



CHAPTER 613

August 2005

(Chapter 613 web site)

www.eaa-chapter613.org

News and Views: Tom Edwards

As I write this my Cessna 172 is waiting for a couple of mags and a wiring harness. It seems that Annual inspections are worth the time and expense. The engine was overhauled a thousand hours ago but the accessories were not. It looks like next year the carb is next! My son's wedding is over and once all the pieces are put back together it will be time to fly!

Note that this coming weekend there is a Air Show across the pond with a chance to fly some Young Eagles. See the schedule and a plea from Don Taylor.

There is also a Fair Haven Fly-In and Fly-By on September 11. I understand the Butterfields will be performing.

My thanks to Bill Y for a great article of his trip to Oshkosh!

Flight Advisor Corner: Hobie Tomlinson

Tailwheel Transition Part III

Last month we left our tailwheel discussion with normal takeoffs. This month we will pick up where we left off and wrap up the series with the other types of takeoff/landing procedures.

First let's discuss the Normal or 3 Point (full stall) Landing for tailwheel aircraft. The approach in a tailwheel aircraft is the same as for its tricycle gear counterpart. It would typically be flown with partial power and a 3 degree descent path @ 1.3 V_{so}. The descent rate "rule of thumb" for a 3 degree descent path is 5 times your groundspeed, which gives a rate of descent of 400 fpm at 80 kts. The power is then reduced to idle as the aircraft enters the "roundout" phase of the landing. At smaller airports, many people prefer to fly a "tighter" pattern and make an idle descent to landing from pattern altitude. While there is nothing wrong with this, it is no longer the normal procedure at today's busy airports. Heavy tailwheel aircraft will carry some power all the way to touchdown and land with the tail slightly elevated. This is to prevent high sink rates from developing at the slower speeds.

The landing technique for tailwheel aircraft starts to diverge from its tricycle gear counterpart after the "roundout" phase. While tricycle gear aircraft are "tolerant" of low pitch attitude landings, tailwheel aircraft are not. This has to do with the gear geometry. Once the main gear contacts the runway in a tricycle gear aircraft, it tends to cause the nose to pitch down, thereby lowering the angle of attack (AOA) and reducing lift. Also if the aircraft was drifting slightly (or in a crab) at touchdown, the aircraft aligns itself, as the center of gravity (CG) is forward of the main gear "pivot point" and point of resistance (wheel brakes).

All these items are reversed in tailwheel aircraft, as the center of gravity is aft of the main gear “pivot point” and point of resistance. Thus if the main landing gear is allowed to contact the runway much before the tailwheel, the tail will tend to drop, increasing the pitch attitude and lift. This causes the aircraft to “balloon” back into the air with decreasing airspeed. The nose then drops due to reducing airspeed and the aircraft contacts the runway nose low again, setting up a porpoise. Also, if the aircraft is allowed to drift and contacts the runway while drifting (or in a crab) a strong swerving tendency is created, rapidly leading to loss of directional control and a ground loop. Because the CG is aft of the main gear, the natural tendency of a tailwheel aircraft during landing is to want to “swap ends” (Similar to shooting an arrow backwards). This negative directional stability during landing roll must be carefully managed to retain control.

Once the roundout phase is completed the aircraft is kept just above the runway by increasing the pitch attitude as airspeed decreases. Backpressure on the elevator control will need to increase fairly rapidly as elevator control effectiveness is decreasing (due to dropping airspeed) even as we need to keep increasing the nose attitude. In the ideal landing, the elevator control will be nearly full aft as the aircraft settles onto the runway at stalling speed. This attitude has the main gear and tailwheel contacting the runway simultaneously, or slightly tailwheel first. The aircraft’s energy & lift are spent prior to touchdown, thus preventing ballooning. After the aircraft has touched down, the elevator control is kept full aft during the landing roll. This will increase the tailwheel traction, improving directional control and preventing the tail from “lifting” as brakes are applied.

