Bon Voyage-Fiberglass Bill of Materials

HULL CONSTRUCTION MATERIALS: The following is an estimate of the fiberglass materials required to build the basic fiberglass hull. The listing is to serve as a general guide only and should not be used to purchase materials until various options and alternatives have been checked to the plans and to the work, whenever possible. The hull construction materials are based on surface area square footage, plus additional laminate build-ups and internal structural members, and may vary somewhat depending on the materials chosen and how they are used. The figures include an overage factor, however it is probable that more materials may be required due to waste, defects, sizes, and types of materials available, etc. The listings do not include materials for the decks and cabin superstructure due to possible variations on the part of the builder and the fact that scrap materials from the hull should be used before purchasing additional materials. In all cases, check the plans and instructions for options as well as the material listing given for the PLYWOOD VERSION.

HULL MATERIAL LISTING - SANDWICH CORE METHOD:

- Core material (*) - 965 square feet
- Fiberglass mat 1 oz per square foot: 12,437 square feet or 777 lbs.
- Fiberglass woven roving 18 oz per square foot: 1264 square yards or 1422 lbs.
- Polyester resin with catalyst: 4400 lbs.
- *(*) Either 3/4" or 1" PVC foam or 3/4" end-grain balsa.*

Bon Voyage - Steel Bill of Materials

The following is a general listing of the primary steel members required to build the vessel, including their description, sizes, lengths, and/or square footage. This listing is to serve as a general guide only, and is not meant to be all-inclusive. Hence, the builder should not use this listing to purchase materials without checking to the plans first to verify sizes and options. In all cases, the builder should check local sources in order to determine stock sizes of materials that may be available. How the members are obtained from the stock and the manner in which the material is utilized will vary to suit stock sizes of materials available in the locale where the boat will be built. This is why many members are listed by square footage. In other cases, members may be obtainable from flat bar, plate, or sheet material; it makes little difference in steel construction.

Also, square footage or lineal footage may be given for contoured members which are cut to shape from plate or sheet stock, or could optionally be formed or bent from flat bar stock. Sizes and areas of materials generally include a factor for overage so that minor members not specifically noted can be obtained from scrap material.

ITEM	SIZE	AMOUNT RQD.
Stem	1/4" plate x 4	18 lin. ft.
Keel/skeg	1/4" plate x 7 1/2" 1/4" x 4" flat bar	29 sq. ft. 4 lin. ft.
Bottom longitudinals	1/8" x 2" flat bar	400 lin. ft.
Side longitudinals	1/8" x 1 1/2" flat bar	270 lin. ft.
Chine & sheer bars	7/16" rd. bar	190 lin. ft.
Rub rail (makes two)	11 ga. x 2" dia. tube	50 lin. ft.
Transom stiffeners	10 ga. x 4" 1/4" x 4" flat bar 1/8" x 2" flat bar	15 lin. ft. 20 lin. ft. 60 lin. ft.
Frames	10 ga. 1 1/4" x 1 1/4" x 1/8" angle 2" x 1 1/2" x 1/8" angle	75 sq. ft. 220 lin. ft. 24 lin. ft.
Inter. frames	1 1/4" x 1 1/4" x 1/8" tee 1 1/4" x 1 1/4" x 1/8" angle	200 lin. ft. 100 lin. ft.
Deck framing	1/8" x 1 1/2" flat bar 1/8" x 2" flat bar 1/8" x 3" flat bar	130 lin. ft. 60 lin. ft. 70 lin. ft.
Carling	10 ga. x 6" 1/8" x 1 1/2"	82 lin. ft. 90 lin. ft.
Hull & deck plating	10 ga.	1300 sq. ft.

Bon Voyage-Plywood Bill of Materials

The following list of materials is intended to be a general guide only. Before ordering any materials, the text and plans should be checked for possible options. All lumber listed as 1" stock is to be standard "lumberyard four-quarter" material which when finished may vary to somewhat less or slightly more than 3/4" in thickness. All widths are NET and all lengths allow for cutting to fit. Grouping lumber and purchasing random-random material to resaw to the

required size will result in considerable savings. All lumber used should be first grade free from shakes and knots. Although spruce (Sitka variety) and mahogany (dark red Philippine type) are called out in the listing, lumber typical to the locale and of similar types and weights may be substituted. All plywood (PW) is to be marine (MAR) or exterior (EXT) grade. The marine-type is preferable as the inner cores are solid and thus the panel has more structural integrity. Douglas-fir (DF) is satisfactory with the quality of the exposed faces of the veneer being designated by the letters "A" or "B". The "AA" grade panels are always preferable, however, "AB" grade is acceptable. All plywood should be a minimum of three plies. All fastenings should be bronze or hot dipped galvanized ferrous metal. Brass fastenings are not advised nor are the electroplated screws commonly sold in hardware stores. All screws are to be of the flat head type intended for wood. All nails are of the ring-type nail common to boat construction. Unless otherwise specified, all wood-to-wood joints are to be glued with a waterproof or highly water resistant glue such as plastic resin, resorcinol, epoxy, or other equivalent type used per the manufacturer's instructions regarding temperature, clamping requirements, curing time, and mixing method.

