

location	#	crew	time	task - assuming mast in after boat in and keeping spreaders on no crew support	13'2"=4.0132 meters, 13'3/4"=3.98 meters, 1 meter =39.37", 11'=3.35 meters	time save
pre-yard	1		10	unhook and secure trailer wheels/stands		
	2	c	5	remove tow signage from truck and flags		
	3	c	15	remove tow straps (when on flat ground)	store in trailer box,check chafe	
	4	c	10	remove mast straps	defer until after	
	4.5	c	45	wash bottom/hull/trailer of bugs etc. (add 2 hours for wax)	quicker if done with long handled brush/spong while in trailer	
	5	c	5	remove foil covers	store in trailer box,check chafe	
	6	c	1	untape prop		
	48	c		remove trailer netting (if long-term stay) 20 minutes		
	8	c	35	unpack rigging/headstay//pad/stretch wrap	save carpet,	
	10		5	install backstay to mast head from truck, tape headstay and backstay pins		
	12	c	5	unwrap deck light		
	13		5	prep antenna, windex and wand from boat		
	14		15	install antenna, wand, windex//fasten wires, tie wrap (if necessary install from 13ft reach ladder)	install tape headstay pin and secure mh gear, from ladder, windex light GE 1447, align and set windex at 55 degrees with card in nav station	
	15		15	loosen rigging/tie aft of mast to main tack	or defer to mast step (20) below if stepped directly from deck	
	16	c	10	retape spreader tips if needed		
	17	c	10	clean tape residue, wash mast , (wax mast add 35 minutes)	attention to underside of spreaders	
	3.5	7	20	remove mast from frames(seal partners if not stepping)		all priority pre-yard could be done in 3.5 alone
pit/yard	19		45	launch boat	use tacy turf foam and tape it to hoist straps	mark hull side for correct strap positions
	20	C	30	step mast, connect shrouds and tie backstay to swim ladder with twine	balanced lift point is just below deck light, safer (bottom heavy) lift is just 8" above light	
	20.3	c	7	run main halyard		
	21	c	20	fit mast chalks/boot outboard galley, fasten tape boot	rubber w two knotted yellow aft, 2 flat yellow starboard side	
	22	c	30	adjust all turnbuckle pins, tune rig to measurements on bulkhead or in wet notes book		
	2.3	23	5	unwrap instrument pod and mast sections		
post yard	24	c	1	unpad and uptape gooseneck		
	24.7	c	50	note labeled life lines turnbuckles, install pads, rerun. lower turnbuckles at S 950 mil, P 2250 mil or +/- 2" slack for class legal tension	use scar pins or cotter rings. When breaking down can try just removing bottom LL then pad stations upright and just pull pins on top life lines to save 15 minutes.	
	24.5	c	15	install stations		
	25	c	4	unwrap drum and headstay		
	20.5		12	install backstay adjuster/ tape pins	to ease installation coil backstay as loose as possible when storing to avoid bending which effectively shortens BS. Tie dock line below upper section of backstay adjuster keeping clear of clevis. Attach to main halyard and tension to align clevis	
	28	c	18	run spin, jib halyards, furler line, tack line	note aft end of tack has two knots, clutch marks	

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	29	c	5	install cunningham		
	30	c	5	install spin blocks	replace spin blocks, tie wrap shackles,	
			7	install boom	bumpers on deck, attach aft end to main halyard, unbag as connecting	
	31	c				
	32	c	1	install jib lead blocks		
	33	c	20	install wheel	line up black marks in order to center	
	35	c	3	connect mainsheet bales to boom, tie wrap	tie wrap shackles on all blocks	
	34	c	3	run traveler and mainsheet		
	36	c	10	remove mast supports on deck	as easier after launch	
	37	c	5	install vang	tape rings	
		c	10	load large items--cooler etc. ensure everything returned to boat from truck (winch handles, loose guage, anchor, tools, battens, sails, blocks, nav charts)	easier to load in water	
	38					
			35	connect mast wires, test	wiring chart in nav station	clean up and lenghten, resoder wires, relabel wires, move and enlarge box, use triple WAGOs for 20/20 connections, insert double WAGO for ground wire
	39	c				
	40	c	5	clean tape residue toilet seat, locks, instruments, mast	use green tape to reduce residue, adhesive cleaner	
	41	c	2	reposition sails, heavy gear from forward		
	42	c	1	open engine seacocks after launch		
	43	c	2	untie swim ladder	to backstay tang	
	44	c	2	untie sprit pole	to pulpet stantion	
	45		2	store keel mat		
	46	c	30	clean deck		
	47		3	replace speedo		
	4.2			source for stretch wrap in single roll quantity:Toppa, middletown, RI 401-846-5133 \$17/rl		
				source for 1/8' foam uline.com 800295-5510 s-2962p 250'x24" perforated largest UPS-able size \$81		
				bold priorities to prep for yard		
decimal hours						
			10.0	total hours		

