

PROP

PLANE

WASH



Vol. 178

April 1990

OFFICERS OF THE S.T.A.R.S. CLUB

PRESIDENT - DAN WILLIAMS
652-7740
VICE-PRESIDENT - ED DANN
682-7584
SECRETARY - BOB PRUGGER
437-3946
TREASURER - MICHAEL GRAHAM
635-6840



STARS MEMBERS

STARS MEETING
April 11, 1990

Time: 7pm Place: Town of Schroepfel
Offices Program: John Fleming on
"Electric Flying", Dan Williams on
"Readying the field for the flying
season"



EVEN THE EXPERT MONOKOTER ED DANN
COULDN'T COVER A WING TIP WITHOUT A
LITTLE INCISION...THERE'S HOPE FOR
YOU YET DOC!

Mark Voorhis is helping Wayne Howard
refinish his big Cub...should be up
soon.

Sad to Say - Gene Ladd's Taub decided
to go alligator hunting - Gene wasn't
happy about retrieving the Taub from
the swamp - he was one "wet & cold"
pilot.

THE PLANE PROP WASH IS THE OFFICIAL
NEWSLETTER OF THE STARS CLUB; & AS
SUCH, ALL PROCEEDS FROM ADVERTISE-
MENTS, SUBSCRIPTIONS, ETC. GO TO
FURTHER ENHANCE THE TREASURY OF THE
STARS CLUB. THE PURPOSE OF THE PLANE
PROP WASH IS TO KEEP THE MODELERS OF
THE STARS CLUB & SUBSCRIBERS AWARE OF
HAPPENINGS WHICH INFLUENCE OUR HOBBY.
THERE IS NO INTENT TO SHOW FAVORITISM
TOWARD ANY CLUB. HOBBY SHOP OR INDI-
VIDUAL. WE HOPE YOU ENJOY OUR NEWS-
LETTER.

Classifieds

FOR SALE: Great Planes Cap21/0s
120FS (never run), Futaba 6FG (CH32-
never flown), 2 new S33 servos, Dirty
Birdi 60/K&B 61, DeBolt Livewire
Jenny kit, Das Little Stik kit, new
Cox Tee Dee .049, Tuned pipe adt for
Enya 60/0s 60 FSR, Super Tigre tuned
pipe, Perry Carb for OS 20, Ace Tach-
master, A-Justo-Jig full house, Mil-
ler Sprayer (used once), Ni-Starter,
Monokote (1-met. blue, 1-gray, 2-
orange)...call Joe Kopec at 638-1357

FOR SALE: Engines New - OS 15 & OS
25 Used Engines - K&B 40 (2), OS 10,
OS 25, OS 35, OS 40 (2), & Fox 10.
Contact Bob Elkovitch at (315) 252-
3474



THROUGH RAIN, SNOW, SLEET OR HAIL,
THE MAILMAN GOES ON HIS APPOINTED
ROUNDS: BUT HE CAN'T DELIVER IF THE
ADDRESS IS WRONG. IF YOU MOVE,
PLEASE ADVISE US OF YOUR NEW ADDRESS.



Minutes of 3-14-90 meeting

17 members and 1 guest present. Meeting was called to order by President **Dan Williams** at 7:01pm. Minutes of previous meeting were approved. Treasurers report was given by **Mike Graham** & approved. We still have four unpaid members for 1990 dues.

Association Report: Al Mortensen, CNYMAA Secretary, informed us that kitchen would no longer be available for our use at Symposium. All food service will be provided & sold by the State Fair Restaurant contractor only. This could result in less profit at Symposium. Future course of Association was discussed. Various additions and changes in Symposium programs were made. It was generally felt, we should continue with Association minus the cars. Al Mortensen was given a list of suggestions, by **Phil Morgan**, to bring up at the next Association meeting. Motion for this was made by Lisle Snow &

seconded by **Phil Morgan**. Unanimous decision.

Snow Fly committee was thanked for making this a huge success.

