HOW IT WORKS

At peak of flight, the Mini-Motor's ejection charge ignites, pushing out the nose cone and streamer. At the same time, the sudden backwards force of the ejection charge disengages the glider from its mount. The pad assembly descends safely to Earth on its streamer, while the glider circles and soars gracefully. The glider can fly for several minutes if properly flight trimmed.

The MINI-DACTYL obtains gliding ability because the canard is at a slight incidence to the wings. This incidence angle is pre-cut in the body strip (boom).

TOOLS YOU WILL NEED

- Superbond Glue (or "white" glue)
- Modeling Knife
- Pencil & Masking Tape
- Fine Sandpaper
- Paint (see painting instructions for options)

MAIN ASSEMBLY INSTRUCTIONS

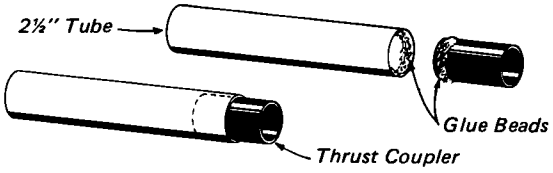
This "Kustom Kit" may be built in either one of two styles. The easier, and recommended style is shown on this side of the instruction sheet. Tips on building the slightly more challenging alternate version are shown on the reverse side. You must read the steps on this side to familiarize yourself with the basic assembly, even if you plan to build the alternate version.

This single-glider version is best suited for hi-altitude, long duration flights. We suggest that you still assemble both gliders, and keep the second one as a spare . . . small gliders can easily fly out of sight, especially when launched with a "B" motor.

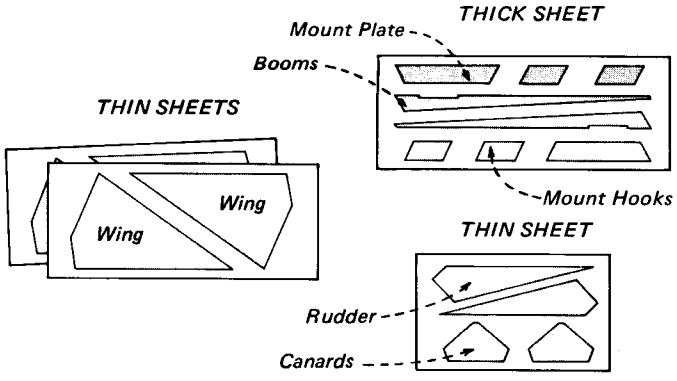
These steps skip from one part to another, so that the glue joints on each assembly can be drying while you are working on another. Be sure to glue each joint neatly and carefully, so the MINI-DACTYL can withstand flight stresses.

1 Start assembly by choosing the Motor tube (2½" long). Run a small glue bead around the inside of one end, and around the outside of the thrust coupler.

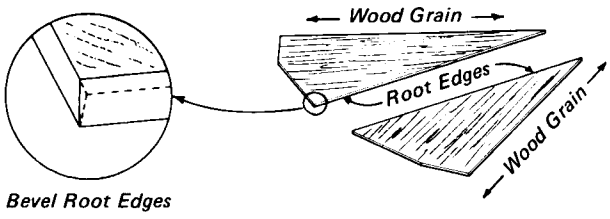
Join the parts with a firm, turning motion until the coupler is about half way in.



2 Identify the balsa parts shown below. Remove them carefully from their sheets as you need them, but avoid tearing the balsa.

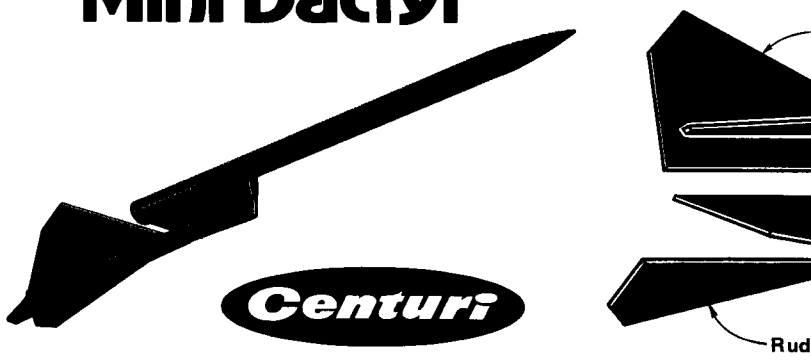


3 Run each wing edge over fine sandpaper to insure straight edges. Sand a slight bevel on each wings root edge and glue the wings together. Allow to dry on a flat surface, propping one wing with the canard, as shown.

