

THE KNIGHT FLYER



FALL ISSUE - October '85

Contributing Editors;
Gil Lange
Elmer Gross
Randy Bittinger

Next Meeting -- October 11

following meetings- Nov. 1

Nov. 22

Dec. 13 - Christmas Party & Election of Officers.

Next SHOW TEAM MEETING -- Oct. 18th

"BANQUET"

Yes, it is just about Banquet time again and I can hardly wait. I and many other members and their wives sure look forward to this annual event each year. It's a great way to get acquainted with each other and let your hair down a little and of course do a lot of dancing to a great band.

The DATE is- Saturday night, October 26th.

Be there by 6:30 and we sit down to eat at 7:00,

The band starts at 9:00 and quits at _____ Z Z Z

Buffet style dinner with three choices of meat - Ham, Beef or Turkey with Salads, hot dishes, desserts, etc.

The entertainment this year will be some outstanding performances by certain members and maybe some cameo appearances of the Wild Willys. Anyone wishing to perform at the Banquet (during band breaks) please contact me at 649-1231.

The night will cost you \$25.00 per couple or \$12.50 per single. The club will spring for a quarter of beer, some fruit punch and some whiskey punch, so reserve yours at the NEXT MEETING which is the DEADLINE for RESERVATIONS.

We need at least 50 people to put this on, so join in on the fun at—
THE WEST END HOTEL, 340 Union St. Hamburg, N.Y. (same place as last year)

Hope you will join us.

The PREZ- Gil Lange

ATTENTION
HOT Off THE PREZ

This past month has been a very trying month for me with problems at both flying fields. The board of directors has been busy trying to work out the details on how to safeguard the fields from this ever happening again. It seems like an impossible task because it is just not possible to monitor the fields at all times, but alot of good ideas have been presented.

The board is meeting with a couple of regulars who fly at North Collins this week and I'm sure a lot of good will be born of this meeting.

We are also setting up a meeting with the Aircrafters to see if we can tighten things up at the Nike field, and just have a good session like we used to have.

From the looks of things, we have about the same problem at both fields. Both party's evidently are very frightened of our models and when one happens to come too close, they get excited and when the authorities are called in, they stretch the truth a little.

Let me give everyone fair warning right now!! This problem definately exists and it isn't going to go away and it is up to us to change our ways and right now • Don't think they can't stop us from flying our models because they can and real fast. Just because we own the North Collins, does not mean we can't loose our permit to fly there. My understanding right from the authorities governing both fields, that one more incident at either field could bring on an investigation and could possibly curtail flying at either or both fields.

From now on and forever - DO NOT, and I repeat DO NOT fly over or even near any building, road or parking lot at the North Collins field. This I am sure will be one of the first regulations to be inacted at North Collins.

At the Nike field, you all have a set of rules and regulations in the rear of your Club Handbooks. Get them out and review them and use them as your Constitution when you fly there. DO NOT, and I repeat - DO NOT fly any further down the East end of the field than you have to, to execute a safe turn, landing or take-off, in other words - stay the hell away from the Arena area or believe me Gentlemen and Ladies we are going to be taking up cars, boats or boozing, etc.

We realize accidents happen when instructing a new pilot or you have an equipment failure, but lets save these monents for the accidents and not deliberately fly that way. Most of the time the instructors are pretty good at directing the beginners to the right air space, but one area that is lax and scares me, is the altitude some of the beginners are allowed to fly in. We are saddled with a maximum altitude of 400 feet at the Nike field because of the Hamburg Airport, so lets try and keep those Kadets a little closer to the terra ferma.

Please attend the next meeting for further developments on these issues. Any ideas you might have are welcome at any time.

Gil Lange

DOWN TO EARTH, REVISITED.....

In the last issue of THE KNIGHT FLYER, I wrote about the art of landing a R/C model aircraft and the difficulties most novice pilots have in mastering this phase of their training. To some of us, learning to land a model is old hat; but...have we really perfected our technique?