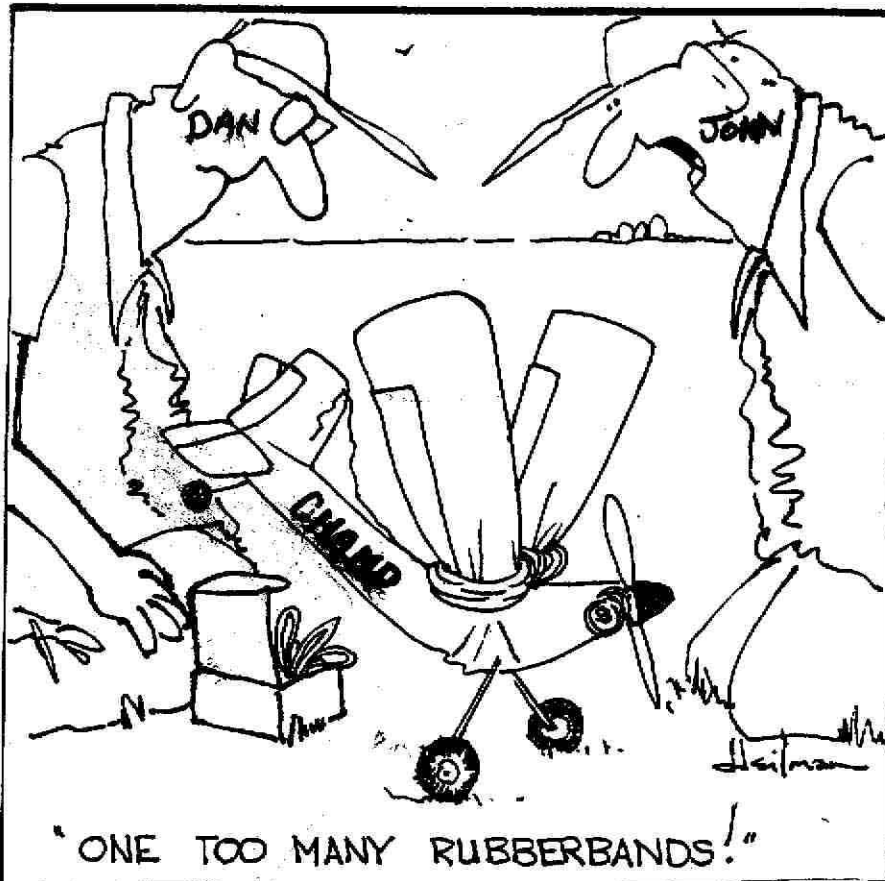
AMA Report: Lon Sauter distributed copies of "recommended Freq. Management Plans for 1991" & "1991 Narrowband Operation Confirmed" to each member present. These were issued by the AMA.

Old Business: Constitution had nothing to report. Voltaires club will accept out invitation, as mentioned in last month's minutes, to fly at our field from dawn to 11am on one Sunday per month. Dates to be determined.

Pylon Racing: **Dan William** requested he be notified if anybody knows of any other club engaged in pylon racing. He will contact them for possible competitive racing.

New Business: Lon made suggestion that tractor loans be paid off in full April 1, 1990. Motion made by Lisle Snow & seconded by **Phil Morgan**. Unanimous decision. Motion for adjournment was made & seconded at 8:09pm.

Bob Prugger



IF YOU ARE NOT A MEMBER OF THE STARS & WOULD LIKE TO HAVE THE PLANE PROP WASH MAILED TO YOU, YOU MAY PURCHASE A SUBSCRIPTION FOR THE FEE OF \$4 PER YEAR. PLEASE SEND REMITTANCE, ALONG WITH YOUR NAME & ADDRESS, TO MARGE SAUTER, 2062 RABBIT LANE, PHOENIX, NY 13135. YOUR SUBSCRIPTION WILL BEGIN WITH THE 1ST ISSUE PUBLISHED AFTER PAYMENT IS RECEIVED. CHECKS SHOULD BE MADE OUT TO MARGARET L. SAUTER.

PREZ SEZ

Well, the building season is rapidly drawing to a close, and FLYING SEASON is rapidly approaching, finally. Start making plans on finishing up this years' projects and get them ready for flying. At the last meeting, Ed Dann showed us some real helpful hints on Monokote covering, so there shouldn't be any excuses for not finishing 'em up. Thanks for the demonstration, Ed.

Last month's meeting was rather well attended! Thanks to all who came. We had a good talk about our feelings on the CNYMAA and the Symposium future. All these ideas were brought up at the Association meeting by Phil Morgan and Lisle Snow. It seems that all the clubs are pretty much in agreement on the subject. We will be having a Symposium next year at the Art and Home building, and we'll make do without the foodstand. Be sure and read the Association minutes; it was a good meeting. I hope that the trend continues, as I think that the CNYMAA is important to all the clubs. I promise I'll do my best to keep the meetings short and the programs interesting. Speaking of interesting programs, I managed to talk John Fleming of Voltaires Electric Flying Club fame to come talk to us about electric flying at the April meeting. This should be a good presentation, so come on out and see what electric flying is all about.

