National Miniature Pylon Racing Association AMA Affiliated

since 1965

APRIL - MAY 1989 EDITION

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Members:

I know the race season is underway but I am not getting those race results. Sounds like a broken record...but in this case no news is <u>not</u> good news. I can only do so fabricating... I need input from you VP's.

As had been promised, the first of a 3 part article written by Gary McPike several years ago is being reprinted again. "How to Paint Your Go Fast" is an excellent step by step program for finishing your pylon racer.

Russ Kime, the self appointed NMPRA Frequency Watch Dog, submitted an article about what is in store for us in the future regarding the "New" Frequencies phase, I don't know what. Read the article and submit your comments to both Russ and myself. Russ has spent a great deal of his own time trying to keep up on the new frequency impacts. I appreciate the input Russ.

On a more solumn note, I just received word that Scott Kalmus has recently had serious surgery and is apparently recovering at home. I am sure Scott would enjoy hearing from you. His address is 5001 Bay View, Garland, TX 75043. Scott, Texas needs you back.

Negociations for the F-1 Championship Race continues. Tentatively the race is set for October 28th and 29th in Phoenix at the Pro Flyers field. Jim Allen is currently working out some of the fine points...more next month.

Until next month (or so). See you in San Luis Obispo.

Good Racing,

Don't forget MOM on her Special Day! To: Gary Hover, President, NMPRA
Wayne Yeager, Chairman AMA Racing Contest Board
George Steiner, AMA Frequency Committee

Gentlemen:

It might seem a little early to start worrying about the frequency changes which will occur in 1991, but we might well take a lesson from Exxon, the U. S. Government and the State of Alaska who undoubtedly all wish that they had begun planning for major oil spills a little earlier. If we wait until:1991 to start deciding what to do about frequencies we may wind up with something that nobody really likes.

There will be changes, to be sure. We are in the final (one hopes) transition period of frequency changes this year and next. We need a reasonable, workable system, since it will likely be in force for many years to come.

Two and a half years ago I designed the frequency control system we now use in pylon racing, and which we will continue to use for the next year and a half. I created it because I recognized that we would be operating essentially outdated equipment at intervals for which it was not designed. It has worked well with its only drawback being the necessity for using special matrix configurations to avoid 3IM interference; some C. D.'s still have some difficulty in applying the system, I find. We have found, however, that we can operate successfully at 40 Khz. spacing with present day equipment.

Both 3IM and Adjacent Channel interference are examples of what Owen Black calls "self-inflicted interference" -- we do it to ourselves. George Steiner assures me that, with the improvement in equipment to meet 1991 standards, that 3IM will virtually disappear. Adjacent Channel interference, and a new bugaboo called "Second order Product Interference" (20P) are a different matter, however.

Let's take a look at what, exactly, we will have starting in 1991, and the new problems which will be with us then....

- 1. We will have the full 50 channels, from 11 through 60 inclusive, which the A. M. A. secured for us by going to bat on our behalf with the F. C. C. These will span the entire 72 Mhz. band, from 72.010 to 72.990 Mhz. and they will be exclusively for model aircraft use--not shared with anyone else as were the old Red & White/Orange & White frequencies with occasionally disastrous results. With 50 channels we now have enough, if we divide them up wisely, to assign groups of frequencies solely to specific competition categories for the NATS, and they can be designed so that there are no 3IM or 20P combinations within each group by itself. That's the good news.
- The bad news is that while we will have exclusive use of each of the 50 channels, at 20 khz. spacing, we will not have exclusive use of the 72-73 Mhz. band. "PRS" which stands for Private Radio Service will have all the intervening frequencies available for assignment (at only 10 Khz. spacing from our channels) for the use of paging systems, or whatever, and these can operate up to 300 watts output! That will be Adjacent Channel interference with a vengeance, and it is already with us in the metropolitan areas. Here in the Los Angeles basin, for example, in December of 1987, Jim Riccio of the San Gabriel Valley R/C League, using an ICOM 7000 Spectrum Analyzer, located five such paging systems within 10 Khz. of our present channels. A year later, in December 1988, the number had proliferated to twenty five! It is conceivable that we could have strong pagers interspersed between virtually all our channels in the near future. A lot of airplanes have "inexplicably" bit the dust here in L. A. in the last year. That's getting rid of obsolete equipment the hard way. Is there a solution? Yes, it requires using narrow band receivers that will reject any adjacent channel signal 82 Khz. away on either side of your frequency, and such

equipment is already available, I am happy to say, by both Airtronics and Futaba.

