Helicoptorial

Performance

This month's article comes to us from CW3 Glen "Bartman" Carter. Bartman is an OH- 58D Maintenance Test Pilot for the Mississippi Army National Guard. Bartman wrote me a few month ago and asked if he could provide information on fixation. Since Bartman is an Attack kind-a-guy, he has some experience on fixation that others might lack. So I offered for him to write the entire article. He accepted and provided the following:

Fixation or Fascination (in flight)

PULL UP, PULL UP, PULL UP!!! These two words, coupled with the proper inflection in someone's voice can make even the most fearless man a pile of silly putty.

We are all taught about visual illusions from the moment we get to "fright" school. Most, we think, are no brainer's. We know, the closer we are to something the faster it appears to be moving, or the object being overlapped is the farthest away. DUH!

What we fail to realize is, that like everything else in our lives, until someone points it out, we tend not to "think" about it. Then we all become "Einstein's" when our IP asks us about Autokenisis. "That is when there is a single light source and when stared at appears to be move". We blurt out that canned response without actually "thinking", or taking it to the cognitive stage of learning. It has been many years now since flight school and I have become a seasoned aviator. Been there, done that, gave the T-shirt to this real cute young lady I met at the O'club. That is another story in itself. But anyway, I thought(key word) that I knew enough about flying at night for this to happen to me. For what it's worth, here goes;

There I was, on the six of an MI-24, out of bullets, missiles, and ideas all at the same time. Oops, wrong story. It was July of 95, Ft. Hood, Tx. Midnight, and I am sitting in an attack by fire position (formerly known as a battle position) target in sight and in range. Symbology lined up and ready to fire. (By the way I fly OH-58D(I) Warriors) My left seater said he was ready so I pressed the fire button and sent .50 cal downrange. The target was about 1500 meters away and I had a visual on it with my night eyes(NVG's). As the rounds started to impact, I adjusted them onto the target. To see rounds splattering on and bouncing off that target was immensely satisfying. My grip on the cyclic became firmer, I gritted my teeth and kept firing. In my mind I was killing anyone that was in my way. I wanted to see mass quantities of dead and wounded rendered by my fine gunnery skills.

Suddenly, above the machine gun noise, radios, and rotor noise I hear PULL UP, PULL UP, PULL UP!! My stick buddy was slapping me on the chest screaming (the normal way to tell someone to stop firing in a 58D). Instinctively I glance down at the radar altimeter and it reads 10ft. In itself, this is not a bad thing, but when you are nose low at 45 kts headed for mother earth, this changes the equation quite drastically. Thankfully, due to my superior piloting skills (sheer luck), I managed to recover (save my butt) without crashing or causing damage to the aircraft or myself. After a long silence and looking at each other, my stick buddy spoke. For fear of offending the younger variety of reader, I will not publish his words, but you get the point. (Insert multiple expletives here.) It was then that I could no longer say "I have never fallen into the trap of a visual illusion". I have experienced them all, but never have I just ignored or failed to realize what was happening.

I had been "had" by fixation. Fixation or fascination in flight is defined as; an illusion that occurs when aviators ignore orientation cues and fix their attention on a goal or an object. Unlike most of the other visual illusions, fixation can happen day or night. I know what you are saying, "I don't fly attack so I don't have to worry about that". What about that load you are looking at below you or that aircraft you are flying NVG multiship with, or that helipad you are on approach to? There is more than one way to experience fixation. It is not only an attack worry.

SOLUTION: Keep your head on a swivel! Actually keep your head on your shoulders and keep your scan going. If you don't, you may be the next to fall into the fixation trap. Or you may hear something to the effect of TREES, TREES, TREES!! But that is another illusion.

Be safe and kill something everyday, no matter how small, just to stay proficient.

Some history on me; I am in the Ms. National Guard at Tupelo. I am an MTP on OH- 58D(I)'s. I went through flight school in 87-88. Flew UH-1's and all models of OH-58's. Mobilized for Desert shield/storm in 90-91 and currently am a CW3

CW3 Glen B."Bartman" Carter

Helicopters to the Rescue

This article is dedicated to those determined crews that help save lives. These life-savers come in many varieties. There are Air Ambulance services, Law Enforcement, National Guard, Active Military, plus a plethora of civil operators who happen to be in the right place at the right time. And of course lets not forget about those firefighters, whether it's in LA county or USFS. The great job that these people do is sometimes overlooked. If your life is ever saved by these crews, please send them a thank-you card or take them to lunch or something. Yes, they get paid for their job, but money isn't the only reason they do what they do. The maneuvers these life-saving professionals perform are sometimes more risky than what the people they save were doing.

Helicopters have that unique ability to easily get to remote areas. Whether it's at 20,000 feet on the side of a mountain or over the ocean, helicopters are there. We rescue people in river canyons, on mountain tops, on mountain sides, on roof tops, traffic accidents, or just about anywhere that people can get themselves into trouble. And it isn't just people that are rescued by helicopter. Animals also get the thrill of flying through the air on helicopters, although sometimes they're hanging well below...

The following are some of the types of helicopter operators that perform most of the rescues in the US. I tried to stay with generalities when describing them because each works a little different. If any of you would like to describe a specific operation in detail, please e-mail me and we'll post it (giving you credit of course).

AIR AMBULANCE

Air Ambulance services are becoming more widespread as helicopters become more affordable. They are growing in cities and rural areas. There are several services that provide excellent service. It would take me two pages to list all the carriers in the US, so I won't. Air Ambulance services are simply ambulances with rotor blades. They come equipped with medics or nurses to provide immediate first aid to victims. Some are based out of hospitals and others out of airports. These guys always know the nearest hospital since almost all have helicopter landing pads.

As a pilot for these services, you had better know your IFR procedures well because they often fly in some of the worst weather. (Often single pilot, too.) Having an ATP or CFI is very common for these pilots.

LAW ENFORCEMENT

Just about all law enforcement agencies seem to have helicopters nowadays. They use them mostly for surveillance but they are also used for quick reaction rescues. (A future article details an interview with the San Jose Police Department on their NOTAR.) The types of aircraft used vary tremendously throughout the country - anywhere from a Switzer 300 to Bell Jet Rangers and more. A lot of agencies even picked up excess aircraft from the military. (The Army provides law enforcement agencies access to their UH-1's and OH-58's.)

Pilots for these agencies usually need to be part of the agency first and then apply for their helicopter program. This ensures that the guy or gal in the air has a good understanding of what's happening on the ground.

NATIONAL GUARD

The National Guard has two parts - Air National Guard and Army National Guard. Both use helicopters for rescue. The National Guard is part of the US military and is supplied with military equipment. The Army Guard primarily uses UH-1's and UH-60's for search and rescues while the Air Guard has HH-60's and H-3's. These helicopters usually come equipped with hoists so the can rescue folks in extremely remote areas. A hoist is a cable that can be lowered from the aircraft, usually no more than 250 feet, to insert a medic and then extract the victim and medic. Hoists are very handy over water, in tree covered areas, mountain sides, or generally anywhere that the helicopter can not land close by.

