

# FOAM CUTTING

Pete Marshall Reveals the Secrets of Precision Foam Cutting  
as the Miss Go-Fast Project Continues...

# *Slope Soaring News*

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\$1.50



## **WHAT'S WRONG WITH THIS PICTURE?**

Either that's a small glider, and it's  
very close to the camera, or...  
it took two burly boys to toss a  
22-pound monster.  
(See "Wingin' It" on p. 2 for details!)

**AM, FM, PCM...What's the Difference? • Fly Sidney, Australia's Primo  
Power Scale Site: Long Reef • Watch Out for the Demon!  
New Kirby Kite Kit from Triton • Slope Warrior! • Peregrine prototype**



# Wingin' It

## FLIGHT OF THE INTRUDER

What?! I couldn't believe what I'd just heard over the telephone. Mark Hambelton, owner of DCU, was on the other end of the line, and he was breaking the news about his next project.

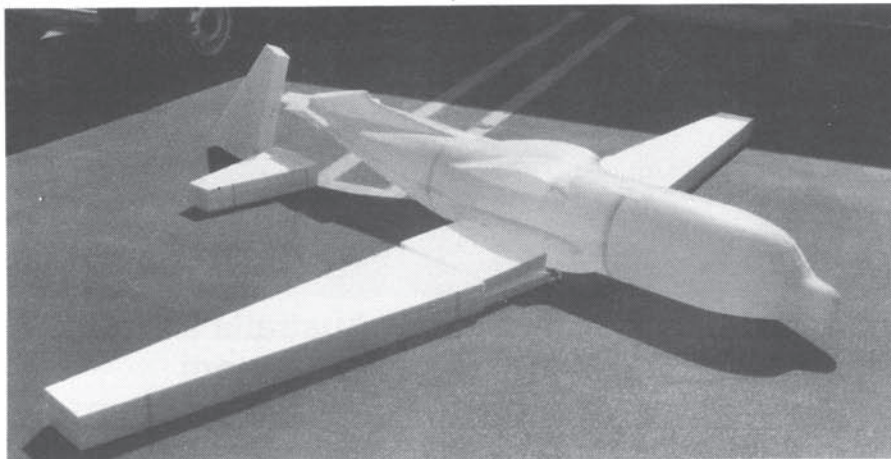
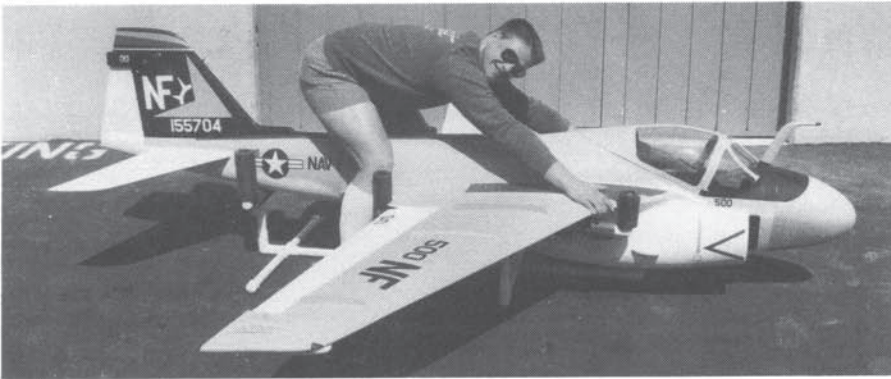
He said he was going to build a 10-foot

A-6 Intruder. Ten feet isn't much when you're talking about high aspect ratio sailplanes. In fact, the average quarter-scale modern fiberglass ship spans from three to four meters, approximately 10 to 13 feet. But when you're talking about a stubby little jet like the A-6, 10 feet represents a lot of model airplane!

Why? That's what most people ask first. Why build a plane that takes up almost all of your waking moments for

### Large? Well, yeah...sorta...

(Top) The seating position is a little crowded, but Mark can almost take a ride on his new toy. (Middle) It definitely takes two to carry or launch the A-6 Intruder. (Bottom) Another large project! Can you tell what it is?



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Last month we assembled the foam-cutting bow and power source. Now, it's time to fillet some foils!

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See you at Torrey Pines?



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**new from VS Sailplanes**

months at a time, only to be able to fly it at special events and in only the best wind conditions?

Well, in defense of his sanity, Mark had a headstart on this project. There's a new movie in the works - *Flight of the Intruder*, taken from the book of the same name - and Mark was enlisted to fabricate the fiberglass fuselages for four huge ducted-fan models that were built for filming it. He talked a deal with the movie people, and he now owns the rights to reproduce the fuselage.

Naturally, his first use for it was a slope glider. (That's only "natural" if you're reading this publication! His second use, by the way, will be to produce a ducted-fan version.)

He had the monstrous fuselage on display at the International Modeler Show back in January, where many of us got our first impression of the project. In the weeks that came immediately prior to the Tri-City Scale Fun Fly, Mark focused more and more on that single project, until it was finally ready for testing only one week before the event.

His original plan was to toss it at Costa Mesa's Estancia High School slope. There's a huge landing area on top (in case it worked) and another one at the bottom (in case it didn't). Actually, his first flight plan was to simply glide it down to the bottom, mainly to check C.G. and control surface throws.

On the afternoon of that flight, however, the plan changed. Instead, they decided to try a hand toss on the field behind the slope. Hand toss a low aspect ratio, 22-pound glider? The two-man throw got the plane eight or 10 feet up into the air. There, it stalled gently, mushed over and belly-flopped onto the ground. The impact flexed the fuse and stripped the elevator servos, and testing was over for the day.

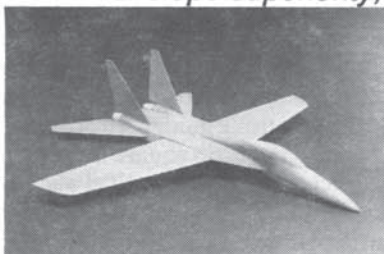
A few days later, Mark returned and completed his original plan of gliding it down to the bottom of the hill. The flight revealed that the plane was tail heavy but controllable, and no damage was done. He added three pounds of lead to the nose, and packed it up to transport to Wil Byers' Tri-City event.

So...how did it fly at the Tri-City Scale Fun Fly? The story and photos will be in next month's *Slope Soaring News!*

P.S. - Mark's next project is a huge C-130!

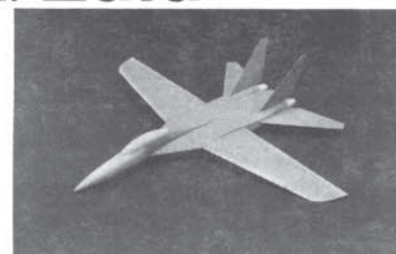
*Chlie*

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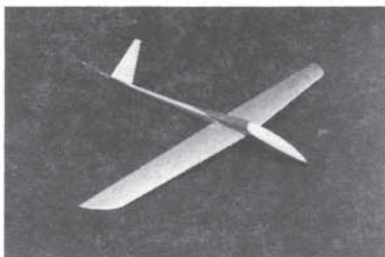
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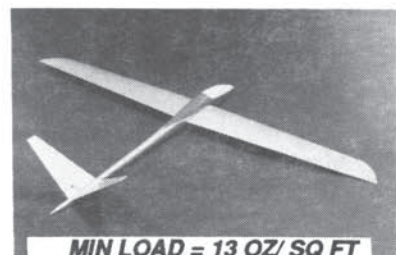
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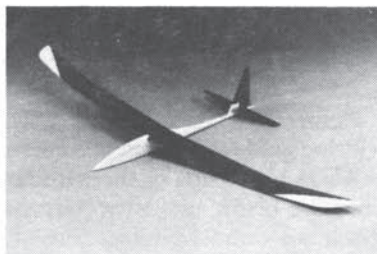
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# Wings, Anyone?

