

THE CONNECTOR

The Official Newsletter of the Aeroguidance Society, Inc.

Endicott, New York

Editor: Gerry Skreckoski



THE CONNECTOR is the monthly newsletter of the Aeroguidance Society, Inc., Radio Control Model Club. The club owns and maintains its flying field in Endicott, N.Y. Anyone interested in joining the club should contact any of the officers listed below.



President: Wynn Aker
Secretary: George Kelsey
Board Member: Tom Kopl

Vice President: John Raney
Treasurer: Jerry Bernhardt
Board Member: Terry Terrenoire II
Past President: Chris Engler

VOLUME 25 ISSUE 9

SEPTEMBER, 1992

NEXT MEETING: Sept 15, 1992 - 7:30pm

Place: Vestal Am. Legion

AGS CALENDAR OF EVENTS			
DATE	TIME	PLACE	EVENT
Sept 12-13	9:00am	Rhinebeck NY	Rhinebeck Jamboree
Sept 13	1:00pm	AGS Field	Empirical Radio Test
Sept 19-20	---	Quackertown PA	KRC Electric Fly
Sept 19-20	---	Chicopee MA	Pattern Contest
Sept 20	---	Bridgeton NJ	Fun Fly
Sept 20	---	Easton PA	LVRCS Fun Fly
Sept 20	1:00pm	AGS Field	Pylon Racing
Sept 26-27	9:00am	Greenwood Park	AGS Float Fly
Sept 21	?	?	AGS Board Meeting
Sept 26	---	Lakehurst NJ	Pattern Contest
Oct 4	1:00pm	AGS Field	Pylon Racing
Oct 11	1:00pm	AGS Field	Pylon Racing

PROGRAM FOR SEPT MEETING. VIDEO

TAPE (?)

NEXT CONNECTOR INPUT DEADLINE IS Oct 6 1992

PREZ SEZ

by Wynn Aker

September, 1992

First, and most importantly, I hope your summer, such as it is, is going well. Most everyone I've talked to has been complaining about the weather since day one this year, and I have to admit, it didn't really feel like summer until about a week or two ago. I suspect that the swimming pools in the area have gotten very little use this summer, and I know most of our local R/C flyers feel like this is just not the summer to fly! That said, however, I've gotten a record number of flights so far this year, I guess because even though it's been cloudy, the wind has been calm, the field has been dry and in good shape, and there are enough planes in the hangar to fly, even with a couple of crashes!

This month brings us some important activities which need mention here: The Annual Greenwood Park Float Fly, and the First Annual Empirical Radio Test At The AGS Field.

On Sept. 26 & 27, we will host our Annual Float Fly at Greenwood Park for everyone who wants to attend. There is a small entry fee to cover costs, and visitors are welcome. Scott Anderson is the C.D., and he has ordered good weather for us, with a minimum of crashes (that last one is for me!). I built a new plane especially for the float fly, and hopefully it will last longer than the last float plane!

What, you may ask, is the First Annual Empirical Radio Test? Well, at the last regular meeting, held at the field in August, we still haven't decided on whether or not to drop the frequency groupings that we have on the pin board, which are presently designed to protect single-conversion receivers from 23-channel apart transmitters. What, you may ask again, is the reason why we even care? Well, without going into much detail, which we have done in recent years, a single-conversion receiver, which uses an IF frequency of 455 kHz, can get stepped-on by two transmitters 23 channels apart. This happens by a phenomenon known as the "beat frequency," generated by two or more frequencies operating simultaneously. This beat frequency is the difference between the two, yielding the 460 kHz harmful by-product, which can be received by your airborne receiver. This fouls up the front end, because the local IF gets confused by something that can be right on, or very close to its operating frequency of 455 kHz. This is the reason why the new AMA "1991-legal" receivers went to a double-conversion scheme. These receivers now have two IF stages: The first is at 10.7 MHz, and the second is at the normal 455 kHz. The first stage will filter out the unwanted signals that may exist at or around 455 khz, and second local IF does the normal conversion with which we are familiar.

