

“In Your Defense”: A Defensive Strategy for Helicopter Pilots

Contact: Nick Mayhew
 Phone: 321-567-0386

Much like defensive driving, defensive flying involves using specific strategies for keeping one step ahead of the curve when it comes to helicopter safety. As we drive to the airport in preparation for our upcoming flight, we are bombarded with opportunities to exercise our defensive driving skills to elude potential danger. Most of us have experienced situations involving drivers who exceed speed limits, text while driving, ignore traffic signals, and fail to pay attention — period. It’s a true jungle out there!



The principle behind using a defensive strategy when flying is to never assume other pilots, air traffic controllers, ground personnel, or even Mother Nature is looking out for your safety. Helicopter pilots often get trapped in difficult situations, because they lose situational awareness about their environment. Unfortunately, complacency and the loss of situational awareness can lead even the most experienced aviators down the wrong path.

Proper Pre-Flight Preparation

When flying helicopters, mental preparation plays a key role in determining overall success. Whether a particular mission involves training, a cross-country, or a practical test, the amount of preparation is usually

reflected in the overall results. It’s always better to over prepare for a flight than to be caught off-guard and surprised by the unexpected.

A great defensive technique to implement before any flight is to mentally rehearse the mission from start to finish. Think through the mission as planned, but develop contingency plans should the flight have to change because of weather, mechanical problems, or other unforeseen conditions. It’s much easier to execute a well-thought-out contingency plan than it is to make radical decisions during flight.

Another advantage of a pre-constructed alternative flight plan is that it allows helicopter pilots to make small adjustments as opposed to reacting to circumstances that could have been mitigated from the very start. Pilots who approach flying using a defensive mentality often experience greater satisfaction in knowing they have thought through various safety options beforehand and haven’t left much to chance. Contingency plans well thought out on the ground often yield positively when decisively executed in flight.

Checklists, Discipline, and SOPs

Disciplined use of checklists, standard operating procedures (SOPs) and logical Aeronautical Decision Making (ADM) has a profound influence on helicopter safety. As required under Title 14 Code of Federal Regulations (14 CFR) section 91.103, pilots must be aware of all available information pertaining each and every flight. This level of awareness will increase safety and improve overall enjoyment of the flight.



Many pilots believe SOPs exist only for crew members flying large helicopters involved in Part 135 operations..... **WRONG!**

SOPs can help prevent unfortunate circumstances from occurring by preparing pilots to handle both normal and abnormal events in the most effective ways.

Helicopter pilots should be encouraged to develop and implement SOPs for all flight operations, regardless of the type of operation being conducted. SOPs add structure and an enhanced level of safety by helping pilots implement best practices and techniques applicable to all situations.

Appropriate checklist usage is another resource pilots can use to deal with abnormal and emergency situations in the cockpit. Unfortunately, many pilots allow the habit of using a checklist to fade over time. Remember, appropriate checklist usage is required on all checkrides with the intentions of improving pilot performance and safety. Even for pilots flying the same helicopter over and over, disciplined checklist usage is a must, because complacency kills.

UP, UP and AWAY!!!!

Part of our defensive flying strategy should emphasize the importance of maximizing altitude and distance from the ground and obstructions. Just because helicopters are capable of flying in close proximity to "things", does not mean pilots should linger around "things" beyond a reasonable amount of time for completing the mission.

Human Factor studies reveal most pilots react slowly and incorrectly to abnormal and/or emergency situations. Research reveals that it can take as much as seven to eight seconds for pilots to properly respond to a startling/unexpected event in the cockpit. Simply put, performing "what if" scenarios during all

phases of flight from start to finish can help train the mind to respond correctly in less time.

In regards to transition altitudes, many pilots believe helicopters will not fly above 500 feet AGL...WRONG!

When transitioning from point A to point B, if conditions allow, why not transition at 1,000 or even 2,000 feet AGL? For those pilots who add additional safety margin to their final transition altitude will be afforded extra valuable seconds compared to pilots who do not. For instance, by increasing a transition altitude by 1,000 or 1,500 feet can give pilots another 30-45 seconds of added time to fly the helicopter, select a suitable landing area and touch down safely! As for routing, conservative flight planning can also pay huge dividends in terms of time and safety. Why fly over the forest, lake, or city when you can go around them at a minimal cost and inconvenience. It's much better to plan and fly conservatively than to be caught in dangerous situations that may be fatal.

A Good Offense Is Still Your Best Defense

Preparation is a key ingredient for successfully flying helicopters. Proper pre-flight planning and good mental preparation pays huge dividends for pilots who take into consideration the known and unknown. From beginning to end, safety starts before we get into the helicopter and ends only when we've secured it after landing.



Acknowledgement

Thanks to Dr. Steve Sparks for authoring this Fact Sheet and the helicopter Rotor Rooter educational training series in sponsorship by the FAA Safety Team (FAASTeam).

This document is a peer reviewed publication by an expert panel of the IHST Implementation Team. More information about the IHST, its reports, its safety tools, and presentations can be obtained at its web site: (www.IHST.org)

