

Seaplane Pilot

Training for the Seaplane Pilot Certificate and Beyond



Seaplane Pilot: Training for the Seaplane Pilot Certificate and Beyond by Dale DeRemer

Aviation Supplies & Academics, Inc. 7005 132nd Place SE Newcastle, Washington 98059 U.S.A. Website: www.asa2fly.com Email: asa@asa2fly.com

© 2003 Dale DeRemer

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means, without the prior written permission of the copyright holder. While every precaution has been taken in the preparation of this book, the publisher and Dale DeRemer assume no responsibility for damages resulting from the use of the information contained herein, and in no case will the author or publisher be liable for any direct, indirect, secondary, or consequential damages. These terms shall not be construed to limit or exclude any other protections the author or publisher may have. The purpose of this book is to bring the reader closer to commonly used seaplane operating practices. **Do not use this book as a substitute for skilled professional flight instruction**. Rather, it is intended to make you aware of techniques and describe how they are accomplished so that you can ask your flight instructor to help you develop skill with each.

None of the material in this manual supersedes any operational documents or procedures issued by the Federal Aviation Administration, aircraft and avionics manufacturers, flight schools, or the operators of aircraft.

Published by Aviation Supplies & Academics, Inc., 2003

Printed in the United States of America

2013 2012 2011 2010 2009 9 8 7 6 5 4 3 2

ASA-SPT

ISBN 1-56027-502-2 978-1-56027-502-2

Cover photos: Bill McCarrel and Dale DeRemer

Acknowledgements and credits for Photography: Acknowledgements and photography credits: Thanks to the many contributors of seaplane photography to this book. Many of the photos are by Dale DeRemer—if a photo credit does not appear adjacent to a photo it is by the author; these are on pages ix, xiii, xv, xvi, 2, 5, 6, 12, 17, 19, 22, 23, 35, 38, 42, 44, 45, 47, 52, 54, 56, 58, 73, 77, 92, 101, 198, 205, 206, 208, 209, 210, 211, 213, 215, 219, 220, 223, 228, 230, 231, 260, 264, 276, 280, 288, 291, 316, 336. Other photo credits as follows—p. xiv, EDO corporation; Seaplane Pilots Association (SPA) courtesy Mike Volk, pp. xvii, xix, xx, 1, 12, 33, 74, 84, 102, 110, 123, 156, 166, 259, 272, 301, 318, 332; photos by Burke Mees on pp. 14, 40, 119, 130, 178, 238, 306, 334; p. 28, ASA; photos by Bill McCarrel on pp. 50, 148, 150, 158, 301(bottom); photos by Robert Grant on pp. xii, 248, 256, 258; courtesy Wipaire, Inc., pp. 149, 299; p. 174 by John Lowery; p. 265 by Russ Hewitt; and Super Cub photos courtesy of Dave Bennett on pp. 20, 55, 104, 144, 165.

Library of Congress Cataloging-in-Publication data:

DeRemer, Dale.

Seaplane pilot : training for the seaplane pilot certificate and beyond / by Dale DeRemer. — 1st ed.
p. cm.
Includes bibliographical references and index.
ISBN 1-56027-502-2 (trade paperback)
1. Seaplanes — Piloting — Examinations — Study guides. 2. Air pilots — Licenses — United States. I. Title.

TL684.D3327 2003 629.132'5247—dc21

2003013798

Contents

About the Author	ix
Acknowledgements	X
Foreword	xi
Introduction	xiii

Section I Getting Started

1	Qualifying for the Seaplane Rating
	How is the Seaplane Rating Obtained? • Private or Commercial Sea Rating? •
	what Standards will fou be Held fo! • How Much Flying is Required?
2	Resources and Information
	Books • Other Books by this Author • Practical Test Standards
3	Choosing a Flight Instructor or Flight School
	Ask the Prospective Instructor Some Questions • Check Other Resources • Evaluate Your Flight Instructor After Every Lesson • Your Responsibility as Part of the Crew • Seaplane Flight Schools
Sect	ion II Preflight Procedures
4	Preflight Inspection
	Sumping • Fuel Quantity • Propeller • Airframe • Tail Section • Floats (Operational
	and Overnight Water, Water Rudders, Paddles)
5	Cockpit Management and Passenger Safety
	Human Resources • Loose Items in the Cockpit/Cabin • Organization •
	Use of Checklists • Passenger Briefing (Underwater Egress, Hypothermia, Emergency Equipment) • It's Not Over Until It's Over! • Review
6	Engine Starting
	Before Starting (Passenger Security, Departure from Dock/Beach, Brief the Dock Handler) • Hand Propping • Review
7	Taxiing
	Displacement Taxi or Idle Taxi • Turns • Turning in Wind (Inertia Turn) • Hump or Plow Taxi (Plowing Turn, Taxi without Rudders) • Step Taxi (Step Turn) • Review
	Continued

