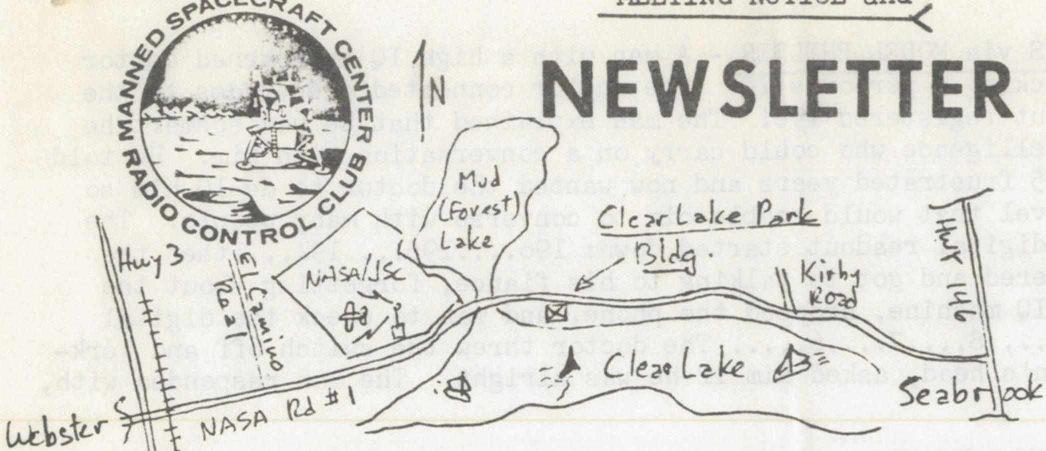
MEETING NOTICE and

NEWSLETTER



DATE: Thursday, Jan. 13, 1977

TIME: 8:00 - 10:00 P.M.

PLACE: Clear Lake Park Bldg. (see map)

PROGRAM: Films.....
1. Edwards RPV Test Activity
2. Wings and Things (AMA).

CONTEST PLANNING- Several club members who have volunteered to be Event Directors for contests met with club officers to set-up a schedule for next year. It is necessary to apply to AMA this early in order to get the desired dates. Response to Hal Rosenberg's questionnaire for contest worker support has not been too thrilling; however, the schedule planning had to be done. Please.....if you haven't gotten yours back to Hal, do it now! He has extra forms if you lost yours. The tentative schedule of events to be sent to AMA and some of the probable Event and/or Contest Directors are:

March 26-27:	Speed Trials (Ellington AFB), Lars Giertz R.C. A/C
April 16:	Quickie 500, Paul Claeys
April 17:	Formula I, Paul Claeys
May 21 (Sat.):	Sailplane, Hal Rosenberg
June 25:	Fun-Fly
June 26:	Biplane (A.M. and Stand-Off Scale (Static judging-A.M., Flying-P.M.),
Sept. 17:	Old Timer, Owen Morris Tim Brown
Sept. 18:	Fun-Fly, Lenny Magill

During the discussion of these proposed events, several ideas surfaced which will be pursued further before the contests are advertised. Some of these were:

1. Scale:
   --- Increase static judging distance from 10' to 25' (or greater) so that super-detailed (AMA/FAI Scale) models won't have such an advantage.
   --- Ban certain optional maneuvers such as Straight Flight Out (and back).
   --- Consider ways to "catagorize" the event so that Fairey "Gordon's" don't compete with Lockheed SR-71's.
2. Fun-Fly: Allow electric starters to be used, but possibly give bonus points for hand-cranking. Make a starter available for those who don't own one. This is primarily a safety consideration because people have been hurt while hand-cranking under stress of the contest.
3. Sailplanes: Find ways to speed up line-recovery....or, have 2 winches in operation. We need to get the planes up faster.

One of the prime objectives of all this is to get the MSC/RCC members to enter, especially the Fun-Fly! Even if you are working at the contest, it is still possible to compete in many instances. We will discuss this at future meetings.....so start building!!!

FAI SPEED TRIALS (....or, Play It Again, Lars!): MSC/RCC plans to host another series of FAI speed trials on March 26-27, 1977, at Ellington. Lars Giertz, the ED, has developed a lightweight fiberglass fuselage for his bomb and he will make it available to anyone wanting to take a shot at the record. He can also supply foam wing cores. His basic design is remarkably simple and goes together very quickly.....(however, you may have some trouble getting the Rolls Royce "Merlin" bolted in!). Seriously, though, for you experienced pilots, this is a rare opportunity to compete on an international basis for very little cost!

