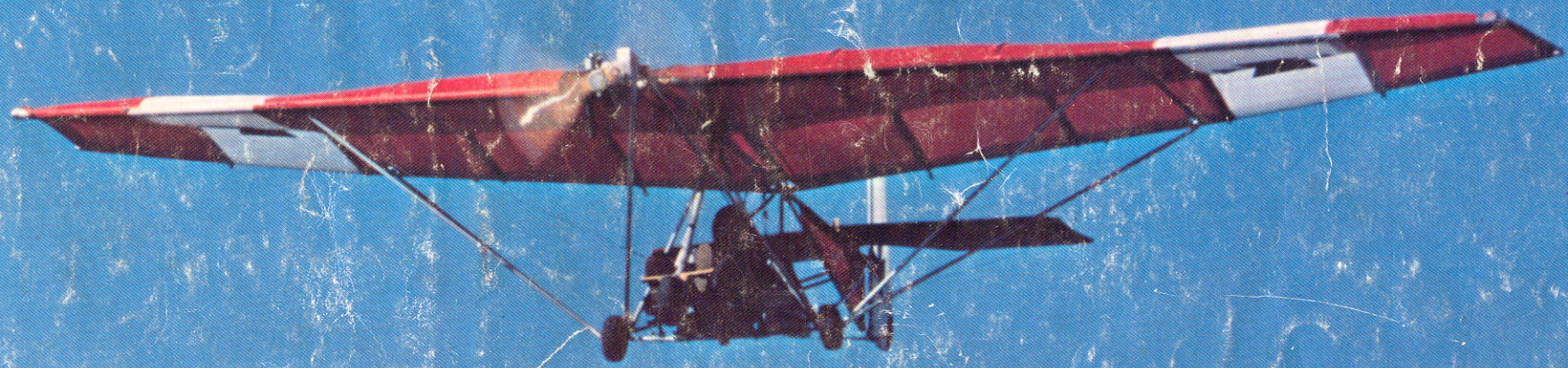
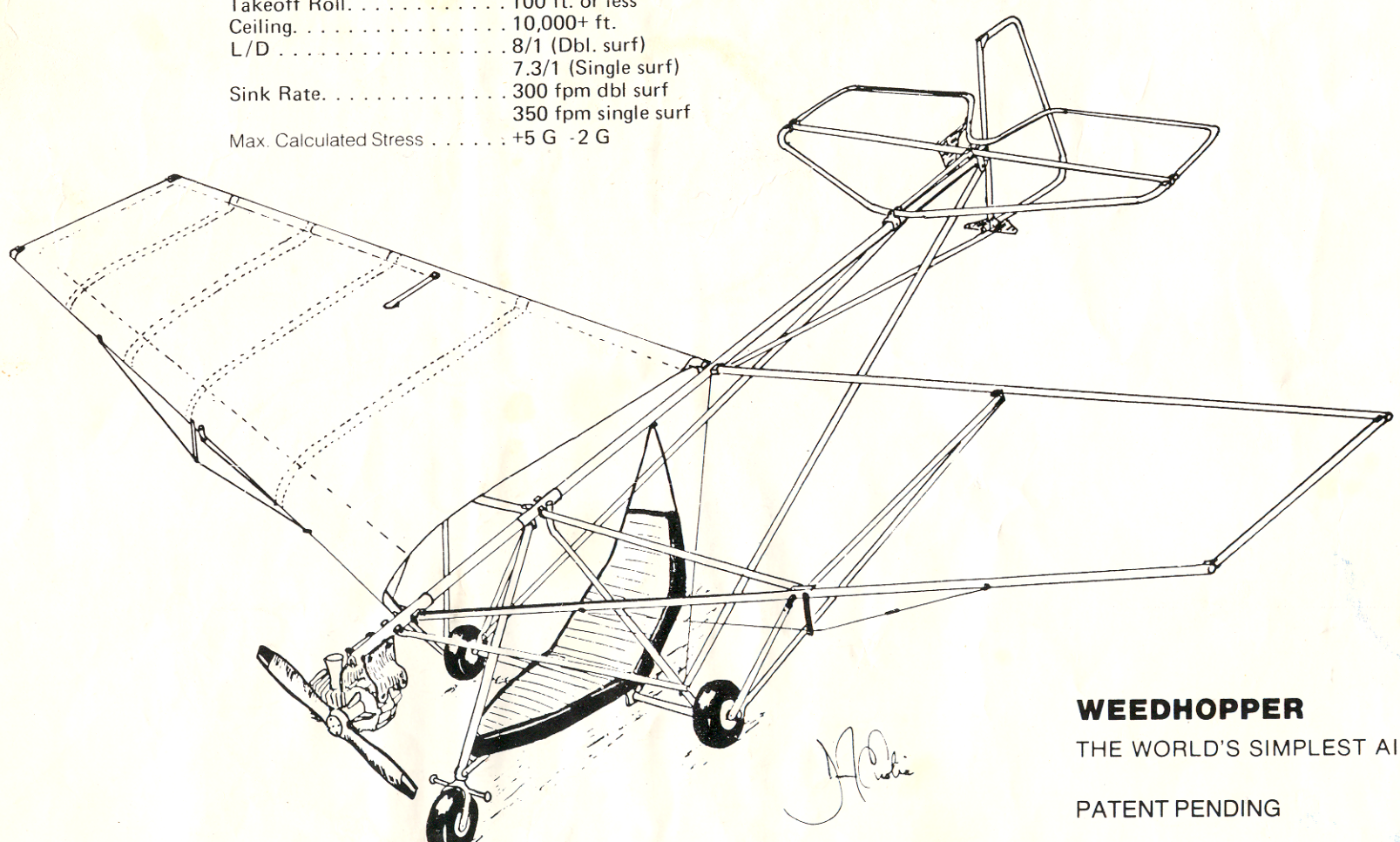
WEEDHOPPER™ OF UTAH INC.

"The Ultimate Fun Machine"



TRUE GRASS-ROOTS FLYING, LOW COST, SIMPLE AND FUN! BRINGS BACK THE FUN OF SLOW AND OPEN FLIGHT.

Span	28 ft.
Area	168 sq. ft.
Weight	160 lb.
Max. load	220 lb.
Cruise speed	30 mph
Red line speed	50 mph
Stall (160 lb. load)	22 mph
Range	90 miles (with 3.5 gallon tank)
Engine	456 cc., Chotia, 2 cycle, 25 hp, 4500 rpm
Takeoff Roll	100 ft. or less
Ceiling	10,000+ ft.
L/D	8/1 (Dbl. surf) 7.3/1 (Single surf)
Sink Rate	300 fpm dbl surf 350 fpm single surf
Max. Calculated Stress	+5 G -2 G



WEEDHOPPER

THE WORLD'S SIMPLEST AIRPLANE!

PATENT PENDING

ABOUT THE DESIGNER:

John F. Chotia, Airplane Designer, Experimental Machinist, Moldmaker, Tool & Product Designer, Inventor, graduated from high school in 1964, then served a four year apprenticeship with NASA Ames Research Center to become an experimental machinist in 1968. His function with NASA was the design and fabrication of Aero-Space and Life-Science Research Equipment.

During his apprenticeship he operated a model race car business producing vacuum formed bodies with aerodynamic features which boosted performance as much as 25%. In the first race entered, such a car won a 25 lap race by **seven** laps! In 1968 he designed an aero assist body for the Formula 'A' SCCA National Champion (a full size car)
In early 1969 he designed and built a racing go kart with many novel features including aero assist body work, 4-speed transmission, and an all moveable wing.

