

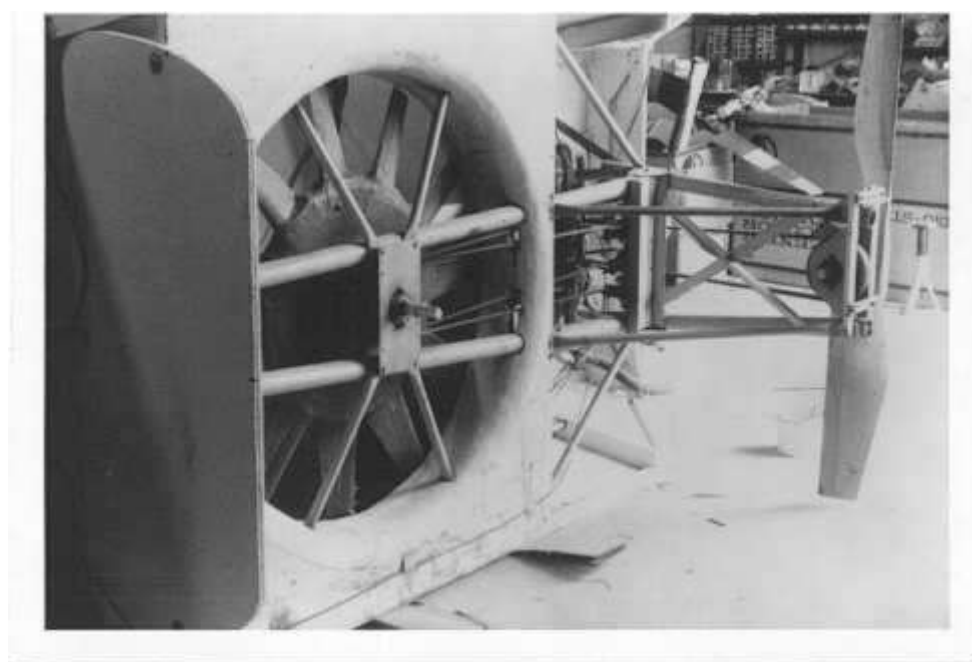
Old design Sevs

Here are some old sevs (but not all) the designer has built. Plans are not available as Sevtec prefers builders concentrate on the more modern, more developed designs.

Smuggler



Here is the original sev, of around late 1960's, powered by a 45hp 1500cc VW pancake air cooled engine driving a 48" propeller and a 42" lift fan. The hull was 1/8 plywood over a wood frame, glassed on the outside.



A view of the drives, craft on its side. Drives were vee belt on a bolt together aluminum tube frame. Fan and propeller are fiberglass over balsa wood construction.



This early 70's sev uses a single cylinder JLO L230 15hp at 6000rpm engine driving a 48" propeller and 30" lift fan of balsa cored fiberglass construction. The hull is wood frame with fiberglass skins attached with epoxy. Metal parts were brazed together with a "Solidox" torch (definitely not recommended.).

