the air. For most the ability to fly is a childhood dream come true. These are lucky people who fly for the sheer love of flying. Most of us start out that way, starved for time in the air and devoured by the desire to learn.

We all start out thinking that we will never tire of being in an airplane. Never will we get complacent or discouraged or disgusted with anything to do with flying. Suddenly, the bloom is off the rose, so to speak. Burn-out is imminent; you can't stand the sight, smell, or mention of an airplane. "What has happened to me?" you ask, "I used to love to fly." Where is that student who lived and breathed aviation? Why has this happened to that eager student? What happened to the sense of adventure, the thrill of learning something new, the anticipation of each flight? Is it gone forever or is it still lurking in the wings waiting to be called to center stage.

Even though we may feel all of the aforementioned negative thoughts and emotions we continue to fly, some on a daily basis. Questioning our own rationale, we fly on. Using sloppy planning or unreasonable rationalization during poor weather conditions, the inability to make basic good decisions become an everyday occurrence. Eventually something brings us up short.

A flight instructor of mine once told me that there is an accident out there, just waiting, with your name on it. Those words have stuck with me since he uttered them. I have spent most of my flight time with that thought in my head, trying to out think that future accident. There have been a few times that I wished that I were anywhere else but flying at that moment. Usually the result of a poor experience was to encourage me to learn all I could about the circumstances surrounding that situation and how to avoid it in the future. We all learn by our mistakes.

The trick to remaining the eager student, ready to fly, is to tap the unadulterated mind set, the willingness to learn and the thoroughness we used to employ. It's all still there in the recesses of the mind waiting to be called forth, a bit rusty, but still there. Try to remember how you felt on your very first flight—the excitement and thrill you experienced when the engine turned over for the first time, how vast the landscape seemed and how small the people appeared from such a lofty perspective. Keep that close to your heart, hold on to it as though your life depended on it because it may someday.

Being a pilot is something special, just don't forget that student pilot inside. +

Ms. Mattison is the Safety Program Manager at FAA's Juneau, AK Flight Standards District Office.

TO FLY OR NOT TO FLY

by Richard Davis

How many times in our flying careers have we found ourselves down at the local fixed base operator renting an aircraft we've never seen or flown before? We go through the usual routine of signing the rental agreement, completing the company flight checkout for insurance purposes, and making arrangements for our hard-earned dollars. Of course we take time to find out about how to access aircraft during non-business hours and in the case of a "wet lease," how to pay and get reimbursed for those extravagant fuel costs. And we're all set, let's go flying!

But, have we covered all the bases? Have we met all of the FAR? More importantly, have we assured ourselves, our passengers, and the public that the aircraft we are about to operate is airworthy and safe for flight? Have we forgotten to research the aircraft's maintenance records to make sure of the aircraft's maintenance and inspection status? Did we personally inspect the aircraft to assure that it meets the minimum requirements specified in the regulations? Or, are we assuming that the fixed base operator has taken care of all these details? Did we even ask?

The purpose of this article is to address various areas and misconceptions regarding the pilot's responsibilities to assure that the aircraft flown are airworthy and safe for flight and to provide some tools to help accomplish that goal.

Who Is Responsible?

FAR §91.7 states in part that, "No person may operate a civil aircraft unless it is in an airworthy condition." This rule goes on to say that "the pilot in command of a civil aircraft is responsible for determining whether that aircraft is in condition for safe flight."

FAR § 91.403 also states that, "The owner or operator of an aircraft is primarily responsible for maintaining that aircraft in an airworthy condition including compliance with Part 39 [AD Notes] of this chapter."

These two regulations reference a "person" and an "owner or operator" as the responsible party required to assure an aircraft is airworthy and safe for flight. An operator is considered to be the person who operates the aircraft for the purpose of air navigation (i.e., the pilot). An operator can also be defined as the person who causes or authorizes the operation of the aircraft such as the aircraft's owner or lessee. Where does the owner or lessee's responsibility end and the pilot's begin? As we have seen, both can be held responsible. Consequently, it is important that pilots take reasonable care in determining that the aircraft they fly is airworthy and safe for flight. It is equally important that operators provide the pilot with the necessary records and information to help him or her come to this very crucial decision.

Airworthy?