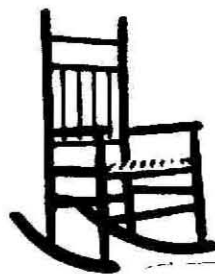
Time to get out the rakes, trash bags, and grass seed! Clean-up time is coming up fast. This'll be the topic of discussion for the April meeting. I'd like to see the field in as great a condition as it was last year. We won't need boots to do the work; I'll keep an eye on the drying conditions. You'll probably either get notified by phone or a postcard. Anyway, we'll figure out what to do at the meeting. The members get asked only once or twice a season to police up the field, so please try to help out. It's your field and you fly off of it; it's up to you to make it the best.

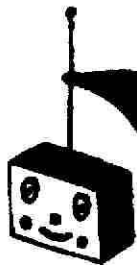
We have some events coming up real soon. We'll be starting our flying lessons in May, and we have our Inter-Club Fly with the OVM Club in June. Keep watch in the Propwash calendar for all the good stuff happening. There may be something showing up in the calendar about the Fulton River-Fest this year. Tim Pease, Prez of the OVM Club, is talking to the City of Fulton and all the clubs to see what interest there might be for participation. The dates aren't finalized, but its sometime in August. It could be good P.R. for model aviation.

If you need to contact me, please call anytime and leave a message on my machine. It won't lose messages anymore. Its left on all the time to filter out solicitations. Its cheaper than an unlisted number.

Nuff fer now; get those planes finished!

Dan





LON'S R/C SERVICE

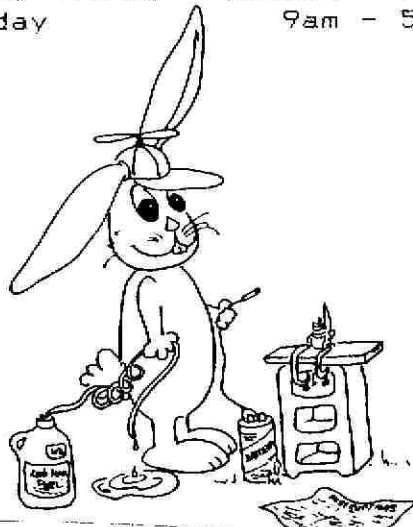
2062 RABBIT LANE
PHOENIX, N.Y. 13135
(315) 695-2448

A Complete Radio Control Modeling Facility
The Professional Approach To Modeling



MARGE'S HOURS
tuesday-friday 12noon - 9pm
saturday 9am - 5pm

LON'S HOURS
tuesday-friday 6pm - 9pm
saturday 9am - 5pm



MARK YOUR CALENDAR!
MAY 24, 1990...7PM

YOU ARE INVITED TO ATTEND AN
ENGINE ADJUSTMENT & TUNING CLINIC
AT LON'S

"BRING YOUR PROBLEM ENGINE"

LON'S R/C SERVICE IS THE SHOP THAT CAN SATISFY
ALL YOUR MODELING NEEDS.

WE HAVE OVER 1800 DIFFERENT ITEMS IN INVENTORY!

WE SHIP VIA UPS DAILY.

CALENDAR OF UPCOMING EVENTS

April 7 - Penn Can Mall Show/Midstate Modelers

April 11 - STARS meeting

April 14 - Arnot Mall Show

April 19 - CNYMAA meeting

May 9 - STARS meeting Program:
ground checking of finished models
(all modelers welcome)

May 16 - STARS field - Test flight &
flying lesson for new modelers

May 24 - Engine Adjustment & Tuning
clinic at Lon's

June 9-10 - SAM 4th Annual RC Assist
Oldtimer & Antique Aeroplane Contest

June 9-10 - AGS 35th Annual Pattern
Contest at Blue Swan Airport

June 16-17 - Kingston, Ontario Fun
Fly

June 16-17 - Sig R/C Fly-In at
Montezuma, Iowa

June 24 - OVM/STARS inter club fun
fly

July 15 - STARS sport pylon racing

July 14-22 - Mid-America AMA Nats at
Lawrenceville, IL/Vincennes, IN

July 21-22 - Valley RC Club Fun Fly
90, Round Top Park, Athens, Pa.