3. A new phenomenon will appear, called "Second Order Product Interference" or 20P. Watizzit, you say? Briefly, when any two channels which are 23 numbers apart (such as 12 & 35, or 20 & 43, for example) are operated simultaneously they will produce a "beat" of 460 Khz. (20 Khz. x 23 = 460 Khz.) and this "hits" almost directly on top of the 455 Khz. I. F. frequency which is used in all our receivers, with deadly results for both receivers. George Steiner dubs this "460 Splat!" (How about "23 Skidoo"?) Almost all Single Conversion receivers are vulnerable to this, since the only I. F. employed in them is 455 Khz. Is there a solution for this problem? Yes, there is! Dual Conversion receivers use a first stage I. F. frequency of 10.7 Mhz. and this effectively screens out the 460 Khz. beat from reaching the second I. F. stage (which is still at 455 Khz., as before.) In other words, if you insist on running a single conversion receiver after January 1, 1991, keep an eye out for anyone who is twenty three channels away from your frequency, unless you enjoy rebuilding airplanes. I can't vouch for the accuracy of this story, but it illustrates what 20P can do to you. In Denver recently, a group was flying near the Television Channel 4 antenna. Now TV 4's audio carrier frequency is at 71.75 Mhz., just below our 72 Mhz. band. A flyer turned on his new Channel 22 radio (72.23 Mhz.) and the 480 Khz. beat produced between his channel and TV 4's audio carrier shot down every plane in the sky in one fell swoop! (They must have all been using old single conversion receivers). Channel 21 (72.21 Mhz.) would have been even worse, since the beat between 71.75 Mhz. and 72.21 is 460 Khz. If you buy a new radio on channel 21 make sure it is a top-of-the-line dual conversion job.

Are there any bright spots in all of this? Sure there are...for one thing you can have your old Airtronics AM (and Futaba, too) converted to narrow band FM transmitter, and they will exchange your old receiver for a new 1991 narrow band receiver for only \$74.95. I don't know what Futaba charges, but I know they have such a program, and many other manufacturers do also. Both Ace and George Steiner will narrow band your old Proline transmitter, but you're on your own for the receiver end of it.

Better yet, the addition of the odd-numbered channels makes it possible to come up with an improved allocation of frequencies for pylon racing. It is possible now to choose twelve frequencies (instead of the fifteen we have presently) with no 3IM or 20P combinations at all! In other words, they can be paired in the matrix in any combination at all without having to worry about 3IM or 20P, and we will still have a minimum 40 Khz. spacing, just as we have now. The twelve I'm looking at are:

CHANNELS 13, 15, 18, 20, 24, 26, 46, 48, 51, 53, 57 and 59

Only an overload on one frequency (more than 25% of the entries) could cause a problem. We would be rid of the special matrix configurations altogether. The only fly in the ointment is that most of us would have to change frequencies, but it would be a one-time only change, since we will be out of the transition period for good. It appears that the light at the end of the tunnel is NOT the headlight of an oncoming train!

I will be interested in any comments you might have on the subject.

Russ Kime 11331 E. Orange Drive Whittier, CA 90606 213/692-8985

IS FINISHES ON T

Airtronics congratulates pilots Dave Shadel, Brian Richmond and Dub Jett, mechanics Jim Shinohara and Bruce Richmond and Team Manager Bob Wallace for their impressive First, Second and Third Place victories at the 1987 FAI Pylon Racing World Championships in Melbourne, Australia.

The United States Team, equipped with Airtronics Module R/C Systems, finished First overall in competition with nine international flying teams.

Airtronics salutes all the dedicated participants and organizers of the 1987 FAI Championships.



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1987 FAI PYLON RACING WORLD CHAMPIONS

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FROM OUT OF THE PAST

NMPRA President was Tom Protheroe May 1969:

Bridi wins the Las Vegas RC/Stardust with his Minnow and K&B 40 with a best time of 1:56. Whit Stockwell (2nd) and Granger Williams Both post times of 1:52 in Formula I.

Cliff Weirick was given the win аt Gabriel race following a fly-off with the Upton-Graham The discripton of the fly-off was as follows: team. "Just picture this - two perfect machines and two top pilots - engines started, the takeoff, a close first lap, down to No. 1 pylon the second time, signal is called, there is the turn, ZAP, a mid-air around No. 1 pylon. It's a good thing men don't cryor do they? The race was given to Cliff on the basis of time, Bob second and Jim Witt third." Cliff's time

was 1:47.6

The NMPRA President was Bill Hager. May 1979:

Bakersfield Air Races were held May 19th and 20th.

