



Dardanup
Aeromodellers
Society (Inc.)

AIR-FLOW

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2011/12 Committee:

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Welcome to the August newsletter. The newsletter can easily be filled with items of topical interest, but what is needed are more anecdotes from members. Your editor cannot attend every flying day, particularly Saturdays. Are there any offers for someone to step forward as Saturday correspondent to supply news and pictures of goings on of what is a big training day? No compensation but the glory of being a sub Editor with eyes and ears to the ground. Maybe that should be eyes to the air.

News from the President.

There will be a busy bee organised in the near future for much needed grounds maintenance, an email will be forwarded with details.

There is more to model flying than just doing a few circuits.

Let's aim at getting some (loose) formation flying in by grouping like models for a few laps.

The other day I noticed two Spitfires in the air, and it looked great. Anything from trainers up will provide experience as well as a good display.

Another idea is to set up a challenge for the day.

Best landing or takeoff. Gliders are becoming more popular, and spot landings can be a lot of fun as well as challenging.

Suppose my message is — On the day grab a mate and challenge each other to some sort of structured flying.

Happy Flying,
Noel.

Larry and the editor have made up two more stands primarily for arming/disarming electric models without bending over too far for old bones. They are

placed in the engine starting area and should provide a further measure of safety for those models which can unexpectedly bite the unwary.

Materials were salvaged from our storage area, so those odds and ends come in handy.

This month the Club is able, with the kind support from Scott Pittick at www.dlenginesaustralia.com/ is offering \$20 vouchers to the first five members gaining their Bronze Wing level award. It is a significant step for those wishing to gain more confidence, and should be an aim for all flyers. Junior flyers in particular might find it a handy boost, but every one can go for it.

Regarding instruction for new flyers, something which might be handy is to think about making a time to meet with your instructor, rather than just turning up to find that no one is there to get you into the air. Making an appointment may be a bit irksome, but no more that cooling your heels just watching others fly. Are instructors happy to place their 'phone numbers on the whiteboard? Instructors have a life too, and volunteer their time.

The new takeoff line and Mobile 'Phone rules have been well taken up, thanks to one and all.

Regulation seems a real pain in the tail sometimes, but the aim is to eliminate all perceived risks, and in fact a risk assessment is now due to ensure that we have covered as much as possible to abide with insurance requirements. Safety is largely the application of commonsense, but we can all lapse on occasions, so a gentle reminder never goes astray.

Until next month, enjoy your flying!

New Flyers

Duncan Kirk (junior) and Thomas Greeff (new Junior) are ready to go solo. It is good to see them pick up the controls so quickly - one advantage of being young! Jay O'Hehir (new junior) is progressing quickly and will be solo soon.



Stephen Peacock went solo recently. It only took a year - on and off! Note the beaming smile.)

Kerry Forsyth - Instructor.



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Remember Bronze Wing Flyer Vouchers



This Picture by **Les Fenn** was taken before the unfortunate Hangar Fire at Larry's when the model Fiat was destroyed.