8	Sailing	75
	Power-Off Sailing • Power Sailing or Tacking (Parking the Seaplane) • Review	
9	The Pretakeoff Check	85
	Checklist Differences • Checklist Timing • The Pretakeoff Check in Detail • Review	
10	Seaplane Base and Airport Operations	95
	Communications Procedures • Seaplane Base (Alphabet Airspace) • Review	
Sect	ion III Flight Operations	
11	Takeoff and Climb	103
	Takeoffs in the PTS • V Speeds for Climb • Seaplane Takeoffs: An Overview • Seaplane Takeoff Performance • Takeoff Area Assessment • The Normal Takeoff • The Crosswind Takeoff • The Rough Water Takeoff • The Glassy Water Takeoff • The Confined Area Takeoff • The Aborted Takeoff • Some Advanced Takeoff Techniques • High Altitude Takeoff • Review	
12	Landing Area Assessment	131
	A Vital Part of Every Landing • The Procedure • Landing Area Assessment Configuration • Assessment Hints (Gusts, Catspaws, Microbursts, Terrain and Wind Currents) • Review	
13	Approaches, Landings, and Go-Arounds	145
	The Normal Approach • Normal Landing • Crosswind Landing • Rough Water Landing • Confined Area Landing • Glassy Water Approach and Landing • Go-Around • Review	
14	Slow Flight, Steep Turns, and Stalls	167
	Slow Flight • Steep Turns • Stalls • Spin Awareness • Review	
15	Emergency Operations	179
	Emergency Descents • Emergency Approach • Forced Landings in Floatplanes • Systems and Equipment Malfunctions • Emergency Equipment and Survival Gear • Review	
16	Postflight Procedures	198
	After Landing • Anchoring • Docking and Mooring • Buoying • Beaching • Ramping • Lines and a Few Important Knots • Review	
17	Multi-Engine Operations	239
	V Speeds and Definitions Table • Preflight Preparation • Preflight Procedures • Airport and Seaplane Base Operations • Takeoffs, Landings, and Go-Arounds • Performance Maneuver • Ground Reference Maneuvers and Navigation • Emergency Operations • Operation of Multi-Engine Systems • Night Operations • Postflight Procedures • Review	

Section IV Preflight and Checkride Preparation

18	Performance and Limitations	261
	Performance and Limitations • Weight and Balance (Overloading, Ballest, CG) • Effect of Atmospheric Conditions (Wind, Temperature, Humidity) • Performance Limitations • Review	
19	Operation of Systems	273
	Water Rudders • Landing Gear—Amphibious Systems • Fuel Systems • Review	
20	Minimum Equipment List	281
	Dealing with Failed Instruments and Systems • The Pilot's Problem • Required Instruments for Day and Night VFR • Obtaining a Special Flight Permit • Review	
21	Water and Seaplane Characteristics	289
	Terms and Definitions (Float components) * Characteristics of Water * Characteristics of Seaplanes (Float Design, Porpoising and Skipping) * Review	
22	Seaplane Bases, Maritime Rules, Aids to Marine Navigation	307
	Identifying and Locating Seaplane Bases on Charts and in Directories • Seaplane Bases/Landing Areas and Operating Restrictions • Safety Rules for Seaplanes (Maritime Rules) • Navigation Aids • Review	
23	Certificates, Documents and Checkride Preparation	319
	Pilot Documents • Aircraft Documents • Checkride Preparation • Checklist for the Checkride	
24	What Now?	333
	Maintain Proficiency • Recurrent Training • Advanced Training • Advanced Learning	
	Appendix 1	337
	Private PTS for Airplane Single-Engine Sea	
	Appendix 2	355
	Seaplane Safety and Proficiency: SEAWINGS; AIM Excerpt; Advisory Circular 91-69A	
	Bibliography	369
	Index	371

Chapter 1 Qualifying for the Seaplane Rating

How is the Seaplane Rating Obtained?

If you are already a rated seaplane pilot, you should skip ahead and go directly to Chapter 4 now (go to Page 21).

The seaplane pilot rating, called the ASES certificate (Airplane Single Engine Sea) may be obtained as the first pilot rating or, most commonly, as an add-on rating for those pilots who already hold the ASEL (Airplane, Single Engine Land) certificate. Since probably 99% of ASES ratings are add-on, this book will primarily address the topics required for the add-on rating. They just happen to be all the topics directly related to seaplane flying. Since about the same percentage of ratings obtained are done in floatplanes, this book primarily discusses operation of the floatplane. However, the same principles apply to the monohull seaplane.

