



PBR Mark I: Viet Nam River Patrol Boat

BUILDING THE WATERLINE HULL AND GUN TUB

Where the PBR Mark I Started

- First Hulls Built by United Boat Works (Uniflite) of Bellingham WA (reconfigured 31' pleasure craft hull)
- Follow on contracts for more and also the PBR Mark II



Beginning of the PBR Mark I

- Brown Water Navy Creation
- 120 built prior to PBR II
- Numerous Field & Build Retros proved problematical
- Photo: restored Mark I PBR
- Courtesy of NW Gamewarden Veterans



Model Baseline

- Scale = 1:6; 31 foot LOA translates to 60+” model
- Abundance of available accessories drove the scale choice
- Acquired drawings:
 - US Navy (NAVSEA 05D) archives (dimensioned, partial)
 - Maryland Silver (non dimensioned illustrations, scaled to needs)
- Photos:
 - Courtesy of Patriots Point and on line photos
- Model to be placed in a large diorama for host museum
 - “Dockside” setting: loading up for a mission
 - Museum: Military History Society of Rochester, NY
 - Initially a group effort

Construction of the Waterline Hull

- Internal framework: 3/16" plywood
- Framing stations followed Maryland Silver mid ship drawing demarcations
 - Intermediate frames added to reduce "hollows"
 - Balsa fillers added to the bow
 - Aft frames shown w/temporary cross braces
- Assembled on slotted (1" X 2 1/4") "strongback" fastened to 3/8" plywood waterline base
- Skinned in 1/16" (2 & 3 inch) basswood sheet after fairing
 - A better choice would have been 1" planking for improved longitudinal contouring

