



CHAPTER
613

September 2003

www.eaa-chapter613.org



Dan Marcotte and his Formula I – Cassutt III M Racer

Views and News

By Bill Morelli

On The Cover – This photo was taken about one week before Dan was to truck his racer out to Reno and participate in the Air Races. The aircraft was built in Canada by a gentleman named Trevor Rafferty

Hobie Tomlinson continues his Flight Advisor column this month with “The First Flight” Starting on Page 4.

Scholarship Update – John Elgert provided the following update on some of Chapter 613’s scholarship recipients:

Kate Wheeler...2002 Mary Jane McGrath Scholarship winner. Earned her CFI-Airplane March 21, 2003. She is currently freelance instructing in California but hopes to be back in Vermont in the fall.

Derek Maroot... 2003 Mary Jane McGrath Scholarship winner. Earned his CFI-Airplane August 20, 2003. He can be found at North Ramp Aviation helping Nick Santo who was also his primary instructor. He will be going back to Lyndon State College in the fall.

Matthew C Zambarano...2000 Edmando A. Roberti scholarship winner Earned his Private Pilot Certificate July 28, 2003 He flew from North Ramp Aviation with Terry Griffin as his primary instructor.

Russell Pratt...2001 Edmando A. Roberti scholarship winner Has a check ride scheduled for September 9, 2003 for his Private Pilot Certificate.



YOUNG EAGLES

by
Donald Taylor

We have 13 pilots reporting Young Eagle flights so far this year for a total of 374. We have surpassed our goal for 2003 by 74. Maybe we can make it 400 by Dec. 17th

Walter Houton	1
Peter LaFramboise	42
Geroge Godin	11
Donald Taylor	183
Geroge Coy	4
John Butterfield	35
Mike Pecue	20
John McNerney	10
Bill Yendzreski	40
Chuck Robitaille	3
Frank Gibney	5
Bill Morelli	5
Steve Couzelis	32

Saturday, Sept. 30

Donald Taylor flew 17 Young Eagles in Bennington, but they took the credit for their own chapter # 1375, which is a new chapter and the first time flying Young Eagles.

From The Young Eagles Office

Can it be september already?

There are now just three months left for the Young Eagles program to reach our goal. It looks very promising, but we can't afford to

come up short. We've come too far already. With nearly 970,000 Young Eagles registered, we are on final approach. But as the old saying goes, "The flight isn't complete until the airplane is tied down." So we can't relax now. There are still plenty of Young Eagles left to fly and we need to average nearly 10,000 Young Eagles over each of the next few months to complete the goal. Now is a great time to take advantage of the weather and fly a few more Young Eagles.

Adirondack Regional Airport

Saranac Lake, NY Saturday, August 30 was well attended by pilots and planes from Franklin County Airport. All planes were put on display.

J3 Cub, RV-6, DeHavilland Chipmunk, Yak 52, Yak 52TW, Citabria, Zenith Zodiac and an IAR-823.

There were some good military planes also.

C-47, TBM Avenger and a T34 Mentor

They had a very large display of RC model airplanes and they flew all day.

Sunday, August 31, we were asked to come over and fly Young Eagles. Steve Couzelis and I went over and flew 31 Young Eagles.

Donald Taylor	22
Steve Couzelis	9

Safety Tip

What is the most dangerous part of an airplane? The propeller. Never move a propeller unless you know what you are doing. Never walk in front of an airplane, always in back of it.

Upcoming Flying Activities

Berlin Community Day

Knapp State Airport – Sept 27th at 09:00
Fly in Breakfast & Young Eagles Rides

For details contact
Greg McGuire at 229-2529

Young Eagles Pilots Needed for this event!!!!

Contact Donald Taylor
802-868 3809

Rutland Vermont

October 4th and 5th

Chapter 968 Leafpeepers Fly-In
Breakfast, Rutland State RUT Contact
Information: Lee Morelli 802-235-2808 Email
Address: vtflyer@vermontel.net

Chapter 613 Potluck

Shelburne Airport
October 26th at 13:30

Bring a dish to share with others

Come and enjoy good food and company for the Chapters first get together of the season.