Since the National Guard is part of the military, the pilots and crew are trained by the military. I say crew, because these aircraft go out with two pilots and at least one crewchief and medic. Some of the crews have spent time on active duty and others have only been in the National Guard. From what I've seen, for the most part, these are very professional crews that are good at what they do. They average probably about 3,000 hours and come from all walks of life. They are engineers, firemen, nurses, doctors, car salesmen, insurance salesmen, pilots for other companies or agencies, police, and more. When there's a rescue underway, they drop what they are doing on their full time job and get to work helping people.

ACTIVE MILITARY

Coast Guard, Air Force, Army, Navy and Marines each have helicopters designated for rescue. Except for the Coast Guard, they are primarily assigned to rescue individuals from their respective services, however there are areas where they work closely with the local civilians.

Pilots here attend the military flight training which can be up to a year long. Because of money issues, these pilots usually don't collect as much flight time as the civilians or their National Guard counterparts. They do however focus heavily on training to make best use of the available time. This focus on training makes the outcome of the actual execution of a task much more reliable.

IN CONCLUSION...

The helicopter has revolutionized rescue. Where it used to take days to hike out of a remote area, it now takes minutes to fly out. With hoist and rappelling capability, the helicopter doesn't even have to land. We can thank the US Military for funding the development of new technologies which make all this possible.

FIREFIGHTING

This month, I would like to focus on another specialized missions for the helicopter, firefighting operations. Most of us have seen news footage or watched movies depicting how fixed-wings operate on a fire, but little is seen on the helicopter. The helicopter can be used for several types of missions. They can be used for reconnaissance, transporting firefighters and their equipment, sling loading equipment to a remote sight, and water bucket or fire retardent operations.

I know both Canada and the US use helicopters extensively during firefighting operations. Unfortunately I know little of Canada's practices on running firefighting other than all helicopters must be capable of responding to a fire emergency. In the US, different agencies are responsible for their territory. Some fires are fought by the US Forest Service, others by the respective State agencies. If the fire is in a city, then the city fire department manages the fire. So, it all depends on how the territory is divided, as to who is responsible for the suppression. And then of course, if the fire gets big enough, other agencies are asked to assist in the battle. This then becomes a "multi-agency" fire. For this reason, much of the methods and terminology used in fighting fires is "standardized". When you get large organizations conducting operations, small differences are a big thing. With everyone using the same methods, communication, safety and efficiency are enhanced.

ORGANIZATION

A firefighting attack organization is set up like a military organization. They are indeed fighting an enemy. This enemy at times can be unpredictable, sneak through lines, or advance rapidly with very little to slow it's approach. Through an organized attack plan, firefighting agencies are able to ultimately conquer their adversary.

Air Attack operations are key to any large scale fire. The air attack consists of both fixed and rotary wing. The individual in charge of the air attack is called the air attack supervisor. This person is responsible for establishing a strategy for the air operations. The strategy may include aircraft priorities on the attack and how all the aircraft will operate in the area. The goal is to provide constant aerial fire suppression.

Next in line is the air tanker coordinator. This individual is usually the lead plane during air attack operations. They identify the target and establish approach and departure paths to the target.

Last in the hierarchy of managers is the Helicopter Coordinator. This person coordinates the helicopter missions as well as sets up the helibase. Establishing the helibase operations includes establishing traffic patterns, approach and departure paths, refueling procedures, parking areas, foot traffic procedures, and dust control.

MISSIONS

A large fire can get very crowded with all types of aircraft. Tankers of all varieties flying through the airspace to deliver their retardent. Smaller fixed wings providing aerial reconnaissance as well as aircraft sequencing. Helicopters from Jet Rangers to Chinooks performing a wide variety of missions. It really is a battle zone.

The helicopter itself, can be used on several different types of missions while fighting fires. They can be used for reconnaissance, water or retardent delivery, and crew and equipment movement.

Recon and Coordination - The Helicopter Coordinator flies a helicopter to not only ensure helicopter sequencing and coordination but also (as with every other aircraft out there) they assist with spotting new fires or giving reports on how well the strategy is working. He can direct minor adjustments to the strategy for initial attack on a new area.
Water or Retardent Delivery - Initial attack is the current philosophy on the use of helicopters on a fire. This is because helicopters can react rapidly to an area and begin fighting right away.

The water bucket, slung below the helicopter is easily deployable and can get water from virtually any remote area. One consideration the pilot might have while flying with the bucket is power availability. This is especially true at higher altitudes. In addition, the weight and balance of the aircraft will change every time the load is added or released. Some buckets dump all their water at once, while with others the pilot is able to control how much water is released.

An alternative to the bucket is a tank attached to the aircraft. I don't know much about this system other than some helicopter manufactures are conducting research in providing attachable tanks to sell to the Fire departments or the National Guard.

Crew and Equipment Placement - It can be very important to get firefighters and their equipment to and from remote areas. Some of the wilderness areas where fires are fought, do not have easy access. The helicopter is uniquely suited for this task. They can quickly insert crews based on the fire fighting strategy. They can also extract crews quickly if things aren't going so well.

SAFETY

Fighting fires is a dangerous business. Risk must be minimized through careful planning and training. Communications are a key factor in safety. With all the air traffic in and around a fire, everyone needs to monitor the correct frequency. If the aircraft is not equipped to transmit and receive on the appropriate frequencies, then you should not be near the fire. The chances for a midair dramatically increase without proper communication.

Another hazard near and dear to the helicopter pilot is wires. The altitudes that the helicopter pilot operates at, leaves him particularly vulnerable to this hazard. A thorough recon of the area is highly recommended prior to operating in the area.

Where there's fire, there's smoke. Smoke always seems to be thickest where you want to go. This area of reduced visibility can make it difficult to estimate distance as well as cause some visual illusions. One rule of thumb about smoke is that if you can't see through it, don't go there. Smoke inhalation isn't as much of a problem since we can easily depart the smoke filled area. However this does not mean that this won't happen either.

As I stated earlier, power requirements can be very important to monitor. Remember to always plan an escape route while dropping water or making an approach. If you commit yourself without options, you are risking lives. Winds can aggravate this problem. Always plan on having enough power to pull away from an approach with your load just in case there is a malfunction and the water or retardent does not release.

Speaking of releasing your load, watch where the load is dropped. Firefighters on the ground are hot, but a thousand gallons of water is not the answer. Water sometimes isn't the only think in that bucket. Often rocks or other debris are included.

One thing the helicopter does very well is create a wind. This downwash is just what a fire wants. It is not good to have the ground crew cursing your name because you made the fire worse. Downwash can also be a hazard while landing to or hovering over a burnt out area. This can cause a brown out condition where the pilot loses all reference to the outside world.

And finally, be aware of your own limitations. Pilot fatigue causes inattention. Don't over extend yourself just to make a buck. That extra hundred dollars isn't' worth a life or the cost of a new aircraft.

WEATHER

Weather can help or hurt the firefighting efforts. Mostly we notice when it hurts. The very conditions that caused the fire to start, now keep it going. Fires can also create their own weather pattern. A large fire can create its own winds thereby dramatically affecting planning.

