The Tailwind

AMA Charter No. 704

OCTOBER ***DON LEWIS, EDITOR*** **2016**

President: Lynn Perkes *Vice-President*: Bill Pruner
Treasurer: Lynn Perkes *Secretary*: Don Lewis
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Next Meeting on Thursday, October 20 – At the Hospital

FALL AIR SHOW IS SAT., OCT. 22

(download flyer here)

Be sure to check out the website at www.fly-hrcc.org

MEETING MINUTES

No minutes were submitted for publication this month.

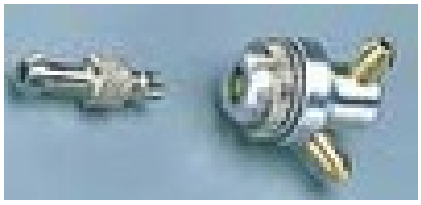
TREASURER'S REPORT

No Treasurer's Report was submitted for publication this month.

FUEL REFILL VALVES

By Jim Kale

I have noticed many having problems with refuel fill valves for the last couple of years. It is just my opinion; however, many of the refuel valves that require a special plug to be inserted into a special jack just don't work too well in the long run. Valves such as the DuBro quick fill often seem to work well in the beginning, but in a year or two, they become difficult to connect, possibly leak, can easily get dirt and debris into your fuel system when you connect the refill fittings, etc. When they have a problem like this, they often cause lots of difficulty, frustration, and bad language at the flying field.



Recently, Phil was trying to fly one of his big gasser models that was having engine run problems for more than two years. Phil had picked up the model at Perry, and it looked to be in great condition; however, there is no way to know how long it had been hanging in a workshop somewhere.

After lots of frustration, bad language, and trouble shooting, we finally traced the problem to the refuel fill valve. It was letting air get into the fuel line and the engine would not run reliably. When the refuel fill valve was removed and replaced with a short brass tube, all of the problems went away and the engine ran like a new one. Unfortunately, on the next flight, the airplane stalled and spun in, possibly because of radio problems. Phil said it was really great though to have the engine perform well—for at least one flight.

I am a firm believer that the best way to refuel is a dedicated third fuel tube that goes straight to the tank. It should have a plug to close it off after refueling is complete. That means you have three lines coming from the tank: one for the vent, one for the feed line to the engine with a clunk inside the tank and a filter as close to the engine as

is practical; and one is the refuel line with a plug in it when it is not used for refueling. A fuel dot is the ideal way to keep this line easy to get to for refueling the model. This is about as simple and fool-proof as you can get. You could use a T-fitting in the fuel between the filter and the tank, and put a line on the end of the T and keep it capped off except to refuel. However the problem with this arrangement is that often when you pump fuel into the line, some of it will go out the carb and onto the ground.

Always use a filter as close to the engine as you can put it. If you use a filter on the clunk inside the tank and then refuel through this line, you will pump debris into the filter from the engine side and it will quickly go back up the line to the carb as soon as you start the engine. We have all seen pilots who spend the bulk of their day at the field having engine run problems because they failed to take these simple precautions when they installed the fuel system. Don't make your flying life miserable and difficult when it is easy to do it correctly the first time.

By the way, when you cut brass tubing to be used in the fuel system, file the ends of it smooth so they are not sharp and cut into the line making a very hard-to-find air leak. A little good building practice will make life much more fun on the flying field. We all want to fly when we go to the field, not spend all of our time troubleshooting problems that we inadvertently caused by poor construction.

If your model survives several years, you should remove the fuel tank system every couple of years or so to make sure you don't have any problems developing. Alex Perez recently brought his 12-year-old model to the field and found that the engine would not run correctly. Then Alex remembered he had not checked the tank system since it was new. He did the correct thing and went home and restored the fuel system to a serviceable condition and it ran great the next time he came out. It is very easy to forget how old a model is if it has been performing well for several years. I once flew a model for six years without fuel difficulties. When the next flying season rolled around, somehow I thought about checking the fuel system. The fuel filter has so much crap in it that I doubt the engine would have run at all. So, I probably saved lots of possible frustration and agony at the field trying to get it started and running.