## Miss Go-Fast Saga Continues...

By Pete Marshall

In a previous issue of *Slope Soaring News*, I left you with your hot wire set-up all ready to go. Your foam cutting bow is suspended from the ceiling by a counterweight pulley system. Your root and tip templates are shaped, smoothed and marked on both sides with five percent chord station lines numbered from the leading edge.

### Only virgins need apply!

If you have never cut foam before, here's a good way to practice using all this new equipment without wasting a lot of foam. Use the hot wire to trim the foam blanks to the correct dimensions before cutting the actual cores. Grab your sheet of virgin blue foam (two or three inches thick) and rough cut some oversize blanks. You can cut the length of the blanks correctly, but allow an inch or so oversize on the width. Using a ballpoint pen and a ruler, transfer the full-size plan (top) view drawing of the wing panel onto the top of the foam blank.

This method of cutting foam cores requires that the templates overhang the edges of the foam blank at the leading and trailing edge. This template overhang will provide a resting place for the hot wire at the beginning and the end of the cut. To satisfy this requirement, lay the root and tip templates on top of the blank on their respective ends. Position the template lying on its side so that its trailing edge overhangs the scribed trailing edge on the blank by 3/32 inch. Now measure 1/8 inch back from the leading edge of the template and mark the blank. Repeat this procedure with the other template, then join the two marks with a ballpoint pen. This new line is your final trim line for cutting the foam blanks to the correct dimensions. The final goal is to cut a wing core 1/8 inch thick at the leading edge, feathering out to zero thickness at the trailing edge.

### Trimming the blanks

To trim the blanks with the hot wire you will need some cutting guides. Cut a couple of straight-edged strips of Formica (two x 6 inch), sand the edges smooth, then polish. Stick some double-sided tape onto the back of the Formica

cutting guides. Now check the butt ends of the blank ensuring that they are straight, square and smooth to receive the taped cutting guides. To position the cutting guide, use a square or a Douglas protractor to ensure vertical alignment perpendicular to the table top. The cutting guides are positioned vertically on the butt ends of the blank so that they overhang the top and bottom of the foam. Accomplish this by projecting the part of the foam to be cut off over the edge of the table along with the cutting guides. Press the Formica strips firmly against the foam to set the adhesive tape. Weight the blank with the evenly-weighted plank to hold the foam firmly while cutting with about 30 pounds.

Pull the hot wire down and rest it on top of the foam, snugging it up to the Formica cutting guide. Hold the wire in place using the drilled wooden doweling strung on the wire as finger grips.

**“Now all your buddies will be hounding you to cut theirs!”**

Ensure that your foam cutting assistant has read through and understands the dos and don'ts of foam cutting. Now that you and your assistant are ready on each end of the wire, turn on the Variac or other power source starting with a low setting on the controller. If the wire does not start to sink into the foam under light pressure within five seconds, then turn up the juice a bit. With gentle pressure on the wire, it should cut about one inch every five to 10 seconds in blue foam and a bit faster in white foam. If you or your assistant should come out the other side of the blank first, continue to move the wire out of the foam about 1/2 inch but keep the wire in contact with the cutting guide.

Failure to maintain contact with the cutting guide will result in a curved cut!

When both ends of the wire have exited the blank, move the wire out and back up over the table. Turn off the power to the wire and examine your first cut.

### Did you hear the angels calling?

Examination of the cut off piece will reveal whether or not the wire temperature was correct. The wire cut surface

should look smooth and be covered with hundreds of very fine filaments of melted foam commonly called angel's hair. The proliferation of this "hair" is the best indication of good wire temperature and correct cutting speed. Note the setting on the power control knob and jot it down. Now work from this setting until you find the perfect wire temperature. Once again, record the power setting, this time right next to the control knob. Continue cutting the foam blanks to shape aiming to achieve the perfect cut with lots of "hair" streaming off the wire. The idea here is to get the feel and the pace of a perfect cut before cutting the actual core.

### Some hot tips

1. **Accomplish all operations on the foam blanks with 20 or 30 pounds of weight on top.** Ensure that the weight is evenly distributed by cutting a plywood plank (3/4 in.) about the same size as the blank to spread the load. Place this weighted plank on top of the foam blank while measuring, trimming, affixing the templates and cutting the cores. Later, this same plank with much more weight will be used for skinning the cores. It's okay for this plank to overhang the leading and trailing edge a bit, but not at the root or tip as it will interfere with the core cutting.

2. **Scribe a vertical witness line on the butt ends of the blank at the 50% chord position.** You can use the templates to do this. Position the templates in place using the correct overhangs on either end. The 50% chord station line is already marked on the template, so just transfer this mark to the core blank. Remove the template and make the line continuous from top to bottom of the core. After the core has been cut out of the blank, these witness marks will allow you to replace the cores precisely into the core beds for skinning and other operations. The witness marks will also serve as the reference for trimming the wing panels to their final dimensions after skinning.

3. **When sticking the template to the core, use a Douglas protractor to line up the chord datum line parallel to the table.** Use double-sided tape to position the templates on the cores. Check for horizontal alignment, 3/32 inch



overhang at the trailing edge and about 1/8 inch at the leading edge. Also ensure that the template is approximately centered vertically on the blank, that is, equal amounts of foam above and below the template. When everything looks perfect, press the template firmly onto the blank to set the adhesive. Now push two small two-inch finishing nails through the drilled holes in the template and into the foam to anchor the Formica securely. Ensure that the nails are inserted horizontally as you can imagine what will happen if the hot wire should snag on a nail. (Blue air to match your blue foam...#%\*#\$@!)

#### 4. Washout...yes or no?

Washout is a desirable feature on any wing but not really mandatory on an aerobatic sloper. In case washout is a new term for you, put simply, washout is a twist built into the wing so that the tip has less angle of attack than the root at all times (except while in negative "G" situations). As the wing approaches the stall, the root (operating at a higher angle of attack) begins to stall before the tip thus allowing aileron control while the nose drops and full control is regained. Washout helps to prevent unwanted tip stall while in tightly banked turns and so could save your aircraft from crashing! To build washout into your wings simply raise the trailing edge of the tip template so that the chord datum line slopes upward from L.E. to T.E. at two degrees from the table top. Cut a small wooden block to the appropriate size to block up the trailing edge of the protractor while setting the washout angle during template positioning (about 1/16 inch usually). Of course, ensure that the washout is identical on both wing tips by recording the measurement.

#### A few cutting remarks

1. Always cut from the leading edge towards the trailing edge.

2. Make all cuts with light to medium firm pressure on the wire pushing it down on the template. Cut the top of the wing core, flip the blank, cut the bottom of the core with the blank upside down. Use the witness mark to align the cut-off part of the foam blank after flipping the blank.

3. Start each cut with the wire cold resting on the templates up against the foam with light pressure. If the wire is started into the foam already hot it will melt the foam excessively for the first

inch, changing the leading edge profile.