The following article, from R/C MODELER, December, 1984, provides some different ideas regarding the landing of a radio-controlled model. It looks more complicated than it really is. If you think about the subject after you have read the article, and then read the article AGAIN, I am sure you will agree that what the author has to say makes a lot of sense.

Happy landings!

Elmer A. Gross

LET'S TALK ABOUT LANDING Or, Taking a Different Approach to the Old Approach

Landings have been variously described on the one hand as a controlled crash and, on the other, as a precise maneuver in which airspeed and altitude are exhausted at the exact instant the wheels contact the end of the runway. The former can be seen at any flying site, any time. The latter is a little more uncommon, usually accompanied by oh's and ah's and the pronouncement that the flier is an expert. Well, not quite. The guy who can land on a dead fly every time and not break its wings is no different than you or I. (An expert is someone who can land on a live fly, not hurt it and not have it fly away.) The only difference between a good and bad landing is everything you do **before** you land.

Believe it or not, it's easier to land a full size airplane than a model. That's because you have an airspeed

indicator, altimeter, vertical speed indicator, and tachometer to tell you how things are progressing. And, as an extra special bonus, you can look out of the window to see if the spinner is pointed in the general direction of the county in which the airport is situated. How convenient! Us poor balsa pilots have to rely on visual cues alone to get down the glide slope and arrive at the end of the runway with

By Don Sobbe

the **right airspeed** that will **allow** us to land. In order to do this consistently, we also need to know our airspeed, altitude, rate of descent and distance to the runway. And, we need to know how to **control** these factors. If you have normal vision, normal depth perception and a transmitter with a ratchet on the throttle, you have all the instruments you need to make good landings.

Let's start with airspeed and altitude. To accurately control a model that is on an approach to landing you must clearly understand what controls airspeed and what controls altitude. "Power, when available, controls altitude and elevator controls airspeed." I say when available, because a twelve pound model with a thirty-five engine may not have enough power available to climb.

Now, there is a direct and interactive relationship between power, elevator, airspeed and altitude that can best be expressed; "Attitude (pitch) plus power equals performance." But for our purpose the foregoing statement is a good rule of thumb, in that power **primarily** controls altitude and elevator **primarily** controls airspeed. An airplane can only be trimmed for a given airspeed. Let's say that we are in an airplane and we have the elevator trimmed for level flight with the throttle set at 50% power. The airspeed indicator reads 70 knots. Now we'll increase the throttle to 80% power and see what happens. Initially the airspeed increases and this might lead you to believe that power controls airspeed but, stick around, that's

going to change. As the aircraft accelerates, the wing generates more lift and we start to climb. As we climb, gravity starts to work on the available power. Since the airplane is trimmed to fly at 70 knots, the airspeed will drop back to 70 knots but, because we are using more power, the aircraft remains in a climb. The only thing we have changed is the power setting and the result is an increase in altitude. Everything else is the same. If we reduced power below the original 50%, the aircraft would descend at 70 knots. "Power controls altitude."

Now let's change the elevator trim and see what happens. Remember, we are climbing with 80% power and an airspeed of 70 knots. As we put in down trim on the elevator, the aircraft levels off and accelerates. We end up trimmed for level flight at 80% power with a new airspeed of 100 knots. We have stopped the climb **and** increased the airspeed by changing the elevator. This might lead you to believe that the elevator controls both airspeed and altitude. This is an example of the interaction of power and elevator and is a little deceptive. If the elevator controlled altitude, then any time we pulled up elevator the airplane would climb. In fact, if we did just that, the airplane would initially climb, but the airspeed would go down. If we kept increasing the climb by using more elevator alone, we would eventually lose all of our airspeed and the airplane would go down. Now we would be holding up elevator but going down. Remember? "Attitude (pitch) **plus power** equals performance." The elevator **alone** will not control altitude. It will control airspeed. In fact, it will control it so well that we can stall the aircraft. "Elevator (primarily) controls airspeed." I know this concept is a little hard to get used to but it will become clear later on when we talk about approaches to landing.

