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# PROCEDURES FOR OBTAINING TAMUG KEELBOAT OPERATOR QUALIFICATION

QUALIFICATION DEFINED:

1. Demonstrate on-the-water proficiency and confidence sailing a sailboat by properly executing all the skills listed on the TAMUG Keelboat Operator Checklist; and
2. Pass TAMUG intro Keelboat course or equivalent; and
3. Be an approved TAMUG Powerboat operator; and
4. Annually renew qualification before sailing in a new academic year by successfully executing a check ride with the Waterfront Operations Director, or an individual as directed by Waterfront Operations Director on a sailboat.

## TAMUG Keelboat Operator Qualification Checklist

| **PREPARING TO SAIL** | **INSTRUCTOR SIGNATURE/DATE** |
|---|---|
| Recognize and forecast basic weather conditions | |
| Board boat properly | |
| Perform a pre-sail check for safety | |
| Properly identify basic parts of the boat, sails, battens, and rigging, etc | |
| Rig boat and sails properly | |
| Demonstrate proper use of sail controls:<br>Jib halyard, main halyard, mainsheet, jib sheet, boom vang, outhaul, backstay, traveler | |
| **BASIC KNOTS – tie the following knots and describe their uses** | |
| Figure eight | |
| Bowline | |
| Cleat hitch | |
| Sail lashing/Slip knot | |
| Clove hitch | |
| Two half hitches | |
| Sheet bend | |
| **NAVIGATION (PILOTING)** | |
| Identify navigation aids specific to the Galveston Harbor | |
| **NAVIGATION RULES (RULES OF THE ROAD)** | |
| Describe the rules of the road hierarchy | |
| Describe the rules pertaining to sailboats on opposite tacks | |

| | |
|---|---|
| Describe the rules pertaining to sailboats on same tack | |
| **LEAVING THE DOCK OR MOORING** | |
| Determine wind direction/strength and current direction/strength | |
| Boat, sail, and crew check prior to departure | |
| **SAIL TRIM** | |
| Show proficiency at trimming main and jib and utilizing telltales while: | |
| ➢ Close-hauled | |
| ➢ Close reach | |
| ➢ Beam reach | |
| ➢ Broad reach | |
| ➢ Dead downwind | |
| Demonstrate proper adjustments in light, medium, heavy air for: | |
| ➢ Outhaul | |
| ➢ Halyard tension | |
| ➢ Backstay | |
| ➢ Boom vang | |
| Demonstrate “sailing by the lee” and explain inherent dangers involved | |
| **STEERING, STOPPING, STARTING, AND TURNING THE BOAT** | |
| Steer boat in straight line and turning maneuvers using tiller extension | |
| Adjust speed of boat using sails | |
| Stop the boat using safety position and start boat sailing again | |
| Stop boat steering head to wind | |
| Get boat out of head to wind position when stopped | |
| Sail backwards | |
| Describe and properly demonstrate heaving-to | |
| Approach and stop at buoy as if you were going to moor it | |
| Describe and demonstrate turning boat using sails | |
| Describe and demonstrate turning boat using bodyweight | |
| **TACKING** | |
| Use the proper helm technique to tack from close-hauled to close-hauled | |
| Show proficiency trimming main from one tack to the other | |
| Show proficiency trimming jib from one tack to the other | |
| Properly use winches to assist sail trim | |
| Properly communicate to others before and while performing tacking maneuver | |
| **JIBING** | |

| | |
|---|---|
| Use the proper helm technique to jibe from a broad reach to a broad reach | |
| Show proficiency at trimming main from one jibe to the other | |
| Show proficiency at trimming jib from one jibe to the other | |
| Properly use winches to assist sail trim | |
| Properly communicate to others before and while performing jibing maneuver | |
| **SAILING A RECTANGULAR COURSE** | |
| Sail a rectangular course by incorporating proper steering, communication, crew coordination, sail trim, tacking and jibing. | |
| **OVERBOARD RECOVERY** | |
| Describe and perform quickstop maneuver to recover a simulated person in the water | |
| **ANCHROING AND REEFING** | |
| Describe and demonstrate proper anchoring technique | |
| Describe and demonstrate proper reefing techniques | |
| **RETURNING TO THE DOCK OR MOORING** | |
| Perform dock landing | |
| **SECURING THE BOAT** | |
| Properly secure boat to dock | |
| Unrig sails, roll sails, stow equipment, clean and secure boat | |