Every aircraft that comes off the production line is issued an airworthiness certificate that signifies at that moment that the aircraft conformed to all the rules, engineering data, and specifications referenced in the aircraft type certificate. The "type certificate" is the document that approves the design of the aircraft. We say an aircraft is airworthy if it conforms to its type design and is in condition for safe flight.

Because aircraft age and wear out as they are flown, "terms and conditions" are issued on the airworthiness certificate to assure the certificate continues to be valid. Each airworthiness certificate states under the "terms and conditions" that the airworthiness certificate is effective as long as the maintenance, preventive maintenance, and alterations are performed in accordance with FAR Parts 43 and 91.

What Records?

Some pilots may not be aware that FAR Part 91 requires owners and operators to keep numerous maintenance records. These include records of maintenance, preventive maintenance, inspection, and alterations. When maintenance is accomplished there must be an entry made in the aircraft's record stating:

- A description of the work performed
- Date of completion for that work
- The signature, certificate number, and kind of certificate of the person approving the aircraft for return to service

Additionally, records must be kept showing:

- Total time in service
- Status of life limited parts
- Time since last overhaul
- Current inspection status
- Status of airworthiness directives
- FAA Form 337's showing major alterations and repairs

With this information in hand it would be easy for a pilot to determine the aircraft's maintenance status. If these records are not readily available, the pilot should ask for them.

Is It Airworthy?

What can a pilot do to determine that an aircraft is airworthy? What actions should a pilot take to ensure that an aircraft is safe for flight?

There are two steps that every pilot should take before flying any aircraft. First, a comprehensive review of the aircraft's records is necessary. Secondly, a thorough preflight walk-around must be conducted. Each of these should be accomplished with the intent to determine the condition of the aircraft and not with the added pressure of an estimated time for departure in mind.

Records Review

Now that we've asked the owner/operator for the aircraft records, let's sit down and get started on our records review. At a minimum our review should verify the following items:

- A current annual, 100-hour(if required), or progressive inspection
- Correction of any reported discrepancies found as a result of an inspection or flight
- Current status of airworthiness directives
- Items deferred in accordance with an MEL or FAR § 91.213(d)
- Current weight and balance
- Current equipment list
- ELT battery expiration date
- Biannual test of transponders
- Biannual test of altimeters and static pressure system
- Major repairs and alterations recorded on FAA Form 337

Obviously, a pilot would find it difficult to determine exactly what maintenance a mechanic accomplished without observing the work. Therefore, it is important that a pilot locate the required maintenance record entry to satisfy his or her requirement to ensure that the maintenance was accomplished and the aircraft approved for return to service. If no entry exists, the maintenance was not accomplished. FAR §§ 43.9 and 43.11 both specify what items must be included in the applicable maintenance entry.

A thorough review of all the above mentioned records should give any pilot a comprehensive idea of the maintenance status of the aircraft they intend to fly. Initially, this review might take a couple of hours, thereafter, it would only require a few minutes to determine the aircraft's current status. Some operators will provide a "status sheet" or a "status board" which, if current, can assist the pilot in quickly determining the aircraft's maintenance status.

Now that our records review is complete, let's go out to the aircraft and check it out!

Aircraft Visual Inspection

Most pilots are familiar with the acronym ARROW:

Airworthiness certificate
Registration certificate
Radio license
Operating limitations
Weight and balance

This is a great start! The pilot should review each of these documents to assure that they are in the aircraft and are current and appropriate. A close look will often reveal an expired pink, temporary registration, a registration number change not reflected on the airworthiness certificate, or even missing documents.

Operating limitations for older aircraft are normally shown in the form of placards on the aircraft. Many aircraft are required to have an "FAA approved flight manual" which specifies the aircraft's operating limitations and placards. A pilot can review the "required equipment list" and/or the aircraft's "type certificate data sheet" to find out if there exists an approved flight manual. All IA's should have type certificate data sheets as part of their library. Check them out.

Anytime a new piece of equipment is added to the aircraft a new weight and balance must be computed. It is essential that you verify that the weight and balance used for flight planning is the most current.