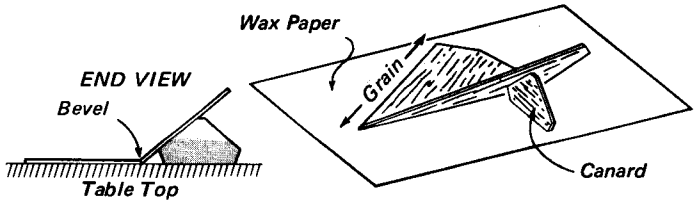


Centuri Engineering Company, P.O. Box 1988, Phoenix, Arizona 85001

Mini-Dactyl

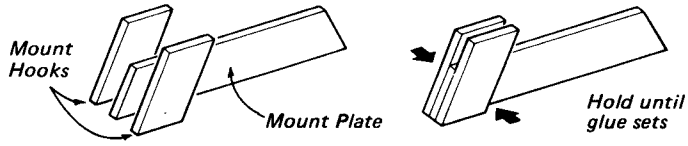


(STEP 3 CONTINUATION)

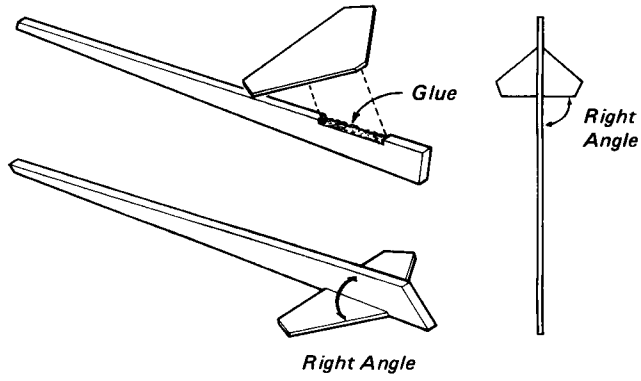


IMPORTANT: Be sure to align the wing sections so that the wood grain is parallel to the leading edge.

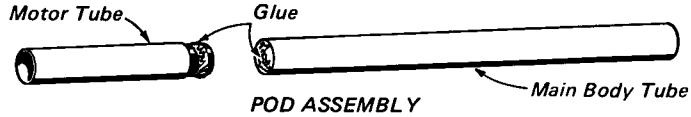
4 Assemble the pod mount, and hold until glue starts to set.



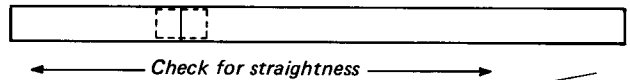
5 Glue the canard into its slot in the boom. Lay the assembly upside down to dry on your work table.



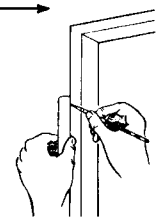
6 Apply glue around the coupler and around the inside of the main body tube. Join with a firm, turning motion and wipe away excess glue.

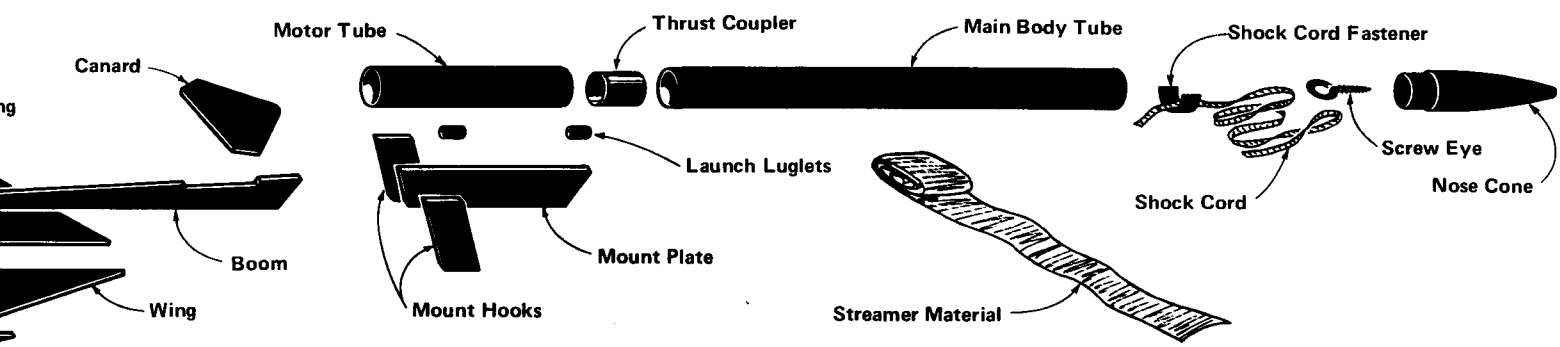


POD ASSEMBLY

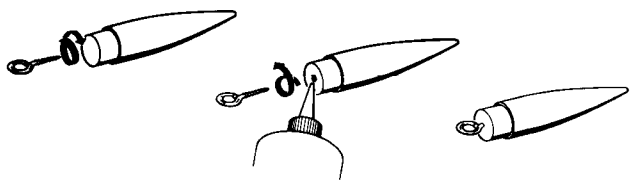


Find a convenient groove or channel, such as a door jamb or partially open drawer. Draw a straight guide line the length of the tube, for the mount to be glued on later.

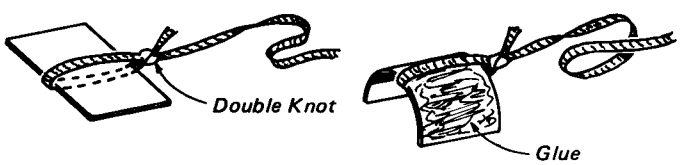




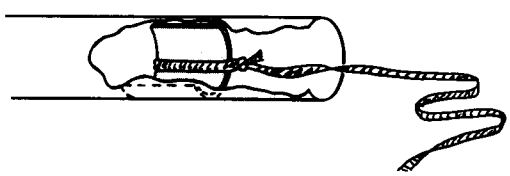
7 Screw the metal screw eye into the center of the nose cone base. Unscrew it and squirt a drop of glue into the hole. Re-screw the eye in place.