July 28-29 - Sky Rovers Fly-In
Phelps, NY

August 10-11 - Fulton Riverfest

August 18-19 - Seaway Valley Model-
aires/Double N RC Flyers Fun-Fly 90,
at Bixby Field, Norfolk, NY

August 26 - STARS sport pylon racing

August 26 - Norm Ball Memorial Fun
Fly at 1000 Islands Field

September 2 - STARS Airshow

September 8-9 - Rhinebeck NY WWI
Contest

September 16 - STARS sport pylon
racing

September 29-30 - RAAM'S FAN FLY at
Griffiss AFB, Rome, NY open to all
ducted fan powered R/C model
aircraft...for further info contact
Art Arre (315) 339-2447

November 16 - Breakaways 3rd Annual
Auction at Fulton Masonic Hall



Just Plane

Fun
Balm
weather
Sunday
brought Son
Mark to
the field at
Lake
Hessington
in Fulton Co.
By a radio-
controlled
airplane



CENTRAL NEW YORK MODEL AIRCRAFT ASSOC.

THE MARCH 15, '90 MEETING WAS CALLED TO ORDER AT 7:15 P.M. BY PRESIDENT WALT THRONE. A 50/50 RAFFLE WAS HELD AND \$28.00 WAS SPLIT TWO WAYS; THE WINNER AND C.N.Y.M.A.A. SCHOLARSHIP FUND. 34 DELEGATES AND OFFICERS PRESENT. THE MINUTES OF THE FEBRUARY MEETING WERE READ AND ACCEPTED. DITTO THE TREASURER'S REPORT. GENERAL FUND: \$6,275.23, CHECKING

ACCOUNT: \$1000.00, SCHOLARSHIP FUND: \$1077.25.
LETTER OF THANKS RECEIVED FROM SCHOLARSHIP WINNER, ROBERT MOSCHIANO.

NOTE: NEXT MEETING, APRIL THE 19TH, THE THIRD THURSDAY - THIS MEETING NOMINATIONS WILL BE MADE FOR MAY ELECTION.

CHARLES HART MADE A MOTION THAT THE CONSTITUTION BE READ TO ALL NEW OFFICERS OF THE ASSOCIATION. JACK JEFFRIES SECONDED THE MOTION AND IT WAS APPROVED-

NEW BUSINESS :

THE PURPOSE OF THIS MEETING : TO DISCUSS THE FUTURE OF THE CNYMAA. WE DISCUSSED THE CHANGES BEING MADE IN THE SPACE NOW AVAILABLE TO US AT THE NEW YORK STATE FAIRGROUNDS AND THE TERMINATION OF OUR ABILITY TO RENT KITCHEN FACILITIES. THE HORTICULTURAL BUILDING WAS MENTIONED, LIKEWISE, THE NEED THERE FOR SEPARATE RENTAL OF CHAIRS AND TABLES. OTHER LOCATIONS WERE MENTIONED, ALSO. SINCE WE MUST ADVISE THE NEW YORK STATE FAIRGROUNDS MANAGEMENT BY APRIL 1, IT WAS DECIDED THAT WE WOULD "LOCK IN" THE BUILDING WE HAVE HISTORICALLY RENTED, BUT WITHOUT THE SPACE FOR STATIC-WILL PROBABLY USE OTHER AREAS THAN THOSE WE HAD UTILIZED FOR STATIC IN THE PAST. THERE IS INTEREST IN OUTSIDE FLYING AT SYMPOSIUM. LOTS OF TIME LEFT FOR PLANNING SAME. FORTUNATELY, THERE WAS A LARGE TURNOUT AND MANY IDEAS WERE BROUGHT FORTH AND DISCUSSED. ONE FELT THAT THE SYMPOSIUM IS A CHANCE FOR A GET TOGETHER WITH OTHER MODELERS TO SEE WHAT IS GOING ON, WHO IS BUILDING WHAT, THAT IT IS NOT JUST A MONEY RAISER. AFTER ALL, OUR WINTERS ARE LONG AND THE SYMPOSIUM BREAKS IT UP NICELY. BY THE WAY, HOW DO YOU FEEL ABOUT IT? SHOULD THE SYMPOSIUM BE A MONEY MAKER OR IS THE PRIMARY FUNCTION TO PROMOTE THE HOBBY SPORT OF MODEL AVIATION, TO SHOW SPECTATORS WHAT WE DO ? WE PROVIDE P.A. SYSTEMS TO MEMBER CLUBS ON LOAN. WE DO THE SAME WITH FREQUENCY SCANNERS, GENERATORS; WE LOAN MONEY TO CLUBS . AND WE EVEN FUND A SCHOLARSHIP ENDEAVOR.

ANOTHER SUGGESTION WAS THAT WE CONDUCT A SYMPOSIUM FOR MODELERS AND A MODEL AIRPLANE SHOW FOR THE PUBLIC. THE FEELING SEEMS TO BE THAT IF WE DO NOT INVOLVE THE PUBLIC THERE WILL NOT BE ANY HOBBY AS WE KNOW IT NOW.