FOR MORE INFO...

California seems to have more than its share of fires. (There are those who say they don't get enough.) Matter of fact "fire" is one of the four seasons there. Because of this, there is a great deal of expertise being utilized by LA County, California Department of Forestry (CDF) and the US Forest Service (USFS). There are others, but I mention these folks because they use helicopters frequently while fighting fires. CDF is currently updating their water bucket video to help pilots train for the fire season.

Once again, I just barely scratched the surface of all you need to know about fighting fires with helicopters. I hope I gave you some insight as to what it is all about. Please respect people hard at work and give firefighters a wide berth.

TRAINING & EVALUATIONS

It's time for an evaluation and the only evaluator available has a reputation of being a little strict. Yuck. Like most people I want my instructors to be really tough and my evaluators to be really easy. And, if an instructor and the student does his or her job correctly, that's exactly how the evaluation will go; easy. I include the student as having responsibility because they have an equal share in the learning process. A student should not allow the instructor to be lazy by not teaching and the instructor should not allow the student to be lazy by not challenging. The learning process is a commitment both instructor and student have made to the successful increase of knowledge.

What kind of things should instructors be teaching and what kind of things should evaluators be evaluating?

An instructor should teach unselfishly everything they know about flying. This includes aircraft characteristics and performance, flying techniques, aeromedical, and aerodynamics. The key is using the building block principle and starting with basics before moving to more advanced techniques. This is where patience is important. The student and the instructor are sometimes in a hurry to do more exciting stuff and if not handled correctly, this may be detrimental to the learning process.

So why on earth would you need to know basic stuff like aerodynamics to fly a helicopter? Well truthfully, the darn thing will fly for the most ignorant slob out there, (you don't need to understand Newton's Laws of Motion to drive a car). And as a friend of mine used to say, "I never could see all them little arrows while I'm flying." However, in the course of flying helicopters, you may one day, through your ignorance, put yourself in a situation you wouldn't have, if you only understood the principles involved in aerodynamics. For example, You're at a high altitude and are heavy with cargo and without thinking you begin your approach down wind. **Did you bump your head??** If you understand the basics in aerodynamics, you would never put yourself in this situation. By understanding how things work, we can make use of things to their full potential.

So what do I look for when I'm evaluating? Competence, professionalism. Pretty vague concepts, however if a pilot possess those, then passing an eval is usually no problem. Bottom line: Would I trust this person to fly my family? I'm very serious about administering evaluations. Friendship, or friendliness, has no place in an honest evaluation.

Oral Evaluation

I like to begin an evaluation by first giving the pilot a route to plan with some purpose in mind such as delivering equipment or people. By doing this I can evaluate the planning sequence. Did they adequately review aircraft performance, weight and balance, and required equipment? I then will ask questions about the takeoff, enroute and arrival. Using this method, I can cover everything a pilot should be of concern to the pilot. I can also begin to understand the thought process of the examinee.

The questions will vary depending on what type of duty the pilot is performing. I usually begin with departure procedures.

- What are your fuel requirements?
- Can we legally do the mission?
- Will we be within CG the entire route? If not, what are our options?

- What class airspace in the departure airport in?
- Then, what are the requirements for departure? The answer will vary depending on the airport of course.

What I want to know is does the pilot understand the procedures and can they effectively use them. (This is good to know before we climb in the aircraft.) Enroute is next and first I'll cover airspace. I specifically want to know if the pilot can safely operate in today's airspace without breaking any rules.

For instance, does the pilot know their cloud clearance and visibility requirements, communication requirements and equipment requirements. Can he or she effectively make decisions regarding alternatives if some of the requirements are not met? Then depending on the area, I like to go to altitude. Into the mountains. The mission might be an external or internal load.

- Does the mission go above 10,000 feet MSL and how will that change any requirements?
- How will that change performance requirements?
- How about physiological requirements such as oxygen?
- What are indication of winds?
- What methods can I employ to ascertain wind direction if it is not obvious?
- What about other weather concerns like clouds and lightning?
- What if lightning strikes the aircraft? What sort of indications will I get and what should be my response?

Upon arrival, were faced with a new set of questions. Have you met the power requirements? What will happen if during my approach I land downwind? Why? How can I recover?

If the landing area is unprepared, how will I make the approach?

Flight Evaluation

Preflight is usually the first part of the flight portion of the eval. During this phase I watch the examinee and ask questions about components of the aircraft. I might even discuss aerodynamics at this point. Another technique I use will be to ask what a component is and what would happen if that component failed. What are the indications, limitations and emergency procedures as appropriate?

I like to fly the route that the examinee planned and if possible do the entire mission. This just reinforces all the planning and makes the examinee feel that they didn't waste their time. It's my job to make sure the examinee performs all the maneuvers required, so I try to include them in the flight. While flying, I'll ask more questions regarding the mission and the aircraft to see how the examinee handles distraction. Most people don't realize how important this is. The examinee is already in a stressful situation just by being evaluated. I intentionally increase the stress to evaluate what happens. I never do this right away. I prefer to let the pilot relax a little and get into the flight first. Let them get through the stress of an evaluation and add a different type of stress. Any abnormal response might be cause for me to dig a little deeper. (So stay cool fool.)

There are a couple things a pilot can do to receive an unsat during the flight. One is to mess up an engine failure in a single engine helicopter. My philosophy is that you only get one chance in real life so you get one chance on the eval. Choosing the wrong landing isn't automatically a no go, but not getting the collective down or not monitoring airspeed is. The mechanics are what I really worry about. I'm not going to be able to correct this fault with just a verbal correction and try it again attitude. This person should practice more engine failures and auto's before be re-evaluated.

Another unsat would be if the pilot continually is unable to maintain the minimum standards set forth in the guidelines for evaluation. For me one excursion is not an unsat unless airspace is violated. However if during the flight the examinee clearly demonstrates his inability to maintain adequate aircraft control, then I'm sorry, come back and see me later.

Debrief

This is where the evaluator really earns his money. A thorough debrief of the flight is a great teaching tool. Some debriefs are short and quick because the examinee was not observed doing anything poorly. Some are lengthy because they were.

Conclusion

Well that's my story and I'm stickin to it. There's no way for a person to know everything, so if someone doesn't know the answer to an obscure question, that's just an opportunity to teach and learn. Because really, teaching is one of the best ways to learn something. I use this technique sometimes. I have my students teach me. I know I still have a lot to learn. If I'm not learning, then I'm stagnating and in danger of being complacent. If the instructor does his job, and the student does his job, and I do my job, then our community can only get better.

EXTERNAL LOADS II

External load operations are unique to helicopters. Last month, I discussed some highlights of important considerations while performing sling load operations. This month we will review an external load mission from planning to execution. This article is not for the squeamish so if you bore easily, have no interest in the excruciating details of external loads or your parents won't let you read about things like slings and harnesses, turn back now.

For demonstration purposes, I'll use a UH-1H (since the Army seems to be giving them to everyone and their brother). A quick background check reveals that the UH-1H has a maximum gross weight of 9500 pounds. It's cargo hook has a maximum capacity of 4000 pounds. With a full load of fuel and two people on board it will weigh in at about 7400 pounds. Fuel capacity is approximately 209 gallons of fuel with a full tank.

