



CHAPTER 613

January 2004

www.eaa-chapter613.org



Upcoming Events

January 18th (Sun) – 09:00 – Chapter 613 Pancake Breakfast – Franklin County

January 21st (Wed) – 14:00 – Williston Library is hosting a former B17 pilot as a speaker

January 24th (Sat) – 10:00 - Chapter 613 tour of the Pratt & Whitney facilities at Plattsburgh International Airport – Need a head count. Contact John Butterfield at 802-878-6337 or e-mail at Airbear@surfglobal.net

building or restoring. When I receive this information back, I will compile a list of who is doing what.

KEEP IN MIND – This list will only be as good as the data that goes into it. Please reply so other Chapter members know where our club resources and expertise are.

December Minutes

By Marge Butterfield

The Shelburne Airport was filled with Christmas cheer for the pancake breakfast on Sunday, December 14th, thanks to **Mary Harrison**. Mary brought in Christmas decorations and music. The tables were adorned with red and green tablecloths and festive plates and napkins. In addition, Mary had also baked a ham, which was delicious.



John McNerney helped with the making of blueberry and/or cranberry pancakes. Following the breakfast, a meeting was called to order by President, **Terry Griffin**, at 10:30 a.m. The minutes are as follows:

- Thanks were extended to **Donald Taylor, John McNerney, Dave and Mary Harrison** and **Marge Butterfield** for setting up for the pancake breakfast.
- Thanks were also extended to the cooks, **Mary Harrison** and **John McNerney** for the fantastic job they did in preparing the breakfast.
- **Moe Boisvert** and **Chuck Robitaille** volunteered to cook for the next

Views and News By Bill Morelli

NOTE: January 18th Pancake Breakfast has been moved to Franklin County Airport. (Shelburne Furnace is not working)

On The Cover – Photos from the December 2003 Pancake Breakfast at Shelburne Airport.

Hobie Tomlinson continues his series in the “Flight Advisor Corner” starting on page 4. This month it’s Aircraft Upset Recovery” continued from last month.

Treasurer Note: Keep in mind when you send in your checks for membership renewal that we have a new Treasurer for 2004.

Send checks to: Steve Couzelis
9 Pine Harbor Road
Milton, VT 05468

Builder and Restorer Profiles – On page 8 is a questionnaire with regard to what you are

pancake breakfast scheduled for Sunday, January 18th from 9:00 – 11:00 a.m.

- The Secretary's Minutes were accepted as printed in the December newsletter.
- The Treasurer's Report was presented by **Dave Harrison**, which covered the period from November 16, 2003 through December 14, 2003. There is a current balance of \$7,669.59 in the general account and a balance of \$985.96 in the *Edmando Roberti Scholarship Fund*. The present value of the Mary J. McGrath Scholarship Fund is \$29,163.89. The Treasurer's Report as accepted as presented.
- **Terry Griffin** announced that the three scholarship applications will be going out at the first of the year. Terry has also received paperwork from headquarters on the EAA Air Academy camp.
- Young Eagles Coordinator, **Donald Taylor**, announced that our Chapter has given 489 Young Eagle rides so far this year. Eleven more and we will reach 500!
- **Donald Taylor** brought in the beautiful leather jacket he received from headquarters in recognition of his superb achievement in giving 1047 Young Eagle rides. Congratulations Donald!!
- **Steve Couzelis** read a thank you note that Jan had written thanking our Chapter for the flowers it sent to her. Jan has had surgery and Steve said that Jan is recovering well. Best wishes for a speedy recovery Jan!
- **John Butterfield** and **Bob Sterling** have arranged a tour of Pratt & Whitney at the former Plattsburg Air Force Base. The tour is scheduled for Saturday, January 24th. See John's article on this in the newsletter.
- **Jim Beams** had a couple ideas for the newsletter. One is to feature a member each month (by way of a photo and a short Bio). Jim agreed to take on this

project. **Terry Griffin** advised that a few years ago, **Rich Luhr** had started compiling information on this. Terry is going to check with Rich to see if he still has any of the information on the computer. The other feature Jim suggested is a list of builders in the Chapter and perhaps a feature article each month. See the questionnaire attached to the newsletter. It would be helpful if all members who are building and or restoring any project complete this questionnaire and return it to our newsletter editor, **Bill Morelli**.

