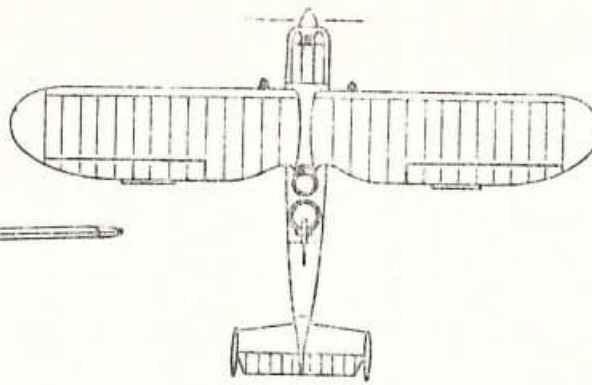
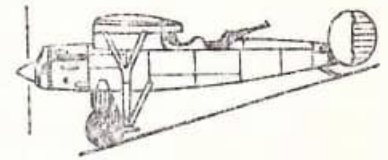


LAVILLE DI-4.



Richard Ballard....Pres. Trea
Bill Andes....Vice Pres.
Dave Plamann...Sec. Editor
Darrel Cordle...Safety
Nate Ericson....."



Jayhawk Model Masters

October

Special Notes

Our next meeting is October 15th, at the Gaslight Village Clubhouse, 7:00 pm. We need to have as many people present as possible as we will be electing our club officers for the next year. So if you dont want to get railroaded, you might plan on attending. I would like to throw in the idea of electing an Event Committee Chairman this year, along with an alternate. They would be responsible for setting up for any events the club sponsors. (Fun-Flys, Fund Raisers, etc.) We can throw that out at the meeting for discussion.

Another topic you might keep in mind is changing our meeting time, and place. We did discuss the possibility at our last meeting and came up with early Sat. or Sunday mornings at a local resturant. Bring your ideas to the meeting with you. Out of 80 members in our organisation, we should be able to come up with some pretty good ideas, for boosting our meeting attendance. Danny Callahan will provide the names of a few resturants as possibilities.

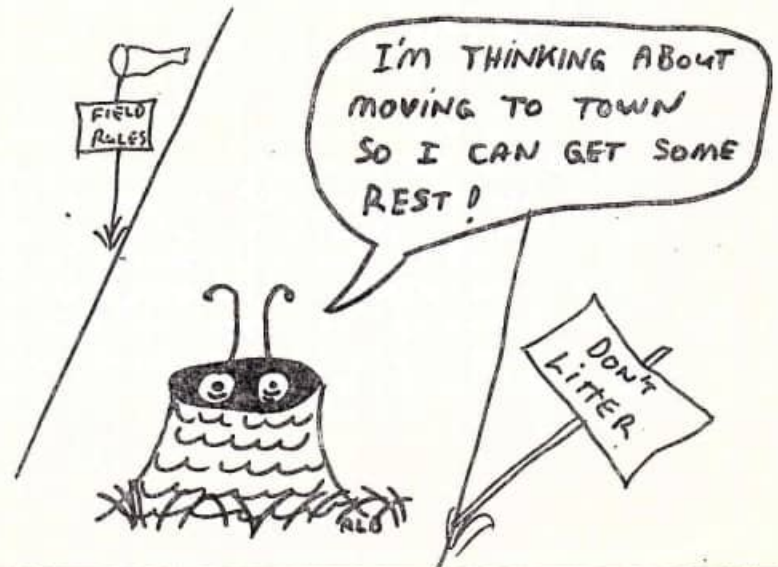
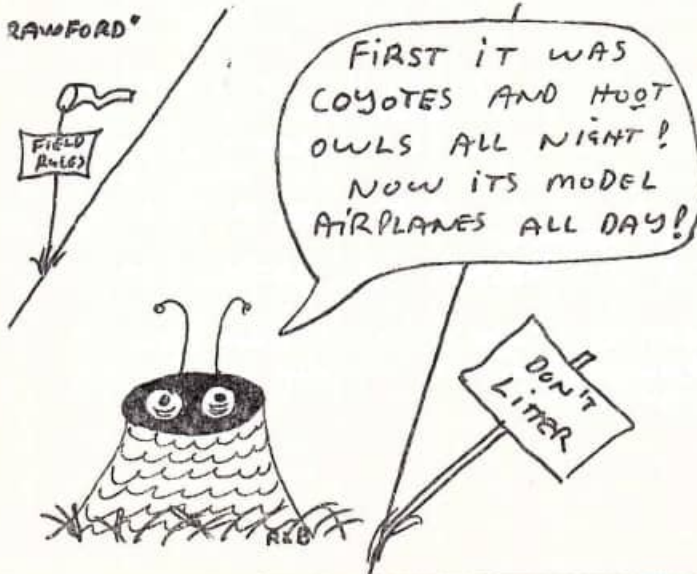
Chuck Hardman will be spearheading the activities on field improvements in the future. He'll be needing everyones support and help when the time comes for elbow grease.