Now let's talk about airspeed and rate of descent. Usually when a model is on final approach it is coming almost directly at you and it's not possible to judge its speed. We must have a way of presetting an approach airspeed that will (1) keep the model safely above stall speed, and (2) allow a controllable and predictable rate of descent. In order to find this airspeed, fly your model past so that you can view it from the side while you reduce power. You will soon find a point where you are holding a slight amount

of up elevator and the airspeed and rate of descent are stable and controllable. At this point, slowly close the throttle and count the number of clicks on the throttle ratchet to get it closed all the way. Let's say it's three clicks. This is your approach power setting. Now when you are on downwind or base leg you can close the throttle all the way, wait for the model to slow down, add your three clicks of throttle and begin your descent for landing. By doing this you will get the same airspeed and rate of descent every time.

Whether you choose to retrim the model for the approach is a personal matter. I don't, because if the wind is gusting or I have to add power for a go-around the model will have a tendency to pitch up. The airspeed,

amount of back pressure on the elevator, amount of power and rate of descent will vary considerably from airplane to airplane. I have two click up to six click models. Some glide well and fly a flat approach with no power and others fly better with a steep approach and more power. The key elements to remember are: (1) Find the number of clicks that will give you the right power setting for an approach airspeed, and (2) don't start the approach until the model has reached that airspeed.

Now that we can reliably set our airspeed and rate of descent, the only variables left are the altitude and distance from the runway at which to start the approach. This will take a little practice. You will have to develop a method of visualizing a

point in space at which your approach will begin. Some people like to imagine a window or box and then fly their model through it. Others line up with a tree on the horizon and eyeball the altitude. I use what I call visual inches. When the model is on downwind and appears to have a wingspan of about one inch, from my view point, I turn base and keep it about six visual inches above the horizon. Then I imagine a line from the runway out to the horizon. When the model gets to that point, I turn it toward the runway and start the approach. By using visual inches a large model will automatically be flown in a larger pattern than a small model. Use any method that works for you, but use something.

Another factor to consider is the

wind. If it's windy you will want to turn to the base leg closer to the runway than if it's calm. This is because your power setting (clicks) will give you a constant rate of descent but your ground speed will be reduced. (See Figure 1.) Wind gusts must be given serious consideration since they could cause a stall at reduced airspeed. If your model normally approaches the runway into the wind at 20 mph, and the wind is blowing at 10 mph, your model will have a ground speed of 10 mph. Now let's say your model is approaching into a 10 mph wind with gusts to 20 mph. When a gust hits your model, its speed over the ground could drop to zero. As often happens with wind gusts, as soon as one hits, the wind drops momentarily to zero. There you are, down low with reduced

power and zero airspeed. Guess what happens next? ("Hey Morrie, get a baggie and bring the shovel!") Whenever there are wind gusts present, add the gust factor to your approach speed and you'll be okay. If the wind is 10 mph gusting to 20 mph, you would add 10 mph, several more clicks, to your approach speed. This means that you will have to carry a fair amount of power and fly the model right onto the runway. That's all right. Big airplanes do the same thing. Use a little steeper approach than normal to keep the nose of the model down. This will prevent wind gusts from getting under the wing and ballooning the model up. It's best to practice approaches on a calm day so you can get an idea of how far out to start an approach with a given power

setting (clicks). One other point is the air temperature. On cold days, air is dense, will support more lift and engines develop their rated power. On hot days, air is thin, will support less lift and engines get tired real fast. So, a cold day three click approach could become a hot day six click approach with the same model.

Now let's talk about flying the approach. The first rule in flying an approach to landing is: "Never try to save a bad approach." As long as there is fuel in the tank and the engine is running, there is no excuse for not going around and trying again. I've aborted approaches at pattern contests rather than risk a crash for which I would have gotten a zero anyway. If the airplane isn't on fire (or