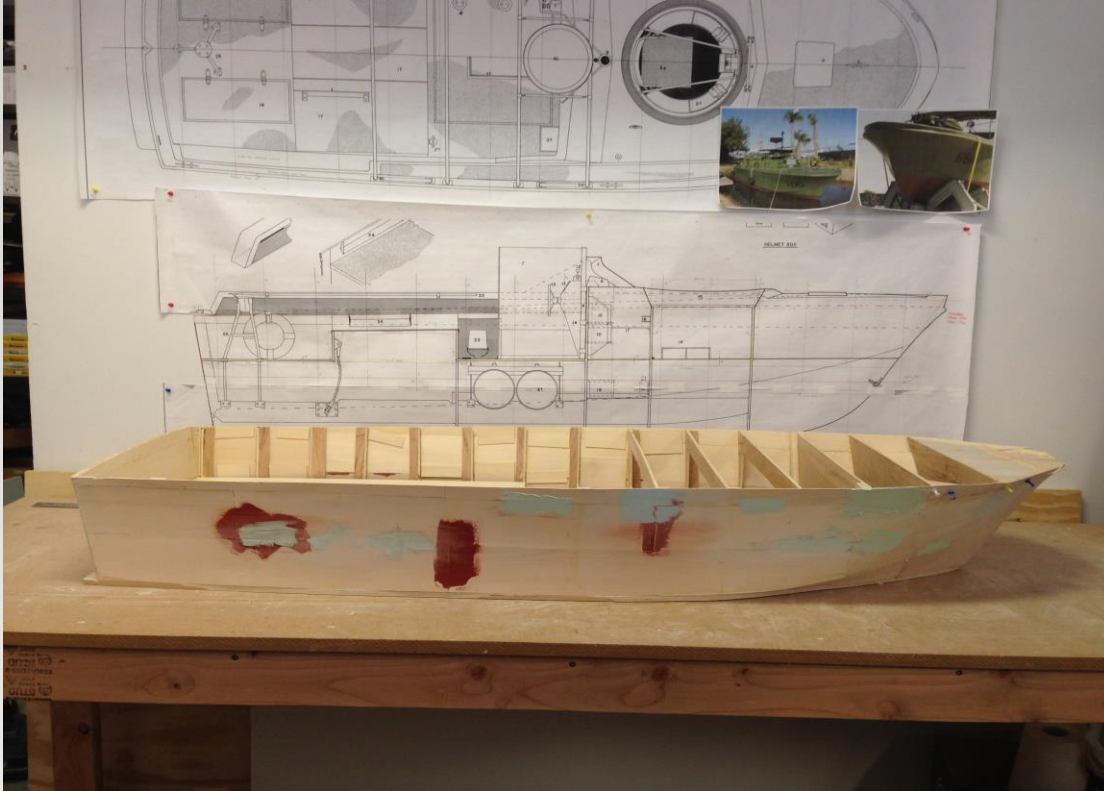


Construction of the Waterline Hull

- Semi bluff bow (just below deck)
especially difficult to shape
 - Rub rail (not shown) disappears into dramatic bow flair
 - Currently being reworked
- A combination of Evercoat Easy Sand body filler and Nitro Stan glazing compound used to fair the completed skin



Construction of the Waterline Hull



Completed Basic hull

Construction of the Hull

- Moving to work topsides
 - The twin diesel engine compartment
 - The engine air intakes
 - Helm area
 - The bow wrap around
 - A paper pattern used to form the wrap around
 - Stacked, joint offset $\frac{1}{4}$ " bass wood used to build up the applied piece
 - Element glued and planed down to meet the rising outer deck (from the stern)

