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WEEDHOPPER™ NEWS

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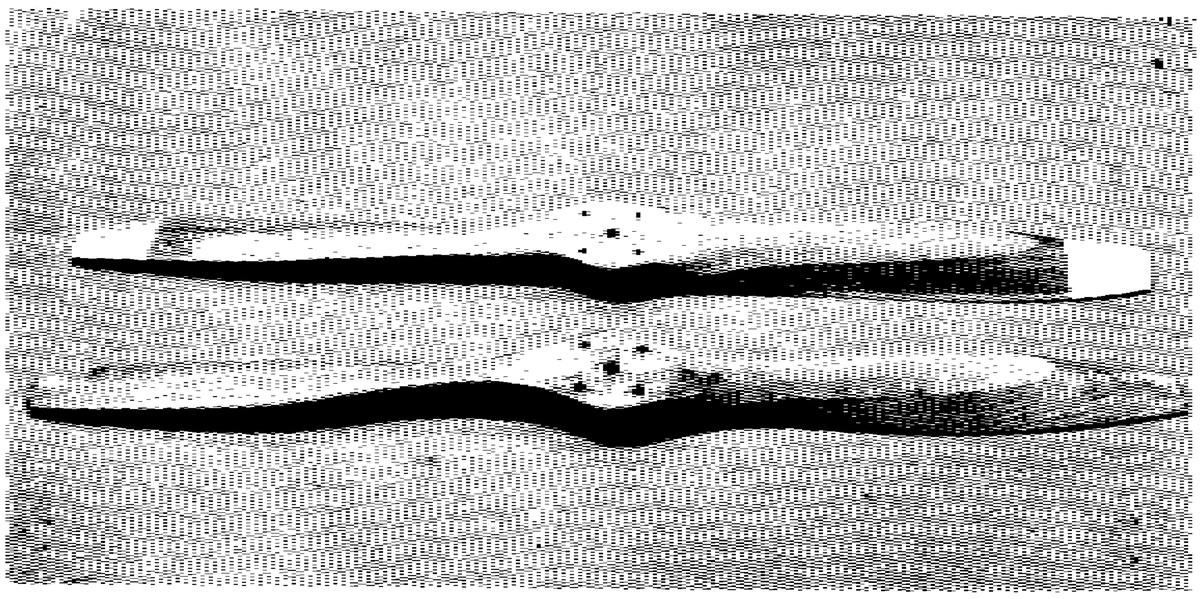


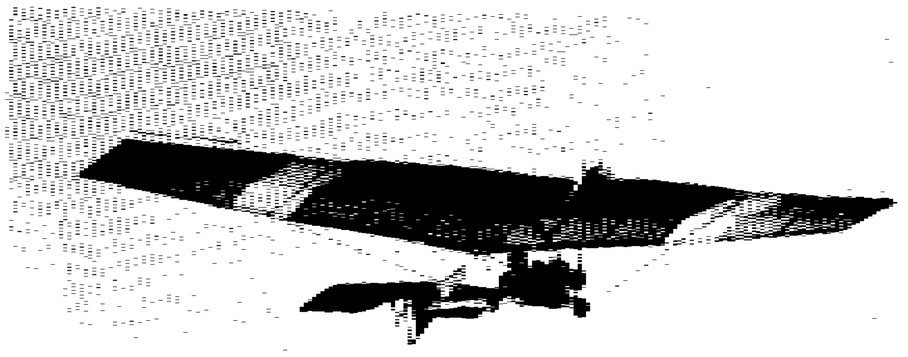
NEW SHAPE (BOTTOM) GIVES BETTER PERFORMANCE FOR HEAVIER PILOTS. (DIAMETER IS ACTUALLY THE SAME).

NEW PROP CARVER

We have just developed a new type of prop carving machine which gives incredible accuracy of pitch angles. We were formerly using templates, rough sawing and finishing by hand and, of course, some variables crept in.