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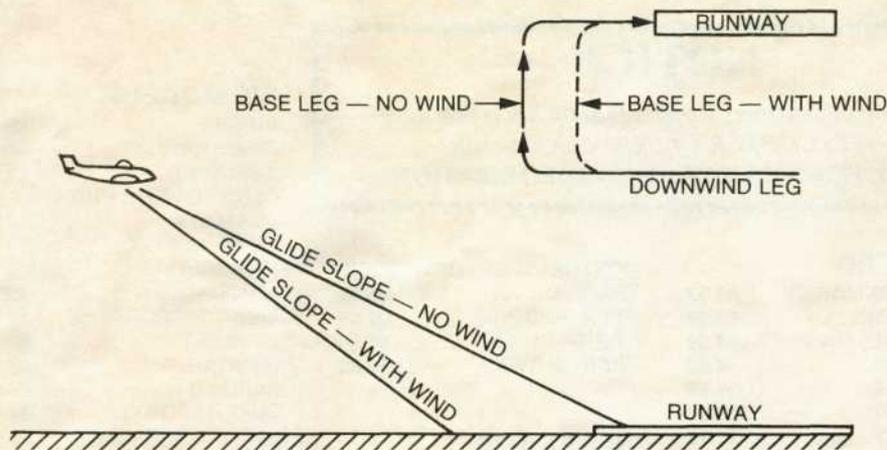


FIGURE 1

your pants), go around! If you're too slow, too fast or not lined up with the runway — you got it — go around! 'Nuff said? Rule two in making an approach is: If you suddenly see propeller blades on the front of your airplane and they are not turning, you have three problems: (1) You're going to land. (2) Right now. (3) Wherever you're at. Forget all about making the runway. That only happens in Hollywood. The big thing to remember is: "Maintain your airspeed." If you let that disappear, control and lift then disappear and your airplane will disappear. Permanently!

Now that you know the rules, let's see how that throttle and elevator work on an approach. While your airplane is on its downwind leg, pick a spot on the field or runway where you want to land. You won't be able to look at it while flying but it will help you to visualize an imaginary line, or glide slope, to the runway. You've turned final, your airspeed is good, you've got your three (or whatever) clicks of throttle set and you start the descent. From this point on you will use elevator **or** throttle to keep the airplane on the glide slope but, **never** use both at the same time. Here's why. (See Figure 2.) Figure 2 shows an airplane that is below its desired glide slope. Notice that in order to get back on the glide slope it isn't necessary to climb, but merely fly level. If we add a little bit of power the descent will be stopped and the airspeed will increase slightly. But, the primary effect will be to stop the descent. "Power controls altitude."

Once back on the glide slope power can be reduced back to three clicks. We haven't moved the elevator at all. Or, we could leave the throttle alone and

feed in a little up elevator, but only if the model is slightly below the glide slope; otherwise, too much airspeed will be lost.

By increasing the angle of attack with the elevator, lift will be increased and the descent stopped. Since the model doesn't have to fight gravity by climbing, the increase in drag due to the increase in angle of attack will not slow the model enough to be of concern. If we used both elevator and throttle together we would get an increase in airspeed and altitude, end up above the glide slope too fast, and then have the same problem but in reverse. If we were above the glide slope and reduced power (power controls altitude) the sink rate would increase but the airspeed would remain under control. Too often we see fliers high on an approach using down elevator. They end up diving at the runway and crossing the field at mach one. Remember? "Elevator controls airspeed." If reducing power won't get the model down to the intended glide slope before reaching the runway then it's time to go around and do it again. If your model keeps coming in low, start the approach from a higher altitude or