We want to congradulate Steve Shumate on placing 7th out of 42 teams in the weight carrying competition this summer. The plane Steve designed for the event may soon be in kit form through a major R/C manufacturer. We sure wish him luck with it.

The Jayhawk Model Masters dont have a name yet for the newsletter. Its been sugg-ested that we have a contest to decide on one. Be thinking about that as there could be a nice prize in it for ya. A trip for two to some exotic airfield, or a ride on the plane Steve won 7th place with maybe. What more could you ask?

See You At Our Next Meeting!

RAWFORD*



BEGINNERS CORNER
Questions and Answers

This months column should have something of interest for all of us. Lets see what they are and find out if we know the answers!

Q. WHAT ARE THE THINGS THAT CAUSE RADIO INTERFRANCE? I LIVE IN THE COUNTRY AND WOULD LIKE TO FLY HERE. HOW CAN I TELL IF IT IS SAFE TO FLY HERE?

A. In general, the main things you need to be concerned about are other sources of RF (radio frequency) signals such as close proximity to a high-power AM,FM,or TV station,or other sources such as a Micro-wave tower,etc. Mobile paging services have also been allotted a block of frequencys that are very close to our R/C channels. About the only way to find out for sure is to run extensive range checks on your equipment during different times of the day. If everything checks out, fly it! Please be sure you don't become a source of interference yourself. IF YOU FLY WITHIN 5 MILES OF AN ACTIVE R/C FIELD YOU ARE CLOSE ENOUGH TO BE CAUSING TROUBLE! Other considerations include noise complants from your neighbors,and of course,safety.

Other sources of interference that we need to be concerned about are more likely to occure at an R/C field such as ours. Several transmitters operating at the same time and close together can result in a thing called 3rd. order intermodulation (3IM). Swamping (in which your planes receiver is overloaded by your or another transmitter operating at very close range),or simply having two transmitters on the same frequency turned on at the same time. These problems can be all but totally eliminated by a few simple field rules such as pilot stations spaced 25-30 feet apart on the flight line,no taxiing or flying close to the flight line, and a pin board to control frequencys in use.

Q. THE FUSELAGE SIDES IN MY KIT ARE BADLY WARPED AND TWISTED. CAN I STRAIGHTEN THEM?

Q. THE WING LEADING EDGE IN MY KIT IS BOWED. CAN I STRAIGHTEN IT?

Q. I BUILT MY WING VERY CAREFULLY, BUT STILL IT TWISTED WHEN I REMOVED IT FROM THE BUILDING BOARD. WHY? CAN I STRAIGHTEN IT SOMEHOW?