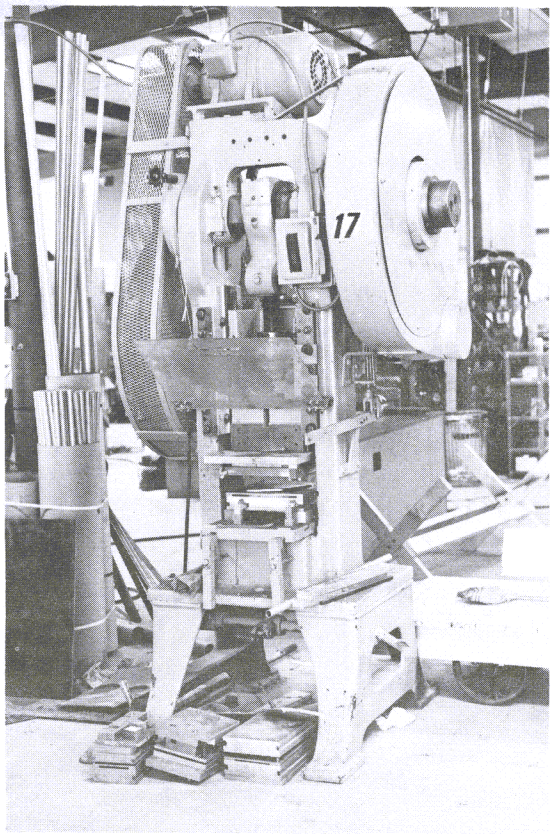
In late 1969, John founded 'Advanced Dynamics', a plastic injection molding and tooling company. A.D.'s service was basically product and tooling design for molded plastic parts. This company grew and expanded employing as many as 21 people. Advanced Dynamics was sold in mid 1976. During the six and one-half years with Advanced Dynamics, he continued research on ultra light airplanes, building 17 of the 24 different designs created as of today.

John's aircraft interests started 23 years ago at age 9 with flying models. As of his Senior year in high school, he had built over 180 model airplanes; 115 of these were his own design. During his early high school years he did well at contests with a class 'A' .15 cu. in., a stunt plane of his own design. Later he did quite well with combat flying wings powered with his own specially modified engines, many components of which he built himself. In 1964, he designed a man powered airplane for the 1959 Kremer M.P.A. challenge, a 50,000 pound sterling British challenge, which in later developments in 1975, was identical in design concept to the one which finally succeeded in 1977 built by Paul McReady in Southern California.

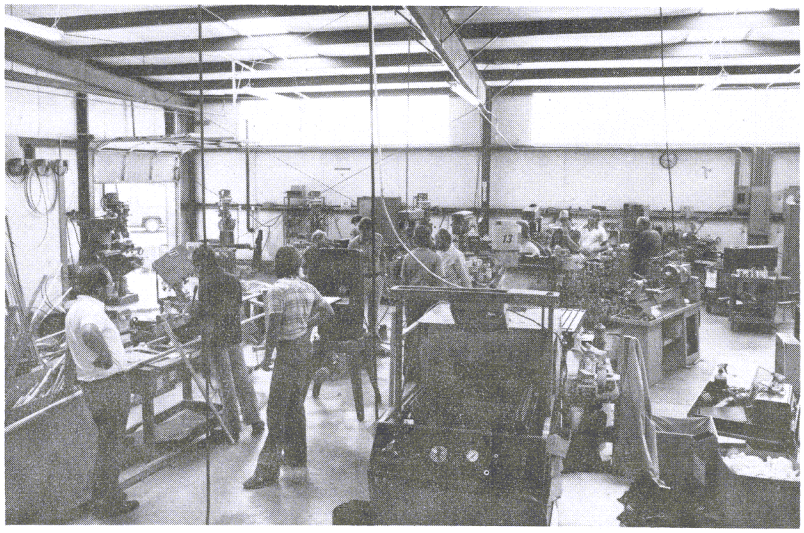
He built his own hang gliders in 1965, long before it was popular, and had many successful flights. He soloed in a sailplane in three and one-half hours instruction in 1965 also.

His interest in flying and his love of design challenge has led to a series of 24 full size ultralight airplane designs, always trying for a simpler, more effective way to do things. The result is the Weedhopper, an ultra-simple ultra-light airplane. The Weedhopper succeeds in providing his ideal fun flying machine. It is easy to fly, but also very maneuverable with plenty of reserve power. The stability on the ground is outstanding. In the air, it is responsive, yet predictable. The Ultimate Fun Machine.

This desire to do the job the best way has led to the design, tooling and development of the Chotia 460 engine at 31 1/2 lb. and over 25HP. It completes the Weedhopper performance package.

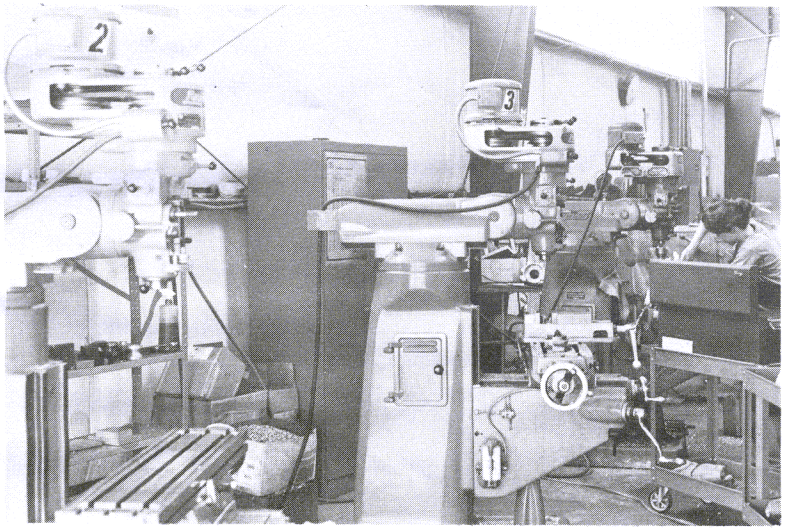


50-ton punch press for stamped sheet metal parts.

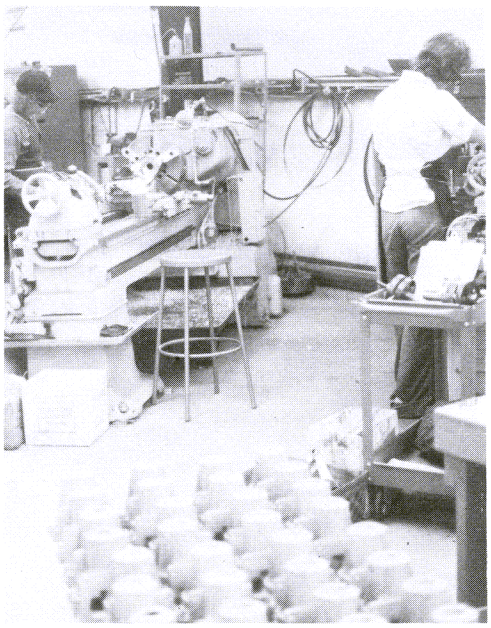


Part of our complete machine shop.

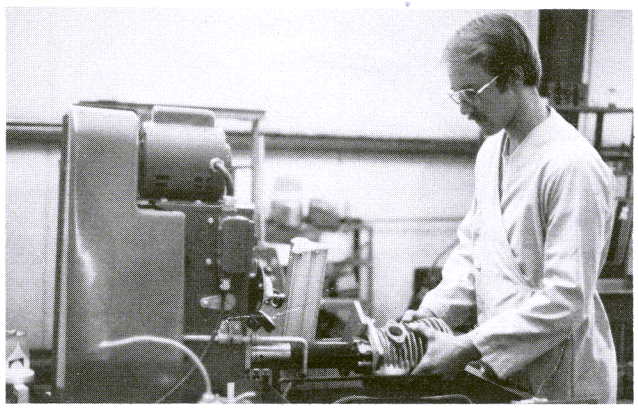
We carve our own props from laminated birch



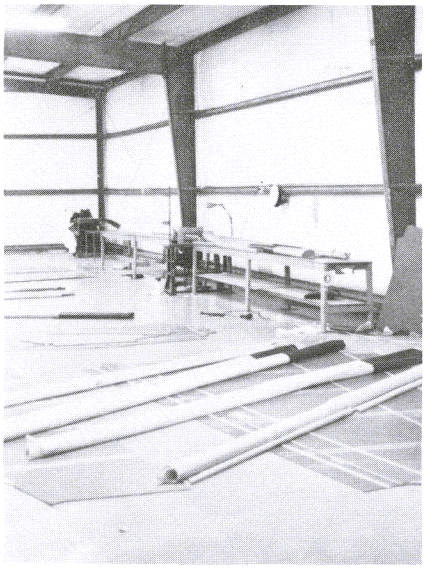
Mill department.