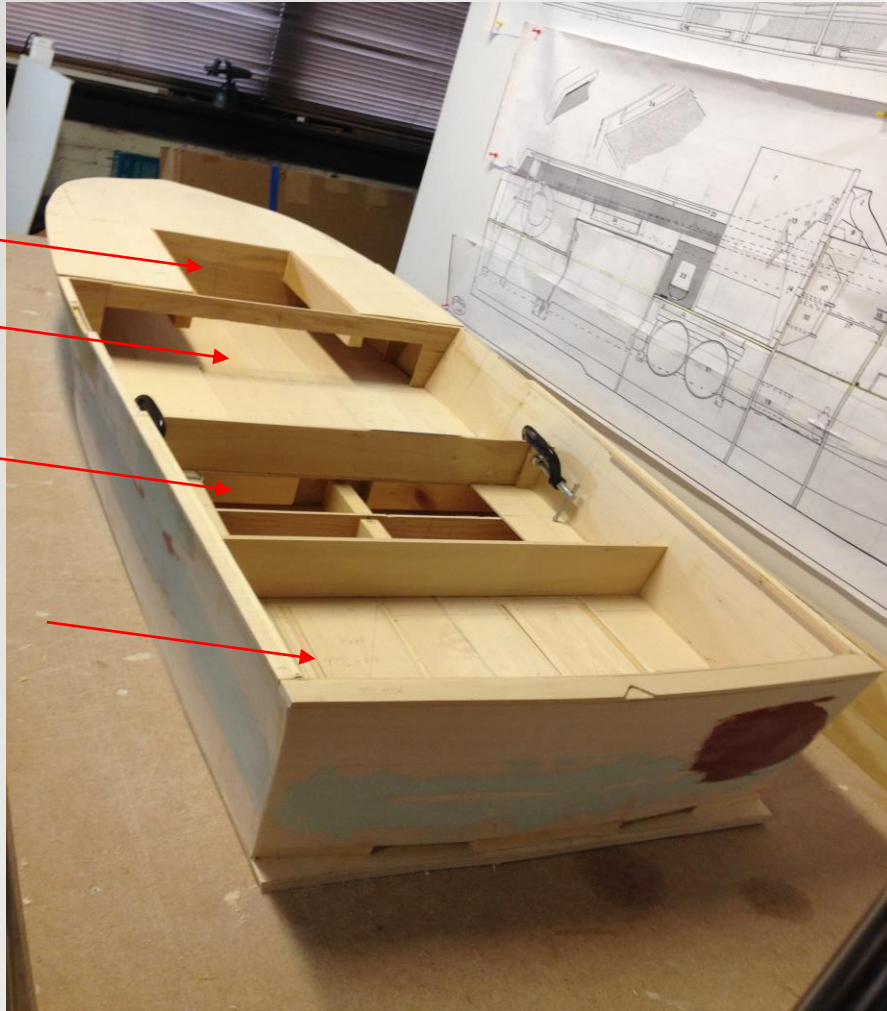
Construction of the Hull Topsides

Forward
gun tub
location

Helm area

Twin diesel
compartment

Stern hatches
and single 50
cal gun station



Starting to add engine intakes



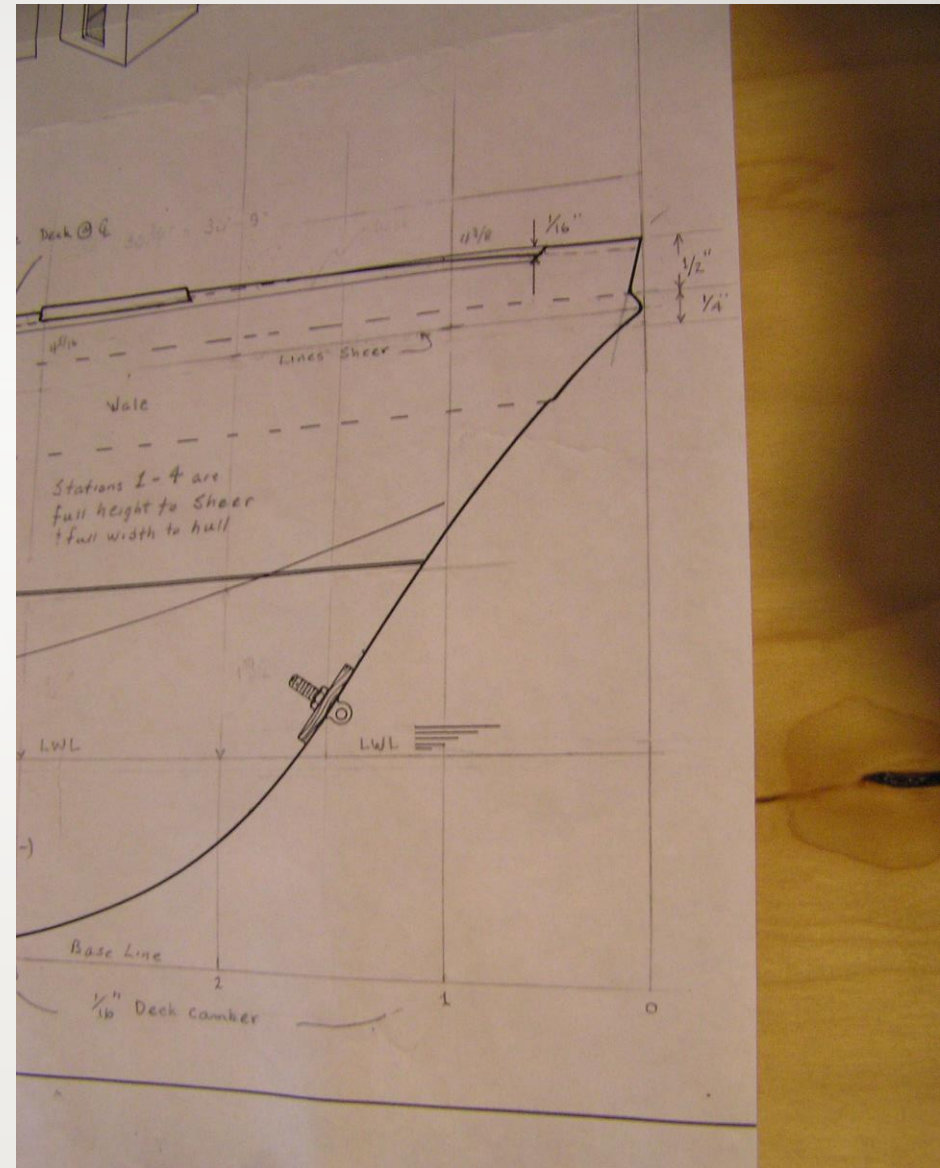
Construction of the Hull Topsides

- The bow wrap around prior to planing
- Area to be reworked not enough top sides flair, nor correct rub rail treatment