ALSO, IT IS FELT BY SOME THAT THE PROGRAMS PUT ON AT SYMPOSIUM NEED HELP. MORE SMALL REAL PROGRAMS. ILLUSTRATING THE BUILDING OF A MODEL, RIGHT IN THE BOOTH, MAKES AN IMPRESSION.

IT WAS SUGGESTED THAT LARGE MALL SHOW(S) TO INFORM THE PUBLIC AND SYMPOSIUM FOR MODELERS IS ONE SOLUTION.

THE SYMPOSIUM IS BEING COPIED AND THE CONCEPT IS GROWING.

SYRACUSE'S LOCATION HAS HAD A LOT TO DO WITH OUR SUCCESS.

NOT ALL MODELERS ARE EAGER TO INVOLVE THEMSELVES IN ACTIVITIES. THAT LEAVES MORE WORK FOR THOSE WHO WILL ASSIST.

SOME ADDITIONAL NOTES MADE AT MEETING: CONCERNING THE SYMPOSIUM: IF WE WILL NOT HAVE THE KITCHEN TO RUN, REORGANIZE WORKERS AND FOR ONE THING, MAKE SURE ALL ATTENDEES PAY. HIRE CLEANUP (IF WE REQUIRE SAME) CHARGE DEAKER BOOTHS MORE T.V. AD'S SPOTTY. USE MORE RADIO. ADVERTISE DURING DRIVE TIME. PROFESSIONALLY PREPARED 11" X 17" POSTERS. BOAT AND CAR CLUBS WELCOME TO HAVE BOOTHS AT SYMPOSIUM. CNYMAA MEMBERSHIP AIRPLANE ONLY. EFFORT TO BE MADE TO EDUCATE NEW AND SOME OLD MODELERS RE: NOT FLYING NEAR HIGHWAYS, ETC.

IT WAS SUGGESTED THAT WE SHOULD TRY TO COME UP WITH A FORMAT TO INQUIRE OF CLUBS AS TO WHAT IS DESIRED. SYMPOSIUM ? AIR SHOW ? THEN WORK TOWARD A COMMON GOAL. CAN WE DO THIS WITH A QUESTIONAIRE? COMMENTS? REMEMBER, OFFICERS ARE INVITED AND ARE WELCOME AT ALL MEETINGS.

MEETING ADJOURNED AT 9:00 P.M.

RESPECTFULLY,

Al Mortensen
AL MORTENSEN, SECRETARY, CNYMAA
119 WEST WAY
CAMILLUS, N.Y.

NEXT MEETING:

THURSDAY, APRIL 19, '90
7:00 P.M. AT WALT'S

433-1100 OFFICE
488-4789 HOME

COMING EVENTS

APRIL 7, PENN CAN MALL MIDSTATE STATIC DISPLAY

DID YOU KNOW THAT THE CITY OF FULTON WILL HOLD A 2 DAY FULTON RIVERFEST AUGUST 10TH AND 11TH (FRIDAY AND SATURDAY)? THE LOCATION IS LAKE NEATAHWANTA IN FULTON AND THE OSWEGO VALLEY MODELAIRS WILL BE CONDUCTING FLYING DEMONSTRATIONS FLOAT FLYING, THAT IS IF YOU HAVE ANY UNIQUE OR UNUSUAL FLOAT AIRCRAFT MODELS OR IF YOU HAVE AN ENTERTAINING FLYING STYLE AND WOULD LIKE TO BE CONSIDERED, GIVE TIM PEASE A CALL AT 564-5889. YOU MIGHT HAVE TO DIAL A 1 FIRST.

NOVEMBER 16 IS THE DATE OF THE BREAKAWAYS 3RD ANNUAL AUCTION AT FULTON MASONIC HALL. 7:00 P.M. 'TILL ?



1810 Samuel Morse Drive

Reston, VA 22090

(703) 435-0750

1991 "NARROWBAND" OPERATION CONFIRMED

The following information resulted from action taken at the January 20, 1990 meeting of the AMA Frequency Committee and Frequency Advisory Council. A program involving the flying of 1991 guideline equipment helped confirm that operation at a 20 KHz spacing is practical and safe.

A second item of business conducted during the meeting produced a set of recommendations for Frequency Management Plans to be used beginning January 1, 1991. While the FCC has not yet ruled on the Academy's petition, it is very likely that some "grandfather"

period for older equipment may be necessary.