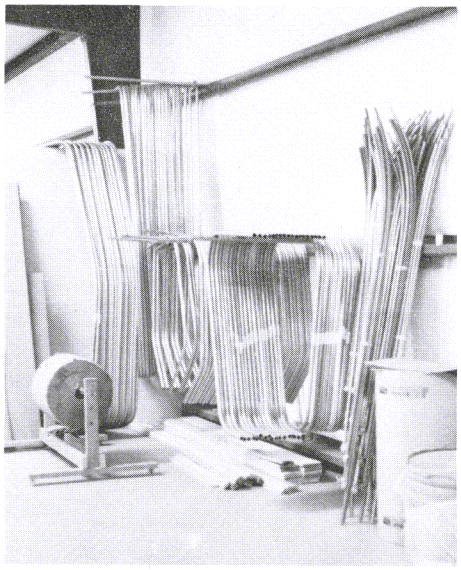
Lathe Department



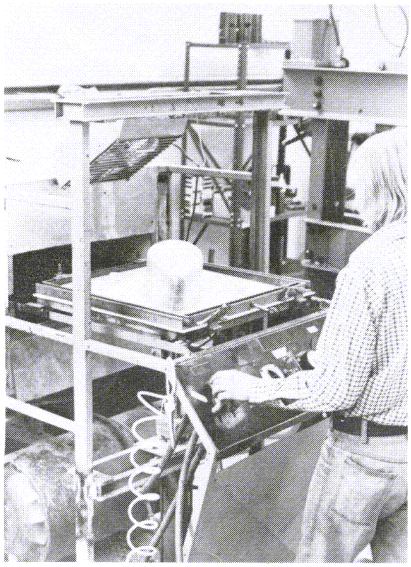
We hone our own cylinders



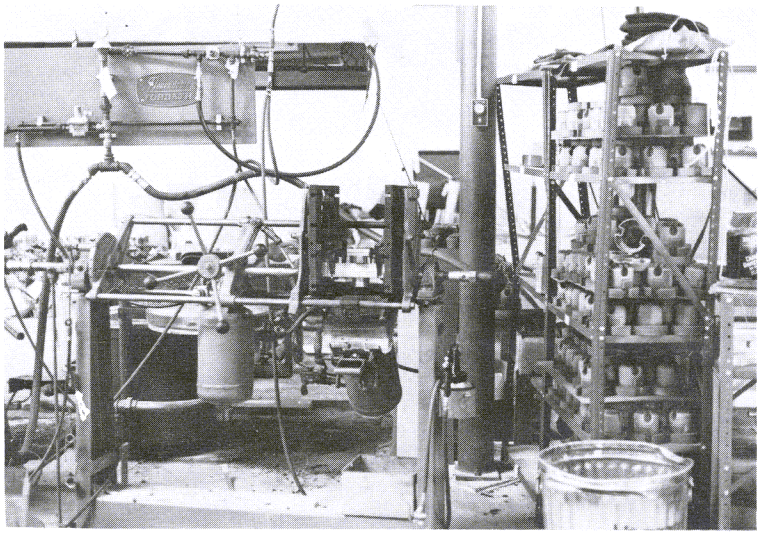
Sail Loft.



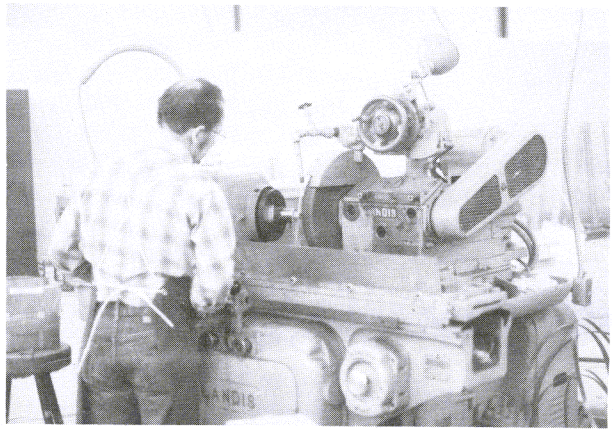
Shipping Department.



Molding plastic tanks.



We operate our own complete metal casting foundry.

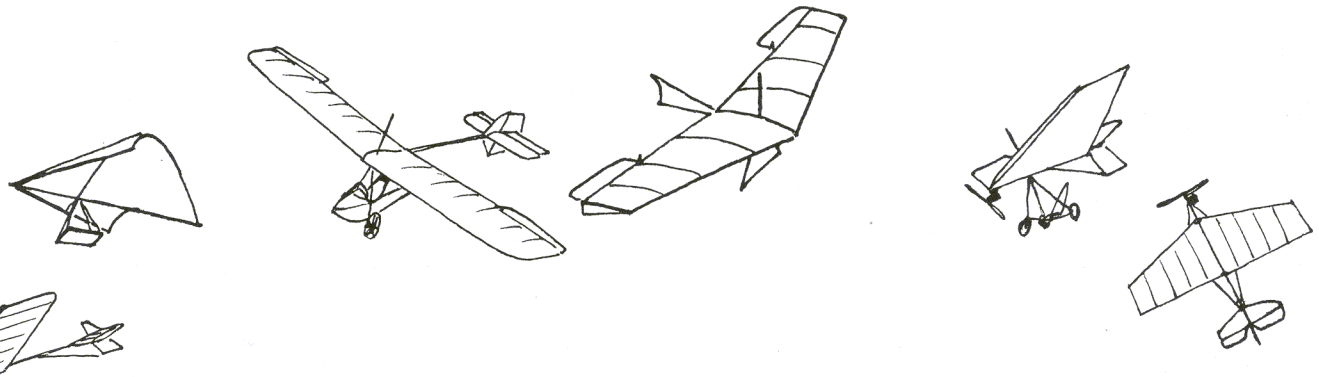


Cylindrical grinding.

WEEDHOPPER OF UTAH, INC.

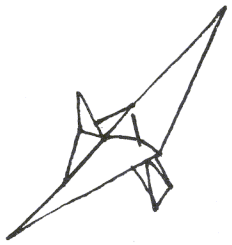
Weedhopper of Utah, Inc. is the most versatile, skilled and specialized company in all aviation today. With over 50 employees and 14,000+ square feet expanding to over 20,000 square feet soon, Weedhopper has the facilities and skills to get the job done right. We have the people, and equipment to manufacture our own airframes, sew the fabrics, cast and machine our own *engines,* carve our props, mold plastics (both injection and vacuum formed), and stamp and form sheetmetal. We have full-time tool makers who design and build all the dies, molds and production fixtures we need, right here in our own machine shop!

What all this means is that we control the quality of our production. Problems with outside suppliers are minimized. Since we buy only the raw materials, bolts, fasteners, etc., and do most all fabrication here, we aren't giving profits to outside suppliers. We are very cost competitive. We achieve low cost *and* high quality. Weedhopper of Utah, Inc., is definitely the biggest in the Ultralight industry. The quality and function of our product, backed by our highly skilled team of employees is why we are number one.

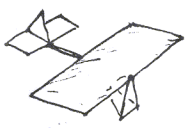


THE DESIGNER'S COMPROMISE

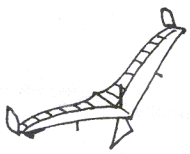
When most people decide to learn to fly it is to have a good time. Thoughts of swooping, banking, turning, diving, and just generally zipping around are rapidly compromised to the reality of the modern lightplane trainer. Instruments, traffic patterns, radios and control towers quickly dampen and inhibit the ideal freedom of flight. The Weedhopper was designed to fill this idyllic desire for freedom. It is totally impractical in the business machine sense, yet as pure recreation, it is unequaled. Its light weight, low speed and tight maneuverability open a new era of bird-like flying, at bird-like altitudes.



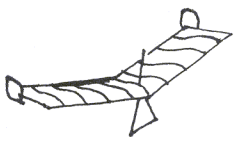
All airplane designs are a balance of choices, if certain features are wanted others must be sacrificed. The goal of the WEEDHOPPER is a low cost, easy to build and easy to fly machine. To achieve this end we cannot have tremendous speed **or** range. The WEEDHOPPER is intended for pure fun flying and most pilots find the slow, highly maneuverable, and open cockpit type of plane the most fun.



