

THE CONNECTOR

The Official Newsletter of the Aeroguidance Society, Inc.

Endicott, New York



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<u>DATE</u>	<u>TIME</u>	<u>PLACE</u>	<u>EVENT</u>
4/9/86	6:30	NYSEG	Ground School
4/9/86	7:30	"	Project Night
4/14/86	7:30	?	Board Meeting
4/15/86	7:00	Bob Noll's	Hanger Session/RSVP
5/3/86	9:00 AM	AGS Field	Field Opening/Breakfas
5/11/86	9:00 AM	AGS Field	Raindate for Opening
5/13/86	6:30	NYSEG	Ground School
5/13/86	7:30	"	AGS Meeting
5/18/86	12:00	AGS Field	STRCA
5/19/86	7:30	?	Board Meeting

I would like to take this opportunity to thank the people who have helped me put out the Connector over the past few months. For in that time I have been very busy and they all did what they could to help-which brought only praise from other members. I would like to thank Bill Underkofler, Jerry Skreckowski, Bob Noll, Jim McKeown, Grover Ellis, and Mary Felice.

FIELD OPENING AND GOURMET BREAKFAST

SATURDAY MAY 3RD 9:00 AM

BRING SOME LAWN TOOLS AND YOUR BIRD (FLYING SUGGESTED AFTER WORK)

WIVES INVITED

RAIN DATE: SATURDAY MAY 10TH

Please phone in your breakfast reservations by Thursday May 1st

to Jerry Skreckoski 625-4103

PROJECT NITE CHANGE NOTICE

WEDNESDAY APRIL 9TH, NYSEG, 7:30 PM

GROUND SCHOOL AT 6:30

BRING YOUR PROJECTS(finished,unfinished,planes or others related to modeling)

DOOR PRIZES

FOR EXHIBITORS ONLY

DOOR PRIZES

THE PREZ SEZ;

The flying season is almost here!! The field opening date is set. Yes, on Saturday May 3rd, the first field event of the season will happen. COME and have breakfast. The morning weather usually is very invigorating and builds the appetite. This is traditionally enjoyable event that stirs up the flying bug. Bring some garden tools to work on the projects which our FIELD chairmen, Bud and Bob spend all year planning. Then we all get a chance to check out the runway and air conditions.

FLIGHT SCHOOL. There will be a flight school for all you beginners (and those still feel like beginners). It will start one or two weeks after the field opening. More details will follow in the next CONNECTOR.

SPRING FLYING. Moore park has been thoroughly muddied by the flood. The Town may clean it up in the near future but as soon as it firms up the warm weather will bring out the golfers and ball players. IN THE INTEREST OF SAFETY, NO FLYING SHOULD BE DONE WHEN THERE IS PEOPLE ON THE PARK.

So where can you fly? Our field. BUT DO NOT DRIVE YOUR CAR PAST THE TURNAROUND AT THE TOP OF THE ROAD. THIS MEANS A SHORT WALK UP TO THE PIT AREA. IF YOU GO PAST THE END OF THE GRAVEL YOU WILL GET STUCK OR AT LEAST TEAR UP THE FIELD.

FREQUENCY CONTROL. As imentioned at the last meeting, due to a very near neighbor who flies R/C, has agreed to continue his use of 72.400 (orange/white) and the AGS HAS BANNED THE USE OF 72.400 at our field. Also, due to known possible interferences, we strongly urge that Channels 12 and 42 NOT BE USED.

The ADDITIVE frequency control system will be unveiled as the first project at the April meeting(Note date change). You will need the new 1986 membership card to fly. See Grover Ellis if you havn't the new PINK CARD.

See You at Project Nite!!!

Jerry Skreckoski

9/20/81

FIELD PROCEDURES

AEROGUIDANCE SOCIETY, INC. R/C FIELD DAY HOLLOW RD.

SAFETY:

1. All fliers will obey the official AMA safety code.
2. No transmitter shall be turned on without the appropriate frequency clothespin attached to the transmitter antenna.
3. Make certain that the runway is clear before take-off and landing.
4. Announce intent to walk on to the runway to the person/persons flying.
5. Announce intent to land. Specify if "dead stick". Dead stick landings have the right-of-way.
6. Announce when having radio or flying trouble. Don't hesitate to call for assistance.
7. All airborne aircraft shall be equipped with a AMA approved prop nut or spinner.
8. Fliers shall warn bystanders not to stand in line with a turning propeller.
9. Fliers shall refrain from aiming their propwash and exhaust at spectators, other fliers, or their equipment.
10. A maximum of four aircraft under power are allowed to be airborne at any one time.
11. Members are responsible for all children and guests they bring to the field.