FAR Part 91, Subpart C specifies numerous types of equipment that need to be installed for specific kinds of operations. The aircraft required equipment list specifies the equipment that must be installed for any aircraft flight operation. Additionally, some equipment may be required to meet the standards of a TSO—technical standard order. A TSO is a published standard to which an item is manufactured. Items that may fall into this category might be transponders, seatbelts, and emergency locator transmitters. Any article manufactured to a TSO standard will be clearly labeled with the applicable TSO number.

FAR § 45.11(d) also requires that an external data plate be installed on the aircraft exterior indicating the aircraft model designation and serial number so it can be read by a person on the ground. If this data plate is not installed, you could find yourself unnecessarily detained!

In addition to the items we've already discussed, your walk-around should always include a close examination for signs of improper or poor maintenance. If you really want to be thorough, bring an unbiased mechanic along with you. Drain the fuel sumps and check a sample for appropriate color and signs of contamination. If you find "auto fuel" check to see that the appropriate auto fuel STC is installed. A dirty, cluttered cabin, crazed glass, oil streaks, oil stains on the tarmac, underinflated tires and oleo struts, rusty hardware, and copious amounts of duct tape are all signs of a poorly maintained or abused aircraft. Remember, if the aircraft looks like it is being cared for, it probably is. If the aircraft looks rough, and the paperwork is incomplete, well...it's anybody's guess.

Bottom Line

It is in the best interest for pilots to check out the aircraft they intend to fly. It's critical that they conduct a complete records review and an extensive preflight walk-around. More importantly, every pilot needs to become informed about all the aspects of the aircraft they fly. We can't assume that someone else has taken care of all the details. Remember, nobody cares like you do!

It is also in the best interest of the owner/operator to provide pilots with the necessary records for them to assure that the aircraft are airworthy and safe for flight. Not only does this show they are interested in the safety and welfare of their customers, but it also establishes an expected higher level of knowledge, awareness, responsibility, and professionalism on the part of the pilot. When the operator promotes an attitude of higher standards and safety, it pays dividends, which translate into:

- Better care of rental aircraft
- Informed decisions
- Better pilots
- Happier customers

Bottom line: It is not the rules, the time, or the expense. What really counts is the safety of you and your customers.

Mr. Davis is an aviation safety inspector (avionics) in the Portland (OR) FSDO.

PILOT'S "IS IT AIRWORTHY" CHECKLIST

Records

- A current annual, 100-hour, or progressive inspection
- Correction of any reported discrepancies found as a result of an inspection or flight
- Current status of airworthiness directives
- Items deferred in accordance with an MEL or FAR § 91.213(d)
- Current weight and balance
- Current equipment list
- ELT battery expiration date
- Biannual test of transponder
- Biannual test of altimeter
- Major repairs and alterations recorded on FAA Form 337

Aircraft Walk-Around Inspection

- Airworthiness certificate: legible, accurate
- Registration certificate: current, correct N-number
- Radio license
- Operating limitations: required placards, approved pilot operating handbook
- Weight and balance: current
- Required equipment:
  - Per required equipment list
  - Per FAR Part 91, Subpart C
- External data plate: model and serial number
- Oil leaks and stains
- Fuel sample
- Underinflated tires and oleo struts, tire wear
- Brake pad wear
- Corrosion, rusty hardware
- Crazed plexiglas
- Dirty and cluttered cabin
- Internal water leaks
- Moldy carpet and upholstery
- "Free play" in control and door hinges
- Loose rivets
- Deteriorating fabric
- Deteriorating seat tracks, missing pins
- Propeller dings and scratches
- Pests: bird nests, rat's nests, bees in pitot tube, etc.

The checklist was designed as an aid to assist the pilot in conducting a thorough records review and complete walk-around. Use it to supplement checklists recommended by the manufacturer. Finding items from this list does not automatically constitute an unairworthy aircraft, a mechanic may, upon inspection, find that some of the items are within the limits of the aircraft's manufacturer.

• RUNWAY MARKINGS

With each revision of the U.S. Terminal Procedures, the FAA is approving new, stand alone, straight-in GPS instrument approaches at many airports. Prior to the approval of a straight-in GPS procedure, many of these airports had only a circling approach procedure, i.e.: VOR-A, NDB-A, etc., and visual runway markings. For example: 5B2, Saratoga County Airport.