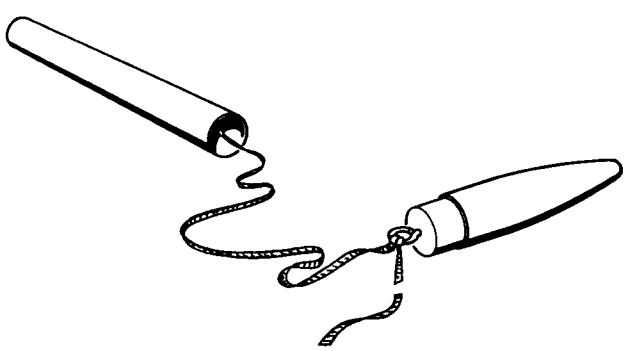
8 Tie one end of the shock cord around the heavy paper shock cord fastener (½" x 1"). Bend it neatly into a half-circle and apply glue to the entire outside surface.



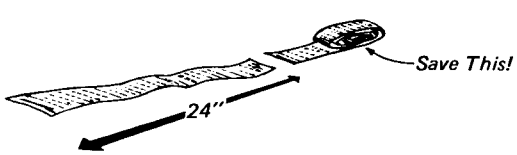
9 Insert the assembly into the open end of the main body tube. Make sure it's at least 3/4" into the tube, to allow for the nose cone to be inserted later. Rub the fastener down firmly with eraser end of pencil, and hold until dry.



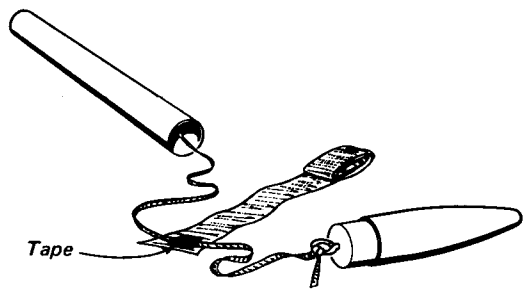
10 Tie the other end of the shock cord thru the nose cone screw eye . . . use a double knot, and trim off excess cord.



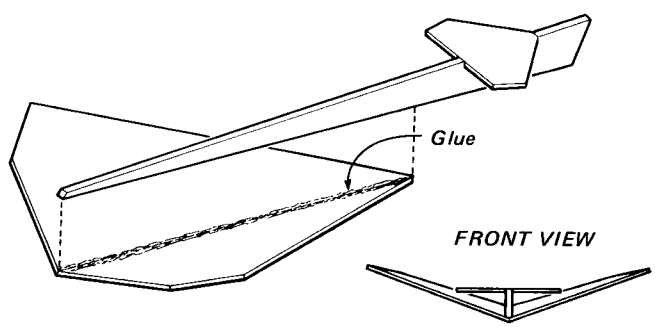
11 We have supplied more streamer material than you can actually use at one time . . . Cut off about 24" for this kit, and save the rest for repairs or replacement later.



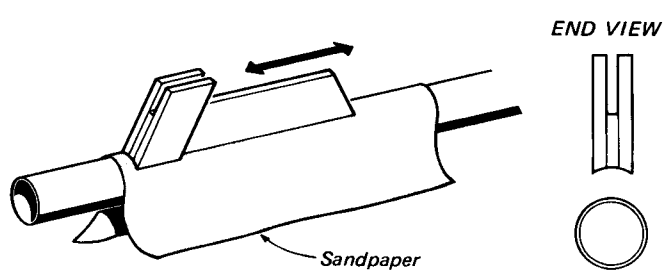
12 Attach one end of the 24" streamer to the middle of the shock cord with masking tape. Be sure it is on firmly . . . add a staple if you can.



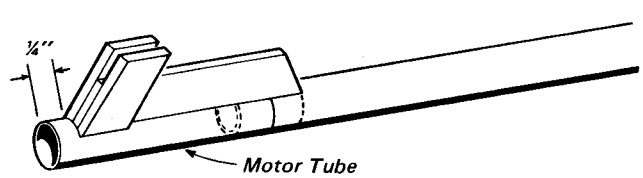
13 Glue the boom along the wing's centerline . . . be sure to align the parts symetrically. Hold with tape or pins, until dry.



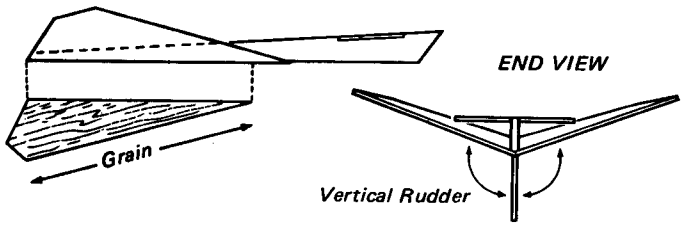
14 Prepare the mount assembly for gluing onto the body: Wrap fine sandpaper around the body, and rub the mount along it to obtain a curved underside.