****50/50 Raffle****

When it was time for the 50/50 raffle, everyone held their breath. **Marge Butterfield** showed her orange raffle tickets (there were also blue raffle tickets sold to members) and someone quipped "If it's a blue ticket, we're done for!". As luck would have it, **Marge Butterfield** was again the lucky winner and collected \$20.00 amidst a clamor of groans. (She has decided to buy only ONE raffle ticket at the next pancake breakfast.

**** Membership Renewal ****

It's time to pay your 2004 dues! Page 9 of this newsletter is a membership application so that members can renew their membership by mail. If you plan to pay your dues at the January pancake breakfast, please still fill out the application and bring it to meeting. The application contains a lot of information to keep our database current. Thanks. The dues for 2004 were due January 1st.

Flight Advisor Corner



by Hobie Tomlinson

AIRCRAFT UPSET RECOVERY (continued)

Last month we left our article on upset recovery, after a discussion of the aerodynamic concepts involved in aircraft upset recoveries. This month I would like to pick it up with a brief review of aircraft stability and the affect that Center of Gravity (C.G.) changes have on aircraft performance and stability.

The aircraft C.G. is the point on an aircraft where all of its weight can be considered to be concentrated. Its is also the point thorough which all four of the in-flight forces (Lift vs. Gravity and Thrust vs. Drag) act, and so can be thought of as the “pivot Point” around which the aircraft will move in flight. This location is defined in inches aft of a data point arbitrarily chosen by the manufacturer. This data point could be the aircraft firewall, the front of the propeller spinner, or just a point in space defined as inches fwd of a known aircraft reference point. The C.G. is also defined by a % of the Mean wing aerodynamic chord or MAC, although engineering people use this more than operators do.

When lift is changed as a result of elevator input this new lift acts through a point on the aircraft known as the aerodynamic center. The aerodynamic center of an aircraft is always aft of the aircraft C.G., through which the “trim lift” (the lift being developed in steady state trimmed flight) acts. This new lift aft of the C.G. creates a “restoring” force that wants to return the aircraft to its “trimmed” condition, hence pitch stability.

Moving the C.G. forward increases an aircraft’s stability, but decreases it performance. This is because the horizontal stabilizer of an aircraft produces downward lift in its function of producing aircraft stability. When the aircraft C.G. moves forward, the download on the tail increases. Because the wing must produce lift equal to both the aircraft weight plus the tail download, it senses a “heavier” aircraft. The additional lift required produces additional drag, thus reducing aircraft performance. The forward C.G. is limited by elevator authority and performance considerations. When an aircraft is flown *out of forward C.G.*, it will have insufficient elevator authority, which usually shows up as

inability to properly “flare” the aircraft during landing. It may also prevent rotating the aircraft early enough to achieve “optimum” short field performance. This condition is quite critical for tailwheel aircraft, as they become too light in the tail and very susceptible to nose over during ground operations.

Moving the C.G. aft increases an aircraft’s performance, but decreases its stability. The performance is increased because an aft C.G. requires less tail download. The wing now “senses” a lighter aircraft, requiring less lift & producing less drag. As the aircraft C.G. moves aft toward the aircraft aerodynamic center, the stabilizing force produced by the tail is reduced. The aircraft has increased elevator authority, requiring less elevator displacement to produce the same results! The pilot now *perceives the controls to be lighter*, increasing the workload of flying and the possibility of “overcontrol”. Because most of our flying and all of our training is typically done with aircraft loaded near the forward C.G., we may not be prepared for the significant change in aircraft handling qualities which happens with an aft C.G. loading. This is especially true in 6 passenger light aircraft, i.e. Cessna 206, Cherokee 6 & light Twins. Aircraft loaded at aft C.G. are susceptible to being unintentionally stalled at low speeds and overstressed at high speeds due to overcontrolling. They also become more susceptible to Pilot Induced Oscillation, or PIO.

Pilot Induced Oscillation or PIO is the first aircraft upset recovery we will discuss. As stated above, aircraft loaded toward their aft CG are most susceptible to PIO. PIO happens when something (called a “trigger” event) causes the aircraft to be displaced from its steady state flight condition. The pilot then overreacts with a quicker and larger control input than is appropriate for the situation. This causes the aircraft deviation to immediately reverse and grow in magnitude. The process quickly repeats with each cycle growing in magnitude. This can happen to any type/size aircraft, even with experienced pilots. One of the space shuttles was nearly damaged on landing by PIO and a few years ago a passenger on a corporate jet in Europe was killed when PIO was experienced while he was out of his seat. Typical “trigger” events might be an autopilot that disconnects with the elevator “out of trim” or wind gust during landing.