Okay. So, what does all this mean? Well, we want to purchase a new frequency pin board, and open up all the channels, as well. But, we don't want to do it if we're going to have a problem with the ATTACK AM receivers, or any single-conversion receiver. But, AMA's technical director, Bob Underwood, tells us that the problem is virtually nonexistent, and that there should be no reason to continue to be concerned about the 23 channel spacings. So, we're going to do an empirical test at the field, on Sunday, September 13, with as many transmitters and as many single-conversion receivers as we can find. Several people have already signed up to help at the August meeting, but as many as we can get up there, the better. Try and come by and see what's going on as we try and shoot down Don Leaf's glider! Just kidding, Don!

(In the case of AM receivers, some "single conversion" units ARE AMA APPROVED FOR 1991 OPERATION. Futaba R-117H seven channel AM receiver for example. I assume that Bob Underwood's comment of a non-existing concern for 23 channel problem includes them. To clear out the skeleton in the closet, I urge you to participate in the Sept 13th radio test at the AGS field. --ed.)

Because the summer is quickly drawing to a close, it signals all sorts of things, including our return to the Vestal American Legion for the monthly regular meetings. Don't forget, and accidentally go to the field, as you will only find company with those others who also forgot! Let's also bring lots of show-and-tell projects to the meeting, as that's what these things are for: the members and their airplanes. We have a little bit of business to take care of this month, including finalizing the candidates for the annual election to take place next month. Because of the uncertain nature of the length of the business meeting, the scheduled program is a videotape, rather than have an individual get all prepared for a program and then maybe not have time to do it. In years past, some program presenters had their program cut way short, due to an inordinately long business meeting, so my goal has always been to keep the business portion only as long as it has to be, and emphasize the projects and fun nature of the hobby. So far, I've heard no complaints! So, we'll keep to our routine and try to continue in this fashion for the September meeting.

I have a request for photos from the pattern contest, as I don't remember who was running around with a camera. My fault. Whoever took pix there, please contact me, or bring them (or the negatives) to the meeting, so that I can complete that portion of the historian's photo album. Speaking of historian, I need to ask for a volunteer to be the historian: I've been for three years, now, and would like to pass this one on to someone, if I could. It's not a challenging or time-consuming job, just one that needs doing. Is there anyone out there who could help?

Some other reminders for the September meeting: let's try to get the book and tape library back up-to-date, and bring those video tapes and books to the meeting. You can still check out any you want, but it's been quite a while now since we have had an indoor meeting, and there are some tapes that have been out for 6 months or more! Please return the tapes and let's get the library current again.

Every problem has in it the seeds of its own solution. If you don't have any problems, you don't get any seeds. Norman Vincent Peale

P Y L O N R A C I N G

We had another fine evening of racing during August. The results are getting closer all the time. The uniform engine rule apparently is having the desired effect. There were 9 competitors and the results are posted below. Tim informs us that only the best three nights for each competitor will be used for the overall standings. In this way, missing a race session will not penalize anyone.

Since this event is holding its popularity, Tim has 3 more race dates scheduled. They are all sundays. Sept 20, Oct 4 and 11.

RESULTS FOR AUG 24th (9 Heats)

	POINTS
T. Kopl	8
Terry T. II, Dick Allen	7
BO4cb Noll, Terry T. III	6
Jerry Skreckoski	5
Dan Luchaco, Tim Rogers, Jerry Bernhardt	4

SEPTEMBER BIRTHDAYS

If there are any errors, please call me!!

1st Steve Gabaly	12th Bill Hinrichsen
2nd Dick Allen	23rd Don Leaf
5th Matt Struck	24th Duane Smith
	25th Nels Christensen

HIGH POINT

A flyer receives 3 points for first, 2 for second, and 1 for third place in any AMA sanctioned competition event.

Standings as of 9-1-92:

Wynn A.....10	Scott A.....7	Hai L.....5
Terry T.....10	Tim R.....3	Dick A.....6
Jerry S.....2	Joe F.....1	

*note, Ralph Jackson and Bob Noll are not on the list as they have achieved "ACE" status, and are no longer eligible.

TEST FOR FREQUENCY INTERFERENCE

At the August meeting we again discussed the new frequency board, and whether it should maintain the current "23" spacing or be opened up to one pin per approved channel. There is still some concern on the part of a few individuals flying the AM radios that are not dual-conversion. Both the AMA Executive, and the Technical director have assured me that there should be no problems. However; we are going to conduct some field tests prior to the September meeting so the situation can be evaluated and some decisions made.

