



# **Robinson R22 Student Study Guide**

LEON SMITH

*Nothing in this manual supersedes any legislation, rules, regulations or procedures contained in any operational document issued by Her Majesty's Stationery Office, the Civil Aviation Authority, the Joint Aviation Authorities, ICAO, the manufacturers of aircraft, engines and systems, or by the operators of aircraft throughout the world.*

Pooleys Helicopter Pilots Guide, Robinson R22, Student Study Guide.

Copyright 2005 © Leon Smith  
ISBN 1-84336-113-2

All rights reserved. No part of this publication may be reproduced in any material form (including photocopying or storing it in any medium by electronic means and whether or not transiently or incidentally to some of the use of this publication (without the written permissions of the copyright owner) except in accordance with the provisions of the Copyright, Designs and Patent Act 1988 or under the terms of a licence issued by the Copyright Licensing Agency Limited, 90 Tottenham Court Road, London, England W1P 0LP. Applications for the copyright owner's written permission to reproduce any part of this publication should be addressed to the publisher.

**Warning:** The doing of an unauthorised act in relation to a copyright work may result in both a civil claim for damages and criminal prosecution.

Air Pilot Publishing Ltd  
Millfield Close, off Mill Road  
Cranfield, Bedfordshire.  
MK43 0JG  
Tel: 01234 750677  
Fax: 01234 750706  
Email: sales@appltld.net  
Website: www.pooleys.com

# ROBINSON R22

---

## Student Study Guide



ROBINSON R22

# Student Study Guide

---

*This guide is dedicated to the memory of Bill Barrell.*

*“To invent an airplane is nothing. To build one is something.  
To fly is everything.”*

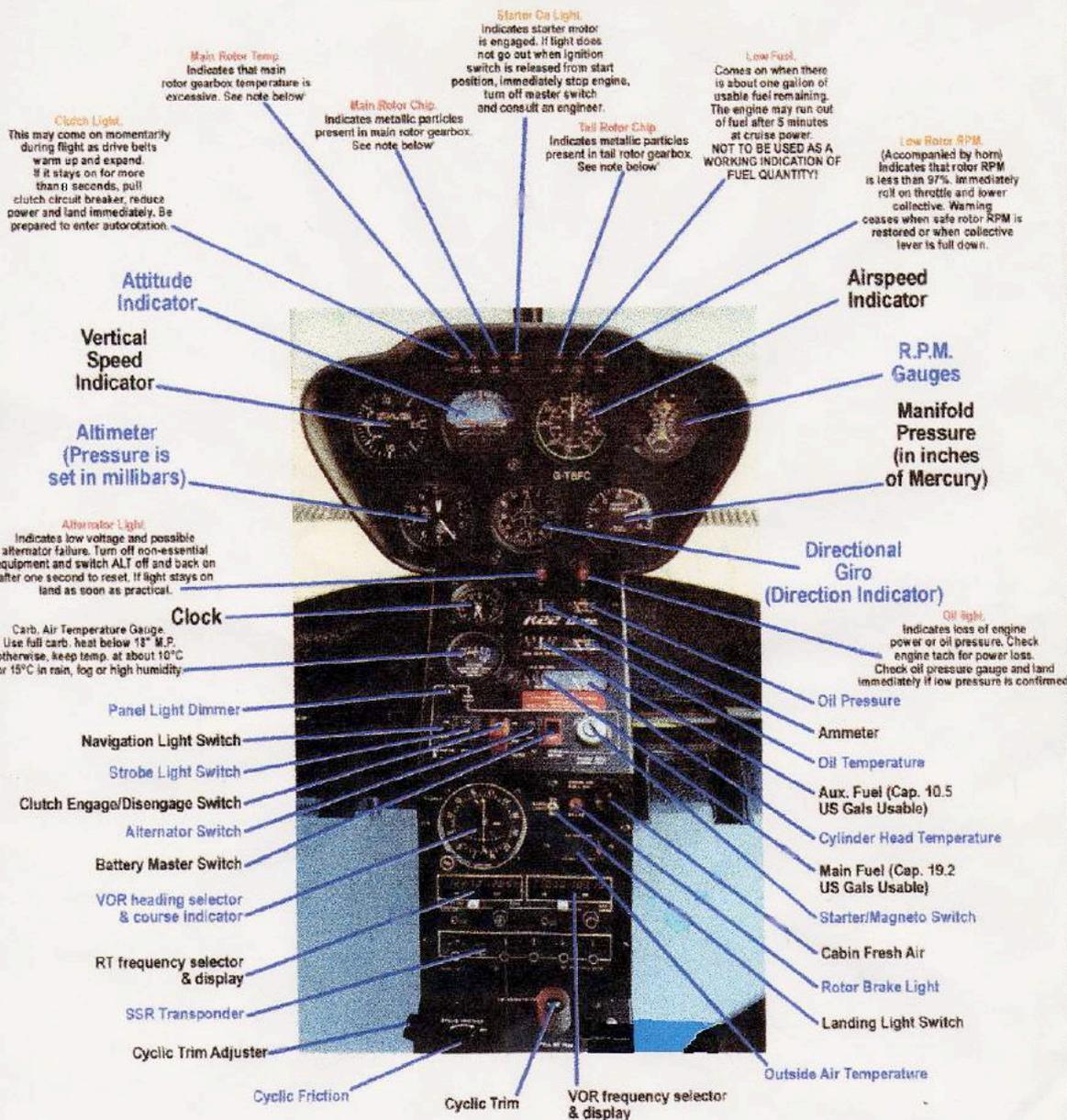
-OTTO LILIENTHAL, PIONEER AIRCRAFT BUILDER