FAA Advisory Circular 150/5340-1G, "...provides the standards for markings used on paved areas (runways, etc.) on airports." It defines a nonprecision instrument runway as a runway having an existing instrument approach procedure for which a straight-in or side-step nonprecision approach procedure has been approved.

The *Aeronautical Information Manual*, paragraph 2-3-1 encourages pilots who encounter incorrect markings to make the airport operator aware of the problem. I have done that, and I was told that the existing visual runway markings meet the standards for basic visibility minimums and they support the GPS procedures as published.

This appears to be a contradiction. However, since Advisory Circulars are nonregulatory, does this mean an airport which currently has only visual runway markings can retain these markings even though the runway is now served by an approved nonprecision straight-in GPS approach procedure?

Thomas E. Miller
Ballston Spa, NY

Your question about GPS runway markings has been the subject of much debate within FAA. At this time, any answer to your question concerning Saratoga County Airport may be a moot point. According to the FAA's Office of Airport Safety and Standards, the runway marking standards for current VFR, nonprecision, and precision approaches are in the process of being changed.

As this answer is being written, the proposed standards are in the final review stages and are expected to be signed and released by the summer of 1997. If approved as planned, the new runway marking standards will be based upon visibility and ceiling minimums rather than the current VFR, nonprecision, and precision runway marking standards.

For example, a runway with approach minimums of more than 3/4 mile visibility and at least 400 foot ceiling will need only "visual" type markings. Runways with approach minimums of 3/4 mile visibility and at least 300 feet ceiling will require "nonprecision" type markings. Runways with approved approach procedures for minimums below 300 foot ceiling height will require "precision" type markings. When approved, these standards will be published in Advisory Circular (AC) 150/5300-13, "Airport Design;" the AIM, and related agency orders

One final comment, everyone must remember these proposed changes are only proposals until they have been signed into effect. Please don't contact your local airport manager to remark your local airport based upon these proposals. Until the proposed standards are signed into effect, the current standards apply.

• BEST RATE OR BEST ANGLE OF CLIMB

I am a flight engineer. Departure gave our air carrier flight a, "Climb without delay to 10,000 feet clearance." The pilots couldn't decide what to put in to the computer. They debated whether to use best rate or best angle of climb. Finally the aircraft commander decided to program in best rate, and we continued our autopilot departure. The question of best rate or best angle of climb was never resolved.

Is best rate what the controller wanted? What are the rules?

Name Withheld
Anytown, USA

Best rate. The AIM, Paragraph 4-4-9, says ATC expects pilots to, "Descend or climb at an optimum rate consistent with the operating characteristics of the aircraft to 1,000 feet above or below the assigned altitude, and then attempt to descend or climb at a rate of between 500 and 1,500 feet per minute until the assigned altitude is reached."

The paragraph also states, "ATC, in certain situations, will include the word 'IMMEDIATELY' in a clearance or instruction to impress urgency of an imminent situation and expeditious compliance by the pilot is expected and necessary for safety."

Because Departure didn't use the key word "IMMEDIATELY" or any other words to express a desire for anything other than a normal departure, this was a routine departure clearance. Best rate was the proper choice.

Your question brings up a more important safety issue. Anytime a pilot has any question about an ATC clearance, the pilot should ask the controller to clarify the clearance's meaning before the pilot does the wrong thing. Pilots don't have to second guess a controller. They only have to ask the controller for clarification.

FAA AVIATION NEWS welcomes comments. We may edit letters for style and/or length. If we have more than one letter on the same topic, we will select one representative letter to publish. Because of our publishing schedules, responses may not appear for several issues. We do not print anonymous letters, but we do withhold names or send personal replies upon request. Readers are reminded that questions dealing with immediate FAA operational issues should be referred to their local Flight Standards District Office or Air Traffic facility. Send letters to Editor, FAA AVIATION NEWS, AFS-810, 800 Independence Ave., SW, Washington, DC 20591, or FAX them to (202) 267-9463. INTERNET address: Phyllis.Duncan@faa.dot.gov

• Restricted U.S. Certificate-Part II

Your response to the question on restricted U.S. certificate is good but incomplete in the March 1997 issue. You imply that if a foreign certificate is valid and a U.S. restricted certificate has been issued, then only a check out by the FBO is necessary.