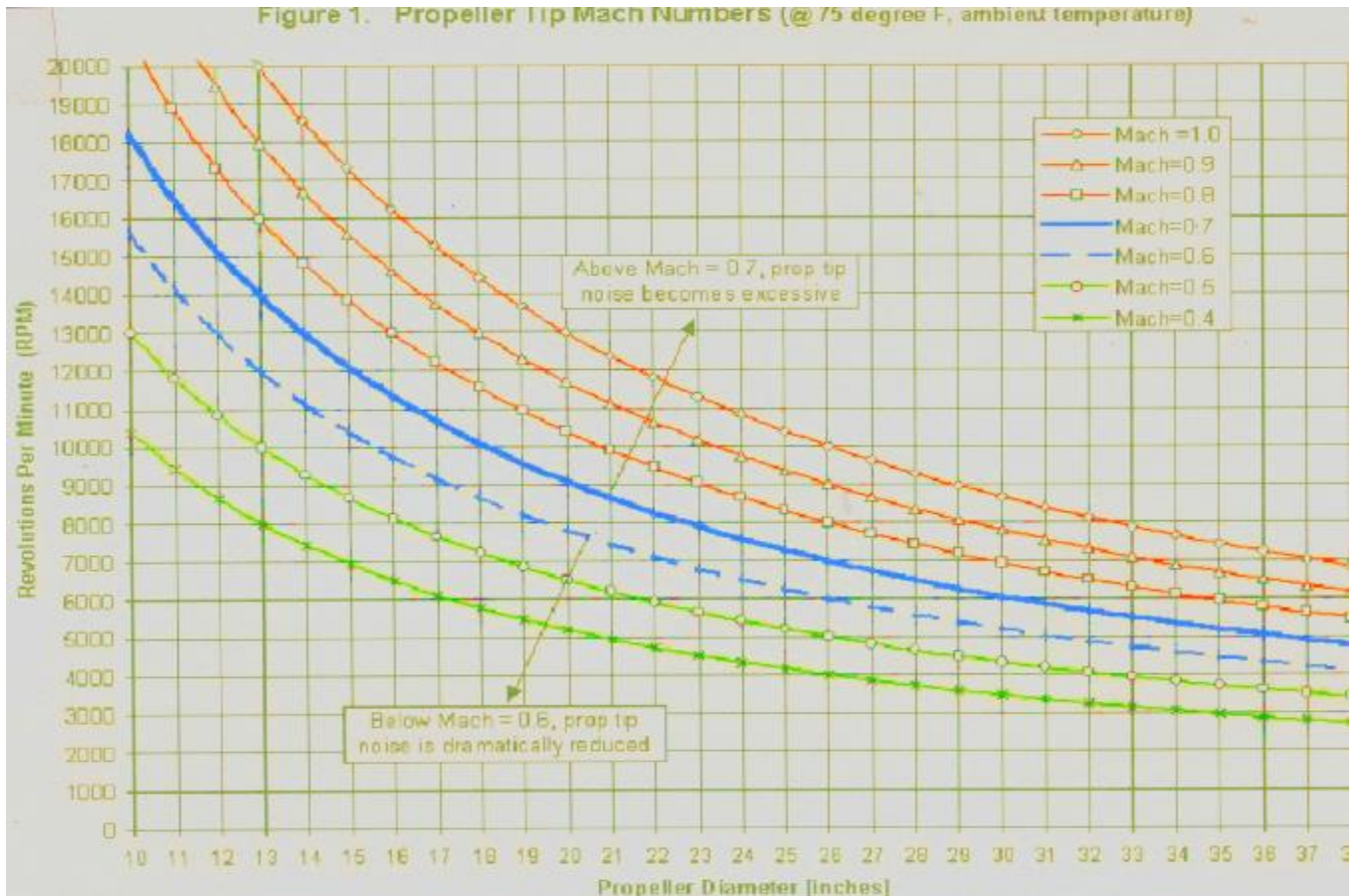
The Spitfires are still around however. L. To R. Editor's 2 metre MK ??, **Dave McNair's** Mk ??, and **Les Fenn's** Mk ?? (?? = somewhere between a Mk1 and a Mk IX)



Alex McGavin's Electric Mosquito. A nice flying model.



Dennis Buckland and Gypsy Moth. Powered by an OS 70 4st, and a very realistic flyer. Covered with Stig Coverall, an excellent and cost effective heatshrink woven material.



Propeller Noise Gradient Chart



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Forty-Seven Years in Aviation -- A Memoir: Chapter 3 -- Primary Flight Training Part 2

July 11, 2011

by Richard L. Taylor

[AVweb's reprint of Dick's memoir began with the [Introduction](#)]



The Piper PA-18 was our introduction to flight training. It was not only a rag-wing airplane, it was a rag-*everything* airplane: Fabric stretched over steel tubing on all the surfaces except the engine cowling. (One of the wags at Hondo called it the "Paper Cub.") A descendant of Mr. Piper's famous Super Cub, the Air Force version was a no-frills screening device used for the express purpose of determining which students would not be able to meet flight-training standards. It was powered by a Lycoming O-235 engine that produced 105 horsepower, hence the official designation PA-18-105. The airplane had no flaps, no radios, no navigation equipment except a magnetic compass. It had one questionable quality: According to a professional test pilot, "The Piper Cub is the safest airplane in the world; it can just barely kill you."