In the Blink of an Eye

By Don Nix, AMA Insider Safety Column Editor

"There's a reason I'm alive for a blink of an eye."
—In the Blink of an Eye by Mercyme

More often than not, that's about all the time it takes for most accidents to happen. I can think of one personal incident where the quick blink of my eyes saved me from more serious problems.

A couple of decades or so ago while living in Southern California, my wife and I decided to spend a long weekend at a cabin we rented occasionally in a small village up near Big Bear in the San Bernardino mountains.

Being born lazy and losing ground ever since, I'm usually quite content to do as little as possible; especially if it requires exerting any physical effort. This time, though, I had an idea about how to both relax and do something productive at the same time. I'd just acquired a new RC kit I was anxious to get started, and since it was of the type that goes together rather quickly with a minimum of tools or accoutrements, I took it along to build.

Fortunately, the cabin was equipped with a rather large, long table perfect for laying out plans and materials. While my wife lingered over coffee the first morning, I got everything ready to go; punched out all the die-cut parts (pre-laser), identified everything, made sure nothing was missing (even read the instructions!), and reached for the thin CA.

I had been especially careful to bring along a brand new, unopened bottle of the stuff so I wouldn't be stuck without enough to finish or have old material. (Remember that word "stuck.") The container was one where you snap off the top to open, and then reverse it to become the cap to seal it back.

Looking at it carefully to be sure I snapped it cleanly, I did so and instantly got a face shower of CA.

That's where the blink of my eyes saved me. Amazing how fast our body can spontaneously and involuntarily react when attacked. Not a drop got into my eyes, although one lid was partially glued shut. That stuff does set instantly under the right conditions!

Surprisingly, I immediately knew what had happened. The material was packaged at near sea level, and I was up about 7,500 feet in the mountains. You can figure out the rest. The higher pressure inherent in the package at the lower altitude combined with the considerably reduced pressure at a much higher altitude outside effectively converted it to aerosol form for a split second.

This would compare to sudden depressurization in an airliner at altitude, and works exactly the same way. Everything inside responds to an urgent need to go out until the pressure is equalized.

(Brief digression: Don't you die laughing at those disaster movies that show an airliner decompressing with everything and everyone being sucked outside for several minutes? No way, no how.)

I got the model ready to cover by the end of the long weekend, but spent a good deal of time peeling CA from various locations on my face and neck. Incidentally, just plain soap and water will loosen the stuff in most cases so it can be more easily peeled. There are commercial debonders available, of course, but I don't think I'd use them on my face or near my eyes.

Later, in telling the above story to a friend in the CA business, he told me about an experience his company had when installing a new CA filling machine. They got everything—electrical, pipes, hoses, etc.—all hooked up and flipped the switch to give it a trial run. When they did, a hose connection failed and all in the area were pretty well showered with CA … the thin type that sets instantly.
Point: Most accidents do happen in the blink of an eye, and sometimes it's difficult to anticipate them. Fortunately, most are preventable with a little caution, good sense and forethought.

Celebrating Flight

Spad S.XII

From Wikipedia

The **SPAD S.XIII** was a French biplane fighter aircraft of World War I, developed by *Société Pour L'Aviation et ses Dérivés* (SPAD) from the earlier highly successful SPAD S.VII. It was one of the most capable fighters of the war, and one of the most-produced, with 8,472 built and orders for around 10,000 more cancelled at the Armistice.

The S.VII had entered service in September of 1916, but by early 1917 it had been surpassed by the latest German fighters, leading French flying ace, Georges Guynemer to lobby for an improved version. SPAD designer Louis Béchereau initially produced the cannon-armed S.XII, which had limited success, and finally the S.XIII.

The S.XIII differed from its predecessor by incorporating a number of aerodynamic and other refinements, including larger wings and rudder, a more powerful Hispano-Suiza 8B engine fitted with reduction gearing, driving a larger "right-hand" propeller, and a second 0.303 Vickers machine gun for added firepower. The sum of these improvements was a notable improvement in flight and combat performance. It was faster than its main contemporaries, the British Sopwith Camel and the German Fokker D.VII, and was renowned for its ruggedness and strength in a dive. The manoeuvrability of the type was however relatively poor, especially at low speeds. A steep gliding angle and a very sharp stall made it a difficult aircraft for novice pilots to land safely.