The WEEDHOPPER has no ailerons, so the landing gear is extra wide and very low. Cross-wind take-offs and landings have proven not to be a problem, simply hold the nose down until the take-off speed is reached then rotate and correct heading with the rudder. The 12° dihedral and low center of mass combine with the rudder to give well coordinated turns. Take-offs and landings have been made in crosswinds up to 10 MPH, 90° to the runway.

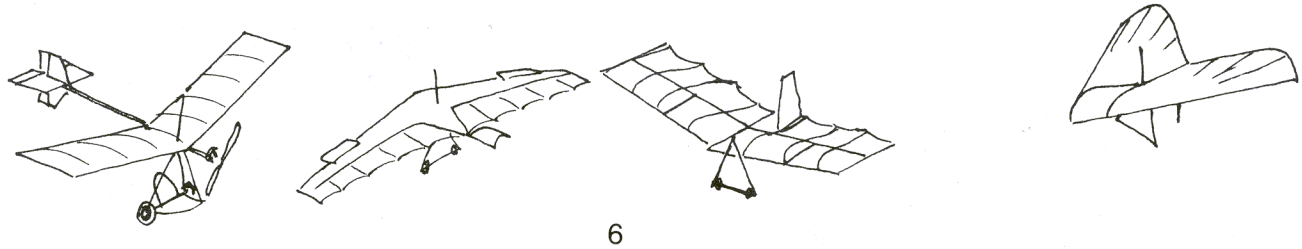


The tractor engine position was chosen to get the empty plane to balance at the proper point for flight. This means we can locate the pilot's seat right on the C.G. and as a result the variable weight of the pilot does not affect the trim or safety of the plane. This is in direct contrast to the accepted pusher arrangement used in nearly all other ultralight designs. The central pilot position is also safer in the event of a crash than right on the nose! The pilot of the WEEDHOPPER also has better attitude reference, and a feeling of security from the structure surrounding him. All this, and the C.G. varies less than ½" with 0 lb. to 200 lb. pilots!



The aluminum tubing and dacron sailcloth structure has been well proven in tens of thousands of hang gliders. The WEEDHOPPER'S rigid airfoiled wing rolls up for car top transport!

(Around border: Some of John Chotia's 27 designs built as of today)



FLYING THE WEEDHOPPER

The wide tricycle landing gear and low G.C. make ground handling very easy. You can maneuver briskly with no fear of ground looping or tipping. The steerable nose wheel is controlled by the feet and will turn a very tight radius. Due to the small amount of weight on the nose wheel, the rudder is all the control that is needed during the takeoff roll. The nose wheel is only needed for slow, tight maneuvers such as turning around.

The reclining pilot position is very comfortable and the excellent over-the-nose visibility gives good attitude reference, especially on landings. In most regular airplanes, you lose forward reference during the flare; not so on the WEEDHOPPER. The prop wash strikes the pilot during takeoff so goggles are desirable. In flight, the prop wash goes over the pilot's head. Seat back position is fully adjustable.

When approaching a stall there is a slight elevator buffet about 3 mph before actual stall. Power-on stalls in straight flight mush straight through and lose about 10-15 ft. of altitude; power-off loses about 20-25 ft. In banks over approximately 15° the inside wing drops and the plane slides to the inside, yawing into the slip and rolling its wings level on its own. There seems to be little tendency to spin inadvertently out of a banked turn or level flight stalls. The WEEDHOPPER is very reluctant to spin. We do not recommend trying to provoke a spin since this is not an aerobatic airplane.

Control pressure is light but not sensitive in pitch. Rudder pressure is moderate and effective. The WEEDHOPPER is stable, handsoff in pitch, roll and yaw. The rudder control alone produces smooth, coordinated turns (see pg. 14). Bank angles of well beyond 60° are possible for full 360° turns in under 7 seconds (approx. 70 ft. radius!). Bank rolls of 90° (or more) may be achieved momentarily and the rudder control will roll the plane back to upright if inverted. The WEEDHOPPER has been tested through a variety of unusual attitudes, however, it is not designed for aerobatics. Please don't try.

The engine down thrust controls climb without the need for trim changes, and the pre-set incidence and stable C.G. position gives near optimum power off glide without trim change, just like a well trimmed model plane!

BUILDING THE WEEDHOPPER

The basic structure of the WEEDHOPPER is seamless drawn 6061 aluminum tubing with larger tubing and/or wood dowels to reinforce all attachment points. Pre-machined brackets or gussets are used to join the tubes. All bolts and hardware are aircraft quality. This construction method has proven very rugged and reliable. The WEED—HOPPER is strong and easy to build, and if needed, it is quick and easy to repair.

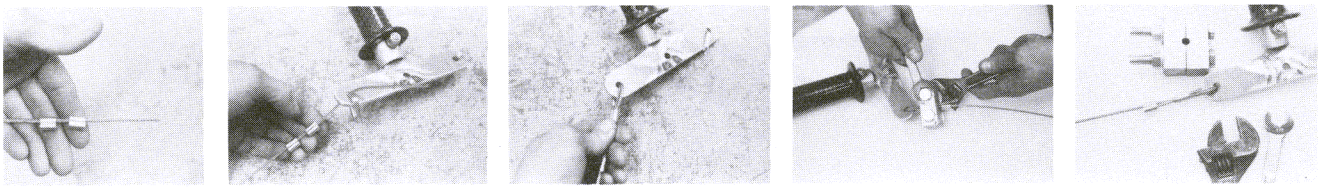
The covering is stabilized dacron sailcloth and is pre-sewn to slip in place. There is no sewing, gluing, or doping to be done. You simply order your sail with whatever color pattern you desire. The beautiful translucent colors seem to glow in the sunlight, almost as a reflection of the excitement and joy of flight.

The control system is simplicity itself. A direct pushrod activates the elevator, two cables run over pulleys and straight back to control the rudder. The foot rest steers the nose wheel.

All components which require bending, machining, or sewing are done for you. Some drilling is necessary, but a special fixture is included to make it easy to do accurately.

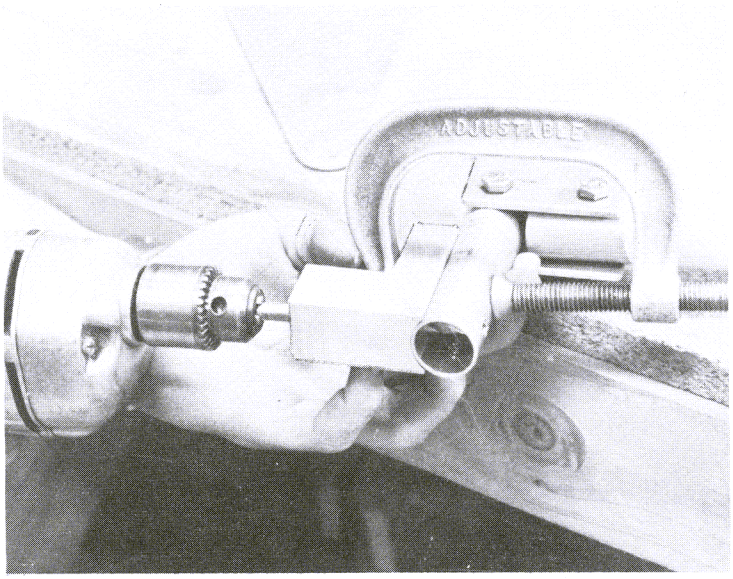
Every effort has been made to insure your successful completion of this project. You should be ready to fly in 40 hours of work or less. The only tools needed are a drill, hacksaw, hammer, file, pop rivet tool, a couple of wrenches, and a screw driver. The complete kit comes with all materials needed to build a complete WEEDHOPPER, aluminum tubing, pre-sewn sails, all hardware, wheels & tires, instruments, engine, prop, fuel tank, etc., EVERYTHING!