This new machine gives repetitive angles within about 1/30th of a degree! This led to a recent 3-day trip to California (warmer air) to flight test several new finely tuned prop designs. The result was an improvement in performance and some classified "tricks" were discovered which are unique to our speed range and not found in books. The result is slightly greater RPM difference between takeoff and cruise for better climb and less fuel consumption. The difference seems more noticeable to heavier pilots.

The new blade shape is more attractive also and lends more of an "antique" appearance. These new props are still the same price ($110.00). This new design is the only 44" prop which will now be produced. We will exchange for older design props in good shape for $50.00 since in most cases they can be re-formed to new specs through our special process. Exchange will take about two weeks.



34' SPAN "CRUISER"

7 MILE GLIDE!

During prop testing in northern California December 8th, John Chotia, flying the new soaring 34 foot wing, shut off the engine at 3500 ft. and flew 6 miles back to the airport, did two 360's then flew the pattern and landed for an estimated glide of 7 miles. There was a slight tail wind of 3-4 MPH and the entire glide took about 17 minutes.

The new wing makes a fantastic "cruiser", holding altitude at about 2800 RPM and barely sipping fuel. The low speed inhibits up-wind cross country flights, but there is a definite feeling of greater independence

of power-on flight. Of course the incredible maneuverability of the standard wing is not there, but the incredible glide of the 34 foot wing is.

It is amazing how much difference 6 feet of wing makes. The 28 foot wing is a "zoomer" and the 34 foot is a "floater" - that's the best way I can describe it.

COLD WEATHER HINTS.

When the temperature drops below 35^{0}-40^{0} F. some fliers have experienced rough running and loss of power. The major reason for this is poor vaporization of the fuel. This is also reflected in poorer fuel economy.

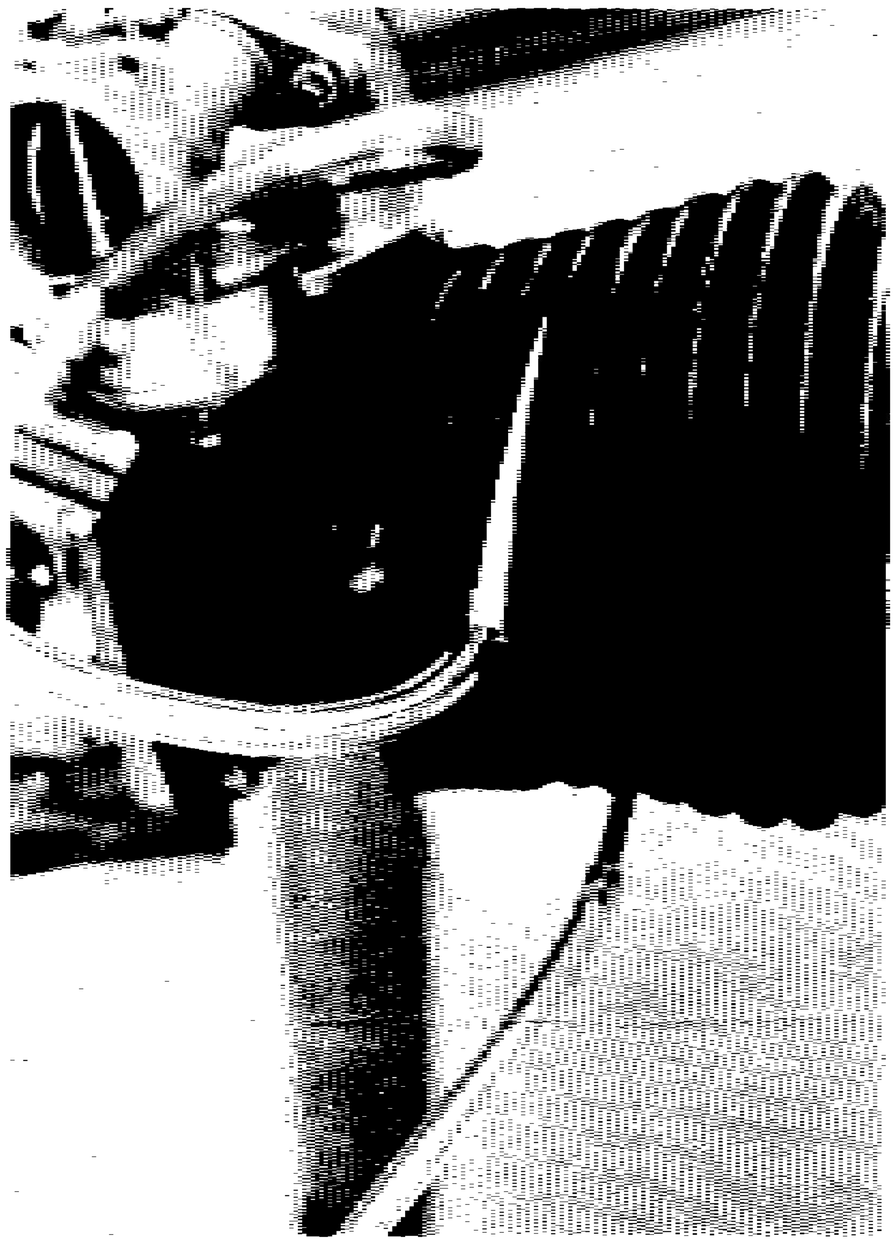
We have come up with a couple of items which will help this situation. Both are designed to provide more heat at the carburetor.