It first flew on April 4, 1917, and the following month was already being delivered to the French Air Service. Other Allied forces were quick to adopt the new fighter as well, and nearly half of the 893 purchased for the United States Army Air Service were still in service in 1920. It was also exported to Japan, Poland, and Czechoslovakia after the war.

The S.XIII was flown by famous French fighter pilots such as Georges Guynemer and René Fonck, and also by Italian ace Francesco Baracca. Aces of the United States Army Air Service who flew the Spad XIII include Eddie Rickenbacker (America's

leading ace with 26 confirmed victories) and Frank Luke (18 victories).

General characteristics

- **Crew:** 1
- **Length:** 20 ft 6 in
- **Wingspan:** 27 ft 1 in
- **Height:** 8 ft 6.5 in
- **Wing area:** 227 ft²
- **Empty weight:** 1,245 lb
- **Loaded weight:** 1,888 lb
- **Max takeoff weight:** 1,863 lb
- **Powerplant:** 1× Hispano-Suiza 8Be, 220 hp

Performance

- **Maximum speed:** 135 mph
- **Service ceiling:** 21,815 ft
- **Rate of climb:** 384 ft/min
- **Wing loading:** 40.56 kg/m²

Armament
Guns: * 2 x .303-cal. Vickers

Editorial

Fall is Here – Don't Blink!

When we get a break in the weather, it really breaks. It seems that we may have another one week long fall season (very similar to our spring this year). Going from 95° to 50° in a week takes some adjusting, but the break is welcome.

This break also signals the time of year for our Fall Air Show. I hope that all of you are looking forward to getting together as much as I am. By the time you read this, I hope to have everything lined up for the event. With everyone's participation I am sure it will be an enjoyable event.

Attending the meeting this month is very important. As all of you know, we will be electing officers at our November meeting. This means that candidates have to be nominated and seconded at the October meeting. Remember, we cannot just nominate someone without their acceptance, so it takes three people to get a candidate nominated: someone to nominate, someone to second, and the person nominated to accept the nomination. If you would like to be a candidate for any position, let someone know and have them and yourself, at least, attend the meeting this Friday.
See you this weekend!

That's my opinion – it oughta' be yours! ☺

Letters To The Editor

Need to get something off your chest? Want to solve all of the club/s problems? Write a letter! I welcome anyone (member or not) to submit an opinion in writing so long as it is civil in its expression (I reserve the right to make that determination). You can email your letters to the editor to me at Don_Lewis@comcast.net, or just give them to me at a club meeting.

Novice Nuances

Balsa Dents

When you accidentally dent a piece of balsa during construction of a model, try this old cabinet-maker's trick. Put a few drops of white vinegar on it instead of using filler. The vinegar will pull 99% of the dent out. Works best overnight. Try it; it really works!

Servo Connector Security

To hold your radio/servo connectors together, use a piece of thin string or dental floss and wrap it around the connectors, looping it through the wires so it pulls the two connectors together. Use a nonslip knot to tie the string so it does not come untied. Don't let an unplugged connector cost you a crash.

Why Didn't I Think of That?

Light Ply Replacement

My favorite material is "doorskins" to use in place of Lite Ply. You can purchase these at your local building supply company for around 5 bucks. The sheets are 36-inches wide by 80-inches high and about 1/8-inch thick. I have used this in place of Lite Ply in fuselage sides, hatches, landing gear mounts, servo mounts, etc., and have never had a failure.

Cheap Plywood

Also along those lines, cabinet makers have birch- and oak-faced ply pieces in different sizes 1/4-inches thick, that they will sell to you for a reasonable price. I use these for firewalls, gear mounts in bigger airplanes, and you can double them up to make firewalls for gas engines.

Smoother Filling

By Don Lewis

If you use a a smoother surface.