Like so may things, quickly and correctly identifying the problem is 90% of the recovery

process. During PIO, the pilots overaggressive control inputs are defeating the natural stability of the aircraft. The solution to this phenomenon is deceptively simple, but takes strong self-discipline to implement. It is to just “let go” of the controls and let the natural aircraft stability go to work restoring stable flight. As in this event, **the pilot IS the problem**; releasing or “freezing” the controls removes the problem! As stable flight is restored, *reduce control aggressiveness by reducing control-input size and speed.*

An Aircraft loaded to its aft C.G. limit typically has low to almost neutral stability. While transport category aircraft are designed to be “high stability” aircraft, aerobatic/fighter aircraft are intentionally designed with low stability to refine their maneuverability. Low stability aircraft have improved maneuverability at the cost of high pilot workload.

Aircraft loaded out of aft C.G. very quickly become unstable. This is a very dangerous condition, as the aircraft becomes “divergent”! In this condition any event, including control input, causes the aircraft to immediately start increasing the divergence, rather than returning to stable flight. **This condition is exceptionally prone to PIO!** In this state “control force reversal” occurs, that is any nose up pitching must be controlled with forward elevator pressure because of the divergent tendency of the aircraft and vice versa. This is the opposite of a stable aircraft’s control force, in which nose up pitch is controlled with aft elevator pressure because of the aircraft’s natural tendency to return to its “steady state” and vice versa. Any airborne aircraft, which is unstable due to faulty loading, load shifting, or the flight testing of a new/unstable design must be constantly flown to prevent PIO! It requires reduced control aggressiveness by reducing control-input size and speed! Retaining control of an unstable aircraft produces an extremely high pilot workload, leaving precious little time for anything else other than flying the aircraft!

The **Human Factors** involved in an aircraft upset are a substantial part of the problem! These natural human reactions to the event have to be overcome by **knowledge, training and strong self-discipline**. The first of these issues is the “startle factor”, i.e. **surprise**. This will be followed almost immediately by **denial**, - “this isn’t happening to me”! Following these two emotions will be an **“adrenaline rush”**, the fight or flight response. Increased pulse rate, tension, very

focused, i.e. **“tunnel”, vision & thinking**, concentrating on the event & blocking out the world around you – known as **“soda straw effect”**. Lastly comes the **need to do something/anything** followed by grabbing a wrong course of action with a strong **tendency to stay with that wrong course of action**. The brain now only accepts information, which will support this wrong course of action while blocking out any information which would invalidate it.

As stated above, the human factors can be overcome by knowledge, training and strong self-discipline. Taking an initial action can break the factors of **surprise & denial**. The best one to start with is simply verbalizing /announcing the event. This is as important in a single pilot operation as with a two pilot crew, because the use of a “trigger” word breaks the surprise/denial stage and starts the recovery process. Samples might be *Stall, Wake-Turbulence, PIO*, etc. This starting of action also tends to reduce the effects of **adrenaline rush & soda straw effect**. It is important to concentrate on maintaining/regaining your orientation. What attitude is the aircraft in, which way is it moving & how fast, where is up & what is the shortest way to get there?

Now the recovery process starts. First **verbalize the event**; next **reduce automation**, disconnecting the autopilot if engaged. It might well be the problem. **Use primary controls as required, up to full deflection**. In normal flying we seldom use full control inputs, but as with aerobatics, upset recoveries very often involve full control inputs. Verbalize what you are doing and why, even to yourself. This tends to normalize the cockpit. If you are test flying with a “ground angel” on the radio, speak in normal tones. Shouting only bumps the adrenaline rush & soda-straw effect – making matters worse! Avoid escalating the situation and stay focused on a solution. This fosters creativity keeping the mental channels open for information that will lead to a solution/recovery. **Seek alternate control strategies** as appropriate.

This looks like a good place to break for this month. Next month we will continue this series with unusual attitude recoveries, upset recoveries, recovery blockers, control jams/failures and hopefully a summary. As the Good Book says, Wisdom is the principal thing, seek wisdom & understanding! So until next month **Think Right to FliRite!**



YOUNG EAGLES

by
Donald Taylor

We had a great year for Young Eagles in 2003. I want to thank all ground crew and pilots for their support.