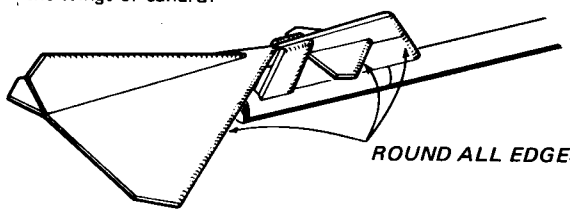
15 Glue the mount assembly in place onto the motor tube, aligning it along the line drawn in an earlier step.



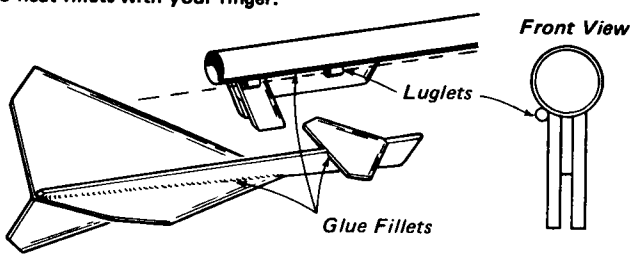
16 Glue the rudder in place, taking care to position it with its grain along its leading edge.



17 When dry enough to handle, hook the glider onto its mount. Use very fine sandpaper to gently round all exposed balsa edges. DO NOT try to "airfoil" the wings or canard!



18 Glue the launch luglets in place near the mount making sure they are in line with each other. EVERY glue joint must be reinforced to withstand flight stresses. Run a fine bead of glue along each joint, and smooth **into neat fillets with your finger.**



PAINTING INSTRUCTIONS

19 Many rocketeers who build and fly boost gliders feel that gliders should not be painted at all. The theory is that paint adds too much weight. It's true that many heavy coats of paint may detract from your glider's performance . . . BUT, properly applied paint can actually improve performance. A thin, smooth coat of paint:

A. Adds some strength to the fragile structure.
B. Provides for smoother aerodynamic flow over the wood surface.
C. Aids in seeing the glider at great altitudes.

RECOMMENDED GLIDER PAINTING

Sand all wood surfaces with very fine paper (300-400 grit) to remove loose fibres.

Apply a coat of clear model airplane dope to the entire wood surface.

Allow to dry. Sand the wood once more.

Apply a dark color on the underside, to aid visibility. Use a light mist coat of spray dope, or use a waterproof "Magic Marker".

This technique adds so little weight, that it's almost impossible to measure it . . . but it greatly improves performance.

RECOMMENDED POD PAINTING

NOTE: Choose a light color (such as white, yellow or silver) so the "decals" will show up well against the paint.

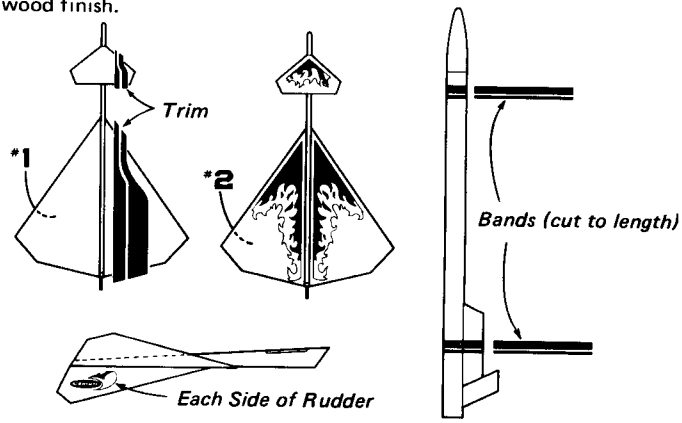
Apply light coats of spray enamel or dope until all surfaces are smooth and shiny.

This technique will of course add weight to the pod, but that is not a drawback. This weight helps bring the pod up to "optimum weight" for maximum altitude.

20 The pressure-sensitive "decals" are ideal for the Mini-Dactyl. They adhere to raw (or partially finished) balsa much better than standard water-type decals, and their weight is negligible. They are a little transparent, and should be applied only against light colors.

Use scissors or a modeling knife to cut each piece out of the sheet. Cut just barely inside the dotted lines. The white background of your "decals" will be clear (like scotch tape) when you apply them to your model.

21 WASH YOUR HANDS THOROUGHLY BEFORE APPLYING DECALS, or your fingerprints will get the decal glue dirty, and hurt your rocket's appearance. The glider "decals" go on the upper surface, on the natural wood finish.



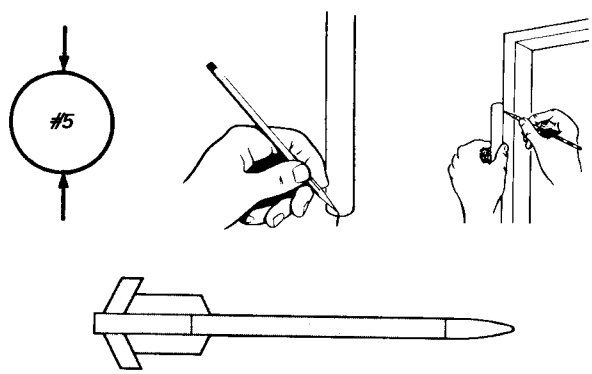
Your MINI-DACTYL is now complete. Read the FLIGHT TRIMMING and LAUNCHING INSTRUCTIONS before trying to fly it.