Choosing the Right Glow Plug

From O.S. Engines

Several factors influence the use of the correct glow plug for your engine. Here are some guidelines:

Engine Type
Standard engines (engines with a 1-piece head) are most common. Standard plugs are easily available, inexpensive, and fit almost all standard engines. Standard plugs are installed with a washer, which creates a compression seal with the head.

*Turbo***.** Many new O.S. engines, which feature a special 2-piece turbo head. The biggest benefit of turbo plugs is superior performance. Unlike standard plugs, turbo plugs (identified by a "P" in the description) feature a tapered "seat" that matches perfectly with the head. That creates a superior compression seal and with it, maximum efficiency and power. Turbo plugs are the choice for racers, who want, and need, top performance.

*A word of caution***:** you should never install a turbo plug in a standard engine or vice versa. Doing so risks doing serious (and expensive) damage.

Displacement
Small displacement engines need a hotter plug than larger displacement because larger engines have more mass and retain heat better.

Nitro Content
Use of higher nitro fuels will require a colder plug than lower nitro fuels.

Temperature
The hotter the day, the colder the plugs need to be.

Additional Things to Know:

- Hot plugs promote better idling and acceleration. If your engine runs rough or accelerates sluggishly, a hotter plug will help.
- Cold plugs produce more power and may improve performance if your engine runs hot. The downside is rougher idling and more difficulty in tuning.
- Fuel-air mix not only affects how your engine performs; it can also have an impact on how long your plug lasts. If you run rich, it means that you're using more fuel than necessary for top performance. Modelers are often advised to run rich during engine break-in, because it helps cool the engine. However, running too rich can also cause an engine to bog down or quit entirely. In addition, it also means that the glow element is being exposed to more contaminants than necessary, which shortens plug life. Running lean means that you're using less fuel. "Leaning in" an engine has a positive effect on performance. However, care is needed here, because over-leaning an engine can harm it, by raising operating temperatures, and burn up a plug [Tech Editor's Note: More than the plug might be lost, excessive leaning can ruin an engine!] before it's time. Do not over lean!

Final Thoughts
Choosing the right glow plug not only improves performance, but can also extend the life of your engine and the glow plug itself. With the guidelines above and the tips below, you're well on your way to achieving both.

- Buy quality plugs. You're protecting your investment.
- Store plugs where it's dry. Moisture can ruin them.
- Use the right glow plug. Follow the guidelines above.
- Follow the proper break-in procedures.
- Tune your engine carefully. Running too lean will make your engine "blow" plugs more often. Proper tuning helps extend plug life.
- Never touch the filament of a glow plug. Doing so can break the filament and ruin a plug.
- Don't over tighten your plug. Tighten it until it's just snug.
- Be sure to shim your engine correctly. A plug that's too close to the piston can cause pre-detonation, which will quickly damage a glow plug.
- Use only a glow starter or 1.5V battery to heat your plug. Otherwise, your plug may burn out ahead of it's time. Don't be afraid to ask for help. Experienced modelers have already "been there, done that." Their experience can save you time and money; and most are glad to help.
- Some connectors for glow plugs can short circuit and damage batteries, or cause them to explode. Batteries may get hot during the use of a glow plug. This especially applies to homemade or nonstandard connectors.

Product Review:

The World Models Paulistinha P-56 ARF

By Geoff Barber

When I think of full-scale primary trainer aircraft, two planes come to mind: the Cesnsa 172 and the Piper J-3 Cub. The latter of the two, the Cub, has been through thick and thin, teaching pilots how to fly for over half a century. Think about it, it's the perfect trainer. With a light wing loading and a forgiving airframe, what more can one ask for? These same characteristics carry over into another plane, one that is very much like the Cub, just from another country.

The Paulistinha, a Brazilian copy of the Cub, flies very similar and was the primary trainer of choice for both military and civilian pilots in the 1960's. To put a Cub and a Paulistinha side-by-side, one may notice a few cosmetic differences, but the general design and measurements are almost the same.

The World Models has introduced their version of this Cub-like plane, and it's an instant classic. The Paulistinha boasts a scale color scheme that is different from the black and yellow, but still has all the great characteristics of the tried and true Cub.