Breakfast / Lunch ???

We are always looking for any reason to fly somewhere. How about a flight down to Glens Falls (Floyd Bennett Memorial – (GFL) for breakfast or lunch?



Flight Advisor Corner

by Hobie Tomlinson

The **FIRST FLIGHT!**

When I started this series on “first flight, I thought a couple of articles would complete the task. I have to admit, I was surprised but the amount of preparation required to properly conduct a first flight. It is a very complex task, even in what would seem to be a “simple” airplane. There in lies the trap, for even if the aircraft is relatively uncomplex, the task of flying it for the first time is not. Within the last few months there have been test flight fatalities in both a new type business jet and a new type ultralight, so even the professionals are not immune to nasty surprises! With that in mind and knowing that the best defense is a good offense, let’s work through a “**First Flight**” profile.

The assumptions at this point are that we have completed all the ground testing and preparation steps, which have been discussed in the previous articles, and that all deficiencies have been corrected. Starting a **first flight**

with any known problems is a giant “**NO – NO!!!**”

The weather should be clear & calm, preferably early morning, airport personnel notified of the pending event, and your ground observer (Radio Angel) present with the required equipment (two way radio/extra power source & high powered binoculars).

The flight Profile for our first flight is as follows:

Briefing

Takeoff/Climb

Control Effectiveness

Power Effects

Near Stall Investigation

Change Flap Setting (if installed)

Practice Approach & Go Around

Actual Approach & Landing

The Briefing should be with your ground observer. The airport ops manager and tower chief, or shift supervisor should have been previously briefed and should be notified that “today is the day”.

The Briefing should include: The location of the ground observer during the flight, the radio frequency to be used, a functional test of the radios, a review of the “script cards” for the flight, (with both the ground observer & pilot having their respective copies in the correct sequence), the types of problems which may be encountered & a review of the procedure for each. Sample “Script Cards” are available from a Flight Advisor or the EAA.

It is important that the ground observer use a calm voice on the radio at all times & is very observant of the flight. The ground observer will continuously monitor the radio and report anything unusual. The suggested location for the ground observer is in the tower cab at controlled airports, or ½ way down the active runway at uncontrolled fields.

The Takeoff & Climb profile will be different than normal in order to stay within the “glide cone” for the airport. The glide cone is a cone of airspace centered over the airport, wide end at the top and point on the airport. On calm

days (which we should have) the cone is vertical, with wind making it tilt into the prevailing wind. The aircraft is capable of a power off return to the airport from anywhere within the glide cone.

As the primary problem that may be encountered is poor engine cooling with outright engine failure due to fuel starvation a close second, staying within the glide cone is important. (*You did practice some forced landing maneuvers in a similar type airplane within the last 30 days, didn't you?*) The procedure to stay within the glide cone is a straight out climb to 400' AGL, then a continuous 180-degree climbing turn to downwind. If flaps are used for takeoff, leave them in the takeoff position until out of 2000' AGL.

The ground observer should record the actual takeoff distance, report the runway ½ point and report anything abnormal.

Once established on downwind we will continue a full throttle climb to 5000' AGL, while circling the airport to remain within the glide cone. A typical light aircraft will glide about 1.5 miles per 1000' of altitude loss, so the radius of the glide cone at 5000' AGL will be approximately 7 miles. To be conservative stay within 5 miles @ 5000', or spoken another way, the distance from the airport in miles should not be greater than your height in thousands of feet AGL. When viewed from the cockpit, the airport will always stay within a line of sight that is less than 45 degrees from the vertical.

Once established in the downwind climb, we have entered the glide cone. Prior to the first turn we are "at risk" of an off field landing, so do not delay the turn above 400' AGL. We can now monitor the engine, while leaving it at full throttle. Look at oil press., oil temp., fuel press, and cyl head temp. They should be green or yellow & steady. Anything at or above the red line, abort the mission & land. Remember if something goes wrong, FLY THE AIRPLANE!!!