ALTERNATE ASSEMBLY TIPS

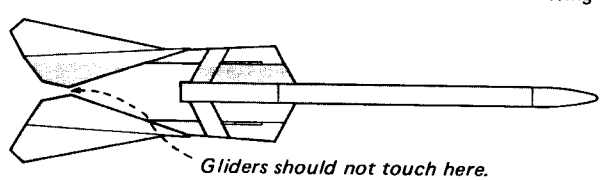
Tips for building the alternate, more challenging version of this ket are **shown below. Please read the main assembly instructions first, if you decide to build this alternate version. The steps shown below are only** tips, to be used along with the regular building techniques shown on the other side.

This version will not fly as high as the single-glider style, but the simultaneous ejection of TWO gliders can be a real crowd pleaser.

Draw two guide lines on the body, for gluing the mounts opposite each other.



Be sure the two gliders do not touch each other at the wing tips.



FLIGHT TRIMMING

How well your glider flies depends largely on how well you balance (or trim) it before launch. You trim by hand launching your glider, watching it carefully, and correcting for excess turning, diving or stalling.

A. Tamp a little clay onto the nose of the glider.

B. Find a clear area, (hopefully with soft grass) to hand launch your glider. Toss your glider lightly into the wind. If the glider stalls, add a little clay. If it dives, remove a little clay.

THE RIGHT MATERIALS FOR THE JOB		
PART	REQUIREMENTS	MATERIAL
Wings	Light weight	Balsa
Decals	Must be able to adhere to un-painted balsa	Pressure-Sensitive

Centuri **Mini-Dactyl**

Catalog No. KM-6

MODEL ROCKETEER'S SAFETY CODE

CONSTRUCTION
My model rockets will be made of only lightweight materials such as paper, wood, plastic, and thin metallic foils, with the exception of payloads and engine holders made of wirelike material.

ENGINES
I will use only pre-loaded factory made model rocket engines in the manner recommended by the manufacturer. I will not change in any way nor attempt to reload these engines.

RECOVERY
I will always use a recovery system in my model rockets that will return them safely to the ground so that they may be flown again.

WEIGHT LIMITS
My model rocket will weigh no more than 453 grams (16 oz.) at liftoff, and the engines will contain no more than 113 (4 oz.) of propellant, as prescribed by Federal Regulations.

STABILITY
I will check the stability of my model rockets before their first flight except when launching models of already proven stability.

LAUNCHING SYSTEM
The system I use to launch my rockets will be remotely controlled and electrically operated, and will contain a switch that will return to "off" when released. I will remain at least 10 feet away from any rocket that is being launched.

LAUNCH SAFETY
I will not let anyone approach a model rocket on a launcher until I have made sure that either the safety interlock key has been removed or the battery has been disconnected from my launcher.

LAUNCH AREA
My model rockets will always be launched from a cleared area, free of any easy-to-burn materials, and I will only use non-flammable recovery wadding in my rockets.

BLAST DEFLECTOR
My launcher will have a blast deflector device to prevent the engine exhaust from hitting the ground directly.

LAUNCH ROD
To prevent accidental eye injury I will always place the launcher so the end of the rod is above eye level or cap the end of the rod with my hand when approaching it. I will never place my head or body over the launching rod. When my launcher is not in use I will always store it so that the launch rod is not in an upright position.

POWER LINES
I will never attempt to recover my rocket from a power line or other dangerous places.

LAUNCH TARGETS AND ANGLE
I will not launch rockets so their flight path will carry them against targets on the ground, and will never use an explosive warhead nor a payload that is intended to be flammable. My launching device will always be pointed within 30 degrees of vertical.

PRE-LAUNCH TEST
When conducting research activities with unproven designs or methods, I will, when possible, determine their reliability through pre-launch tests. I will conduct launchings of unproven designs in complete isolation from persons not participating in the actual launching.

FLYING CONDITIONS
I will not launch my model rocket in high winds, near buildings, power lines, tall trees, low flying aircraft or under any conditions which might be dangerous to people or property.

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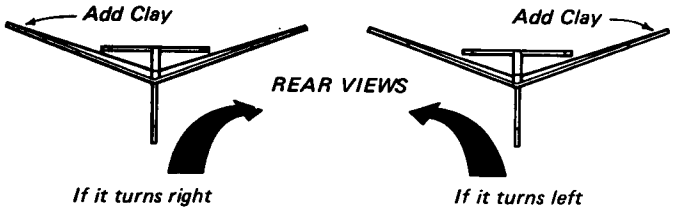
IP-706-0873

C. With practice you can launch off the wind so it turns and glides with the wind on a long glide.

D. The MINI-DACTYL GLIDER should circle slightly while gliding. If it glides perfectly straight, it can easily glide out of sight.

If it turns too much to the left, add a little clay weight to the opposite wing tip, and visaversa. Avoid sharp spiraling turns as this drastically decreases performance.



E. Test fit the glider onto the balsa pod mount. The glider should disengage easily. If necessary, sand the inside surfaces of balsa mount hooks slightly. Do not sand too much, or glider will wobble.

F. You should test launch your Mini-Dactyl with a mild-power motor (¼A or ½A) before trying the more powerful motors. A glider that does well in hand-launching may perform quite differently when released from a pod, hundred of feet up. Many fine gliders have done poorly in contests because the contestant didn't take the trouble to thoroughly glide test it first.