ELIGIBILITY:

Flying at the Aeroguidance Society R/C field is the right of regular and associate members in good standing. Visitors and/or guests must have AMA membership (as is required of regular members) before flying.

GENERAL:

There shall be no aircraft engine running before 9 A.M. nor after 9 P.M. on any day.

Mufflers shall be used at all times on all engines above .051 cu.in.

Prolonged engine test running and/or break-in shall be conducted at the western edge of the field.

Tractor and related equipment shall not be operated unless 2 or more adults are present.

Don't litter. Pick up waste and place in barrel.

Be courteous to spectators, answer questions, PROMOTE the club.

Last member to leave shall lock the entrance gate.

THE ACTION AREA - by Bob Noll

HANGER SESSIONS - The March session was back at my hanger again. From all indications, there are going to be quite a few new pattern planes at the upcoming Project Night. The next session will be at my shop as follows;

Tuesday April 15, 1986
7 to 10 PM

2317 Acorn Dr, Vestal
Phone 754-5279

We'll begin to discuss the fine art of "TRIM and BALANCE", something that will turn a great looking plane into a spectacular performer.

NEW FREQUENCY CONTROL SYSTEM - The new frequency control boards will be unveiled at the next meeting. Considerable effort has gone into the design and build of the new system by the members of my committee, Ed Hall, Bill Underkofler, Jim McKeown and Dick Allen. The committee was charged, by the Board of Directors, to implement an additive system. The committee chose to integrate a frequency grouping plan into the system because of the highly publicized concerns regarding reported interference problems caused by the interaction of our very own frequencies. The following information will allow you to become familiar with the new system prior to the next meeting so that you will have adequate time to think about items that may need further clarification or in the event that you cannot be present for the presentation.

FREQUENCY GROUPING PLAN

72.030 (12)	72.160 (B1/W)	72.320 (V/W)	53.100 (Br/Bk)
72.080 (Br/W)	72.590 (40)	72.750 (48)	53.200 (R/Bk)
72.960 (Y/W)	72.630 (42)	72.790 (50)	53.300 (Or/Bk)
72.550 (38)	75.640 (Gr.W)		53.400 (Y/Bk)
72.910 (56)			53.500 (Gr/Bk)
	72.240 (R/W)	72.400 not avail.	53.600 (B1/Bk)
S P E C I A L	72.670 (44)	72.830 (52)	53.700 (V/Bk)
	72.710 (46)	72.870 (54)	53.800 (Gy/Bk)

FULLY PROTECTS AGAINST: 3IM INTERFERENCE (NEW CHANNELS)
IMAGE INTERFERENCE
IF INTERFERENCE
OLD CHANNEL 80 KHz SPACING

72.400(Or/W) - HAS BEEN ALLOCATED TO OUR NEAREST NEIGHBOR AND CANNOT BE USED AT THE AGS FIELD.

CHANNEL 42 - A WARNING WILL BE NOTED ON THE FREQUENCY BOARD THAT INTERFERENCE HAS BEEN REPORTED.

CHANNEL 12 - A NOTICE WILL BE POSTED ON THE FREQUENCY BOARD THAT THIS FREQUENCY IS USED BY A NEIGHBOR.

GENERAL - 1) ALL PRESENT FIELD RULES REGARDING SAFETY AND OPERATION APPLY.
2) A LOG BOOK WILL BE PROVIDED IN THE IMPOUND AREA TO RECORD ANY AND ALL ACTUAL OR SUSPECTED INCIDENTS.

AGS FREQUENCY CONTROL SYSTEM

The new AGS FREQUENCY CONTROL SYSTEM has been designed to reduce potential interference problems as well as provide an additive system. An additive system simply means that something is added to the frequency board rather than taking something away as we presently do with colored frequency pins.

The sketch, complements of Bill Tomsa, will help you understand what the frequency board looks like. Basically it is a grouping of frequencies (see FREQUENCY GROUPING PLAN) with clips to attach your membership cards. The left clip is for the ready line and the right clip is for the person flying.