QUICKIE 500 NEWS (Paul Claeys): The old rules still stand! No changes for the coming year were voted-in even though there were a large number of proposals made to modify them.

SCANNER?

FROM THE TAC TIMES, TEMPLE, TEXAS via MODEL BUILDER - A man with a high IQ approached doctor who had special machines for checking a person's IQ. The doctor connected electrodes to the man's head and the digital readout registered 196! The man explained that he was sosmart he could not find anyone of his intelligence who could carry on a conversation with him. He told the doctor he had searched for 15 frustrated years and now wanted the doctor to de-IQ him so he could be brought down to a level that would enable him to converse with many people. The doctor threw the switch and the digital readout started down: 196....195....194....then the telephone rang! The doctor answered and got to talking to his fiance, forgetting about the man. Finally he remembered the IQ machine, dropped the phone, and ran to check the digital readout. It was reading 10....9....8....7....6..... The doctor threw the switch off and jerking the electrodes off of the man's head, asked him if he was alright. The man responded with, "10-4 GOOD BUDDY!"

TECHNICAL NOTES: Many thanks to Mike Gaudiano for his article on dope blushing which appears on pages 3 & 4. Many of us have been fouled-up for years by this phenomenon without beginning to understand just what was happening. Now we know! And by the way, how about some more material like this from you members? We need all the information we can get (see bottom of p.4).

NEW FIELD CARDS - Your 1977 MSC/RCC membership card is enclosed with this newsletter. Please destroy your old 1976 card immediately -- NASA Security has been notified to recognize the new badges as of January 15. Remember - no badge, no fly!!!

FOR SALE - Used Futaba 3-channel system, 1976 model. Includes rechargeable nicads and charger. 72.160 mHz. Call Issac, 667-2501.

WARNING - KEEP YOUR EYES OPEN - John Kiker's Bucker Jungmeister bipe went out of control and was destroyed on Dec. 29. Immediately after this happened, Dave Thomasson and Gil Symons wert in to the parking area and discovered a man and about 3 young boys with an R/C car on the same frequenc (72.160) He was a NASA (or contractor) employee and had a JSC decal on his Karmann Ghia VW. Whe John brought in the "totalled" airplane, the man refused to discuss it and would only say that he had not turned the transmitter on. The airplane behavior, however, certainly indicated interference: we could see that the ailerons and throttle were banging stop-to-stop erratically and were not simply locked-up on one side. (Don't know about rudder and elevator). So, when you are in the parking area, look around to see who else is there and what they are doing. (P.S.: John's radio worked OK when he tested it at home afterwards.)

DOPE BLUSHING
CAUSES AND CURES

The most annoying problem new modelers experience with dope finishes is a phenomenon known as "blushing"; i.e., freshly painted areas which appear to be whitened and have very low gloss. While this problem is well known, its cause is not necessarily well understood. The purpose of this discussion is to explain why blushing occurs as well as to provide information on how to prevent it.

"Lacquer" was the name originally given to paint which was based on cellulose binders and which had fast-drying characteristics. The term now generally applies to all coating which dry fast, regardless of the type of binder. Airplane dope is only one type of lacquer. However, it gave birth to the lacquer industry when the termination of World War II created a need to find a use for this country's large and then uneeded dope manufacturing capability. It is interesting to note that the trend toward all-metal civilian sport aircraft construction has caused a further reduction in the demand for dope and this trend extends to model aircraft as well with the introduction of epoxies, acrylics, urethanes, and iron-fabrics and plastics.

The origin of the word "dope" as it applies to surface coatings for airplanes is perhaps lost in antiquity. It is, however, usually applied to lacquers which are formulated with high-viscosity cellulose binders. The higher the viscosity of the binder the greater the tautening effect it will have on fabric or paper. A pigmented dope, by contrast, contains much lower viscosity binders because it is applied primarily for decoration and protection rather than for tautening.

All forms of fast-drying lacquer are subject to the blushing problem and for the same reason. To obtain fast-drying characteristics, it is necessary to incorporate into the lacquer certain solvents and diluents which have low molecular weights. The lower the molecular weight of the solvent, the greater its volatility and hence, its evaporation rate.