G. By now your glider should have passed all its "flight trimming". The Mini-Dactyl glider is one of the easiest boost gliders to trim. If you have trouble, enlist the help of a model airplace hobbist, who can show you the tricks of the trade.

H. Finally, protect the clay by brushing a light coat of clear dope on it. This will firmly adhere the clay to the glider, and will avoid the clay picking up dirt or pebbles . . . which could throw off the flight trimming.

LAUNCHING INSTRUCTIONS

Igniters and complete Mini-Motor instructions are included with all Centuri Mini-Motors.

The single-glider Mini-Dactyl can be launched with any of the following Mini-Motors.

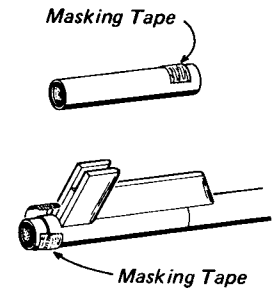
MAXIMUM ALTITUDE CHART	MOTOR	FEET	MOTOR	FEET
ALTITUDES DEPEND GREATLY ON THE PRECISION OF ASSEMBLY AND SMOOTHNESS OF THE SURFACE FINISH. USE LOWER POWER MOTORS I.E.A. AT FOR FIRST FLIGHTS	¼A4-2M	150	A4-4M	550
	½A4-3M	300	B4-5M	1000

DOUBLE VERSION: ½A4-3M, A4-2M, B4-3M

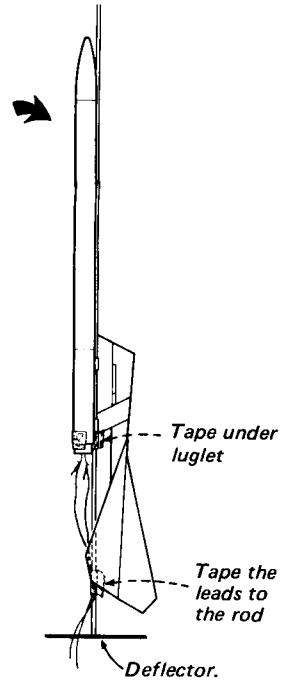
Avoid using the most powerful motors on the first launch. For instance, a "B" motor will fly your rocket so high that you may lose sight of it and be unable to find it again. Or, it may cause, the rocket to recover a great distance away . . . possibly on a roof, or in a tree top. "B" motors are intended for experienced rocketeers, and large launch areas.

FLIGHT PREPARATION

1. Inspect shock cord fastener for firm bond.
2. Insert Flameproof Parachute Wadding according to its directions.
3. Tuck in shock cord.
4. Fold and roll the streamer neatly.
5. Socket nose cone in place.
6. Apply a small amount of masking tape to your Mini-Motor casing . . . just enough to have a good friction fit . . . and insert it into rocket.
7. Apply a narrow strip of masking tape completely around the exposed end of the motor and body tube.
8. Attach the glider and check its fit (loose, but not wobbly).



Avoid short circuiting your launcher's clips by applying tape to the launch rod, to raise the rocket up a little above the deflector. Tape the launcher's leads to the rod, to avoid tangling in the glider. Carefully prepare and check all parts of your rocket before each flight.



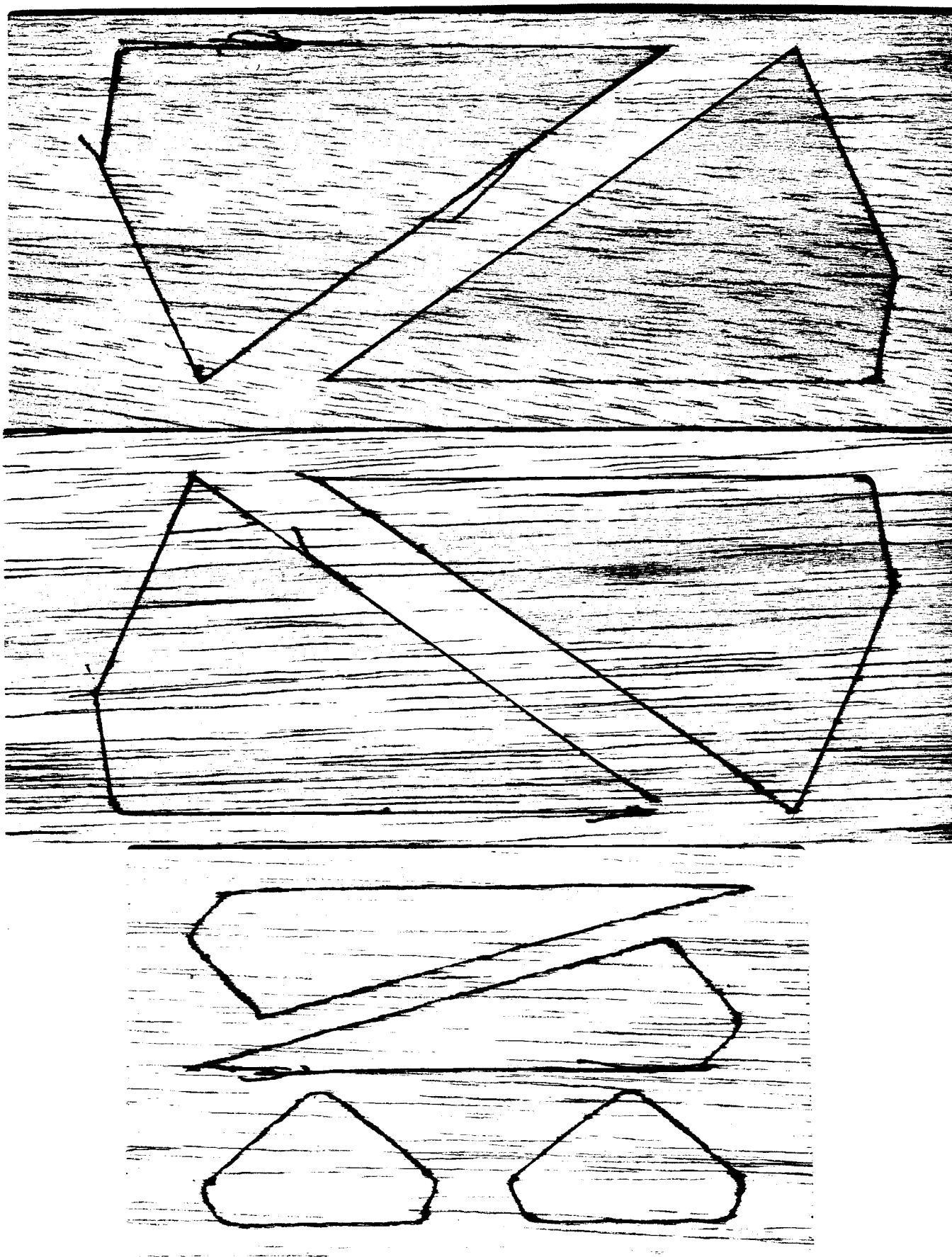
Launch the MINI-DACTYL from any standard model rocket launcher having a 1/8" diameter x 36" long steel launch rod.