There were 16 pilots reporting Young Eagle flights in 2003, for a total of 506. We surpassed our goal of 300 by 189. Chapter 613 flew 489 because 17 flights went to Chapter 1375 .

| | |
|-------------------|-----|
| Walter Houton | 1 |
| Peter LaFramboise | 53 |
| Gorge Godin | 11 |
| Donald Taylor | 231 |
| George Coy | 4 |
| John Butterfield | 35 |
| Mike Pecue | 33 |
| John McNerney | 10 |
| Bill Yendzreski | 42 |
| Chuck Robitaille | 5 |
| Frank Gibney | 5 |
| Bill Morelli | 5 |
| Steve Couzelis | 34 |
| John Elgert | 2 |
| Loren Shaw | 32 |
| Ron York | 3 |

Thank You from the Young Eagles Office

On behalf of Michelle Kunes, Crystal Fitzwater, Sherry Harris and Kathy Kracht, we want to extend our sincere appreciation for all you have done to make sure the Young Eagles Program met and exceeded our initial goal of flying 1 million young people.

Through the years, your support and suggestions have helped shape the program. Your dedication to high standards and safety has no rival. You can be proud of what your

organization has accomplished. You should know that there is no other aviation organization that could have established such a program and had the determination to make it a success.

We look forward to working with each of you in the future as we continue building aviation's future. As we transition from a celebration of the past 100 years of flight to the dawn of a new century for aviation, the Young Eagles program is poised to be a catalyst for fueling the dreams of flight for generations.

We have done what many thought impossible. Our goal has been accomplished in a manner consistent with EAA's can-do spirit and sense of community. No matter what else can be attributed to the program, we can take great satisfaction in accomplishing our goal and hopefully changing a few lives for the better along the way.

Steve Buss,
EAA Young Eagles Executive Director.

Safety Tip

The way to fly safely at non-towered airports is to react.

- Radio –** Listen to the automated weather observations if available and the common traffic advisory frequency (CTAF) for airport information and traffic advisories.
- Eyes –** Use Them! Look for other traffic. This is the top priority when operation in the vicinity of a non-towered airport. Use landing lights so other pilots can see you more easily.
- Announce –** Report your position and intentions using standard phraseology.

Courtesy – A little courtesy will smooth out most problems. The “Me First” attitude can be dangerous and rude.

Traffic Pattern–Follow the recommended procedures. Prepare before you fly. Research the necessary information about your departure and destination airports.

Did You Know

Flying Before The Wright Brothers

Does the name Richard Pearse ring a bell? It does if you are from New Zealand which claims Pearse, a local farmer, beat the Wright brothers into the sky by nine months.

Pearse’s bamboo monoplane made a text book takeoff from his South Canterbury farm on March 31, 1903 and while the plane had an elevator and aileron like surfaces, it proved impossible to control.

Local historians say Pearse’s flight ended on top of a 12 ft. tall hedge. When the Wright brothers solved the control problem with their wing warping technique, Pearse fell off the pages of history.

His design however, had some modern elements including the tricycle landing gear.



Young Eagles Rally

By Mike Pecue

We are going to be scheduling a Young Eagles Rally sometime in the Spring at MPV. I have been in contact with the Barre Town School, and they are doing an aviation piece and would like the entire 8th Grade to have Young Eagle rides. (not sure of the totals 100+). I will be in touch when I find out the dates.... prob. in late April or May..

The following frequency chart is an excerpt from the Pilots Pocket Handbook by Art Parma and is copied by permission.

(Clip and Save)

