

Monaco Bill of Materials

LUMBER & PLYWOOD: All plywood must be intended for marine or exterior use; interior grades are not acceptable. The marine grade panel features higher grade inner ply cores, while the exterior plywood grade cores may have voids not apparent to the eye, and may also use cores made from woods not as suitable for marine applications. In most cases, the glues used in both the marine and exterior panels are the same waterproof type, however, the decision to use exterior panels in lieu of marine panels must lie with the builder, considering the particular use of the panel in the boat and the expected service. The letters A, B and C designate the grade of the exterior veneers with A grade the best, etc. Douglas-fir plywood is acceptable for all plywood, although mahogany or other attractive veneers are preferable in many instances as described in these instructions.

All lumber used should be first grade, free from knots, shakes, checks, or other defects. All *widths are actual size*. All thicknesses are standard finished sizes, with *1" lumber being four quarters material, usually finished to about 3/4"*. The exception is the 2' x 6" motor stringers which are standard finished size (1 1/2" x 5 1/2"). Grouping lumber and purchasing "random-random" material to resaw to the required size will result in considerable savings. All lumber sizes should be checked to the work before purchasing wherever possible. Lumber typical to the locale and proven in use in boats of similar type can be used as long as the weight, strengths, and characteristics are similar. Suitable boatbuilding woods include white oak, mahogany (Mahog.- Philippine dark red, American, or African types commonly used in boats), Sitka spruce, Alaskan cedar, Port Orford cedar, Douglas-fir (DF), longleaf yellow pine, apitong, and teak.

HULL MATERIAL LISTING: The following material listing is an estimate of the materials required to build the basic hull. The material listing is intended to serve as a general guide only and should not be used to purchase materials until the various options and alternatives have been checked to the plans, to the work, and to the materials which may be available in the area in which the hull will be built. The listing may vary due to the amount of waste and other variables that cannot be controlled.

ITEM	MATERIAL	NO. PCS.	SIZE
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LUMBER:**Transom #0**

Floor Timber	Mahog.	1	2" x 4" x 26"
Bottom	Mahog.	4	1" x 2-1/2" x 30"
Horizontal Beam	Mahog.	1	1" x 4-1/2" x 54"
Sides	Mahog.	1	1" x 8" x 44" (makes two)
Uprights	Mahog.	1	1" x 2" x 100" (makes five)
Deck Beam	Mahog.	2	1/2" x 3-1/2" x 54"

Frame #1

Sides	Mahog.	1	1" x 9" x 24" (makes two)
Bottom	Mahog.	1	1" x 3" x 64" (makes two)
Deck Beam	Mahog.	1	1" x 7" x 65"

Frame #2

Sides	Mahog.	1	1" x 9" x 24" (makes two)
Bottom	Mahog.	1	1" x 3" x 68" (makes two)
Deck Beam	Mahog.	1	1" x 7" x 72"
Frame #3			
Sides	Mahog.	1	1" x 7" x 24" (makes two)
Bottom	Mahog.	1	1" x 3" x 69" (makes two)
Deck Beam	Mahog.	1	1" x 7" x 75"
Frame #4			
Sides	Mahog.	1	1" x 3" x 49" (makes two)
Bottom	Mahog.	1	1" x 3" x 68" (makes two)
Deck Beam	Mahog.	1	1" x 6-1/2" x 78"
Frame #5			

Sides	Mahog	1	1" x 7" x 26" (makes two)
Bottom	Mahog.	1	1" x 3-1/2" x 60" (makes two)
Deck Beam	Mahog.	1	1" x 7" x 78"
Frame #6			
Sides	Mahog.	1	1" x 7" x 27" (makes two)
Bottom	Mahog.	1	1" x 7-1/2" x 27" (makes two)
Deck Beam	Mahog.	1	1" x 6" x 73"
Frame #7			
Sides	Mahog.	1	1" x 7" x 27" (makes two)
Bottom	Mahog.	1	1" x 3-1/2" x 40" (makes two)
Deck Beam	Mahog.	1	1" x 5" x 61"
Frame #8			

