

March
2011

FLITE LINES

AMA
Charter
1723

Newsletter • CASA de AERO R/C Club • Prescott Arizona

PRESIDENT

Jack Hardy
583-3315

VICE-PRESIDENT

Dave Marston
778-4967

SECRETARY

Gene Tomek
776-9786

TREASURER

Glenn Kuhn
445-1344

SAFETY OFFICER

Tom Gatchell
442-1436

BOARD MEMBERS

Robert King
771-9303

Robert Crone
7590422

INSTRUCTORS

Electric - John Conrad
778-4810

Fuel - Richard Thomas
443-1757

FIELD MARSHAL

Gary Swigart
771-9069

NEWSLETTER EDITOR

Gary MacCauley
443-8934

gmaccauley@qwest.net

COEDITOR

Tom Gatchell
442-1436

steeragemate@cableone.net



FROM THE MAIN PROP NUT.

BY Jack Hardy,
PRESIDENT



Hello everyone and how are you?

This has been one fantastic month. We started the month with a one day snow storm and some really chilly temperatures, then within two weeks we had members at the field in tee shirts. The R/C God's must love us.

Rich came up with a great idea during coffee one morning, to ask the wives to join us for lunch at Wally and Molly's. Believe it or not we had 14 people for a fun time. Thanks Rich, and let's do it again real soon.

We had a super month with lots of students at the field, some to fly, some to learn to fly, and some to just watch and think what it must be like to be in one of those flying machines. A highlight was having our friends Arlo Chan and Gary Paulsen out to the field. Now we need to get them on a buddy box.

We had a super turn out at our last Club meeting. Charlie Bock presented a program on his experiences as a Test Pilot for the USAF, and Rockwell, flying the SR-71 and the B-1 Bomber.

We were privileged to have four students join us for the meeting, and one student, Cole, won the Casa de Aero Jacket. Thanks for coming and I hope to see you at our next meeting at 7pm on March 1st.

I would like to thank Ryan Moosman, Facilities Director, and Steve Robinson, Facilities Manager, for all of their help with our drainage problem on the north side of our air field. They did a fantastic job so we should never have a problem with water running across the field again.

In our last newsletter, I asked all of you to say some special prayers for Pat Richardson as she was getting ready for some serious back surgery. Well I want to tell you that your prayers were answered and Pat is recovering ahead of schedule. She told me that she was feeling so good that she is planning to start training for the Boston Marathon.

We had a wonderful Sweethearts party at the Stone Ridge Country Club on Friday February 11th, and although the crowd was a little short of great, all had a super time and the food was five star. So you will have plenty of time to attend next year. We have reserved the party room at the Lone Spur Cafe for Friday, Feb. 10, 2012. Don't delay and mark your calendars now. I know, you don't even have a 2012 calendar yet.

Well, I think I have rambled long enough. So take it easy, stay well, and always land soft.
With Warm Regards,

Jack

NEXT MEETING will be Tuesday March 1, 2011

Meetings start at 7:00 PM in room 101, Building 21 (Robertson Aviation Safety Center)
On the Embry-Riddle campus, 3700 Willow Creek Road.

Visitors are welcome! **See you there!**

Flite Lines is published monthly by **Casa de Aero R/C Club** for members and friends. The views and opinions expressed within are solely those of the authors and not necessarily those of the Club.



From the **Safety Officers**

Tom Gatchell and ARF the wonder dog.

OK, this month's subject: P-Factor! I'm sure most of you have heard of it, some have experienced it and might not have recognized it. Maybe the following will be familiar.

You take your nice, new P-97 Belchfire Warbird ARF that the manufacturer actually spent some time designing a great flying airframe and matched it to the correct power motor/ESC/battery combination that should give good, reliable power and flight performance for many flights. Now as human nature would have it, a few of us want MORE POWER, right? Vertical performance and rocket-like speed, cool, right???? AND there's nothing wrong with that as long as you understand ALL the dynamics that go with modifications and have the RC flying skills to match the modification's new performance. Years ago MOST RC planes were flown with much less power (scale?) than even our little "toy" park fliers today. Please don't get me wrong. There are many modified planes being flown regularly and safely at our field, I'm just commenting on an observation.

Dynamics???? What the heck???? That's RIGHT! Airplanes, models AND full sized, are not immune to the laws of physics. The difference is, your behind isn't IN the model allowing you to feel all the forces DOUBLING or TRIPLING the power results in.