The first and most effective is a fuel pre-heater. A soft aluminum fuel line is wrapped in the groove between the cylinder fins, as shown in the photo. The fuel runs from the tank, around the cylinder (picking up heat) and then into the pump. For maximum effectiveness, the fuel lines, after the heat exchange tube, should be as short as possible to avoid heat loss. The fuel will boil after shut down, but that isn't a problem since it is free to flow back into the tank and the "boiling" is only a slight bubbling which condenses as soon as it reaches a cool fuel line.

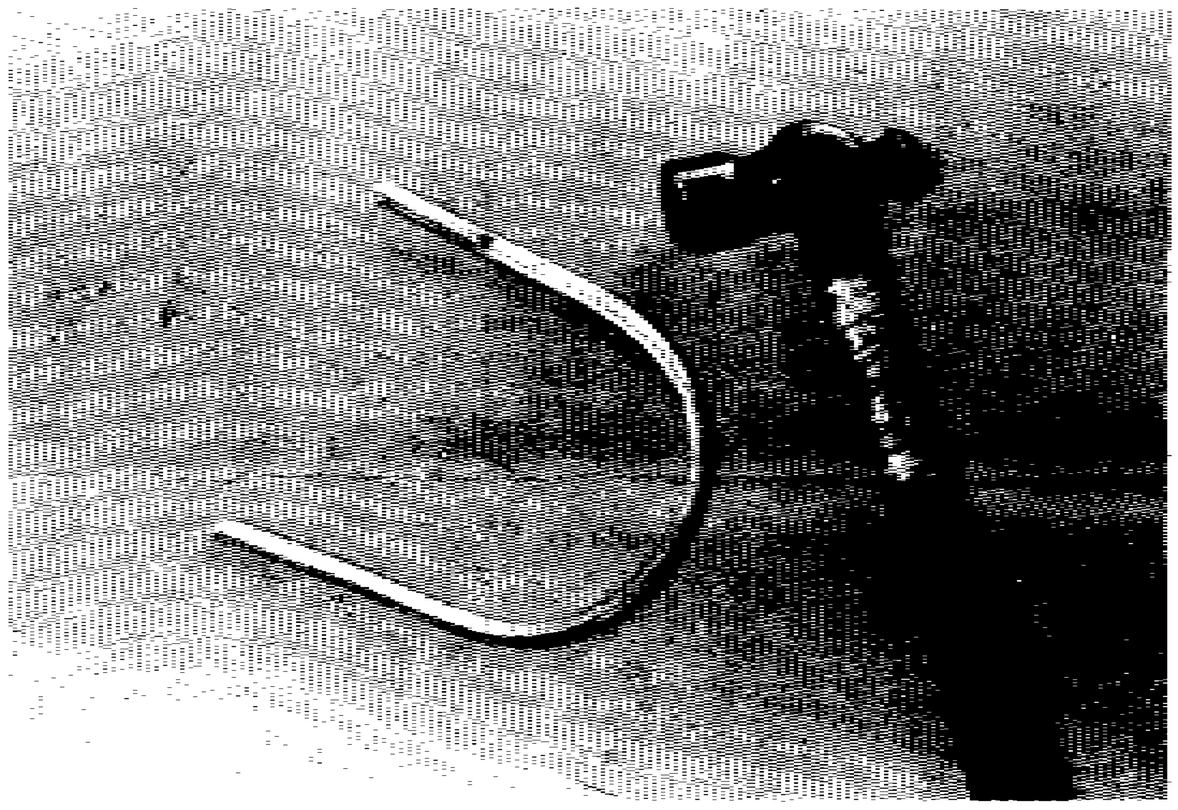
Secondly, we have used foam rubber to insulate the carburetor manifold. This will allow heat to transfer up from the cylinder and warm the carburetor for better vaporization.