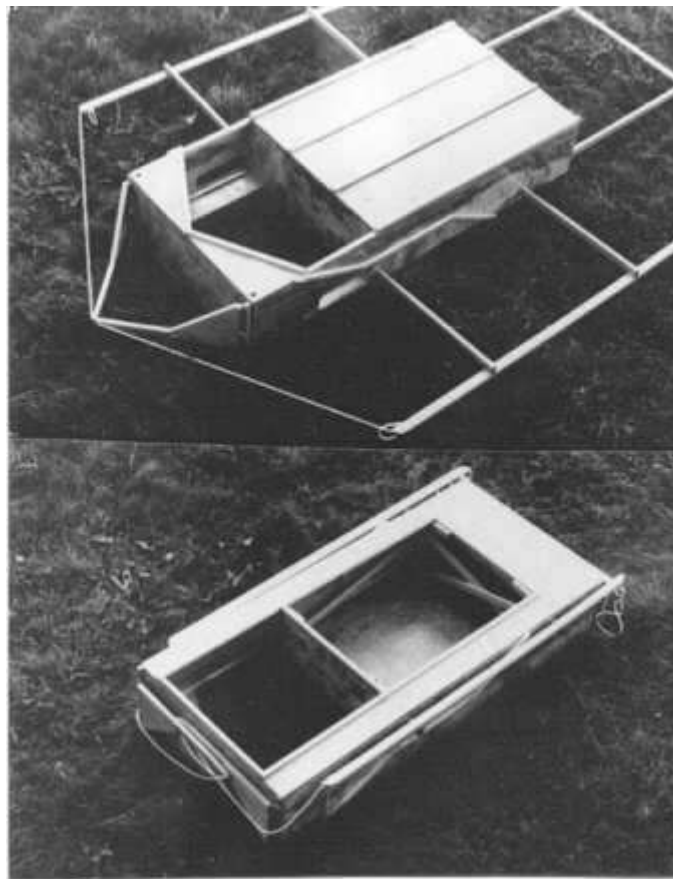
Inflatable Sev





This early 70's inflatable craft drives a 32" integrated 4 blade fiberglass over balsa lift/thrust rotor in a duct. Hypalon is used for the inflated structure, with an extruded aluminum angle bolted frame to add stiffness. A 17hp, single cylinder JLO L270, 17hp at 6000rpm, is the power

Folding Sev



This compact sev, the folding mechanism shown, could plane out an adult in deep water, using a 4 1/2hp Briggs and Stratton vertical shaft engine, (That's not a typo, actually the engine put out less than 4 hp) yet fold to fit in a station wagon or pickup.

Fan-Tastic I

The Fan-Tastic I sev was a 70's program that produced about a gross of 8 and 10hp Briggs engined homebuilt craft. The hull was an aircraft fabric covered wood frame

over a couple of carved polystyrene floats. Propeller and fan started as fiberglass covered balsa, and then fiberglass covered foam, and finally molded Birch plywood.



Climbing a river bank on only 8hp was easy for fan-Tastic I.

