



# EAA602 Log Book

Adirondack Chapter Newsletter  
June 2006



## From The Presidents Desk

by Tim Cowper



What a great time at Don Hiserts Clam Bake, despite the terrible weather. Thanks to Don, Linette, and the rest of the Hisert family for putting on a fantastic event. There were at least 80 people there, and the food was awesome. It's always good to get together with aviation people and talk about airplanes. According to Linette, a repeat event is in the planning stages for August 19-20(?). Hopefully we'll have better weather next time, and more of us will actually be able to fly in!

The flying season is upon us so if anyone has ideas about fly-outs please let people know. Scott Olendorf has suggested a Basin Harbor (B06) trip, which sounds good to me. The 602 message board is a good way to communicate so please don't be afraid to log-on and post. As a standing rule, in the event of good

flying weather, on any given Sunday, if there are no definitive plans, then the plan is to meet at Mohawk Valley for breakfast, at 9:00AM. Everyone is invited, no matter what you fly, and drive ins are welcome too. Check out "Weekend Update" on the message board.

The Speculator Seaplane fly-in is on the agenda at the end of this month and several of us are planning on flying up despite not having seaplanes, or even floats! A couple of our members, who are driving up, have stated that they would shuttle people from Piseco Airport over to the event. Join us...it should be fun!

We're moving ahead with the Poker Run for next

month, June 24, so mark your calendars. Fred has been securing airports and right now it looks like we'll have five stops. Starting at Edinburg, we'll be stopping at Galway, Murphy's, Fulton County, Hiserts, and then back to Edinburg. Details and prizes are still being finalized and more airports could be

added, but this should prove to be a lot of fun. Also, don't forget the Fun-Fly-In at Edinburg on August 26-27 in association with UL 90.

A lot is happening with 602. Get involved! If you have any ideas in regards to 602 meetings or events please call me, or better yet, come to the meeting.

The Meeting This Month  
Will Be At Edinburg  
Airport @ 7:00pm on  
**TUESDAY, MAY 30<sup>th</sup>**  
Because of the  
Memorial Day Holiday

***Remember, DUES ARE DUE BY JUNE. Please get your dues in by the end of June so that we can update our mailing list for active members. Thanks, Doug***

Name \_\_\_\_\_ EAA Number \_\_\_\_\_ Exp Date \_\_\_\_\_  
 Address \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_  
 Home Phone \_\_\_\_\_ Cell Phone \_\_\_\_\_ Work Phone \_\_\_\_\_  
 E-Mail \_\_\_\_\_ Ratings \_\_\_\_\_  
 Experience Years \_\_\_\_\_ Hours \_\_\_\_\_ Aircraft Owned \_\_\_\_\_

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## 3 Area Pilots Honored by FAA With The Wright Brothers “Master Pilot Award”

At a recent Federal Aviation Administration Safety Seminar presented by Mr. Al Miller, Safety Programs Manager of the FAA Flight Standards District Office in Latham, three long time area pilots were recipients of the prestigious national Wright Brothers “Master Pilot Award”. This award

commended each of them for over 50 continuous years of flying, and in appreciation for their dedicated service, technical expertise, professionalism, and many outstanding contributions that have furthered the cause of aviation safety.

The three dedicated pilots are Herbert L. “Herb” Dudley, of Edinburg; Raymond C. “Ray” Gould, Jr. of Fort Plain; and Anthony J. “Bud” Hill of East Greenbush. They were each presented with plaques honoring their 50 years of safe flight and with lapel pins commemorating the history of flight. Their wives were presented with stick-pins identical to the lapel pins, for standing by their men and encouraging them.

Herb Dudley, retired USAirways Captain, made his first solo flight from Gay Valley Airport (now Mohawk Valley), Scotia, NY, on November 7, 1950, after only 4 hours of instruction. He worked in area service stations to earn money for flight lessons and continued as a student pilot at local airports in Albany, Schenectady and Glens Falls.