Top finishers were: Dave Shadel

1:17.0

1. Tom Christopher 2.

1:18.9

Jerry Boyce 3.

1:15.3

Never say "Yes" before you have heard the end of "Hey, will you do something for the newsletter..."! Dave Shadel called me several weeks ago and asked if I would do an article on Painting. I said "Sure" -- I'm dumb.

I was going to start with the primer, --you know--, sand, paint color, sand, paint trim, sand, paint clear, fly - but to get a good paint job you must go back several steps before you get to the primer. You can't get a good paint job if what you are painting is not prepared for it.

I'll start at the point where the whole plane is finished and the fill coat of resin has been brushed on all the wood parts. Sanding must always be done with a sanding block and not with 80 grit. I recommend sanding everything wet, for two reasons - first, you can sand with finer paper faster. Break the gloss and knock off the chunks and runs with 180 grit wet, then finish and smooth with 220 or 240 grit wet. The second reason for sanding everything wet is that you can tell where you go through to the wood. It's faster to recoat a few spots now than to shoot an additional coat of primer when you're trying to save time and weight later on.

At this point you do not have your control surfaces hinged or installed: some like to paint them separately, some install and paint the plane as a unit. Some even bolt the wing to the fuselage and paint so no primer and paint are on the center of the wing. I'll make no recommendation on this, but I will recommend that you hinge and install all the control surfaces before you paint your plane. You will find that any irregularities in your hinge lines or bulges in the wood can be corrected faster now than later.

Now go over your plane with a final filler. Hobby Poxy Stuff or 3M Acrylic Spct Filler (Light Green) work well. Fill everything that looks like an air bubble in the epoxy parts. Put a light coat on the tail fillets and around the canopy fillet and landing gear with your finger. In fact, do all the filling using your finger, not a stick or putty knife. You'll get imperfections filled better with less filler that way. It all cleans off your hands with acetone. Now you have a plane that looks like it has the measles. Let it set overnight, or longer if you have the time. Then sand all the spot filler off with a sanding block using 240 wet paper and water with a few drops of dishwashing detergent in it. The detergent will help keep the paper from getting clogged with the fine powder the filler produces as you sand. Be careful not to sand through the resin on the wing and tail; if you do, spot them again.

If you are running short on time at this point you can speed up the resin by using a Mono Coat heat gun or a hair dryer to heat up the resin. It will go off in a matter of minutes. But be careful not to get it too hot or you may cause warps in the wood or melt the foam under the wood in the wing.

Now you should have the whole plane sanded with the minor nooks and crannies filled and sanded flat and smooth.

The most critical part of painting a model plane is the preparation, if your plane is smooth the paint goes on smooth, if not the paint will show all the imperfections under it. A good light paint job is only about .012 inches thick. So you do not have much to play with in painting. I'm not going to get into painting jigs but you should have some way of holding the parts of a plane as you paint them.

Mask off the canopy. I recommend Scotch 33+ Electrical tape. It's flexible and leaves a good clean paint line.

15HOULD

SHOUL

Clean the plane with alcohol - not acetone but alcohol. Rubbing alcohol can be found in any drug store. Methanol works even better since it does not leave any residue. Clean all the parts at least twice. Don't forget the hinge lines and the inside of the elevators next to the fuselage. I use about four paper towels for the wing and about the same for the fuselage.

After the plane and all its parts are clean you are ready for primer. I recommend good ol' K&B primer. It's easy to find in any hobby shop and it is fuel proof.

The first coat of primer should be thinned at least 50%. This will fill most of the pin holes if you shoot it at 25 or 30 lbs of pressure. A light coat will do - don't put on a heavy coat. After you have sprayed this on go over the surface with your finger and work the primer into the larger pinholes that were not filled when spraying. If you can't get all the pinholes, don't worry, we'll get to them later. Let the first coat tack for about 20 minutes.

The second coat should be shot at about 35 lbs. of air. I add some talcum powder to the primer to help it build up better and sand faster. The second coat should be as heavy as you can get it on the plane. You'll probably get some small runs. Don't worry, you are going to sand it all off anyway.