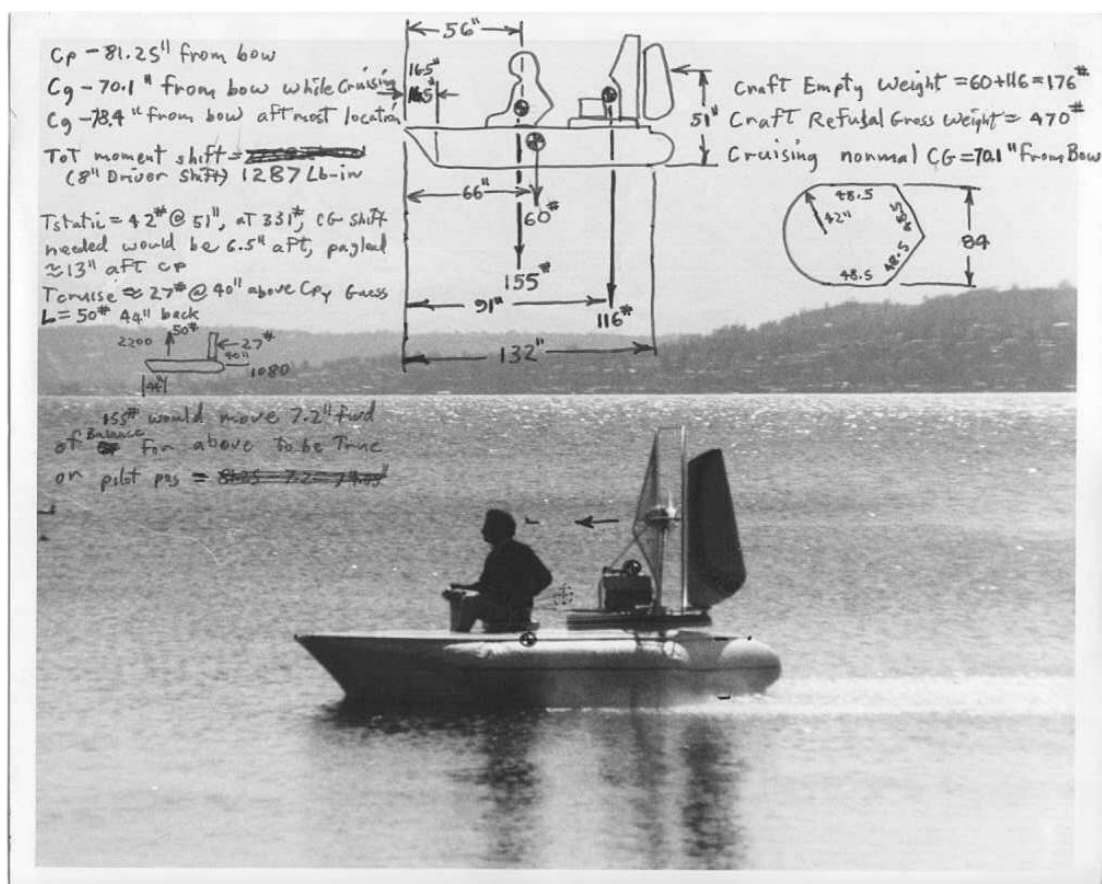


The airdrive was removable and the craft could be cartopped.





This craft, based on the original Fan-Tastic I, is of molded fiberglass with molded Birch plywood fan and propeller, just like the above homebuilt craft.



A few calculations, pre computer style.

Utility Sev

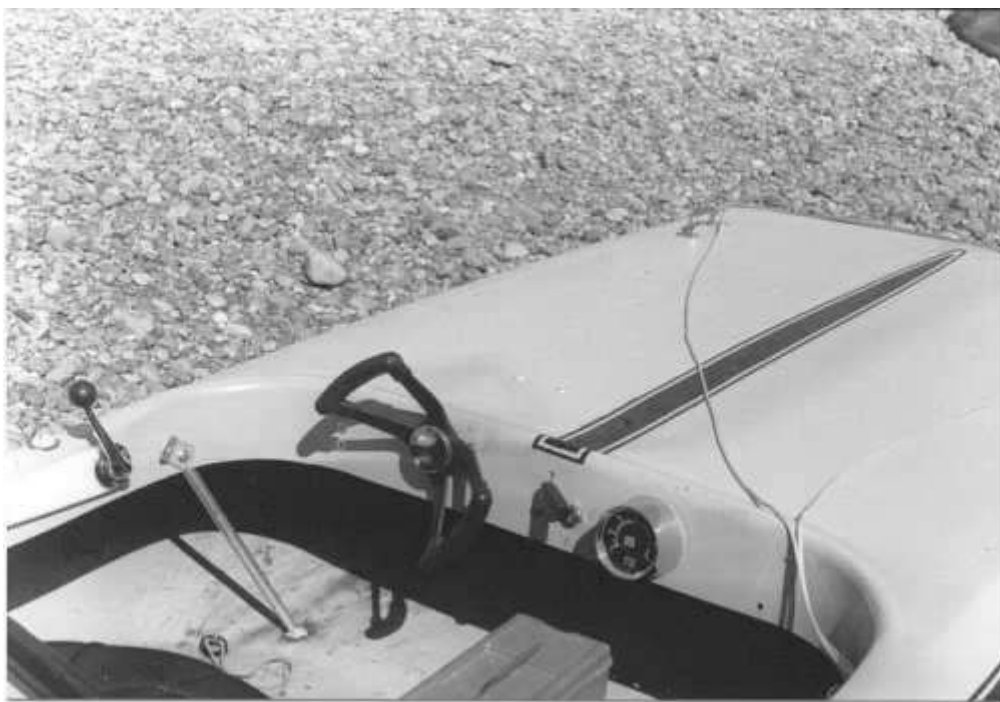
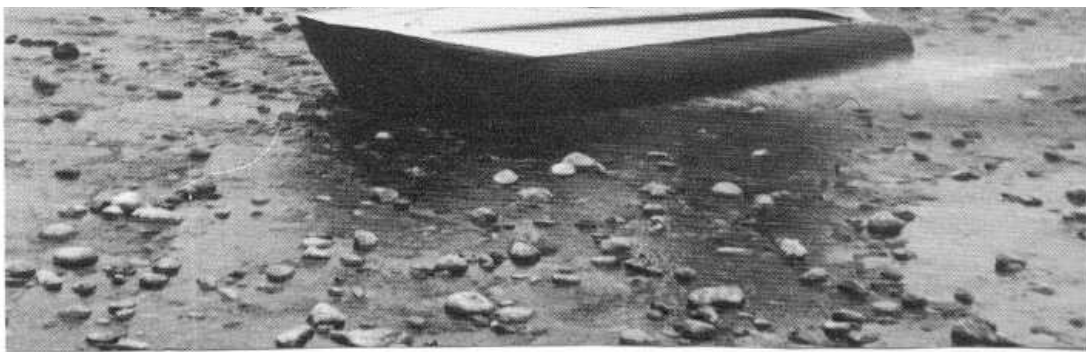
The Utility sev program used a horizontal opposed Briggs twin rated at 16 and 18 hp. The hull was plywood, covered with fiberglass, with an aircraft fabric deck, and the rotors were molded Birch plywood.