# KEELBOAT SAFETY OFFICER

### QUALIFICATIONS

a. A keelboat safety officer must be a qualified keelboat operator, and;
b. A faculty, staff or volunteer staff member

# KEELBOAT OPERATION PROCEDURES

### SAFETY

a. PFDs must be properly worn at all times while above decks
b. Closed-toe shoes must be worn at all times. No open-toed shoes or sandals.
c. Swimming off the boats or piers is strictly prohibited.
d. A minimum of two people are required to sail a sailboat: one qualified keelboat operator plus another person who is physically able to execute duties of the crew.
e. The maximum number of people on a boat is six plus Safety Officer.
f. Alcohol is strictly prohibited on all sailboats.
g. It is the keelboat operator's responsibility to be aware of weather forecasts for wind and hazardous weather.
h. When sailing in unprotected water, all personnel above decks must wear a personal EPIRB (Emergency Position Indicating Radio Beacon).
i. When sailing in unprotected water all personnel above decks must wear safety harness at night and during the day in rough weather, includes requirement to rig jack lines.

### CREW

a. Keelboat Operators are required for all sail vessels while underway in sight of campus (Galveston Grain Terminal to Pelican Island Bridge). A Keelboat Safety Officer is required onboard for all other areas. Keelboat Operators are designated by the Waterfront Operations Director to provide safety oversight and sailing instruction and coaching.
b. Trips of over 12 hours will require 2 safety officers. The Safety officer is the responsible party in charge of the watch.
c. When sailing in unprotected waters or on a sail of greater than 12hrs a Chief Safety Officer (CSO) must be onboard and in command. A CSO is a qualified safety officer who is a member of the faculty/ staff who has extensive experience sailing experience offshore in both cruising and racing conditions.
d. The Chief Safety Officer onboard is the designated responsible party in charge of safety and safe navigation
e. All crew members must complete the swim test and demonstrate treading water for 10 minutes.
f. All students serving as crew on an keelboat must have either passed Kine 199 Basic Keelboating course, be currently enrolled in that course or, have demonstrated an equivalent course or

experience to the KINE 199 and received a written validation of this requirement from the Waterfront Operations Director

## PASSENGERS

a. Any one sailing on the vessel who is not a TAMUG student, faculty or staff must fill out a liability waiver prior to departing http://www.tamug.edu/waterfrontops/Documents/WAIVER.pdf

## FLOAT PLAN

a. A float plan must be filed in accordance with TAMUG Vessel operations and safety procedures

http://forms.tamug.edu/waterfrontops/floatplan.htm

## TIME LIMIT:

a. Sailing hours are from 0900 to 2000 or sunset, whichever is earlier, except for yacht races or other special activities pre-approved by the Waterfront Director .

## WEATHER:

a. Sailing will be secured if sustained winds are over 25 knots or gusts are over 30 knots.

b. Sailing will be secured if there is a threat of hazardous weather, lightning and thunder, or unpredictable winds.

c. Safe operations will be location, vessel and crew specific. The keelboat operator, safety officer, or chief safety officer onboard will be ultimately responsible for the safety of the vessel and will determine the safest course of action when adverse conditions arise while underway.

d. Places to check the weather :

e. The National Weather Forecast Website at: **http://www.srh.noaa.gov/hgx/**

f. Galveston Bay Operational Forecast System (GBOFS) at: **http://tidesandcurrents.noaa.gov/ofs/gbofs/gbofs.html**

g. NOAA National Buoy Center web page at: www.ndbc.noaa.gov

## DISCIPLINARY ACTIONS:

a. Disciplinary Actions-any infractions of University Rules will be resolved following normal university procedures. Violation of these or any other Keelboat Sailing procedures will be referred to the Keelboat Sailing Coach for resolution.

## SAILING BOUNDARIES

a. TAMUG Keelboats shall not be sailed North of the Gulf Coast Intracoastal Waterway (GCIWW )on the Houston ship Channel or South of buoys 7 and 8 on the Houston Ship Channel or west of the Pelican Island Bridge, except for yacht races or other special activities pre-approved by the Waterfront Director .

