About Marine Aluminum:

The performance of thousands of aluminum boats produced over the past twenty years is indicative of the suitability and acceptance of aluminum as a boat building material. Today many of the finest long-range sportfishermen, sail and motor yachts are constructed entirely of aluminum. Ocean going vessels from Coast Guard and Navy boats to fishing trawlers, tankers and cargo ships have also turned to marine aluminum.

Principal examples of the functional advantages of aluminum are: **1.** Light weight without sacrificing strength. **2.** Exceptional dent-resistance and toughness that contribute to seaworthiness and safety (an aluminum boat will tend to bend or dent upon impact but not break, crack or splinter). **3.** Reduced maintenance and overhaul expenses. **4.** An aluminum boat generally requires less power to propel it with consequent savings in fuel consumption, assuring long-range performance. **5.** An aluminum boat provides the owner the opportunity of faster speeds across the top of the water without using more fuel than would be consumed by a heavier boat of similar size and design that plows through rough seas at lower speeds. **6.** In the event of damage, repairs in aluminum hulls consist of conventional cut and weld techniques and age makes no difference. The repair assumes the strength of the basic hull, unlike repair to reinforced plastics and wood hulls.

The use of aluminum is a natural follow-on from the trend to steel ocean going ships, for many sould and economic reasons, and for similar reasons, metal and plastics are today rapidly displacing wood for practically every type of boat. Polyester laminates have proven popular as a replacement for wood for small boats in recent years; however, the physical properties and service characteristics of this material are quite different from those of aluminum.

In designing any hulls, especially large ocean going yachts, detailed examination of basic design factors and hull construction materials is necessary, with proper evaluation of structural materials. The major physical properties and characteristics to be considered in designing boat hulls are:

1. Ductility, elongation and yielding before rupture. Plastics generally have an elongation of 1.1 to 1.4, whereas aluminum marine alloys range from 10.2 to 14.0, giving them very high resilience on impact.

2. Dent resistance. Aluminum is tough, resilient and has high dent resistance, important for resistance to slam action of waves, impact with docks or debris.

3. Effect of localized stress concentrations. The high ductility of marine alloys enables them to adjust to stress changes without noticeable effect. This is a serious disability of polyester laminates.

4. Ability to withstand fire. Aluminum will not burn and it requires a temperature of 1200° F to melt. Most plastics and wood will burn readily.

5. Loss of strength under fatigue loading and vibration. Under ideal conditions, flat laminated reinforced plastics provide wet tensile strengths of the order psi 20,000 to 40,000, average 30,000. This can be compared with 5086 marine aluminum (which is non-absorbent) with guaranteed ultimate tensile strength of 47,000 psi. Under fatigue loading conditions in water, this can seriously effect the laminated plastics hull strength and, more particularly, the strength of secondary bonds attaching bulkheads, stringers and other structural members. A welded integral marine aluminum structure is not so effected or changed, making it the lightest and strongest hull of all available materials, including wood or plastics, and it is totally unaffected by water absorption.

6. Uniformity of product. Marine aluminum is supplied to precise specification ready for use, with known physical properties.

7. Weight. The fact that aluminum weighs half as much as steel for equal strength in most large yacht applications clearly points out the boat builders' desire for replacement of wood and steel with aluminum. The economic advantages of high ratio of strength to weight are reduced fuel consumption, more speed (fewer pounds per horsepower), greater maneuverability, reduced draft, and longer range.

8. Resistance to corrosion. Pure aluminum is highly corrosion-resistant but is not strong enough for marine purposes. This corrosion difficulty was overcome in the early 1930's, when high strength aluminum alloys containing 2% to 3% magnesium were developed. These proved to be highly corrosion resistant in sea and polluted waters. Today aluminum alloys in the magnesium group often are referred to as the "marine alloys," being ideally suited for marine construction and environment.

Strikers are the only production sportfishermen that are completely weld-constructed of marine aluminum throughout the hull and superstructure resulting in a single weldment for the ultimate in safety and performance. The exclusive Striker Pentapolymeric marine-aluminum hull assures unique stability . . dryness . . comfort . . and positive lift—generated by its bottom configuration which includes five planing surfaces. Inherent advantages of marine aluminum's high-strength/low-weight ration ; substantially lower fuel consumption . . longer range . . higher speeds . . greater maneuverability.

Fuel and water tanks are welded integrally into the lowest point of the box keel for maximum stability. Full sized manholes allow easy cleanouts. The diesel fuel is cooled by conducting heat from fuel through the aluminum bottom into the cool water surrounding the hull-increasing volumetric efficiency of the diesel engines. Striker's seakindly hull is specifically designed to run in all sea conditions for extended offshore service. The elimination of unnecessary brightwork from the clean lines of the Striker assures minimal maintenace . . . maximum fishing/cruising time.