4. When cutting tapered wing cores, the person guiding the tip end of the wire must obviously cut slower than the root cutter because of the shorter tip template length. You see, the objective in cutting wing cores is for both ends of the wire to exit the foam simultaneously, and the wire should be at the same chord station number on both templates at all times. That's why the root cutter, having the farthest distance to cut, calls out the chord station numbers as his end of the wire travels over them. The tip cutter, meanwhile, paces his cutting speed to pass over the same chord station as the root cutter at the same time. As the cut progresses back towards the trailing edge, the chord station numbers sometimes get so small as to be unreadable or nonexistent. The root man calling the numbers can revert to calling distance to go in inches or centimeters, i.e., "1 inch to go...1/2 inch...1/4 inch to go...1/8 inch...out of the foam and holding on the template."

5. It is important for the root man to cut at a normal rate and resist any tendency to rush the cut. The tip man, although cutting slower, must keep the wire moving no matter how slowly. Any momentary hesitation of the wire at either end will melt a shallow groove in the core.

6. If excessive pressure is needed to move the wire through the foam, the wire is too cold.

7. Connect the power to the hot wire using the alligator clips as close to the foam as possible. Although the wooden doweling is strung on the wire to protect your fingers from the heat you may still "clip-on" between the dowel and the template.

#### The final moments

Although the aim is for both ends of the wire to exit the foam at the same moment occasionally on a long wing panel there may be a short time when both ends of the wire are out, but the center section of the wire is still in the foam due to lag. Important: Both cutters should continue to move their end of the wire to the tip of the trailing edge of the template and freeze the wire in that position until the center portion of the wire exits the foam. As soon as the entire wire is visible move it out and away from the foam lifting it back up over the table turning off the power source.

Similarly if one cutter inadvertently

exits the foam before the other that cutter continues to move his end of the wire to the end of the template and waits for the remainder of the wire to exit before moving the wire off the template. Always turn off the power source after each cut. A good slow-cutting wire can almost be touched without burning, but if left on, the wire may overheat without the foam to cool it and lose tension.

#### Check out those wing cores!

They should look perfect! Nice, straight leading and trailing edges, no grooves lots of angel hair, smooth feathered trailing edge...how do they look?

#### When things look strange

If your cuts look rough or pebbly with no hair showing, you are probably running your wire a little hot, or you might be just cutting too slow. If you are looking at your cores and you notice curved tracks or striations left by the wire this is an indication of wire lag which may be caused by inadequate wire tension. Wire lag can also be caused by one or both cutters pulling too hard on the wire.

#### Extra strange

When making extra long cores, say over 40 inches, it's possible to see a ripple pattern cut into the core. This wave form similar to a miniature ocean swell can be as deep as 1/2 inch and is caused by wire flutter in slow motion. Just as a telephone line can flutter in a wind, so can the hot wire in the fluid foam. The cure for this problem is to go to maximum wire tension and to cut slower.

If you used Styrofoam SM, the core beds may curl a bit after cutting. That's okay. Label the core beds left and right, top and bottom, leading and trailing edge, then tape them together to make a sandwich protecting the precious cores until ready for the next step.

Make a New Year's resolution. Repeat after me: "I will never throw these core beds away until death us do part (or the wings are totalled, whichever comes first)."

These core beds actually form a female mold for each wing and can be very useful for repair work, not to mention that they are required to skin the wings. Armed with all this knowledge and using the procedures systematically as described, you should have some respectable wing cores. Now all your buddies will be hounding you to cut theirs!





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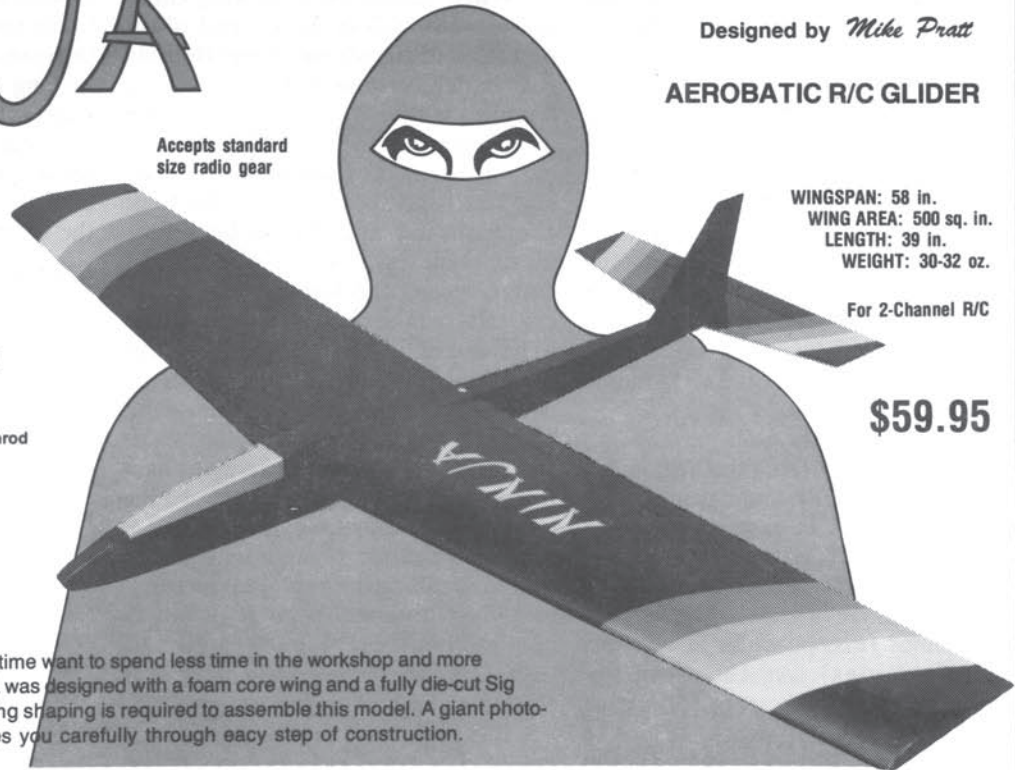
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## AM, FM and PCM: What's the Difference?

*(This article appeared on the Craftsman's Workshop computer bulletin board—which, sadly, is no longer in service—so I don't know the author's name. It does offer a bit of explanation about the three types of radio signals we broadcast upon, however, so I've reprinted it here for your information—Charlie.)*

**AM (Amplitude Modulation):** Modulation in which the amplitude of a wave is the characteristic subject to variation. Those systems of modulation in which each component frequency of the transmitted intelligence produces a pair of side-band frequencies ( $f$ ) at the carrier frequency,  $+f$  and  $-f$ . The carrier frequency may be transmitted without intelligence carrying side-bands.

**FM (Frequency Modulation):** Modulation of a sine wave carrier so that its instantaneous frequency differs from the carrier frequency by an amount that is proportional to the instantaneous amount of the modulating wave.

**PCM (Pulse Code Modulation):** A pulsed modulation in which the signal is

sampled periodically and each sample is quantized and transmitted in a digital binary code. Not very clear or simple is it? Now, let's see if I can put it in terms that apply to RC and which can be of use to you.

---

**"...nothing on the market  
is interference-free..."**

---

AM was the primary system used for years in RC equipment. With the advent of the new closer-spaced frequencies, it was found that these systems would cause problems due to the fact they were mostly "wide-band." So, the engineers got busy and made improvements to make it possible for AM systems to be "narrow-band" within the 1991 frequency spacing guidelines. (Note: You will need to be sure that both your transmitter and receiver are narrow-band to participate in AMA sanctioned events beginning in 1991.)