While the Academy recommends the use of "narrowband" equipment, both transmitters and receivers, it recognizes that arrangements need to be made to accommodate older equipment for an interim period. To that end, the following article provides two interim alternate plans. These may be used as presented or as guidelines for your club to develop one that will serve your special needs. The text of the articles, prepared by Warren Plohr of the Frequency Committee, seeks to provide the information in nontechnical terms.

In 1982, the FCC allocated 50 new radio frequencies in the 72 MHz band to model aircraft radio control. Since these channels are separated by 20 KHz, the AMA and the manufacturers of RC equipment recognized that the use of these new frequencies would have to be carefully managed to avoid unacceptable control interference between RC fliers. Plans to introduce the new RC frequencies (now known as RC channels) were developed by the AMA and the RC industry. As part of the planning, guidelines for acceptable introduction of the full set of RC frequencies was developed. The Guidelines are partially documented in the 1990 AMA Membership Manual, pages 11 and 12. Manufacturers of radio control equipment have recently introduced narrowband RC receivers and transmitters meeting the Guidelines. This newly available RC equipment provided the first opportunity to confirm, by actual flight demonstration, that use of narrowband Guidelines RC equipment can provide the modeler with the ability to use any and all of the 50 channels allocated to RC model aircraft. Such a demonstration was successfully accomplished on January 20, 1990, at Orlando, Florida's RC World.

HOW IT WAS DONE

Commercially available narrowband Guideline RC transmitters and receivers were used to control powered RC model aircraft. Other narrowband RC transmitters were used to simulate potential interference found at typical RC flying fields. The aircraft control channels were channels 16, 17, 18, 19, and 20. All aircraft were first operated in taxi tests, to confirm that each RC receiver could approach potential interfering transmitters without loss of control. This was followed by a flight of each aircraft near the other transmitters. After five sets of RC equipment on different control channels were checked, four aircraft, on channels 16, 17, 18, and 19, were flown at the same time. The good news is that **no interference or loss of control was noted.** The demonstration confirmed that commercially available narrowband Guideline RC equipment can operate aircraft on the 50 closely spaced RC channels without mutual control interference.

THE DETAILS

The RC equipment used in the demonstration was

a cross-section of current types. AM and FM modulation, PPM and PCM encoding, and single or dual conversion receivers were used. The receivers and transmitters were made to operate on the special channels using crystals supplied by the original manufacturer of the equipment. AMA Frequency Committee member, Bill Hershberger, and Advisory Council member, George Steiner, validated the Guideline performance of the equipment by laboratory test. The interfering transmitter channels were selected to provide the most prevalent type of RC to RC interference. Three or four types of interference were generated for each RC receiver. They were:

Adjacent Channel, by operating a transmitter on the next higher or lower channel number than the control transmitter.

Second Order, by operating two transmitters that are 23 in channel number apart.

Third Order, by operating two transmitters one and two channel numbers away from the control transmitter.

Image, by operating a CH 00-09 transmitter that produces a signal nearest a CH 20-30 receiver's image response.

The control and interfering transmitter channels used were:

Control Transmitter	Interfering Transmitters
CH 16	CH 17, 18, 41
CH 17	CH 18, 19, 41
CH 18	CH 19, 20, 43
CH 19	CH 18, 17, 41
CH 20	CH 19, 18, 41, 00

For example, the adjacent channel interferer for the Channel 20 receiver was a CH 19 transmitter. This CH 19 transmitter and another interferer, a CH 18 transmitter, provided the 3rd Order interfering signal. The signal from the CH 18 transmitter coupled with a CH 41 transmitter to produce the desired 23 channel interfering signal. The CH 00 transmitter provided a signal 10 KHz away from the calculated channel 20 receiver's image response. In a similar fashion, the other receiver interferers were assigned.

A flight line was set up. Operating transmitters were stationed along the runway with 100 feet between the aircraft pilot and the other transmitters. The interfering transmitter operators stood close together, less than the recommended minimum of ten feet apart, in order to provide a more severe test. A chalk line on the runway seven feet in front of the interferers marked the taxi target for the aircraft pilot.

Guideline RC equipment installed in a model aircraft was operated on each of the five control channels. The first group of tests used only one aircraft at a time. The aircraft was first taxied past the interfering transmitters. This provided assurance that control can be maintained with extreme separation from the pilot. The aircraft pilot's taxi aim point was the seven foot chalk mark. A minimum of two passes confirming solid control was followed by a take-off run past the same interferers. Low passes over the runway, 20 feet or so away from the interferers, provided further confirmation of solid control. Pilot Bill Hershberger used a unique test flight path that encouraged glitches due to antenna nulls. A flight path of sharp turns near the interferers often sets up null points that show up as "glitches". Bill had none!

