



CHAPTER 4

SAFETY OF FLIGHT

PRIVATE PILOT AIRPLANE

COLLISION AVOIDANCE

14 CFR Part 91 requires that each pilot operating in VFR conditions maintain vigilance so as to see and avoid other aircraft. This is impossible without proper visual scanning. Only a small center area of our vision has the ability to send a clear focused image to the brain. Scanning casually back and forth across the horizon covers a lot of area, but you will not see an object in the distance. Effective scanning is accomplished with a series of short, regularly spaced eye movements that bring successive areas of the sky into the central field of vision. Each movement should not exceed 10°, and each area should be observed for at least one second to enable detection. Concentrate your scan outside the aircraft. For every 4 or 5 seconds spent scanning the instrument panel, spend 15 seconds scanning outside.

Always be familiar with other operations in the air where you are flying. Use the horizon as a reference point. An aircraft above the horizon is higher than you and an aircraft below the horizon is lower than you. If a target in the distance does not appear to move in any direction, except to loom larger as time passes, you are on a collision course.

OPERATING NEAR OTHER AIRCRAFT

14 CFR Part 91 covers right-of-way rules.

An aircraft in distress has the right-of-way over all other air traffic.

When aircraft of the same category are converging, the aircraft to the other's right has the right of way.

If the aircraft are of different categories:

A balloon has the right-of-way over any other category of aircraft.

A glider has the right-of-way over an airship, airplane, or a rotorcraft.

An airship has the right-of-way over an airplane or rotorcraft.

An aircraft towing or refueling another aircraft has the right-of-way over all other engine driven aircraft.

When approaching head on, each aircraft should alter course to the right.

An aircraft that is being overtaken has the right-of-way and the overtaking aircraft should alter course and pass to the right.

Aircraft that are landing have the right-of-way over other aircraft in flight or on the surface. If two aircraft are approaching to land, the lower aircraft has the right-of-way, but may not cut in front of, or under, another aircraft to gain this advantage.

No one may operate an aircraft so close to another aircraft so as to create a hazard or in formation flight without the consent of both pilots in command.

Areas of high traffic concentration, such as terminal areas, or near VORs, will make scanning more difficult. Atmospheric conditions which lower visibility make scanning more difficult and create illusions.

5.3.8.3.4.A.1 J31

The most effective method of scanning for other aircraft for collision avoidance during daylight hours is to use a series of short, regularly spaced eye movements to search each 10-degree sector.

5.3.8.3.5.A.1 J31

To scan for traffic to the right and left during straight-and-level flight, systematically focus on different segments of the sky for short intervals.

5.3.8.3.6.A.1 J31

There will be no apparent relative motion between your aircraft and the other aircraft if another aircraft is on a collision course with your aircraft.

5.3.7.1.0.A.1 H507

Prior to starting each maneuver, pilots should visually scan the entire area for collision avoidance.

5.3.8.1.4.A.1 J14

Execute gentle banks, left and right for continuous visual scanning of the airspace when climbing or descending VFR on an airway.

1.3.0.8.9.A.1 B08

An aircraft in distress has the right-of-way over all other air traffic.

1.3.0.9.0.A.1 B08

The aircraft on the left shall give way when two aircraft of the same category converge, but not head-on.

1.3.0.9.1.A.1 B08

A glider has the right-of-way over an airship and aircraft refueling other aircraft.

1.3.0.9.2.A.1 B08

An airplane and an airship are converging. If the airship is left of the airplane's position, the airship has the right-of-way.

1.3.0.9.3.A.1 B08

Aircraft towing other aircraft has the right-of-way over an airship and gyroplane.

1.3.0.9.4.A.1 B08

Both pilots should give way to the right if a glider and an airplane are on a head-on collision course.

PRIVATE PILOT AIRPLANE

NIGHT OPERATIONS

Night flying presents special challenges and requires special considerations and preplanning. Your eyes are best adapted for daytime vision. However, you see well only within a small, central area of your field of vision. During the day, you must look directly at objects to see them in sharp focus. This is the reason scanning the horizon in small segments is an effective collision avoidance technique (Figure 4-1).