I could spend a bunch of effort writing about TORQUE, bigger PROPS, more PITCH, more BLADES, gyro effects and all the swell forces that powerful new thrust applies to left-wing, fuselages, tail surfaces and the right wing but others have

already done it and better than I could myself. So THIS column will be a little shorter so I can include the excellent article I found online. Be advised, I, as the "Safety Czar for Life", felt the need to dwell on this issue after a few guys have either made hard left turn departures over the pits and parking area or lost planes due to "unhappy" handling characteristics with planes that have become Dr Jekyll and Mr Hyde after adding "MORE POWER"! Also, these effects seem to be missing with ducted fan jets because all that "wind" is contained in a tube and doesn't flow over flight surfaces. However "jet effect" will be another column!

I will now ask our editor-in-chief to run the article following this column! It is brief and to the point, but with links for more information should you want it. You should at least read the short version:

Understanding Propeller Torque and P-Factor
From wiki.flightgear.org

This is an attempt to answer the frequent question: "Why is my aircraft turning left all the time?"

This occurs only in aircraft with propellers at the front of the aircraft. And yes, it does occur in real life. Four distinct phenomena cause the effect, all causing the aircraft to turn in the same direction. They are:

Prop wash

A propeller pushes air not just horizontally to the back, but more in a twisting helix around the fuselage (clockwise as seen from the cockpit). As the air whirls around the fuselage it pushes against the left side of the vertical tail (assuming it is located above the propeller's axis), causing the plane to yaw to the left. The prop wash effect is at its greatest when the airflow is flowing more around the fuselage than along it, i.e., at high power and low airspeed, which is the situation when starting the takeoff run.

Propeller torque effect

Torque effect is the influence of engine torque on aircraft movement and control. It is generally exhibited as a left turning tendency in piston single engine propeller driven aircraft.

According to Newton's law, "for every action there is an equal and opposite reaction," such that the propeller, if turning clockwise (when viewed from the cockpit), imparts a tendency for the aircraft to rotate counterclockwise. Since most

single engine aircraft have propellers rotating clockwise, they rotate to the left, pushing the left wing down.

Typically, the pilot is expected to counter this force through the control inputs. To counter the aircraft roll left, the pilot applies right aileron.

It is important to understand that torque is a movement about the roll axis. Aileron controls roll. Prop torque is not countered by moving the rudder or by setting rudder trim. It is countered by moving or trimming the aileron.

This correction induces adverse yaw, which is corrected by moving or trimming the rudder (right rudder).

On aircraft with contra-rotating propellers (propellers that rotate in opposite directions) the torque from the two propellers cancel each other out, so that no compensation is needed.

P-Factor

P-factor is the term for asymmetric propeller loading, causes the airplane to yaw to the left when at high angles of attack.

The descending right side of the propeller (as seen from the rear) has a higher angle of attack than the upward-moving blade on the left side and provides more thrust. This occurs only when the propeller is not meeting the oncoming airflow head-on, for example when an aircraft is moving down the runway at a nose-high attitude (i.e. at a high angle of attack), as is the case with tail-draggers. Aircraft with tricycle landing gear maintain a level attitude on the takeoff roll, so there is little P-factor during takeoff until lift off. In all cases, though, the effect is weaker than prop wash.

Gyroscopic Precession

This is the tendency of a spinning object to precess or move about its axis when disturbed by a force. The engine and propeller act as a big gyroscope. However, gyroscopic precession is likely to be minimal in a typical aircraft.

Gyroscopic precession is frequently confused with p-factor.

One author maintains p-factor is caused by a combination of factors unrelated to gyroscopic precession.

<http://home.earthlink.net/~x-plane/FAQ-Theory-PFactor.html>

http://wiki.flightgear.org/index.php/Understanding_Propeller_Torque_and_P-Factor

Tom

CASA DE AERO GENERAL MEMBERSHIP MEETING

February 1, 2011

Members present: Tom Ault, Jon Bassi, Charles Bock, Joe Bolender, John Conrad, Rob Crone, Walt Findlay, Tom Gatchell, Val Goff, John Gorczyca, Jack Hardy, Bob Herod, Vince Herod, Al Iamiceli, Bill King, Robert King, Gary MacCauley, Dave Marston, Galen Richmond, Gary Swigart, Richard Thomas, Gene Tomek, Walter Wilken and Bruce Wright.

Guests Present: Randy Meathrell, Jay Riddle, Cole Field, Stephen Rayleigh, Matt Lyon, Alberto Neves

Jack Hardy called the meeting to order at 7:00 PM. The pledge of allegiance was spoken by the attendees.

President's Report (Jack Hardy): Tom Ault brought a jacket for the raffle which was donated to the club by the widow of a former member. Arlo Chan and Jerry Paulson are CdA's ERAU liaisons. Both are interested in learning to fly RC planes. ERAU students have been out flying and club members should give them a warm welcome and introduce themselves.