The Utility sev.







Utility sev details. The sev was built up with open propeller or duct.

Red Sev

This craft would get 56mph on water with a VW upright 54 hp 1600cc engine.





The red sev.





The 6 place, 54hp Datsun B210 (Nissan) engined yellow sev climbs the backyard hoverport of the designer.



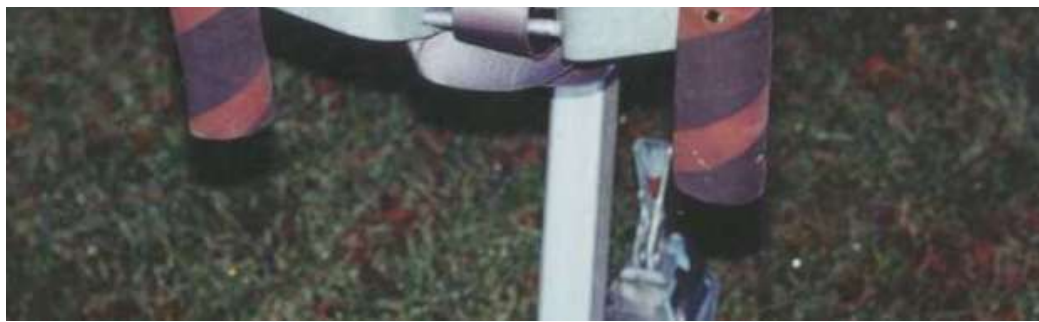
This airboat is powered with a 15 hp JLO L 230 engine.





This airboat is powered with a 27 hp 400cc twin cylinder engine. The propeller is molded fiberglass with hollow blades and a wood hub.





Wet or dry launch trailer, or how to avoid the ponderous fly-on trailer. The aft roller is used for loading and unloading, only, and almost all craft weight rests on forward roller when on the trailer.