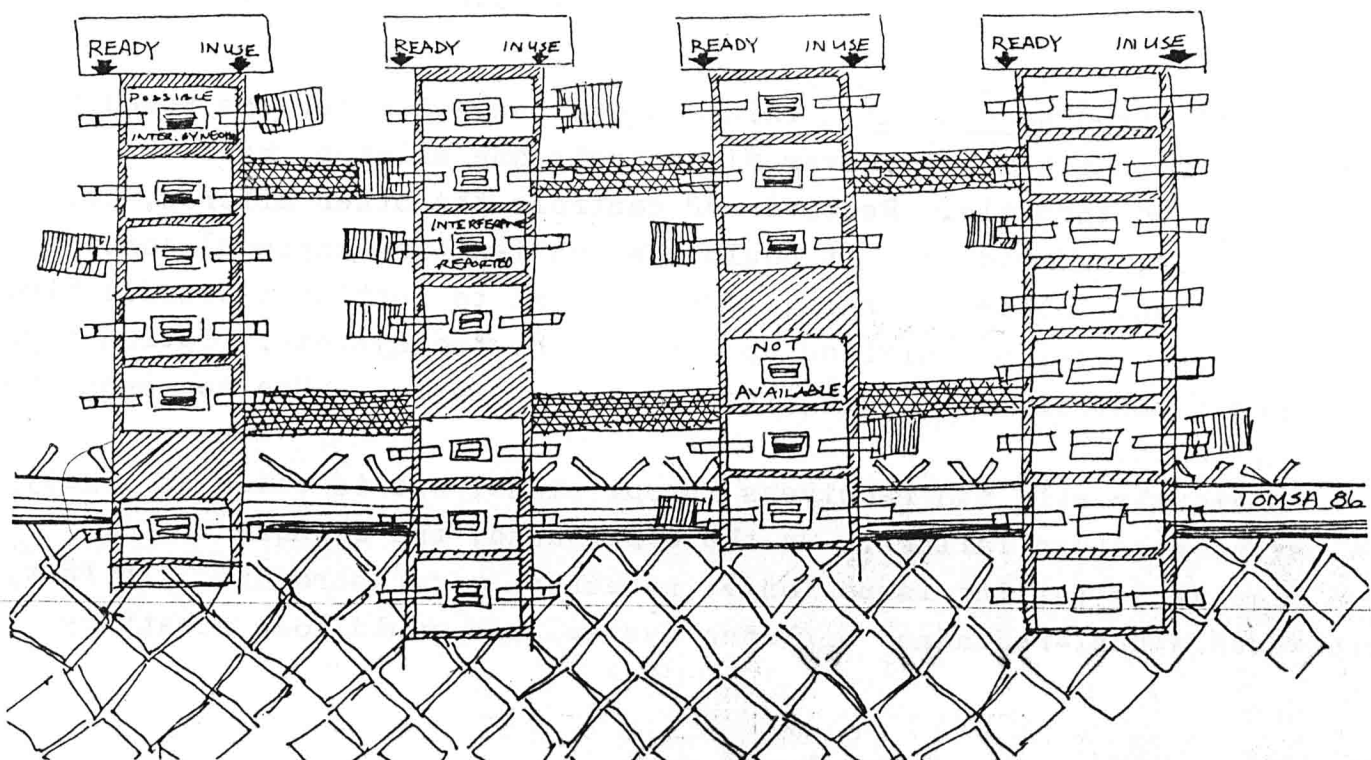
Here are the simple steps regarding the use of the board;

1. PLACE VALID AGS MEMBERSHIP CARD IN CLIP CORRESPONDING TO PROPER FREQUENCY. ONLY ONE FLYER PER GROUP.
A) USE "IN USE" CLIP IF FREQUENCY GROUP IS NOT IN USE.
B) USE "READY" CLIP IF FREQUENCY GROUP IS IN USE.
2. REMOVE TRANSMITTER FROM IMPOUND AREA.
3. MAKE ONE FLIGHT.
4. REMOVE MEMBERSHIP CARD FROM CLIP AND RETURN TRANSMITTER TO IMPOUND.

EXCEPTIONS:

1. GUESTS WILL USE A VALID AMA MEMBERSHIP CARD.
2. CONTINUOUS FLIGHTS MAY BE MADE IF NO CARDS ARE IN A "READY" CLIP WITHIN THE SAME GROUP.
3. FLYING WITHIN GROUPS IS ALLOWED IF LESS THAN 6 FLYERS ARE PRESENT AND ALL TEST AND AGREE, EXCEPT FOR 6 METER GROUP WHERE THERE ARE NO SUCH RESTRICTIONS.

The test to be performed will be defined in the log book located in the impound area.