location	#	crew	time	task - assuming mast down at lift and keeping spreaders on no crew support winterizing and oil change add 1.5 hours before haul		time save from "to do"	to do
pre-yard			10	clean trailer poppets to remove grit and course dust, check and adjust brace/poppet settings	keel brace must be back 1" to accommodate keel cover. Safety check on mast clearance as determined by approx. poppet height- clockwise from star bow 9", 8, 7-7/8, 7-7/8, 7.5, 8-3/8, 8, 9.5		mark brace
	1						
	2		2	install keel mat	place mat 11" to x 53-60" back from front wall of keel box, needs to be at least 28" wide		
*	3		3	remove speedo			
		c1	10	offload large items--cooler etc. ensure everything stowed below or removed to truck (winch handles, loose guage, anchor, tools, battens)	easier to offload large stuff while in water		
	4						
*	5	c2	10	disconnect mast wires, pad vhf, tape to mast			
*	6	c1	7	remove vang/bag		3	get canvas bag
*	7	c2	2	disconnect mainsheet bales from boom			
*	8	c1+2	5	remove boom/bag/store on sole w front end under v-berth	put aft end in bag last, if alone then attach main halyard so don't need to drop boom, use bumpers on deck if needed		
*	9	c1	10	remove backstay adjuster/bag	tie backstay to stern pulpet. leave backstay extended to aid in reassembly		
*	10	c1-2	25	pull halyards(messengers all same length), furler line, tack	main and jib on port, spin on star		
*	11		20	wrap instrument pod and mast sections to protect	could use mainsail cover for quick temp protection from shroads	18	get padded canvas
	12		15	wrap drum and headstay		12	get padded bag/sleave
*	13	c2	5	pad and tape gooseneck/vang			
	14	c1+2	10	place mast supports on deck, bring "on deck" duffle, secure front support	easier done before hauling		
*	15	c1	5	remove/store cunningham leave rope loop on mast but tie off			
	16	c1-2,ag	20	loosen boot, rigging/tie aft of mast to main tack with sail tie			
				*=intransit items need tools, foam, tape on race last day and would reduce to only 20 minutes the time required at yard pre-pit, bold=required minimums			
0.3 pit/yard	2.7 17	1.2 C1+2	30	pull mast	lift point 8" above deck light		

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	18	c	5	store mast chalks/boot outboard galley	rubber w two knotted yellow aft, 2 flat yellow starboard side		
	19		10	remove antenna, windex, wand//fasten wires	on install tape headstay pin and secure mh gear		
	20		5	store antenna, windex and wand (tape in place) on boat	windex in hanging locker rod, wand to overhead hand rail		
1.6	30		45	haul boat and fit forward on trailer	use tactory turf foam on straps, move keel chalk back 1" to accommodate cover install, beware lift points must be forward at rear to avoid shaft		
after haul/rig down	31	c	35	remove wheel / foam wrap/put in truck		25	get padded bag
	32	c	20	clean boat bottom w/sponge			
	33	c	5	tape over/seal mast hole in deck/ or install mid mast support			
	34	c	10	remove backstayput in truck	tie wrap in 5-6ft loop		
	35		5	pin all turnbuckle pins with scar pins or cotters	headstay clevis 1/2"*1.5", takes 1/8 * =>1" cotter pin// Intermediate shroads 3/8*L? clevis takes 1/8 cotter , Int. TB take 3/32 * 1"cotter//U&L shroad 1/2"*L? clevis TB take 1/8"*1-1/4 cotters//backstay clevis 1/2"*2", 1/8 *1.5" cotters//main tack clevis 1/2"*1.75L//vang and gooseneck think take 7/8 cotter rings w 1/16" wire//lifelines 1/16*3/4" cotter rings or 1/2L*1/16 cotter pins//mainsheet and traveler =>7/16 cotter rings at ?1/16 wire?		
	36	c	5	wrap deck light	nonstandard j105 decklight. protects for road salt/bug/loss of bulb		
	36.5		4	stretch -wrap spreaders	saves bug cleanup		
	37		120	fasten and secure rigging/headstay//pad/stretch wrap (6 wraps of 80 gauge wrap equals close to 5-6 mils)	use carpet around lower mast (must cover base turning blocks) after foam to protect against furler and lower TBs, note mast heastay tang just over aft edge of transom //forward mast support in band 30-40" above main tack pin//aft mast support in band 44-56" below headstay tang//mid mast strap support centered 19" above deck light//main mast tang sits just ahead of bow pulpet... pin all rigging and attach strap hooks by closed end to rigging clevis. tie to each other, headstay offset and fixed to spreader, run strap from lowers down and around to furler clevis. tilt mast strap hooks toward straps and tape		