While The World Models doesn't waste much expense on the box graphics, they sure do a nice job of packing their product to prevent damage during shipping. All the pieces were individually bagged, and then taped together to keep them in their place within the box. I really like the color scheme on the Paulistinha. The colors are taken right from a full-scale plane, and it's nice to see something different from the standard 'yellow and black' or 'red and white/blue and white' sunburst patterns.

Some of the features that really caught my eye were the ironed-on trim scheme, the scale-looking functional landing gear, and the rugged, painted fiberglass cowl that matched the covering almost perfectly. The World Models did a fine job on this plane across the board!

I know it sounds unrealistic that I couldn't find any real concerns assembling this ARF, but it really was THAT easy to put together. When it comes to flying the Paulistinha, I have absolutely no reservations either! I can recommend it as a second airplane, or even a first plane if you have plenty of help from an experienced instructor. I guess what I'm trying to say is this: If you're looking to add a .40 size plane to your hangar, you really ought to get this one!

Price: $139.99
Wingspan: 71 in (1800 mm)
Wing Area: 698 in² (45 dm²)

Weight: 5.5 Lbs (2500 g)
Length: 47 in (1200 mm)
Radio Used: Futaba 7C
Engine Used: O.S. .52 Surpass (Replaced by: O.S. .56FS-a)
Channels Used: 4 total - Aileron, Elevator, Throttle, and Rudder

See the full review at:
http://www.rcuniverse.com/magazine/article_display.cfm?article_id=1271

Origin of Common Expressions

As incredible as it sounds, men and women took baths only twice a year (May and October)! Women kept their hair covered, while men shaved their heads (because of lice and bugs) and wore wigs.

Wealthy men could afford good wigs made from wool. They couldn't wash the wigs, so to clean them they would carve out a loaf of bread, put the wig in the shell, and bake it for 30 minutes. The heat would make the wig big and fluffy, hence the term "big wig." Today we often use the term "here comes the Big Wig" because someone appears to be or is powerful and wealthy.

Pioneers of Flight

Pilcher and Chanute

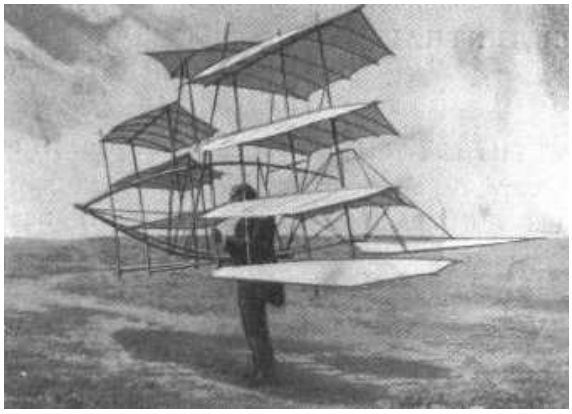
From Century-of-Flight.net

By the turn of the century, interest in flight was too great to be set back by the death of Lilienthal. One individual upon whom Lilienthal had a profound effect was Percy Sinclair Pilcher, a lecturer in naval architecture and marine engineering at the University of Glasgow. Lilienthal was generous in his support of Pilcher, allowing the latter to gain flight experience with Lilienthal's gliders in preparation for flying his own.

Pilcher's glider, the Bat, which was built in 1895 and similar in design to Lilienthal's but without a tail assembly, was less dramatic in its appearance but more aerodynamically efficient. With the flight experience gained on Lilienthal's glider, Pilcher built several others, including the Hawk, which included a tail unit with a hinged surface controlled by the pilot and a wheeled undercarriage with dampening springs to absorb landing shock. Pilcher then turned his attention to propulsion and calculated that an engine weighing forty pounds (18kg) and generating 4 horsepower (not yet in existence, but within reach) could keep his aircraft in flight although it would be insufficient for an unassisted take-off.

Pilcher never got to test his aircraft engine. In an effort to generate interest and gain investors, he exhibited the unpowered Hawk in Leicestershire, England, on September 30, 1899. In flight, the tail assembly broke, and the craft crashed.

