

Polynesian Voyaging Society
Crew, Instructor, and Leadership Training Program

Check Sheet—Level 3: Advanced

(Revised: Sept. 25, 1998; Will be revised further)

NAME OF TRAINING CANDIDATE (NON-TRANSFERRABLE):

Purpose of Training, Level 3: To train individuals to take a leadership role in all aspects of safety, planning, and government protocol associated with voyaging. The goal is to get participants to plan and conduct sails and voyages.

Prerequisite:

- successful completion of Level 2
- at least ____ coastal sail, ____ interisland voyages, and ____ long voyages
- at least ____ workshops or presentations on some aspect of voyaging or navigation
- Recommended: Obtain Captain's License from U.S. Coast Guard

Instructions: As you complete each item, initial and date it to attest that you have completed the step and understand it. In level 3, you will have to work more independently than at earlier levels. Your supervisor is to check you out when an item specifies a supervisor checkout (boxes).

At level 3, you will complete reading *The Complete Sailor: Learning the Art of Sailing* by David Seidman. Readings from this book are assigned by the initials "CS" and a page number or numbers (e.g., "CS / 15"). Also, obtain a copy of "Hawaii Boating Basics: A Guide to Responsible Boating" (free from the Department of Land and Natural Resources). Other readings, provided in your Training Program Reader / Level 3, are indicated by title followed by the initials "TPR": for example, "Insuring a Safe Crew and Canoe" / TPR.

When you do the readings, have a dictionary on hand to look up words you do not understand. Keep a written list of these words (and symbols) in your notebook and write definitions for them. If a word or symbol is not clear after you have looked it up in a dictionary or glossary, put a star next to the word and make it a point to ask a supervisor to define or explain the word to you. *Do not skip over words* that you do not understand, because *not knowing what words refer to will hinder your mastery of the voyaging process.*

You will continue to use the same three-ring binder or folder from Levels 1 and 2 to hold your letters, notes, vocabulary lists, diagrams, etc.

Materials:

- Hawaii Boating Basics: A Guide to Responsible Boating (free from the Division of Boating and Ocean Recreation, Department of Land and National Resources)
- Seidman, David. *The Complete Sailor: Learning the Art of Sailing*. Camden, Maine: International Marine, 1994
- Training Program Reader (TPR) / Level 3
- Three-ring binder for copies of your letters, vocabulary lists, notes and diagrams on sailing procedures you participate in (e.g. raising and lowering sails, tacking, anchoring), and other required writing.

References for Sail Planning and Designing a Course Strategy

Astronomical Data

- Nautical Almanac (Arcata, CA: Paradise Cay Publications and Wichita: Celestaire, Inc.)
- The Observer's Handbook (Roy Bishop, Ed. The Royal Astronomical Society of Canada)

- Voyager II (Software for the MacIntosh from Carina Software)

Geography of the Pacific

- Landfalls in Paradise (Earl Hinz, Honolulu: UH Press)
- Sailing Directions (Enroute) for the Pacific Islands (Pub. 126, Defense Mapping Agency, Hydrographic / Topographic Center)

1. Risk Management and Emergency Procedures

Initial the first blank and date the second blank for each step after you have completed it.

1. _____ _____ Read “The Safety Risk Management Process” / TPR.
2. _____ _____ Write a letter to PVS explaining what risk management procedures, policies, or programs you would adopt to prevent another incident like the one in 1978.
3. _____ _____ Understand right of way and how to avoid collisions at sea. (Read “Rules of the Road” / CS / 118-125.)
4. _____ _____ Understand how to signal for help at sea and able to use emergency signaling devices. (Read “Emergencies” / CS / 154-163.)
5. _____ _____ Understand the relationship between the escort boat and the canoe and able to explain the four functions of escort boat (Towing, Carrying Back-up Equipment and Supplies, Safety Net in Person Overboard Emergency, Evacuation of Crew Members in an Emergency).

Supervisor Check—the following blanks must be initialed and dated by a supervisor to certify that you:
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_____ _____ turned in a letter explaining what risk management procedures, policies, or programs you would adopt to prevent another incident like the one in 1978.
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2. Weather II

Initial the first blank and date the second blank for each step after you have completed it.

1. _____ _____ Understand that the global circulation of air and winds is fueled by the energy of the sun.
2. _____ _____ Understand Hadley Cells.
3. _____ _____ Able to define and describe high and low pressure systems and how they form in the atmosphere.
4. _____ _____ Identify areas of high and low pressure on the globe.
5. _____ _____ Understand the Coriolis Effect.
6. _____ _____ Understand the circulation of air around high and low pressure systems in the Northern and Southern Hemisphere.
7. _____ _____ Understand the movement of high and low pressure systems in the Northern and Southern Pacific Ocean and their seasonal variations.
8. _____ _____ Understand temperature inversion and how it affects the winds in Hawai‘i and the Pacific.
9. _____ _____ Understand wind shifts associated with approaching cold fronts that accompany low pressure cells.
10. _____ _____ Understand the formation of doldrum conditions in the Intertropical Convergence Zone.
11. _____ _____ Understand El Niño and La Niña conditions and how they affect weather.
12. _____ _____ Understand how to predict weather by observing ocean swells and horizon clouds.
13. _____ _____ Discuss weather phenomena regularly with knowledgeable crew members or meteorologists to test one’s knowledge of weather conditions and changes in the weather.
14. _____ _____

3. Government Protocols

Initial the first blank and date the second blank for each step after you have completed it.