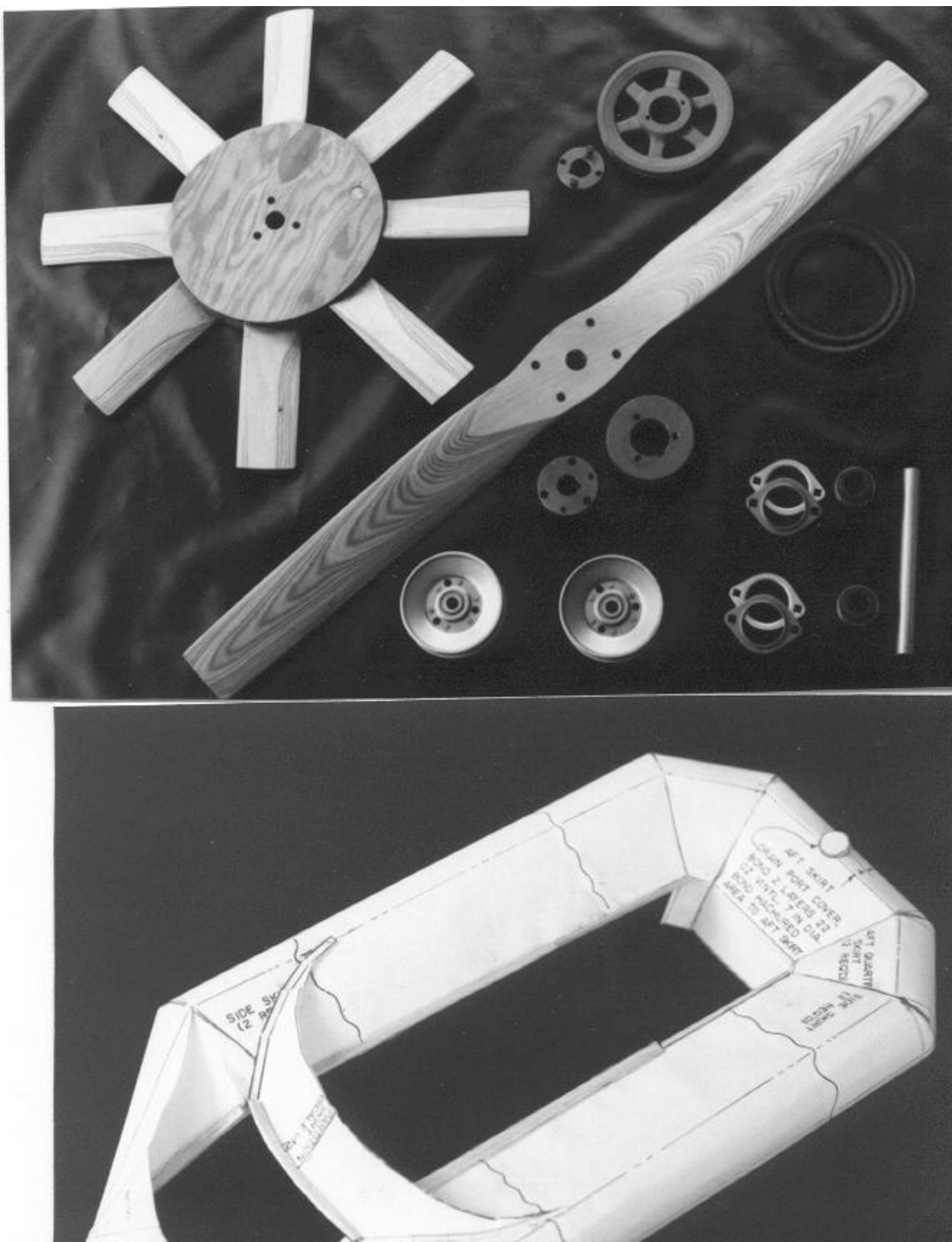
Rollers are 2 1/2" PVC Conduit (ABS will do, maybe larger diameter would be better, cover with hose, even better.) The ends and bearings are UHMW made with a flycutter on a drill press. Some small UHMW fairings are in place to keep the skirt from snagging, and the winch stand bow block is radiator hose. All the galvanized hardware shown comes with the basic UPS deliverable EZ Loader trailer kit for personal water craft (as on web). Bolted construction is used to not compromise the galvanizing on this high quality trailer.

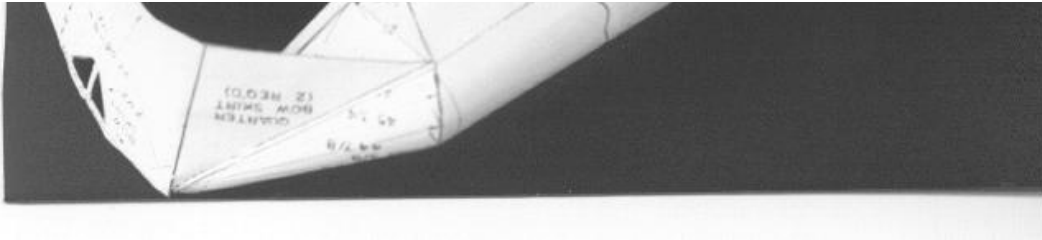
The maximum size Sevtec craft that can be handled is 600 lb with gas and whatever else is carried, and hull length of 13 feet. Ratings can be upped to 800 lb by replacing 8 in wheels with 12 inch, with no other modification to the trailer. The trailer tongue can be extended with a piece of 1/8" X 3" X 3" steel tube, replacing the short forward length provided, to handle longer hulls up to 16 feet.

Watch out, some homebuilt craft with plywood bottoms have tender bottoms not good to use on rollers, and are a foot longer than implied in advertizing material. A third roller will be needed on these craft, especially if they have a front mounted lift fan or engine and fan, and self dry loading, easily done with a Sevtec craft, may or may not be realistic.

