



Flight 506 News

Volume 12, Issue 6

June 2006



Chapter Events

Mark Your Calendars!

**Saturday,
June 10, 2006**
EAA Chapter 506
Meeting
8:30 am Breakfast
9:00 am Meeting
Chapter 506 Clubhouse

Breakfast will be
provided
By the Breakfast
Committee at a cost of
\$4.00 per person.

May Presentation Notes:

By Byron Covey

We had a two part program. The first part opened with a quotation from an FAA training document that attributed the tendency of a tail wheel airplane to turn left on its takeoff run to, among other things, engine torque. Following that, we took a group test of which control inputs are required during certain maneuvers, and what forces the controls were applied to counteract. We then simulated some of the maneuvers with a bicycle wheel sized gyroscope to verify the effects of gyroscopic forces. The group scored about 75% on the test.

In part two, following a short break to allow those with a need to depart for fly-ins, barbecues, or to milk the cows, I demonstrated the process of closing (bonding the skins together) the rudder for my Glasair Super II-FT project.

"Flying isn't dangerous, but crashing is."
BJC

EDITOR'S NOTES

If you are president of the month, you are invited to contribute an article about your upcoming presentation. If you just have some notes and an idea, I would be glad to "ghost write" your article for you. After the presentation has been given, we can recap it in the following month's newsletter.

Next weekend is the Airshow in Reading, PA.

Next weekend there are fly-ins at Kennebec and Raleigh East airports, both starting at 10:00 am. Free food at Kennebec, bring a dish to Raleigh East.

Got an idea for an article? Talk to me.

May Meeting Minutes

By Ken Dunaway

Thanks to Nancy Normark, Ida May Covey and Roxanna Mancusi for the delicious breakfast. The club feasted on eggs, pineapple ham, sausage gravy and grits.

The meeting was called to order at 9:00 a.m. by the monthly president, Byron Covey. Seven guests were present.

- Frank Johnson
- Lou Hudson
- Pam Light
- Gary Fordham
- Gary Stein
- Paul Roder
- Ken Arnold

Secretary report:

The minutes from the April meeting as printed in the May newsletter were approved.

Treasurer's report:

The treasurer reported a balance of \$2,054.17 in the club's checkbook.

Old Business:

Members were reminded that the JNX open house and Young Eagles event is planned for September 30.

The first meeting of the Builder's club will be right after next month's meeting.

New Business:

The club agreed to donate \$25.00 to Harold Shehane's church per the family's request.

Monthly Program:

The May program followed. Byron lead a stimulating review and discussion of aerodynamics. Nancy Normark performed an excellent demonstration of a Pitts Special.

On the ground in a New York minute

By Lucky Charlie

60 Seconds:

Eddie, "when do you do the GUMP check", I asked, as we flew through the wild blue yonder?

56 Seconds:

Eddie, we are losing fuel pressure, Switch Back to the other tank!

50 Seconds:

The thing-a-ma-gig is stuck in the closed position, yelled Eddie, as he threw off his head set and dived into the floorboard to attack the fuel selector valve with both hands. TAKE The Plane!

45 Seconds:

Eddie, "we're not going to make it to JINKS".

40 Seconds:

Two red eyes glared from the VASI.

38 Seconds:

I pulled and banked to the left like turning my old mule who was blind in her right eye. The view was like turning a sharp curve at night and the lights only illuminated the view straight ahead but not what was coming around the curve.

30 Seconds:

We cleared the power lines, but the trees ahead stood at attention. Add more bank and top rudder. What's that shaking?

20 Seconds:

Eddie is now back in his seat, sitting quietly.

15 Seconds:

I could see a break in the tall broom sage grass. Is that a ditch ahead? I inquired of Eddie. "NO it's a ROAD", he quietly expounds.

10 Seconds:

OK, it's two ditches. This could hurt. I'll pull out my last tool. Deploy GROUND EFFECT.

05 Seconds:

We sailed across the road and touched down in the next field. It was a smooth as landing on the moon.

00 Seconds:

I'd rather be lucky than good!

Control Inputs Test

Test Vehicle:

Airplane: Pitts S-1S, 180 HP, 1000 Lbs operating weight, fixed pitch metal propeller, 3200 RPM max level flight. I picked the Pitts because the gyroscopic forces of the propeller are more significant than in many other light A/C because of the physical characteristics of the airplane and the relative size of the propeller.

Preflight completed, strapped in, magnetos checked, brakes on, briefly apply full power, and the airplane: (Rolls left)

Why: (Due to torque)

We have verified that the pattern is clear, we are aligned with runway, and are ready to go. We smoothly advance power, give a little forward stick to get the tail up a little, accelerate to 80 MPH, ease off the runway, accelerate to 100 MPH, and initiate a climb.

What do we do with the rudder to keep the little biplane pointed straight down the runway in each phase of operation?

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|-------------------------------------|--|-------------------------|
| 1) Initial power application: | (Right rudder) | Why: (P factor) |
| 2) Forward stick to raise the tail: | (Right rudder) | Why: (Gyroscopic force) |
| 3) What effect is torque having? | (Putting more down force on the left wheel.) | |
| 4) Aft stick to initiate the climb: | (Left rudder) | Why: (Gyroscopic force) |

One minute later we are level at 3000 feet, and begin a classic Pitts rudder coordination exercise. We accelerate to 160 MPH, then pull 4 G positive to establish a 45 degree up line. Hold the line for three seconds, then push at -4 G to a 45 degree down line. Glance at the fuel and oil pressure on the push to ensure both are OK. Repeat the cycle two more times.