Side/Bottom	Mahog.	1	1" x 4" x 60" (makes two)
Deck Beam	Mahog.	1	1" x 3" x 37"
Other			
Keel	Mahog.	2	1" x 4" x 16'
Chine	Mahog.	2	1" x 4" x 20'
Sheer	Mahog.	6	5/8" x 1-1/2" x 21'
Bottom Battens	Mahog.	2 2 2 2	1" x 1-1/4" x 19' 1" x 1-1/4" x 17' 1" x 1-1/4" x 15' 1" x 1-1/4" x 14'
Side Battens	Mahog.	6	1" x 1-1/4" x 20'
Motor Stringers	DF	2	2" x 6" x 16'
Strongback	Mahog.	1 1	1" x 2" x 8' 1" x 2" x 2'6"
Battens - Foredeck	Mahog.	2 2 2 2	1" x 1-1/2" x 7' 1" x 1-1/2" x 6' 1" x 1-1/2" x 5' 1" x 1-1/2" x 3'
Battens - Mid Deck	Mahog.	6	1" x 1-1/2" x 5'

Battens - Aft Deck	Mahog.	1	1" x 1-1/2" x 12' (makes 6)
Carlings - Forward	Mahog.	1	1" x 4" x 9' (makes 2)
Carlings - aft	Mahog.	1	1" x 4" x 6' (makes 2)
Hatch carlings	Mahog.	1	1" x 4" x 9' (makes 2)
Hatch Longitudinals	Mahog.	2	1" x 4" x 8' (makes 4)
Deck Beams Fwd of #4 &5	Mahog.	2	1" x 7" x 6'
Motor Stringer Clips	DF or Mahog.	1	2" x 2" x 10' (makes 12)

PLANKING: These instructions give several options for planking. e.g., The inner veneers may be less expensive lumber than the outer layer, and plywood can be used optionally on the bottom. Thus, the following quantities are given in square footage of area to be covered. The bottom is to be a total of 5/8" thick, the sides a total of 1/2" thick. Veneer thickness will vary, depending on the number of laminates used. If four laminations of veneers are used, multiply the area to be covered by four to obtain the total square footage required. Cold-molded construction results in considerable waste; most add 20% to the square footage of the veneer to obtain the total required. Mahogany, dark red Philippine, or Honduras is advised for the outer lams.

- Total area for both sides = 66 sq. ft.
- Total bottom area = 92 sq. ft.
- Total transom area = 12 sq. ft.

PLYWOOD: Minimum plywood grades are listed. Exterior (ext.) grade plywood is specified, however, a full marine panel is preferable. The letters "AB" designate the quality of the exterior veneers, however "AA" panels are better. Douglas fir (DF) veneers are acceptable, but mahogany or similar veneer surfaces are more attractive.

ITEM	MATERIAL	NO. PCS.	SIZE
Gussets #1 - #7	DF Ext AB	1	3/8" x 4' x 4'
Floor Timbers #1 through #8, Stem #9, & Breasthook #10	DF Ext. AB	1	3/4" x 4' x 5'
Transom #0	DF Ext. AB	1	1/4" x 4' x 5'

FASTENINGS:

- Screws: Flathead wood type, bronze or hot dipped galvanized
- 1 1/4" #8 = 3 gross
- 1 1/2" #8 = 7 gross
- 2" #10 = 4 dozen
- 3" #14 = 6 dozen
- Nails: Ring type boat nails, bronze or Monel
- 1" #12 = 5 lbs.
- 1-1/4" #12 = 3 lbs.
- Carriage Bolts: Bronze or hot dipped galvanized complete with nuts and washers. Check lengths to work.
- 3/8" = 2 required at stem/keel junction
- 1/4" = 48 required for clips
- 1/4" = 32 required for frames

Adhesives: Epoxy adhesives are advised throughout the construction. These may be an epoxy adhesive or epoxy resin. Epoxy resins should be used with thickeners (microspheres and silica or equal) per the instructions with the resin and/or thickening agent. Due to the noted options, the amount required is difficult to estimate. Start with a gallon container of epoxy and after use you will be better able to estimate the total amount required.