At night, this central area of your vision becomes less important. Your peripheral field of vision provides substantially greater sensitivity to low light situations.

The same traffic scanning techniques work well at night, but you must realize that you will “see” things a bit differently. You must actually look slightly to the side of an object or light in order to see it clearly. You can prove this to yourself on a clear night. Pick out a faint star and look directly at it. It will seem to disappear, then reappear as you move your eyes just slightly to one side. This “off center” viewing technique is critical to effective visual scanning for traffic at night (Figure 4-2).

Another limitation of your vision that is important to consider for night flights is adaptation. When you first enter a darkened room, it seems black. After a short time, though, you are able to see more and more. The process of adapting your vision to low light situations can take up to 30 minutes.

When planning a night flight, allow at least a half hour before the flight for your eyes to adapt to darkness. Once your vision is adapted, avoid bright lights, especially white light, to maintain good night vision. When bright light is unavoidable, closing one eye will help reduce the blinding effect.

Red light is used for cockpit and instrument light because it has less effect on night vision than white light.

For a night flight you will need all the same materials used during any flight, with the addition of a good quality flashlight. Most often the flashlight is fine, it’s the batteries that cause problems, so carry an extra set. You may find it useful to have two flashlights, one with “D” size batteries for use during preflight inspection and loading, and a small penlight size flashlight with a red lens. The smaller light is easier to use in the cockpit, and the red lens will reduce the light’s impact on your night vision and, tied to a string, can be hung around your neck so it’s always reachable.

A red or white anti-collision light system and red, green, and white position lights are required for night operations. The purpose of position lights, on the wing tips and tail, is to enable you to determine the relative position and direction of motion of another aircraft in flight. Except in Alaska, lighted position lights should be displayed on an aircraft during the period from sunset to sunrise (Figure 4-3).



Figure 4-3

1.3.0.9.5.A.1 B08

When two or more aircraft are approaching an airport for the purpose of landing, the right-of-way belongs to the aircraft at the lower altitude, but it shall not take advantage of this rule to cut in front of or to overtake another.

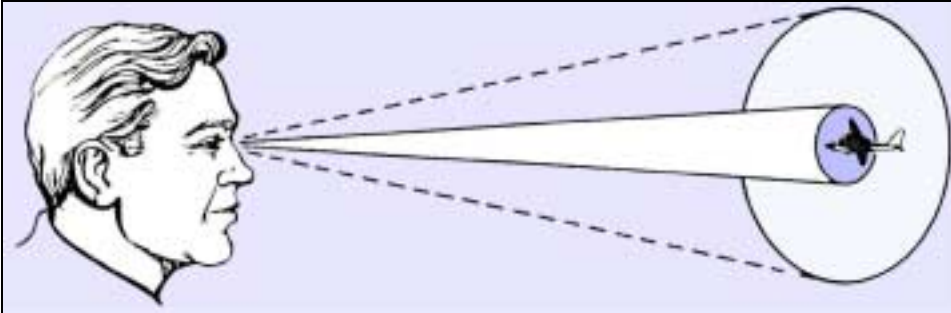


Figure 4-1

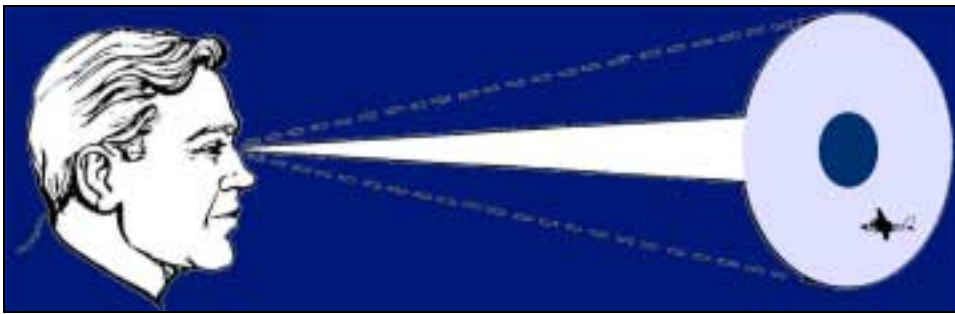


Figure 4-2

5.3.7.1.2.A.1 H564

The most effective way to use the eyes during night flight is to scan slowly to permit off-center viewing.

