

AMA Charter 1983 - Founded March 30,
1938 - Cleveland, Ohio
- The Plane Facts -
August 2001

NEXT CLUB MEETING

Will be on Saturday, Aug. 4th, 2:00 p.m., at our flying field located at 3050 Avon Lake Rd - Litchfield, OH. The **American Airlines Gas Model Club** meets here on the 1st Saturday of each month during the summer. The **AAGMC** welcomes visitors at all regular meetings.

2001 AAGMC OFFICERS

President Paul Bianco
(440) 845-5954
V.Pres. Dick Matejka
Secretary Jim Knodel
Treasurer Henry Horn
Sgt. at Arms Mike Labosky
Club Photog. Adam Snelly
Elec. Media Coord. Don King

2001 MEMBERSHIP DUES

Open Members \$50.00/yr.
Senior (17-18) 8.00
Junior (<17) 5.00
Initiation Fee \$25.00 (New Members)

PLEASE NOTE: As pointed out above at the top of the column, this month's meeting **has been changed to Saturday afternoon.**

Rather unexpectedly, no one called or emailed us with an answer to the "trivia" question in the August issue of *Model Aviation*.. Soon, if you don't already, you'll know the gentleman - very prominent in Cleveland's early aviation history. We're just a little surprised there aren't more aviation historians in our midst..

Speaking of the Sept. issue of *MA*, I can't help commenting about the models (only the highlights!!) that competed at the Top Gun competition back in April... The work on those airplanes is incredible. It makes me wonder where these folks find the time to devote to these projects! I assume most, if not all have day jobs - do they spend the wee hours grinding away on fibreglass, spraying, machining? Nonetheless - such craftsmanship sure does provide a target to shoot at in terms modeling ability.. Not real sure I'll ever get there...

Please note below - A Club Fun-Fly on the

4th, and two electric contests, the first of which is the next day, the 5th...

- FROM THE BOARD -

From the Pres...

Well, Mother Nature took control of another monthly fun fly. The gusting winds on July 7th didn't allow any flying, but Don, Marv and Henry didn't let that stop them in planning a workday at the field. We had gravel delivered for the driveway (3 truck loads) and about a half dozen guys put the field in great shape. Thanks go out to our newsletter editor for "editing" the field with the weed eater! This guy is dangerous with that thing in hand! If we could just get him to strap one of those engines on a plane.....wow! Anyhow, thanks to all the guys who showed up AND we had one gal show up! Guess who? Hint...she loves giant scale and frequently "attends" our club meetings. Give up? How about Rose Matejka and her homemade GIANT SCALE BROWNIES!!! Yummie !! We also had a brief club meeting. The meeting was called to order at 2:12 pm by yours truly. Attendance: 6 (not counting the brownies!). No meeting minutes since the June meeting was a wash, literally. Treasurer's report read and approved. No notices and communications. Under old business, we still need to ask about posting a club sign at the drive entrance. The Cub Scout fun fly issue has been cancelled due to no interest from the Cubs. Under new business, we discussed the AAGMC family picnic, which will be on August 18th. Dick Matejka is coordinating the potluck portion and HE NEEDS YOUR HELP! The club will be providing the main course, hamburgers/hot dogs (Pasta????), but please call Dick if you are coming. Meeting ended at 2:34 pm. Remember, the Suburban Club will be attending our August fun fly! Come on out and join the fun! Please fly and drive (past the stables) SAFELY!! Later....

PAUL'S SCHEDULE OF EVENTS

AAGMC Fun Fly @ **our field w/Suburban's Club, Aug. 4th**
Electr. Contests, **Aug. 5 & 19**
AAGMC Family Picnic, **August 18th**
AAGMC Fun Fly @ our field, Sept. 1st
(start times are 12:00 noon, 2:00pm flying)

INFO FILE..

We continue with the "discussion" about canard

designs... Here's part 2..

Tails and Canards

by Alan Brown

Now that I've thoroughly confused the issue, let's get back to center of pressure as defined in the picture below.

In steady level flight, the center of pressure has to be at the same place as the CG of the airplane. If we rotate the airplane to a new angle of attack (incidence angle is how we rig the airplane, angle of attack is the angle the airplane presents to the airflow at any point in time), then we'll get some incremental lift from the wing acting at its own center of lift and some from the horizontal tail at its own center of lift. The total extra lift will act somewhere between the wing and the tail at the aerodynamic center. To a first approximation, that point will be given by the ratio of tail area to wing area, as shown.

More exactly, this will depend on the aspect ratios of the two surfaces, wing downwash and the distance between wing and tail in wing chord lengths.

If we fly the airplane a bit faster, it will need a smaller wing angle of attack, which results in a negative tail angle. We'll have to add some down elevator to keep the airplane trimmed, otherwise it will want to pitch up. Conversely, if we want to fly more slowly, we have to add up elevator to keep trimmed.

Depending on how we set the initial tail angle, we can obviously have the tail, at normal flight speed, either help to lift the airplane or give negative lift. In the former case, the CG will be aft of the 25% chord point, and in the latter case it will be forward of the 25% point. However, the position of the aerodynamic center does not change.

Suppose we trimmed the airplane with the CG at the aerodynamic center. Then the airplane will be neutrally stable (there'd be no pitching moment relative to the CG as the airplane rotated), but we wouldn't need any change of trim to fly faster or slower. Any small elevator movement would result in a rapid response because the extra wing lift acting at its own center of pressure gives a very strong pitching moment.

So, as we all know, moving the CG back allows us to trade maneuverability for stability, or allows us to have smaller control surfaces, but still with lower stability. The reverse happens if we trim with the CG forward of the 25% point.

If our airplane has flaps, we'll introduce a nose down

pitching moment when we put the flaps down. If the CG is well forward, we may not have enough control to keep the airplane flying level, so flapped airplanes need larger control surfaces in general than those without flaps.

Note, however, that the aerodynamic center of the flapped airplane is still where it was without flaps because it only depends on the incremental change in lift of the wing and tail. Thus, we can't just move the CG of our flapped airplane back without sacrificing stability as before.

{ We should get this done next time...ed. }

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Don't forget to get out to the **Fun-Fly** with the Suburban folks.. And also the **Picnic**. These are really a lot of fun.. And... Your favorite **Club** needs your support!

Guess I'll land now... 'Til next time! 8^}