Our legal people have confirmed that certain currency regulations apply to all operations. In general, anytime the regulation says "no person may", the holder of a restricted certificate must be in compliance with the regulation.

The most important regulation which applies is the BFR (FAR §61.56). Also applicable are FAR §§ 61.57, 61.58, 61.55, 61.31(e), (f), and (g). This training/checking must be done by U.S. certificated personnel.

The three European International Field Offices (IFO) have issued a letter which details the specifics and which has been sent out to our local areas for pilot information.

T.R.Proven
FAA Aviation Safety Inspector (Ops)
Flight Standards
International Field Office
Brussels, Belgium

We answered the question of how someone can get a restricted U.S. certificate. Thanks for reminding everyone that after a foreign pilot receives such a certificate, that pilot must still meet applicable U.S. operational requirements to fly a U.S. registered aircraft with the restricted U.S. certificate.

• VFR Applicability in Gulf of Mexico

FAR §91.101 lists the limits of applicability for VFR operations in the Gulf of Mexico. What rule applies from 12 miles offshore to the southern boundary of the Houston FIR? Does the FAR or ICAO rules apply?

Ricky E. Simpson
Summit, MS

From the coastline out to and including 12 miles is United States domestic airspace and FAR §91.155 applies continuously.

Beyond 12 miles out to the northern boundary of the KZHU Control Area/Flight Information Region (CTA/FIR) is the offshore airspace area designated as the Gulf of Mexico. While this airspace is international, ICAO procedures allow for the contracting State, Air Traffic Services provider, to use their domestic procedures provided communications and radio navigational signals are adequate. The Gulf of Mexico Low is Class E airspace from 1,200 feet AGL up to but not including FL180. The Gulf of Mexico High is Class A from FL180 up to and including FL600. VFR flight is permitted in the Gulf of Mexico Low and §91.155 applies to aircraft of US registry. (Reference §91.703)

Within the KZHU CTA/FIR VFR flight may be conducted in meteorological conditions equal to or greater than §91.155. Operations on a VFR flight plan are permitted only between sunrise and sunset.

FAA Order 7110.65(8-1-3a) provides additional information.

• Single Yoke Flight Operations, Again

Several people have written us about our answer in the October 1996 issue about single yoke flight operations. They asked how could we say certain types of flight instruction could be done in single yoke multi-engine aircraft when FAR §91.109 refers only to single-engine aircraft. The answer is we failed to say that FAA has issued an exemption to the rule to the American Bonanza Society for its Bonanza/Baron Pilot Proficiency Program and several other petitioners (including the person who asked the question in October) permitting certain types of flight activities in single-yoke multi-engine aircraft. Each exemption spells out in detail who is authorized to give the instruction and the conditions and limitations under which the flight operation is to be conducted.

So yes, such flights can be done, but only under the conditions listed in the exemptions. As we said, the key to answering the original questions is flight safety or if the flight is prohibited by the FAR. We failed to include the fact that exemptions can be issued for certain segments of the FAR and this FAR is one of them. We regret the confusion this omission may have caused anyone.

CREDIT WHERE IT'S DUE

Our front and back cover designs sometimes don't lend themselves to photo credits, so we have a couple from some past issues we'd like to bring up to date.

From the front cover of the March 1997 issue, the seaplane picture was taken by J.J. Frey, formerly of EDO Floats, but the seaplane belongs to Dr. Dale DeRemer of the University of North Dakota and founder of the SEAWINGS aspect of the Pilot Proficiency Award Program.

The *Seminole* with one engine shut down and prop feathered on the back cover of the April 1997 issue was shot by FAAer Gary Livack and piloted by FAAer Ben Coleman, who is the airworthiness Safety Program Manager at the Orlando, FL Flight Standards District Office.

1997 CERTIFICATED FLIGHT INSTRUCTOR AND GENERAL AVIATION MAINTENANCE TECHNICIAN OF THE YEAR AWARDS

A certificated flight instructor and an aviation maintenance technician are two of the most important people in the world of aviation. Without them the continuance of flight would be impossible as both are responsible for keeping aircraft in the sky—one through training future pilots and the other by keeping aircraft airworthy. This is why the National Certificated Flight Instructor and Aviation Maintenance Technician of the Year Awards Program was initiated 34 years ago to recognize the important role they each play in aviation safety and pilot education and to reward an active flight instructor and maintenance technician for outstanding contributions to the general aviation industry.