# CONTENTS

## Page

	Instrument Panel	4
Robinson R22	General Notes for Student Helicopter Pilots	5
Ex 1-3	Familiarisation and Air Experience	7
Ex. 4	Effects of Controls	8
Ex. 5	Attitude and Power Changes	11
Ex. 6	Level Flight, Climbing and Descending, Turns	13
Ex. 7	Basic Autorotations	16
Ex. 8	Hovering	18
Ex. 9	Landings & Take Offs	20
Ex. 10	Transitions	22
Ex. 11	Circuits	25
Ex. 12	First Solo	28
Ex. 13	Sideways & Backwards Flight	29
Ex. 14	Spot Turns	31
Ex. 15	Vortex Ring Recovery	32
Ex. 16	Engine Off Landings	33
Ex. 17	Advanced Autorotations	35
Ex. 18	Forced Landings	38
Ex. 19	Steep Turns	40
Ex. 20	Precision Transitions	41
Ex. 21	Quick Stops and Downwind Emergency Turns	42
Ex. 22	Navigation	44
Ex. 23	Advanced Take offs, Landings and Transitions	47
Ex. 24	Sloping Ground Landings	49
Ex. 25	Limited Power Operations	51
Ex. 26	Restricted Area Operations	55
Ex 27	Instrument Flying	59
Ex 28	Night Flying	63
Final Handling Test	Final handling Test for PPL(H)	66
	Height-Velocity Diagram	67
	Limit Manifold Pressure Diagrams	68
	Emergencies	69

# Robinson R22 Instrumentation



The equipment above represents a typical R22 Beta panel. Equipment and instrumentation varies from aircraft to aircraft.

**\*Note**

If Main Rotor Temp, Main Rotor Chip or Tail Rotor Chip light is accompanied by any indication of a problem such as noise, vibration, or temperature rise, land immediately. If there is no other indication of a problem, land as soon as practical.

## ROBINSON R22

### GENERAL NOTES FOR STUDENT HELICOPTER PILOTS

- The Study Guide
1. This study guide has been prepared to supplement the flying and ground instruction you will receive on your Basic Helicopter Training Course. It is complementary to your formal ground instruction and in particular it is designed to help you understand more fully your instructor's in-flight demonstrations and exercise briefings.
  2. These notes provide:-
    - (a) A progressive series of Air Training Exercises in which the helicopter pilot is required to be proficient.
    - (b) The main considerations of each exercise that will be stressed during full and pre-flight briefings.
  3. The information contained in these notes is applicable to the course instruction you will receive on the Robinson R22.
- Air Exercises
4. The air exercises are listed under their main titles and are numbered from 1 to 28. The initial sorties will be confined to a particular exercise, but as the course progresses, revision of previous exercises will be carried out, as well as introduction to more advanced exercises.
- Principles of Flight
5. The principles of flight for each air exercise are not discussed in this guide. Detailed information can be obtained from other publications, which your instructor will tell you about. The information given in these publications, together with ground school instruction, is the foundation upon which your instructor will base your helicopter flight training.
- Main Considerations of Each Exercise
6. The main considerations of each exercise will be fully covered in the full and pre-flight briefings. These notes will service as a reminder of the main points.
- Full Briefings
7. The full briefing is given before each new exercise is taught in the air. As the name suggests, this briefing covers the subject in detail. It may take up to one hour to deliver. During the briefing, lessons learnt in the ground school readings are linked to the practical aspects of flying.
- Pre- Flight Briefings
8. Pre-flight briefings will be given just before each flight. As well as including a résumé of the main points of the air exercise, the briefing will also cover details which will affect the conduct of the flight, namely weather, airfield state and air traffic control.
- Post Flight Discussion
9. After every dual sortie, the flight will be discussed. This discussion is a review of the exercise and is used to amplify or clarify any particular point of difficulty, thus consolidating the exercise as a whole.