

# "TURBULATOR"

## Newsletter

of the Rio Rancho  
Radio Control  
Flying Club

AMA Club #2770

WATERMAN FIELD

ELEVATION 5840 FEET

35° 17.2'N 106° 44.8'W

1934 Retz R8  
by  
Don Olson



## PRESIDENT'S CORNER

### "Da Prez Sez"

January 2014 is turning out to be a cool, windy, dry month for us. Things at the field have been very quiet, with only a few members getting in some flying time. The schedule at the Star Center has not helped the indoor flying as well. Hopefully Feb. will bring about a little more activity and some better flying weather. Anyone with something new or interesting should bring it to the meetings for show and tell. We are open to input as to

things that will be interesting to all during the winter months.

See you at the Feb. meeting.

## Events & Reminders

1. Meeting 3 Feb 7:00pm
2. Club dues are payable to our new treasurer Mike Skipwith. Dues remain at \$50/yr
3. Remember to update your AMA membership.



Retz R8 built by Don Olson. The following information has been provided by Don.

Scratch built from a 2X3 inch 3 view. The plane is 33% at 72in wing span. The Airplane weighs 18 lbs, is powered by a Saito 1.80 4 Stroke swinging an 18x6 wide blade prop. Covered in Solar-Tex with Custom catalyzed Rustoluem paint. Started in Aug 2013 and all finished with the exception of tuning the motor in Oct. Have been too busy to go do it. It will fly when the time is right .

I have started another scratch plane. A 1931 Peterson Sportster also on RCGroups 1/4 scale at 80 in.

The link to Dons RCGroups page on the Retz is <http://www.rcgroups.com/forums/showthread.php?t=1977511>



A model aircraft that is hanging still in air during strong winds may be subject to the same aerodynamic forces as a model aircraft that is flying fast during calm weather. The aerodynamic forces depend much on the air density.

For example, if a glider glides 25 meters from a given altitude during low air density it may glide 40 meters during high density. The air density depends on the atmospheric pressure and on the air temperature. The air density increases with decreasing of the air temperature and/or with increasing of the atmospheric pressure. The air density decreases with increasing of the air temperature and/or with decreasing of the atmospheric pressure. A flying aircraft is subject to a pressure depending on the airspeed and the air density. This pressure increases exponentially with increasing of the airspeed. The aircraft's resistance to the airflow (drag) depends on the shape of the fuselage and flying surfaces. An aircraft that is intended to fly fast has a thinner and different wing profile than one that is intended to fly slower. That's why many aircraft change their wings' profiles on landing approach by lowering



## Aerodynamics

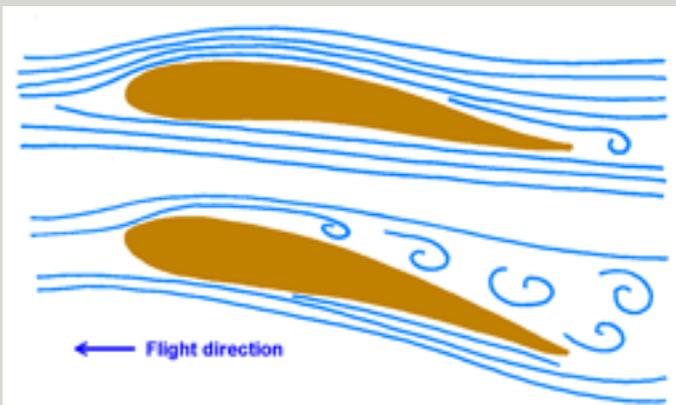
Aerodynamics is the study of forces and motion of objects through the air. Basic knowledge of the aerodynamic principles is highly recommended before getting involved in building and/or flying model aircraft.

the flaps located at the wings' trailing edge and the slats at the leading edge in order to keep enough lifting force during the much lower landing speed.