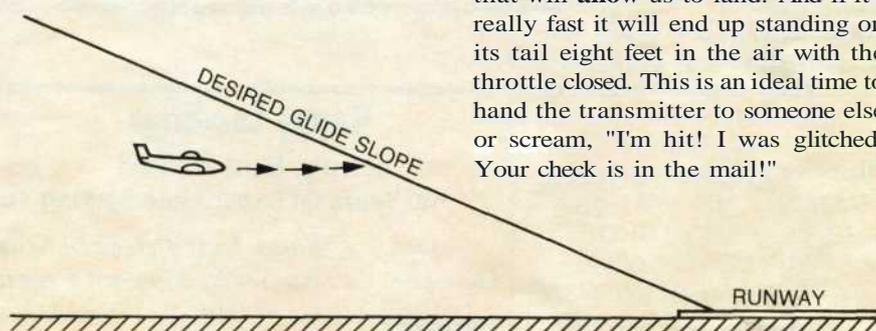


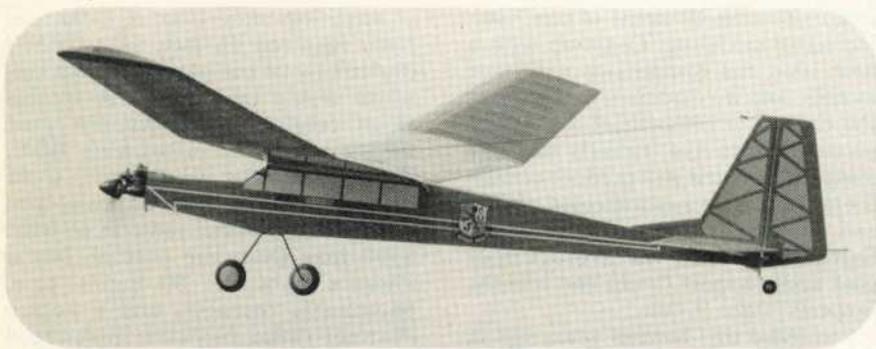
FIGURE 2

closer in. If it keeps coming in high, start the approach from a lower altitude or farther out — but leave the power setting (clicks) alone.

In actual practice it is generally easier to leave the power alone and fly the elevator to maintain the desired glide slope. However, models with high wing loadings can be stalled easily when too much elevator is used at a reduced airspeed and, in this case, setting the descent rate (speed) with the elevator and then using the throttle to maintain the desired glide slope is a much safer procedure. This is exactly what jet fighters do.

Thermal and gusts tend to bounce models around near the ground. Don't be in too big a hurry to correct these wanderings, unless they are extreme, as they tend to cancel each other out. And when you do change power or elevator, give it a few seconds to act on the airplane before changing those settings again. Make small changes. Think of putting pressure on the stick instead of actually moving it. You'll get smoother and more precise control that way.

Now let's assume that you've made a beautiful approach and your model is a foot over the end of the runway. This is the payoff. If you've done everything right, you can slowly close the throttle and start feeding in up elevator. You only want to use enough elevator to stop the model's descent. As the airspeed bleeds off, the wheels will slowly settle to the runway. (If you are flying a model with a high wing loading it is sometimes necessary to keep the power on until the wheels are on the ground. A sudden power reduction could result in a stall.) Of course, if you haven't done everything right and the model is too slow, it will fall out of the air like a homesick manhole cover. If it's too fast, it will just fly down the runway and land a block away. This is what I meant earlier by the **right airspeed** that will **allow** us to land. And if it's really fast it will end up standing on its tail eight feet in the air with the throttle closed. This is an ideal time to hand the transmitter to someone else or scream, "I'm hit! I was glitched! Your check is in the mail!" •



From The Fly Sheet SOME WORDS TO THE NEWCOMERS

From *The Fly Sheet*, newsletter of Sierra Foothills R/C Flyers, Ken Danzer, Editor, is the following sage advice by President Dennis Carlsen, who learned the hard way.

Some words to the newcomers to the club:

Having recently learned to fly R/C, I would like to offer some unsolicited advice to those of you just starting out.

But first, a little background to establish my qualifications. (As you read the following, fellow members, remember that some of you actually voted for this guy at the last election -- Ed.)

My first R/C was a hand-me-down already built airplane that the previous owner showed me how to fly (once), and from there it lasted through several spiral dives and rebuilds until it really came in hard, and was beyond further repair. By now I was quite proficient and ready to build one of my own. (A MEN Trainer.) The ads said you could learn to fly this one all by yourself. Sounded good. I landed it in at least 10 trees, the top of the Club House at Lake Wildwood, (twice) crashed into the side of Lyman Gilmore School, and finally through a bleacher. End of second airplane.