PA-18 Cub

Students who were unable to solo after ten hours of instruction in the Cub were considered unsatisfactory for further flight training and were released from the program. This seemed a rather brutal way to do business because some students who couldn't solo in the allotted time might have succeeded with a few more hours of instruction. For example, one of our classmates who didn't qualify was dismissed from flight training, served his three years of active duty in a non-flying capacity, and then entered an aviation career through the civilian door. He retired years later as a captain for a major airline and I'm sure he has thumbed his nose at the "10 hours and out" policy more than once. Nevertheless, economic considerations prevailed; the cost of training an Air Force pilot was high enough to justify early screening.

The first lesson in the PA-18 was known as "the dollar ride," in which the instructors took each of us aloft to demonstrate the capabilities of the airplane and get a handle on our reactions. At about the midpoint of my ride, Mr. Petty asked if I had ever experienced a spin. Totally unaware of what was going to happen, I answered in the negative, and a second later the nose popped up, the world turned upside down and the plane made a couple of rapid rotations before the horizon settled down to its normal level self. I can't say I really enjoyed the experience, but if it was part of the program, so be it.

During the Cub phase, we rode Air Force buses back and forth to Jackson Field, a grass airport several miles away that served as an auxiliary field for Stallings. (See "Jackson Field" at right.) The emphasis was on basic flying skills -- takeoffs, landings, stalls, engine-out procedures -- and the objective was the all-important solo at or before the 10-hour point. The grass runways were well-suited to Cub training; a crosswind during takeoffs and landings tends to move taildragers sideways while embryo pilots are learning what the rudder pedals are for -- and grass is a lot more forgiving than asphalt.



The Cub training went well and when Mr. Petty decided I could handle the airplane by myself, he climbed out of the back seat and turned me loose for the traditional three first-solo landings. Like all students, I was impressed with the change in performance absent 180 pounds or so of instructor in the back seat -- the Cub used a lot less runway on takeoff and floated like a feather on landing. Three rewards accompanied the first solo: We were permitted to paint a thunderbolt on the visors of our ball caps (thunderbolts were added as we moved through the several stages of training); we were now permitted to carry our seat-pack parachutes tucked up behind our backs like real pilots instead of being slung over our shoulders; and the instructors presented us with certificates documenting a momentous event: The day we were kicked out of the nest.



Richard's First Solo Flight certificate

The ink has faded, but the certificate reads:

This is to certify that on this, the fourteenth day of March 1955,
 Richard L. Taylor in a PA-18 did, alone and unassisted take off from and return to Jackson Field, Stallings Air Base,
 thereby successfully completing his First Solo Flight.
 (signed) Raymond A. Petty, Most Worthy and Gray Haired Flight Instructor.

Patience is one of the hallmarks of a good flight instructor and Ray Petty had that quality in spades. But just a few days into the primary program, his forbearance wore a bit thin. A quick lesson in the Cub's architecture is in order to understand what happened.

About the Author ...



Richard "Dick" Taylor began his aviation career in 1955 as a 2nd Lt. in the U.S. Air Force, and flew B-29s

and KC-97 tankers.

Dick left active duty in 1959 and returned to civilian life in Ohio, although he continued to fly with the Air National Guard, Army National Guard and Air Force Reserve in several different aircraft. Dick retired from the Air Force in 1979 as a Major and Command Pilot.

In 1966 he joined the faculty of the Department of Aviation at The Ohio State University. He was the department's Director of Operations and Training from 1981 until his retirement as Associate Professor in 1988.

Dick's total flight time over 47 years was almost 12,000 hours, acquired in a wide variety of military and civilian aircraft. His civilian pilot credentials include ATP, Commercial and CFI; he was also a designated pilot examiner.