5.3.7.1.3.A.1 H564

The best method to use when looking for other traffic at night is to look to the side of the object and scan slowly.

5.3.7.1.4.A.1 H564

The most effective method of scanning for other aircraft for collision avoidance during nighttime hours is to use peripheral vision by scanning small sectors and utilizing off-center viewing.

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A red light is positioned on the left wing tip, a green light on the right, and a white light on the tail. If in flight you see only the red position light of another aircraft, you know its direction of travel is from your right to left. If you see only the green light, the other aircraft must be moving from your left to right.

The colors help you apply the right of way rules of FAR Part 91. Yield the right of way when you see a red light. You have the right of way when you see a green light.

An aircraft approaching head on will present both red and green lights, but their positions will be reversed, left for right. From directly behind, you will see only the white light on the tail of an aircraft moving in the same direction as you are.

Check the operation of all lights, including the cockpit and instrument lighting, as well as the landing and taxi lights, during your preflight inspection.

MEDICAL FACTS FOR PILOTS

Hypoxia is a state of oxygen deficiency in the body sufficient to impair the brain and other organs. A person experiences hypoxia at higher altitudes only due to reduced atmospheric pressure. The reduced pressure can affect night vision at cabin pressures as low as 5000 feet. Significant effects of altitude hypoxia usually do not occur below 12,000 feet, but heavy smoking, anemia, alcohol, drugs, or carbon monoxide from exhaust fumes will drastically lower that altitude. The effects of hypoxia occur gradually and may be difficult to recognize. Symptoms are impairment of judgment, memory, coordination, a feeling of well being (euphoria) or belligerence. Drowsiness, dizziness, or headache can occur.

14 CFR Part 91 requires supplemental oxygen when flying above the following cabin pressure altitudes:

Above 12,500 up to and including 14,000 feet MSL, the required crew members must use supplemental oxygen for that time at those altitudes in excess of 30 minutes.

Above 14,000 MSL, required crew members must use supplemental oxygen for the entire time.

Above 15,000 MSL, enough supplemental oxygen must be aboard to supply each occupant for the entire time.

Hyperventilation is due to excessive breathing which produces an overabundance of oxygen and a deficiency of carbon dioxide. This can occur during a stressful situation and produce symptoms very similar to hypoxia; light headedness, suffocation, drowsiness, and coolness which in turn can cause an anxious pilot to overreact and further aggravate the symptoms. Hyperventilation can be counteracted by covering the mouth and nose with a paper bag and breathing into it.

5.3.7.1.5.A.1 H567

During a night flight you observe a steady red light and a flashing red light ahead and at the same altitude. The other aircraft is crossing to your left.

5.3.7.1.6.A.1 H567

During a night flight you observe a steady white light and a flashing red light ahead and at the same altitude. The other aircraft is flying away from you.

5.3.7.1.7.A.1 H567

During a night flight you observe steady red and green lights ahead and at the same altitude. The other aircraft is approaching head-on.

5.3.7.1.9.A.1 H573

VFR approaches to land at night should be accomplished the same as during daytime.

5.3.8.4.9.A.1 J31

To adapt the eyes for night flying, a pilot should avoid bright white lights at least 30 minutes before the flight.

1.3.1.6.2.A.1 B11

Except in Alaska, lighted position lights should be displayed from sunset to sunrise.

5.3.8.4.4.A.1 J31

Hypoxia is a state of oxygen deficiency in the body.

1.3.1.6.3.A.1 B11

When operating an aircraft at cabin pressure altitudes above 12,500 feet MSL up to and including 14,000 feet MSL, supplemental oxygen shall be used by required crew members during that flight time in excess of 30 minutes at those altitudes.

