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Attitudes Toward Pilot Recurrent Training

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The purpose of this thesis is to analyze the current method established by the Federal Aviation Regulations (FAR's) of keeping pilots proficient. The question that arises is that of whether or not these regulations ensure safety. Just because a pilot might be considered current under the FAR's, they might not be proficient for their type of certificates they hold.

Pilots licenses, which are referred to as certificates and ratings, are different from motor vehicle licenses. Once pilot certificates are issued they are valid until the airmen dies or unless it is suspended, revoked, or surrendered. The Federal Aviation Administration (FAA) has tried to establish pilot proficiency through laws that make pilots maintain "currency" and undergo periodic flight reviews. The reason for doing this is of course to keep not only the pilots safe in the air but also the rest of the people on the ground. Most people wouldn't fly with a pilot who hasn't piloted an airplane in the last 20 years. The pilot still holds his pilots certificate but really wouldn't be considered safe.

In addition to currency pilots must have a current medical. The three classes of medicals are: first, second, and third. All of these medicals must be issued by a

designated medical examiner. The first class is the highest level and must be accomplished every six calendar months. The second class is issued every 12 calendar months and the third class every 24 calendar months. The more experienced pilots such as ATP's are required to hold a first class medical. These pilots are the ones that do most of the passenger carrying. The private pilots only need a third class medical.

Pilots get different certificates and ratings as they get more flight time and prove their skills to an examiner. As you move to the next higher certificate, the stricter the testing standards become. The basic certificates are: student, recreational, private, commercial, airline transport pilot (ATP), and flight instructor. Some ratings are: instrument, multi engine, and the type rating.

The student pilot is a person just learning how to fly. Most of the time spent flying is with an instructor. To be eligible for a student pilot certificate you must be 16 years of age. After you learn about the airplane's systems and how to operate the controls to fly the plane safely you will be sent out solo to acquire experience on your own. At this stage you are not allowed to fly with anyone except an instructor. The recreational pilot has a minimum of 30 hours and is restricted to 50 nautical miles from his or her home airport and can only carry one passenger. The recreational certificate was developed for

those people who enjoy flying yet don't want to do it as a career. Recreational pilots may fly a couple of times a month. Private pilots have a minimum of 40 hours and must be at least 17 years old. They can carry passengers and share the airplanes operating expense with them. However, they can not fly people or property for hire.

The commercial pilot is at least 18 and has about 250 hours. The holder of a commercial certificate can carry people or property for compensation or hire. Majority of the commercial pilots desire to use their piloting skills as a career and/or a means of income. ATP's are a minimum of 23 and have over 1500 hours. These pilots fly passengers or cargo on a frequent schedule. To become a flight instructor you have to be 18 and hold a commercial certificate. Flight instructors are those who train others how to fly. They can give both ground and flight training. If you wanted a glider rating you must find a flight instructor that is authorized to give glider instruction.

The ratings allow you to operate specific airplanes or to operate in specific conditions. The instrument rating allows you to operate in lower visibility and within the clouds. A pilot must have a multi engine rating in order to operate an airplane with more than one engine. Type ratings are issued for each make and model of aircraft when it is over 12,500 lbs. A type rating is also required for any turbojet powered airplane. The purpose of a type rating is

to ensure that a pilot is capable of handling fast moving aircraft that have complex systems. This is why they have to be type rated in each different model.

Prior to 1974 there was no recurrent training required by the FAA. Then in 1974 the government imposed a mandatory biennial flight review (BFR). This rule required that you demonstrate competency relative to your certificate and rating level, and then get a logbook sign-off from the instructor.

In 1989, the FAA added more stipulations to this rule. First, any recreational pilot and non-instrument rated private pilots with fewer than 400 flight hours had to complete an annual flight review (AFR). Second, the BFR had to be completed in every category and class of airplane that the pilot operates. It was clear from the fatal-accident data that pilots with fewer than 400 hours had the same accident profile as all other pilots (Boyer, 1992).

Requiring a pilot to take a BFR in every category and class of aircraft would be extremely expensive to those that are rated in several airplanes. On July 22, 1992 a notice of proposed rulemaking was issued that rescinds the AFR requirements and enhances the BFR by only requiring one hour of ground and one hour of flight instruction (Boyer, 1992). The rule as it stands now might hold accident levels down but pilots are not going to be as proficient as they were between 1989 and 1992.

In order to get a new certificate or rating a pilot must have: the minimum hours, meet the minimum age requirement, receive the proper training, pass a written test, pass an oral and a flight test with an examiner. After receiving the certificate all you have to do is stay current. If a pilot is going to carry passengers he or she must have made at least 3 touch and go landings in the category and class of airplane within 90 days. If the flight is to occur at night the 3 landings must be to a full stop. When the pilot uses his instrument rating to operate in the clouds or in low visibility the currency requirement is: within the last 6 months you must have logged 6 approaches, and have 6 hours of instrument time of which 3 must be in an airplane. The other currency requirement is that all pilots must have a flight review every 24 calendar months which consists of 1 hour of flight instruction and 1 hour of ground instruction.

For example lets say a pilot gets his or her private certificate on January 1, 1994. If they didn't fly an airplane again until January 30, 1996 all they would have to do is 3 touch and goes and then they would be "current" to carry you as a passenger. Are they proficient with their skills? Facts indicate that pilot's skills deteriorate with time. Of course the major airlines require their pilots to undergo training or checks every 6 months because they are the one's who carry people everyday.

Flying is different from some occupations in that if you don't use your skills and try to improve, you lose your ability. Loss of ability or forgetting can occur from: decay through time, interference, or motivated forgetting. The currency regulations are used to help restore forgotten skills and procedures. As pilots learn new information it sometimes interferes with the recall of old information. Motivated forgetting is when the brain stores unpleasurable information in a way that it is not easily recalled.

To illustrate the deterioration of skills with time I'm going to use a study that was conducted for the FAA under subcontract by Embry Riddle Aeronautical University. This study was found in a book entitled "Pilot Proficiency: Skillbuilding for Every Pilot." The research started out with 42 pilots, all of whom were FAA employees. These pilots were monitored during their initial training before getting their private pilots certificate. They then tested the pilots at 8 months, 16 months, and 24 months after getting their private certificates. The same standards for evaluating were used during the private checkride as well as the following periodic checkrides. The results of the test concluded that overall performance declined with time since training. Only one task was performed correctly after the 24 month time period, it was the runup. A runup is performed before takeoff to check the airplane's systems. The engine speed is increased and the following systems are

checked: ignition, carburetor, electrical, and vacuum. As long as the pilot followed the written checklist nothing was performed incorrectly or overlooked. When the pilots were on their license checkride the total error rate was 8.9%. At 16 months it went to 38.1% and after 24 months it hit 42%.

If everyone got more training and did review flights sooner then the level of pilot proficiency would increase. But do we want check flights every two weeks, every month, etc.? I could see the checks once a year but any sooner than that would get extremely costly. Flying is costly as it is except for those professional pilots that get paid to do it. The average cost to rent the smallest single engine two seat airplane is between \$40 and \$50.

There is a point at which a pilot should determine whether he or she is proficient and not just current. This is self judgement and it is subjective. Statistics show that most automobile drivers feel that they are better than the average driver. Why wouldn't this attitude follow through to pilots? This attitude is a human factor and makes it hard for a person to perceive their proficiency level. It is up to recurrent training to keep a pilot safe and to demonstrate that there is a higher level of proficiency for all pilots to try and achieve. Training must not give a false sense of proficiency or it will lead to an overconfidence in the pilots abilities.

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