If you are one of the people flying an AM system, we would like to have you participate in the testing. We also would like to have as many of the new "odd" channel radios as possible. If you have a new "odd" channel radio, would you please call me so I can arrange for proper test conditions. At this time we are planning to conduct this test during the weekend of September 12 and 13. If you would like to be a part of this test, but will not be available, we can arrange to have your equipment included.

Please call me at 748-8146, Jerry Skreckoski at 625-4103, or Scott Anderson at 797-3943, if you would like to participate in this field test or if you have equipment you want to have included in the test.

The Mousseler is an inexpensive mousse-can muffler which will add power and reduce noise of .32 to .40 size engines compared to their stock mufflers. There are many versions of mousse-can mufflers in use, especially on Competition Fun Fly planes. My particular design, the Mousseler, is a three-stage unit which can be expected to add about 1,000 rpm while maintaining noise levels between 89 and 95 dB depending upon propeller and rpm. See Table 1 for performance data.

The Mousseler is attached to the engine via a standard tuned pipe header. If you already have a header, you can build and install a Mousseler for under \$ 4.00. If you can't get a free (empty) mousse-can from your wife and/or girl friend; you should be able to find one (full) for a buck or two at K-Mart.

To make a Mousseler first study the drawing, then cut a piece of 5/8" brass tube to a length of 4.8"; and a telescoping piece of 19/32" brass tube to 5.5". Fabricate the middle cap from a piece of 1/64" sheet brass. Bend the "petals" to be a snug fit in the 19/32" tube. Silver solder or braze the cap flush with the front of the 19/32" tube. Do not solder on the rear cap at this time. Then braze the two tubes together with a 0.3" overlap. This gives you a tube 10.0" long with a cap (plug) near the middle.

Next mark the 60 hole locations in both areas A & B; and the 36 hole locations in area C (exhaust). The three rows of holes in area C are only 0.2" apart, and the holes are on 0.2" centers as well. Each row of holes is staggered with respect to adjacent rows. Now drill the holes (all 156 of them!) with a sharp #48 drill. It works better if only about 1/8" of the drill protrudes from the drill press chuck. Next deburr the holes by running a large rat tail file around inside the tube. Then redrill all holes and deburr them a final time.

Make sure all pressure is removed from the mousse can before drilling holes in both ends. Gradually enlarge the hole sizes with larger drills, files, and a taper reamer until the front hole is 5/8" and the rear is 19/32". This should be a snug slip-fit.

Now braze a 1/64" plate on the rear tube to cap off the back end. This does not have to have interior "petals" like the middle cap. Trim off the edges flush with the O D of the 19/32" tube and sandpaper to a smooth circle which will slide through the mousse can holes.

Clean the outside of the brass tube with sandpaper and then alcohol, especially in those areas where it exits the mousse can. Also clean the ends of the can. Then assemble the unit (one end at a time) using a high temperature automotive epoxy called "J-B Weld".

6

Position the Mousseler temporarily on your airplane with the exhaust holes directing the exhaust away from the plane. Note which side is the bottom. File a notch and then drill a 1/16" hole in the very bottom rear of both the mousse can and the 19/32" tube (cap) to act as oil drain holes.

The Mousseler is mounted to a tuned pipe header with a silicone tube; and to the airplane in a manner similar to that used for a tuned pipe. Since the Mousseler only weighs 2.5 oz. the mounting can be very light. I use 2 #64 rubber bands. A friend used a 1/32 wire standoff wrapped around the exhaust tube.

The rear cap reduces sound by about 1 dB when measured from the side and by several dB from the rear (with no power loss). If you want to convince yourself that the rear cap doesn't rob power leave it off temporarily. Then cover/uncover the open tube with your thumb while the engine is running and the rpm is being measured. Not to worry: the exhaust will be relatively cool compared to that from a stock muffler.