1.3.1.6.4.A.1 B11

Unless each occupant is provided with supplemental oxygen, no person may operate a civil aircraft of U.S. registry above a maximum cabin pressure altitude of 15,000 feet MSL.

5.3.8.4.5.A.1 J31

Rapid or extra deep breathing while using oxygen can cause a condition known as hyperventilation.

5.3.8.4.6.A.1 J31

Emotional tension, anxiety, or fear could result in hyperventilation.

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Carbon Monoxide poisoning can occur by breathing even small quantities of carbon monoxide over a period of time. Carbon monoxide reduces the ability of the blood to carry oxygen. Most aircraft heaters work by air passing over the exhaust manifold and if there are cracks, carbon monoxide may enter the cabin. You may not smell the exhaust gas but the symptoms of headache, drowsiness, or dizziness should alert the pilot to shut off the heater, open vents, and land.

Spatial Disorientation can result from various illusions in flight. Complex motions and forces and certain visual scenes encountered in flight can create illusions of motion and position. The pilot can prevent spatial disorientation from these illusions only by visual reference to reliable, fixed points on the ground or to flight instruments.

Alcohol renders a pilot much more susceptible to disorientation and the effects of hypoxia. FAR Part 91 prohibits anyone from serving as a required flight crew member within 8 hours of consuming any alcoholic beverage or with a blood alcohol content of .04% or greater by weight. Also, except for a medical patient under a doctor's care, or in an emergency, you may not carry aboard an airplane any person who is under the influence of intoxicating liquor or drugs.

5.3.8.4.7.A.1 J31

A pilot should be able to overcome the symptoms or avoid future occurrences of hyperventilation by slowing the breathing rate, breathing into a bag, or talking aloud.

5.3.8.3.2.A.1 J31

Large accumulations of carbon monoxide in the human body result in loss of muscular power.

5.3.8.4.8.A.1 J31

Susceptibility to carbon monoxide poisoning increases as altitude increases.

5.3.8.3.3.A.1 J31

When haze is present, all traffic or terrain features appear to be farther away than their actual distance.

5.3.9.3.9.A.1 L05

Continual flight into instrument conditions often leads to spatial disorientation or collision with ground/obstacles when flying under Visual Flight Rules (VFR).

5.3.8.5.0.A.1 J31

The danger of spatial disorientation during flight in poor visual conditions may be reduced by having faith in the instruments rather than taking a chance on the sensory organs.

5.3.8.5.1.A.1 J31

A state of temporary confusion resulting from misleading information being sent to the brain by various sensory organs is defined as spatial disorientation.

5.3.8.5.2.A.1 J31

Pilots are more subject to spatial disorientation if body signals are used to interpret flight attitude.

5.3.9.3.8.A.1 L05

Human error is the one common factor which affects most preventable accidents.

5.3.9.4.0.A.1 L05

When a pilot relies on short and long term memory for repetitive tasks, checklists are often neglected.

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ACROBATIC FLIGHT

14 CFR Part 91 defines acrobatic flight as any intentional maneuver involving an abrupt change in the aircraft's attitude, an abnormal attitude, or an abnormal acceleration, not necessary for normal flight. Acrobatic flight is prohibited:

Over any congested area of a city, town, or settlement;

Over an open air assembly of persons;

Within the lateral boundaries of the surface areas of Class B, Class C, Class D, or Class E airspace designated for an airport;

Within 4 NM of the centerline of any Federal airway;

Below an altitude of less than 1,500 feet AGL; or

When the flight visibility is less than 3 statute miles.

14 CFR Part 91 also requires that, except for required crew members, or students receiving instruction in maneuvers required for a certificate or rating, all occupants of an airplane wear approved parachutes whenever an intentional bank exceeds 60° or an intentional pitch attitude exceeds 30 degrees.

1.3.1.6.7.A.1 B12

No person may operate an aircraft in acrobatic flight when over any congested area of a city, town, or settlement.

1.3.1.6.8.B.1 B12

Acrobatic flight is prohibited in Class E airspace below 1,500 feet AGL.