Now I was ready for an aileron ship. About this time I met Joe Hurba at a local hobby shop. He was in the process of starting a new R/C club. I joined on the spot and while at the hobby shop, I acquired my 2nd, secondhand ship, a Fox .60 powered Midwest with a 6' wingspan. (I got a good deal on it, and now I know why.) That engine really screamed for half a tank, and then just quit. Could maybe have been a bit lean. This one landed in at least 5 trees, the last time in the top of a 70' pine. It cost me \$10 to have some kid go up and get it. I finally hit the antenna of Magnolia School with it, and that was the end of that airplane.

By now, I am ready for "Scale." I built a PT 19 5³/₂ lbs., .46 for power, heavy, but I can at least take-off now, and landings are getting closer to the runway. (Except for the time the wing came off, which was the end of that airplane — Ed.) I had a lot of good flights with that plane, learned how to do loops, rolls, and make low passes over the pits, but landings still leave something to be desired.

I love Scale, so next I built a Corsair, 52" wing, .60 power, 8V2 lbs., heavy. I can now hit the runway most of the time, but always end up upside down.

The Corsair had a roll over problem.

Still I had the Scale bug, so my next plane was a P-51, with K & B .40. Very fast. Now, I can consistently hit the runway, but not always with the wheels first. Then I met Harry Stewart, designer of the #7. None of the aforementioned planes were flyable, and the club decided to have another contest, a special one for #7's. I hated the thought of a 3 channel, .15 size plane, (I am a scale modeler, remember) but I built it anyway, bought an inexpensive .15 to save money, and it turned out to be a great plane, but a poor choice in engines. Now I could take-off, land, fly low and slow, and due to an erratic and unreliable engine, I became very good at dead stick landings. I had not had so much fun in R/C for 4 years. I learned to do touch and go's, this was great.

Then I went back to Scale. Now I can hit the runway every time. I built a biplane, which finally crashed due to radio failure. Harry gave me his Silver Phaeton, with which I had many successful flights. Started to get brave, fly inverted, have a lot more fun and time to fly because I don't have to rebuild after every landing. Finally, on low inverted pass, gave up instead of down, end of Silver Phaeton. Built a Yellow Phaeton, and am starting to get brave again.

Moral of the above story for those of you who are not too good at reading between the lines:

First Plane — Should be light, slow, simple, and forgiving. Learn to take-off and land.

Second Plane — Same as the first, because you'll break the first one before you learn.

Third Plane — Try ailerons. You will probably be able to keep this one for awhile, as you will have mastered the basics on #1 and #2.

Fourth Plane — Go for it. Scale, Pattern, big or little, you should be able to handle it by now. •

RC FREQUENCY ALERT!

FOR LEGAL AND SAFE MODEL OPERATION

AIRCRAFT ONLY FREQUENCIES

72mHz
Channels 12-56

CAR AND BOAT FREQUENCIES

75mHz
Channels 62-84

RC frequencies are allocated by the Federal Government and are divided into two categories: AIRCRAFT-ONLY and SURFACE MODEL-ONLY. Using a radio that is tuned to an aircraft-only frequency in a car or boat is against the law. It can cause a model aircraft to crash if the car or boat is used near an RC flying field. This can happen at distances up to five miles, depending on conditions. The car or boat may also be crashed by fliers operating on the same frequency.

Using an improper frequency and causing an accident can result in a liability suit. You can protect yourself by being sure that the models you operate are on the proper frequencies.

**DON'T USE AN AIRCRAFT-ONLY
RADIO FREQUENCY IN A CAR OR BOAT.**

ITS ILLEGAL!



For more information on RC frequencies and how they are regulated, write to the Academy of Model Aeronautics, 1810 Samuel Morse Drive, Reston, VA 22090 or call (703) 435-0750.

OUR SCALE RALLY '85 WINNERS were-
\$200.00 — Harry Merrill - Gowanda, N.Y.
50.00 — Ed Rozek - Cheektowaga, N.Y.
25.00 — Bob Niefer - Buffalo, N.Y.