Jack will be meeting with ERAU Maintenance to discuss constructing a drainage ditch at the North end of the field. ERAU Security is checking the field on a regular basis.

Randy Meathrell was introduced and he showed a T33 jet that can be purchased from Valley Hobby for less than \$100.00 and includes everything except the radio. The T33 will do six minute flights and uses ailerons and elevator for control.

Secretary's Report (Gene Tomek): Our membership is now 53. Copies of this month's Flite Lines are available at the front desk.

The Treasurer's Report (Glenn Kuhn): Given by Jack Hardy in Glenn's absence. Our cash balance is \$3,307.96.

The Safety Officer's Report (Tom Gatchell): No unsafe events have been noted. Tom will discuss P Factor and its relationship to safety in next month's Flite Lines.

Field Report (Gary Swigart): Field is in good condition. Rough spot near north end due to drainage issue.

Flight Instruction Report: No report given.

Vice President's Report (Dave Marston): Speed World will hold a Jet Rally on February 11 -13. There are normally 30 to 40 jets at this event.

The Sweethearts Dinner will be held at Stoneridge on February 11, 2011. Cocktails are available from 6 to 7:00PM with dinner thereafter.

The ERAU UAV program is up and running and the Club is assisting the students with flight training. Several graduate students and professors are putting the UAV course together on a minimum budget. The plane will be able to do such things as real time down load of pictures and movies. CdA will assist in plane set up and flight tests. Steve Rayleigh now plans on using the 40 Cadet as the initial platform for the UAV. Steve and Matt Lyon flew Shadow Drones in Iraq.

Jack introduced CdA member Charlie Bock who is a retired Air Force Colonel.

Charlie spent 18 years as a test pilot and discussed his experiences testing the SR-71 high

altitude, high speed spy plane. The fuselage of the plane gets up to 500 degrees with hot spots topping 600 degrees. The plane is built from titanium and stainless steel. The long fuselage was used to increase fuel capacity. The wing loading was moderate and the plane was limited to a 30 degree bank at Mach 3. The Pratt and Whitney J-58 engines gave the plane an 80,000 foot ceiling and a Mach 4 speed. 80,000 lbs. of special fuel was used with large starter motors to crank up the engines. At altitude the plane operated in a pseudo ram jet mode. The engines ran at full power most of the time. An air cooled pressure suit was used to keep the pilot comfortable.

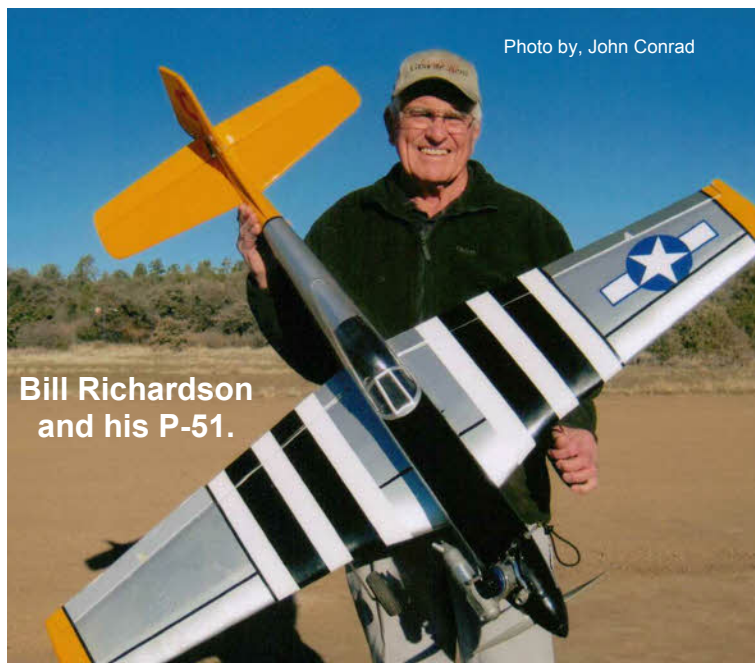
Rafflemeister Bruce Wright took over and drew tickets of the following winners:

Richard Thomas	Flight Simulator
Bob Herod	Epoxy
Walt Findlay	Glow Plug Adaptor
Steve Rayleigh	Wire Cutters
Gary Swigart	Electric Props
Joe Bolender	Electric Props

Coffee and refreshments were made available throughout the meeting.

The meeting was adjourned at 8:10 pm.

Respectfully submitted by: Gene Tomek



A few pictures from the Annual Sweethearts Dinner.