The landing roll requires vigilance and precise directional control to prevent a ground loop. Remember a tailwheel aircraft has negative directional stability on landing! Many tricycle gear pilots have developed the bad habit of neutralizing the controls upon touchdown, or even letting go of the controls! This is a recipe for disaster in a tailwheel aircraft! Maintain directional control by picking an object at the far end of the runway and keeping it at a constant place “in the windshield” or over the cowling. As airspeed drops, more and more rudder deflection will be required to obtain the same result, due to decreasing rudder effectiveness.



Crosswind Takeoffs involve a slightly different procedure in tailwheel aircraft. The aircraft is first aligned with the runway and the tailwheel centered (and locked if a locking type). The ailerons are positioned into the wind and the elevator control aft. Brakes are released and the throttle smoothly advanced to takeoff power, while maintaining enough aft elevator input to keep the tail solidly on the runway. In strong crosswinds, some downwind braking may be initially required to keep the aircraft straight until rudder effectiveness increases. The transition from tail down to tail up is delayed until a slightly higher airspeed to keep the tailwheel control function longer. Once the tail is raised it is positioned higher than in a normal takeoff, giving a slight negative angle of attack and keeping more weight on the main gear. Slightly higher takeoff airspeed is used to insure a “positive” liftoff. Aileron control input is reduced as aileron effectiveness improves with increasing airspeed.

The higher liftoff speed used precludes the aircraft settling back on the runway while drifting. Once liftoff speed is obtained lower the tail slightly and the aircraft will fly off the runway. In strong crosswinds, use enough aileron input not only to prevent the upwind wing from lifting, but to actually lift the downwind wing. This will allow the aircraft to fly off in a slip, thus preventing drift if a gust lull should cause it to momentarily settle back onto the runway. Once solidly airborne, eliminate the slip and return to the crab method of drift control.

Crosswind Landings may be made the same as normal landings in light crosswinds. The crab method of drift control must be changed to the slip method (wing low) prior to touchdown. It is my personal technique to transition from crab to wing low flight just prior to initiating the roundout in all aircraft. That way the aircraft track and drag configuration are stable through the landing maneuver and critical timing judgments are minimized. (Initiating the slip method of drift control increases aircraft drag, so power needs to be maintained further into the landing maneuver than normal). The rudder is now used to keep the longitudinal axis of the aircraft aligned with the runway centerline, while aileron is used to bank against the drift until it stops. The aircraft will touchdown in a slip, upwind wheel first. As the aircraft slows, increase rudder and aileron control inputs (to retain effectiveness with slowing airspeed) up to full control travel, if needed.

In strong crosswinds, Wheel Landings are used to retain better aircraft control response all the way to touchdown. The low control effectiveness just prior to touchdown in normal landings is inadequate to deal with strong, gusty or turbulent winds.

A wheel landing is normally made from a power approach, as described above. The correct touchdown speed is one that will produce a level attitude upon touchdown and is usually about approach speed, or $1.3V_{so}$. Upon completing the roundout, power may need to be increased slightly to prevent the speed from dropping off. Once the aircraft is flying just above the runway in a level pitch attitude, the power is reduced (without changing the pitch attitude) just enough to allow the aircraft to begin to settle onto the runway. During this phase of the landing, a constant, level pitch attitude is maintained with the elevator while the descent rate is controlled with power.

The common mistake at this point is allowing the airspeed to decay and the pitch attitude to increase. If that happens, a bounce and possible porpoise is guaranteed!

Once main gear contact with the runway is made, the tail is raised to “weight” the gear and maintain firm ground contact. Power is now reduced to idle. In strong crosswinds it is better to keep the tail up a little longer than normal, then rapidly transition the tail down. This is because the most marginal directional control occurs with the tail in an intermediate position during transition from tail up to tail down and vice versa. Of course while all this is going on we are maintaining very precise drift and runway alignment control using the “wing down” method. This will cause us to touch down on the upwind gear first, which is normal.