SITUATION

The local electric company has hired us to move a cement block from a road to a hill top. The cement block weighs 2500 pounds. It's a 45 minute flight from the home airport to the block on the road. The road is at 500 MSL and the hill top is at 2000 MSL. The distance between the road and the hill top is roughly 5 miles. Fortunately winds are expected to be light and the temperature cool.

PLANNING

Our goal is pretty straight forward. Get the cement block to the top of the hill. Before I accept the mission, I must decide if my aircraft is capable of performing this feat.

> **The Aircraft**. Returning to the information discovered in our background check of the UH-1H, we see that the cargo hook is adequate for the load, *however* 7400 pounds plus 2500 pounds is greater than the maximum gross weight of 9500 pounds. (We'll assume that the

environmental conditions will support the aircraft at 9500 pounds in an out-of-ground effect hover.)

The dilemma is easily solved by reducing my variable - fuel. A reduction of 400 pounds of fuel will give me my maximum gross weight of 9500. I've predicted that my burn rate will be 550 pounds and hour. At that rate, in the 45 minutes it will take me to get to the pick- up area, I will burn off about 410 pounds of fuel.

Using the math techniques that I learned in second grade, I compute that I will have approximately 900 pounds of fuel remaining when I arrive at the pick-up area. As long as my burn rate remains the same, I will have roughly 1 hour and 38 minutes of flight time. Subtracting 45 minutes for return time, and the 20 minutes for reserve, the mission can take no longer than 33 minutes. Hook up, travel time, and release I calculate at 15 minutes - 18 minutes to spare. As a contingency for fuel, I found a closer "ma and pa" airport that sells Jet A. It is only ten minutes away.

Recon. Next I'll want to look over the area to see if there are any unusual or special considerations for my flight.
The Pick up Area. When I get there I notice that the cement block is to the side of the road in a fairly dusty area. There are trees not too far from the load that are about fifty feet in height. Winds appear to be predominately coming from the south.
The Route. Along the route of flight to the hill top, I must cross a huge set of power lines. The terrain climbs rapidly and is devoid of any buildings.
The Landing Area. I get to the hill top and I see that the area for the block is sufficient. The hill top is not the highest peek in the area. In fact the hill is on a small ridge from a larger hill that is about 1000 feet higher. I notice also that the predominant winds might force me to make my approach to the southwest. This will put the larger hill out my right side as I approach the landing area.
The Load. The load looks like it should fly normally. There are no protruding edges. It looks like it has all the aerodynamic qualities of ... well ... a cement block. I check the load to ensure that it is rigged properly and that the harnesses will be strong enough to support the weight.

THE FLIGHT

I arrive at the pick-up area slightly ahead of schedule. I calculated my fuel burn rate to be 540 per hour. My fuel gauge indicates that I have slightly more than 900 pounds. Things are going to well so I'm a little on edge. I land by the load to begin a final inspection and hook-up.

Important Safety Tip Igon...

If I hook-up with the aircraft sitting on the ground, make sure the sling goes to the hook from the front of the aircraft. If I just go straight to the hook "over" the skids, I'll end up with an extremely lateral CG.

Hook-up complete, I get back in my aircraft to begin the lift.

First thing I do is cross check my fuel..is it below my maximum allowable that I computed for the mission?

Then I bring the aircraft to a hover and confirm that I have out-of-ground effect hover power prior to continuing my ascent. I do this facing into the wind if possible. I know when I landed that I had OGE power without the load, but now is it within acceptable limits if I add 2500 pounds? I slowly bring the aircraft to an OGE hover and continue to a point to where the line is

tight. The weight is great enough that if I'm slow with my maneuvering I will center myself over the load. It is important to be centered over the load at lift off to minimize oscillations from the very beginning.

I note my power and my controllability as I carefully increase collective to bring the load off the ground. By controllability, I'm talking about cyclic and pedals. How is the CG? How much left pedal do I have remaining?

With the load now off the ground, I'm going to continue my ascent until the load is at least 25 feet above the obstacles in my takeoff path. I want this little extra cushion in case I lose any altitude going through effective translational lift.

Enroute, I make all control movements **slow** and **positive**, so as not to induce an oscillation. Turns will be very **shallow**. I also am very aware of my altitude so I ensure that my load clears all obstacles.

I make my approach as I had planned, using the hillside to the right of my landing area as a reference point. I select an area on the hill abeam my intended landing area to slowly come to a hover next to. I remember to **lead** my deceleration so the inertia of the cement block won't begin an oscillation and it will be much easier to place the load if it is not swinging.

As I come to a hover with the load, I'm am very aware of my power and controllability. I definitely do not want to droop the rotor RPM. I also don't want to run out of left pedal. Of course if I begin to occasionally bump the pedal stops all I really need to do is reduce power to regain control. This could be a problem if I descend too soon.

Gently I lower the load to the landing area and take some slack out of the line. I move slightly to the side of the load prior to opening my hook to release to sling. I do this out of habit. The sling falling on the cement block is probably not going to hurt the block, however a huge metal clevis falling on an air conditioner or something more fragile can cost everyone a lot of money.

The mission complete I check my fuel to ensure that I will have enough to return to my home plus a twenty minute reserve.

Planning, Planning, Planning. It helps you to prepare for a job so you have all the right tools prior to beginning. It also will help you understand your options if things start going your way.

EXTERNAL LOADS

One of the unique things about helicopters is its ability to pick up and place loads into remote areas. This article will discuss external load operations using a helicopter. The pilots of these types of operations concern themselves with specific questions when performing external load operations. They want to know the type of load, the drag that it will create, the weight, the conditions for pick up and set down, how tall are the obstacles in the immediate area, what the distance is between pick up and set down and how many people are involved.

LOAD IT UP

Dream it up and, if it's not too heavy, the helicopter can lift it. (Even a CH47D can get overloaded.) Loads can come in all sizes and shapes. Logs, air conditioners, towers, vehicles, and more. They can even be live cargo. (I've done some sling loading of mules myself.) Firefighters use water buckets hanging from helicopters to perform initial attack missions. Whatever type of load you are hauling, rigging and weight of the loads are very critical.

Some of us have felt that sick feeling when the load, for whatever reason, departs the aircraft unexpectedly. This could happen if the load was not rigged correctly. Remember the type of sling or clevis must be able to handle a far greater weight than the actual load. This is because the G forces on a load, increase its relative weight. An increase in G force can happen during climbs or turns. I hate to think of live cargo accidentally dropped. So prior to every load, ensure that a qualified individual reviews the load arrangement.

The weight of the load is also very important. Remember back from our aerodynamics, that a helicopter has to work harder to hover out of ground effect. Well (news flash) most external load operations are outside ground effect. Careful computation of performance data and weight and balance information prior to picking up a load is essential. Complacency from aircrews who **thought** they had performance without computing the data, has wound up wrecking an aircraft. Too much weight and the pilot could lose anti-torque capability, or worse droop the rotor. Losing rotor RPM is BAD.