Oops, hold up on this one. Although this designer trailered the craft with this trailer for some 500 miles without the slightest sign of difficulty a customer broke the bottom of a Sevtec craft with the same setup. The roller is mounted at the craft center of gravity, so all craft loads are borne by the roller. however, the break was right at the roller, not a crushing failure, but a gross bending failure of the craft bottom. Tests with a similar foam fiberglass layup indicate that if the rest of the structure beyond the bottom panel did not contribute to the hull stiffness (unlikely, but conservative) it would take more than 4 "g" force to break the panel. Evidently the customer got much more than that running on paved roads (possibly with a few items such as railroad crossings and maybe a curb or two in between segments of pavement). It would be hard to get 4 g's with a vehicle with pneumatic tires and springs, but there is the possibility of the craft bouncing on the trailer to create the high loads. It is felt at the cost of

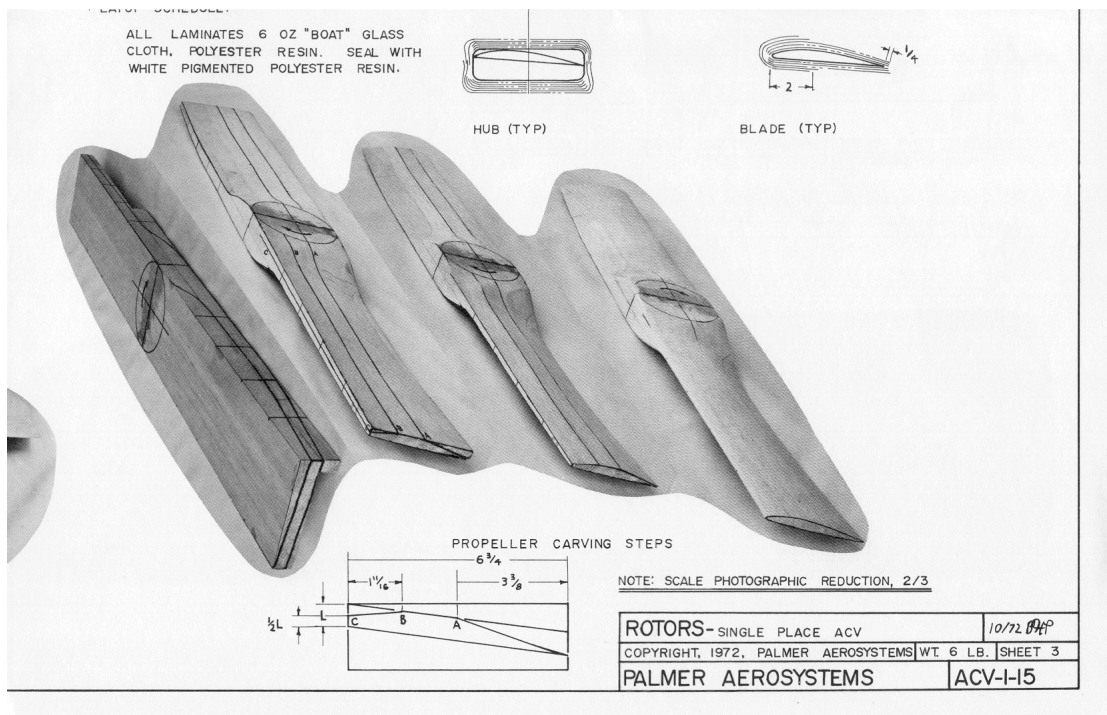
possibility of the craft bouncing on the trailer to create the high loads. It is felt, at the cost of some utility, that the forward roller will have to be moved far enough back so that the hull can be pulled forward the roller and the flat bottom rested on a pair of bunks, which need be not necessarily more than 3 feet long. This is because there is almost no weight in the Sevtec craft up forward and the forward is already supported by a small bunk. For unloading, the craft will have to be forced backwards by pushing the nose side to side onto the forward roller, a much more minor inconvenience than a broken bottom. Forget this trailer for other craft, as their bottoms are far too tender, and they have lots of weight forward due to front engines and lift systems, or are built with much softer foam core material and thinner skins than the Sevtecs. **11-04 update: The latest Fan-Tastic is the 15 foot model, and has been trailered over 2000miles with no problems. The new trailer is very similar to the trailer shown here except it has been found that a single roller works fine and the craft is pulled forward onto bunks that are just ahead of the roller. Here is an image**





of the molded birch rotors once sold by Sevtec, along with an inverted view of a paper model of a typical sev skirt.

This is how, 1970's style,



Sevtec used to have builders carve balsa rotors and cover them with polyester resin and fiberglass.