Oleo gear aircraft are the easiest to wheel land, while the Cessna “light type” gear legs are the toughest. This is because they act like a bow, if they are placed “in tension” by the landing load they will snap back and return the airplane to the air. Wheel landings are good to teach on long (or sod) runways initially. Sod runways have more give than pavement, while long runways provide more time to set up the landing. A technique that works well for me is to carry extra “nose down” trim for wheel landings. This makes it harder to “raise the nose” unintentionally, as more backpressure is required. Conversely, it is quite easy to raise the tail when the mains “touch on”. Wheel landings can be made power off, especially in calm winds, but extra approach airspeed is required and the timing has to be impeccable!

Short Field takeoffs are started by “swinging the tail around” at the very beginning of the takeoff area and stopping. Wing flaps, if available, are positioned to manufacturer’s recommended setting. Full power is then applied, correct static rpm verified and the brakes released. The tail is allowed to rise off the ground and then positioned for maximum acceleration. Once airborne, adjust pitch attitude to maintain best angle climb until looking over the obstacles immediately ahead, then accelerate to best rate.

Short Field landings are almost identical to normal landings, except that a power approach is made on a slightly steeper descent path at $1.2V_{so}$. Because of the slower speed and higher sink rate, power is carried through the roundout until the sink rate “zeros” and then brought to idle. Once the aircraft has touched down (in a 3 point attitude) the elevator control is moved to full aft and the brakes applied.

Soft Field takeoffs vary slightly from short field ones. Wing flaps, if available, are set to the manufacturer’s recommended setting before leaving the parking area. Because the main concern is keeping the aircraft moving so it doesn’t get “bogged down”, a rolling takeoff is used. This usually precludes using the very end of the takeoff area. Full power is applied as the aircraft aligns with the runway and the tail allowed to rise off the ground. During this takeoff the tail is kept as low as possible. The tailwheel should be just barely clear of the ground during the takeoff roll. Excessive back pressure will keep the tailwheel on the ground, causing it to “rut-in” and slow the aircraft’s acceleration. Once airborne, accelerate to best angle climb in ground effect and establish the departure climb.

Soft Field landings are identical to normal landings, except that power is carried at touchdown. At the completion of the roundout, add enough power to transition to level flight just above the runway in the 3 point landing attitude. Then slightly reduce power until the aircraft settles onto the runway. Upon touchdown, additional power may be required to keep the aircraft moving and full aft elevator control held to keep the tail down.

So there you have it, tailwheel flying in a nutshell! People who correctly fly tricycle gear aircraft will not have significant problems with a tailwheel check out. Those pilots who have developed “bad habits” will take longer. Try it, you’ll like it! It will improve your flying of all aircraft.

Our thought for this month is: “The wise shall inherit glory, but shame shall be the promotion of fools!” So until next month, Think Right to FliRite!

Young Eagles: Donald Taylor

We have only one pilot reporting more Young Eagle flights for this edition of the newsletter. We have flown 190 flights with 110 to go for a total of 300 for the year

Young Eagles To Date

Young Eagle Flights have started to pick up! We have flown 156 Young Eagles so far, which leaves 144 more to go for our total of 300.



George Godin	2	Donald Taylor	91
George Coy	1	John Butterfield	14
Don Nowakowski	8	Mike Pecue	13
William Hanf	8	Chuck Robitaille	10
Ronald York	9	Steve Couzelis	17
John McNerney	17		

Adirondak Regional Airport (SLK) Saranac Lake, NY Young Eagles Rally Saturday August 20 and Sunday August 21. If you plan on going Let me know. If you do not want to let me know, just show up! If you go, let the Flagmen know you are a Young Eagles Pilot and He will direct you to a parking spot.