1. _____ Know about boating registration and documents. (Read “Hawaii Boating Basics: A Guide to Responsible Boating.”)
2. _____ Know about regulations and restrictions for docking, anchoring, or mooring vessels, including mooring fees.
3. _____ Know procedures and numbers to call for permission to enter, dock at, and leave harbors. (See “Procedures for Mooring / Docking / Anchoring Canoes on O‘ahu” / TPR.)
4. _____ Know how to apply for permit needed to conduct ocean activities (Application for Approval of Marine / Ocean Waters Event; apply to the Division of Boating and Ocean Recreation, Department of Land and National Resources, preferably 30 days in advance.). (See “Procedures for Mooring / Docking / Anchoring Canoes on O‘ahu” / TPR.)
5. _____ In case of a boating accident, know how to file a boating accident report form with the Division of Boating and Ocean Recreation, Department of Land and National Resources. (Read “Hawaii Boating Basics: A Guide to Responsible Boating.”)
6. _____ Know about passports and other documents and requirements for international travel.

4. Leadership Training—Planning and Conducting Sails or Voyages

Planning and Conducting a Sail

Initial the first blank and date the second blank for each step after you have completed it.

1. _____ Have a clear idea of why you were going to your destination.
2. _____ Check out the nautical charts of your destination, noting the layout and depth of the water in or around any harbors, moorings, or anchorages you planned to use. (See “Maps of Harbors, Launch Ramps, Piers, and Anchorages in Hawai‘i” / TPR.)
3. _____ Research seasonal weather patterns, average wind and weather conditions, and tide and ocean currents along the route you plan to sail.
4. _____ Given the windward ability and speed of your vessel, design a course strategy and sail plan to get to where you wanted to go in the time frame you had available. (Read “Basics of Sail Planning” / TPR.)
5. _____ Write up a sail plan, applying the principles of risk management from section 1. “Risk Management and Emergency Procedures” and placing the highest priority on the safety of your crew and vessel. (Read “Sail Planning—Long Voyages” / TPR.)
6. _____ Select a crew.
7. _____ Orient and/or train the crew and other participants, as needed.
8. _____ Communicate effectively with crew and other participant about what gear and provisions to bring on a sail, rules and policies of PVS, sail plan, crew call, etc.
9. _____ If the sail was educational in nature (with students on board), create a lesson plan or plans for the sail.
10. _____ Take responsibility for all logistics, including escort boat, waivers, implementation of all PVS policies and procedures, equipment, provisions, loading, transportation, harbors, permits, etc. (See “Checklists for Voyaging” / TPR)
11. _____ Monitor the weather in advance, both through direct observation and reports from the National Weather Service; make a decision on whether the weather would allow you to go.
12. _____ Monitor the ocean swells in advance, both through direct observation and reports from the National Weather Service; make a decision on whether the harbors, anchorages or moorings selected would be safe, given the height and direction of the prevailing and forecasted swell(s).
13. _____ Check the tides in advance to know what the depth of water will be around any selected anchorages or moorings.
14. _____ If you decide to go, prepare the canoe to sail and go through the checklists of the captain and watch captains. (See “Checklists for Voyaging” / TPR)

- _____ Safely and successfully supervise all aspects of sailing from leaving the dock, anchorage, or mooring to a safe return.

Long Distance Voyages—Navigation Knowledge and Skills

- _____ Research what celestial bodies would be available for navigation (given time of year and route of the voyage).
- _____ Research what celestial bodies would be available for determining latitude (given time of year and route of the voyage).
- _____ Check the phases of the moon to insure that there was a bright moon or a dark moon, as needed for navigation, during certain periods and legs of your voyage.
- _____ Research the lay of islands and designated a target area for your navigation
- _____ Research the geography of all islands along the route and in your target area (size and prominent land features; positions and distances from other islands; coastlines and reefs, depth of water in harbors and anchorages).
- _____ Research the populations of land-based sea-birds and their behavior and nesting cycles for the island(s) you plan to find.
- _____ Design a reference course to your target area, with corrections for currents. (Read “Correcting for Currents” / CS / 199; “Sail Planning—Long Voyages” / TPR.)
- _____ Able to calculate your course made good daily, taking into account direction, speed, and time (dead reckoning).
- _____ Keep track of deviations from the reference course in terms of miles and houses.
- _____ Successfully navigate your course.
- _____ Find the island you were looking for.

Supervisor Check—the following blanks must be initialed and dated by a supervisor to certify that you:

_____ have the knowledge and ability to take command of a sail, safely and successfully, from beginning to end.

_____ have the maturity, character, judgment, and communication skills to provide leadership in PVS education and voyaging programs.

You must plan and conduct safely and successfully at least _____ sails and at least _____ long voyage(s) to be certified at the advanced level. List your sails and voyages on a separate sheet of paper in the following format and attach your sail plan for each sail or voyage you have conducted.

