Frequent Flyers Ultralight Club
November 2004 Newsletter

USUA Club 162

November 7, 2004: The club met at Hawthorne Feather for the November meeting. It was decided that the format for dues would be changed. Dues are now $2.00 per month, renewable January 1st each year. Any members joining the club during the year will pay for the months remaining in the current year. This will be easier to track. Jeff Smith flew to the meeting in a Piper Cherokee, which he owns with 8 other pilots. Tim Pierce discussed his Rans S6 project and Tim Wall described a couple possibles for his next bird. The porta potty will be removed the end of the month and returned in the spring. Thanks to Dennis Dobe for arranging this most welcome addition to the airport. After some hangar flying Tim & Jeff did some pattern work preparing for Tim's USUA flight test in Jeff's Flightstar trainer. The wind was getting a little wild so Tim decided to fly another day. Next meeting: December 5, 2004.

A few notes on Propellers from Dick Harrington

Seems like most everyone has a question about props. Some like what the manufacturer has provided or recommended but, many wish to increase the performance of their aircraft by replacing the prop with something better.First off, it is best to stick with the designer or manufacturer's recommendation as changes may not enhance the performance of the aircraft and may even become dangerous. Secondly, the propeller material may be a factor in the aircraft's performance. All materials exhibit a natural frequency of resonance such that at certain rpm values the material of the prop may resonate to the point of damage or destruction. It's best to follow recommendations as to the type of prop to use based on the material of its manufacture. Wood propellers exhibit a change in pitch as airspeed is increased making for a better cruise speed over all. Other materials, however, do not exhibit this tendency and are, therefore, not as efficient. Wood props handle foreign object strikes fairly well and seldom result in catastrophic failures. Carbon fiber blades will shatter whenever a foreign object strikes causing an sudden unbalance situation requiring emergency action. Metal props have a definite frequency of resonance and certain ranges of RPM cannot be sustained over lengthy periods of time. Most propeller blades utilize the "Clark Y" airfoil section. However, in recent years other airfoil sections have been employed to provide some enhancement in performance. Length of the prop, that is the diameter, must be kept at optimum values to maintain prop efficiency as high as possible. This results in better climb capability, such as is seen on the Helio Currier. This was a factor on some of the military aircraft used for artillery spotting as these aircraft operated from short un-improved strips. A two bladed propeller is more efficient than a three bladed prop since the two blade prop is of a much larger diameter than the three bladed prop. Tip speed is of much concern regarding the efficiency of propellers. Metal bladed propellers must not exceed 950 ft/sec. (feet per second) at the tip while in rotation.

Continued on Page 2

Frequent Flyers Ultralight Club
November 2004
Newsletter

Props (continued from page 1)

Wooden propellers have tip speed a bit lower and should be below 850 ft./sec. For a propeller of known diameter the tip speed can be determined from the formula tip speed = 3.14159*(rpm/60)*diameter(ft.) for instance a propeller of 5 feet in diameter turning at the rate of 2150 rpm will have a tip speed of 3.14159*(2150/60)*5 tip speed = 563 ft. per second, well within the limits for a wooden prop. This is typical of a Rotax Engine turning at 5550 rpm. Propeller blade diameter can be found easily knowing the engine horsepower by using the following formula Prop Diameter, ft. = 1.83*hp^(1/4) that is, 1.83 times the forth root of the engine horsepower. For instance, for an engine of 50 hp the 4th root of 50 is 2.66 multiplied by 1.83 gives a diameter in feet of 4.87 feet or 58.4 inches. For the example of the 40 hp engine the required propeller diameter will be Prop Diameter = 1.83 * 40^(1/4)= 1.83*2.515 = 4.6 feet or 55 1/4 inches. Three blade propeller things change slightly. The multiplying factor now becomes 1.5 instead of 1.83 as in the two bladed prop. In the case of the 50 hp engine the diameter becomes, Prop Diameter = 1.5 * 50^(1/4) Prop Diameter = 1.5 * 2.659 Prop Diameter = 3.989 Ft. or 47 7/8" substantially smaller. There are many other considerations regarding propellers, however, the above should be used as a guide to understanding more of the technical aspects of what props to use and how to verify if your selection meets the criteria set forth by these equations.