FM has been available for RC use for years but until recently it has usually been a bit more expensive, therefore not

as popular while the wide-band environment prevailed. With closer frequency spacing, the advantages in the ease of engineering narrow-band equipment with FM systems and a reduction in their cost has made their popularity increase dramatically. Contrary to many opinions expressed, you can still experience glitches with FM radios and you most certainly will be shot down if someone else turns on a transmitter with the same frequency while you're flying. Incidentally, there is no law saying you have to use FM equipment to meet 1991 guidelines.

Just as a side note, AM equipment is easier to get repaired. Many local technicians can handle it. However, alignment of FM equipment and checking its frequency deviation requires more expensive equipment than most local technicians are willing to acquire. And getting PCM equipment repaired is pretty much a return-to-the-factory job.

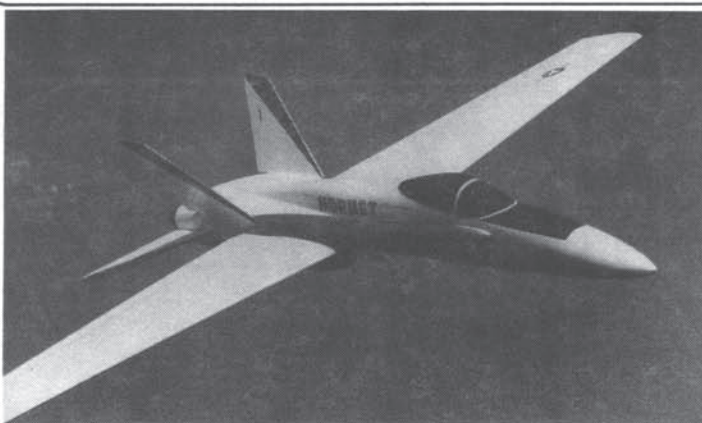
What about PCM? Well, it can be either AM or FM. Most of the RC stuff, however, is FM. If you believe all the marketing material available, it would



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seem the best reason to buy PCM equipment is that it is nearly glitch free. This is really a matter of opinion. Let me explain why.


The key to PCM operating systems is the ability to transmit intelligence to the receiver in the form of a binary code which is then translated into functions which activate the servos. At the same time, the receiver has a processor which repeatedly samples transmitted data and evaluates it to determine whether or not it is free of “trash” that might cause a glitch in the aircraft. This sampling takes place many, many times per second. The processor compares each

string of control data to the previous string, and if it is judged to be error-free, it is sent on to the servos. If the data is found to be invalid or garbled, no control signals are sent to the servos until a valid data string is received. This can happen so rapidly that in most cases a glitch is not even noticed. In a worst-case situation, where the receiver doesn’t get valid signals for an extended period of time, (someone else on your frequency, transmitter failure, etc.) the plane will appear to “lock-out” and the controls will freeze in their current attitude. Note: Contrary to what is often said, a “lock-out” is not irreversible. As


soon as the receiver verifies a valid string of data, control commands are resumed to the servos.

So there you have it! PCM can be either AM or FM but it is usually FM. Either AM or FM can be used past 1991. And as far as preferences, nothing on the market is interference-free as far as I know. The most noticeable difference would be that with a PCM system, the plane will simply not respond to controls where the other systems experiencing glitches can send a plane cartwheeling wildly across the sky.





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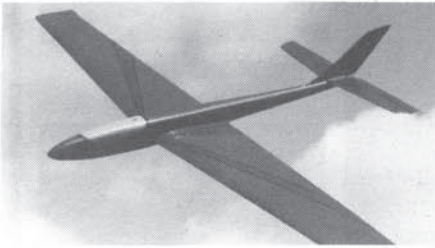
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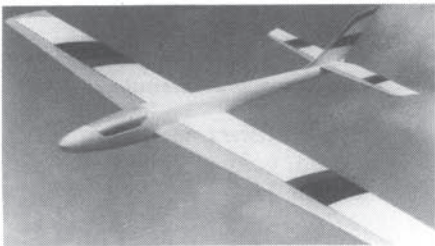
# DESIGNED TO FLY!



## Silhouette

The ultimate combination of speed, energy retention, and maneuverability. Excellent in light lift. Small radio required.

Wing Span ..... 43 in.  
Wing Area ..... 232 sq. in.  
Wing Loading ..... 9-11 oz./sq. ft.  
Airfoil ..... Modified (8%) Eppler 374  
List Price ..... \$58.95  
Balsa sheeted foam core wing  
Spruce leading and trailing edge stiffeners  
Balsa and ply fuselage  
(\*Glass fuse available factory direct)



## Quicksilver

A very fast and aerobatic sport glider for the intermediate to advanced pilot. Standard radio O.K.!!!

Wing Span ..... 52 in.  
Wing Area ..... 362 sq. in.  
Wing Loading ..... 10-13 oz./sq. ft.  
Airfoil ..... Modified (8%) SD6060  
List Price ..... \$78.95  
Balsa sheeted foam core wing  
Spruce leading and trailing edge stiffeners  
Light plywood fuselage sides w/birch doubler

DEALER/DISTRIBUTOR  
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SERVICE!



### Up in the air "Down Under."

It's a little out of the way for a quick visit, but Australia's Long Reef site can add another bright spot to a vacation among the kangaroos.

## Site of the Month

# Long Reef: Sidney, Australia

By Campbell MacInnes

Okay...let's get this straight. At this place you look out over the Pacific when the sun is rising? So, it's a little out of the way if you're from Southern California, but it's not very far if you happen to live in Sidney!

Long Reef is one of several slope soaring sites (*Slopies*, if you're Australian)

in the Sydney area. Just remember, *SSN's* intrepid contributors do whatever it takes to get a well-rounded set of flying sites.)

Long Reef is a great site. It is medium in height—three to four times higher than Long Beach, California, and a little lower than Hughes Hill. Long Reef is very steep (steeper than Hughes), but

### Mr. MacInnes tries a southern breeze.

Campbell's Dragonfly "mutant" shares the sky with the local power-scale planes. Reportedly, there's a Harrier kit available from one of the Long Reef regulars!





with great visibility down to the beach and surf below (unlike Torrey Pines).

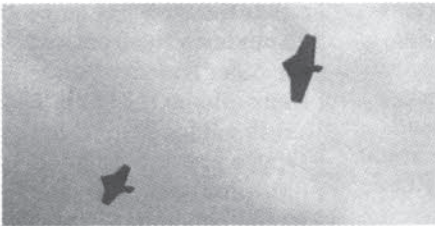
Long Reef is a peninsula/triangle that juts out into the Pacific. It faces northeast and gets your basic ocean breezes. The flying site is a slight bowl, and the end of the bowl is the tip of the triangle (don't fly past the tip).

Traditionally, Long Reef has also been a hang glider site. Fortunately, the hang glider pilots prefer the late afternoon, and the slopies prefer the midday.

Long Reef has a great landing site—the backside of the site is a golf course! Don't worry about the golfers being upset—they're used to the hang gliders landing, so little slope gliders are not a problem.

**LOCALS**

The Long Reef RC Gliding Club is fairly active. Most of the consistent flyers at the bluff belong to the club. The club has had various events and is trying to become more formally active. As in the U.S., the interests of the different



**Chasing their tails...?**

...if they had tails. A pair of locally designed delta wings at play.

slope soaring glider clubs varies—Long Reef RC Gliding Club is into power scale, while several of the other regional clubs are into "glider" scale and planes based upon thermal designs. Members of the Long Reef RC Gliding Club include Lance Duke and Kevin Mahr, both of whom are designing and selling their own kits.