These items seem to help. Another which will also help, but we haven't used yet, is to pick up warm air off the exhaust pipe.

The airplane flies well in cold air, but it is a bit miserable during assembly and disassembly, cold hands!! The best solution for that is a hangar but a bit expensive and hard to transport!



FUEL COMES FROM TANK, AROUND CYLINDER TO PICK UP HEAT, THEN TO THE FUEL PUMP. USE SAFETY WIRE TO PULL TUBE TIGHT IN FIN. CHECK REGULARLY FOR WEAR.



SOFT ALUMINUM FUEL LINE WILL HAVE TO BE FLATTENED SLIGHTLY TO FIT BETWEEN THE FINS.

OUR NEW HONING MACHINE HAS ARRIVED.
THIS ALLOWS ALL PROCESSES IN-HOUSE,
EXCEPT CASTING.

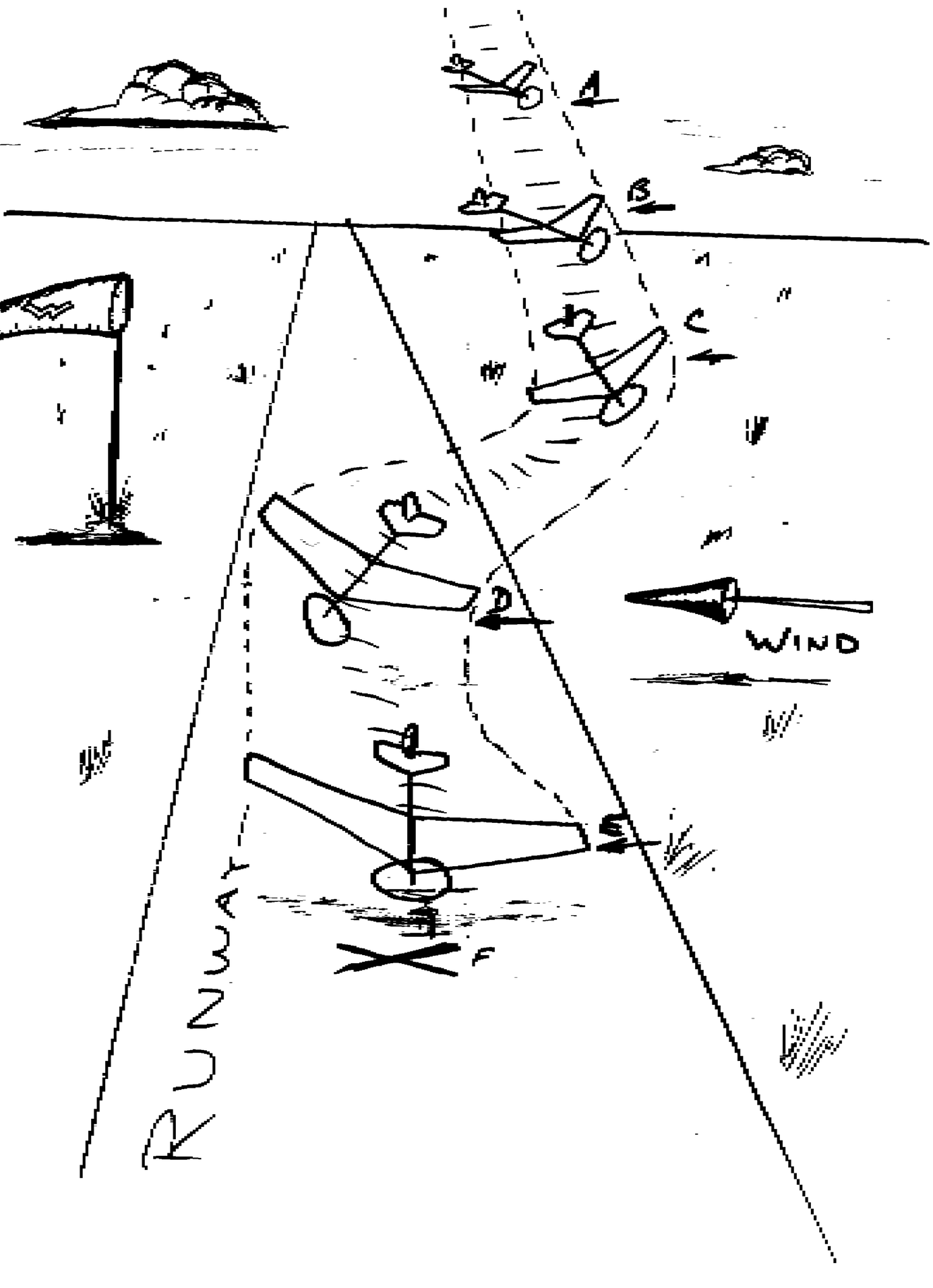
CROSS WIND TECHNIQUE

An interesting and very effective landing technique has been developed by factory pilots to handle cross winds gracefully. The standard practice is to slow it up, plop down and immediately get the nose wheel down to avoid ballooning. That system works well, but sometimes the lurch when the wheels touch looks sloppy.

This new procedure involves approaching on the up wind side of the runway while crabbing into the wind. Then at about 4 ft. altitude, and about 2500 RPM, a shallow turn toward the downwind side followed quickly with an up wind turn. At this point the plane will bank the upwind wing low and line up with the runway center line. The small amount of slip will cancel a large part of the wind. Touchdown will be with the upwind wing low and near zero crab angle, opposite rudder can help line up. Quickly putting the nosewheel down gets all 3 wheels down neatly.

