

## **BASIC (1<sup>st</sup> semester) Knowledge & Skills Outline for OPTI Sailing** (DSK 3-2011)

Note- tasks may be learned/practiced in a different order than listed here.

### **1- The Boat & It's Parts**

- a. Parts of the boat; their names & their functions
  - i. Basic division of systems: **HULL** and **RIG**
    - i. The HULL : buoyancy, stability
    - ii. Components of the HULL
      - a. Non-specific parts: Bow, stern, port, starboard, deck, cockpit
      - b. Structure: thwarts, gunwhale, stem, transom
      - c. Daggerboard: prevents boat from side-slipping
      - d. Rudder: steers boat
        - i. Tiller: controls the rudder
    - iii. Directions oriented to the HULL: Port, Starboard, Ahead, Astern
  - ii. The **RIG** propels the sailboat, and consists of these basic components: the Spars, the Running Rigging, the Sail
    - i. **Spars** ... mast, boom, sprit
      - a. Retainer line for mast
    - ii. **Running Rigging** is used to control the sails, and is adjusted routinely & often as part of sailing the boat... *optis don't have halyards*
      - a. Sheets: control the sails angle to the wind
      - b. Other running rigging include the boom vang, outhaul, snottter (*sprit halyard*)
      - c. Cleat(s): several different types

- *Land Lesson to review all the above; use written notes to reinforce learning*

### **2- Rigging the Boat (skill)**

- a. Determine all parts of the boat which must be rigged, put in proper order. Know terminology for applicable parts of the boat.
  - i. Rudder & Tiller on the transom
  - ii. Daggerboard & shock cord ready at trunk
  - iii. All gear in boat: life jackets, bailer, paddle
  - iv. Sails: bend on correctly
  - v. Outhaul attached, mainsheet rigged (check ratchet block) , sprit, boom vang
  - vi. Bouyancy Bags
  - vii. Drain plug(s) !!
- b. Launch boat & prepare to sail (*never drag or drop hulls, use safe lifting/carrying practices*); transit to dock area if applicable, secure properly at dock
- c. "Prepared to sail" means proper attire: shoes, wettable clothing, hat, sunscreen, and PFD

- *Coaches to carefully supervise above; minimize direct help but prevent damage to boats and also prevent students from departing on initial sail if they are obviously unready*

- **Checkpoint- Students should know basic terminology & functions for major parts of the boat** (*Mainsail, Main sheet, Rudder, Daggerboard, Tiller, Mast, Boom, bow, stern, port, starboard*)

- **Checkpoint- During 1 & 2 above, students must be introduced to small-boat safety gear & it's use**

### 3- Knots & Lines

- a. Types & characteristics of rope
  - i. strength & stretch, suitability for different tasks
- b. Types of knots & their purpose (*skill*)
  - i. Cleat hitch: dock lines, any Herreshoff or horn cleat
  - ii. Figure 8 or 'Stopper Knot'
  - iii. Bowline
  - iv. Clove Hitch

### 4- Orienting to Wind Direction

- a. Determining wind direction (*skill*)
- b. Angle of BOAT to wind
- c. Angle of SAIL to wind
- d. Putting 3b and 3c together, POINT OF SAIL (key concept)

- *Land Lesson to review 3 & 4 above. "Walk Thru" all points of sail and Tacking maneuvers. Practice in holding tiller & mainsheet, shifting sides; in the skipper position... holding jib sheet & shifting sides; in the crew position*
- **Checkpoint- Students should know basic ropes & knots, Points of Sail, Tacking, Safety Gear & the meaning of "Prepared To Sail";**

### 5- Evolutions: Departure from beach or dock

- a. Skipper & crew must be familiar with & always follow precautions, procedures, and safety rules, for any/all activity on docks or piers & on boats
- b. Situational Awareness: Boat is "parked" head-to-wind until ready (helps ID wind direction)
  - i. skipper notes course & point of sail for departure

### 6- Steering the boat

- a. Identifying course, & keeping steady on course
- b. Skipper positioned correctly in boat, good visibility
  - i. Use hiking stick / tiller extension
- c. Factors affecting the helm: weather helm, lee helm
- d. Dry practice in simulator to be followed by wet practice in Opti without rig, daggerboard down 1/2. Boat is pushed by instructor so that student can really steer. Then student practices switching sides while holding the tiller extension.
  - i. Emphasize correct position in sitting, correct method of holding tiller ext'n: push-pull!