If you have a new engine, expect it to run hot for approximately 20 minutes. After that CHT will drop approx. 30 degrees and oil temp

will lower. It is important for engine break-in to stay at full power until this occurs, climbing or turning to control airspeed. On faster aircraft, do not let airspeed increase above 140 knots under any circumstances. This will come on later flights and is the area where flight control issues start to surface.

Control Effectiveness checks are next and can be completed during our climb to 5000' AGL, beginning once we are above 2000' AGL. First trim the aircraft for "hands off flight" If unable, note what is wrong on the script card & radio it to the ground observer. Then check flight controls for proper function in the following sequence, rudder, ailerons, elevator nose down & elevator nose up. In each instance make a small single direction input & observe. The rudder should have a linear force gradient and yaw the airplane with a slight roll. The ailerons should produce roll, having a positive & linear force gradient with minimal adverse yaw. Elevator forces should be linear & evenly matched with the control wanting to return to the trimmed position. Look for excessive binding or freeplay in the controls. Does the plane fly like a plane?

Power Effects are next. We should now be at 5000' AGL and we will continue to operate in a 4000' thru 5000' altitude block. With the aircraft trimmed for level flight, slowly reduce power to idle, observe the pitch change. Place in normal glide attitude & note the control force, then trim it out. Now slowly increase power to full throttle, observe the pitch change and override to maintain the correct climb attitude. Note the control force, then retrim.

Near Stall Investigation is next. In this test we will start at the slowest of 140 kts or cruise speed, repeating the control effectiveness checks described above. We will then slow down in 5 kt increments, repeating the checks at each increment, staying within our 4000' thru 5000' block altitude & our glide cone. The bottom speed is 1.1 times calculated stall speed. **DO NOT** stall the airplane that comes later. If you get any

pre-stall warning, or anything abnormal happens, discontinue the tests and use that as your minimum in-flight airspeed. One little caution item is that pre-stall buffet may be non-existent. A stall can be abrupt & occur with little or no warning; possibly causing the aircraft to depart controlled flight with an abrupt yawing or rolling motion. (*You did practice stalls within 30 days in a similar type aircraft, didn't you?*)

Change of Flap Setting is next. Slowly extend the flaps to the first increment. If rolling, yawing, or an abnormally high power requirement occurs, return the flaps to the previous setting & discontinue the tests. Continue this through all flaps setting, performing control effectiveness & near stall investigations at each setting. Remember you altitude & position awareness, staying within our block altitude and glide cone.

Practice Approach and Landing is next. Beginning at 5000' extend the flaps to the landing configuration. Now establish a 500-fpm rate of descent at 1.3 times calculated stall speed, or 1.3 times the minimum in-flight speed determined by the previous near stall investigation. Trim to hands off control pressure. We will now practice a landing on a pretend runway @ 4,500' AGL.. Slowly reduce the power, while increasing pitch attitude to fly a "Zero vertical speed". Slow to 1.1 times calculated stall speed or the minimum in-flight speed determined above. If there are no surprises, we are ready to return and land. We can return to clean configuration, increase our speed (not to exceed 140 knots) & head back.

Actual Approach and Landing is here! We want to set up a high, wide downwind to give us more time, remembering to stay within our glide cone. Staying within 1 mile @ 1,500' AGL should be sufficient. Drawing out the distances on a chart & flying them for ground reference familiarity before the flight will help lower workload at this point. The ground observer should also sound the alarm if the flight path is straying too far from the field.

Complete our landing checks, then set up the same 500-fpm descent @ 1.3 V_{so} that was practiced above. Adjust the aircraft ground track to allow a stable descent profile. Approaching the runway, slowly reduce the power & pitch to a slight rate of descent, approximately 100-200fpm. Remember, we do not want a full stall landing on the first flight, but rather want to touch down at 1.1 times V_{so}. This will prevent initially exploring stalling characteristics very near the ground! The best analogy is a "Glassy-Water" landing for you seaplane types.