Photos by Tom Gatchell

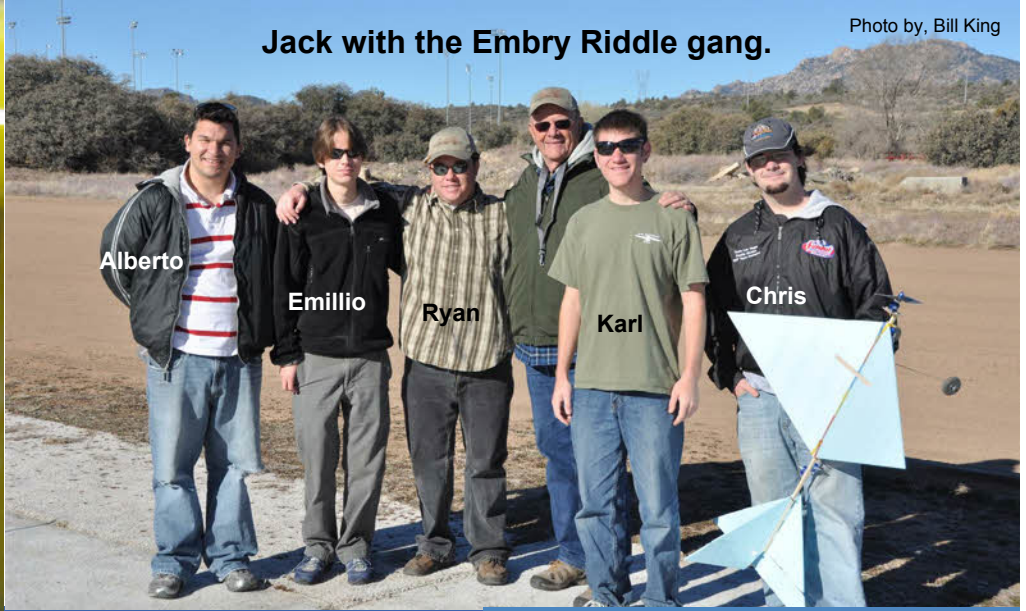


Some people really get into the hobby.

Photo by, Walter Wilken

Jack with the Embry Riddle gang.

Photo by, Bill King



Alberto

Emillio

Ryan

Karl

Chris



Stupid Hobby!!

Photo by, Bill King



Before it was stupid.

Photo by, Bill King



Jerry's Katana.

Photo by, Bill King



Nice paint job, Walter!

Photo by, Bill King



Chris Doughty's Delta Dart

Photo by, Bill King

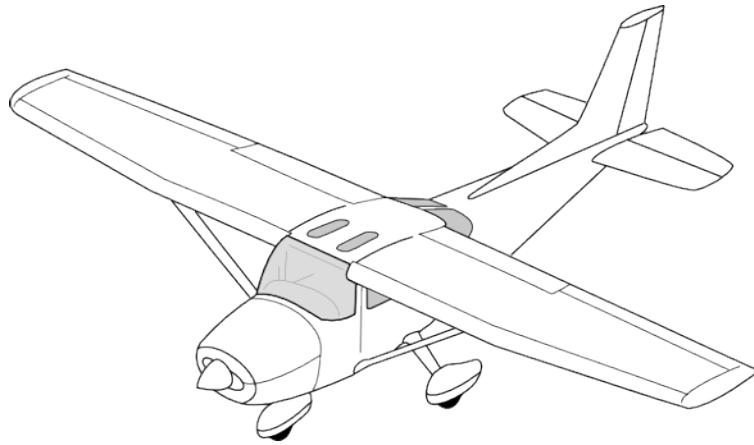


Do you give rides, Bud?

Photo by, Bill King

**CASA de AERO
'FLITE LINES'
P.O. Box 12913
Prescott, AZ 86304-2913**

POSTAGE



SUPPORT YOUR LOCAL HOBBY STORE

The owners and operators of the local hobby shops put in long hours and make a large investment in inventory so that you can have the items you need to enjoy this great hobby.

Their margins are slim when they have to compete with mail order houses.

Their existence literally depends on us. If you want to keep the convenience of instant supply of that needed item, patronize the stores below.

VALLEY HOBBY SHOP RC CENTER

7680 East HWY 69
Prescott Valley AZ

Open Monday thru Friday 9:30 AM to 7 PM

Saturday 9:30 to 6 PM

Sunday Noon to 5 PM

Ask Donna for that special item

(928)-775-4071

Owners: Donna and Tony Pacini

ARF Assembly

Rod Larson will assemble
Your ARF to flying status.
You supply him the materials
and your new model will be
ready to hit the air with
a professional build.

Call 928-642-7667

Put your advertisement in the FLITE LINES. It's free if you're a member, almost free if you're not.
Contact Gary MacCauley with your copy, hand written, emailed, typed, or on disk.