The 1997 National Certificated Flight Instructor (CFI) of the Year is James E. Trusty of Old Hickory, TN, and the 1997 National Aviation Maintenance Technician (AMT) of the Year is Leonard Beauchemin of Webster, NY.

James "Jim" Trusty was chosen CFI of the Year because of his teaching methods, with an emphasis on safety, and also for his aviation advocacy in the community. After retiring from teaching school and selling real estate, Jim decided to become a full time flight instructor. He stated that after 15 years of teaching college level students, teaching people how to fly was not difficult. One student summed up Jim's teaching philosophy this way: It not only encompasses "the mechanical aspects of maneuvering the plane, but also other details just as important to any pilot wishing to be well informed about such topics as the mechanics of the plane, the theoretical aspects of flight, the weather and its effect upon performance, and—most importantly—safety. For Jim teaching safety was not just one lesson in a series of lesson plans, but an integral part of every day's lesson whether in the air or on the ground."

Jim's safety message comes through not just in his role as a flight instructor, but also as an FAA Aviation Safety Counselor. His credits include the Tennessee "Poker Run," the Tennessee "Wings" Program, Tennessee Aviation Days, and about 20 safety meetings and seminars a year. He has also written articles for national flight magazines.

Looking towards aviation's future, he especially enjoys working with the Boy Scouts of America, the Civil Air Patrol, and any other organization that works toward making aviation safer or getting the youth of America involved in aviation. When told of his award Mr. Trusty said, "I just want everyone to know the experience of flight. Nothing is more challenging or rewarding, both to learn and to teach."

Leonard "Len" Beauchemin was chosen as AMT of the Year because his demonstrated leadership and technical abilities were clearly apparent from his list of accomplishments. A long-time aviation enthusiast (not only an A&P, but also a pilot), he claims that he has "turned his hobby into a career."

Len is currently employed by Eastman Kodak Aviation Services as manager of technical support where he also serves as an employment development coach delivering essential leadership skills training to Eastman Kodak supervisors through managers. Before this he was employed by Canadair Challenger as a technician and supervisor. Over the last 15 years, Len has conducted AMT technical, management, and team training programs. He was also selected to administer and facilitate the interaction management training program at Canadair in conjunction with Development Dimensions, Inc.—the first behavioral skills training developed for aircraft maintenance technicians.

Associate Administrator for Regulation and Certification, Guy Gardner, presents the CFI award to Jim Trusty (left), and the AMT award to Len Beauchemin (right). *Louise Oertly photo*

At the 1995 National Business Aircraft Association's Convention, Len was a featured speaker on maintenance's role in the development and growth of a corporate flight department. He has served on numerous technical working groups and written articles for aviation publications focused on maintenance challenges. When told of his award he said, "I can't express how honored and flattered I am by this award. We work in this industry because we love it. This [award] is an added bonus. My intention has always been to ensure the professional integrity of the aircraft maintenance industry."

Both Trusty and Beauchemin were presented the CFI and the AMT of the Year Awards on March 25 during the National Air Transportation Association's (NATA) Convention and Trade Show in Fort Lauderdale, FL. Over 30 general aviation companies participated in the Industry Awards Program providing an estimated $10,000 of special recognitions to the winners for their achievements in the general aviation industry.

This program is sponsored by the AOPA Air Safety Foundation, Experimental Aircraft Association, Federal Aviation Administration, General Aviation Manufacturers Association, Helicopter Association International, National Air Transportation Association, National Association of Flight Instructors, National Association of State Aviation Officials, National Business Aircraft Association, and Professional Aviation Maintenance Association.

Contact your local FSDO or FBO for an application or more information on the 1998 Awards Program. The applications need to be submitted to your local FSDO by December 31, 1997 and the 1998 winners will be honored at the NBAA Convention in Las Vegas, NV.