Construction of the Hull Topsides

- View of the Maryland Silver drawing flair
- Not exactly the correct profile when compared to the Patriots point photo



Construction of the Hull Topsides

- The completed flair build out
- Built out the rub rail first
- One application of Rage Easy Sand body filler to bulk up some of the area
- Then another Evercoat product –Metal Glaze applied directly over roughed paint or similar surface and sanded to contour



Closing in on the Hull Topsides

- Hull nearing completion: fore deck framing added, bow wrap now integrated, engine air intakes in, aft risers in
- Sans forward gun tub, gun tub deck
- Sans Helm Venturi (Cowling)



Construction of the Gun Tub

Gun configurations

- Single 50 cal
- Twin 50 cal mounted side by side
- Twin 50 cal separated adopted
- Navy designs; at outset drawings not released
- Production by others (not United Boat Works)



Construction of the gun tub

- Gun tub fabrication
 - Maryland Silver drawing depicted single gun configuration
 - Smaller gun tub
 - Scrapped first attempt
 - An 8" MDF form of appropriate size fabricated / shaped on a disc sander for rendition #2
 - First attempt using .040" styrene wrap proved too stiff for a suitable wrap
 - Reverted to two .020" styrene sheets, joints offset
 - Butt ends were *temporarily* nailed at the wraps to flatten the junction
 - Still not a perfect joint, required sanding and filling to achieve desired result
 - Used styrene adhesive to join the layers and secure the joints

Construction of the Gun Tub

First Attempt (Single 50 cal)