Sail Log

Date	Sailing Route	Duration (In Days or Hours)
1.		
2.		
3.		

5. Serving as a Teacher

To complete level 3, you must conduct at least _____ workshops or presentations on some aspect of voyaging or navigation. List your workshops or presentations on a separate sheet of paper in the following format:

Workshop Log

Date / Place / Time / Audience	Topic of Workshop
1.	

- 2.
- 3.

6. Recommended Readings / Level III

Initial the first blank and date the second blank for each step after you have completed it.

PVS History

1. _____ Finney, Ben. Hōkūle‘a: The Way to Tahiti (The story of the first Voyage to Tahiti in 1976; New York: Dodds, Meads, 1979).
2. _____ Finney, Ben. Voyage of Rediscovery: A Cultural Odyssey Through Polynesia (The story of the Voyage of Rediscovery, 1985-1987; Berkeley: University of California, 1994).
3. _____ Kyselka, Will. An Ocean in Mind (The story of Mau, Nainoa, and the 1980 Voyage to Tahiti; Honolulu: University of Hawaii Press, 1987).

Navigation—Techniques and Traditions

1. _____ Burch, David. Emergency Navigation. (Camden Maine: International Marine, 1986.)
2. _____ Gladwin, Thomas. East Is a Big Bird: Navigation and Logic on Puluwat Atoll (On one tradition of Micronesian navigation; Cambridge, MA: Harvard University Press, 1970).
3. _____ Lewis, David We, the Navigators: The Ancient Art of Landfinding in the Pacific (Honolulu: UH Press, revised edition, 1996?)
4. _____ University of Pennsylvania. Traditional Navigation in the Western Pacific. 1997. <http://www.museum.upenn.edu/navigation>.

Canoes

1. _____ Haddon, A.C. and James Hornell. Canoes of Oceania (Honolulu: Bishop Museum 1975).
2. _____ Holmes, Tommy. The Hawaiian Canoe (Honolulu: Mutual Publishing, revised edition, 199-).
3. _____ Kāne, Herb Kawainui. “Evolution of the Hawaiian Canoe” (on the PVS Web Site at <http://leahi.kcc.hawaii.edu/org/pvs>, 1998).
4. _____ Koakanu. “Hawaiian Canoe Building Tradition” (on the PVS Web Site at <http://leahi.kcc.hawaii.edu/org/pvs>, 1998).

Voyaging Traditions and Research in Polynesian Migrations

1. _____ Buck, Peter. Vikings of the Pacific (Migrations and Cultures of Polynesia; Chicago: University of Chicago Press, 1959; originally published as Vikings of the Sunrise in 1938).
2. _____ Jennings, Jesse D., ed. The Prehistory of Polynesia (Cambridge, MA: Harvard UP, 1979).
3. _____ Kāne, Herb Kawainui. The Voyagers (Bellevue, WA: Whalesong, 1991).
4. _____ Kirch, Patrick Vinton. The Lapita People: Ancestors of the Oceanic World Voyagers (Cambridge, MA: Blackwell, 1997).
5. _____ Nakuina, Moses K. The Wind Gourd of La‘amaomao (The story of Hawaiian navigators Pāka‘a and Kū-a-Pāka‘a, with wind chants of all the islands; Honolulu: Kalamakū Press, 2nd edition 1992).
6. _____ Henry, Teuira and others. Voyaging Chiefs of Hawai‘i (Pan-Polynesian voyaging traditions; Honolulu: Kalamakū Press, 1991).

Oceanography

1. _____ Van Dorn, William G. Oceanography and Seamanship by (Centreville, Maryland: Cornell Maritime Press, second edition 1993).

2. _____ Recommended: a university course in oceanography, e.g. Oceanography 201 in the UH system.

Weather

1. _____ Crawford, William P. Mariner's Weather (New York: Norton 1992) or a similar book to gain a theoretical understanding about weather at sea.
2. _____ Shroeder, Tom. "Climate Controls" in Prevailing Trade Winds: Weather and Climate in Hawai'i. Sanderson, Marie, ed. (Honolulu: UH Press, 1993).
3. _____ Recommended: a university course in meteorology; e.g. Meteorology 101 in the UH system.

Certification

Congratulations! You have just completed Level 3: Advanced of the Polynesian Voyaging Society Training Program:

Signatures (Print your name in parentheses after the signature if your signature is illegible.)

Supervisor

Date

PVS Voyaging Coordinator

Date

PVS Executive Director

Date

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Training Program Reader (TPR) / Level 3: Advanced

Risk Management

1. The Safety Risk Management Process

Sail Planning and Course Strategy

1. Basics of Sail Planning
2. Checklist for Educational Sails on Eala
3. Procedures for Mooring / Docking / Anchoring Canoes on O‘ahu
4. Maps of Harbors, Launch Ramps, Piers, and Anchorages in Hawai‘i
5. Sail Planning—Long Voyages
6. Voyaging Checklists
 - Captain’s Checklists
 - Watch Captain’s Checklists
 - Safety Equipment List
 - Personal Gear List