Did you Know: by Donald Taylor

The First Amphib

The 1911 A-1 Triad was designated because it would perform in three environments – Land, Sea, and Air. Being able to operate off land and water meant it had to have a retractable landing gear. Thus, the Triad was the first successful Amphibian. Flight testing began on January 26, 1911 when Glen Curtis himself flew it off the water near Coronado, California, outside San Diego. Curtis new he had opened a new chapter in aviation.

The Navy ordered its first airplane, a AN-1 for \$5,500, on May 8, 1911. This date is considered the birthday on naval aviation. Lt. Theodore G. “Spuds” Ellyson, trained at the Curtis Flying School as the first naval aviator, piloted the AN-1 on July 1, 1911 in Hammondsport, NY This marked the first flight by a commissioned naval aviator.

OSHKOSH TIME AGAIN!!

BY: Bill Yendrzeski

It is Saturday morning, and clear blue day. Not to much wind on the ground, but we do have some head winds to deal with. We, are heading for Oshkosh AirVenture 2005.

I'm bringing along a friend of mine, who is not a pilot or plane guy. He is actually a tool maker, gun maker. He is finishing a special custom rifle for me as we speak. This will be an adventure for him. I have tried to explain the arrival process to him the best I can. I finished by saying wait and see.

We are off by 1230Z and heading West. The winds are lighter than expected and we are making good head way. I have selected GVV Gennese Co. for the first stop for fuel and weather update. We do it in just over 2.3 hrs. While the plane is being topped off, I check the weather and see there is a big system that was on the Western side of the Dakota's is not into Minnesota. It seems to be picking up steam. We will update it at FNT, Flint, Michigan. I file a flight plan To enter into Ontario, Canada and get flight following. 2.4 Hrs later we are in FNT. The first thing I do is get to the weather. Here we meet Howard, can't remember his last name. He is from Rhode Island. Real nice guy. We study the system heading for Oshkosh, and it is moving real fast now. It is already into Wisconsin, and heading right for our destination. We hem and ha for a few moments and decide to head West. We cannot get to MKG, Muskegan because of an airshow going on, so we decide to head for GRR, Grand Rapids and check Flight Watch on the way. Listening to Flt Watch things do not sound good, and the haze is cutting the visibility way down. I decide to land at GRR. As we had passed Howard on the way over he soon follows suit and joins us, along with 8 other plans heading the same direction. We all keep checking the weather and by 6PM we head for the motel near by and spend the night. We met two young kids, well, I call them kids in the early 20's, from Georgia. They have Cherokee and this is their first time. Really nice kids, Kerry and Philip.

It is a good thing for it rained big time that night while we all went to dinner and continued thru the night. In the morning we ate a quick breakfast the the motel and headed for the airport. The storm had moved thru and still had some convective stuff North of us. We all decided to go VFR because the weather would be getting better the farther West we got. We received a special VFR to depart GRR and headed West. Kerry and Philip are the first off and we leave about 10 minutes after them. We start off at 1300 feet and head West. As we get close to MKG it starts to clear as predicted. The head winds are now 30 kts and increasing. We climb to 4500 and the wind there are over 48-50 kts. We check with MKG and he tells me the winds at 6000 are only 42 kts. I climb for 6500 feet. We are feet wet and heading over the Lake Michigan. 1 hour and 10 minutes later we are feet dry and heading for Ripon the start the arrival procedure. As we close on Ripon, I ask Paul to keep an eye out for other planes. As I approach the Ripon area I see several planes in line and I'm listening to the Fisk controller. I see an opening between a Mooney another small plane and turn in to get in between them. Out of know where a small white plane flies by our right side and below us and another one is right behind him. They are not on the railroad tracks like the procedure says and we let them go. We hit Fisk and the controller gives us Rwy 27. YESSSSSSSSSS. That will let have a short taxi to the North Forty. We are on down wind for 27, and are turning base, and the Tower tells me to take the Green dot on the runway. I wag my wings and turn final following another Cessna who will take the first dot the red one. As I descend on final the ground controller tells me to go long and give way to a King Air, which we do not see. I ask him what King Air and he says go long. I do, and then he says white/blue Cessna go around. I hit the power and turn and start the climb out push in the carb heat, with positive climb I retract the flaps and look for a place to get in line again. Then the controller says, white/blue Cessna land now, I look back at the runway and see that I have Plenty of cement left and roll back and slip it to the left and do a real nice cross wind landing.