WHAT A DRAG

The pilot must also be concerned with the drag that the load will create. A large flat load flies differently than a round load. Some loads can even have aerodynamic properties that can make them very unstable. This could be one cause of an oscillation. Once the load begins to oscillate, the pilot must try to stabilize the load. If the load is oscillating due to aerodynamic properties it is probably best for the pilot to slow down. (More on oscillations later.) For some loads, it is advisable to use a drag chute to help streamline the load to keep it from spinning. I've used a drag chute when slinging another helicopter and also when slinging the mule.

The drag profile will have an effect on the airspeed of the aircraft as well as power used. The more drag, the more power required. As you approach the maximum power available, the pilot has fewer options with regard to maneuverability. It's always best to conserve power.

CONDITIONS

Hot, dusty conditions are probably the worst. Because not only does the higher temperature limit you on power but the downwash from the rotor makes it extremely difficult to maintain a visual reference

point. Hill tops or roof tops can also pose a problem because of the lack of visual reference points to help maintain your position over the load. At times like these it is a great benefit to have another crewmember on the aircraft providing guidance to the pilot for drift or altitude. In short anything that reduces your visual cues makes life more difficult. That's when good pilot technique helps.

OBSTACLES

Wires, buildings, towers, ridge lines heck just about everything can be an obstacle when there's a load hanging 100 feet or more below your aircraft. We must be ever vigilant to maintain awareness of where the load is above the ground.

OSCILLATIONS

I've found that the longer the line used, the easier it is for a pilot to experience an oscillation in the load. An oscillation is bad two big reasons:

1. Because controlling the load for placement can be extremely difficult.
2. A heavy load will feed back the oscillation to the helicopter making it difficult to control.

When experiencing an oscillation, the pilot has a few options; turn or increase power. (Sometimes doing both can help.) These actions will help stabilize the load. When the oscillation has stopped or decreased, the pilot should ensure that all control movements are smooth and positive. The pilot should always plan each movement of the controls so that they lead the load sufficiently so transitioning from one heading to another is gradual. Also changing airspeeds should be gradual.

DON'T GIVE ANY STATIC

A load will build up static electricity as it is flown off the ground to the next location. Keep people away from the load until it has been grounded. A grounding rod may be used or touch the load to the ground. The electric charge is enough to knock someone to the ground.

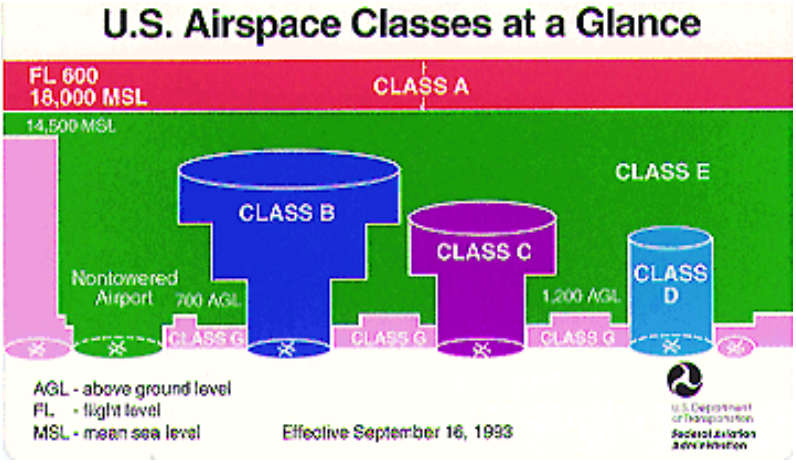
IN SHORT...

There are three things to consider when doing sling loads; planning, planning, and planning. Know your power requirements. Know your limitations. Be smooth and positive and the controls. And always keep in mind the **last** resort; release the load. If an emergency occurs where the load is aggravating the situation, open the cargo hook. I don't advocate this unless it's to save the aircraft and its occupants. Experience and common sense under pressure are what is needed in these situations. If possible, set the load down first, then land the aircraft.

There are a million other things that I didn't go over when conducting external load operations. Next month I would like to go over a single mission step-by-step so everyone can get a little taste of moving a load.

Till then...Chuck

AIRSPACE HAS CLASS



This is a **class** on Airspace, as it might apply to helicopter operations. Class A airspace will not be addressed. (Not many helicopters go above 18,000.)

Helicopter pilots really do care about airspace. Ok Ok maybe not all helicopter pilots care. However our type of flying frequently takes us into all the different types of airspace. In one flight you could easily enter Class B, C, D, E and G.

The FAA in there infinite wisdom (and that was by no means sarcastic) decided to rename the airspace in the US so it more closely resembles that of ICAO. For new pilots, learning the terminology is no big deal. For those who have been around since helicopters had dirt floors, this transition has been difficult. Those folk should relax because very little has changed. Those who are really having difficulty adjusting are those who probably weren't that familiar with airspace requirements in the first place.

For simplicity's sake, there are only two types of airspace; controlled and uncontrolled. Uncontrolled airspace is Class G, controlled airspace is everything else. As I see it, the major differences between all this airspace are weather and communication requirements. There are other minor differences that cover pilot requirements and aircraft and equipment requirements.

CLASS G

Uncontrolled airspace. Class G airspace can be further divided into three distinct areas:

1. below 1200 AGL
2. above 1200 AGL but Less Than 10,000 MSL
3. above 10,000 MSL but not less than 1200 AGL.

There are no communication requirements in class G. You don't *have* to talk to a soul. There are times for prudent communication however. Around an airport with a Unicom or CTAF would be such a time. Or maybe in a high density helicopter area like the LA Basin. This is not only prudent for safety, but it is courteous as well.

Below 1200 Feet AGL

For us helicopter drivers, the FAA has offered the most leniency here and also the most opportunity to find our weakness. Below 1200 feet AGL we can operate **clear of clouds** with an **airspeed to see and avoid obstacles.** You'll notice that there is no minimum visibility requirement. That was not an oversight. The FAA allows us to operate at this vague criteria because we can adjust our speed all the way down to a hover. This is pretty convenient as long as you can maintain some kind of visual reference.

As I said earlier, this also gives us the greatest opportunity to find our weakness. I'm talking about decisions and judgment. At what point do we say we won't go. Weighing the risks against the goal. Each day is a new challenge to our own judgment. The weather that you felt was acceptable to fly in yesterday is not always acceptable today. However, this vague concept of judgment, holds true for every time we contemplate flying. It just seems that in Class G airspace, your limits are more easily found.

Above 1200 Feet AGL but Less than 10,000

Above 1200 AGL, we must comply with cloud clearance requirements as well as visibility requirements. The standard **500 below, 1000 above and 2000 horizontal** plus a **one mile** minimum visibility daytime and **three miles nighttime** are what is allowed here. For those of you in the east of the Rockies, there really is a lot of G airspace above 1200 feet AGL. You just have to head west a little.

Above 10,000 Feet MSL but not Less Than 1200 Feet AGL

Above 10,000 feet MSL, but not less than 1200 feet AGL, cloud clearances change to **1000, 1000, 1 mile** and visibility minimums increase to **5 miles.** Believe it or not there still a lot of places like this that you can get into.