**EMERGENCY SUPPLIES**

Back in downtown Sidney there is a good hobby store named Hobby City; just outside of downtown Sidney there is another good store named Wings N Things.

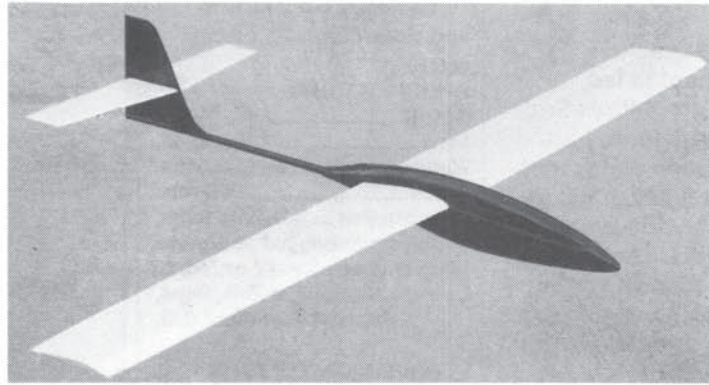
**DIRECTIONS**

**TURISTAS:** LAX to Sidney (all of your Frequent Flyer Mileage—(14 hours!), taxi to Sydney Wharf (Aus \$12), Ferry to Manly (Aus \$3), Bus to Long Reef (Aus \$2).

**LOCALS:** Take the 12 or 14 north from Sydney through Dee Why to Long Reef.



# LANCE



**IT'S BUILT! JUST COVER AND FLY!**

span.....48 in  
length.....33 in  
airfoil.....Selig 3021  
area.....269 sq in  
aspect ratio.....8.7:1  
stab.....full flying

loading.....11-13 oz/sq ft  
radio...2 chan STANDARD or micro  
wing.....machined balsa  
fuse.....glass and carbon fiber  
hardware...ready except for servo ends

The Lance is a rugged, highly aerobatic sloper. It's low drag and modern airfoil provide good penetration and thermalling ability. It's predictable handling and good stall characteristics make the Lance a pleasure to fly.

\$145 plus \$4 shipping and handling, California residents add \$9 sales tax.

**GLIDESIGNS**

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(805) 498-2491

## SCALE GLIDERS

Convenient Size • Affordable Price

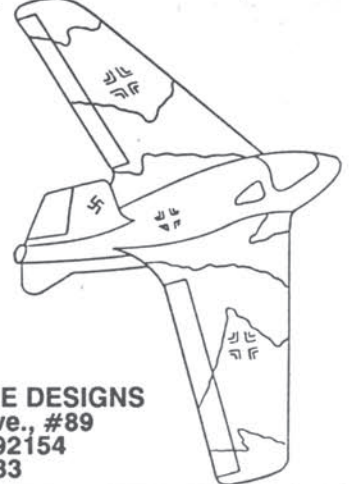
**Phoebus**  
\$89.95



WING SPAN .....48 IN.  
WING AREA.....1 SQ. FT.  
WEIGHT.....10 OZ.  
TWO-CHANNEL OPERATION  
FIBERGLASS FUSELAGE  
FOAM CORE WING  
SHEET TAIL

**Messerschmit  
ME-163 Komet**  
\$69.95

A 1/8-scale slope soaring plane that is a ball to fly. The kit features a fiberglass fuselage and foam core wings that are to be balsa covered by the builder. Wings are detachable for ease of transportation. Specs: 44 in. wingspan; 300 sq. in. wing area; flying weight 24 oz. The Komet may be fitted with an electric or glow engine for flat land flying.



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# Scraps...

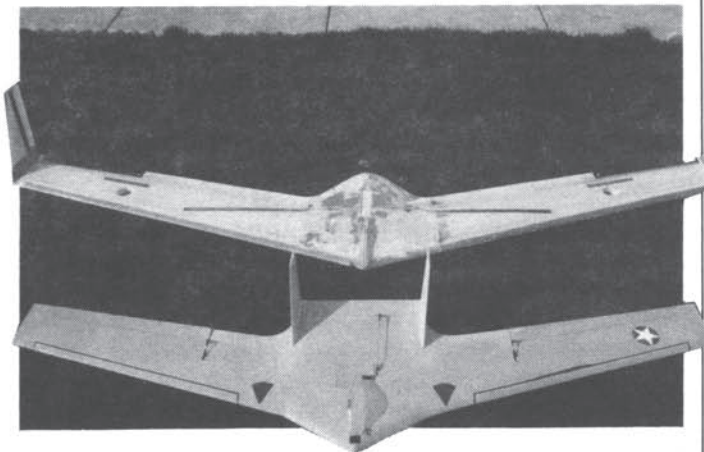
## RATS!

I screwed up! In last month's Torrey Pines Scale Fun Fly entry form, I listed an information phone number for Jerry Miller incorrectly. It should have read: 619/450-1483. Throw away that entry form (if you've been saving it), and replace it with the new one in this issue. Thanks!

## WING MAN

Got a thing for flying wings? I saw the larger of these two fly at Richland (after-hours, when the scale fun fly had ended for the day), and it's a beauty! Alan Halleck designed and built both of them.

The smaller wing is Alan's original Clovis Point.



### Clovis Point and What's-His-Name.

Alan Halleck's flying wings utilize up-to-the-minute technology and tasteful design parameters.

#### SPECIFICATIONS

Span..... 78 in.  
 Area..... 780 sq. in.  
 Weight..... 85 oz.  
 Airfoil..... Elina  
 Construction..... Blue foam, fiberglass  
 Wing loading..... 16 oz./sq. ft.  
 Controls..... Ailerons, elevator, adjustable in-flight C.G. (has also flown with elevons, flap, adjustable in-flight C.G.)

The larger wing is new and doesn't have a name, yet.

#### SPECIFICATIONS

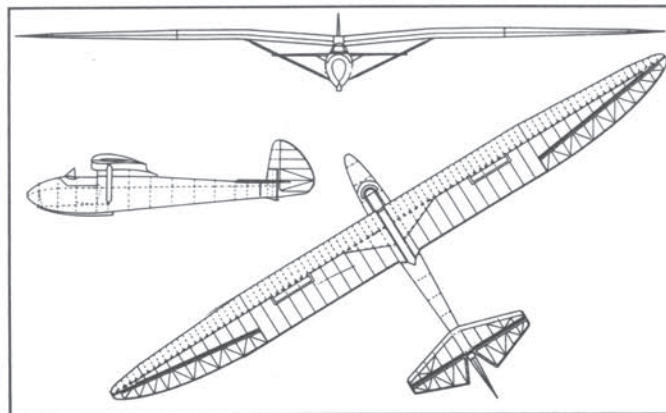
Span..... 106 in.  
 Area..... 1350 sq. in.  
 Weight..... 10 lbs.  
 Airfoil..... SD8020  
 Construction..... Blue foam, vacuum-bagged fiberglass  
 Wing loading..... 17 oz./sq. ft.  
 Controls..... Elevons, flaps, adjustable in-flight C.G.

## WHAT NEXT? THE EXORCIST?

Looking for a fast, fun-to-fly sloper? Watch for the new Demon, soon to be offered in the NorthEast Sailplane Products catalog. It'll have a fiberglass fuselage, a vacuum-bagged pink foam (a 1.7 oz. material, similar to the more familiar blue foam) wing with Schuemann tips and a re-

movable V-tail. It's a pivot-wing design with a 64-inch span, SD8000 airfoil, 370 sq. in area, 24-25 oz. weight with mini radio gear. The Demon will sell for around \$175.