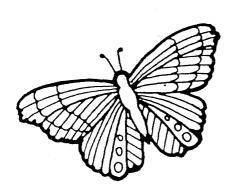
You should have shot most of Parts A&B on to the plane. Take what is left and put it in your freezer (if your wife will let you). It will keep for about two weeks and can be used later if you get any dings in the plane.

Let the primer dry indoors <u>out of the sun</u> for at least 36 hours. Now get out your trusty sanding block and water dish and sand it all off. If you are planning on painting with Superpoxy, 400 paper should be used. If you are going to use any of the acrylic enamels or urethane paints use 360 paper (can be found in auto paint stores).

I sand as much of the primer off as I can. A plane I have primed will only pick up 1 1/2 to 1 3/4 oz. of weight between finished ready for paint and primer sanded ready for color. This will make the difference between a light and a very light airplane, believe me.

Some builders go back over the airplane with a very light coat of primer after the first heavy coat has been sanded off, just to make sure that all of the pinholes and irregularities have been filled and the plane is smooth. You can do this if you want. I don't, because the color paint I use is satin and has filler in it. Whether you choose to stop at the heavy coat or put on an insurance coat, there's one thing you must do - sand off as much primer as you can. When you are finished sanding the whole airplane should look like a "meadow in early spring" wiht small patches of white and large patches of resin or epoxy.

This is the end of the first section of this article. While you are sanding all that primer off, I'll be writing the next part which will deal with color paint and trim.

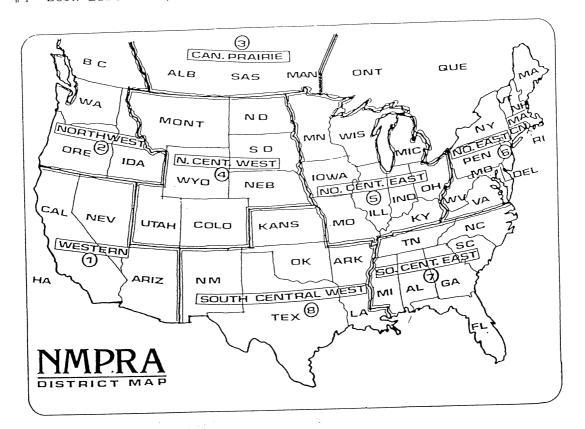


See you next month. Happy Sanding!!

Gary McPike

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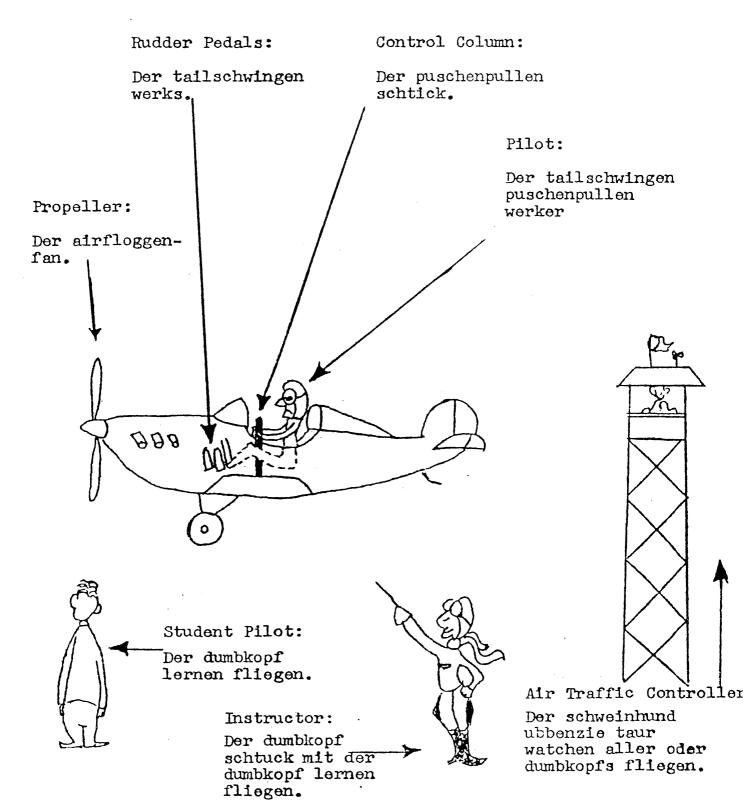
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MAY 1989