The final all-up test was what we all have waited for years to see. Four models, using Guideline equipment on channels 16, 17, 18, and 19 were lined up on the runway. The four aircraft control transmitters and interfering transmitters on channels 00, 20, and 42 were operated during a "walk around" ground check. All seven transmitter operators walked around the lined-up models while confirming control response. Then the seven transmitter operators were stationed along the runway ten feet apart and engines were started. One by one, each model took off past the other six transmitters—without a glitch. All four were flown around a racetrack pattern, up and down the flight line without incident. The demonstration was complete. The attending members of the Frequency Committee and the Advisory Council finally had experimental evidence that the AMA could recommend to its membership, the use of all 50 RC channels for model aircraft flying in 1991.

The model aircraft used were provided and flown by President, Don Lowe, and AMA Frequency Committee member, Bill Hershberger. Other aircraft pilots were Steve Helms, member of the Frequency Committee Advisory Council, and Bob Underwood, AMA Technical Director. George Steiner, Advisory Council member, orchestrated the activity as test conductor. Committee members, Lance Halle and Warren Plohr, were kept busy assisting and documenting the fast moving activity. Other members of the Frequency Committee, the Advisory Council, and observers assisted in other duties, including operating interfering transmitters. Among those were AMA District 7 VP, Pete Waters; RC pioneers, Walt and Bill Good; former Frequency Committee member, Dick Jansson; Frequency Committee members, Larry Dungan and Chuck Ahern; Frequency Committee Advisory Council members, Jack Albrecht, Mike Byrd, and Fred Marks.

The Academy wishes to thank the officers and members of RC World for making their fine facilities available for this activity.



1810 Samuel Morse Drive

Reston, VA 22090

(703) 435-0750

RECOMMENDED FREQUENCY MANAGEMENT PLANS FOR 1991

When the FCC allocated 50 frequencies in the 72 MHz band to model aircraft radio control in 1982, the AMA and RC industry recognized that the use of these new frequencies would have to be carefully managed to avoid interference between RC fliers. Plans to introduce the new frequencies, now called channels, were developed by the AMA and industry. (See the AMA Radio Control Utilization Plan, Part 3: Frequency Use Plan, in the AMA Membership Manual.) Currently, 22 of the 50 channels are being used. The plan suggests that all 50 channels will be introduced in 1991.

It was the poor performance of the older RC receivers and the use of wideband transmitters that prohibited immediate use of all 50 channels. Many older receivers were designed to be used in an RC band where only a few different frequencies were in use, and the frequencies used were all well separated. If these wideband receivers were used in a band with many RC channels spaced close together, the receivers would accept unwanted RC signals, interfering with aircraft control. When the new channels were approved in the early 1980s, all of the receivers in use were of the wideband type. None could provide interference-free flying if 50 channels were used. However, manufacturers of radio control equipment have introduced narrowband RC receivers and transmitters meeting the AMA Guidelines. (See the story, "1991 'Narrowband' Operation Confirmed".) This means that any and all of the 50 channels allocated to RC model aircraft can be used starting in 1991, provided narrowband RC equipment is used.

In the past, the AMA has been able to recommend one, and only one, set of 72 MHz frequencies for use. 1991 will be different. It is expected that some wideband receivers may continue in use. These will require protection in the new 50 channel environment. Also, some wideband transmitters still in use will require isolation to prevent causing interference to other modelers. No single frequency use plan can meet these conflicting needs. Thus, alternate plans are needed for safe flying. The AMA recognizes that 1991 will be a transitional period requiring interim alternate plans, and is offering such to its membership.

CHANGES IN THE AMA RADIO CONTROL UTILIZATION PLAN

The plan (see pages 10 and 11 in your Membership Manual) will be updated for 1991. This is a preview of the major changes you will see in your 1991 Manual. The changes will be effective January 1, 1991.

72 MHz BAND CHANGES RECOMMENDED PLAN

The AMA recommended frequencies for RC operation in the 72 MHz band are fifty "Aircraft Use Only" channels. CH 11 through 60, inclusive. Narrowband receivers and transmitters must be used to operate on all 50 channels. Use of the 50 channels can be controlled with the commonly used frequency pins, using as many channels as other considerations permit. The only restriction is that all receivers and transmitters must be narrowband.

INTERIM ALTERNATE PLANS

The AMA recommends the use of narrowband equipment for RC, but recognizes that some RC flying sites may continue to use some wideband receivers and transmitters during the changeover. In recognition of this, the AMA recommends the interim use of two alternate frequency management plans.