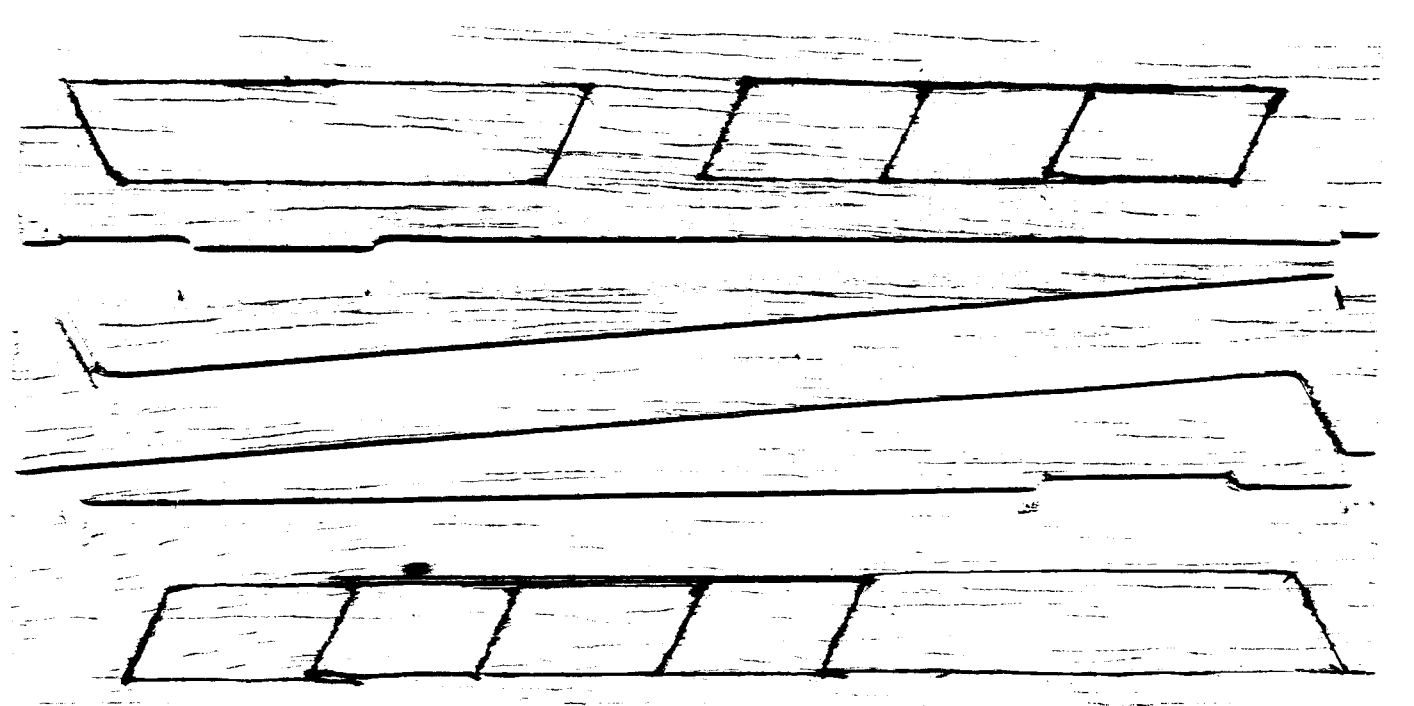
This rocket is designed to be launched only from standard remote-controlled electrical launch systems. Always use the recommended engines. Comply with all Federal, State, and local laws.