Saturday

Sunday

CLI	F-1 Thunderbirds, Fort Worth Texas	7th	Q500 Boeing Hawks, Kent WA F-1/FAT Ellington CT (Neg) F-1 Thunderbirds, Fort Worth, Texas
13th	QM Atlanta R/C Atlanta, GA	14th	Q500 Pro Flyers, Phoenix QM Atlanta R/C, Atlanta GA
20th	F-l San Luis Obispo, CA	21st	F-1 San Luis Obispo, CA F-1/FAI, Q500 Hadleyn, MA (X,S) Q500 Bridgewater, MA (X,S,Beg)
27th	Q500/QM Dullas R/C, Dallas, Texas	28th	Q500 SGVRCL, Whittier Narrows, CA Beginners Pylon WIRCS, Whidbey Island, WA F-1 Dallas R/C, Dallas, TX

JUNE 1989

Saturday

Sunday

. 3rd	Q500/F-1 WIRCS, Whidbey Island, WA Q500 Round Rock R/C, Round Rock, Texas	4th	F-1 WIRCS Whidbey Island, WA Q500 Round Rock R/C, Round Rock, Texas SEMPRA Sport-RCACF Apopka, Florida
10th	F-1 Camp Pendleton, CA One Day	11th	Q500 Farmington, CT (X,S) F-1/FAI, Hamburg, NY (X,S) F-1 Camp Pendleton, CA One Day
17th		18th	
.24th	Q500 N. Dallas R/C, Dallas, Texas	25th	FAI Farmington, CT (X,S) F-1 N. Dallas R/C, Dallas Texas

CALIFORNIA STATE CHAMPIONSHIP

FORMULA ONE RACES

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MAY 20 & 21, 1989

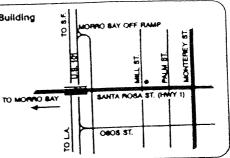
CALCUTTA RACE SUNDAY AFTERNOON

Trophies to 10th and Fast Time

No real aircraft are permitted on Camp San Luis Obispo runway. No more than 20% of entries are allowed on any frequency. Frequencies #42, #48 & #54 will not be allowed. Date of Entry when recieved, will be used to determine first choice of frequency!

No Alcoholic Beverages Are Permitted in the Building REGISTRATION

- Bring your AMA, FCC and NMPRA licenses to pre-registration.
- PRE-REGISTRATION IS REQUIRED BY MAY 12, 1989
- Registration and static 'scale' judging; Friday, May 19, 1989, 7:00 to 9:30 p.m. San Luis Obispo City Recreation Center. 864 Santa Rosa (Hwy 1) — Corner of Santa Rosa & Mill streets.
- All contestants must register!
- All aircraft will be safety inspected and measured.
- Parking will be a problem, so plan to show up early.



TRANSPORTATION

If you plan to fly to San Luis Obispo commercially, consult your travel agent or local airline for convenient service to our community. Avis and Hertz rent-a-cars available at the airport.

MOTELS

- Many Motels are available, call as eary as possible for reservations. Some suggestions are:
- ☐ Quality Suites 1631 Monterey Street, San Luis Obispo, CA 93401 Toll-Free 800-228-5151
- ☐ Sands Motel 1930 Monterey Street, San Luis Obispo, CA 93401 805-544-0550
- ☐ Olive Tree Inn 1000 Olive Street, San Luis Obispo, CA 93401 ◆ 805-544-2800
- ☐ Travelodge 1825 Monterey Street, San Luis Obispo, CA 93401 805-543-5110
- ☐ Somerset Manor 1895 Monterey Street, San Luis Obispo, CA 93401 805-544-0973

RACE DAY . FOOD AND BEVERAGE WILL BE AVAILABLE AT THE FIELD FRIDAY TEST FLYING 4 P.M. TO 6 P.M.

\$35.00 entry fee if paid before May 12, 1989 \$45.00 entry fee if paid after deadline

Contest Director.

Jim Sneed 1965 Carmel Court Grover City, CA 93433 (805) 481-0775 (after 6:00 p.m.)

- Pilots Meeting 8:00 a.m. sharp
- · First heat off at 8:30 a.m.
- NO ENGINE RUNNING BEFORE 4:00 PM FRIDAY!!

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A Saturday afternoon feast is planned at the flying field at 5:00 p.m. Steak, Chicken, Beans, Salad, Bread, enough for all. \$8.50 per plate. Seating will be provided.

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F-1 ESTRELLITA KIT District 8 record holder 1:08 - \$100 + ship

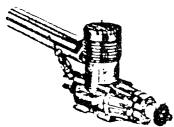
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• Heavy Duty Dural Gear - Q.M. (Small)	5.95

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