BUILDING THE WEEDHOPPER



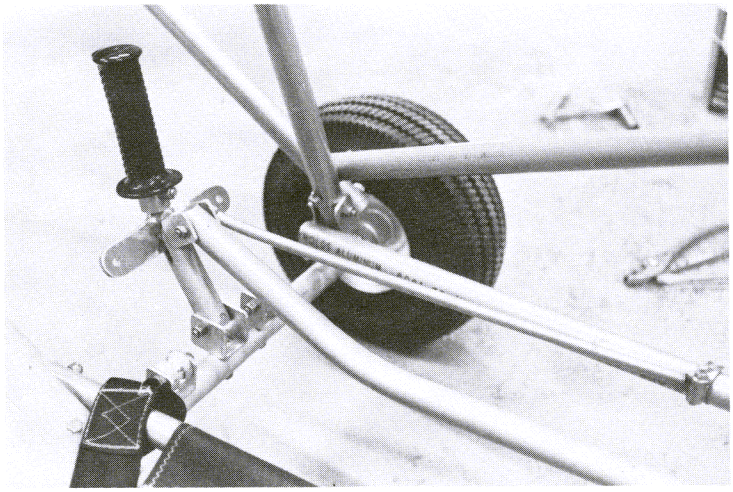
Swaging Cables.

Clear, step-by-step photos make building easy and sure.



A Drill Guide is provided for accurate (and straight) holes.

Special tools, such as those shown in the photos above and to the left, come with the kit for easy construction.

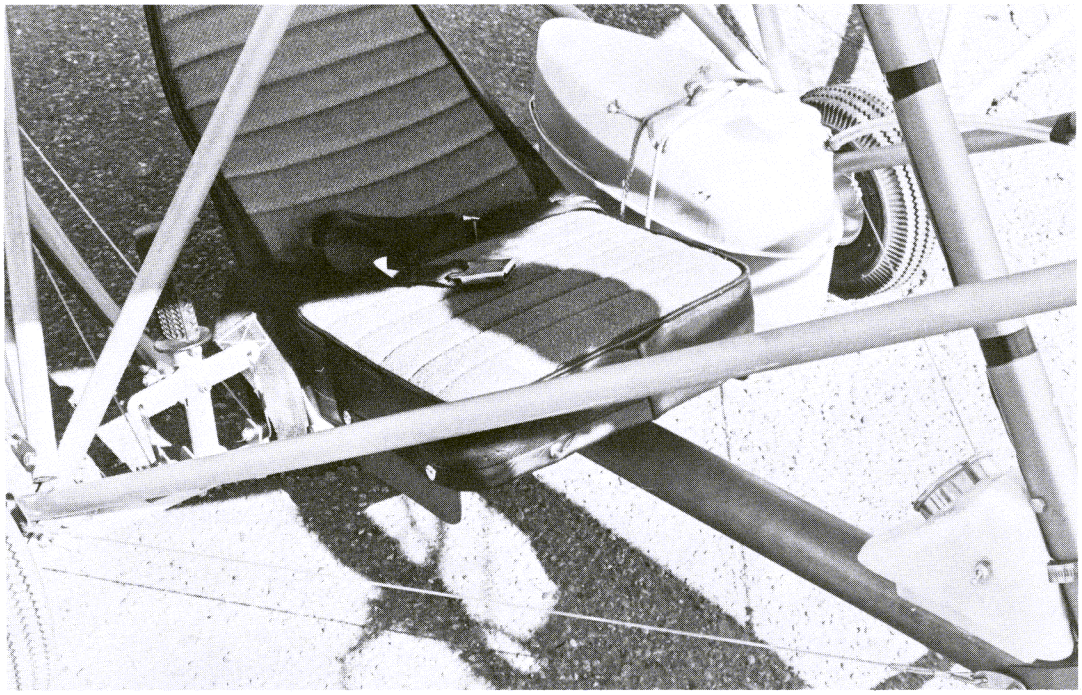


Control System.

Lots of assembly photos make the plans easy to follow.

We do all the sewing, bending and machining. Additionally, we pre-drill the difficult castings. A special drill guide and cable swaging tool are provided. All you need is a hacksaw, hammer and file, hand drill, two 'C' clamps, "pop" rivet tool and a few wrenches. Building is quick and easy. (Also shown are the optional brake, custom upholstery and big fuel tank.)

LICENSING AND REGULATIONS



Seat bottom folds back for "foot launch and landing" capability.

NO LICENSES REQUIRED!

Because the Weedhopper is "capable" of being launched and landed on the pilot's feet, no license is required for the plane or pilot. This capability makes the Weedhopper technically a hang glider. Normally launches and landings are off the wheels with the seat belt on. As long as the capability exists there is no license requirement.

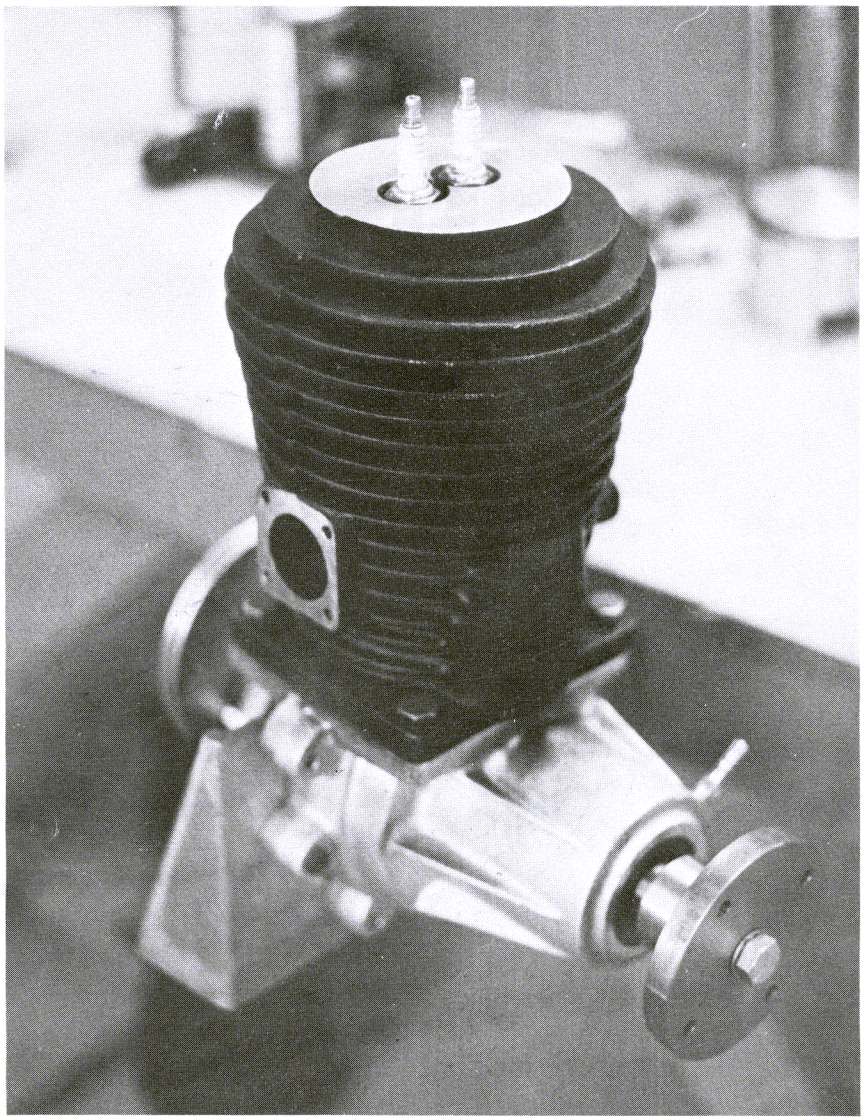
We do not recommend that you attempt a foot launch, it is difficult and risky. Use the wheels, it is far safer. Each individual pilot does not have to prove this capability.

We strongly recommend dual instruction in another (2-passenger) plane. You should be able to recognize and recover from stalls, control airspeed during climb with the elevator, and control glide path during approach with power. You won't need a full student solo. Take off and landing, particularly, are much easier in the Weedhopper than in any normal airplane. Ground handling is far superior, airspeed control is easier and there is no control coordination problem of rudder versus ailerons. There is no tendency to spin or drop a wing in a stall. The Weedhopper is easier to handle than just about any normal aircraft. Still, you need to be comfortable and confident in the air and sure of what you are doing.

You will also need to be familiar with Parts 61 and 91 of the Federal Air Regulations (F.A.R.'s). This is basic student pilot requirement. This is for your own good as is the need to be able to read a sectional map. You need to know where not to fly to avoid getting shot down or causing problems.

Also, this isn't necessary, but we suggest you join the E.A.A., P. O. Box 299, Hales Corners, Wisconsin 53130. They have an excellent organization and publication, "Sport Aviation." Cost is $25.00 a year and well worth it.