Both interim plans restrict wideband transmitters (silver sticker) to even-numbered channels 38 to 56. These are the wideband transmitter channels currently in use. This emphasizes the recommendation that old wideband transmitters not be converted to the new channels. Better yet, convert them to narrowband.

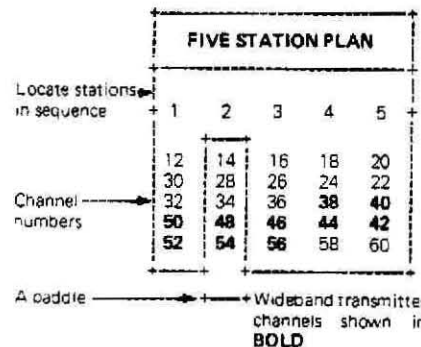
ALTERNATE PLAN NO. 1

The interim alternate plan no. 1 recommends use of 25 "Aircraft Use Only" even-numbered channels 12 through 60. Use of narrow- or wideband receivers on any even-numbered channel is acceptable. Narrowband transmitters (gold sticker) are required on all channels except even-numbered channels 38 to 56. Either wide-

or narrowband transmitters can be used on those 10 channels. Use of the 25 channels can be controlled with individual frequency pins as is common now. Four flight line restrictions are recommended:

1. Keep aircraft's flight path away from other operating transmitters.
2. Maintain pilot's flight station spacing, 10 to 20 feet apart.
3. For fixed-wing powered aircraft, flight path and line of pilot's flight stations should be along parallel lines separated by a minimum of 25 feet.
4. Keep transmitters operating on adjacent numbered channels near each other. Avoid using channels numerically near each other at extremes in distance from each other.

At sites where random use of frequency pins for frequency control does not provide adequate interference protection, the following Five Station Plan is suggested. Note that it employs a paddle containing the frequencies assigned to a specific station.



Details of how to implement a flight station plan will be provided in the 1991 Manual.

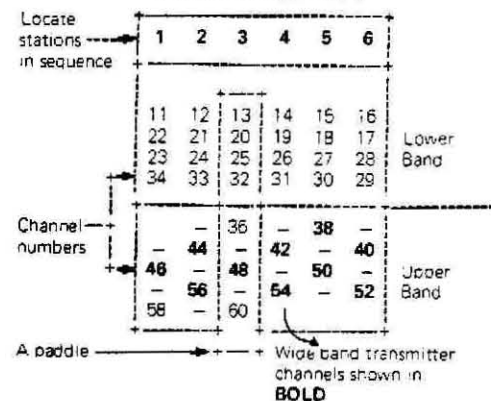
ALTERNATE PLAN NO. 2

The interim alternate plan no. 2 recommends use of Flight Station Plans. This plan is recommended for sites where a mix of wide- and narrowband equipment will be used along with a mix of odd- and even-numbered channels. One of the Flight Station Plans to be listed in the Membership Manual is described here, the Six Station Plan.

This station plan uses 37 channels—24 lower- and 13 higher-numbered channels. Six frequency paddles are used to maintain frequency control at six flight stations. Each paddle controls availability of six or seven RC channels.

The Flight Station Plan requires narrowband transmitters and receivers on the lower band. Upper band can use either wide- or narrowband receivers. Wideband transmitters are only permitted on CH 38-56. All other channels must use narrowband transmitters. Three flight line restrictions are recommended:

SIX STATION PLAN For 37 Channels 24 Lower/13 Upper Band



1. Keep aircraft's flight path away from other operating transmitters.
2. Maintain pilot's flight station spacing, 10 to 20 feet apart.
3. Flight path and line of pilot's flight stations should be along parallel lines separated by a minimum of 25 feet.

This briefly summarizes the AMA recommendations for 72 MHz frequency band management at RC model aircraft sites in 1991. The same frequency management plans may be used at AMA sanctioned events with one additional requirement: All transmitters used at sanctioned events must be narrowband and display a RCMA/AMA gold sticker.

OTHER CHANGES

CHANNELS 00-09

The AMA recommendations for managing RC channels 00 to 09 (6-meter band, Amateur frequencies) are similar to those for channels 11 to 60. All channels can be used only if all equipment is narrowband. Use of wideband receivers requires use of even-numbered channels only. Wideband transmitters cannot be used on any channel.

CHANNELS 62-90, SINGLE, AND TWO-COLOR FREQUENCIES

No changes will be made in the recommended frequency management of these RC bands. The RC frequencies on 75, 27, and 53 MHz will continue to be used without a requirement for narrowband transmitters or receivers. However, the AMA notes that use of narrowband equipment on these bands decreases the chance of interference from non-RC transmissions.