| COMMUNICATIONS AND NAVAIDS | |
|----------------------------|--|
| 118.0 - 121.4 MHz | Air Traffic Control |
| 121.5 MHz | Emergency, ELT signals |
| 121.6 - 121.9 | Airport Ground Control |
| 122.00 MHz | Enroute Flight Advisory Service |
| 122.025 - 122.075 MHz | Flight Service Station FSS |
| 122.1 MHz | FSS Receive Only with VOR |
| 122.125 - 122.175 MHz | FSS |
| 122.2 MHz | FSS Common Enroute Simplex |
| 122.225 - 122.675 MHz | FSS |
| 122.7 MHz | Unicom, Uncontrolled Airports |
| 122.725 MHz | Unicom, Uncontrolled Airports |
| 122.750 MHz | Air to Air, Private Airports, non-public |
| 122.80 MHz | Unicom, Uncontrolled Airports |
| 122.85 MHz | Air to Air, Private Airports, non-public |
| 122.90 MHz | Multicom at Airports with no Control Tower or FSS, Temporary Emergency |
| 122.925 MHz | Multicom Forestry Service |
| 122.95 MHz | Unicom at Airports with Control Tower |
| 122.975 MHz | Unicom, Uncontrolled Airports |
| 123.0 & 123.050 MHz | Unicom - uncontrolled airports |
| 123.025 MHz | Air to Air Helicopters |
| 123.075 MHz | Unicom Uncontrolled Airports |
| 123.10 MHz | Temporary Control, Search and Rescue |
| 123.15 - 123.575 MHz | Flight Test |
| 123.3 & 123.5 MHz | Flight Schools Gliders, Hot Air Balloons |
| 123.6 - 123.65 MHz | FSS on the Airport |
| 123.675 - 128.8 MHz | ATC |
| 128.825 - 132.0 MHz | Aeronautical Enroute ARINC |
| 132.05 - 135.95 MHz | ATC |
| NAVIGATION AIDS | |
| 190 - 544 kHz | Non-directional Beacons (NDB's), ILS Compass Locators |
| 75 MHz | Fan Markers, Z Markers, ILS Markers |
| 108.1 - 111.9 MHz | ILS Localizers - odd tenths |
| 108.2 - 111.8 MHz Terminal | VOR's - even tenths |
| 112.0 - 117.9 MHz | VOR's |
| NDB RECEPTION RANGE | |
| Compass Locator | |
| 25 Watts | 15 NM |
| MH 50 Watts | 25 NM |
| H 50 - 1999 Watts | 50 NM |
| HH 2,000 + Watts | 75 NM |

Questionnaire for all Builders and Restorers

Would any member who has completed and/or is in the process of building or restoring an aircraft please complete this questionnaire and return it to Newsletter Editor, **Bill Morelli at 105 Brick Church Road, Fairfax, VT 05454. Once the questionnaires have been received, Bill will print a list of these members and their projects in the newsletter. This will enable those members to contact others who have completed or are in the process of building and/or restoring an aircraft to exchange information. Thanks.

Name: _____

Address: _____

Phone: _____ E-mail: _____

Project: _____

Have you completed your project? _____

Comments _____



EAA CHAPTER 613

of VERMONT



Membership Application

and **Renewal Form** to update Chapter's data base
Date _____

Name _____ Spouse or S. O. _____

Mailing Address _____

City _____ Zip _____

Business or Occupation _____ Business Phone _____

National EAA # _____ Date _____ Home Phone _____

E-Mail address _____ @ _____ Check Yes__ or No__ if you want
EAA Newsletter sent via E-mail.
(Saves chapter postage & paper)

Pilot License Yes__ No__ If yes, what class & rating? _____

Aircraft Owned _____ Current Projects _____

Are you willing to give others rides? Yes__ No__ Would you like to be given rides? Yes__ No__

Are you willing to participate in the Young Eagles Program? Yes__ No__

Aircraft Interests

Homebuilts _____ Classics _____ Warbirds _____ Ultralights _____ General _____ Aerobatic _____

Other _____ Please describe _____

Use this area to express thoughts and suggestions for club activities, your interests in holding office or chairing a committee, as needed.

Dues: \$15. (Single); \$20. (Family). Please make check out to: **EAA Chapter 613 of Vermont** and send with this form to:

Steve Couzelis, Treasurer
9 Pine Harbor Road
Milton, VT 05468

Dues are paid to Jan 1, and are up for renewal at that time.

04/02

EAA. . . *the Sport Aviation Association*

EAA CHAPTER 613

Bill & Carol Morelli, NLE's
105 Brick Church Rd.
Fairfax, VT 05454



FIRST CLASS MAIL



January 2004

OFFICERS/COMMITTEE MEMBERS

| President | Phone | Address | e-mail |
|--|--------------|---------------------------------------|------------------------------|
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| Young Eagles Coordinator | | | |
| Don Taylor | 868 3809 | 11 Ferris St., Swanton 05488. | |
| Technical Counselor | | | |
| George Coy | 868 2698 | 116 St. Albans Rd, Swanton 05488 | george@gesoco.com |
| Assistant Tech Counselor & Activities Committee | | | |
| John Butterfield | 878 6337 | 721 No. Williston Rd, Williston 05495 | airbear@surfglobal.net |
| Chapter Web Site | | | |
| Dick Bayer | 796-4432 | 20B South Main St., Alburg 05440 | webmaster@grnmtsolutions.com |