Dick Allen 9-7-92
AMA 9174

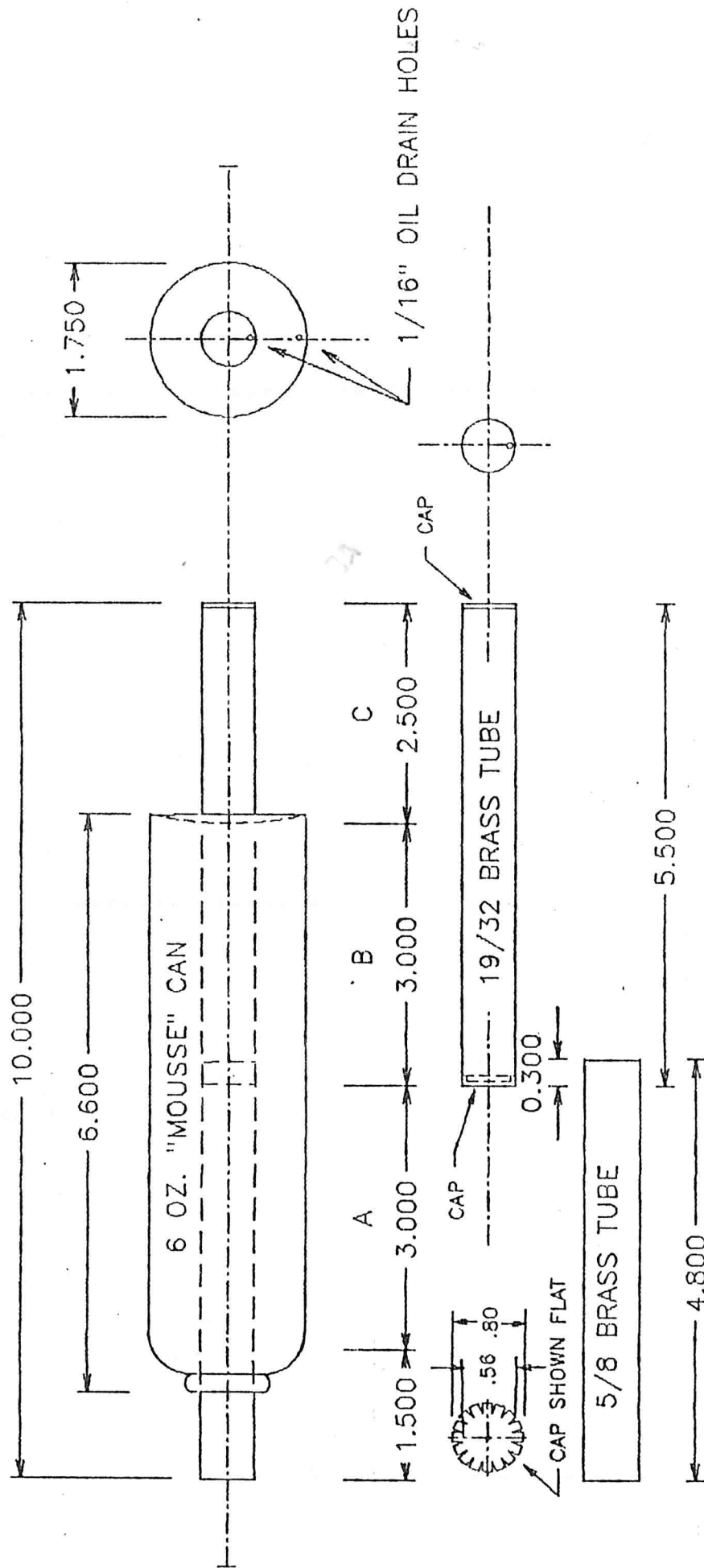
TABLE 1 Sound Measurements

Engine	Muffler	Propeller	rpm	dB
O.S. .32	Mousseler #3	P.Point 11-4	14,000	94
	O.S. (stock)	P.Point 11-4	11,000	92
	Mousseler #2	Master A. 10-6	13,000	90
O.S. 40FP	Mousseler #3	Master A. 10-6	10,000	89
	Mousseler #3	APC 9-7	14,000	95
	None (pipe only)	APC 9-7	-----	104
	O.S. w/ O.S. Mute	APC 9-7	11,800	89.5

Measurements were made at 9 ft. from the engine, 9 in. above the ground. Fuel was Omega 10%. Instrument was "Radio Shack" sound level meter set to the "A" scale. Engines were mounted on aircraft.

MOUSSELER

MODEL 40 - 3



R. C. ALLEN
8-19-92

Vestal, New York 13850-0039
P.O. Box 39
Aeroguidance Society, Inc.

M O W I N G L I S T

Sept 26	Wynn Aker 785 6627 Scott Anderson 797 3943
Oct 3	OPEN
Oct 10	Ralph Jackson Dick Allen
Oct 17	OPEN