His first commercial job was as First Officer on a C-46 for Resort Airlines, a freight carrier out of Oakland, CA. Then, flying for Meteor Air Transport, a civilian contractor to the US Government,, he was assigned to fly the DEWLine (Distant Early Warning Line) near the North Pole during the “Cold War”, landing on frozen lakes with minimal navigation and communication facilities, carrying combined freight loads of dynamite, gasoline and other supplies for the establishment of our country’s northern most defense sites. Later he flew trans-

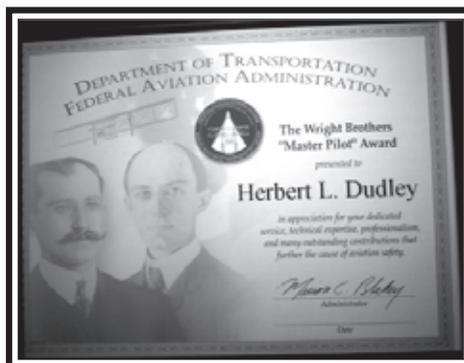
Atlantic flights for Meteor as F/O on a DC-4.

Herb went on to fly for the General Electric Executive Flight Department, where he earned his Airline Transport Pilot Rating in a B-23. He was later transferred to the GE

Flight Test Division in Schenectady, where he flew F/O on a C-54 for GE’s Atomic Test Division, and earned a 4 engine type rating as the youngest pilot ever to fly for GE Flight Test. In 1961 Herb started his airline career with Lake Central Airlines, which merged with Allegheny , Mohawk, and Piedmont Airlines and later became

USAirways. He retired from USAirways in1990, as Capt. on the DC9, with nearly 27,000 flight hours.

His love of aviation continues as he enjoys flying his Cessna Skylane and is active in the EAA Young Eagles Program, having given free introductory airplane rides to over 100 youngsters.





## Vibration Control

by Larry Saupe

For many of us, vibration in an aircraft is just a normal part of the flight. At times though, this sensation can become bothersome to the pilot, or in extreme cases even damaging to the aircraft.

The whole idea behind vibration control is to isolate that which is vibrating (typically the engine and/or propeller) with that which you want to protect (say the airframe, instruments or pilot) see Figure 1.

How is this accomplished? To main idea here is to dissipate the vibrational energy into heat. We still need to allow movement, because the vibrating source itself (the engine) is still going to vibrate to matter what you do. The best way to think of this is just a simple spring mass system (like you would see on a typical car

suspension). The suspension spring will allow movement up and down, but still allow it (the car) to return to center (equilibrium) once the bumps cease. What keeps your car from “vibrating” as it travels down a bumpy road is the shock absorber. This shock absorber damps the oscillatory motion through viscous action (drag), converting the translational motion into heat.

You might now be thinking of how the cars “ride” may change depending on the type of shock used (shock rate). Worn out shocks will allow your car to vibrate (continuously bounce) and too stiff of a shock (highly damped) will result in a very harsh ride. So there is definitely some tuning involved with selecting the correct shock absorber for your application. The term used to describe how effectively a spring/shock (isolation) system dissipates a given amount of vibrational energy is called Transmissibility. This term basically describes how much energy is transmitted from the source to the receiver. Transmissibility is defined as the ratio of the output vibration divided by the input vibration. If this ratio greater than one, the vibration is amplified, and if the ratio is less than one, the vibration is reduced. Wait a minute.... You mean I can even amplify the vibration depending on which isolation system I select? The answer is... Yes, absolutely. This is related to frequency actually (cycles per second). If the driving frequency is close to the

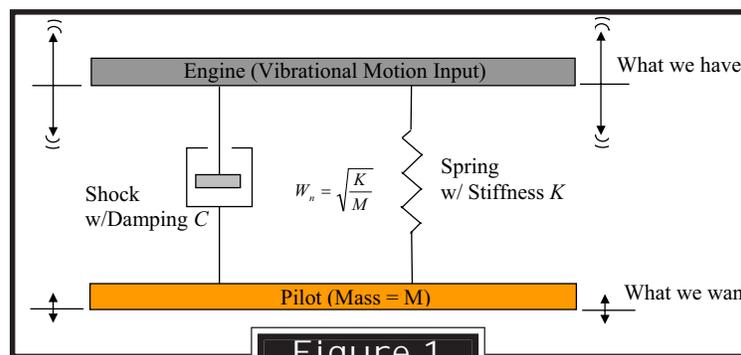
systems natural frequency, vibration will be amplified. Due to this fact, caution must be used when selecting a vibration isolator (such as an engine mount or instrument mount), as this isolator may end up being an amplifier if not chosen correctly.