He began an aviation writing career in 1971 that includes 20 books. He is the founder, editor and a regular contributor to [The Pilot's Audio Update](#); the Update has been in continuous publication since 1978.

In 1975 Dick began another career as a consultant and expert witness in litigation involving pilots and is still active in that capacity; he has consulted or testified in 550 mishap investigations.

Dick and his wife live in Dublin, Ohio, a suburb of Columbus.

Jackson Field

Jackson Field was surrounded by small tobacco farms. Throughout the early-spring growing season we were often entertained by the crop dusters in their almost-antique Super Cubs and Stearman trainers converted for use as agricultural applicators. The small tobacco fields were bounded on all sides by tall pines and the dusters would drop over the trees and

spray a swath then climb out, do a wingover and repeat the process ... tough way to make a living (dangerous, too).

Entry to the cabin was accomplished through a two-piece door on the right side, hinged at the top and bottom and locked into the closed position with the half-turn of a handle. The door is normally closed and locked in flight, but when it's unlocked, the top half flies up, the bottom half falls down and the student is suddenly and completely exposed to thin air.

One of my original tablemates was out of his depth from the very first day; he was nearly incapacitated by his fear of flying and became ill every time he left the ground. After trying everything he knew to resolve the problem, Ray lost his cool and took a draconian step: As he related to us later, at 2000 feet or so he rolled the Cub on its beam ends with the right wing pointing straight down, unlocked the door and shouted "Jones [not his real name], why don't you just jump out now and get it over with!" When they got back, Jones -- white as a sheet -- disappeared, never to be seen again in flight training.

Having broken through the solo barrier, the balance of our time in the PA-18 was spent practicing takeoffs and landings. Learning to fly a taildragger is no more difficult than learning to fly any other airplane -- except for taxiing, takeoff and landing, when the main wheels are in contact with the ground and providing a point around which the airplane can rotate. All taildraggers try to swap ends on the ground because the center of gravity is behind the main wheels. Given this characteristic, taildragger pilots become very adept on the rudder pedals.

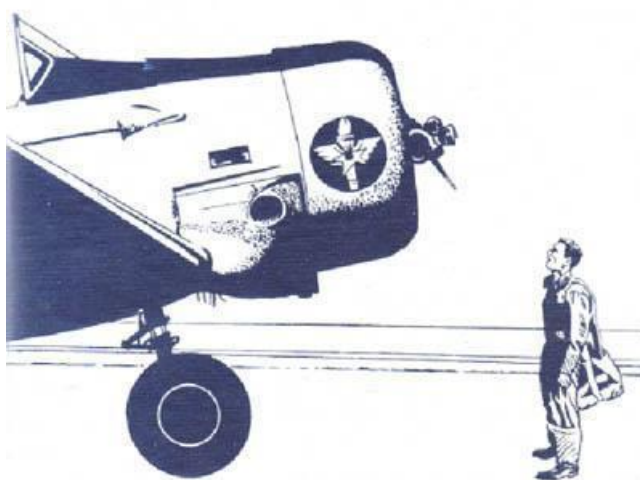
The problem is exacerbated when you're flying any light airplane in strong winds; keep in mind a PA-18 with one occupant weighed only about 1500 pounds and 20-knot surface winds were common conditions on the North Carolina coastal plain. There were days when we probably shouldn't have been flying but we flew anyway; the school contractor had a limited number of Cubs so we had to press on to get finished and out of the way for the next class. Several times during our initial training the wind was so strong the non-flying students were detailed to the far end of the runway where three of them would walk a just-landed Cub back to the ramp, one holding down the tail, the other two at the wing struts to keep the airplane from blowing over.



Near the end of the PA-18 phase, one of the instructors flew a T-6 to Jackson Field so we could get a close look at our airborne classroom for the next 120 hours of training.

In general, the T-6 is not considered a big airplane ... but for student pilots with only 20 hours total flying time and faced with the imminent transition from the Piper Cub to an all-metal, 600-horsepower airplane with retractable landing gear, wing flaps, constant-speed propeller and a top speed of 200 miles per hour, the T-6 loomed large.