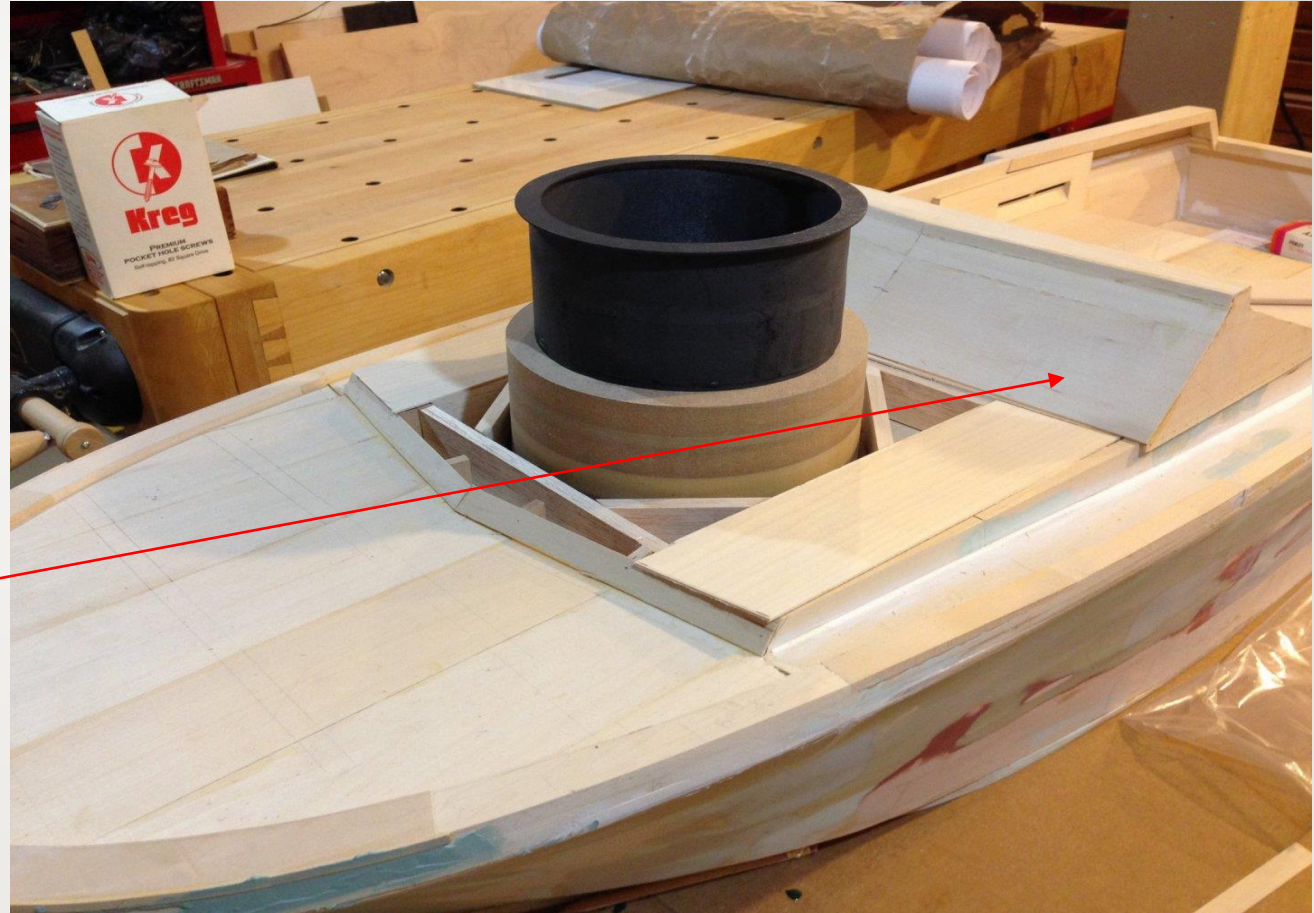
- MDF form
- Cap ring and mid tub ring laser cut out of 3/32 model plywood
- Scale bolts - modified RC hobby store stock



Construction of the Gun Tub

Second Attempt Twin separated 50's

- Fortuitous gun deck construction delayed
- The new molding form shown in relationship to the earlier attempt
- Note the Venturi (helm cowling)