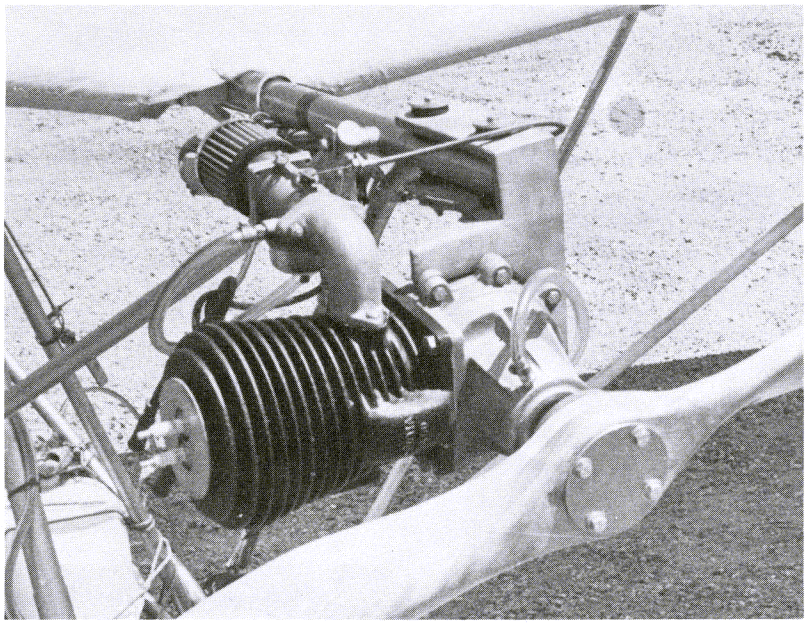
1 YEAR OR 100 HOUR GUARANTEE
ON THE CHOTIA-460 ENGINE



CHOTIA 460 AIRCRAFT ENGINE

2 Cycle, Schnurle ported cylinder, piston valve induction; 3 ball bearings on crankshaft, needle bearings on rod and wrist pin.

Bore = 88mm	Power = 25 hp @ 3800 rpm
Stroke = 75mm	Weight = 31.5 lbs.
Displacement = 456cc	Overall Size (less Carb. = 16" H. 12" L, 7" W
Rotation = reversible	Mounting = Multiple choice, 10 points
Fuel/Oil Ratio = 50:1	Ignition = Points/Battery Dual Plugs and Coils Approx. 20 hrs. running per charge



Chotia - 460 Engine ready for flying

THE CHOTIA 460 ENGINE

We are proud to produce an engine of our own design and manufacture. Designed and tooled by John F. Chotia (the Weedhopper's designer), it reflects the same overall balance of purpose, function, cost and long range goals as the design of the Weedhopper.

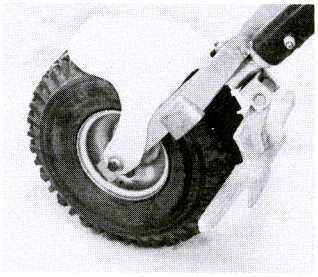
The Weedhopper was originally powered with a Yamaha Y292 snowmobile engine. This engine gave good performance with approximately 30 take off horsepower, but its high RPM (6000) made the propeller efficiency low, about 30%. The Chotia 460 produces approximately 25 hp at 3800 RPM. The lower RPM allows a larger, more effective prop of about 40%. The performance is outstanding. Add to this low noise level, low fuel consumption, low vibration levels, light weight, and it is easy to see why we decided to make our own engine suited to our own purpose!

The Chotia 460 is designed to meet our own requirements of horsepower and RPM. As a result, it is much lighter for its displacement than the normal type of "high hp per cubic inch" two cycle engines. The low RPM means long engine life too; we expect approximately 500 hrs. before overhaul. In addition, the timing is centrifugally advanced and retards the spark for easy starts and smooth idling, yet peaks the timing for maximum performance for flight. The crankshaft is extended and a third ball bearing is added in the extended case to support propeller loads and allow the prop to be further away from the cylinder (for more efficiency). The direction of rotation can be easily reversed and the multitude of mounting points make this engine easily adaptable to many other airplanes as well.

This engine is the direct result of the Chotia-Weedhopper concept. "If we can't buy the right part, we will make it!" Ultralight designs of the past have suffered from using off-the-shelf components which were not ideally suited to this type of flying. We will not accept any less than the right part to do the job correctly, even if it means designing, tooling and producing our own engine, props and instruments (we make our own props too)!

OPTIONS

A. Nose wheel fender $15.00

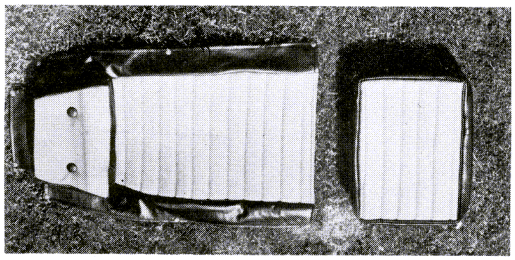


Protects the prop from debris thrown by the nose wheel on gravel or muddy strips.

B. Nose wheel brake $35.00

Allows quicker stops and more controlled taxi on hard smooth surfaces.

C. Custom seat $75.00

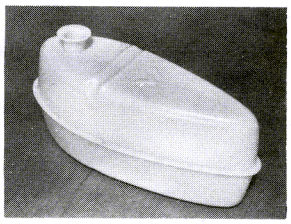


Provides extra comfort and that "finishing touch," really enhances appearance. Tuck and rolled center section is available in gold, blue, or black. Outer edge is black naugahyde.

D. Double surfaced wing $200.00

Cuts drag to boost climb and extend glide. Highly recommended for pilots over 190 lbs. who will be flying off fields over 4000 ft. ASL. The double surfaced wing should be ordered with the original kit, or the sail must be returned to the factory and an additional $50.00 fitting charge will be necessary. All other options may be added by the customer at any time.

E. 3.5 gallon fuel tank $65.00



Gives longer range and duration. Molded high density polyethylene is very durable and resistant to vibration.

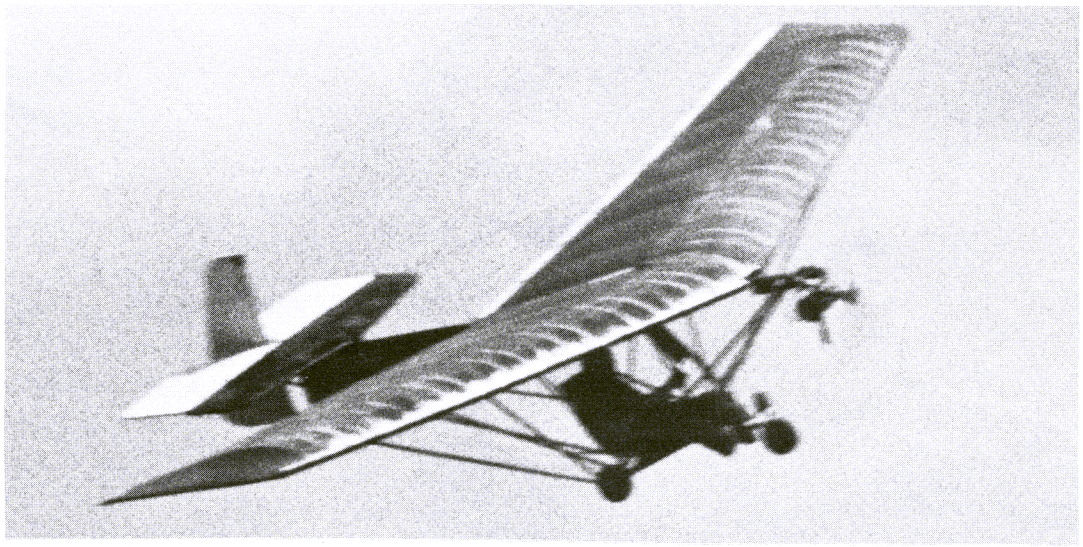
F. Storage bags $70.00
(Soaring wing) $80.00

Protects the wing fabric against dirt and damage during transport or storage. Separate bag holds ribs and struts to avoid misplaced parts.