The T-6 "Texan" has a long and illustrious history, beginning with the North American Aviation NA-26, a design that won the U.S. Army competition for a basic combat (BC) aircraft in 1937. The airplane went into production soon thereafter and 180 airplanes known as BC-1s were delivered to the Army. Somewhere along the line the airplane became an advanced trainer, resulting in the AT-6 designation, later shortened to T-6; it was the only single-engine advanced trainer for the Army Air Corps during WW II. Thousands of U.S. Naval aviators earned their wings in the SNJ (a T-6 with a tail hook) and almost every foreign nation that could muster enough pilots to call it an air force used the T-6 in various roles. The Texan was deployed early in the Korean War as a forward air control platform and continued to train Air Force pilots until 1957, when the T-34/T-28 program was implemented in all the civilian contract schools.



The T-6 went through a number of modifications over the years. The final version in the series was the "G" model (ca. early 1950s), equipped with a more powerful engine, a steerable tailwheel and a full-time hydraulic system. The T-6G became the standard for the rest of the production run that ended in the 1950s; all variants considered, a total of 15,495 Texans were built.

Our upgrade from the Cub to the T-6 included the use of crash helmets ("brain buckets" in the often-morbid vocabulary of aviators) and throat microphones. The helmets made us feel more like military pilots and the throat mike (an elastic "choker" necklace with two button microphones that picked up sound waves from one's larynx) was indispensable. I can't imagine all those hours of flight instruction in a really noisy airplane using hand-held microphones ... or worse, shouting back and forth.

The T-6 was powered by an R-1340, nine-cylinder, radial engine introduced by Pratt and Whitney in 1925. It was the first engine built by P&W and the design proved to be a good one; when production ceased in the 1950s, nearly 35,000 of these engines had gone out the door. Unlike most turbine engines that require only the press of a button to light the fire, starting the R-1340 (or any radial engine for that matter) required the pilot to orchestrate fuel, air and ignition to arrive at a combustible mixture. The cylinders would belch and cough and blow smoke and occasionally backfire until all nine jugs were happy ... and then the sound became a pleasant rumble, something like the exhaust of a big Harley.



T-6 Texan

Once you are strapped into the front seat of a T-6 you have a clear picture of ... well, you don't have a clear view of anything straight ahead except the aluminum that wraps around the engine. You can see directly ahead only from the time you raise the tail on takeoff until the time you lower the tail on landing, and not at all while you're taxiing. This problem -- common to all round-engined taildraggers and even worse in the back seat -- leads to a lot of neck-craning and S-turning on the ground. It also led to some consternation for my father, who had come to Kinston for a visit. He was not at all familiar with airplanes and seemed a bit confused as he watched a group of T-6s S-turning along the taxiway. He wondered, "For all the money they're spending on your flight training, why can't they teach you to drive these airplanes in a straight line?"

No matter how you slice it, the transition from Piper Cub to T-6 was a giant leap in complexity and pilot technique; the Texan was six times as powerful, two tons heavier and carried enough fuel to keep a Cub in the air all day. Student pilots in primary flight training were required to develop a working knowledge of the engine and propeller combination, the operation of the retractable landing gear and the wing flaps, fuel, oil and electrical systems. With regard to pilot technique, 20 hours in the Cub gave us a leg up on flying the airplane "from chock to chock" ... an absolute necessity in the T-6 and one of the most valuable lessons any pilot can learn.



An airplane this complex came equipped with a dazzling (for us) array of flight and engine instruments. The front cockpit panel contained the usual primary flight instruments as well as gauges to monitor engine operation and all the other onboard systems. Radio navigation equipment was limited to a low-frequency receiver; the VHF transmitter and receiver controls were located below the canopy sill on the right side of the cockpit. The rear cockpit was much less adorned but had enough gauges to get us through the basic instrument-flying part of the program.