Referring to the specific instructions which accompany Centuri launchers and firing panels, mount the rocket on the launcher and prepare for ignition. Avoid eye injury by capping the exposed tip of the launch rod when not actually launching the rocket.

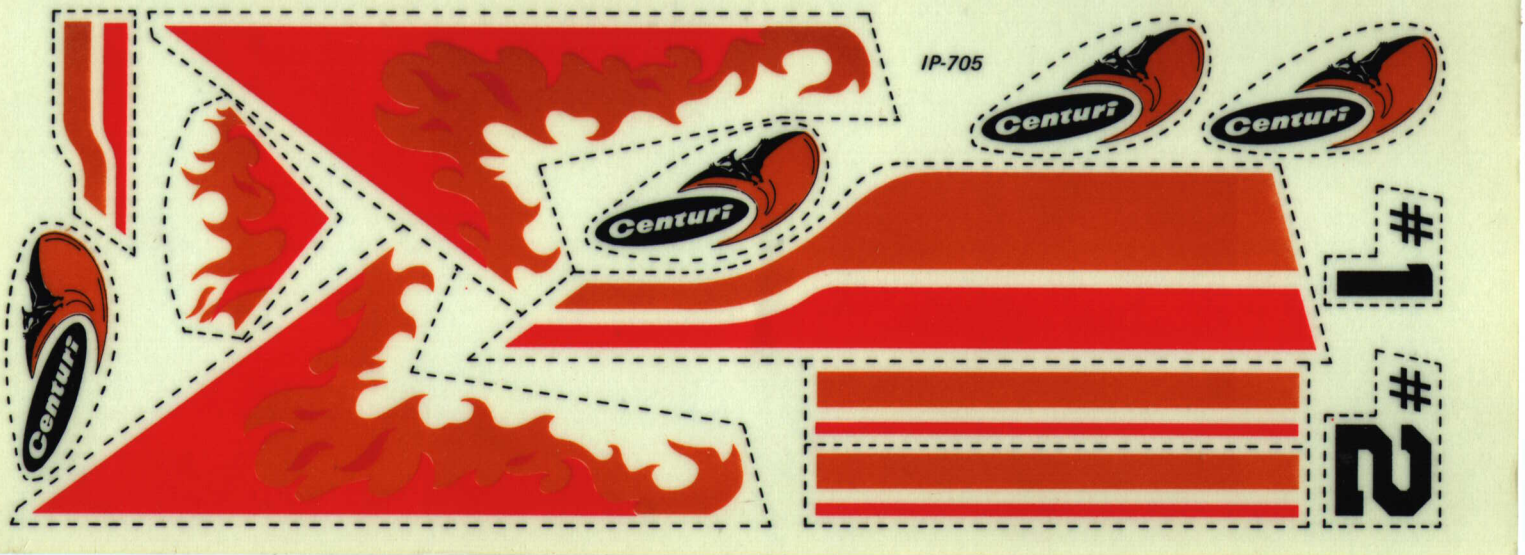
THE LAST WORD. . .

Any contest boost glider requires a lot of room. Find a really big field. Don't launch in a high wind or you are guaranteed to never see your glider again . . . and somebody in the next county will get an unexpected addition to his airplane collection. It's smart in any case to write your name and address on the glider so it can be returned if it strays a long way from home.





3/32" make two
1/16" make two
WESTCOTT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RECOMMENDED AVERAGE AGE FOR "MINI-DACTYL" KIT: 13 TO ADULT

A REWARDING HOBBY FOR AGES 10 TO ADULT

MAXIMUM ALTITUDE CHART

ALTITUDES DEPEND GREATLY ON THE PRECISION OF ASSEMBLY AND SMOOTHNESS OF THE SURFACE FINISH. USE LOWER POWER MOTORS (¼A, ½A) FOR FIRST FLIGHTS.

MOTOR	FEET	MOTOR	FEET
¼A-2M	150	A-4M	550
½A-3M	300	B-5M	1000

TOOLS YOU WILL NEED

Here are the ordinary modeling tools & supplies you'll find useful in assembling this kit.

- Superbond glue
- Dope paint (optional) (or "white" glue)
- Fine sandpaper
- Fi-Cote
- Modeling knife (or Sanding sealer)
- Pencil & Ruler

Mini-Dactyl MINI-ROCKET

Manufactured by Centuri Engineering Co., Phoenix, Arizona

Catalog No. KM-6

Centuri

FLYING MODEL ROCKET KIT

true-contest Mini-Dactyl boost glider

- Includes two gliders!
- Efficient streamer-recovery pod!
- Amazingly long glide duration!
- Pre-cut balsa glider parts!
- Hi-efficiency balsa nose cone!
- Giant 2-color stick-on "decals"!
- Contest-clay for flight-trimming!

Gliders circle and soar for up to several minutes.

Kustom Kit

Includes parts for alternate double-glider version . . . or use the second glider as a spare!

FLY WITH HI-PERFORMANCE Centuri ROCKET ENGINES

Motors not Included

Pod carries gliders to extreme altitudes.

Centuri

Mini Rocket

FOR USE WITH CENTURI MINI-MOTORS

Catalog No. KM-6

IP-708
0873

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