- *Initial sailing exercises to consist of 'Baby Duck' practice in steering. To reduce demands made of students, sail trim need only be "good enough" to keep the boat moving.*

### 7- Stopping & Starting... Review & walk-thru on land, practice on water as 'Baby Ducks'

- a. On points of sail, beam reach & above
  - i. Luff entire sail(s), exhaust all momentum to a complete stop
- b. Practice use of helm at low or no speed thru water
- c. Observe drift of boat
- d. Trim sail & regain speed; 'full & bye'

### 8- Evolutions: Tacking... Review & walk-thru on land, practice on water as 'Baby Ducks'

- a. Situational Awareness: Identifying which tack boat is on
- b. Sequence- Begin Tack, Switch sides, Keep control (*skill*)
  - i. In Flying Juniors and similar, exchange hands on helm behind back
- c. Use proper command/response "Ready About" "Hard A-Lee"

**9- Point of Sail... Review & walk-thru on land, practice on water as 'Baby Ducks'**

- a. Must demonstrate all points of sail
  - i. Sailing on reaching & running points (*with wind free*)
    - i. Steady on course, adjust sails to wind
- b. Upwind Sailing
  - i. Consistent helmsmanship 'by the wind', no excessive luffing or falling off
  - ii. Tacking
  - iii. Proper sail trim for close-hauled
- c. Maneuvers between all points of sail: know when to trim or ease,
  - i. know when tacking & when not
  - ii. Gybing must be smooth, under control, and efficient (*no excessive turns*)

- **Checkpoint- Students must demonstrate the ability to control the boat on steady course on all Points of Sail, Tack reliably, Stop consistently (all unprompted); before gybing independently or to begin Docking drills.**

**10- Evolutions:** Landing / Docking ... learning this should be early in program, enabling students to sail more independently as soon as practical. The student must be able to recognize leeward from windward, so they must first know the points of sail before docking practice.

- a. Choose spot to land & approach route based on conditions; skipper communicates plan to crew
- b. Keep boat under control, decelerate appropriately while maintaining steerage & control
- c. Boat must fully stop, crew handles bow/dock line(s) appropriately
  - i. A "Satisfactory" docking: No vigorous fending off, no grabbing at dock, no assistance (verbal or otherwise) by coach
- d. Secure boat properly to dock, be ready for transit to beach or launch/retrieval area including tow methods or paddling

**11- Evolutions:** Getting Out of Irons (*skill*)

- a. Specify which tack & point of sail to come out on, bring boat to identified course 'full & bye'

**12- Evolutions:** Jibing / Gybing (*skill*)... Review & walk-thru on land, practice on water as 'Baby Ducks'

- a. Planned & deliberate only, no accidental gybes
  - i. Keep control of boat when dead down wind, understand how to avoid a broach or death-roll
- b. Control of helm & sails thru-out turn, onto new tack
- c. Switch sides, keep heeling under control

**13- Evolutions:** Capsize Recovery... Initial exercise in swimming pool

- a. Know & follow *DOs* and *DON'Ts*
  - i. *Primary DO: check each other's safety*
  - ii. *Primary DON'T: "never try swim to shore"*
- b. Coordinate crew & skipper, scoop method (*double handed*)

**14- Evolutions:** Overboard Recovery

- a. Appropriate maneuver to recovery based on conditions
- b. Practice at least 2 methods of getting person from water into boat (one may be using a loop of rope)
- c. –SAFETY- Proper rescue method- never go into the water to save a drowning person, use any alternative such as a rope or a pole

- **Checkpoint- All skills: Rope/Knots, Terminology, Points of Sail, Tacking, Gybing, Docking, Capsize Procedure, Safety Gear & Safe Boating Practices... students may begin advanced drills**

**15- Right-Of-Way Rules:** 2 imperatives, keeping lookout & all vessels obligated to avoid collision

- a. Concept of "Right-Of-Way" and privileged vs burdened vessels
- b. Between sailing vessels: opposite tacks, same tacks, ahead / astern
  - i. Intro to R-O-W between other vessels: sail / power, restricted ability
- c. Situational Awareness: Recognize R-O-W situations as they develop, in good time to avoid close calls

**16- Unrig Boat & Stow Gear** (after –all- sailing sessions)

- a. Douse & furl sails; when ashore clean/dry them, roll & stow properly
  - b. Retrieve boats & place correctly on cradles (*if applicable*)
  - c. Secure running rigging, remove & dry & stow all gear correctly
    - i. No lines dangling in bilge, no lines in grass
  - d. Bail or Drain hulls, clean boats, police the area
- Checkpoint- Right-Of-Way rules, Safety, Day's-End Procedures.

**17- Communications**

- a. On board communication
- b. Communication between vessels
  - i. Visual communications: flags, semaphore, blinker, -SAFETY- Flares
  - ii. Radio: intro to VHF protocol (when NOT to call "Mayday")

**18- Navigation**

- a. Basic Use of Compass, orienting to cardinal directions
- b. Chart-Reading, recognition of Aids To Navigation

**19- Seamanship**

- a. Jobs of Crew & Skipper
  - i. Crew- balance, jib trim, handling bow line at dock, lookout
  - ii. Skipper- planning the course (*ie observation & thinking ahead*), steering, mainsail trim
- b. Towing... limited to towing FJs or Optis and similar small craft
- c. Recognizing Local Weather
  - i. Thunderstorms
  - ii. Sea Breeze
  - iii. "Wind Tide"
- d. Other Safety Topics
  - i. Heat stroke
  - ii. Hypothermia