Our ground observer should monitor our approach path, give est. altitude callouts during the roundout & flare, and advise the ½ way point on the runway. If not on the ground at the ½ way point of the runway, go-around and set up another approach.

So that completes our **First Flight!** As accident records show that most mishaps occurring during the first 10 hr of flight on a new aircraft are caused by pilot-induced factors, adequate preparation & precautions will go a long way toward reducing the risks, (remember risk assessment?) The goal of flight test preparation is always to minimize the risk, so do it like the pros do & the odds are you will get to enjoy retirement

I know this got lengthier than I would have liked, but I felt it was important not to "split" this particular article. So as the "Good Book" says, "Fools despise knowledge and instruction." In the mean time, **Thing Right to Fli Rite!**

Congratulations

Chapter 613 member **Walter Fedorishen** received his private license on July 03

Walter owns a Cessna 150 and is based at Franklin County Airport.

HOW BAD DO YOU REALLY WANT TO GO TO OSHKOSH?

PS
with your spouse.

by: Bill Yendrzeski

Yes, this is the question we have to ask ourselves when we are taking our spouse with us on a flight. The question is, do we fly, or do we drive the car?

This question must be answered for the following reasons.

Bumps. What we call turbulence.

White fluffy stuff. What we call cumulus clouds.

Rain. What we call rain.

So, we now have to check the weather daily, at least two weeks ahead of time. This is done on a daily basis because the spouse wants us to make sure it will be good to go. We would normally check the weather one or two days before the flight. This I do faithfully every day to make sure the weather is looking good. The more I look at the weather the more unsure I become of my judgment skills of whether to go or not to go. I began to question myself, and wonder if the weather will hold for the whole flight. This is very stressful needless to say. But as the pilot, and the spouse who's going with you, you have to make these judgments. Most people do not realize what the pilot must go through to prepare for a flight with the spouse in the plane.

It's Thursday now two days before we will make our first attempt for Oshkosh Saturday is not looking to bad at this time. But when I checked the weather on Friday, it is not looking to good. Sunday is a question mark already. Saturday morning when I get up and I find the weather is not looking good to go today either with thunder storms all over the place for the whole day. So we will wait for Sunday. Sunday morning arrives and I'm up at 5:30 AM to start

checking the weather. 40 knot head winds, lots of rain and possible thunderstorms. This looks like it will be all day and into Monday morning. I run the numbers and find that it will take me 3 hours and 18 minutes to get to Rochester, NY. That is pushing the limit on my plane for an IFR flight. In fact this is beyond my personal limits, where I like to keep it to 2.5 hours for IFR. I look at Rochester to Flint, MI and I find the leg time will be 3 hours and 56 minutes for the flight there. This I cannot do. The flight from Flint, MI to Oshkosh would be three hours and 10 minutes with the current head winds. This is beyond what I can do. The conditions are just not going to work.

The bottom line is this, if you want to camp out with your plane you have to get to Oshkosh on Sunday afternoon, or you will be on the other side of runway 9 in never never land. I look at Monday and the weather looks good. What to do now? If we get there on Monday we will most likely be on the far side of the field like I mentioned before. This means you have to take the bus to the showers and this is a real pain. That is if there are any campsites left to park.

The decision is made, the spouse and I jumped into the truck, which is loaded with all the gear that we were going to put in the plane. We gas up the truck and we're on our way. That is how bad I really wanted to go to Oshkosh. The decision has been made we will drive.