The evaporation of solvents from a paint film is a cooling reaction. That is, for a solvent to change from a liquid to a vapor, some external heat must be absorbed. The required heat is drawn from the surrounding air which cools the immediate area around the item which is being painted, as well as the item itself. The faster the rate of evaporation, the greater the cooling effect. If the dew point (the temperature at which moisture in the atmosphere condenses from a vapor to a liquid) is reached, condensation will occur in the same manner as it does on the side of an iced drink glass during a humid summer day. The higher the air temperature, the greater the amount of water that can be retained in a unit volume of air and therefore the greater the amount of water that is available to condense.

The cooling problem is aggravated when spraying is performed rather than brushing. This occurs because not only is the surrounding air cooled by the rapidly evaporating misted solvents, but also by the refrigeration effect of the compressed air as it expands to atmospheric pressure from the spray nozzle. The problem is especially apparent with small hobby-type compressors that do not have storage tanks and in-line dryers which strip the moisture from the air before it reaches the spray gun. It is not uncommon for these hobby-type systems, under humid conditions, to actually condense water in the form of distinct droplets on a doped surface. The droplets are large enough to be observed with the naked eye.

Any water which condenses on a wet paint film is immediately drawn into it by the water-miscible (easily mixed) solvent components such as ethyl alcohol and ethyl acetate. During the drying process, the escape of this water by evaporation is greatly hampered because of the presence of a high ambient humidity. The solvents and diluents, however, are not bothered by this problem and evaporate at their normal and much faster rates according to the air temperature. Thus, the proportion of water-to-solvent in a drying lacquer film increases with time to some point which is beyond the solubility limit of water in the film. At this point the excess moisture eumlsifies with the paint and precipitates out some of the cellulose binder. This effect produces a discontinuous surface which scatters reflected light and causes the film of dope to appear white. Turbidity in a clear dope film will cause only a mild opacity, but in a pigmented film it may be severe enough to produce distinct milkiness and total loss of gloss. Also, coatings with severe blushing typically suffer from poor adhesion because a reduced amount of cellulose binder is present at the covered surface and because some amount of water is still entraped.

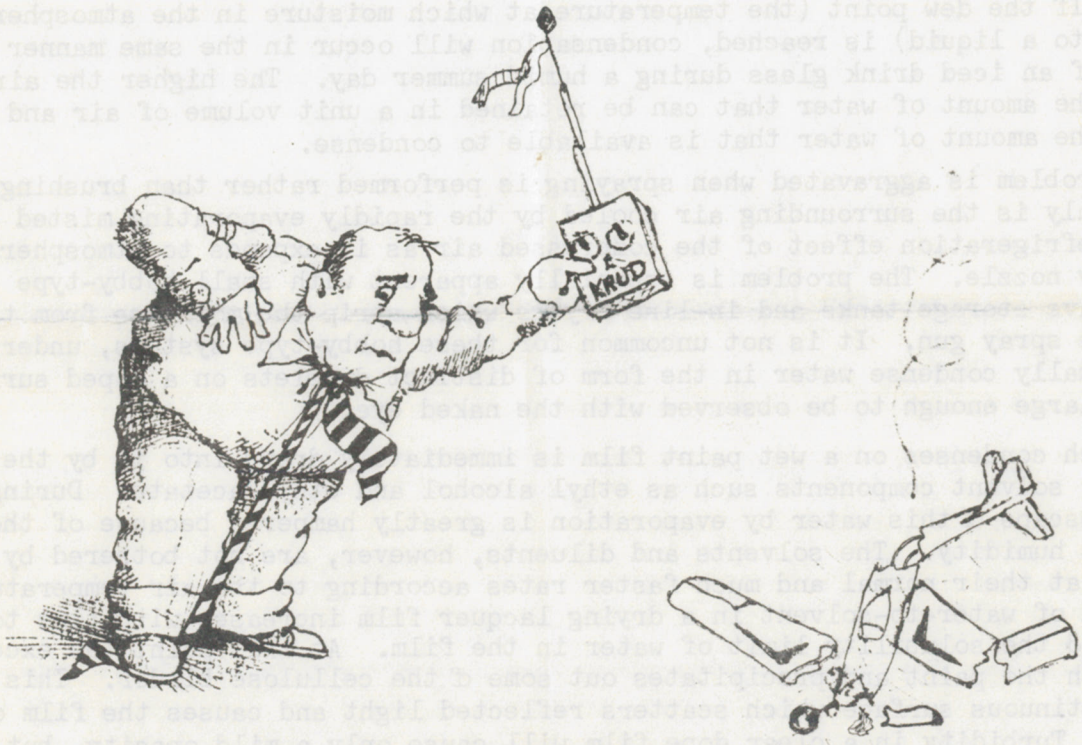
One solution to the blushing problem is to reduce the evaporation rate of the solvents to some level that does not reduce the temperature of the surrounding air below the dew point. The easiest way to achieve this is by mixing certain diluents, which have higher molecular weights, with the dope. The high molecular weight diluents retard the rate of solvent evaporation; hence their name "retarders". The most common of the retarders for dope applications is an aromatic hydrocarbon known as butyl acetate.

