

Design Brief by Javier Soto Acebal

MAIN DATA:

LOA 52.55 M.
LOD 45.80 M.
LWL 39.00 M.
BEAM 8.60 M.
DRAFT 3.60 M.
DISPLACEMENT: 210 TONS.
BALLAST: 82 TONS.
SAIL AREA: 1100 M²
MAINSAIL: 396 M²
SCHOONER MAINSAIL: 334 M²
JIB: 254 M²
GENOA: 424 M²



MAIN ENGINE: Caterpillar C18 - 873 hp.
TRANSMISSION: Hundested CPG-32 variable pitch.
GEN SETS: 2 x Caterpillar C4.4 50kVA.

DESIGN AND ENGINEERING: **SOTO ACEBAL NAVAL ARCHITECTS**
INTERIOR DESIGN: **SOTO ACEBAL NAVAL ARCHITECTS**
BUILDER: **ASTILLERO BUQUEBUS, URUGUAY**

Doña Francisca

This Schooner Doña Francisca is intended for hard cruising, not only it will be strongly rigged and masted but also sturdily built.

The lines are those of a fast yet very weatherly cruiser, below the waterline there is our racing boats heritage, above the water level our deepest respect to aesthetics and naval architecture of the past. This boat is not a past replica but brings up aesthetics elements from the golden Era of yachting that have been carefully studied, processed and redesigned to produce a unique actual vessel. It was important in our aesthetic search to analyze the earlier British cutters, with their vertical stemposts, narrow hulls, and bowsprits, painted dark and above all fast and exceptionally seaworthy.

'Mosquito' (1848) was a nice example but as many vessels of that period were designed according to Scott Russell's wave line theory, a problem was a lack of volume forward. After CDF analysis, we go for a bow zone with plenty of volume and powerful 'shoulders'. Our prismatic is high; we know this boat will be fast so lines are according to the real speeds she will show. Firm buttocks, easy diagonals, and waterlines yet no hard bilges all combined make a sweet set of lines with high speed potentiality.

This is the biggest sailing boat built in carbon in America, ever in this period of construction. Carbon was the material chosen for its construction, among the benefits of this material is to increase the ballast/displacement ratio, more tended in this case to increase ballast than to reduce displacement.

The process for lamination was after lots of test decided to be by resin infusion, being the largest epoxy infusion already done. After the process the samples tested did shown excellent mechanical properties and best than expected fibber-resin ratios. All structural members are laminated in epoxy carbon layup ending with a light and stiff structure, the result is a big amount of ballast to be located in the 70 tons bulb.

It was requested that the boat must be capable to sail in shallow waters, the River Plate included. So design draft was fixed at 3.60m, a real challenge to the Naval Architect. A hollowed high tensile steel strut was precisely engineered saving weights that are aggressively added to the bulb. Finally the keel will be of the 'T' type with very low center of gravity helping in sustaining all her sail plan.

Sail area is divided into a snug and strong schooner rig, which makes her look very seaworthy and workmanlike. Mast and standing rigging will be of carbon, helping in the lowering of the center of gravity. It was decided to use roller furling for booms and foresails; reduced crew usage is a design target present all along the full project.

The deck arrangement will show an intention to reduce visual elements, as far as a proper function allows. Houses and skylights are kept to a minimum; we feel that increasing the teak flat surface areas aesthetics are improved. In the same thinking hardware elements were reduced with carefully analysis. Most hardware will be in bronze, the main goal of this is to avoid stainless steel shining, and create a pleasant atmosphere. The teak layout will be trimmed by mahogany trims and planks properly located to create a nice balance between bare and shiny dark reddish woods.

Down below we found a classic Edwardian style interior with a mix of Honduras mahogany and white paneling. The owner's cabin is aft of the deckhouse, separated and independent with an adjacent fully operative office. Forward of the deckhouse is the saloon which extending the whole width, is spacious and airy. There is a living zone on port and opposite is the dinner room, with a table for ten persons. Following through a corridor is an accommodation zone with three guest cabins, all with their bathrooms in suite. Next forward is the galley and crew mess area, with a companionway entrance. The captain is on starboard and there are two crew cabins in the forward end of the interior arrangement.

The forepeak and lazarette are bigger than normally seen on these boats; we foresee this will be much appreciated when this Schooner turns from stationary to real life service.