Monday afternoon around 4 PM local time we arrive at Oshkosh. We get in line with all the other campers and wait our turn to pay to get in. We finally get our tickets and make our way into the campground to try and find a place to set up our tent. This place is packed. Campers and motor homes are everywhere. We drive around for 15 to 20 minutes looking for a spot for our tent. The only places that are open are way out by the highway, which has all the traffic noise at night. This is not a good place to go. We finally find an open spot not too far from the main Barn Store. Unfortunately we are in the middle of the generator area with the

motor homes. Oh well, this will do just fine because we will not have to walk all that much to get to the show area. We set up the tent and get everything in place and then the go out for dinner. We drive by the end of Rwy 9, the place is packed with planes. I do not see an open spot anywhere. Dinner was great. When we get back we hit the showers and turn in for the night.

The generators are running, but they put me to sleep with no problem. The spouse however has a restless night. She is not a pleasant person in the morning.

For the next two days we enjoy the show and see also sites. The new technology for aviation is unbelievable. There is just too much to try to tell you in a short story. Just a quick brief of what is there for your small handhelds. Not only can you get a moving map now, but you can also get the entire United States approach plates on a small flash card For your PDA. You can also get to an artificial horizon HI, and you can also get three-dimensional terrain picture graphics. You have to see this stuff to believe how good it really is. The new aircraft are out of sight. Especially the Cirrus planes. They are all going to glass panels. Lancair, and Diamond. I really like the Diamond because it has a 750 LB + pay load with full fuel. The Cirrus is about 650. The new twin diesel from Diamond is really great. 11.8 g/HR both engines, with 900 lbs pay load with full fuel. The air shows were great even though we were rained out twice on Wednesday.

Since we drove out to Oshkosh we decided we would leave on Thursday to return home. We had a good time, and I'm glad we both went together. I enjoy having my spouse with me on these flights because I enjoy her company while I'm flying. So just remember fellow pilots what we have to go through to enjoy the company of our spouses.

Before I forget, my spouse's name is LEE. And I guess it would not be good of me to end this story without the most important thing I can say

to her.

Have I told you lately how much I love you and I'm truly glad that you will fly with me even with all your fears of the bumps, the white fluffy things and all that rain.

Thanks again for trusting me and loving me.

Your pilot.

News From EAA's e-Hotline

Sport Pilot Makes Big Splash in Popular Mechanics

The cover story in the October 2003 issue of Popular Mechanics includes an exciting, seven-page feature on sport pilot and light-sport aircraft by Norman Mayersohn, a frequent visitor to EAA AirVenture Oshkosh. It includes



many photos of aircraft that could be part of the light-sport aircraft fleet when the rule is

finalized in the near future. In the article, EAA is recognized as the "expert" for these new categories, a leadership role the organization has maintained since the proposal's conception.

Teledyne Mattituck Offers 100 hp Continental For Experimentals

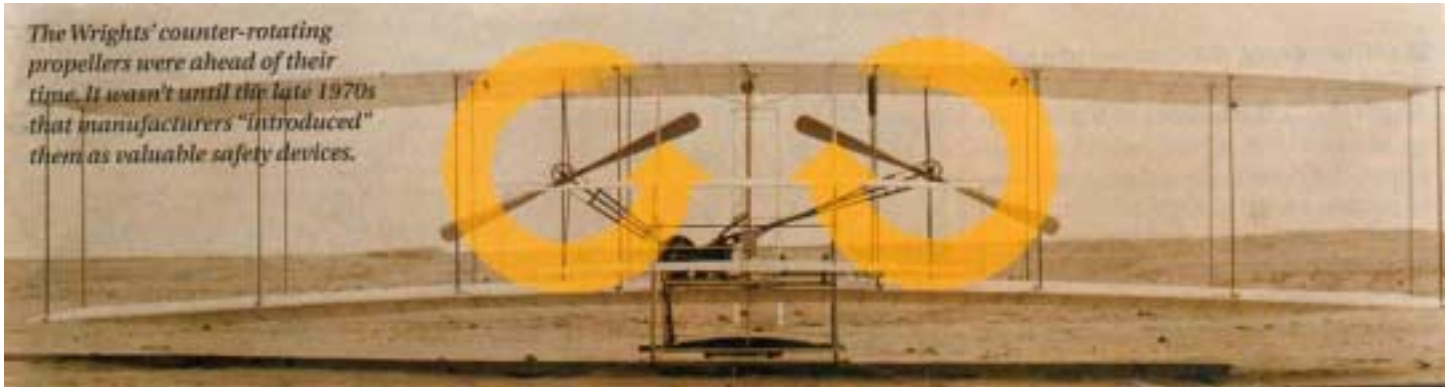
Teledyne Mattituck Services, Inc., an aftermarket supplier and overhauler of piston engines for general aviation, has a extensive program for experimental homebuilders. The TMX Experimental Engine program offers homebuilders a variety of engine configurations for their projects.