A. These three questions and others like them often come up when building a kit. In general, warped wood parts can be used as is, without any special effort used to straighten them before use. Wood warps due to changes in mosture content during storage or shipment. Assuming you use good building techniques,(lots of pins,a flat building board,etc.)and take it one step at a time,you should find that you can pull out warps as you go along. After the structure is complete,opposing forces will hold the warp in alignment.Attempts to straighten warped wood are usually futile anyway,if done seperate from the building process. You might find that what is warped today,isnt tomorrow, simply because of a change in humidity!

As far as correcting a warped wing goes, unless you have a fully sheeted,or foam core wing,a-surprising amount of twist can be pulled out with the covering. The twisted wing can be held twisted the other way while the covering is shrunk and allowed to cool. The wing will stay where you want it for a long time, or at least long enough for the twist to stabilize and stay where it should!

Q. IF ONE OF THE WING SPARS IN MY KIT IS CRACKED OR BROKEN,CAN I GLUE IT OR SHOULD IT BE REPLACED?

A. Assuming you can find the correct size and type of wood,replace it. A properly done glue joint is probably just as strong, but why take the chance to save only a dollar or two? RLB

HOW IT WORKS

CG, AC, AND STABILITY

LONGITUDINAL STABILITY:

The tendency of an aircraft which has been trimmed to fly level at a certain angle of attack (AOA) to return to that AOA when disturbed from it.

AERODYNAMIC CENTER: (AC):

A fixed point at which a change in angle of attack (AOA) will act.

CENTER OF GRAVITY (CG):

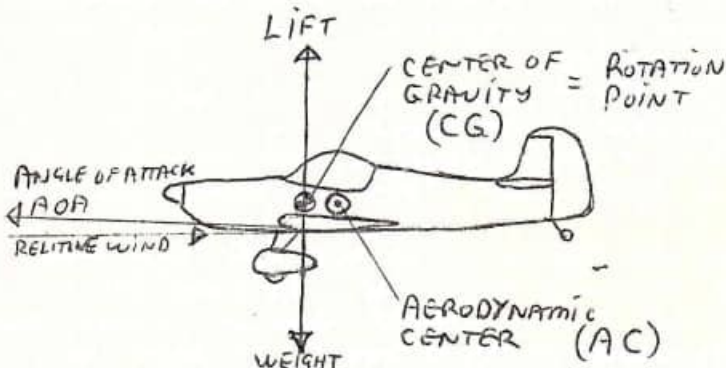
A fixed point about which an aircraft will rotate when acted upon by gravity or lift.

As you can see, our subject this month is starting to sound a little complicated. Please bear with me just a little longer and I will attempt to lighten up and come up with a simple explanation for a complex subject. I would ask that those of you with more training (any training for that matter) in aerodynamics try to "cut me a little slack" as there no doubt will be some technical errors in this article. My intent is not to give everyone in the club a degree in aerodynamics, but only to help them better understand some of the mystery of flight. With that said, lets begin.

As most of you already know, a tail-heavy airplane is very difficult to fly. In extreme cases the aircraft will be uncontrollable and will crash. Nose heavyness, on the other hand, results in a very stable aircraft. Lets take a look at the reason for this.

In order to fly, several things are necessary. Forward airspeed (Relative wind) is necessary for the wing to develop lift. A positive ANGLE OF ATTACK (AOA) is necessary for the wing to "get a bite" on this relative wind. When these two things occure, lift is produced. If forward airspeed and AOA are brought into balance, the lift created will equal the weight of the aircraft and it will fly level, neither loosing or gaining altitude. The aircraft is said to be IN TRIM. (SEE DRAWING # 1)

① AIRCRAFT TRIMMED FOR LEVEL FLIGHT. LIFT = WEIGHT.