A favorite question I ask during orals is placing the aircraft at 10,300 feet in Class G airspace I come upon a sizable cloud. How far must I avoid this cloud? This question points to the application of different requirements in two different areas of Class G. As the aircraft descends below 10,000 feet to avoid the cloud, the requirements change.

Class G airspace ends at 14,500 feet where Class E Airspace takes over.

CLASS E

Controlled Airspace. Class E is the catch-all name for all controlled airspace that is not specifically around an airport with a control tower. Weather requirements to operate in this airspace below 10,000 feet MSL are the standard 5,1,2 and 3. Above 10,000 MSL it changes to 1000,1000,1 and 5. If the weather is less than that, stay out of there!

As I said, Class E is Everywhere. It can be above 14,500 feet or at the surface. The only time there is a communication requirement is when Class E is surface based and the weather is less than 1000 and 3. Because Class E is **controlled airspace**, a SVFR clearance will be required to operate under such conditions. The clearance can come from a tower, if they're feeling generous, or more likely than not, from approach control. I say, it can come from a tower, because sometimes surface based Class E is attached to Class D. You've seen this on the VFR Sectional as a magenta dashed line connected to a blue dashed line. It is designed for the safety and convenience of other aircraft conducting instrument approaches. Some towers however, do not recognize that Class E airspace as belonging to them so they will not issue a clearance.

CLASS D

Controlled Airspace. This is the lowest echelon where a tower is operated. The dimensions for Class D are as depicted on the VFR chart. The top of Class D generally goes to 2500 AGL and the MSL altitude is published on the VFR Sectional.

Communication is a requirement. Aircraft must seek permission to enter Class D airspace and should avoid it if there is no intent to takeoff or land. Weather requirements are the standard for controlled airspace. SVFR is authorized if granted by the controlling agency.

CLASS C

Controlled Airspace. The size of this airspace is always depicted. Always look for the **altitudes published** for each section. They give a minimum and a maximum altitude. If you want to avoid the airspace, stay out of those altitudes. Be Careful to look for changes in altitude. The airspace may be divided in such a way that you may be under the airspace at one point and at the same altitude a few feet to your left or right you are inside the airspace. This can be bad because **Communication is a requirement here prior to entry.**

CLASS B

Controlled Airspace. The dimensions of this airspace vary from Class B to Class B. They vary as necessary to achieve adequate control of aircraft sequencing into and around these large congested airports. **Communication is a definite requirement.** As far as weather requirements, the FAA did something smart here to assist the workload of ATC. **Clear of clouds with a minimum of 3 miles visibility.** Since all aircraft that enter Class B are under positive control using radar, they felt they could cram more aircraft into their airspace by reducing the cloud clearance requirements. This enhances traffic flow (so they tell me).

Quite a few helicopters operate in and around Class B airspace and I have found it very user friendly. We just have to remember ATC's job is to sequence and prioritize aircraft. If we're not a priority don't get bent out of shape. Be specific about your request and if it doesn't interfere with other aircraft, you'll most likely get cleared to do what you want.

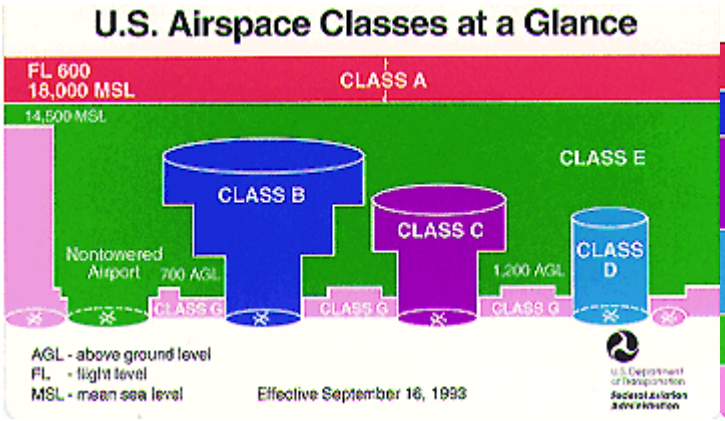
CHAMELEON AIRSPACE

You've seen this airspace. It changes depending on if it is day or night. Whether tower is open or closed. Class D airspace can change to Class E or G and Surface Class E can change to Class G. One of the requirements for Class D is of course an operating control tower. If that tower closes, the airspace may change to E or G depending if they still have weather reporting capability and the letter of agreement in the establishment of that airspace. It all gets pretty convoluted as to the specific reasons for the changes. The only absolute place that I have found to see how this airspace changes is in the Airport/Facility Directory.

In Conclusion...

Knowing airspace is important. The criteria for operating in all these different types of airspace was developed for the safety of pilots, passengers, and residents below. Very few missions are worth the lives of anyone of those people. Please don't push the envelope because the FAA's rules are too limiting.

Ok... I'll step off my soap box now. Just remember to review your route of flight (prior to takeoff), noting the type of airspace that you will encounter. The small amount of knowledge you gain from planning, will help your decision making process for the conduct of the mission.



Airspace Classes	Communications	Entry Requirements	Separation	Special VFR in Surface Area
A	Required	ATC clearance	All	N/A
B	Required	ATC clearance	All	Yes
C	Required	Two-way communications prior to entry	VFR/IFR	Yes
D	Required	Two-way communication prior to entry	Runway operations	Yes
E	Not required for VFR	None for VFR	None for VFR	Yes
G	Not required	None	None	N/A

Night Fright

by Chuck Meager

OH-58 by Night, Stealth mode

Chuck Meager here. It has been one day, 13 hours and 26 minutes since my last flight. It was at night, just after midnight, the moon was near full on a clear night. As I was flying along, I kept saying to myself, 'This has got to be the greatest thing on earth! Then a strange thought entered my head, if I put as much energy into something that would make me money, as I do with flying, I'd be rich beyond belief. But the thought quickly passes as I become immersed in the night, destined to be a slave to my pleasure. It was a safe and successful flight that night, everything going according to plan. I remember it hasn't always been that way... There was a time when flying at night was very scary. But through the all powerful equation E = T + DL (Experience= Training + Dumb Luck), I have learned to truly enjoy flying at night.

The uncertainty of flying at night can be frightening. For most of us, the cause of this fear is our degraded vision. Vision is something we pilots cherish. Without good vision we'd be just like everyone else. AACK! ! Can't have that. It would bruise our precious egos. I know that the first time you get a Class 1 Flight Physical for the military, you had better have 20/20 vision. In our aeromedical studies we learned that night vision is equivalent to 20/200. That's legally blind! (Imagine the flight surgeon issuing a pilot certificate to someone with 20/200 vision.) If it wasn't so dangerous it would be comical to have all these blind people flying around the unsuspecting population below.

So here we are blind at night and yet we're out there conducting business in our aircraft. Did we bump are heads or what?? But still we do it all the time and there aren't that many accidents at night. Why?