1.3.1.6.9.A.1 B12

The lowest altitude permitted for acrobatic flight is 1,500 feet AGL.

1.3.1.7.0.A.1 B12

No person may operate an aircraft in acrobatic flight when the flight visibility is less than 3 miles.

1.3.1.7.2.A.1 B12

An approved chair-type parachute may be carried in an aircraft for emergency use if it has been packed by an appropriately rated parachute rigger within the preceding 120 days.

1.3.1.7.3.A.1 B12

With certain exceptions, each occupant of an aircraft must wear an approved parachute when intentionally pitching the nose of the aircraft up or down 30° or more.

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LAND AND HOLD SHORT OPERATIONS

Land and Hold Short Operations (LAHSO) include landing and holding short of an intersecting runway, an intersecting taxiway, or some other designated point on a runway. At a controlled airport, ATC may clear a pilot to land and hold short to allow concurrent activity on an intersecting runway or taxiway. The pilot may accept the clearance if the PIC determines that the aircraft can safely land and stop within the Available Landing Distance (ALD). ALD data can be found in the A/FD.

It is the PIC who has the final authority to accept or decline the clearance. The pilot should decline the LAHSO clearance when it will compromise safety. Student pilots or pilots who are unfamiliar with LAHSO should not participate in the program.

Pilots should only receive a LAHSO clearance when there is a minimum ceiling of 1,000 feet and 3 statute miles visibility.

NATIONAL TRANSPORTATION SAFETY BOARD

NTSB Regulation Part 830 pertains to the reporting of aircraft accidents and incidents.

The operator of an aircraft shall immediately, and by the most expeditious means available, notify the nearest NTSB field office when there is an accident or any of the following incidents occur:

A flight control system malfunction or failure,

An in-flight fire,

Aircraft collide in flight,

An aircraft is overdue and is believed to have been involved in an accident,

Any required flight crew member is unable to perform his normal duties due to an injury or illness.

Understanding the definitions used by the NTSB helps to clarify matters:

"Aircraft accident" is an occurrence which takes place between the time any person boards the aircraft with the intention of flight and all such persons have disembarked, and in which any person suffers death or "serious injury" or the aircraft receives "substantial damage".

Fatal injury is one in which death results within 30 days of the accident.

Incident is an occurrence which affects or could affect the safety of operation.

Operator means any person who causes or authorizes the use of an aircraft.

5.3.9.5.1.A.1 J13

Student pilots should not participate in the Land and Hold Short Operations (LAHSO) program.

5.3.9.5.2.A.1 J13

The pilot-in-command has final authority to accept or decline any land and hold short (LAHSO) clearance.

5.3.9.5.3.A.1 J13

When it will compromise safety, pilots should decline a land and hold short (LAHSO) clearance.

5.3.9.5.4.A.1 J13

The "Available Landing Distance" (ALD) data published for an airport that utilizes Land and Hold Short Operations (LAHSO) is published in the Airport/Facility Directory (A/FD).

5.3.9.5.5.A.1 J13

The minimum visibility for a pilot to receive a land and hold short (LAHSO) clearance is 3 statute miles.

PRIVATE PILOT AIRPLANE

Serious injury means any injury which:

Requires hospitalization for more than 48 hours, commencing within 7 days after the injury;

Results in the fracture of any bone;

Causes severe hemorrhages;

Involves any internal organ;

Involves second or third degree burns.

You must file a written report within 10 days of an accident or within 7 days if an overdue aircraft is still missing. A report of an incident is filed only if it is requested by the NTSB.

AERONAUTICAL DECISION MAKING

Aeronautical Decision Making (ADM) is another pilot skill that you must practice to gain experience and proficiency. Your instructor will be teaching you how to make decisions from your first training lesson. In most cases the instructor will not say, "This is how you make a decision," but will guide you in how to make them. Some decisions are easy to make, while others take some background and training before you can make the correct response to a situation.