Redundant Airborne Systems-Dick Allen

The most reliable part of our airborne R/C systems is the receiver, while our batteries and servos must share the blame for being the least reliable.

After talking with many experts, I have come to the following conclusions:

Servos: The easiest way to achieve servo redundancy is merely to plug 2 servos into a single channel via a "Y" cable. The most important controls are roll and pitch. For roll, put one servo on each aileron. One can fly an airplane on either aileron, providing the "dead" servo did not wuit near maximumthrow. (Murphy is not always unkind-it just seems that way.)

For pitch redundancy, use two servos on the elevator channel. Couple each servo independently to only one half of the elevator. Use two separate pushrods. There should be no mechanical connections between elevator halves. Again, one can get a plane down safely on half an elevator, providing the other half did not die too far away from neutral.

Batteries: Achieving battery redundancy is a tougher problem than with servos. Using a battery-backup (automatic switch-over to a stand-by pack) requires complex circuitry which can itself go bad. Also, the ones I've seen use non-standard 5-cell packs.

It seems to me that using two completely independent airborne systems(as described below) is a better approach for acheiving battery redundancy.

Dual Airborne Systems: This approach uses 2 receivers tuned to the same transmitter. Receiver #1 controls one aileron, half the elevator, and throttle. Receiver #2 controls the other aileron, half the elevator, and rudder. It could also(on ignition engines) control a kill-switch. Other controls, less critical to getting a wounded bird down in one piece, are divided up between the two systems. Optionally, the rudder control may also utilize redundant servos. Use two separate battery packs.

OBviously with two receivers in one plane, one is twice as likely to have a receiver failure. On the other hand, the consequences of one receiver's failing is no longer necessarily catastrophic. In fact, with such a dual-redundant airborne system. one could lose a battery

Pack, a servo, or even a receiver and still have a fighting chance of avoiding disaster.

I have been advised that the following rules should be utilized to avoid cross-talk between airborne systems:

- 1) Separate the two receivers as far as is practical within the plane.
- 2) Keep the antennas separated-forexample by running them to opposite elevator tips.
- 3) Both systems should share a common ground. This will be more effective if metal-case receivers are used.

One final thought: Do not use components that are any less reliable than those you would use in a non-redundant system. Always remember the

First Law of Redundancy

"Murphy shall, sooner or later, smite the aircraft of those who assume that redundancy can compensate for less-than-optimum equipment."

Helicopters and Other Things-Bill Underkofler

Noise: Clubs across the country are losing flying fields, and the principal reason is noise and annoyance to neighbors caused by our motors. The AGS lost its former field in the town of Maine due to noise aroused neighbors-an experience we don't want to repeat. At the Maine field we violated no laws and our legal right to operate was clear, but we were nevertheless driven out by harassment tactics-vandalism, arson, and flying bullets. We need to take action now to head off future problems at our present field.

Unfortunately, noise sensitivity is a subjective issue and there are no adequate standards to define what is acceptable. It's not just sound level-a dB meter shows that our noise at the neighbor's site is less than that of his own power mower or local road traffic. The annoyance factor is personal and subjective. High speed 2-cycle engines seem most annoying. 4-cycle engines, while just as loud on a dB meter are lower in frequency and are perceived as less annoying. The chain saw engines are lower in frequency but have great carrying power-can be heard farthest away.

The AMA recently reorganized its Sound Committee. We can hope

that it will soon come up with some realistic standards and guidance. The chairman has written a series of articles, the first of which appeared in the current "Model Aviation". Suggested Reading.

In the meantime let's use good sense and use best available now mufflers at the field. Some so-called mufflers are cheaters and we know it-let's replace them.

It is possible to make quieter mufflers. I have been modifying my helicopter mufflers for additional quieting. In one experiment I added a second expansion chamber onto an existing muffler. A second experiment added a gun silencer type fitting unto an OS40 muffler(perforated tube and side expansion chamber). Both modifications showed considerable improvement(to my ear) with acceptable power loss. I would encourage all club members to try similar experiments and report results.

Perhaps the club should buy an inexpensive sound meter and start collecting data. At present the only noise standard set for models is that for FA1 pattern-we should at least meet that criterion until better standards are published.





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AGS

BRING YOUR "P & J" to the ever-popular

AEROGUIDANCE
SOCIETY INC.



ANNUAL Project Night

Wed - APRIL 9, at 7:30 pm

New York State Electric and Gas Bldg., Old Vestal
Road, Johnson City, New York.



Airplanes (All sizes) - Cars - Boats - Interesting Projects - Prizes too!