ANNOUNCING THE NEW FAR PARTS 61 AND 141

On April 4, 1997, the *Federal Register* published the final rule for Pilot, Flight Instructor, Ground Instructor, Pilot School Certification—Federal Aviation Regulations Parts 61 and 141. There are several ways to obtain a copy of the new rule. Electronic copies are available through the FAA homepage in Word 6.0 or Adobe Acrobat format at:

www.faa.gov/avr/arm/nprm/nprm.htm

(be warned that the file is over 800 pages and more than one meg in size) or through CompuServe or FEDWORLD. For a printed version, contact the FAA's Office of Rulemaking at (202) 267-9680, but expect a delay in receiving it because of the high demand for copies. Copies can also be purchased through the U.S. Government Printing Office at (202)512-1800 or many commercial enterprises.

IN MEMORIAM

In our March issue the *FAA Aviation News* profiled the remarkable career of Louise Sacchi, the first female transoceanic ferry pilot. We are sorry to report that Ms. Sacchi lost her battle with cancer on March 23. She will be missed by those who knew her.

AWARD-WINNING "AVNEWS"

The staff of *FAA Aviation News* was presented the FAA Flight Standards National Excellence in Public Awareness Award for 1996. The annual award goes to a Flight Standards employee or employees for efforts in "telling the FAA story." Employees are nominated by their peers and are vetted by a local, regional, then national committee.

The Aviation News Staff is proud of this award and will continue to do our best in providing you, our readers, the important "story" of aviation safety from the FAA.

THE AMELIA EARHART SYMPOSIUM

July 2 of this year marks the 60th Anniversary of the disappearance of Amelia Earhart and Fred Noonan during their ill-fated flight around the world. At the time a massive search for the U.S.' premiere woman pilot and her navigator turned up no trace of the duo, but the years since have provided much speculation and rumor: Amelia was spying on the Japanese, she and Fred decided to run off to a tropical island, she's alive and well in Topeka, etc.

Nineteen ninety-seven is also Amelia Earhart's Centennial; she was born July 24, 1897.

A series of symposia later this year will try to put perspective on the life of this remarkable aviator and her oft-forgotten navigator, Fred Noonan. The symposia dates and cities are still being planned, but consideration is being given to:

May 18-23 in Oakland, CA, where the 'round the world flight began

June 1-5 in Miami, FL, where the flight left the U.S.

July 1-5 in Atlanta, GA where Amelia received an honorary degree from Oglethorpe University

July 22-25 in Atchison, KS,

Amelia's birthplace, in commemoration of her 100th birthday

For further information contact The Amelia Earhart Symposium, 1151 Whitlock Ave., S.W., Marietta, GA 30064-1932; (770) 427-5939 or (770) 426-7883.

WEIGHT AND BALANCE REMINDER

"I pulled up to the pumps to refuel the aircraft prior to a flight to Scotland from the Midlands.

One hundred and thirty litres of fuel were put into the right-hand tank and then the airfield pumps ran dry. Irritated, but unconcerned, I decided to drop into an enroute field to complete the refueling.

On becoming airborne, the aircraft was close to being uncontrollable. Cross-feeding fuel from the heavier tank enabled the flight to be completed without incident.

Salutary lesson learnt, weight and balance are just as important laterally as longitudinally!"

CAA Comment: It was fortunate that he was able, through the cross-feeding system, to be able to do that. Many aircraft do not have that facility.

From the United Kingdom's GASIL(General Aviation Safety Information Leaflet)

120-DAY RE-ASSESSMENT OF ASOS

The FAA's new Air Traffic System Requirements Service, ARS, has undertaken a 120-day re-assessment of ASOS beginning April 1, 1997. This activity will consider certification procedures, system availability, and the representativeness of ASOS. The assessment will include a combination of: a field comparison of ASOS and manual observations for a specified period of time at selected sites and analysis of any discrepancies; pilot and airport operator feedback from user meetings and safety seminars at each site; evaluation of pre-commissioning data; review of user letters and comments; and other site specific data relating to each site identified.

The sites selected will include some contract weather sites where the contract is scheduled to be terminated and there have been user concerns expressed; and sites recommended based on FAA Regional input, Congressional letters, user feedback, and comments received on the *Federal Register* announcement of ASOS Service Standards. A detailed plan for this assessment is being developed. Additional user feedback on ASOS and the Service Standards will be obtained through the annual review of the standards with industry and government representatives focusing on user issues and problem resolution.