Like Lilienthal, Pilcher died a day after crashing; he was thirty-two. During the nineteenth century, while



aviation research was pushing forward in Europe, nearly nothing constructive was happening in this area in the United States. Although there was interest in flying, and patent offices in the United States and around the world were swamped by fanciful designs for flying machines, very little in the way of research and experimentation was going on.

The country was still expanding to fill its borders, securing its footing in the community of nations, and lunging toward industrialization. However, in the 1 890s, this situation turned itself so completely around that in 1892 the French-Egyptian experimenter Louis Mouillard commented, "You Americans are clearly in the lead in the aviation movement."

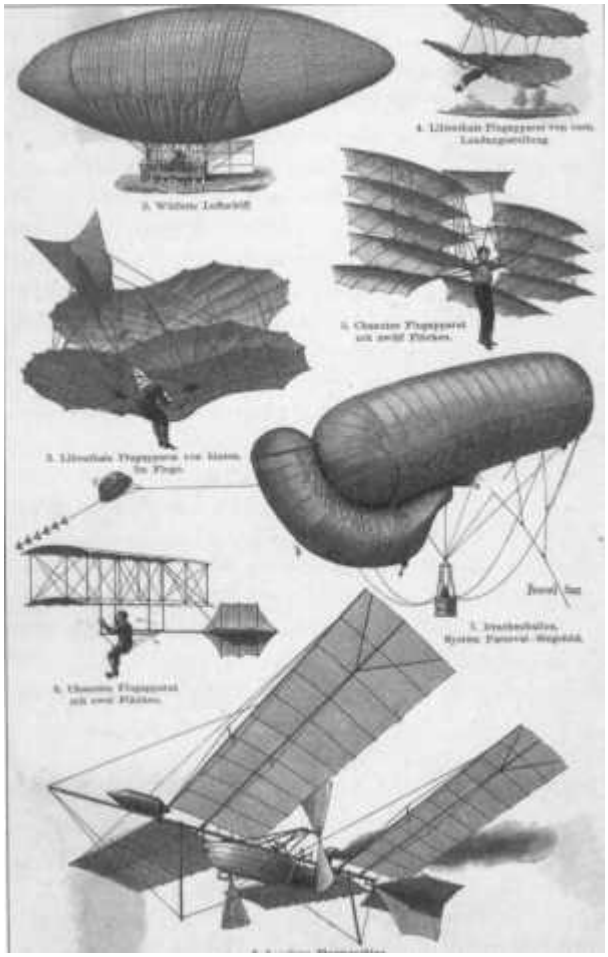
Credit for this leap goes largely to two men working to quietly and independently: Octave Chanute and Samuel Pierpont Langley. Octave Chanute (born

Chanut, but he Americanised the pronunciation of his name by adding the e) was born in France, but the family emigrated to the United States in 1838. Octave joined a railroad crew where he apprenticed himself to Henry Gardner, the engineer for the Hudson River Railroad, and in a few years developed a reputation as an outstanding engineer in his own right. He served as president of the fledgling American Society of Civil Engineers and chaired a committee that devised a rapid-transit rail system for New York City. The political pressures with which Chanute had to contend, following on the heels of his heroic but frustrated efforts to improve the scandal-ridden Erie Railroad, caused him to enter a period of depression and exhaustion. This prompted him to tour Europe, where he could relax, and it was on this tour that he was exposed to the work being done there in aviation.

Flight was never more than a hobby for Chanute, but his interest was to remain avid for the rest of his life and he was among the first to think seriously about the aerodynamic effects of wind on roofs, bridges, and railroad locomotives. Upon his return to the United States, he moved to Chicago and continued his engineering work.

Chanute was continually recognized as making important contributions to the country's westward expansion, so when his history of flight, Progress in Flying Machines (based on articles he had written for the Railroad Engineering Journal), was published in 1894, it was widely read and considered a serious work. In this work, Chanute summarized all aviation efforts to that time and made some pointed suggestions as to the avenues along which serious experimenters might proceed. Progress in Flying Machines, along with Lilienthal's work, was studied carefully by the Wrights, whose respect for Chanute, based on this work, was so great that the brothers corresponded with Chanute and later they became friends. At the age of sixty-two, Chanute decided to take his interest one step further and experiment with building and flying gliders himself.

