

Advanced Piloting On-the-Water Training

On-The-Water Teaching Aid Guide

The purpose of this guide is to outline for course instructors and assistants their preparation to help students experience various aspects of the Advanced Piloting curricula on the water.

Instructors may choose those elements from this guide that apply to their situation and incorporate them in their plan. On the water activities normally will not last longer than about four hours. It may be necessary for them to be conducted at times not closely associated with a classroom course. The waters on which this is conducted and the type of boat available will have a significant effect on the elements selected for use and the method of instruction. For example, in inland areas navigational charts from the National Oceanic and Atmospheric Administration or the U.S. Army Corps of Engineers may not be available. Local maps may be useful in such cases. If navaids are not available it may be possible to make effective use of buildings or other objects shown on maps. The instructor should encourage students to be involved as they feel comfortable and can do it safely. While underway, other situations may arise that the student will experience beyond those tabulated in this guide. The instructor should acknowledge those unique opportunities with the best responses possible.

This is an optional part of the Advanced Piloting Course. Participation will not affect the credit given for the course. It does not provide any certification or credential to the student. Separately, the USPS Boat Operator Certification program provides several elements for certification of skills via hands-on training and completion documentation is provided from that program.

This time together with the students on the vessel provides a good environment for sharing the “Boating is FUN... We’ll show YOU how” part of USPS. Questions may be answered about the value of membership in USPS and the local squadron. Other courses and seminars should be shared as a way to show how students can gain additional boating knowledge and skill even if they do not become members.

General considerations:

Weather:

- The activity should be in good weather with moderate seas.
- Winds and waves not to exceed the capabilities of the boat and crew.
- Review wind, tide, and current conditions affecting boat operation.
- This activity should not include “heavy weather sailing,” “handling under adverse conditions” or similar activities.

Navigation Limits:

- Within range of a cell phone (10 miles) or VHF shore station—not further than 20 miles offshore.
- Limited to daylight hours
- Nighttime activity needs additional justification and approval.

Vessel:

- The vessel should have a current VSC sticker
- The vessel must be insured. USPS insurance becomes primary when the first participant comes on board for the activity, not while moving the boat to the activity location.
- The vessel should be in good condition with no significant problems (all vessels have problems, but not significant ones).
- The vessel should have sufficient fuel on board for the activity.
- The vessel should have a VHF radio, cell phone, or other appropriate communication device.
- Conduct engine room/bilge visual and sniff check, and start blower before starting engines.
- Allow engine to warm up to operating temperature as precaution to heating problems.

Knowledge and Expectations:

- For larger more complicated vessels the boat owners should be aboard even if not participating in the subject Teaching Aid Activity. (Not necessary for runabouts).
- The squadron teaching aid activity should be documented, preferably in squadron executive committee meeting minutes or in e-mails saved until no longer needed.
- It is Mandatory that every person wear a PFD when entering the dock area and while on board the vessel unless they remain below deck. (If the PFD is kept on at all times there is not a concern about coming up on deck without it).
- Participants should be told what to bring and what not to bring.
- Appropriate clothing should be recommended to participants.
- USPS float plan issued and check list on float plan completed. (It is a tri-fold in the USPS materials catalog under [Public Boating Courses, Miscellaneous](#), #09-66-111-N/C or may be downloaded at http://www.usps.org/o_stuff/fp_form.html).

- Check for any medical condition of participants

There must be a safety briefing about the boat. Consider the following items as appropriate and relevant to the activity:

- Weather check
- Thru-hulls
- Battery switches/electrical panel
- Engine controls
- Head usage
- Trash disposal
- Location of First Aid kit
- Warning about sitting down or holding on during maneuvers
- Location of throwable devices for MOB
- Location of VHF/DSC radio and usage
- Location of flares and other visual distress signals
- Location of fire extinguishers and extinguisher ports to engine compartment (if applicable)
- Anything relevant about the particular vessel being used

REMINDER: All OTW programs must be pre-approved by the Squadron or District to comply with insurance coverage requirements.

This Advanced Piloting On-The-Water Teaching Aid Guide has been approved as required and no additional approvals are necessary unless modifications are made to intent and contents.

Feedback comments should be directed to the [Inland/Coastal Navigation Committee Chair](#) to assist in making this Teaching Aid Guide the best possible.

The following items should be considered in the plan for Advanced Piloting OTW Training as appropriate:

ACTIVITY	TOPIC	DETAIL	INSTRUCTOR NOTES	COURSE REF.
Ashore or prior to getting underway	Plan the voyage	Review chart of area. Note nav aids and prominent objects.	Identify areas to be avoided.	Ch. 1
	Plot waypoints and enter into GPS/electronics	May be virtual and/or visible objects on water or land.	Two or more WPTs for route	Ch. 1
			Consider additional navigation WPTS, including dock.	Ch. 1
			Determine & plot magnetic courses & leg durations.	Ch. 1
			Consider establishing hazard WPTS.	Ch. 4
	Prequalify route	Determine tide predictions for time & location.	Check clearance under keel.	Ch. 7
			Check overhead clearance.	Ch. 7
		Determine tidal current predictions for time & location.	Ascertain effect on route.	Ch. 8
		Determine & plot crosstrack error limits.	Enter crosstrack error limit in GPS/electronics.	Ch. 4
		Determine & plot danger circles.	Plot & enter in GPS/electronics.	Ch. 4
		Determine & plot danger bearings	Plot & enter in GPS/electronics.	Ch. 4

ACTIVITY	TOPIC	DETAIL	INSTRUCTOR NOTES	COURSE REF.
Underway	Carry out the planned voyage	Navigate the planned route.	Compare compass courses and bearings with GPS directions to waypoints. Compare nav aids with chart information.	Ch. 1
	Simulate failure of all electronics at some time while navigating with GPS	Revert to DR Navigation. Take bearings. Plot and label bearings, Fix and new DR track.	Restore electronics after appropriate time	Ch. 1
	Fixes	Plot & label running fix	Hand bearing compass is helpful. Compare RFIX with GPS	Ch. 3
		Interpret radar fixes	If radar is available	Ch. 3
	Seaman's Eye	Confirm position by use of Seaman's Eye	At any convenient time	Ch. 3
	Avoidance Techniques	Utilize danger bearings	Visible and/or GPS	Ch. 4
		Utilize Crosstrack error	Previously established in GPS	Ch. 4
		Utilize danger circles	GPS or radar	Ch. 4
	Positioning Techniques	Plot bearing & distance to waypoint	GPS	Ch. 5
		Plot position using two electronic distances	Radar and/or GPS	Ch. 5
		Plot position using two electronic bearings	Radar and/or GPS	Ch. 5
		Plot GPS position using grid line crossing	GPS	Ch. 5
Ashore or after completing voyage	Review experience on the water	Discuss lessons learned.	What went well. Improvement opportunities.	