All dope and most thinner formulations contain at least some butyl acetate, but in some areas of the country extra amounts are required because of the high relative humidity conditions. The additional amount needed to prevent blushing can be as little as 5% by volume, although larger amounts can be used without harm. In fact, the extra amount will improve flow characteristics and minimize "orange-peel" problems. Remember, however, that large amounts of the retarder will significantly increase the length of time that it takes a paint film to become completely dry. While it may be dry to the touch, it will take several days, perhaps longer, for all of the retarder to leave the film.

Butyl acetate is available as a retarder from aircraft paint supply stores, solvent dealers and chemical supply houses. The "technical" grade from the latter is about ten dollars per gallon, but this can be easily shared in a club since a little of it goes a long way.

Freshly blushed dope finishes (which did not include retarder) can be saved by spraying them with a light coat of pure butyl acetate. This technique apparently converts the precipitated binder back into its original paint form. However, the amount of gloss recovered will not necessarily be the same as with an unblushed area. Other techniques include polishing with fine grinding compound and then waxing.

Saverio Gaudiano



even an engineering whiz needs help

J. W. Smith

MSC/RCC MEETING MINUTES - January 13, 1977

The January meeting of the MSC/RCC was held at the Clear Lake Park building. President J. W. Smith called the meeting to order at 8:10 p.m.

1. Minutes of the December meeting were read by the Secretary and accepted by the members.

2. Dave Hoffman presented the following items in the Treasurer's report:

   A. The club is out of shirts and fuel. Need to order more.

   B. A letter from AMA had been received concerning FCC license problems. Apparently the FCC has issued Class D licenses to everyone who has applied for Class C. It is not clear what action, if any, will be taken on this.

The Treasurer's report was accepted by the members.

3. Old Business:

   A. J. W. Smith discussed the results of the contest planning meeting as reported in the Newsletter. Dave Thomasson commented that we had now voted in the contests and now needed to vote in helpers. Smith stated that Hal Rosenberg's recent survey was intended to take care of this. Lars Giertz indicated that there were already 9 entries expected for the next speed trials and this would not leave sufficient time to run the helicopters. JohnKiker will start negotiating with EAFB for the speed trial dates.

   B. Dave Church stated that MSC/RCC should coordinate with other clubs on use and control of the new county field at Bear Creek Park. Ways should be found to protect club memebers and AMA against unrepresented flyers. Lars Giertz disagreed, saying that the park effort had been spearheaded by Bert Striegler and others and that inputs had been provided by all interested groups. We should not get involved in management of the area. It is a county function. Paul Claeys then indicated that R/C boats, cars, and planes will operate from one area. This will be interesting!

4. New Business:

   A. Don White asked if new members were being given copies of Field Rules. Dave Hoffman said that this was being done.

   B. Paul Claeys commented on his Phoenix crash on 72.160 followed by Kiker's interference trouble as reported in the Newsletter. Kiker said that it was very difficult to stop people who work at JSC from coming out as they please. He will put a notice in the NASA Roundup paper; meanwhile, everyone watch out.

   C. Kiker: new badges in effect on Jan 15th. Security will watch for this. If you haven't paid up and gotten the badge, stay out!

5. Model of the Month: entries were Jim Blick (Platt T-28), Tom McPherson (Andrews Trainermaster), Don White (Lanier Rebel bipe), Tommy Giertz ($\frac{1}{4}$ midget racer), and Bruce Wood (a pair of QT trainers from RCM). Jim Blick won.

6. Refreshments were provided by Jim Gose.

7. Program - an excellent AMA film called Wings and Things.

The meeting was adjourned at 9:45.

Respectfully submitted,

Tim Brown, Secretary