G. "T" shirt $6.00

Small, Medium, Large & Extra Large

DOPED WINGS

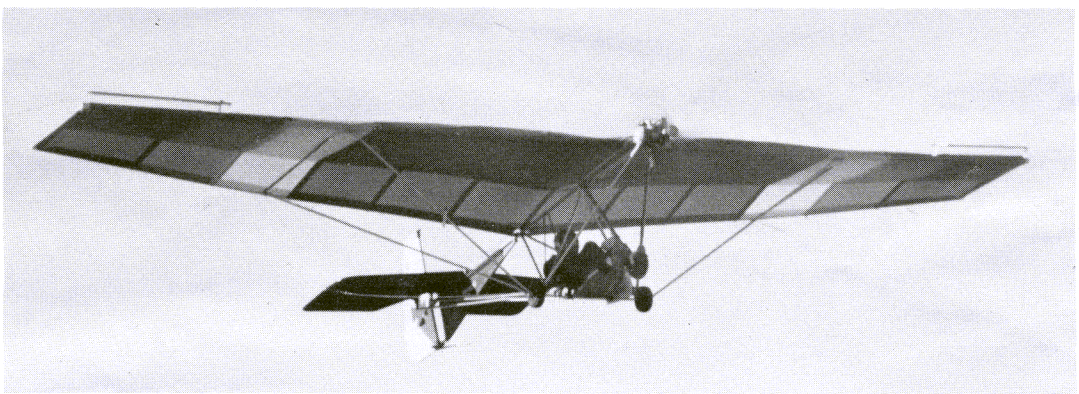


The complete Weedhopper kit may be purchased less covering. The same basic airframe may then be covered with doped fabric. This saves money and boosts performance, however, building time and portability suffer.

The wing ribs are made of locally available extruded styrene foam insulation board with spruce (or douglas fir) cap strips. The covering can be 1½ oz. dacron dress lining available at any dress fabric shop.

The look, feel and performance of the doped wing is definitely worth the extra effort (about 30 hours). This type of construction is best if the plane will be hangared.

SOARING WINGS



The longer (34') soaring wings will lift heavier loads at higher altitudes. Payload is increased to approx. 270 lb. The spoilerons which are used on these wings help handle the 208 sq. ft. of wing area.

These wings are more sensitive to gusts and slower to respond to controls than the standard wings. They cruise at much lower power and burn much less fuel. You are trading less maneuverability for more "float." if high altitudes or heavy loads are not needed, then the standard wings are best, but if the low sink, flat glide and weight carrying capacity are what you need, the soaring wing is best.

PERFORMANCE

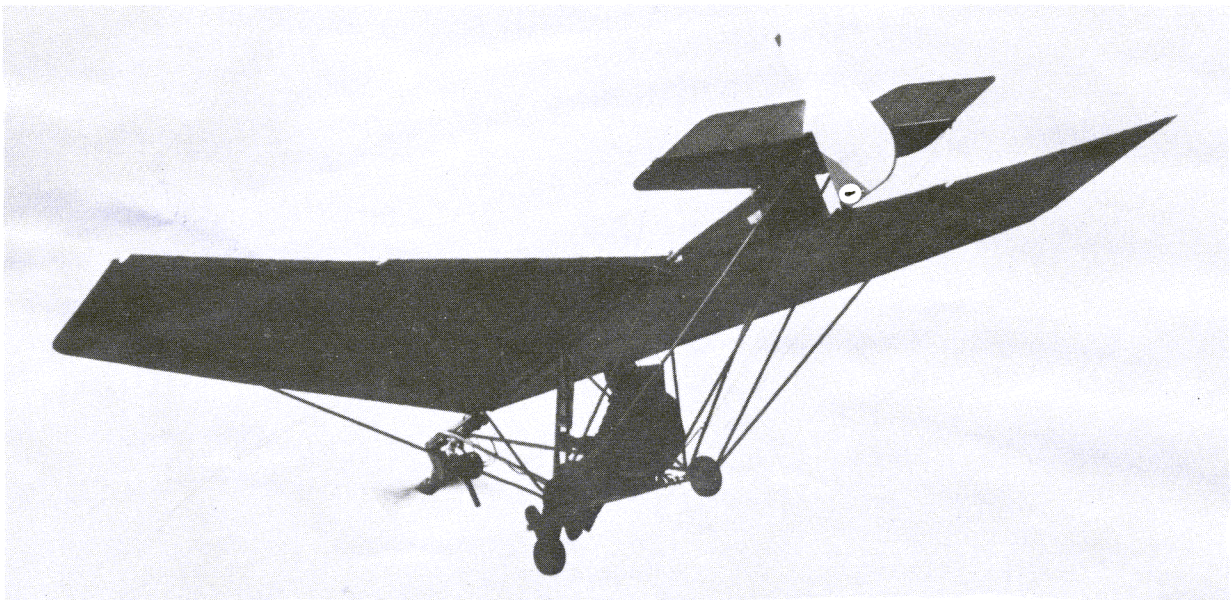
The WEEDHOPPER cruises at 30 MPH, tops out at over 50 MPH (red line) and stalls at 20 MPH. The glide ratio is 8/1 with the double surfaced wing and 7.3/1 with the single surface wing. Power off sink rate is 300 FPM double surfaced or 350 FPM single surface.

Take off roll at sea level and 150 lb. pilot is under 100 ft. and climb rate is near 600 FPM. At 4200 ft. with a 190 lb. pilot it rolls about 180 ft. and climbs approximately 300 FPM.

The WEEDHOPPER is **not** a marginal airplane. It will carry a full sized man and will offer brisk performance even fully loaded at high altitudes. Its excellent short field capability and tight maneuverability gives fun flying in any open, unsurfaced area away from crowded airports.

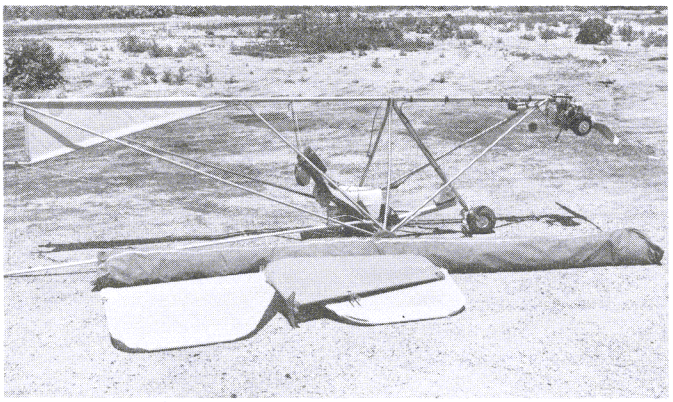
Power off, you can soar as well as a high performance hang glider; power on, you can maneuver and swoop and bank and feel a sense of freedom and control never before experienced in the aviation world.

The WEEDHOPPER provides practical, fun flying at the minimum of cost and effort, yet gives the maximum return in pure fun!

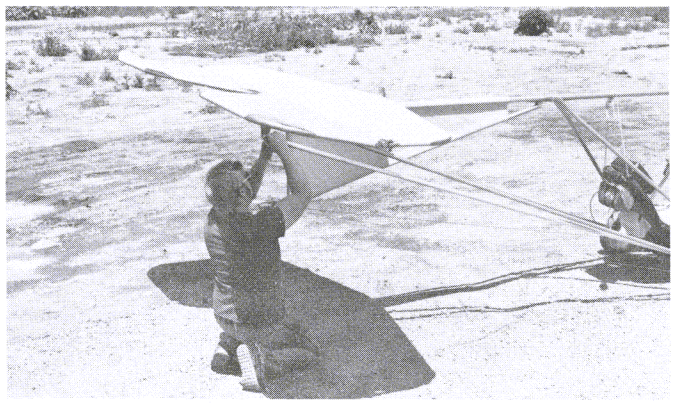


QUICK SET-UP BY ONE MAN WITH NO TOOLS!