A table, called the Rating Task Table, will be found near the beginning of the Practical Test Standards (PTS), which is the FAA document that specifies the knowledge and skills you need to know. In appendix 1, the PTS task table is found on Page 354. More about this reference is covered in Chapter 2. This table defines which tasks will be tested, based on the ratings the applicant holds and the sea rating sought. The PTS referred to in this book is reprinted in the appendix.

While there are separate PTS's for Private and Commercial sea ratings, close inspection of the two will show that the tasks in each, for the add-on sea rating (adding private/commercial pilot sea to an existing private/commercial pilot land) are essentially the same. However, the examiner will expect a higher level of knowledge and skill from the commercial pilot applicant.

For this reason, when discussing the PTS "Tasks," this book does not differentiate between private and commercial.

To qualify for the sea rating, you must pass an oral examination and a flight check with an FAA examiner or designated seaFor an example of this table, *see* Appendix 1, Page 354.



FAA-8081-14AS, Private Pilot Practical Test Standards for Airplane (SEL and SES)

plane examiner, based on the required tasks outlined in the PTS and discussed in detail in this book. The good news is that there is no written examination.

Private or Commercial Sea Rating?

If you hold a commercial pilot land certificate, you may choose to take either the private or commercial checkride. If the private check is selected, your pilot's certificate will read "Commercial pilot–land, private privileges–sea." Since there is little difference between the private and commercial checkrides, my recommendation is definitely to take the commercial sea checkride. Another situation where this issue may come up is the pilot who has the private pilot land and sea rating. Taking the commercial pilot land checkride does not provide commercial pilot sea privileges. Another checkride in the seaplane is necessary to upgrade to commercial sea. So, if possible, acquire the commercial land certificate, *then* get the seaplane rating. That way, only one seaplane checkride is needed.

What Standards Will You be Held To?

The standards (topics and tasks to be tested) are spelled out in the PTS. References to the appropriate section are found in the sidebars throughout this book. If there has been a recent update, it is also available in print and on the FAA website. This book takes each topic in the PTS and discusses it in detail. If the reader is familiar with the discussions herein, and has acquired adequate skill in operating the seaplane, passing the examination will be just another fun seaplane experience.

How Much Flying is Required?

Flight time needed to reach proficiency varies from about 4.5 hours to 15 hours. Why this variation? Training time needed is a function of the skill of the pilot (as a pilot and a mariner), the complexity of the aircraft used for learning and testing, and the level of skill required by the flight instructor before the applicant is signed off to take the practical test. Most flight schools and experienced flight instructors can give a good estimate of the time required because, for them, the only unknown is the skill of the pilot. Even that can be approximated by the instructor or school after a quick look at the applicant's logbook. So you should have a good idea of the flight time required before starting the course.



PTS references throughout this book will be indicated by this PTS heading, or text in blue, in the sidebar area.

Canadian landplane pilots presently need fly a seaplane for only about five hours and have an endorsement entered in their logbook by a commercial seaplane pilot in order to be certified to fly seaplanes. However, the same knowledge and skills discussed in this book are what seaplane pilots anywhere in the world need to know.

Let's get started!



A FOCUS SERIES BOOK

Seaplane Pilot

Training for the Seaplane Pilot Certificate and Beyond



Dale DeRemer

Getting the seaplane rating is just pure fun. It provides the challenge of learning a new skill, freedom to land anywhere there is water, the ability to truly enjoy the out-of-doors and access remote places. The seaplane pilot rating may be obtained as an initial pilot qualification, but most commonly, as an add-on rating for pilots who already hold an Airplane, Single-Engine Land certificate. Dale DeRemer's *Seaplane Pilot* guides pilots through this process, with plenty of tips, techniques and advice from a pro along the way!

Dale DeRemer, "the recognized dean of seaplane pilots," invites readers to join him on this learning adventure. All the tasks the pilot must demonstrate during the checkride are covered in detail: preflight preparations, taxiing, sailing, seaplane base and airport operations, takeoffs and landings, and emergency operations. Whether a reader is studying intensely for training to obtain a seaplane rating, or just improving their knowledge and skills from the comfort of an easy chair, *Seaplane Pilot* will prove a welcome and enjoyable learning experience.

> Dr. Dale DeRemer is also called the "father of the SEAWINGS national safety program for seaplane pilots" by *Water Flying Magazine*. In the past 15 years, he has conducted his well known wilderness courses, training hundreds of pilots, one-on-one, in the skills of wilderness seaplane operations from the rain forests and high volcanic lakes of Central America to beyond the Arctic Circle. He is ATP-rated land and sea with more than 20,000 hours flight experience in landplanes, seaplanes and helicopters.



Aviation Supplies & Academics, Inc. 7005 132nd Place SE Newcastle, Washington 98059 1-800-ASA-2-FLY • www.asa2fly.com