I forgot about my partner, Paul who has never done this before. After landing I had to take Him to the showers to clean up.



This is Paul after camp setup

This is our camp site. Sun is setting and we head for dinner and then hit the sack. It has been a Long day.



Monday and the White Knight and the Space Ship One will be in today at 3Pm. We head for some chow and then into the show. Paul cannot believe the planes. He has never seen so many planes at once. We pay our fees and head into the show. We check out the War birds on the way in. There are a lot of them here. The place is packed with planes, just the North Forty where we were. Plus the other side of the field is full of planes this year.

Nice looking P-40

We hit the Fly Market and check it all out. Paul buys some things, a mini torch set and a paint spray gun and some small grinding bits. We then hit the hangers and do a quick scan of things in them, and then check out some of the planes on display for sale. I check out the Diamond 40. This is a sweet package for the money. That Garmin 1000 package is some thing. It is easier to use than the 430 I have in the plane.



It is time for some lunch and the air show is about to start. The normal military fly overs are going on now and they are something to see in formations. We watch and take some pictures and eat our lunch. It is a real sweet day, much cooler today than yesterday. I really got a sun burn on the old bald head yesterday, and it is a little tender today. We are all waiting for the Space Ship One to arrive. The crowds are really big today for a first day of the show. The word must be out. And then she is there flying over head. What sight to see history in front of you and alive in the air. White Knight is really quiet, more so than I thought. She was preceded by a P-51 Mustang which had just been completely restored to the finest detail. I think they said the name was White Lightning. You really had to be there to really appreciate the beauty of this plane. We also got to meet Burt Rutan and Mike Mellville and his wife Sally. I also got them to sign my tee shirt. They are really nice people, just like you and I, ordinary folks.



That is Mike the first civilian pilot into space and Burt next to him.

That about wrapped up the first day. We headed out and met Steve, his brother John and their brother in law for dinner. We had a great meal and had some good laughs over dinner. It had started to rain, for they had said another system was coming in tonight. We got a little wet getting back to the tent. By the time we got into the tent it was really raining. I had my little Radio on, and we were listening to some music and killing time we some small talk when the announcer stated that severe weather was moving in with high winds and heavy rain with hail and possible tornados. That is all we need. Well, about 20 minutes late it hit. I could hear it Coming from the sound of it hitting the other planes, and then BANG, it was there. It poured And the wind blew and folded our tent over and I stood up to keep it upright. It lasted like that For about 45 minutes and then let up some. The wind kept coming, but not as strong. We finally felt we could try and get some sleep about 1230 AM.

When we got up about 6AM we found that the people behind us had lost their tent. It was down and flooded. The other person next to us had gotten pretty wet. We got a some water under the Tent and some had leaked thru the floor, but we were able to stay dry. It was overcast and cool. That was okay, the rain was gone. The wind was down and it was a new day. We did the breakfast thing and hit the show again. Today we did some more looking at the new tech stuff out there. The new navigation software is outstanding. And the price is coming down.

We checked out some more planes. They also brought Glacier Girl the P-38 the brought up from about 270 feet below the Greenland ice. Just check this out.



Not a bad looking plane UH????? Oh yeah the girls look real good too.....

The air show started with the Stars and Stripes being flown in by the sky team of old folks. I think the are all over 60 years old. They have been doing this for 22 years at the show.



This is the guy I tried to get a good picture of at Reno last year during the air races. They landed the plane on the camper. Pretty neat. Then they took the plane off from there.