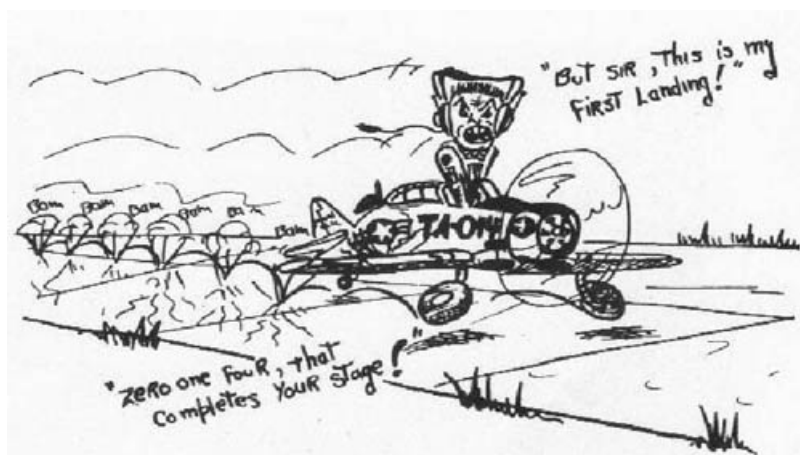
The steerable tailwheel was perhaps the most practical modification to the basic T-6, especially at low taxi speeds; trying to maintain a straight line without positive steering would be nothing short of artistry in braking. With the tailwheel locked -- accomplished by holding the stick all the way back and centering the tailwheel so a locking pin could fall into place -- 17 degrees of steering was available with the rudder pedals. With the tailwheel unlocked and in the full-castering mode, you could use the brakes (gently, gently) to turn the airplane at will.

T-6 transition began with several dual rides that emphasized takeoffs and landings, stalls and simulated engine failures. Ray Petty was big on engine-failure procedures and I came to expect he would close the throttle at some point on virtually every takeoff and ask, "Now what are you going to do?" He emphasized the folly of trying to get back to the runway unless there was a lot of air (at least a thousand feet) between the airplane and the ground.

My first solo in the T-6 was a memorable event. It took place on a beautiful spring morning, warm enough to have the canopy rolled back, and for the first time I realized the airplane was responding properly even though I was not consciously moving the controls. It was that magic moment when an airplane seems to become an extension of the pilot's thinking ... I have experienced the same feeling sooner or later with every aircraft I have flown since.

The training curriculum included a series of stalls, the nastiest of which was the "top rudder" stall. This pilot-tester began from straight and level flight, then we would roll into a steep bank to the left, holding the bank with aileron and adding right rudder until the airplane stalled. Of course everything was working against us; we had essentially set up the airplane for a cross-control stall (a truly wicked thing) in an already steep bank, and when the wings quit flying it was nearly impossible to recover without going inverted.

We were also required to complete a series of landing "stages," in which we flew (solo) six repetitions of the several types of landings we had been taught -- three-point, wheelies, flaps and no flaps, crosswind, etc. -- with instructors posted near the end of the runway grading our performance. At the completion of each landing we exited the runway and taxied back for another repetition; this required taxiing via two legs of the runway triangle, something many of us considered a waste of time ... we were there to fly, not drive. In order to get back into the air ASAP, we resorted to taxiing faster than normal with the tailwheel off the ground. It was also a great way to develop a fine touch on the rudder during takeoff and landing.



At this point you need to know the infield had been leased to a local farmer whose corn crop had grown higher than an elephant's eye, high enough to hide us from the observers -- we thought. What we failed to consider was the height of the vertical stabilizer with the tail off the ground; it was just high enough for an instructor to see it, whereupon the fast-taxi procedure was declared *verboden* ... oh well, back to the S-turns.

Despite its size, weight and reputation (some pilots called it the "Terrible Texan," or the "torque tube," both unwarranted slurs) the T-6 was a bit of a pussycat in a spin; the first turn put the nose down to nearly vertical, but during the second turn the nose came up to perhaps 30 or 40 degrees below the horizon, where it stayed until recovery. As spin training progressed we were required to make a complete recovery at a predetermined point such as after two turns, or aimed at a specific target on the ground.

[Continued next month.]



Larry setting up his camera 'plane



David Jones about to hit the sky