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|---|----------------|-------------------------|
| 5) What is done with the rudder to keep the Pitts straight when pulling on the stick in the rudder coordination exercise? | (Left rudder) | Why: (Gyroscopic force) |
| 6) When pushing? | (Right rudder) | Why: (Gyroscopic force) |
| 7) If we roll inverted, then push, which rudder pedal is pressed to keep the airplane straight? | (Right rudder) | Why: (Gyroscopic force) |

Let's try some aerobatic maneuvers, and see what the gyroscopic forces of the propeller do to the airplane.

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|---------------------|----------------|--|
| 8) Positive G Loop: | (Left rudder) | Why: (Counteract gyroscopic force, but the amount of rudder varies around the loop because rudder effectiveness varies with airspeed.) |
| 9) Negative G Loop: | (Right rudder) | |
| 10) Hammerhead: | | |
| Pull to vertical: | (Left rudder) | Why: (Gyroscopic force) |

Vertical line: (Increasing right stick as the plane slows) (Torque)

Zero airspeed: (Judge the airspeed by the left aileron deflection.
At 2 inches below the chord line, A/S is almost zero)

Pivot: (Full left rudder to pivot using aerodynamics)
(Full right stick to counteract left roll (due to torque) and
(Forward stick to counteract nose up pitch (due to gyroscopic forces.)

11) Spin:

Power off, back stick and left rudder produces a spin via aerodynamic forces. Apply full power, and the propeller quickly accelerates to 2500+ RPM. What does the gyroscopic force of the propeller do to the airplane?

12) Torque Roll:

Vertical up, full power until it starts sliding backwards:

What makes the airplane roll?

Which way does it roll?

Any gyroscopic forces involved?

Any asymmetric thrust involved?

Student Pilot Solos At 91

Cliff Garl satisfied a lifelong dream and may have set a record of sorts last week. The 91-year-old Shoreline, Wash., student pilot soloed for the first time over Arlington Airport. "You go into a nursing home and you'll see people a lot younger than he just sitting there," Garl's 75-year-old instructor Joe Bennett told The Seattle Times. "I actually don't know of anybody, even in their 80s, who's soloed." According to the Times, the FAA didn't have records of any student pilots over the age of 90 in 2004 and showed only 59 in their 80s. Garl told the Times he was nervous before the flight but once in the cockpit of the Cessna 172, the training took over. As might be expected, the medical was Garl's biggest obstacle -- even though he's in good health. Garl's doctor, Dr. Robert Betts, who happens to be an air medical examiner, put him through a very thorough examination and the verdict was clear. "I saw nothing to disqualify him," Betts told the Times. (Garl's blood pressure of 120/70 may more closely resemble that of a healthy teenager.) Still, the medical process took months to complete. "I think it was a question of who was going to outlast who," Garl told the Times. Garl hopes to get his private or recreational certificate.

May 22, 2006 NewsWire Complete Issue by The AVweb Editorial Staff

2006 Chapter 506 Programs & Activities:

<i>Date</i>	<i>Program Responsibility</i>
January 14	Dave Courtney – “Flying with Bob”
February 11	Ned Nutt – “Medical Questions and Answers”
March 11	Joe Mancusi – “The Role of the Flight Advisor”
April 8	Larry Fink – “Garmin 296 Training Software”
May 13	Byron Covey – “Torqued?”
June 10	Mort Altman
July 8	Jack Schultz
August 12	Ron Normark
September 9	Paul Bellman
October 14	Art Armeni (JNX open house and Young Eagles event)
November 11	Jim Turner
December 9 (PM)	Nancy Normark & Ida May Covey – Christmas Dinner Party

Other EAA Chapter News

EAA Monthly Meetings

EAA 506	JNX	Second Saturday	8:30 am Breakfast	EAA Clubhouse
EAA 1114	NC81	Third Saturday	8:00 am Breakfast	Bobby Cox field

Miscellaneous

Interesting Web Addresses

Online sectionals www.skyvectors.com
 Cheap auto gas <http://autos.msn.com/everyday/gasstations.aspx?zip=&src=Netx>

Kennebec Flying Club – Airport Fly-In [Traffic 122.8 / Rnwy 14-32 / Grass 2700x100’]

Neighborhood open house and fly-in on Saturday, June 3, starting at 10 am.
 Free hamburgers, hot dogs and homemade ice cream served at Noon.

Classified Corner

Woods Aviation;

Specializing in Poly Fiber Products.
 Also available are FAA DAR services,
 aircraft maintenance and fabric aircraft
 restoration.

919-581-0640

919-581-0690

919-581-0830 (Fax)

EAA Chapter 506:

Clubhouse @ 3149 Swift Creek Road, Smithfield, NC 27577

Visit Chapter 506's Website

<http://www.blueasp.com/506/>

The submission deadline for newsletter articles is generally two weeks before the next meeting. Articles appearing in this Chapter newsletter may be reproduced in full, only if proper credit is given to the author and the Flight 506 News.

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