Why are many commercial vibration isolators made out of rubber or silicones? I don't see any springs or shocks there? It comes down function and economics. It turns out that these elastomers behave much like a spring (you press on it and it bounces back). They also have fairly good damping character-

istics, hence do both jobs at the same time. Cheap, lightweight and reasonably functional. What more could a pilot ask for? Well... for one thing we need to ensure our polymer will do the job we need. It needs to have a spring constant large enough (but not too large) to support our item (strength/

stiffness), but also have the proper damping characteristics to lessen the vibrational energy.

How would I select a proper isolation system to control vibration? This is where a little math comes in (but thankfully not a lot of it). Let's look at a quick example of wanting to isolate a flight instrument panel from airframe vibration. We need to know the mass (weight) of the item we are trying to isolate, the range of vibrating frequencies, and the vibration amplitude. If the source if vibration is an engine, the frequency is typically quite easy to arrive at. For a two-stroke engine this is simply (RPM)\*(# of cylinders)\*(1/60) = cycles per second. Let's say we measure our instrument panel mass as 5 pounds. We decide to mount the panel with 4 isolators (1.25 lbs per isolator). Amplitude, how much it (the airframe) moves per cycle, can be measured directly using a device called an accelerometer, or we can estimate it to start. Amplitudes from an airframe to an instrument cluster would typically be less than 1/16th of an inch. This will be needed during the final selection process of an isolator to ensure it allows enough internal travel to accommodate this amplitude (linear motion of the vibration). We would typically start our search by looking through various catalogs (or websites) for isolators that provide the proper strength to support



our item, then look at the transmissibility curve of each isolator, followed by its linear motion capabilities (deflection). If we plan to operate our engine from say 2,000 RPM to 5,000 RPM, then we need an isolator that can support at least 1.25 pounds per device, have good performance (low transmissibility) from 67 to 167 hz, and be able to readily flex 1/16" or better.

As you might envision, vibration control is a science all to itself, and many resources are available to assist a pilot/builder/maintainer in this endeavor.

One of the pioneers in elastomer vibration control was Hugh C. Lord. In 1919 he patented a rubber to steel bonding process to create a lightweight and very strong vibration isolator. He later formed Lord Corporation in Erie, PA, producing isolators for the railroad, heavy equipment, automotive and aviation industries. His patented Lord Mounts remain a state of the art engine mount for many GA, commercial and military aircraft.

One ultralight manufacturer that has taken vibration control to a new level is Blue Heron Powered Parachutes in Delanson, NY. Blue Heron developed a state of the art dual media isolation system to dramatically reduce engine vibrations passed on to the airframe. A nice overview of the system, and how it was developed, can be seen at Blue Heron link <http://www.blueheronppc.com/dualmedia.htm>. Ask anyone who has flown a late model Blue Heron and they can attest to the fact of how much a good vibration isolation system improves the flying experience.

One take-away from all of this is to realize that vibration isolation systems (whether they be a spring & shock system, or elastomer based) require maintenance over time. Mechanical springs may soften over time and shocks may wear out. The same can happen with elastomers as they age (spring and damping capabilities slowly changing over time). New types of vibration control (and elastomers) are developed all the time.

Periodically changing (or upgrading) your isolators may be a worthwhile investment towards many vibration free flying hours.

Pilot (Mass = M)

Engine (Vibrational Motion Input)

Spring

w/ Stiffness K

Shock

w/Damping C

What we have

What we want



## Up-Coming Events

For more information on events,  
call Doug @ 862-2409

**May 31-June 4**

2nd Annual Can-Am Fly-In Speculator, NY

**June 17**

Cooperstown Breakfast Fly-In Cooperstown, NY

**June 21-24**

Sentimental Journey Lock Haven, PA

**June 24**

EAA 602 1st Annual Poke Run Edinburg, NY

**July 8-9**

Geneseo Air Show Geneseo, NY

**July 15**

Cooperstown Breakfast Fly-In Cooperstown, NY

**July 24-30**

AirVenture Oshkosh, WI

**August 19**

Cooperstown Breakfast Fly-In Cooperstown, NY

**August 19 or 20**

Hisert's 2nd Clambake Hisert's Field, NY

**August 26-27**

Edinburg Fun Fly-In Edinburg, NY

**September**

2nd Annual Rhinebeck Small Plane Fly-out



## EAA602

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**VicePresident - Tony Rizzio**  
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