TYPES OF DECISIONS

There are two general types of decisions; those that must be made immediately and those where time is not a factor. Most airplane manufacturers have checklists for the decisions that must be made immediately. Your instructor will "DRILL" you on these emergency items many times on the ground and in the airplane. As a result of this focused training on these specific skills, incidents involving immediate action decisions account for only 20% of the total incidents (according to a study conducted by NASA).

That means 80% of the errors that led to an incident occurred during the pre-planning phase. It seems obvious that a large number of accidents and incidents could be avoided, if better preflight planning were performed.

DECISION AIDS

Decision aids are tools that can be used to ensure all relevant information is considered. The appropriate flight planning, followed by the operation of the aircraft within your capabilities, will ensure a safe flight.

Manufacturers' checklists and our school checklists are examples of decision aids. They are made for routine tasks. Operating without their use, could lead to errors in your decision-making. Checklists provide an effective means of solving the most human of frailties; forgetting.

1.3.1.9.4.A.1 G11

If an aircraft is involved in an accident which results in substantial damage to the aircraft, the nearest NTSB field office should be notified immediately.

1.3.1.9.5.A.1 G11

A flight control system malfunction or failure requires an immediate notification to the nearest NTSB field office.

1.3.1.9.6.A.1 G11

An in-flight fire would necessitate an immediate notification to the nearest NTSB field office.

1.3.1.9.7.A.1 G11

An overdue aircraft that is believed to be involved in an accident requires an immediate notification be made to the nearest NTSB field office.

1.3.1.9.8.A.1 G12

To protect it from further damage, aircraft wreckage may be moved prior to the time the NTSB takes custody.

1.3.1.9.9.A.1 G13

The operator of an aircraft that has been involved in an accident is required to file an accident report within 10 days.

1.3.2.0.0.A.1 G13

The operator of an aircraft that has been involved in an incident is required to submit a report to the nearest field office of the NTSB when requested.

PRIVATE PILOT AIRPLANE

EFFECTIVENESS OF ADM

The effectiveness of ADM and the safety of general aviation depends on several factors:

The knowledge required to understand the situation, the information available, and the possible options.

The skills required to execute a decision. Understanding how to make decisions effectively, including how to search for information and when to stop searching and choose a course of action.

The self-awareness to recognize when hazardous attitudes are influencing decisions and possessing the self-discipline to overcome those attitudes.

KNOWLEDGE AND SKILLS

The first two factors, knowledge and skills, have been addressed during your ground and flight training. The knowledge required to understand weather conditions, calculate fuel requirements, use of checklists, and other items required for flight planning have been explained. Your instructors have given you instruction on how to put preflight planning into action. This will start you on a path toward making good aeronautical decisions based on the limitations of the aircraft, weather conditions, and your experience level. This will also help you develop a positive attitude toward safety and risk management. Having a positive attitude means always considering the potential safety implications of decisions.

Progressive decision-making recognizes that changes are constantly taking place, and that you should be continually assessing the outcome. For example, more weather information about alternate airports will allow you to judge the quality of the decision and to recognize when it is time to modify that outcome in the face of new information. With this progressive decision making strategy, you may make changes rapidly based on the information at hand. You should continue to seek more information about the situation so the plan may be refined and modified if necessary.

Flexibility and the capability to modify actions as new information is obtained are very desirable features of decision-making. What this means, in simplest terms, is always having a way out.

HUMAN NATURE

The other factor is attitude. It is one of those aspects of human nature that is hard to define precisely, but we know it when we see it. It is an overall approach to life. It is something in the way people talk and act that makes us think that they are reckless, safe, liberal, conservative, serious, happy-go-lucky, or any one of a number of other adjectives. They have a certain style of responding to life's events that is relatively consistent and which they tend to apply in many situations.

DETAIL

NOTES

5.3.9.3.7.A.1

The pilot is responsible for determining whether a pilot is fit to fly for a particular flight, even though he or she holds a current medical certificate.

5.3.9.3.8.A.1

Human error is the one common factor which affects most preventable accidents.