## REPORTING MAINTENANCE DISCREPANCIES, DAMGE, OR INJURY:

b. All maintenance discrepancies shall be reported to Waterfront Operations immediately by submitting a Maintenance Discrepancy Report. Temporarily fixing an item is NOT authorized on board without permission from the Director or designee.

http://forms.tamug.edu/waterfrontops/MaintenanceDiscrepancyReportForm.htm

c. All incidents or injuries, no matter how minor, shall be reported using the Incident Report. Any injury requiring more than first aid must be reported to the Waterfront Operations Director Immediately

## BASIC REMINDERS UPON DEPARTURE:

a. Boom vang and the mainsheet both shall be uncleated and fully released prior to hoisting the mainsail.
b. Reefing line on mainsail shall always be rigged before departure.
c. Identify wind direction and departure plan with crew prior to leaving the dock.
d. Leave the dock with mainsail only.
e. All people on the boat shall sit inside cockpit while sailing. Individuals are not to sit up on the deck of boat. There will be no standing while sailing with the exception of when needed to raise or lower sails.
f. Mainsail shall be raised or lowered while the boat is pointing into the wind.

## STOWAGE PROCEDURES UPON RETURNING

g. Boats shall be returned to the proper slip number and shall be moored alternating bow-in or stern-in to reduce damage to the masts.
h. Boats shall be tied and centered in slip by five lines: two bow lines, two stern lines, and a spring line on the finger pier. Lines stay attached to the dock.
i. Roll the sails and store below on the side berths. Sails should be rolled on the boat and not on the dock.

2. To easily roll the mainsail, keep outhaul and tack attached to boom. Place the sail on one side of boom. Crew members stand on other side of boom. Fold the head of the sail down to the second batten. Roll from the second batten down to the foot of sail. Remove from boom. Place sail on berth below. Please do not fold sail in half as this breaks battens.

3. To efficiently roll the jib, after removing from forestay, bring jib back to cockpit. Fold head of jib down to approximately the second seam of sail. Roll toward foot of sail. Jib sheets stay attached to the sail and are coiled and secured independently. Please do not wrap jib sheets around sail.

a. Uncleat the boom vang. Release backstay tension by still cleat the line.
b. Traveler car should be positioned to the end of the traveler bar that is farthest away from the finger pier and cleated on both sides.
c. Mainsheet needs to be cleated at both cockpit and stern cam cleats with residual line in middle of boat. Provide enough mainsheet tension to prohibit boom from swinging. Mainsheet should be properly coiled and hung from the middle of boom with clove hitch.
d. Tiller extension should be secured on top of tiller with loop of shock cord provided.

e. Tiller should be centered in boat and tightly lashed (three loops) with shock cord provided. Plastic hooks attach to the cleat keeper for backstay on both sides amidships.

f. Main halyard shall be attached to the shackle on the end of the boom (not to the outhaul). The boom should be parallel to the deck.

g. Mainsail tack pin placed onto tack fitting.

h. Mainsail slide pin placed into hole in mast groove.

i. Jib halyard led to starboard pulpit with slack taken out.

j. Anchors and anchor line properly stowed in bow locker ready to deploy. Bitter end attached to boat.

k. All rope clutches in down and locked position, slack taken out – lines coiled and hung on winch.

l. Winch handle, sponge, bucket, whistle, tow line, chartlet and paddle properly stowed down below. All trash removed.

m. All PFDs (minimum of six) should be hung up on lines provided at top of compression post. PFDs should never be stored on floorboards or seats.

n. Pump any water out of bilge and visually inspect that it is dry.

4. REPORTING MAINTENANCE DISCREPANCIES, DAMAGE, OR INJURY

a. All material discrepancies shall be reported to the Cutter Shed watch immediately by submitting a Sail Craft Discrepancy Report. Temporarily fixing an item is NOT authorized on board sailboats without permission from the BST director.

b. All incidents or injuries, no matter how minor, shall be reported using the Incident Report Form.