Sounds sorta like a mini-Snipe, doesn't it?



### The classic Kirby Kite...

...is now available from Triton Models in a 1/5-scale, 111.6-inch span, fiberglass/built-up kit.

## OUT OF THE COLD...

Greg Harding, proprietor of Triton Models, is moving! Instead of ordering your Rehier vintage sailplane kit from him in Kotzebue, Alaska, send that check to Triton Models, Box 103, RD 1, Reading, PA 19607.

Triton now offers a new kit—the Kirby Kite. The original full-scale Kirby Kite was a sport sailplane built by Slingsby in England between 1935 and 1939. It was modeled somewhat after the German Grunau Baby IIa that Slingsby was building under license at the time. Like the Grunau Baby, the Kite had an open cockpit and struts, but it differed by having gull wings and a more streamlined monocoque plywood fuselage.

Triton's 1/5-scale Kite utilizes a fiberglass fuselage with built-up wings and tail surfaces. It has a 111.6-inch span, 918 square inches of wing area, five to six pound overall weight and a Gottingen 532 airfoil tapering to thin symmetrical tips.

Triton also offers some neat T-shirts (I know be-

cause I won one at the Richland scale fun fly!) that say "Real Sailplanes Have Gull Wings" with a front view of either the DFS Rehier or Zanoia on the front and the other two views and some info on the back. The shirts sell for \$12. Drop Greg a line at his new address and ask for his informative brochure.

## POWER SCALE PLANS!

Looking for some plans to scratch-build your next power scale sloper? Bill and Bunny Kuhlman at B<sup>2</sup> Streamlines, P.O. Box 976, Olalla, WA 98359 have just received six new sets of plans from the Power Scale Soaring Association in England.

They have an Aero L-39 Albatros, F-86 Sabre, F-20 Tigershark, Fokke-Wulf 152H, Gloster Meteor and BAE Hawk. Prices range from \$8.50 to \$20.

Nine more plans are on the way and will be arriving soon, so send 'em a SASE for complete information on current and upcoming plans from B<sup>2</sup> Streamlines!



# ...bits and pieces from the world of slope soaring



## Howard Hulin's Peregrine.

In his first effort at kitting a slope glider, Howard put together a sleek, wooden-fused, foam-winged beauty.

### PEREGRINE

I was hanging out at Point A a few weeks back, and ran into Howard Hulin with his new Peregrine sailplane. You may remember Howard from the Torrey Pines Scale Fun Fly last year; he and flying buddy Larry Ervin brought out a scratch-built A-10 Thunderbolt and a pair of F-84s. Now, Howard has turned his designing talents toward a high-performance, non-scale glider.

The Peregrine is available in two sizes and is constructed with balsa and light plywood. Howard promises loops, rolls, inverted flight and an array of other acrobatic maneuvers as well as gentle stall characteristics for those not-so-graceful moments...

#### SPECIFICATIONS

**Peregrine**  
 Span..... 48 in.  
 Area ..... 336 sq. in.  
 Length ..... 40 in.  
 Weight ..... 28 oz.  
 Aspect ratio ..... 7:1  
 Wing loading..... 12 oz./sq. ft.  
 Airfoil ..... Eppler 374 (10.5%)  
 Price..... \$59.95

**Peregrine 60**  
 Span..... 64 in.

Area ..... 408 sq. in.  
 Length ..... 40 in.  
 Weight ..... 35 oz.  
 Aspect ratio ..... 10:1  
 Wing loading ..... 9 oz./sq. ft.  
 Airfoil..... SD6060 (11%)  
 Price ..... \$64.95

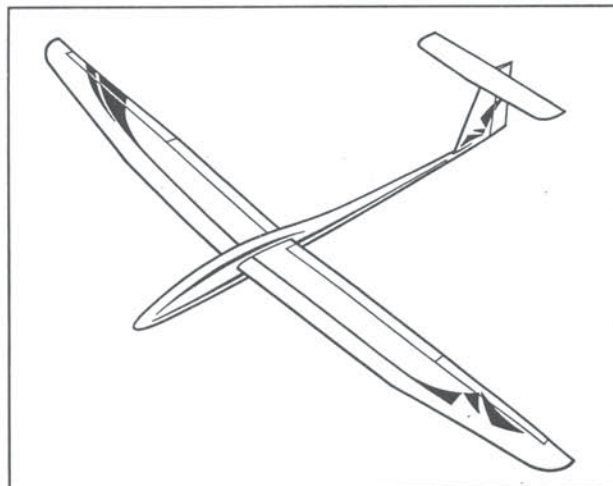
Curious? Contact Howard at Flydesign Products, 213/634-1106 for more information or to place your order.

### SLOPE WARRIOR!

Ron Wagner's Hi Performance Sailplanes now

#### Slope Warrior!

Hi Performance Sailplanes now offers a two-meter Ken Stuhr-designed slope version of the Warrior.



makes a specific slope glider. Wagner offers the larger Thunderbird and Warrior kits for thermal, F3B and slope racing, but the two-meter Slope Warrior is designed just for high performance fun on the hill-sides.

Like the larger gliders, the Slope Warrior features the latest aerodynamics and composite construction. As a special introductory offer, the \$179.95 kit with pre-

Way, Redmond, WA 98052; 206/882-2556. That's a new address, by the way. The Wagners just moved the sailplane shop to a larger commercial facility.

### VIKING INTERNATIONAL SLOPE RACE

It takes place in England on October 5-9, 1990, and it promises to be a premier

## WARNING HOBBYPOX

#### SYMPTOMS

Restlessness, Tension,  
 Boredome, Victim Finds  
 Relaxation Difficult

#### CURE

Thereis no known cure for HobbyPox, But temporary relief can be found at The Flying Machine Model Center Corner of Crenshaw & Lomita (213) 325-6194

#### Does it itch?

No, but it is habit-forming. Dan Spinks printed up a batch of these posters with his suggested cure! Stop by and pick one up!

sheeted wings is available for \$159.95.

For more details on the Slope Warrior, the larger kits and Ron's stock of composite building materials, contact Hi Performance Sailplanes, 16650 Redmond

slope racing event. Two categories will be contested: individual competition and three-man team competition for the Viking Trophy. A maximum number of 42 entries will be accepted, and each competitor must have an FAI sporting license. Current F3F rules will apply.

Interested? To receive your complete information packet (rules, hotel info, etc.), please contact the Viking Race Organizing Committee at the following address:

**Nic Wright**  
 44 Pen-y-Cefn Road  
 Caerwys  
 Nr. Mold  
 Clwyd CH7 5BE  
 Great Britain  
 Telephone: 0352 720516

Any writers or photographers going? We'd love to have a report with photos to run in SSN!





## NorthEast Sailplane Products



If you love RC Soaring  
order our catalog!

What you will receive is the most comprehensive catalog of RC soaring kits available. We don't just list kits, we review them and provide you with the information that you are looking for! You'll also get technical information, tips, and advice in over 60 pages of text, photos, and illustrations!

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The \$3 will be happily deducted  
from your first NSP order!