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A series of studies conducted a few years ago identified five attitudes among pilots that were particularly hazardous as well as an antidote to counteract the attitude. These attitudes are:

Antiauthority

This attitude is found in people who do not like anyone telling them what to do. Flying is governed by many regulations established for the safety of all, so pilots with this hazardous attitude may rebel against authority by deliberately breaking rules intended for safety.

ANTIDOTE:

Follow the rules. They are usually right.

Impulsivity

This is the attitude of people who frequently feel the need to do something-anything-immediately. They do the first thing that comes to mind, without thinking about what the best alternative might be.

ANTIDOTE:

Not so fast. Think first.

Invulnerability

Many people feel that accidents happen to others, but never to them. They know accidents can happen, and they know that anyone can be affected, but they never really feel or believe they will be personally involved. A pilot with this attitude is more likely to take chances and increase risk.

ANTIDOTE:

It could happen to me.

Macho

A pilot who is always trying to prove that he or she is better than anyone else is thinking, "I can do it-I'll show them." All pilots are equally susceptible to this hazardous attitude, which can lead to taking risks to impress others.

ANTIDOTE:

Taking chances is foolish.

Resignation

Pilots who think, "What's the use?" do not see themselves as being able to make a great deal of difference in what happens. They blame whatever happens on luck. Instead of seeking out information and making positive decisions, they just drift along, making no changes and hoping for the best.

ANTIDOTE:

I'm not helpless. I can make a difference.

5.3.9.3.2.A.1

Following the rules is the antidote when a pilot has a hazardous attitude, such as "Antiauthority".

5.3.9.3.3.A.1

Not so fast, think first, is the antidote when a pilot has a hazardous attitude, such as "Impulsivity".

5.3.9.3.4.A.1

It could happen to me, is the antidote when a pilot has a hazardous attitude, such as "Invulnerability".

5.3.9.3.5.A.1

Taking chances is foolish, is the antidote when a pilot has a hazardous attitude, such as "Macho".

5.3.9.3.6.A.1

I am not helpless, the antidote when a pilot has a hazardous attitude, such as "Resignation".

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Having these attitudes can contribute to poor judgment, since they tend to push you toward making decisions that involve more risk. Recognizing that these hazardous attitudes exist is the first step in neutralizing them in the decision making process. Before dismissing these attitudes as belonging to someone else, realize that everyone has these attitudes to some degree. At one time or another all pilots have acted impulsively or in a macho fashion to demonstrate their aviation skills to others.

DETAIL

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CHAPTER 4 QUIZ

Safety of Flight

1.3.0.7.7.A.1 B07

A person may not act as a crewmember of a civil aircraft if alcoholic beverages have been consumed by that person within the preceding

- A. 12 hours.
- B. 8 hours.
- C. 24 hours.

1.3.0.7.9.A.1 B07

No person may attempt to act as a crewmember of a civil aircraft with

- A. .008 percent by weight or more alcohol in the blood.
- B. .04 percent by weight or more alcohol in the blood.
- C. .004 percent by weight or more alcohol in the blood.

1.3.0.9.2.A.1 B08

An airplane and an airship are converging. If the airship is left of the airplane's position, which aircraft has the right-of-way?

- A. Each pilot should alter course to the right.
- B. The airship.
- C. The airplane.

1.3.0.9.3.A.1 B08

Which aircraft has the right-of-way over the other aircraft listed?

- A. Aircraft towing other aircraft.
- B. Airship.
- C. Gyroplane.

1.3.1.6.4.A.1 B11

Unless each occupant is provided with supplemental oxygen, no person may operate a civil aircraft of U.S. registry above a maximum cabin pressure altitude of

- A. 15,000 feet MSL.
- B. 14,000 feet MSL.
- C. 12,500 feet MSL.

1.3.1.6.8.B.1 B12

In which class of airspace is acrobatic flight prohibited?

- A. Class G airspace above 1,500 feet AGL.
- B. Class E airspace below 1,500 feet AGL.
- C. Class E airspace not designated for Federal Airways above 1,500 feet AGL.

1.3.1.9.7.A.1 G11

Which incident requires an immediate notification be made to the nearest NTSB field office?