The wings' profile of an aircraft is usually asymmetric, which makes the pressure on the wings' upper side lower than the underside, causing the air on the wings upper side to accelerate downwards, thereby a lift force is created. The air always flows away from areas of higher pressure toward areas of lower pressure, thus the air over the wing top accelerates as it enters the lower pressure region (where the air curves toward the wing), whereas the air under the wing slows down as it enters the higher pressure region. So, one may also say that the wings create lift by reacting against the air flow, driving it downwards, producing downwash. The top of the wing is often the major lift contributor, usually producing twice as much lift as the bottom of the wing.

The lift force of a symmetric profile is based on the airspeed and on a positive angle of attack to the airflow, which makes the air react as it was asymmetric.

The following picture shows the airflow through two wing profiles. The uppermost profile has a lower angle of attack than the lowest one. When the air flows evenly through the surface is called a laminar flow. A too high angle of attack causes turbulence on the upper surface, which dramatically increases the air resistance (drag), this may cause the flow to separate from the upper surface resulting in an abrupt reduction in lift, known as stall.



Summarizing:

The aircraft generates lift by moving through the air. The wings have airfoil shaped profiles that

create a pressure difference between upper and lower wing surfaces, with a high pressure region underneath and a low pressure region on top. The lift produced will be proportional to the size of the wings, the square of airspeed, the density of the surrounding air and the wing's angle of attack to on-coming flow before reaching the stall angle.

How does a glider generate the velocity needed for flight? The simple answer is that a glider trades altitude for velocity. It trades the potential energy difference from a higher altitude to a lower altitude to produce kinetic energy, which means velocity. Gliders are always descending relative to the air in which they are flying.

How do gliders stay aloft for hours if they constantly descend? The gliders are designed to descend very slowly. If the pilot can locate a pocket of air that is rising faster than the glider is descending, the glider can actually gain altitude, increasing its potential energy.

Pockets of rising air are called updrafts. Updrafts are found when the wind blowing at a hill or mountain rises to climb over it. (However, there may be a downdraft on the other side!) Updrafts can also be found over dark land masses that absorb more heat from the sun than light land masses. The heat from the ground heats the surrounding air, which causes the air to rise. The rising pockets of hot air are called thermals. Large gliding birds, such as owls and hawks, are often seen circling inside a thermal to gain altitude without flapping their wings. Gliders can do exactly the same thing.



# MEETING MINUTES

## Minutes from the January 2014 Club Meeting

The meeting was called to order at 7:00pm with 11 members present  
Club members recited the pledge of allegiance.  
Minutes: Accepted as published.  
Treasurers Report: Accepted as Presented.  
Membership Report: There are 30 members paid for 2014. Members have until the 1st meeting in March to pay dues for 2014.  
Field Report: Its been cold and not much action at the field.  
Safety: None.

Unfinished Business: 1. Caps. Andy Wilson presented the information of purchasing club ball caps from Rio Rancho T-Shirts. The caps will cost \$10 ea and can have an airplane and club wording. Andy stated that available colors were Red, White or Blue. Members questioned if our Logo can be embroidered onto the hats, and if other colors were available like, turquoise and khaki. Andy would find answers to the club questions and report back. There was also discussion on the club purchasing ballcaps for all members as part of the 2014 dues. A motion was made and passed unanimously. The result was that when all information is presented and club color

for the hats determined the club would purchase 50 ball caps and distribute to all 2014 paid members and any new members would receive a hat as part of their membership.

New Business: 1. Members decided to have a Show n Tell next meeting giving members a chance to show their latest builds.  
2. Vic reported that the Star Center is full of dirt and mud for motorcycle shows the month of January and he'd try to get us some dates for February.

The meeting adjourned at 7:50pm.

Raffle Results.

1. Don McClelland
2. Mike Wells
3. Andy Wilson



### Turbulator:

Editor Don McClelland

We are always looking for articles, pictures and your input!

For comments, or suggestions

Please Email Don at  
[macmoke1@gmail.com](mailto:macmoke1@gmail.com)

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## RIO RANCHO RC CLUB

AMA Charter #2770

[www.rioranchorcfllyers.org](http://www.rioranchorcfllyers.org)

### Next Club Meeting

February 3rd 7:00pm at the Wallen Club House. 5545 Lilac Pl.