More information on ASOS, the Service Standards, and the 120-day Assessment will be available soon on the FAA Academy Internet site:

HTTP://www.AMA500.jccbi.gov.

NEW ORGANIZATION FOR WOMEN IN MAINTENANCE

The Association for Women in Aviation Maintenance (AWAM), a professional development association for women and men in the aeronautical and aerospace maintenance industry, held its first annual meeting in March in Dallas, TX.

AWAM was formed to address the need for a professional organization for women in the maintenance field, one of the most rapidly growing and changing fields in aviation.

For further information contact Marcia Buckingham at (904) 424-5780 or write to AWAM at P. O. Box 1030, Edgewater, FL 32131-1030.

CALENDAR OF EVENTS

JUNE 7 - Aircraft Owners and Pilots Association annual fly-in at Frederick Airport, Frederick, Maryland. Contact AOPA at (301) 695-2000 for fly-in information.

JULY 9 - 13 - The 99's Annual International Convention in Portland, ME. For more information on "Maine-ly Fun," contact Mary Tait at (209) 935-4266.

SEPTEMBER 6 - 7 - Great Hagerstown Air Show at Washington County Regional Airport in Hagerstown, Maryland. This is one aviation event that is actually sponsored by the town's chamber of commerce! For ticket information call (301) 739-2015 or e-mail hagercc@hagerstown.org .

OCTOBER 2 - 4 - National Convention of the Silver Wings Fraternity (for those who soloed more than 25 years ago) at the Marriott North Central Hotel, Atlanta, GA. For details call 1-800-554-1437.

Editor's Runway

from the pen of Phyllis-Anne Duncan

Jessica

Early in March the National Transportation Safety Board (NTSB) issued the probable cause of the April 11, 1996 accident that killed seven-year-old Jessica Dubroff, her father, and a flight instructor. That publicity-laden flight, you may recall, was for Jessica to establish a "record" as the youngest person to fly across the country. The FAA has always distanced itself from such media events, and all the official record-keeping organizations refused to recognize such a record. The single-engine Cessna crashed in Cheyenne, WY after taking off over-gross, out of CG, on the non-favored runway, and into the teeth of an ice storm. NTSB cited the flight instructor—the pilot-in-command, who, it was obvious from his injuries, was flying the aircraft at the time of the crash—for using poor judgement, perhaps being unduly influenced by a schedule of media events. NTSB also cited fatigue, the weather, and weight and balance problems as causal factors.

As a result of this accident, Congress passed the "Child Pilot Safety Act" which makes it unlawful to allow a non-certificated person to touch the controls of an airplane for the purpose of setting an aeronautical record. Any pilot who does so can have his or her certificate suspended or revoked.

Under this legislation, we can still introduce young people to the experience of flight and encourage them to continue in our footsteps. This accident, however, shows us just how "outside" or non-aviation factors can affect pilot decisionmaking. The NTSB report cites a litany of small errors the PIC committed before takeoff, errors which, in hindsight, should have indicated that something was about to go wrong. *FAA Aviation News* will analyze the full accident report and prepare an article addressing the safety issues cited by the NTSB.

Perhaps we can all learn from the mistakes that led to this accident.

Commuter Rule Redux

Friday, March 21, marked the end of the transition period for the rule change that required large commuter air carriers to conform to the requirements of FAR Part 121. Operators had 15 months to bring their programs into compliance, and we can count this as one in the "win" column. Not only was the rulemaking project accomplished in one year, as per the deadline established by former Secretary of Transportation Federico Peña, but 33 carriers (operating 900 airplanes) out of 39 successfully made the transition within the allotted time. The remaining 6 carriers (operating 13 airplanes) are expected to transition soon or make other business decisions.

This project is testimony to the dedication of industry and government to safety and evidence of the commitment both had to implementing a workable regulation. Industry and government worked together to change the regulations, to facilitate the transition, and to implement the rule in a fair and equitable manner for all operators.

Hats off to the industry for cooperating, and accolades to the dozens of public servants in the FAA who worked tireless hours, day and night, to assist operators in their transitions. Let's hope this type of cooperative endeavor will become an established practice for future FAA/Industry issues.

'Til next time...

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