- A. An overdue aircraft that is believed to be involved in an accident.
- B. An in-flight generator or alternator failure.
- C. An in-flight radio communications failure.

5.3.7.1.2.A.1 H564

What is the most effective way to use the eyes during night flight?

- A. Look only at far away, dim lights.
- B. Scan slowly to permit offcenter viewing.
- C. Concentrate directly on each object for a few seconds.

5.3.7.1.5.A.1 H567

During a night flight, you observe a steady red light and a flashing red light ahead and at the same altitude. What is the general direction of movement of the other aircraft?

- A. The other aircraft is approaching head-on.
- B. The other aircraft is crossing to the right.
- C. The other aircraft is crossing to the left.

5.3.7.1.7.A.1 H567

During a night flight, you observe steady red and green lights ahead and at the same altitude. What is the general direction of movement of the other aircraft?

- A. The other aircraft is flying away from you.
- B. The other aircraft is crossing to the left.
- C. The other aircraft is approaching head-on.

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5.3.8.1.4.A.1 J14

What procedure is recommended when climbing or descending VFR on an airway?

- A. Execute gentle banks, left and right for continuous visual scanning of the airspace.
- B. Fly away from the centerline of the airway before changing altitude.
- C. Advise the nearest FSS of the altitude changes.

5.3.8.4.5.A.1 J31

Rapid or extra deep breathing while using oxygen can cause a condition known as

- A. hyperventilation.
- B. aerosinusitis.
- C. aerotitis.

5.3.8.4.8.A.1 J31

Susceptibility to carbon monoxide poisoning increases as

- A. air pressure increases.
- B. altitude decreases.
- C. altitude increases.

5.3.8.5.1.A.1 J31

A state of temporary confusion resulting from misleading information being sent to the brain by various sensory organs is defined as

- A. spatial disorientation.
- B. hyperventilation.
- C. hypoxia.

5.3.9.3.1.A.1

What is it often called when a pilot pushes his or her capabilities and the aircraft's limits by trying to maintain visual contact with the terrain in low visibility and ceiling?

- A. Mind set.
- B. Scud running.
- C. Peer pressure.

5.3.9.3.2.A.1

What is the antidote when a pilot has a hazardous attitude, such as "Antiauthority"?

- A. Follow the rules.
- B. I know what I am doing.
- C. Rules do not apply in this situation.

5.3.9.3.3.A.1

What is the antidote when a pilot has a hazardous attitude, such as "Impulsivity"?

- A. It could happen to me.
- B. Not so fast, think first.
- C. Do it quickly to get it over with.

5.3.9.3.4.A.1

What is the antidote when a pilot has a hazardous attitude, such as "Invulnerability"?

- A. It can not be that bad.
- B. It could happen to me.
- C. It will not happen to me.

5.3.9.3.5.A.1

What is the antidote when a pilot has a hazardous attitude, such as "Macho"?

- A. Taking chances is foolish.
- B. I can do it.
- C. Nothing will happen.

5.3.9.3.6.A.1

What is the antidote when a pilot has a hazardous attitude, such as "Resignation"?

- A. I am not helpless.
- B. What is the use.
- C. Someone else is responsible.

5.3.9.3.7.A.1

Who is responsible for determining whether a pilot is fit to fly for a particular flight, even though he or she holds a current medical certificate?

- A. The pilot.
- B. The medical examiner.
- C. The FAA.

5.3.9.3.8.A.1

What is the one common factor which affects most preventable accidents?

- A. Mechanical malfunction.
- B. Structural failure.
- C. Human error.

PRIVATE PILOT AIRPLANE

5.3.9.3.9.A.1

What often leads to spatial disorientation or collision with ground/obstacles when flying under Visual Flight Rules (VFR)?

- A. Getting behind the aircraft.
- B. Duck-under syndrome.
- C. Continual flight into instrument conditions.

5.3.9.4.0.A.1

What is one of the neglected items when a pilot relies on short and long term memory for repetitive tasks?

- A. Flying outside the envelope.
- B. Situation awareness.
- C. Checklists.