# SAILING CHECKLIST/TRACKING SHEET

| | |
|---|---|
| Boat Name: | |
| Date: | |
| Time Out: | |
| Time In: | |
| Safety Officer Name | |
| Safety Officer Information: | Phone:<br><br>Email: |
| Emergency Contact: | Name:<br>Phone: |
| Total # people on boat: | |
| Names of crewmember(s): | |

UPON SAILBOAT CHECKOUT: (to be completed by Safety Officer)

| | |
|---|---|
| Safety Officer qualification verified | Yes/No Initial: |
| Liability Form completed (if req'd) | Yes/No Initial: |
| Weather and wind forecast reviewed | Yes/No Initial: |
| Navigation brief conducted | Yes/No Initial: |
| Sailing rules and procedures reviewed | Yes/No Initial: |
| Material condition of boat is approved for sailing | Yes/No Initial: |

UPON RETURN OF BOAT TO DOCK: (to be completed by Safety Officer)

| | |
|---|---|
| Boat in proper slip with stern or bow in as required | Yes/No Initial: |
| Spring lines attached properly so boat does not hit pier | Yes/No Initial: |
| Stern and bow lines attached so boat is centered in slip | Yes/No Initial: |
| Boom parallel to water. Mainsheet cleated | Yes/No Initial: |
| Mainsheet coiled and hanging from boom | Yes/No Initial: |
| Halyards coiled neatly over winches (not tossed below) | Yes/No Initial: |
| Jib & Spinnaker halyards attached on pulpit | Yes/No Initial: |
| Main halyard attached to shackle at end of boom | Yes/No Initial: |
| Sails rolled neatly and stowed below on berths (not folded) | Yes/No Initial: |
| Discrepancies reported | Yes/No Initial: |
| Bilge pumped dry | Yes/No Initial: |
| PFDs stowed | Yes/No Initial: |

Signed:_____ Keelboat Operator

# KEELBOAT SAILING TECHNIQUES

## DEPARTING and RETURNING To the Dock

All TAMUG Keelboats will be motored away and to the dock and operated under the powerboat guidelines.

## RAISING OR LOWERING THE MAINSAIL PROPERLY

It is important to note that the mainsail will generally go up or come down smoothly when if the maneuver takes place while the boat is pointed directly into the wind. Once wind catches the sail ever so slightly, the pressure will cause the mast groove sail slugs to twist and then bind. Any further adjustment will be difficult and cause problems. Keep the boat pointed into the wind at all times while raising and lowering the mainsail. When preparing to lower the mainsail, it is important to make sure the halyard is clear and free to run.

## LOWERING THE JIB

Here are the steps to properly lowering the jib sail:

1) Check to make sure the jib halyard is clear and able to run free.

2) While sailing, pull the leeward jib sheet in snug so foot of sail is inside side rail. Place in self tailer cleat.

3) Immediately release jib halyard (jib will generally come down about halfway).

4) Have one person move to the bow on the windward side of boat. They should hold something secure such as mast, shroud or forestay.

5) Quickly pull down remaining jib sail and safely walk back to cockpit on windward side of boat. There is no need to pull the jib completely down and bundle jib together on deck. If the jib sheet remains cleated, it will not go into the water.

6) Please note that during all this, it is important for the skipper to maintain a steady and smooth course so crew who ventures onto the bow stays on board the boat.

7) Safety is crucial thus it is important to minimize the amount of time a person is out of the cockpit. If wind or wave conditions make it unsafe for a person to walk on the bow area either lower jib part way on it's own force or lower the jib when inside the basin.

8) Do not have someone go to the bow while on a run or broad reach.

## TACKING THE JIB

Before tacking, ensure jib sheets are clear in the cockpit, your intended course is clear of other boats/hazards, and all crew members are in safe zones for the maneuver. Communication is key to all steps. The assumption is that you will tacking from a close hauled course to a close hauled course. If you

are intending to tack from any other point of sail, it becomes two separate evolutions first being to head up to a close hauled course and then secondly to tack.

These are the general steps to tacking the jib on a SAIL BOAT:

1) The skipper communicates “prepare to tack” and crew members take their positions

2) The jib trimmer(s) places sufficient turns of the new jib sheet on the new winch and takes slack out of the lazy sheet. The jib trimmer(s) also uncleats the working jib sheet from the self tailer, removes excess turns on the working winch, and holds same in preparation to tack. The jib crew then reports back, “ready to tack”.

3) Skipper prepares for his duties with the tiller and mainsheet and confirms by communicating also “Ready to tack”.