Wednesday we headed for home. With a tail wind I got to ROC, Rochester , NY in 4.4 Hrs of flying time. Great tail winds. Spent the night there with my brother Mike and we got home on Thursday about noon. 1.6 hours home. I burned 150 gals of 100 LL for an average of 9.2 Gal/ph. Not bad considering the bad head winds. The most costly fuel was ROC \$4.16 / gal. the least was at Oshkosh \$2.99 / gal. All in all, it was worth

it all. The cost and the rain and wind and Hail, did I mention Hail, Yes we got some on the elevators surfaces, they were tilted down with the lock in place and the wind was driving the hail in a horizontal plane and bang. It got them. Not to bad. The rest of the plane was fine. Some of the other planes with their Tails into the wind got the same thing.

See ya next year, and I will give you a report from the Reno Air Races when I get back in September.

The ACE Camp

by Don Taylor

The ACE camp was held Wednesday August 10th at the Franklin County Airport. We had to start flying Young Eagles early as I was the only pilot there. Heather got the hamburgers and hotdogs and put on the Barbeque at noon.

Thunderstorms were around in the afternoon but they kept far enough away so that we got all the kids and two adults in the air. I flew 34 young eagles.

There were about 8 adults with the group. They pitched in with all the cooking, made 6 ribs, etc. The big help for me was they did all the paperwork for the young Eagles and lined up the kids for each flight. All I had to do was fly the kids and sign the certificates!

Aircraft Wanted

Sunday, September 11, 2005

On Sunday, September 11 from 12 p.m. to 5 p.m., the Fair Haven Municipal Airport will be the site of Air Fair Haven. Activities will include aircraft displays, demonstrations, historical exhibits, food and craft vendors, and kids' activities. The Vermont Army National Guard maintenance facility located at the Fair Haven airport will hold an open house to coincide with Air Fair Haven.

Confirmations have been received from participating aircraft including a Cessna 182 Skylane, Piper Cub, Aeronca Champ, Cessna 172, and a 56 foot wing span motorized glider. Owners of other general aviation craft, balloons, and gliders are invited to participate on the ground or as part of a fly-over. Civic organizations and craft vendors are also welcome.

To sign up your aircraft, contact Cal Waitkus at (802)265-4988. All other vendors and exhibitors please contact Gordy Foster at the Fair Haven Chamber of Commerce, (802) 265-3855.

Want your wings? Want cheaper insurance? Want to be a better pilot?

Dick Ferno and Portland FDSO have planned some exciting FAA seminars in our area. They have been listed in the Calendar of Events. The information about these seminars is basically word of mouth unless you log on and register to the FAA website. Due to monetary constraints, they don't mail this info to us. I encourage everyone to log on for FAA emails about these events and pass along the word to internet challenged pilots. Dick Ferno can be reached at 802-433-6691 or at angus@innevi.com

Some of these seminars are beginning to fill up!

Calendar of Events

Aug 19-21	Wings of Freedom Tour, Massena, NY
Aug 19-21	EAA Northeast Fly-in Glens Falls Airport (GFL)
Aug 20 & 21	Adirondack Regional Airport, (SLK) Young Eagles Rally, Saranac Lake, New York
Sept 1	FAA Seminar Airworthiness Requirements South Burlington
Sept 3	FAA Seminar, Sport Pilot/Light Pilot Aircraft, Swanton
Sept 11	FAA Seminar, Basin Harbor Fly-in, Ops at Non-towered Airports
Sept 11	Air Fair Haven Fair Haven, VT
Sept 13	FAA Seminar, Learn about the Weather, Montpelier
Oct 18	FAA Seminar, Aeronautical Charts, Little known facts, South Burlington
Oct 19	FAA Seminar, Aeronautical Charts, Little known facts, North Clarendon

Check out www.flyins.com for all the places you would care to fly!

Check out www.faasafety.gov for seminar info and registration!

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