For Wittman Buttercup and Tailwind, Hatz CB-1, Cassutt Racer and Cub Replica builders, the Continental 100 HP TMX O-200 Carbureted engine might be just the ticket. Each engine is assembled with all new, FAA PMA-approved components and come completely assembled and tested for \$14,500, configured for fixed pitch props. TMX engines are shipped with Slick Mags and Harness, Precision Carburetor, Bendix fuel injection or FADEC, Magna-Flight lightweight starter & ring gear (where applicable), spark plugs and fuel pump. All engines are test-cell run and inspected prior to shipment. For more information, visit www.mattituck.com

DID YOU KNOW

“The Wright Power”

Submitted by Donald Taylor



Although propellers have been used in previous designs, technical data quantifying their performance was absent. Airscrews, they were called. Visits to the Dayton Public Library showed that this data was almost useless. The Wrights had to develop their own formulas for optimal propeller performance. They made another seminal discovery: Propellers were simply rotating wings. The brothers figured they'd need 90 pounds of thrust to make their 605 – lb Flyer airborne. To achieve that value, the propellers were given eight – and – half-foot diameters, carved by hand (using hatchets in the early steps) out of three layers of spruce, laminated, covered with canvas and then painted. The blades were twisted so as to make them 66 percent efficient. The proper amounts of chamber for each propeller section were derived from the information the Wrights used in designing the Flyers wings. –

Why two propellers? To achieve enough thrust. Why the counter rotating propellers? The Wrights knew from the start that propellers created torque and turning effects. To cancel them out, one propeller drive chain was twisted making the propeller turn in different directions and turn slowly. The Wrights knew that slower turning propellers were more efficient than faster ones.

The Wright brothers knew about propeller torque and were the first to use counter-rotating propellers.

Basin Harbor Fly-In by Marge Butterfield

There was a record turnout for the annual “Wings, Wheels and Keels” at Basin Harbor. This event is sponsored by the Aero Club of New England. There were a lot of EAA Chapter 613 members present, so it was good to see everyone and catch up on all the news. **Norm Sears** won second prize in the spot landing contest. Congratulations Norm!

President, **Terry Griffin**, called a meeting at Basin Harbor. Following are the minutes of the meeting:

- It was voted to spend up to \$1,000.00 for 4 tables and 36 chairs to be used at the pancake breakfasts and other events. **Donald Taylor** will look into this further before purchasing the tables and chairs.
- **Terry Griffin** announced that **George Chaffee** donated a trailer to the Chapter. We will have to build an enclosure around it. It will be big enough to carry the stove, tables and chairs. **Donald Taylor** volunteered to head up this project. **Don Nowakowski** and **John Butterfield** will be helping also. Of course, extra hands are always needed. If anyone would like to help out on this project, please call **Donald Taylor** at 868-3809.
- It was voted to have all the pancake breakfast on Sundays. They will be starting on the third Sunday in November and run each month through the third Sunday in April. As usual, the November, December and January breakfasts will be held at the Shelburne Airport and the February, March and April breakfasts will be held at the Franklin County Airport.
- **Mary Harrison** was present at the meeting and everyone was glad to see her on the road to recovery after her heart surgery.
- The next meeting will be at the Shelburne Airport at our annual potluck in October.





More



Basin

Harbor



EAA CHAPTER 613

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FIRST CLASS MAIL



September 2003

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