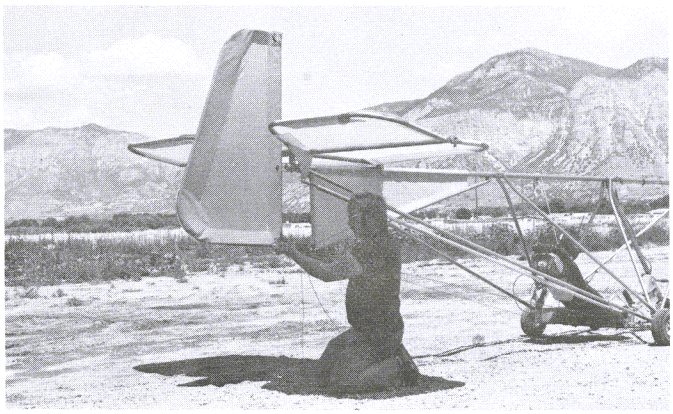
About 30 minutes, and no help needed!



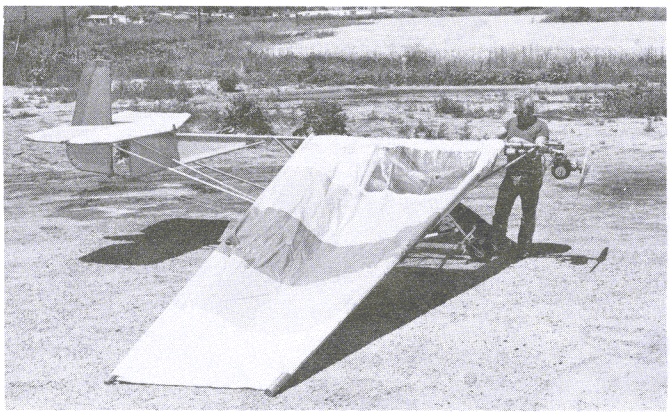
Broken down for transport.



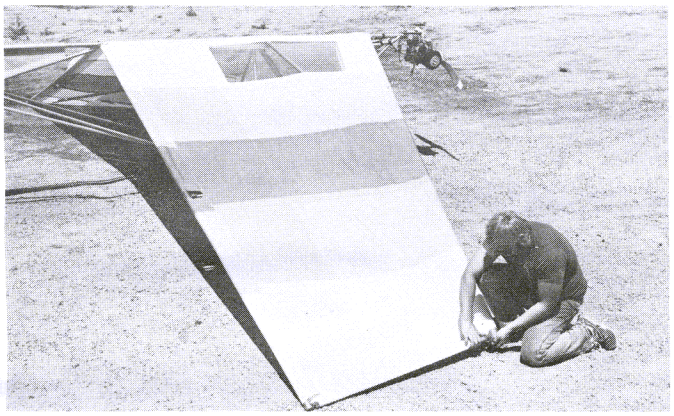
1. Attach elevator and pushrod.



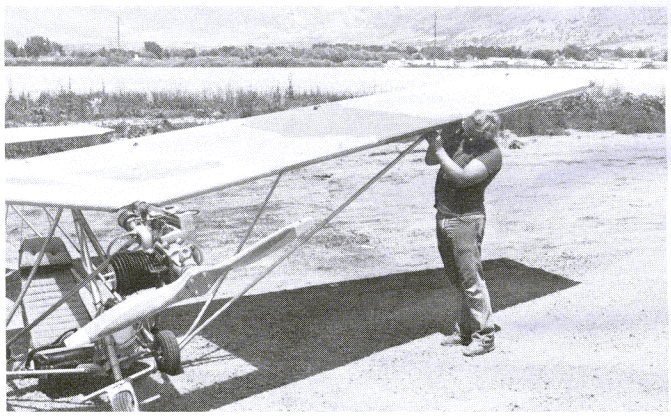
2. Attach rudder and cables.



3. Mount wings to fuselage.



4. Install wing tips, attach compression struts.

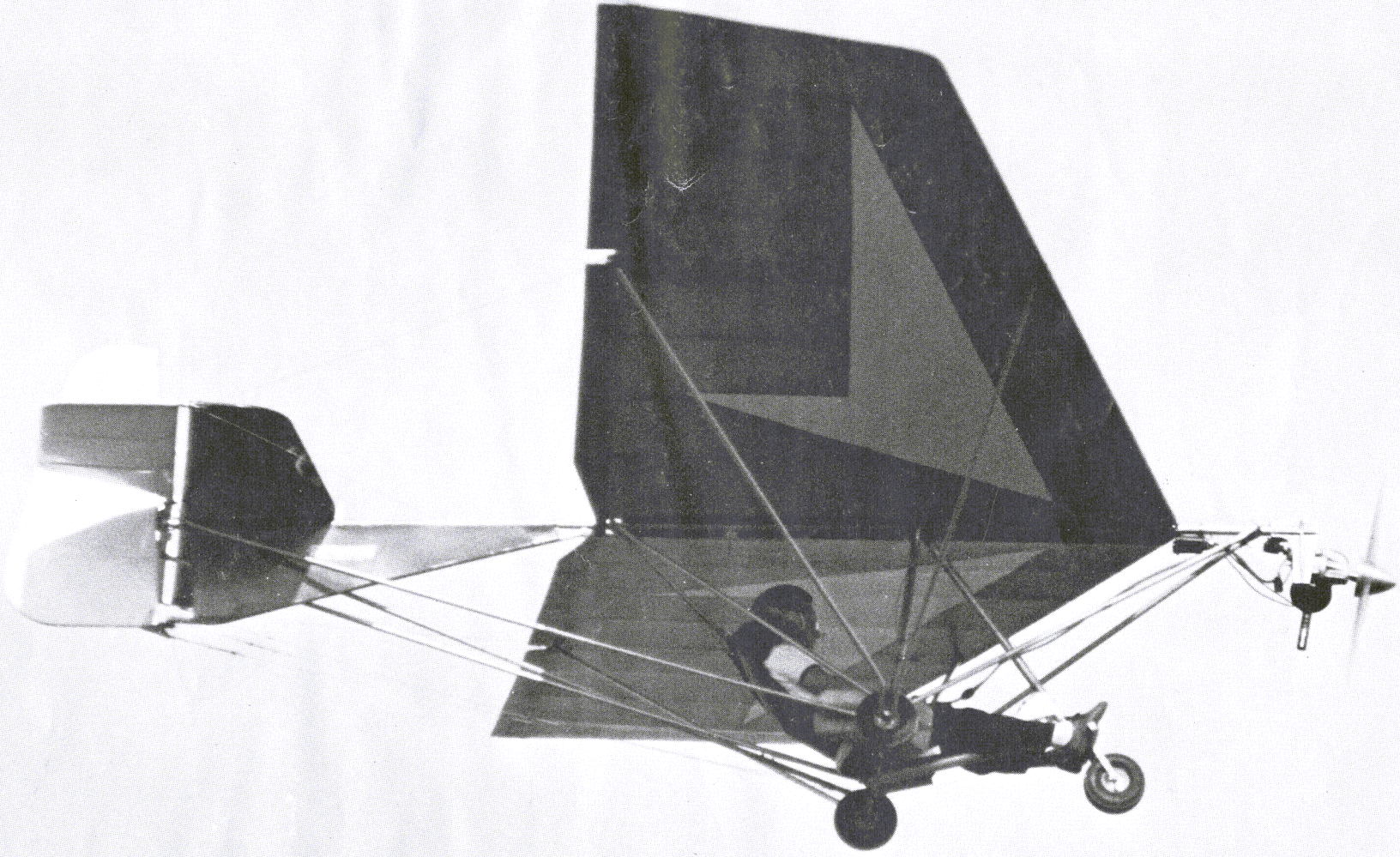


5. Install wing struts.

6. Slip ribs in place.

7. Attach elevator brace wires.

8. Pre-flight and fly!



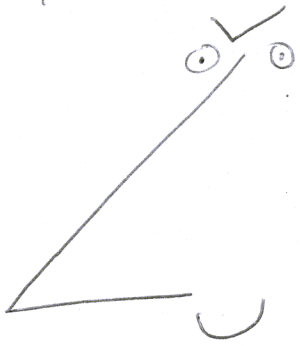
THE WEEDHOPPER WITH THE CHOTIA - 460

NO MATTER HOW YOU YOU LOOK AT IT:

- For Fun
- Easy To Fly
- Excellent Ground Handling
- Stability
- Ruggedness
- Low Maintenance
- Quiet
- Smoothness
- Maneuverability
- Portability

THE WEEDHOPPER WITH THE CHOTIA-460 ENGINE IS YOUR BEST CHOICE!

ORDER FORM



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