Too old to fly himself, he sought out young men with engineering talent and assembled a team consisting of August M. Herring, a New Yorker who had already built several moderately successful Lilienthal-type gliders; William Avery, a Chicago carpenter who was building a glider to Chanute's specifications; and William Paul Botusov, a Russian immigrant who claimed to have built a successful glider along the lines of Le Bris's artificial birds.



In June of 1896, Chanute set up camp along the duned southern shore of Lake Michigan, east of Chicago, and that summer his group tested a number of gliders (under the full view of reporters who filed almost daily reports on the group's progress). First they tested a glider Herring had already constructed—with financial backing from Chanute—on the Lilienthal model. However, they found it difficult to fly and capable of only short hops of no more than 116 feet (35m). In the meantime, Avery's workshop back in Chicago had completed a multi-wing glider, the Katydid, so named because of its insect-like appearance, and brought it to the test site. The craft had six pairs of wings, arranged on a central frame and pivoted so

that the wings could adjust and bring the aircraft back into trim no matter what the wind conditions.

Experimental glides with the wings in different configurations resulted in a craft that was safe, stable, and manageable even in winds of twenty miles per hour (32kph), though not capable of longer glides than Herring's machine. On July 4, the group disbanded and returned to Avery's workshop to use what they had learned to build three gliders: a version of Butusov's glider (dubbed the Albatross), an improved version of the Katydid, and a new craft designed by Chanute and Herring. At the end of August, the group returned to the testing site with all three machines.

The Katydid and the Albatross performed well, but not significantly better than the machines used in the earlier trials. The third machine, however, represented a vast improvement and a major step forward. Chanute used a bridge-building device, Pratt trusses—crossed wires bracing vertical struts evenly spaced between upper and lower wings—to give the rigid wings more structural stability and added a cruciform tail section and a seat for the pilot.

This machine made many flights at over 350 feet (106.5m) and was remarkably stable and easy to fly. It also had the characteristic wing shape that the Wrights were later to adopt. Chanute ended the trial in late September. In the summer of 1896, Herring conducted further tests with this glider. On October 11, 1898, using a two-cylinder compressed-air engine, Herring conducted a powered glide of about fifty feet. Though Herring was convinced this feat had made him the first to fly, Chanute realized that what the young man had actually accomplished was to come closer to the goal of powered, controlled flight than anyone had before, but that they were still not there.

www.century-of-flight.net

Sometimes You Just Have to Laugh…

A redneck from Sweetwater, Texas walked into a bank in New York City and asked for the loan officer. He told the loan officer that he was going to Paris on an international redneck festival for two weeks, needed to borrow $5,000, and that he was not a depositor of the bank.

The bank officer told him that the bank would need some form of security for the loan, so the redneck handed over the keys to a new Ferrari. The car was parked on the street in front of the bank. The Redneck produced the title and everything checked out. The loan officer agreed to hold the car as collateral for the loan and apologized for having to charge 12% interest.

Later, the bank's president and its officers all enjoyed a good laugh at the redneck from the south for using a $250,000 Ferrari as collateral for a $5,000 loan. An employee of the bank then drove the Ferrari into the bank's private underground garage and parked it.

Two weeks later, the redneck returned, repaid the

$5,000 and the interest of $23.07. The loan officer said, 'Sir, we are very happy to have had your business, and this transaction has worked out very nicely, but we are a little puzzled. While you were away, we checked you out on Dunn & Bradstreet and found that you are a highly sophisticated investor and multimillionaire with real estate and financial interests all over the world. What puzzles Us is, why would you bother to borrow $5,000?

The good 'ole Texas boy replied, 'Where else in New York City can I park my car for two weeks for only $23.07 and expect it to be there when I return?

You Might Be An R/C Modeler If...

By Bill Atkins, Byron, GA

- ...You actually enjoy reading these "You Might Be" jokes.

- ...You spend $12.50 for your wife some costume jewelry earrings at a Swap Meet and $362 for airplane stuff and figure everything is even.

The Lighter Side of R/C