Classified Ads;

As you can see there is nothing for sale this month, so there is plenty of space for want ads, for sale items or anything else that needs communicating. If you wish to place an ad send it to me and I will put it in the next newsletter. Ads are free so send them to:

Tpierce@mcttelecom.com

Frequent Flyers Ultralight Club Web Site

FFUC has a new web site designed by Warren Hurd. Click on the link below to access the site.

www.ahyup.com/ffuc.htm

NEW MEMBERS WANTED!!

Frequent Flyers Ultralight Club is looking for new members. Anyone interested should contact:

Tim Pierce
(603) 464-5407
or
Tim Wall
(603) 428-7231

Meetings are the 1st Sunday of the month at Hawthorne Feather Airport (8B1) at 10:00am.

Frequent Flyers Ultralight Club
November 2004 Newsletter

The Banana Episode

Ever have the urge to throw some real juicy fruit at someone? Occasionally the situation arises where it's possible to rid oneself of such stresses and frustrations by pelting someone or something with all such ammunition in sufficient quantity to relieve such problems.

While flying a single engine aircraft in Canada many years ago, I had just such an opportunity. The job called for many days up in the bush country where access to sources of food and lodging were at a distinct premium. Calling upon the cooks and wait staff of the hotel where I stayed while in civilization, I would ask for a box lunch to be put up for my forthcoming trip the next day up into the remote bush country. The only stipulation I placed on such repasts was to please leave out any and all fresh fruit. However, my requests most often fell on deaf ears as I would discover at lunch time upon opening the box. Along with great sandwiches, cookies, cake and other such delectable were two or three items of fresh fruit. Since I am not fond of such items I would place them in a box on the rear seat.

After a period of several weeks an accumulation of such items became overwhelming to the point where something had to be done. While returning to home base from a location well up north one day, it dawned on me that this would be a great time to unload the rear seat of old unused lunches. The weather was sunny and mild on this early fall day with light winds and absolutely no turbulence. Flying at two thousand feet over the forested terrain provided an excellent panorama of the hilly and lake dotted country. Perfect for my purpose of ridding the airplane of the badly accumulating odor from slowly decaying fruit.

At one hundred miles per hour at two thousand feet, the objects would travel forward on line with the aircraft for a short distance before accelerating toward the earth. Each object required me to make a three-sixty degree turn while watching the descent. As each item encountered objects on the earth they would shatter apart and splatter their contents all over everything within the explosive range of the object. Some items landed in the tops of trees where they were totally lost. However, others struck stumps or impaled themselves on dead tree branches. It was great entertainment on the long journey south. However, as I prepared the last item, a banana, for its final trip to earth, I noticed I was coming over a small lake. This would be a great time to see what sort of a geyser would be generated when it struck the water. Timing my approach to the drop zone carefully, I let go out the window at what appeared to be the appropriate moment. Looking down as I started a three-sixty, I suddenly realized there was a small boat in the water with a couple of fisherman casting out into the water.

Watching in awe and much dread, I saw the banana appear to be heading on its uncontrolled flight heading right for the boat. The banana landed less than ten feet from the boat shooting a geyser about ten feet in the air. Both fisherman jumped to there feet, probably wondering what sort of a fish was attacking them, before the banana surfaced. By that time my three sixty degree turn had been completed and it was time to move on.

To this day, I can only imagine the expressions on the faces of the two men in the boat when the banana struck the water. After this episode there were no more lunches put up at the hotel for my trips north. By this time I had found most of the remote lumber camps with water access up in the bush so I never worried about going hungry again. Dick Harrington