It will take some practice, but you can eventually set up really neat landings in considerable cross winds. Outside of looking good, a really polished landing gives a great feeling of accomplishment, especially under otherwise adverse conditions.

CROSSWIND TECHNIQUE



A & B 'Crab' Approach

C. Turn away from wind.

D. Turn into wind.

E & F Flare and land with upwind wing low and slight down wind (opposite) rudder.

(All motions are exaggerated for clarity.)

ENGINE EXPERT, DAVID PETERSON, SETS UP AN ENGINE FOR TESTING IN OUR NEW SOUND-PROOFED ROOM. ALL ENGINES ARE RUN ONE HOUR BEFORE SHIPMENT.

NEW ENGINE TEST ROOM

Cold weather settled on us with a thud and totally disrupted our engine run-in procedure. We had been testing the engines outside using a prop for a load and getting reasonably consistent horse power figures. When the temperature dropped below 20° F., we started getting very inconsistent results. This is unusually cold for this time of year in Utah (record breaking cold), and caught us not quite prepared, but now we are set.

We have completed a sound proofed room with all the necessary guards, ventilation, etc., and are continuing with much more predictable results. We run each engine 1½ hours and this new room allows this inside with controlled conditions.

NEW PACKAGE DEAL

Enclosed in this newsletter is a new package purchase program. This allows more choice of engines, since some surplus snowmobile engines of 250 cc. to 300 cc. will work. The airframe may also now be covered with shrunk and painted fabric for lower cost and smoother finish.

WEEDHOPPER NEWS is free for one year to all Weedhopper builders. Yearly subscription price is $6.00 for 12 issues.

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