Training and past experiences. By past experiences, I'm talking about how you've been doing things in the dark all your lives. (For some of us, that could be metaphorically true as well.) I remember playing basketball on the playground until I could barely see the basket. Or walking into a dark room. You might slow down if you're not sure where things are. Or here's a good one ...remember the game

where you reached into a hole in a closed box and tried to feel the objects to choose the right one without seeing the object?

The kind of skills we learned as children help us function in the aircraft. Playing in the dark, we unconsciously practice scanning techniques and reacting to moving and stationary objects. Or walking into a dark room, we learned, by stubbing our toes a few times, to slow down or wait until our eyes adapt to the lower light level. We also learned that different objects feel different. So we know what the fuel switch feels like without having to look.

But what we learned as children won't help us in every situation. This is because flying can be a little more stressful than playing basketball at night. Stress adds a new dimension. Or maybe I should say that the added dimension in flying adds stress. We have to retain our brains to think in three dimensions and create reactions accordingly. So we need to know how the eye works, how we estimate distance and depth, and what types of visual illusions we can experience. By being familiar with these things, we can better apply them to any situation. If you're just doing things in the aircraft without some reason other than 'my instructor told me to', you're no better than the computer you're sitting in front of right now. Each situation is different and knowing the reasons that we do things will allow you to be more adaptable.

Through our aviation training, we learned about the night blind spot. The absence of rods in the fovea makes it necessary to use off-center vision so we can see things better under conditions of low illumination. And that it takes 30 - 45 minutes for our eyes to completely adapt to the dark. We also learned that scanning will keep us more alert to our situation and prevent us from getting fixated.

Visual illusions, vestibular illusions, and distance estimation and depth perception, are the things that can affect us easiest when flying at night. Knowing what to do to prevent or recover from the illusions or how to view things to maintain your orientaion, is extremely important.

So... here's the scenario. You're flying along at night, away from the city lights, and you see what appears to be an aircraft coming toward you. You change course to avoid him but you're still not quite sure on his position. Your having a difficult time estimating his distance and course. -OR- You're flying over the city at night, talking with approach control, from nowhere you see the familiar green and red lights of another aircraft rapidly closing in on you -OR- You're looking at the city lights and you think you see one moving - is it a car? is it an aircraft? is it a threat?

What do you call the illusion where you feel like you're going backwards but in reality it's your reference point moving forward?

Or how about the illusion that makes you want to climb over the tower or power lines when you know you have enough altitude to clear the obstacle?

What do you call the technique for estimating distance where the closer an object is to you the faster it appears to be traveling?

Or the technique for estimating distance of the aircraft near the airport?

Knowing all the names for these is pretty trivial unless you want to talk coherently about them to an evaluator. What's really important is how you use them. As you're flying in the dark, pay attention to your instruments. You don't want to be too fast during an approach. Scan around and note your rate of closure. Look at your VSI and note your rate of descent. Remember that the helicopter flies the same at night as it does in the day. However you should be more cautious in the dark. That will give

you more time to react to the things you can't see. Don't relax your scan just because you're talking with approach control. They're people and they make mistakes too. And of course, probably the most important for a successful flight at night is planning.

Well, it's getting late. I'm going to be doing what most people should be doing at night - going to sleep and dreaming about flying helicopters. Talk amongst yourselves for next month's topic: Night Vision Devices: Don't leave home without them.

Helicopter Piloting

- How to learn to be a helicopter pilot
  - If you don't hold a pilot certificate of any kind
  - If you are currently rated in airplanes
  - How to select a school
  - How to select an instructor
  - How much will it cost?

Training to become a Helicopter Pilot

If you are thinking about getting your helicopter license, there are a few things you may want to know first. Most people who decide to get their helicopter license break down into one of two categories. Someone who holds no pilot rating at all, or someone who holds some sort of fixed wing rating. Of course, there is the occasional balloon pilot, or other exotic, but these are quite rare.

People who currently do not posses any type of pilot certificate

If you hold no rating at all, you will need to take 20 hours of instruction and log 20 hours of solo practice. Generally, however, it will take you closer to 45 hours of dual instruction before you are ready for your checkride, giving you closer to 65 hours total time in helicopters, if you are an average student.

Before you can take your checkride, you must pass a written exam. These days that pretty much means going to a computerised testing center. The test is multiple choice, there are study guides available that give you the answers, and passing grade is a 70. Piece of cake.

Assuming you pass your written test, and your flight instructor thinks you are ready for the checkride, you will be signed off to take a combination oral and flight test with either an FAA examiner, or more likely a Designated Examiner who is a person who does not work for the FAA, but has been designated as having enough experience to judge whether you make the grade or not.

The length of the exams are pretty much up to the examiner. Supposedly you will only be tested on subjects called out in the "Practical Test Standards" (which you should get a copy of) but in reality most examiners use that as a bare minimum and will ask you plenty of questions that are not in the PTS. One to two hours of oral exam and an hour of flying is pretty typical for the designated examiner we send most of our student pilots to.

People who currently hold an airplane certificate

First of all, as you read the regulations you should realize that you are *not* a "student pilot". You are not even a "student pilot in helicopters". You are a private or commercial or ATP pilot working on

adding a category and class to your certificate. Thus any regulation that talks about student pilots *does not apply to you*. Some people want to interpret that they apply to you, but they don't.

An example would be cross country flight. As a non-student pilot, you have to receive 3 hours of flight instruction in cross country flight before you can take the checkride. However, you do *not* have to be "signed off" for cross country flight the way a student pilot does. Once you have been signed off for solo flight in a category and class, you can do just about anything except carry passengers. You could technically fly cross country before receiving your 3 hours of dual cross country. I know it sounds weird, but *you are a rated pilot* and the FAA will let you get away with a lot that a student pilot cannot.

In general, you should plan on spending 40 hours of dual and 15 hours of solo to get your helicopter add-on. Probably 98% of our add-on students do it plus-or-minus 5 hours from that figure.

How to pick a school

The first thing is to find all the schools, and visit each one. Start with the yellow pages. Some schools don't advertise. Find them by calling all the airplane schools and aircraft charter companies, and ask them who does helicopter training in the local area.

To visit each school, call them up and make an appointment to meet with the owner/president. You will usually have an easier time getting an appointment during the week, rather than on the weekend. Tell them you'd like to meet them to hear about the school, their training program, and why you might want to train with them.

Meet with the owner/president, look the facilities over, look the aircraft over, get at least the following information:

- Rate Sheets broken down by Dual Instruction, Solo, and Rental rates
- How is time charged? Is it from the time you walk in the door, or when the helicopter is started or what?
- Insurance information: does the underwriter waive subrogation against students and renters, if so, is there a deductable the student is responsible for, if not, does the school have any pointers toward renter insurance.
- How many instructors are there broken down by full time versus part time
- What is the average experience of the instructors?
- How many helicopters are there (of the kind you would be training in)
- Who does the maintenance on the school helicopters (i.e their own mechanic, or an outside mechanic. If outside, who is it?)
- How many hours will it take to get the rating? How much will that cost? Is the quote FAA minimums, or is it based on actual, typical students?
- Do you have to put any money down in advance?
- Do you get a bonus for block payments, and if so, how much?
- The names and phone numbers of two recent graduates, and two currently enrolled students that are willing to act as references
- Is the school FAA Part 141 approved, and if not do they have a syllabus? Can you have a copy of the syllabus?
- Who would be conducting the check ride?
- Does the school have a regular ground school, how much does it cost, and what is the cost of materials you are going to be responsible for (textbooks, plotters, etc).