Construction of the Gun Tub

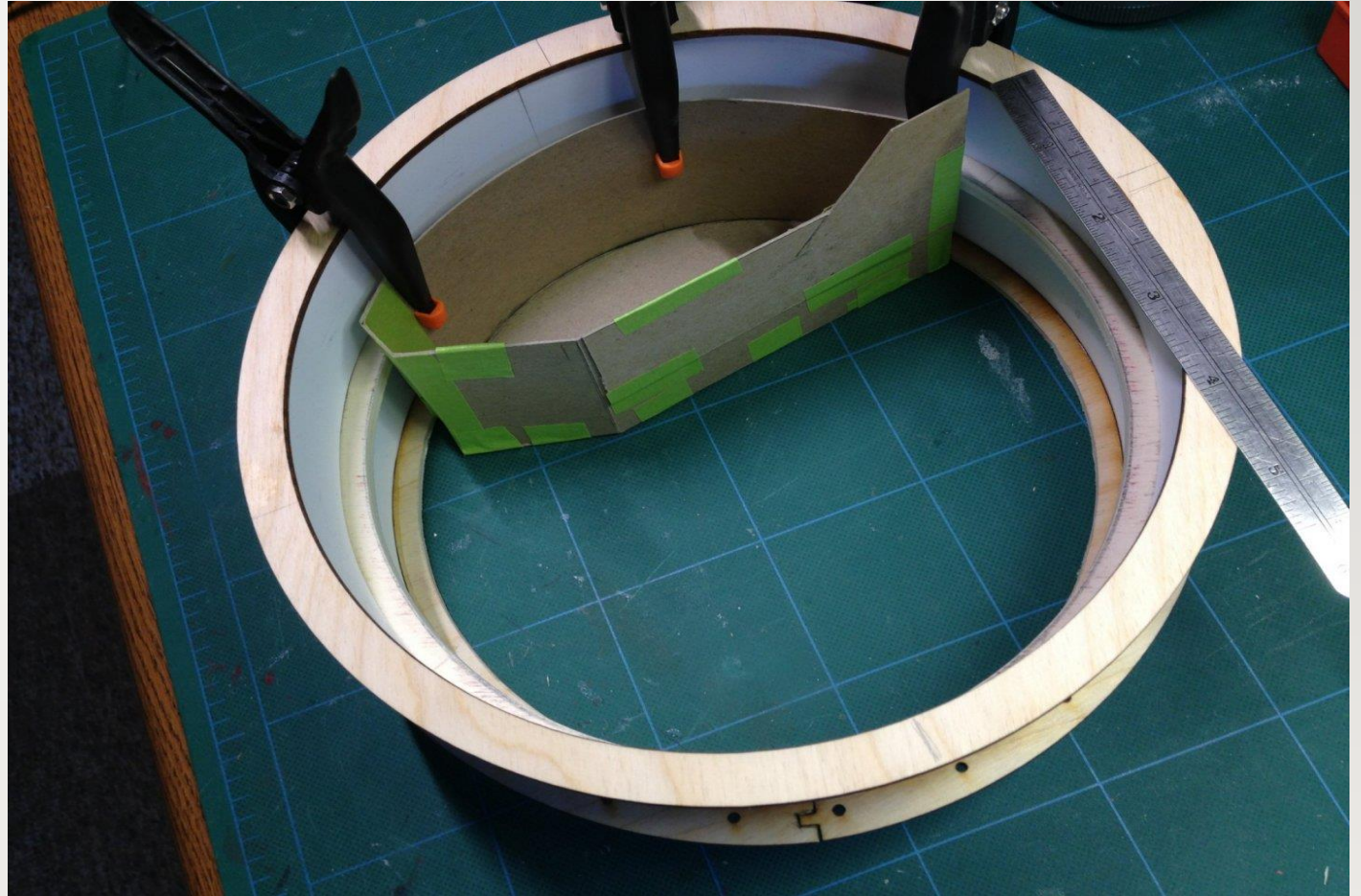
Complex innards (Patriots Point photo):

- spent shell catch tubs
- gun carriages
- tub steering
- firing controls
- 50 cal bandolier feed bins



Construction of the Gun Tub

- No dimensioned drawings
- Mock up of shell catch tubs
- Laser cut cap rings and internal mounting rings installed
- Estimated tub width proves incorrect



Construction of the gun tub

Rework in order!