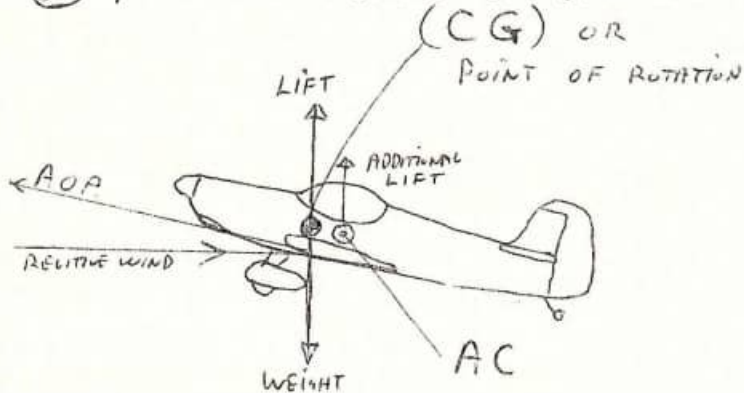


AIRCRAFT IS STABLE

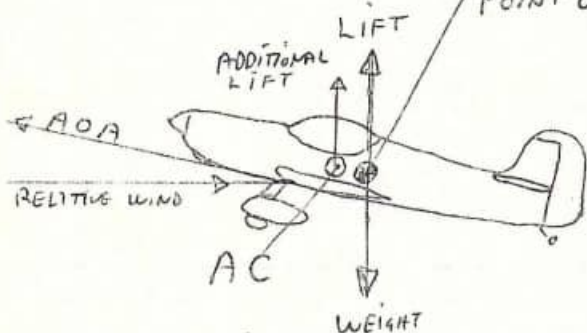
Any change in pitch caused by a movement of the elevators will result in a change in the AOA, which in turn causes lift to become either more or less than the aircraft weight. This in turn, causes either a gain or loss in altitude. (SEE DRAWING # 2)

In this case we have an example of a properly balanced aircraft. (note that the CG is ahead of the AC.) We know that the aircraft rotates around the CG, and that any change in lift acts not at the CG, but rather at the AC. It then is easy to see that in this case additional lift not only causes the aircraft to climb, but also to rotate back to a level flight condition because the extra lift is acting BEHIND the point of rotation.

② FORWARD CENTER OF GRAVITY



③ REARWARD CENTER OF GRAVITY



Now lets look at a tail-heavy airplane. (SEE DRAWING # 3)
In this example, the CG is behind the AC. A change in pitch (lift) is now acting AHEAD of the point of rotation. (CG) This causes the AOA to try to increase further, resulting in even more additional lift, resulting in a further increase in angle of attack (AOA)! As you can see, the process feeds on itself and the aircraft becomes uncontrollable. Most likely, a crash will result at this point. Now that we understand what is happening, it should become fairly easy to balance a new plane at a point that will insure a safe first flight. All we need to do is insure that the CG lies somewhere AHEAD of the AC! To do that, all we need to know is the location of the AC which is at-"ah!, lets see now! Its at-no, maybe a little more to the-"!!! O.K., we don't know where the AC is, and the plans don't tell us. The plans do tell us where the CG is however, and it is now up to us to balance the plane at, or ahead of this point.

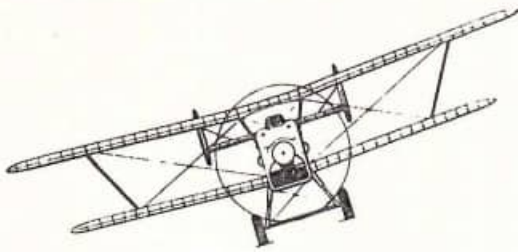
In general, the AC will be located about 35% of the cord, aft of the leading edge of the wing. For example, if your wing is 10" wide, the AC would be about 3 1/2" behind the leading edge. If we locate the CG at, or forward of the 1/4 cord point (2 1/2" or less behind the leading edge) the aircraft will be stable. If it is too stable, you can gradually move the CG to the rear untill you get the plane to fly like you want it to.