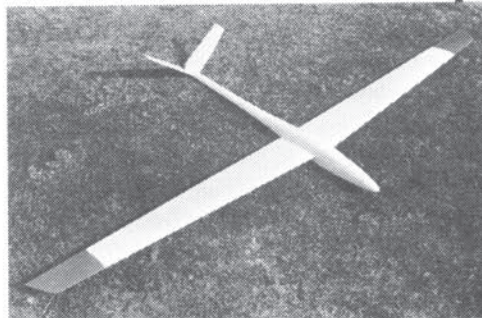
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"We don't do power, the airfoil IS the airplane."

- Sal, Stan, and Jay...The NSP Gang

# SNIPE!

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- Extremely Fast and Acrobatic!
- Set Your Own Roll Rate, 100° to 720° Per Second!
- Kits Available Now!



Intended for Experienced Pilots. Radio with Dual Rates Recommended.  
Fast Building. Build the tail and paint. Finish in 10-15 Hours.  
\$160, plus \$5 Shipping and Handling.

Wing Span: 72 in.  
Aspect Ratio: 14.4:1  
Wing Loading: 14-16 oz./sq. in.  
Weight: 35-41 oz.  
Wing Area: 360 sq. in.  
Airfoil: HQ 1.5/9

**Jerry Bridgeman**  
9582 Hamilton Avenue  
Huntington Beach, CA 92646  
(714) 963-5421

### This is an intelligence test.

#### DID YOU KNOW...

...that even a slow-moving, two-pound "floater" can do considerable damage if it crashes into a home, a car or a spectator?

#### ARE YOU AWARE...

...that your membership in the Academy of Model Aeronautics includes a \$1,000,000 insurance policy that covers such unpleasant incidents?

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...and able to dial a telephone? Then call this number **today**, and ask the AMA representative who answers the phone to send you a membership application form.

703/435-0750

## Air Mail

### LANCE LOVER

I fly Smith Hill in Thousand Oaks, California every Monday, Wednesday and Friday, rain or shine, and drive 55 miles round trip from Northridge to get there.

I have 19 fuselages and 22 wings from Son of Savages to Paragons, plus many remains, sad tales, etc.

If I were to lose every one of my planes, which I love, the first thing I would do is purchase a Lance or the first Lance-A-Lot off the assembly line from Gene and Chris Lovejoy of Glidesigns.

Of the dozens of guys who fly Smith Hill, Gene and Chris are the only ones that I'll stop flying just to watch to see what they do with the Lances. I wish that you could make it better known just how wonderful those planes are. I have flown alongside Gene and Chris with no wind and little lift, or with wind up to 20 knots, and I never cease to be amazed!

**Mark Hurwitt**  
Northridge, CA

*Funny you should ask, Mark. I have a story written by Jerry Clark, one of the better builders in the Long Beach area, just waiting for some photos to go with it. Guess I'll either have to catch Jerry and get some shots of his, or perhaps I can join you guys at Smith Hill one of these afternoons.*

*I'm waiting for the Lance-A-Lot myself. A four-channel RTF (elevator, aileron, rudder and flaps) sounds like a lot of fun! — Charlie.*

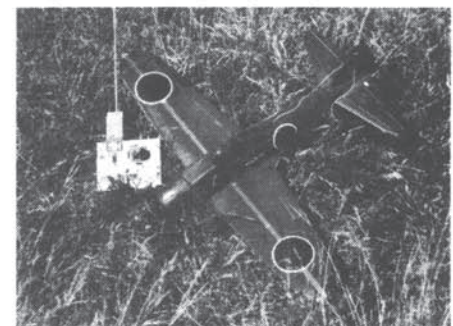
### RASKIN RESPONSE

I'm very pleased with the way you presented my article on aerobatics in SSN. Thank you.

Jim Metzger has my deepest respect for putting his apology to me in print. I

### Just for fun!

Nope, this Jef Raskin plane *isn't* fully aerobatic. (Surprise!)





hope that if I'm ever in the same situation I'll have the guts to do the same. Please convey my respects and full acceptance of his graceful apology to him. (I don't have his address, or I'd do it myself.)

Lastly, just for fun, I have enclosed a photo of my scale Zero. The Zero is an ex-electric Kyosho kit that I've had for a number of years. Though it was only moderately successful as an electric, it is great as a slope soarer. The main modifications were to increase the aileron length to almost full span and add strapping tape to make the wings strong enough for sport aerobatics. I also used some flat spray paints here and there to "age" it.

With its small elevator and rudder and its semi-symmetrical airfoil, it isn't fully aerobatic, but it will do fine rolls, hammerheads, sustained inverted flight and do pretty quick snaps. With the blunt radial front, it takes a lot of altitude to get up enough speed for a clean loop, and outside loops just don't happen.

But it flies and maneuvers at what appear to be scale speeds and rates, and it looks oh-so-realistic in flight with the light shining through the faceted canopy, that I have to fight to keep myself from yelling, "Tora, Tora, Tora!" and diving at the nearest Navy base.

**Jef Raskin  
Pacifica, CA**



**Hi, Mom!**  
Karl Cranford, Rotor and an outrageous Hawaiian slope site!

### VACATION IN PARADISE...

Enclosed are some pictures taken on a trip to Hawaii in search of the perfect slope. I thought my chances were excellent since the tradewinds average 12mph for 320 days per year from the same direction!

After arriving on Oahu, I called all of the hobby shops listed in the Yellow Pages and was surprised to learn that



**ME-109**

## SLOPE SCALE

HIGH PERFORMANCE SLOPE GLIDERS!

- Fiberglass Fuselages
- Foam Core Wings
- 46 in. span, 320 sq. in
- 12-15 oz./sq. ft. wingloading

Basic Kit ..... Sug. Retail: \$69.95  
One-piece fuselage ● Foam Cores  
Plans & Instructions

Complete Kit ..... Sug. Retail: \$99.95\*  
One-piece fuselage ● Foam Cores  
Pre-cut Tail Surfaces ● Wood &  
Linkages ● Plans & Instructions  
(\*Spitfire/Mustang ..... Sug. Retail: \$104.95)

**F6F Hellcat Now Available!**

---

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Brian Laird ● Paul Masura



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**SPECIAL  
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COBRA**

**ZERO**

**ONLY  
\$79.95  
ALL KITS!**

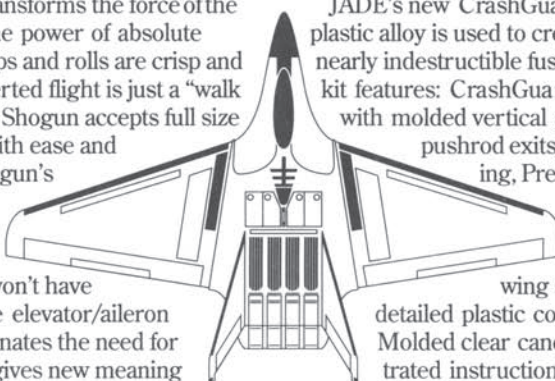
**FW 190**

**P-51  
MUSTANG**


# SHOGUN

Shogun transforms the force of the slope into the power of absolute control! Loops and rolls are crisp and precise. Inverted flight is just a "walk in the park." Shogun accepts full size radio gear with ease and because Shogun's stall characteristics are mild mannered, you won't have to be! Simple elevator/aileron control eliminates the need for mixers and gives new meaning to the term "fly by wire".

JADE's new CrashGuard™ thermoplastic alloy is used to create Shogun's nearly indestructible fuselage. Deluxe kit features: CrashGuard™ fuselage with molded vertical stab supports, pushrod exits, and inlet detailing, Precision machined wood parts, Foam wing cores, Balsa wing sheeting, Highly detailed plastic cockpit and pilot, Molded clear canopy, Photo/illustrated instruction booklet and complete hardware package.