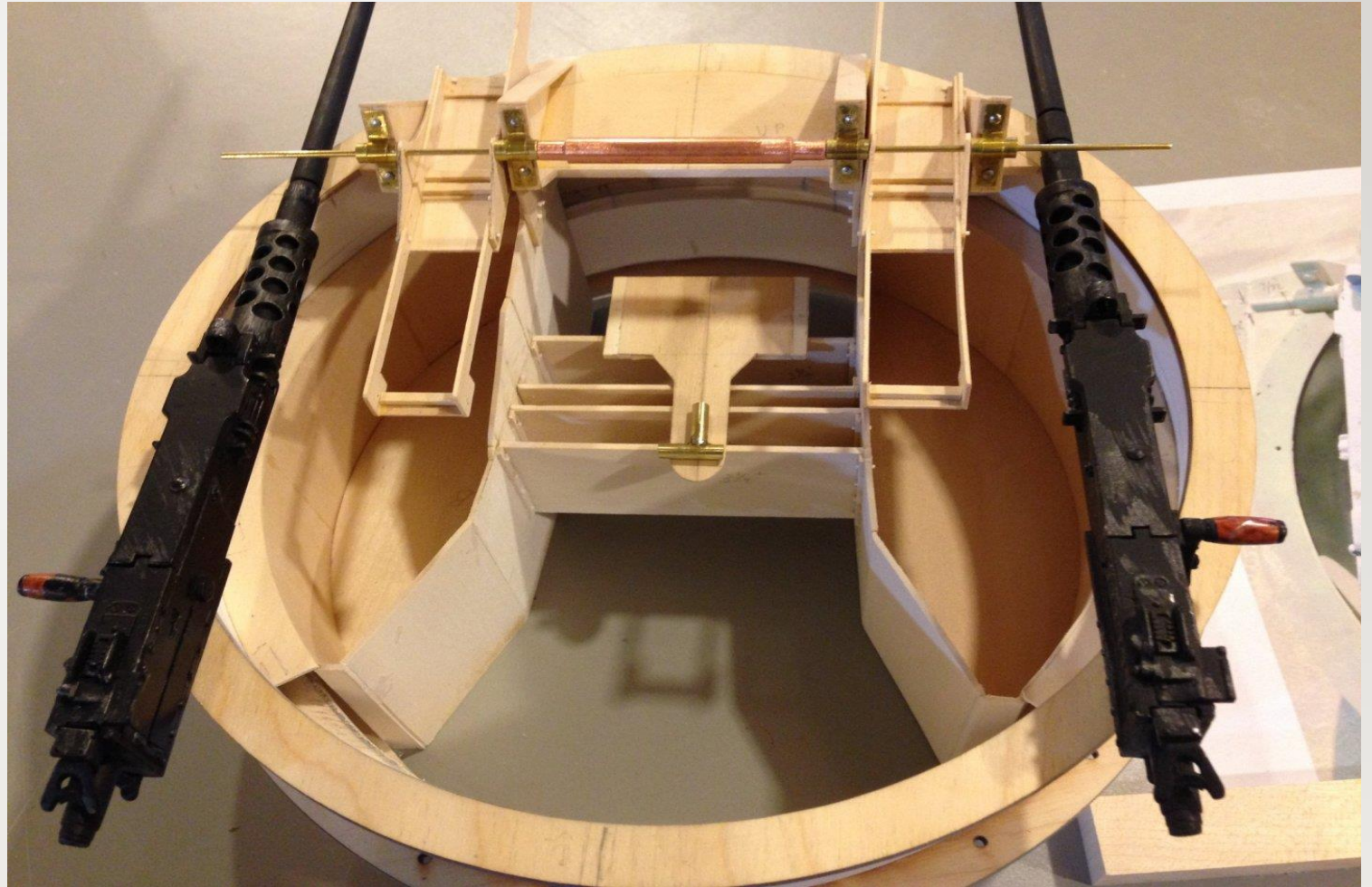
- Tubs too wide, insufficient room for cartridge compartments
- Salvaged most of elements
- Reworked to fit correctly
- The one on left is correct
- Handed off to Jim..Whew!!!



Construction of the Gun Tub

Dry fit assembly depicting

- Spent shell tubs
- Gun carriages: guns aside
- Brass trunnions waiting for carriage supports to be fastened
- Tub (Train) drive
- Ammo bins/chutes
- Sans forward/rear shields
- Simulated plate bolt heads made from shaved round styrene stock



The Completed Gun Tub!!!!

A model in itself!

Without help from MSW members this project would have floundered

A member of MSW provided a document NAV ORD 3741 Description, Operation and Maintenance of this system

Correctly painted: Marine Corp #23 Green



The Completed Gun Tub

For anyone interested there is further detail and information on our web site regarding some early history of the vessel and sub assemblies of an actual gun tub

Modelshipwrightguildwny.org

Found under **Topics of Interest**

