

# **The Helicopter Pilot's 'Medical'**

by

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Of all the pilots who come for their flight physical, helicopter pilots have been tops for motivated confidence, poise and determination. Naturally, more of them are professional pilots, since private ownership and recreational flying of these machines is much less common than with single or multi-engine aircraft. And, many of these pilots are not the least interested in straight and level flying, after their exciting three-dimensional flight experiences in a helicopter.

Nevertheless, almost weekly we read of helicopter crashes, often with severe injuries or death. Much of this publicity stems from the fact that a celebrity or VIP on-board makes the accident more newsworthy. Second, it is often the case that helicopters are deployed to conduct inherently dangerous work such as rescues in bad weather, technical flying near electrical towers, lift work into remote mountainous areas with unpredictable winds, or fire fighting or air-ambulance medical missions. Scenic tours and shuttle flying are more common, and much less hazardous.

Occasionally, newscasters have given the erroneous impression that a helicopter is more dangerous than other forms of flight. In actuality, people are less likely to get airsick in a helicopter. Due to the high angular moment of the helicopter's spinning blades, in effect a big gyro, their ride is smoother than similarly sized airplanes. This is one of the reasons they work well as photographic platforms. Further, when the engine does conk out, a helicopter can autorotate, similar to a winged seed pod falling from a tree. A properly maneuvered autorotation will touch the machine lightly to the ground, with little or no forward speed. An airplane can't do that, as you know.

Medically speaking, the helicopter pilot does have some specific demands for co-ordination that is different than other types of aviation. Greater eye-hand co-ordination needs to be developed to fly helicopters compared to flying airplanes. This makes the learning curve steeper, especially at the student pilot level. The biggest challenge for a fledgling helicopter pilot is learning how to hover. It is akin to balancing a broom in your hand. Most people can learn it well, in time and with sufficient practice.

In contrast with a locomotive, where the engineer can drive the train with one hand, going in forward and reverse, and where the rails do the steering, the driver of a car can also turn left or right. The latter requires at least one hand and one foot for maneuverability. Then there is general aviation, where a pilot can fly his plane with one hand and two feet, able now to move forward, turning left or right, as well as going up and down. In a helicopter, you can move laterally in any direction, or you can rotate 360 degrees. A helicopter can thus accomplish three things that an airplane cannot. It can fly backwards. The entire aircraft can rotate in the air. And, a helicopter can hover motionless in the air.

To control such an amazing machine, one hand grasps a control called the Cyclic, which controls the lateral direction of the helicopter (including forward, backward, left and right). The other hand grasps a control called the Collective, which controls the up and down motion of the helicopter (and also controls engine speed). The pilot's feet rest on two pedals that control the tail rotor, which allows the helicopter to rotate in either direction on its axis. It takes both hands and both feet to fly a helicopter, plus a lot of nerve, and common sense!

So, in the flight examination for helicopter pilots, flight surgeons pay more attention to things such as dexterity, balance, eye-hand co-ordination, eye muscle control, in addition to the usual checks for high blood pressure, diabetes, and screening for handicaps or systemic disease. Helicopter pilots have to be more resistant to spatial disorientation, since they must often look straight down, move their heads rapidly, and endure the flickering light through rotor blades as well as much noise and vibration. More helicopter pilots must stay ready for flight at a few minutes notice, especially when on call for rescue work, medical transport, or fire fighting. And, often this dangerous flight is made at night, in fog or storms or smoke, where visual references are lost, and the flying is under IFR.

In such a case, alcoholic beverages are naturally taboo. And other drugs which would affect vision, motor coordination, or alertness are also dangerous and unwise. Even though most helicopters fly closer to the ground than similar sized airplanes, and somewhat slower, there are enough towers, tall buildings, hills and canyons and mountains to make a pilot want to take every precaution possible.

In recent months helicopter accidents have involved mid-air collisions in Arizona, with fatal outcome for several prominent news reporters and photographers as well as the pilots. In Washington, at pressurized altitude, a side window popped out of a medical transport helicopter. The medic had just unstrapped his seat belt to reach his water bottle, and was sucked part way out the machine, including his head and one arm. Fortunately, he was a big man, and able to hold on with his other arm, finally pulling himself desperately back inside. The pilot knew something was wrong, when he lost cabin pressure, and was able to land safely at a nearby airport. The following day, with healing bruises and resilient courage, the paramedic was up on another patient transport mission. No better time to conquer fear!

I've admired skilled pilot friends who do sky-medical rescue work, who drop tons of water over blazing forest fires, as well as others who fly huge Sky Cranes for logging companies, or similar machines for remote construction projects. The AME is part of the 'team,' a member concerned with safety, with health, with longevity. Successful flying continues when all work together. Aviation medicine is a great specialty. Now it's time to get out of the office and go flying.

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*[Doctor Hansen, author of the popular book on home health care, **Get Well At Home**, currently serves as medical director of the **Emerald Valley Wellness Clinic**, and its **Live-for-Health Seminars** in Creswell, Oregon. Pilots who for health reason are having trouble passing their medical should contact us. For further information or inquiries, contact: [clinic1@emeraldwellness.com](mailto:clinic1@emeraldwellness.com)]*