

## **Guidelines for Hang Glider Racks**

The following information was compiled to act as a guideline for those building racks, and those assigned to inspect them.

The average hang glider is ~18 feet long, a little over 1 foot wide and weighs ~75 lbs. A proper rack set up provides support at the further most extremes of the vehicle and in the middle of the load. The load carrying members need to be well padded; pipe insulation is the most often used material.

Yakima or Thule style racks are the most common installation on an SUV. Some "standard" roof racks will work, but others won't support the load. The toughest part is the front rack due to the lack of "off the shelf" solutions. The easiest approach is to add an after-market bumper guard and attach the front rack to it. The whole thing can be literally bolted together. Another route is to weld or bolt brackets to the frame under the bumper. There are as many different ways to build a rack as there are vehicles. Inspect as many approved racks as possible, and talk to hang glider pilots for ideas.

Important points;

- a. There needs to be at least 3 hang glider supports (crossbars).
- b. The supports should be padded with a minimum of  $\frac{3}{4}$  inch closed cell foam. Thicker padding is encouraged.
- c. The length of the crossbars, from one side of the vehicle to the other, should provide at least 12 inches per hang glider to be carried. i.e.; to carry four hang gliders, the crossbar should be at least 48 inches wide. Some crossbars have short vertical risers on the ends, so gliders can't slide off going around turns.
- d. Racks may be made of any material that provides substantial support. If plastic pipe is used, it should be at least 1  $\frac{3}{4}$  inch diameter, schedule 40 ABS or PVC.
- e. The distance between each support should be at least 3.5 feet, but not more than 8 feet. For most SUV's, set the cross bars as far apart as the roof allows.
- f. The crossbar supports should offer a large area of support. For instance, a 2 x 4 board laid flat spreads the load better than one on edge. Too thin a support can damage the airframe.
- g. All supports should be on the same horizontal plane so that the glider lays flat.
- h. Because hang gliders are so long, the front support needs to be solidly mounted to resist side to side shifting and bouncing. Many front supports have a diagonal brace.