

DACUM Research Chart for Marine Carpenter

DACUM Panel

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**CENTER ON EDUCATION
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THE OHIO STATE UNIVERSITY
1900 Kenny Road • Columbus, Ohio 43210-1090

April 21-22, 2005

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Duties		Tasks				
A	Develop Wood Components	A-1 Define the need for component	A-2 Describe the requirements for component	A-3 Research the location of the component	A-4 Research component-related systems (e.g., electrical, HVAC, plumbing)	
		A-12 Document component and related systems (e.g., drawings, photos)				
B	Participate in Work Group Activities	B-1 Identify safety issues & work-related problems	B-2 Solve safety issues & work-related problems	B-3 Establish standard operating procedures	B-4 Coordinate work schedule with co-workers	B-5 Mentor new workers
C	Build Boat Components	C-1 Study info on components (e.g., digital photos, drawing, documents)		C-2 Determine order of component construction	C-3 Procure materials (e.g., wood, plastic, foam) for component	
D	Apply Wood Finish	D-1 Decide on finish type	D-2 Determine procedure for type of finish	D-3 Prep component for finish	D-4 Apply finish to component	D-5 Inspect finish quality
E	Build Module From Components	E-1 Establish level surface for module	E-2 Establish center line for module	E-3 Lay out module sole & bulkhead location		E-4 Install module sole & bulkheads
		E-10 Prep hull for module installation	E-11 Fit module to hull			
F	Install Soles & Bulkheads in the Hull	F-1 Level the hull	F-2 Transfer level line into the hull	F-3 Locate center line of boat	F-4 Transfer center line into the hull	F-5 Review blueprints for location of soles & bulkheads in the hull
G	Install Components (e.g., cabinets, trim)	G-1 Inspect boat & installed components for compliance with standards & specs		G-2 Verify specs & measurements of existing interior locations & components		G-3 Plan order of component installation
		G-10 Install prefabricated plastic parts	G-11 Install wall & floor coverings (e.g., vinyl, carpet, linoleum)		G-12 Install upholstered components	
H	Repair Damage to Components	H-1 Evaluate damage to component	H-2 Determine repair needed for component	H-3 Obtain materials needed for repair to component		H-4 Prep component for repair (e.g., clean, sand, cut)

A-5 Design the component	A-6 Present component design to supervisor	A-7 Prepare engineering change order for component	A-8 Order component materials	A-9 Build component prototype	A-10 Install component prototype	A-11 Evaluate result & performance of component
B-6 Clean work area	B-7 Maintain tools (e.g., power, hand)					
C-4 Cut out wood parts for component	C-5 Cut out plastic sheet goods for component	C-6 Cut out foam parts for component	C-7 Assemble parts into component	C-8 Verify component is built to specifications	C-9 Assemble parts & components for delivery to boat	
E-5 Lay out location of component parts (e.g., cabinets, bunks)		E-6 Install module components (e.g., cabinets, showers, bunks, settees)	E-7 Check square, level, & elevation of module	E-8 Install temporary supports onto module	E-9 Install module systems (e.g., plumbing, electrical, HVAC)	
F-6 Lay out sole & bulk-head locations in the hull	F-7 Install sole & bulkhead in the hull					
G-4 Review specs for component & location in/on boat	G-5 Install interior bulkheads	G-6 Install interior panels	G-7 Install interior cabinets	G-8 Fit appliances to components	G-9 Install flooring & decks	
G-13 Install interior & exterior trim (e.g., molding, handrails, bunkrails, doors)						
H-5 Repair damaged component and the finish	H-6 Inspect component repair and the finish					

General Knowledge and Skills

Safety
Tool use
Tool maintenance
Glue application
Fastener application
Adhesive application
Materials knowledge
Finish application
Ability to read blueprint
Draft blueprints
Basic math and geometry
Planning
Layout knowledge
People/communication skills
Marine terminology
Basic computer skills

Worker Behaviors

“Timely and workmanlike”
Meet deadlines
Maintain clean workplace
Attendance
Punctuality
Reliability
Personal relations with others
Personal hygiene
Follow instructions
Work safely
Productivity
Common sense
Quality craftsmanship
Positive attitude
Friendliness
Works well independently
Ability to multitask
Versatility
Ask questions

Future Trends and Concerns

American labor market will put us out of business
Northern Marine layoffs
Taiwan and China
Need more proficient labor market
Improve quality, increase quantity
More efficient learning
Quicker training
Increasing cost of benefits
Improving techniques

Tools, Equipment, Supplies and Materials

Table saw	Crane
Router	Sander (hand and belt)
Jig saw	Grinder
Band saw	Dolly
Panel saw	Sawsall
Miter saw	Pneumatic tools
Circular saw	Sandpaper
Hack saw	Glues
Block plane	Adhesives
Chisel	Fasteners
Razor knife	Caulk
Router table	Filler
Hammer	Putty
Drill press	Bevel square
Shaper	Bevel board
Joiner	Scribe
Drill	Jig
Spray gun	Pencil
Square	Forklift
Level (hand and laser)	Scissor lift
Plumb bob	File
Transit	Tape measure
Caulking gun	Scraper
Paint	Knives
Oils and finishes	Vinyl
Fiberglas® and resin	Upholstery
Plastic laminates	Dimension lumber
Hull liner	Plywood
Linoleum	Plastic sheet goods
Carpet	
Personal protective equipment (e.g., breathing apparatus, gloves, boots, safety glasses)	

Improving materials
Finding more skilled labor
Moving towards composites
Change from hydraulics to electronics
Better trade relations w/different countries to get materials
More standardized operations
More efficient boat construction
Electronic engine controls
Environmental issues