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	38		35	fasten mast to frames/frames to boat	mid mast strap to 2nd station base just over top of mast, rear mast stand strap to spin Us, forward mast strap runs through bow cleats		3/4" pile carpet (<i>bow 8X24</i>)
*	39	c	3	tie off sprit pole	to bow pulpet rail		
*	40	c	3	tie off swim ladder	to backstay tang		
*	41	c	3	remove spin blocks			
*	42	c	1	remove jib lead blocks	store in canvas bag		
*	43	c	7	fasten traveler and mainsheet/bag mainsheet			
	44	c	5	tape all instrument/compass covers	green tape low residue		
*	45	c	5	empty bilge			
	46	c	5	tape prop/head shut/under locks for chafe	green tape		
	47	c	3	close seacocks after haul			
*	48	c	5	store all heavy sails and gear forward			
*	49	c	5	place something on V-berth boards so they stay put			
	50	c	40	life lines turnbuckles, remove. S 950 mil, P 2250 mil TB gap returns to legal tension on lowers	note each is labeled, use csar pins or cotter rings instead of pins when reinstalling can try removing bottom at turnbuckle then pull pins and pad stations upright then just pull pins on top life lines to save time.		
6.4	51	c	15	remove stations/pad/bag screws	put screws in nav station		
pre-tow	60	c	60	install trailer netting forward upright/under box/ahead of keel			
	61		20	check/fill tire pressure	trailer 77 lbs. if possible should do this days before. Truck from 55-60 unloaded to 75 if full bed payload		

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	62		20	hook up and check lights, test brakes	note trailer 4 chain fall, 10'11 high with 62 pounds in tires empty (actual meas was 10'10") tires now (8/05) at 75 for the following clearance and attitude measurements: from flat underside of hitch where exits receiver 15-11/16 w 5 link fall, 14-5/8 no WD bars, 14- 7/8 w 4 link fall. Truck hitch sits at 15"-5/8 with no weight. At front drivers tow hook at underside of chrome no weight 17"-15/16. truck tires around 60. Note front mast stand plus one piece 1/2" carpet inserted. trailer port side at front side forward jack 10-9/16", star 10.75" is 4-link ride height with stands as noted above yields mast clearance height of 13'-3/4" at butt plug. Appears that 1" hitch height change equals about 2" mast butt height change. with trailer side at front side of forward jack at 11-5/8 (= to 5 link fall height) Butt at 13'-2 1/4". added 1/2 plywood and ?1/2 rug? 10.05		
	63		10	tighten poppet set screws, tape trailer poppets/check box cover secure	use heavier duct tape on poppets		
	64	c	10	install foil covers	tie rudder cover to backstay tang		
	65		25	install tow straps	pad w carpet at gunnel and foam across deck... Twist to prevent vibration, mid strap handle on port side for best fit with fender. tape excess webbing.		
	66		25	install tow signage and flags	masthead flag, 2 flag rear straps, 2 flags mid straps, foam pad under truck sign extra bungees, bunge rear sign between aft poppets/tape.		
3.0	67	c	12	clean truck windows/mirrors			
					can rush complete tow prep in 37 minutes		
decimal hours							
			12.9	total hours			
			~6	total hours with crew help	note RI permits issued on effective date only but good for 5 days		
					while in transit keep as much essential racing gear on boat as possible		