4) Skipper communicates “tacking” as he begins to turn the boat into the wind

5) When the working jib begins to luff, the jib trimmer(s) “breaks” the jib by releasing working jib sheet completely off the winch.

6) Once the jib has crossed centerline of the boat, but not sooner, the jib trimmer(s) pull in on the new jib sheet that has been previously wrapped around the winch as hard and fast as possible pulling the jib in before too much force is in the sail.

7) Jib trimmer(s), depending upon wind strength, can either place another wrap or two around the winch and place into the self tailer cleat or place jib sheet directly into the self tailer.

8) If additional tension is needed on the jib sheet, the trimmer should properly place the winch handle in the winch and grind the sail in further.

9) Once the jib sheet is trimmed properly, the winch handle should be removed and placed in the winch handle pocket.

## GYBING

A “controlled gybe” is the standard procedure while recreationally sailing a SAIL BOAT. Before gybing, ensure jib sheets and mainsheet are clear in the cockpit, your intended course is clear of other boats/hazards, and all crew members are in safe zones for the maneuver. Communication is key to all steps. The assumption is that you will gybing from a broad reach course to a broad reach course. If you are intending to gybe from any other point of sail higher into the wind, it becomes two separate evolutions first being to fall off to a broad reach course and then secondly to gybe.

These are the general steps to gybing on a SAIL BOAT:

1) The skipper communicates “prepare to gybe” and crew members take their positions

2) The jib trimmer(s) places sufficient turns of the new jib sheet on the new winch and pulls slack out of this lazy sheet. The jib trimmer(s) also uncleats the working jib sheet from the self tailer, removes excess turns on the working winch, and holds same in preparation to gybe. The jib crew then reports back, "ready to gybe".

3) Skipper prepares for his duties with the tiller and mainsheet and confirms by communicating also "ready to gybe".

4) Skipper or separate mainsheet trimmer begins to pull in the mainsheet and the goal is to have it center lined as the stern crosses the wind.

5) At the same time, the skipper begins to turn the boat more downwind and communicates "starting to gybe".

6) As the stern of the boat turns through the wind, the skipper communicates "gybing" and moves to the other side of the boat.

7) As the working jib collapses, the jib trimmer(s) "breaks" the jib by releasing working jib sheet completely off the winch.

8) Once the jib has crossed centerline of the boat, but not sooner, the jib trimmer(s) pull in on the new jib sheet that has been previously wrapped around the winch pulling the jib in approximately half way and placing it in the self tailer cleat. Additional wraps may be placed on the winch if needed. If additional tension is needed on the jib sheet, the trimmer can properly place the winch handle in the winch and grind the sail in further. Once the jib sheet is trimmed properly, the winch handle should be removed and placed back in the winch handle pocket.

9) As the boom crosses centerline during the gybe, the mainsheet needs to be released quickly so the boom goes all the way out to the proper sail trim. Please note that the mainsheet will go out faster if the mainsheet block "ratchet" has been previously turned "off". Also note that if the wind is moderate to heavy, the mainsheet may go out very quickly so be careful not to get "rope burn" by letting it run through your hands.

10) Once on the new proper courses, adjust sails accordingly and continue sailing.

## CREW OVER BOARD WHILE UNDER SAIL

All sailors must know how to react quickly to a crew overboard situation. On TAMUG sail vessels we practice the „Quick Stop Recovery" method.

These are the general steps for crew overboard recovery on a SAIL BOAT:

1) The person sighting the crew overboard should call out "Crew overboard, port (starboard) side" and point to the victim until relieved

2) Toss a floatable cushion or extra PFD to the victim

3) If not already on a close-hauled course, begin to turn the boat up towards the wind while pulling jib sheet and mainsheet into close-hauled trim

4) Tack the boat but do not release the jib sheet or the mainsheet. You are tacking into a “heave to position‟ and then falling away from the wind

5) Keep the mainsheet and jib sheet trimmed in as you slowly continue to turn the boat downwind in a circular track keeping the crew overboard slightly aft of the beam of the boat

6) Once dead down wind, gybe the boat and immediately release the mainsheet and jib sheet allowing both to run completely free.

7) Steer toward the crew overboard in somewhat of a safety position (preferably not head to wind)

8) Rescue the crew overboard preferably on the boat’s leeward side