THAMES FOR A SPECIAL KICK

As many of you know, on May 21, I crashed my 1/3 scale Lazer 200, the only thing left was the cowel, landing gear and the tail section. At that point in time I wasn't sure what to do. But with a kick in the tail by Orville Chatwood, we began to build another one. Notice that I said "we", thats right. Orville was building the fuselage and I was building the wings. In about 3 days he had the fuselage all framed up and I had just got started on the wings. In about 2 weeks we were ready for a test flight, but the weather wasn't. Finally the weather broke after a week or two, and we had a beautiful Sunday afternoon. The only problem was that after the first crash I hadn't noticed that the coil had been damaged and it was creating interference with the radio. So Bill Eberhardt loaned me a coil fro a new engine that he had in his ROOM full of spare parts and engines, then it was all systems GO!!!

The next day we put Lazer #2 in the air, and it flew great ! But only Bill flew it and his exact words were "it flies as solid as a rock" About 10 to 12 minutes into the maiden flight it flew exactly like a ROCK, it went straight into the ground, if there was ever a time to have tears in my eyes, that was it. Every one there that night, I think felt part of what I was feeling. All that I wanted to do was fly with the Show Team and most of all, at our own Scale Rally, which I had never done before.

A few days went by and I still wasn't certain what to do for a couple of reasons. The first reason which was a most concerning one, was - what if that #2 airplane would have failed over a crowd or over the pit???? Even a pilot like Bill Eberhardt at the controls it could have killed someone, and it would have been my responsibility not his. Could I live with that? The second reason was would I be able to accept failure again? I didn't think so. The last reason was I had just bought a house and had to save my pennies. I had so much concern built up inside because I didn't know what to do, but when it all seemed so bad, it got much better.

About one week after the crash, I was sitting at home with my family having a birthday party for my daughter, when all of a sudden a bunch of cars pulled up to the house. You see, I wasn't attending the Show Team meetings, so the Show Team came to see me. Orville, Bill E., Jerry P., Gil, Jim L., and Ray B. They walked up to the door as I walked outside all choked up, and they said "where have you been?. We need you on the team." Well at that point in time, I realized what our club and show team was truly all about. Oh yes! we certainly have some thing in common, but even more important, we have a friendship and a bond to each other that is very hard to describe.

A couple of days later, Bob Rodgers and Orville Chatwood came over with another surprise, a partially built % scale Lazer which Bob had started and wanted me to finish and fly it in our Scale Rally. Well that was, and still is, a very appreciated favor.

The club and show team have really been a good and a challenging

experience, and who isn't involved with these activities is only cheating themselves out of a lot of fun. These activities are not only a lot of fun, but very self-rewarding. Especially the Show Team, unfortunately I must admit that it requires a lot of extra time and an enormous expense above and beyond the regular duties of a member and an officer, but it's worth it!!!!

In conclusion, I would like to dedicate this article to several Special Guys of a Special Team, who are a part of a Special Club, that just happen to enjoy Model Aviation.

THANKS GUIS,
Randy Bittinger

P.S. Thanks for the initial KICK!!!! Orville.

THOSE WINTER BLUES

Many of us are gearing down and getting ready to pickle our engines and rack up our models for another season. For some of us, it's not the end of the season, but the beginning of another season, and a different kind of flying. Yes, that's right, flying with ski's or pontoons.

You don't have to hang up your transmitter for the winter. All you have to do is dig out your Kadet or other trainer or bi-plane or whatever, and fit it with skis or pontoons. Some trainers, like the Kadet, all you have to do is take off the landing gear, re-adjust your C-G and hand launch her and you can fly year round.

I am readying a hand-me-down, modified RCM 60 trainer right now to fly this winter with a set of Gee Bee 40-60 size pontoons, which I think will make an excellent snow goer.

A few of us are planning on flying together this winter and we would like to have you come along and fly with us. (weekends only of course)

If anyone is interested, contact me or Randy Bittinger and we will be glad to give you any information we have to get you ready for the Blizzard of '86.

No special fuel is necessary, but you should have an electric starter and a good reliable engine on your bird.

Let us know.

Gil Lange