- Does the school supply headsets, or will you have to supply your own (good headsets cost between $300 to $1,000, so this is not an insignificant cost) If you have to buy one, my recomendation is a David Clark, although some people will argue toward a cheap headset. Warning - helicopter headsets are different than airplane headsets. You want a helicopter headset, not an airplane headset with an adapter cable
- What is the pass/fail ratio for the school?

Get a tour of the facility. Try to get a feeling for whether this is a well organized school or not. Is it a single helicopter school, or does the school have multiple helicopters? If the school only has a single helicopter, you will have a more difficult time scheduling in it, and mechanical difficulties will cause lessons to be cancelled whereas with multiple helicopters often another helicopter can be substituted. Also, as a rule of thumb single helicopter schools are less likely to be around a few years later when you want to rent their helicopter.

Ask to talk to a couple of the instructors. You may have to come back if they are all flying at the time. Ask leading questions, such as whether the instructor enjoys working at the school, whether the management is difficult to work for, is the maintenance good, are the helicopters all in good shape. The *way* the instructor answers is as important as what he/she says... If the owner told you it would take "X" hours and "Y" dollars to get your rating, ask the instructor whether those estimates are reasonable or not. Don't say the owner quoted them, just ask, "do you think I could get my rating in "X" hours for "Y" dollars?". If there is a big discrepency between what the owner said and what the instructor says, you might want to be extra careful. Ask the instructor what the pass fail ratio for the school is. Again, compare it to what the owner says.

After the tour, thank everyone for their time, leave, and write down pertinent information. Organize it with any materials they give you, and go through the same process at each of the schools you've located.

When it comes to making the final decision, first of all make sure you are comparing apples to apples. Don't price shop two schools and compare FAA minimum rates to "typical" rates. Compare minimum to minimum or typical to typical. Generally an FAA Part 141 approved school will be better organized than a non-141 school, but this is only a very general guideline. However, a non-141 school *should* have a syllabus showing lesson plans, number of hours, etc. I'd be wary of a school that didn't have a syllabus. If the school's insurance company doesn't waive subrogation, you could be responsible for the *entire* worth of the helicopter if there is an accident during training or rental. Factor in the price of renter's insurance when you determine cost of flying at that school.

Try to determine whether the helicopter fleet is being well maintained. In my book, maintenance is much more important in helicopters than it is in airplanes. There are a lot of pieces that can fall off an airplane and leave it flying. There are not nearly so many pieces in a helicopter. Of course, it can be very hard for someone who doesn't know about helicopters to determine whether the maintenance is good at a particular school. All I can say is talk with some of the current students and specifically ask them about maintenance. Look the helicopters over. If a lot of little stuff isn't being fixed, that *may* mean that big stuff isn't being corrected either. However, it's no guarentee either way.

Try to figure out whether this is a school which soaks it's students. I've seen many schools that take 100 hours or more for people to get a private pilot license. You will find the occasional person who really needs to take this long, but if you talk to 3 graduates and they all took over 80 hours to get their private, the school may be "overtraining" them in order to get additional revenue. A private pilot certificate should normally take between 55 hours total time for an airplane pilot to 65 hours total time

for a non-pilot. If the school average is much more than that, they are probably gouging their students for extra revenue.

Most important is to talk to some of their students. This is where you will get some honest opinions about the school. Obviously you won't get much information out of a pilot who's only been flying there for a couple weeks, but students who have already soloed will be good sources of information. Ask direct questions about whether the student thinks it's a good school, who are the good instructors, is the maintenance okay, and what things are bad about the school. Obviously the school isn't going to point you toward someone they know to be dissatisfied, but even taking this into consideration, the students are much more reliable sources of information than the schools employees or the schools competition.

How to select an instructor

Probably one of the most important resources during your flight training will be the instructor. I'd rather train with a good instructor at a bad school, than with a bad instructor at a good school! The instructor is the person you will be spending all the time with. How many hours you will take to train (and therefore how much it will cost), and how good a pilot you will be ultimately depends on the instructor. It's worth your while to select a good one. That said, keep in mind that full time instructors often move on to other flying jobs as they reach 1,000 to 2,000 hours of experience. There is no guarentee that the instructor won't leave part way through your training, so select a school you can live with if the instructor of choice leaves.

Spend a half hour to an hour talking with the instructor. Make sure that the two of you can get along! See how knowledgable the instructor seems to be. If the instructor spends a lot of time trying to convince you to go fly rather than talk, you may have found a guy who isn't going to want to spend the time with you on the ground preparing for a lesson that he should. Some instructors don't get paid unless the aircraft is in operation. A good lesson usually involves spending a fair amount of time on the ground talking about what the lesson will entail, how the maneuver will be flown, etc. It is fair and reasonable for the school to charge you for this time at the instructor rate. It is not fair to charge you the aircraft rate for time spent on the ground, and if there is no charge at all, the instructor will be reluctant to spend the required time on the ground. If the instructor is getting paid both on the ground and in the air, he is more likely to spend the time in your best interest, since there is no economic reason for him to prefer flight time over ground time.

Ask the instructor about his experience, both in terms of hours and in terms of how many students he has had. What is his pass/fail ratio? Is he going to be at the school for a while, or is he going to be leaving for a different flying job in the next year?

As for whether you should be looking for a high time grizzled old veteran, or a fresh CFI, that is a very difficult question to answer. More experienced instructors may be burned out, or less enthused than a low time instructor. On the other hand, a more experienced instructor will probably be able to train a better pilot in slightly less time. Still, I have met high time instructors who have been doing it for quite a few years that are just terrible, and fresh CFIs who are fantastic. There are no absolutes. This is why you need to talk to the students and recent graduates; they have the best idea of who the good instructors are, and who to avoid.

How much will it cost?

This varies greatly. In the United States, in a Robinson R22, you should figure on about $10,000 for a private pilot license. You will find schools that promise it to your for less, but this is a realistic amount to budget for. If you want to compare prices, don't compare their package prices, or what they say the license will cost. Simply compare their hourly prices for the machine and the instructor. That will eliminate the schools that quote ridiculously few hours to get your license. The $10,000 figure was arrived at by multiplying 45*(the dual instruction rate) + 20*(the solo rental rate).

One thing to think about is that most people looking for a school will price shop based on quoted rates. But the real determining factor will be how good the instructor is. A disorganized instructor can cause you to take longer than a good, organized one. At $165/hr or more for dual instruction, it doesn't take many hours of wasted time before that instructor has cost you thousands of dollars. My suggestion is not to pay too much attention to the exact prices, but evaluate based on whether you like the people, and what their reputation is with their customers.

[Top] [Up] [Prev] [Next]