CHECK ALL SIZES TO THE WORK PRIOR TO CUTTING. Abbreviations used are: Mahog = mahogany; DF = Douglas-fir; PW=plywood; Ext=exterior; MAR=marine.

ITEM	MATERIAL	NO. PCS.	SIZE
LUMBER:			
Frame members	Oak, Mahog or DF	16 req. 14 req. 4 req. 1 req. 1 req. 9 req. 1 req. 2 req.	2" x 6" x 4' 2" x 6" x 1' 2" x 6"NET x 5' 2" x 6"NET x 12' 2" x 10" x 14' 2" x 12" x 12' 2" x 12" x 5' 2" x 13"NET x 8'
Keel	Oak, Mahog or DF	2	2" x 6" x 34'
Skeg	Oak, Mahog or DF	1	2" x 6" x 28'
Bottom battens	Oak, Mahog or DF	2 2 2 2	2" x 4" x 42' 2" x 4" x 40' 2" x 4" x 38' 2" x 4" x 30'
Side battens	Oak, Mahog or DF	2	2" x 4" x 48'

Keel web cleats	Oak, Mahog or DF	1 6	2" x 2" x 3' 2" x 2" x 4'
Stringers	Oak, Mahog or DF	4 3	2" x 4" x 5' 2" x 4" x 32'
Transom uprights	Oak, Mahog or DF	4	2" x 6" x 5'
Sheer clamp laminations	Oak, Mahog or DF	6 2	1/2"NET x 4" x 48' 1/2"NET x 4" x 16'
Forward deck beams	Oak, Mahog or DF	1 1	2" x 6" x 10' 2" x 8" x 12'
Foredeck battens	Oak, Mahog or DF	2 2 1	2" x 4" x 5' 2" x 4" x 7' 2" x 4" x 8'
Carling	Oak, Mahog or DF	2	2" x 6" x 32'
Cabin clamp	Oak, Mahog or DF	2	2" x 5" x 32'
Aft deck beams	Oak, Mahog or DF	2 4 2 1	1" x 4" x 8' 2" x 4" x 6' 2" x 6" x 6' 2" x 6" x 10'
Aft hatch framing	Oak, Mahog or DF	12 6	1" x 3" x 3' 1" x 3" x 6'
Misc blocking /cant strips	Oak, Mahog or DF	2" x 2" x 80 lin. ft.	
Rub rail	Oak, Mahog or DF	2	1" x 1 1/2" x 48'
PLYWOOD:			
Stem & breasthook	DF Ext AB	4	3/4" x 4' x 8'
Frame gussets & floor timbers	DF Ext AB	4	3/4" x 4' x 8'
Transom	DF Ext AB	4	3/4" x 4' x 8'
Chine logs	DF Ext AB	3	3/4" x 4' x 8'
Motor stringer webs & brackets	DF Ext AB	2	3/4" x 4' x 8'
Keel & stringer webs	DF Ext AB	4	1/2" x 4' x 8'
Drain troughs	DF Ext AB	1	3/8" x 4' x 8'
Aft cabin bulkhead	DF Ext AB	4	5/8" x 4' x 8'
Lounge seat	DF Ext AB	1 1	3/4" x 4' x 10'** 3/4" x 4' x 8'
Cabin front	DF Ext AB	3	3/4" x 4' x 8'
Bottom Planking	DF AB MAR	8 24	1/2" x 4' x 8' 1/2" x 4' x 10'**

Side Planking	DF Ext MAR DF Ext MAR DF Ext AB DF Ext AB	2 2 9 9	1/4" x 4' x 12'* 3/8" x 4' x 12'* 1/4" x 4' x 8' 3/8" x 4' x 8'
Decking	DF Ext AB	5 5	3/4" x 4' x 8' 3/4" x 4' x 10'**

* If side planking is laid diagonally in forward areas, 4' x 8' panels can be used, see instructions.
** Can substitute 4' x 8', adjust quantities accordingly.

FASTENINGS:

Screws: Flathead wood type, bronze or hot dipped galvanized

- 1-1/2" #8 - 2 gross
- 2" #10 - 4 gross
- 3" #14 - 15 gross
- 3 1/2" #18 - 4 doz

Nails: Ring type boat nails, bronze, stainless steel or Monel; annular type, common type suitagle for cabin structure as required.

- 1" - 5 pounds
- 1-1/4" - 5 pounds
- 1-1/2" - 14 pounds
- 1-3/4" - 12 pounds
- 2" - 10 pounds

Carriage bolts with nuts and washers

- 3/8" (check length to work) - 108 each

Glue: Epoxy - 5 gallons