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## TORREY PINES SCALE FUN FLY!

**September 1-3, 1990 ● San Diego, California**

**Sponsored by the Torrey Pines Gulls**

For entry blanks, hotel info and general information, please phone  
Jerry Miller at 619/450-1483 or Charlie Morey at 213/494-3712.

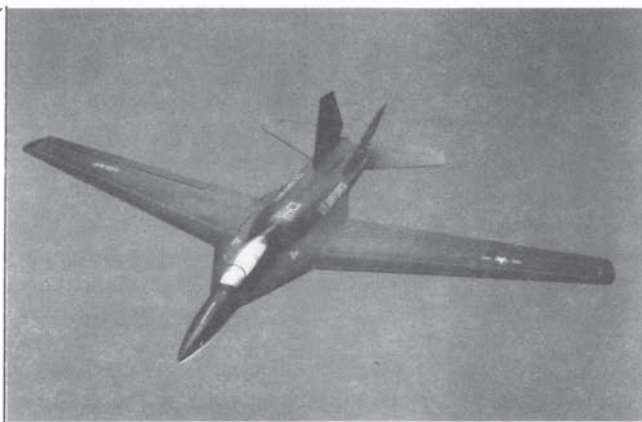




### Stryker

Wingspan: 50 in.  
Weight: 30 oz.  
Radio: Standard  
Retail: \$99.99

- Epoxy fiberglass fuselage ●
- Foam core wing ●
- Precut balsa and plywood ●
- Generous hardware pack ●



DCU, 1556 S. Anaheim Blvd., Unit C, Anaheim, CA 92805; 714/535-6969



**We're talkin' HUGE!**  
And the tradewinds blow all day...  
Karl flew from the highest point,  
right in the middle of the photo.

they only knew of one thermalling location and no slope sites. With that in mind, I was left to find that right combination of slope face, wind direction, landing area and accessibility on my own.

Several days of driving around the island with my wife (while forcing myself to swim, snorkel, bodysurf, sunbathe and enjoy the scenery) left me with three or four potential flying sites which were truly overwhelming in the first two elements but *completely* lacking in the other two!

I had almost given up hope two days before we were to return to the mainland. We were snorkeling at Hanauma Bay, and—whammo!—there it was! A 300-foot high, steep, grass-covered bowl facing straight into the tradewinds. I spotted it from the water, and my reaction coupled with my rapid swimming to shore must have given the other beach goers the impression that Jaws was lurking just off shore!

I ran to the car, grabbed my travel case. In it were one brand-new, never-been-flown Rotor from VS Sailplanes (one Kevlar/glass fuse, one set of 58-inch Eppler 374 wings slope wings, one set of 84-inch, SD3021 thermal wings, two stabs, one vertical fin), one Airtronics Vision radio, plus baking soda and cyanoacrylate glue...just in case.

It was a long walk up a steep road, and the landing area was marginal, however, I could use the exercise, and the grass was deep and forgiving.

Now came the moment of truth. The case was opened, the plane was assembled, flying surfaces were adjusted, pictures snapped, deep breaths taken, brow wiped, and finally, the toss.

Success! Even with the small wings which put the wingloading at 17 oz./sq. ft., and the wind at only 8-10mph, the lift

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### Banzai mk.II

**Aerobatic Slope Soarer**  
wingspan: 60 in.  
wing area: 480 sq. in.  
airfoil: Eppler 374 (mod.)  
length: 36 in.  
weight: 26 to 34 oz.  
radio: 2 channel min. (std. size)

**Price: \$34.00**

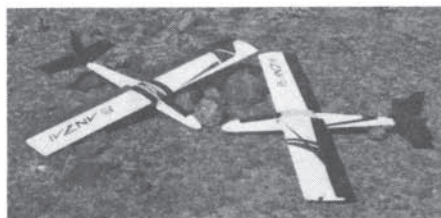
**S&H: \$3.50**

For more info or to order, write to

**Banzai Enterprises**

2997 Anderson Ave.

Port Alberni, B.C. V9Y 2V3



### Coming Soon:

**Sonata: 2m thermal soarer**

**Odyssey: F3B, Racer**

**Manta: sloper**

**PSS**

Dealer inquiries invited

When you contact our advertisers...

**Please tell 'em you saw it in SSN!**





was deep and strong. And the Rotor reacted accordingly, climbing like mad as I trimmed for the right glide speed (which is quite fast). Needless to say, the flying was great and the view breathtaking.

After flying conventionally-controlled gliders for 15 years, I was hesitant about the handling of the "pitcheron" controlled Rotor. After flying it, I can honestly say that the differences in characteristics are only improvements. The



#### Pucker factor...

Just take a deep breath and throw! The heavily wing-loaded but efficient Rotor flew up and away!

roll rate is scary, and the handling is crisp and responsive with minimum drag.

So, if you're looking for a place to fly while vacationing on Oahu, check out the Hanauma Bay. The road to the top starts at the interection of the main highway and the road down to the bay itself.

Happy flying!

Karl Cranford  
Palm Desert, CA

#### CHEAP TRICK!

I called Aircraft Spruce & Specialty Company about their ad (Cheap Trick, \$23, part number 01-15600) in your December/January issue.

It was a cheap trick!

They don't know anything about the ad, and they said the transformer alone was \$80. This is false advertising.

Robert Miller  
Holladay, UT

*That wasn't an ad, Bob. The information was submitted by reader Tom Overton who bought the cheaper transformer from Aircraft Spruce (714)870-7551 and then modified it as described. I phoned them on June 20, and was told that 50 of the Home Builder's Hot Wire Kits will be coming in soon, list price: \$18.40. Good luck! — Charlie.*



## Torrey Pines Scale Slope Soaring Fun Fly September 1-3, 1990 • San Diego, California

REGISTRATION FORM • PREREGISTRATION DEADLINE AUGUST 4!

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City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_  
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Frequencies \_\_\_\_\_  
Company you represent \_\_\_\_\_

Entry fee includes three days slope fee, Saturday night social sponsored by industry members, one entry to the Sunday night banquet and one entry in the pilots' raffle ..... \$30  
Guest banquet fee (\$22 each) ..... \$ \_\_\_\_\_  
Total ..... \$ \_\_\_\_\_

**SCALE MODELS ONLY. MUST BE AN AMA MEMBER. LATE REGISTRATION (AFTER AUGUST 4) \$5.00 EXTRA. NO EXCEPTIONS!**

#### Hotel Information

The Wyndham Garden Hotel (formerly the Ramada Inn) is conveniently located within easy driving distance to the Torrey Pines Glider Port. The hotel offers pool, spa, restaurant, view rooms and nightly free happy hour from 5:00 to 7:00 p.m. with hors d'oeuvres.

<b>Wyndham Garden Hotel</b>	<b>Room Rates</b>	<b>IMPORTANT:</b> When making res-
5975 Lusk Boulevard	1-2 people..... \$59	ervations, be sure to mention the
San Diego, CA 92121	3-4 people..... \$69	Torrey Pines Model Airplane Event
619/558-1818	Suites..... \$75	to receive these discount rates!

For more information, phone Jerry Miller at 619/450-1483 or Charlie Morey at 213/494-3712. Mail written inquiries to the address below. Please send your entry to Slope Soaring News, TPG Fun Fly, 2601 E. 19th St., #29, Signal Hill, CA 90804.



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