Carrying this a step further, lets assume you are building an aerobatic design that will "do it all". The plane is designed to "stay where you put it" or in other words, to have NEUTRAL STABILITY, without any self-correcting tendency. Following test flights, the CG is moved to the rear untill it finally ends up at the exact same point as the AC. Any change in lift will have no effect on trim because all forces are acting on the same point. If you ever find a plane like this, protect it with your life because they are rare!

For the new pilot however, this type of stability is not what you need. A forward CG is better for most flying (and all training) because it will make any plane behave better. Why not give yourself some extra help and check your CG one more time. If there seems to be a question, move the CG forward. Don't take a chance!

FLY SAFE!

RLB



Sign in....11:00
Start Time.11:30

OCTOBER 9th FUN-FLY

To give everyone an idea of what to expect at our fall Fun-Fly, the following events have been scheduled. There will be other (SURPRISE) events announced at the field. You will simply have to trust us on those. Sure hope your planning on coming out and joining the fun.

\$\$ Quick Trip; Take-off and land in the shortest possible time. Time starts at the command of the timer, ends when plane comes to a complete stop.

RULES: *You must fly a regular landing pattern.

*No cross runway take-offs or approaches. You must clear the threshold lines at both ends of the runway. The main reason for this rule was safety, but it will also encourage more of our first year people to fly the event.

\$\$ Touch n Go; Make as many touch and go maneuvers as possible in 3 minutes. Time starts at command of timer.

RULES: *(same as above) Threshold lines will be used.

\$\$ Looping; Most loops done in one (1) minute wins. (Chuck should do well on this one.)

RULES: *Time starts at pilots signal.

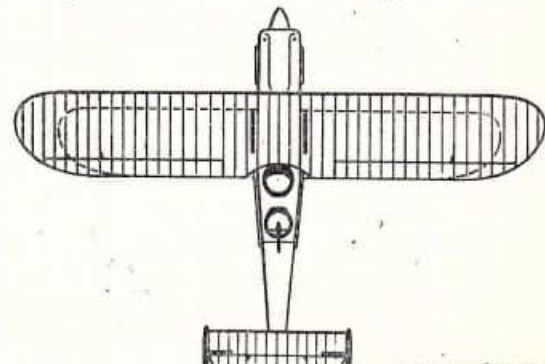
*If plane rolls out of a loop, it will not be counted.

*If the direction of your plane carries toward the pit, you must discontinue your looping until you correct the planes heading. (NO LOOPS OVER PIT-SPECTATORS)

General Rules

1. Flying over the pit area, spectators, or parking area, will result in disqualification. All flight paths and maneuvers must be flown on the opposite side of the field, away from spectators and flight stations.
2. All events must be flown with the same aircraft. No modifications other than props, and glow plugs will be allowed.
3. Any damage to the aircraft other than a broken prop, disqualifies the aircraft for that event. (Any field repair must be inspected by the Contest Director.)
4. Landing outside the designated area (normally the runway) disqualifies the aircraft for that event.
5. No beer or alcoholic beverages will be allowed.
6. Pay attention to the event lineup. There should be one person flying, and one on deck, with the third getting ready. We aren't going to hunt you this year. If you're not ready when it's your turn, you'll be passed over. (unless you have engine problems) then you'll go to the back of the lineup.
7. Strict radio frequency procedures will be in effect. Take your radio to the impound area upon your arrival at the field.
8. Judges have final say on safety and rules.
9. Open flying will be allowed only during intermission.
10. Have Fun !

Bring your own drinks & goodies
and remove your own trash.



FAIRCHILD-REPUBLIC A-10 THUNDERBOLT II (1976)
The A-10's heavily armored fuselage is built around a rapid-firing, tank-busting 30-mm. cannon that is the most powerful gun ever installed in an aircraft. The twin 9,065-pound thrust turbofan engines are mounted aft on pylons for maximum protection against ground fire; they give the plane a top speed of 518 mph and a load-carrying capacity of 16,000 pounds of bombs. The A-10 shown here bears the shark's mouth of the USAF's 23rd Tactical Fighter Wing.

