

# Introduction



*A book should begin just like an instructor with the ability to motivate the reader. Adults learn best when they see a practical need for a subject. When writing this introduction I asked myself, ‘why do pilots want to become flight instructors?’ I came up with the following answers. One is the lifetime instructor who is so motivated that he or she would like to teach for many years. Another is the line pilot who enjoys flying so much that he or she would like to work in the training department. The last and largest category is the ‘time builder’. The ‘time builder’ may look at the instructor stage as an undesirable stepping stone that must be used to get to the final goal. A point worth mentioning is that this attitude tends to change because teaching is an integral part of every aviation job. Good instructor skills are needed on the line when working with new colleagues and instructor experience is certainly valued by employers.*

*The goal of this book is to give you enough back-ground information about teaching and learning to let you take full advantage of your aviation skills and knowledge.*

## 1.1 How to teach and not what to teach

This book covers *how* to teach and *not what* to teach. Have you ever heard the expression “*it’s not what you say that matters, it’s how you say it that really counts*”? There is certainly some truth to this, but instructors must also know what to say. Instructors must know the subjects they are teaching. This book is written under the assumption that you have the required background subject knowledge. We will not discuss subject details from ground school or air exercises. The goal of this book is to give you enough background information about teaching and learning to let you take full advantage of your aviation skills and knowledge.

## Relationship with other documents

Although you have the underlying licences, you probably still need to practise how to demonstrate and explain tasks and topics. *Fig. IH 1.2* shows the relationship with other documents. Use regular training handbooks and theoretical knowledge books as references for *what to say*. Use this book as a reference for *how to say it*. *Fig. IH 1.2* also shows the relationship with other documents that you will use during the instructor course.

## Not just flight instructor training

In addition to flight instructor training this book is also designed to suit the needs of other instructors such as ground instructors, CRM, MCC, maintenance, cabin crew, check pilots and type rating instructors.



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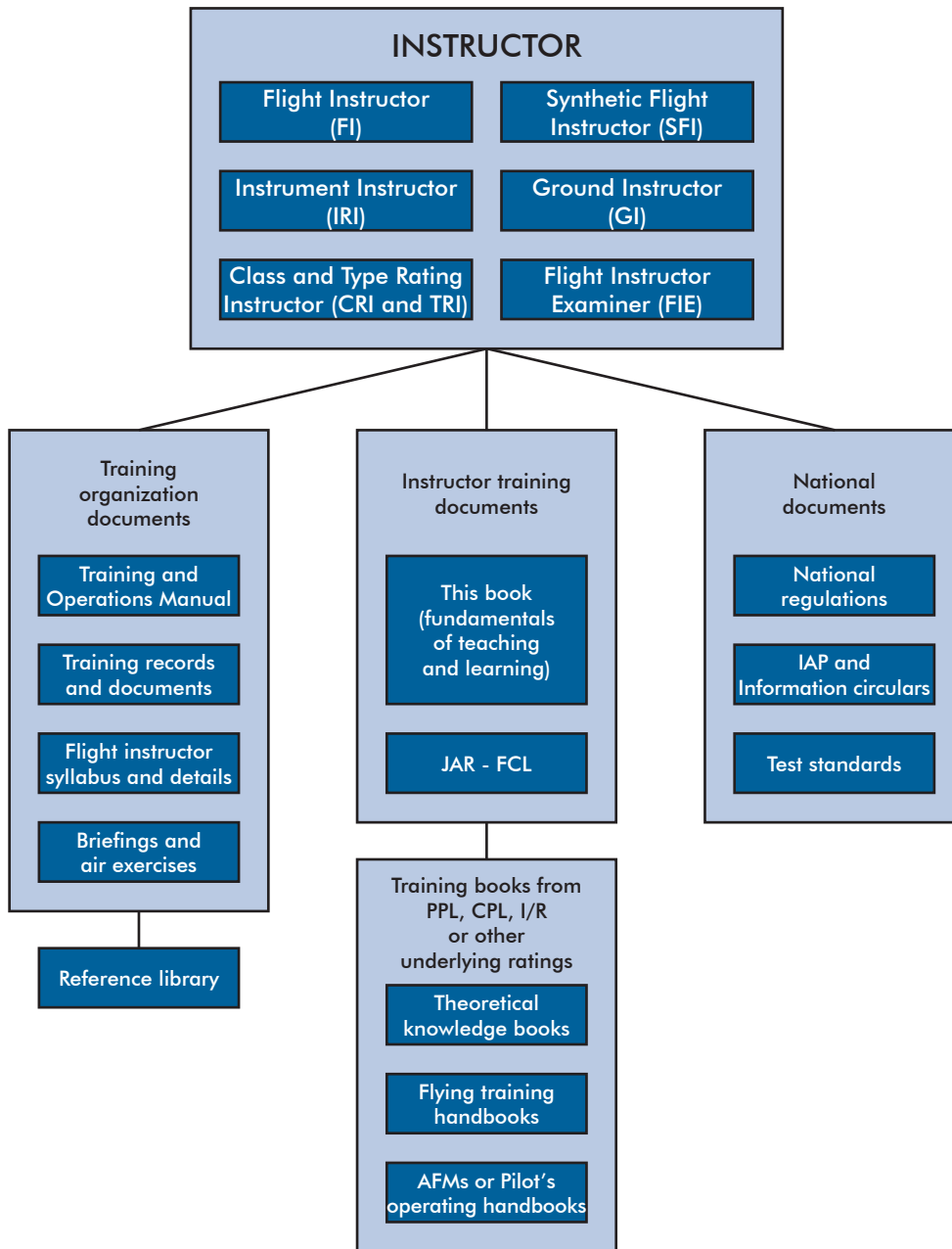


Fig. IH 1.2 Relationship with other documents.

Topics	Tuition hours	Practice in class	Comments	Progress test
The learning processes	2:00	- : -	Allow for questions and short discussion periods.	0:30
The teaching processes	4:00	- : -	The tuition time should allow for questions and short discussion periods.	1:00
Training philosophies	2:00	- : -	The PPL training syllabus should be used as reference material.	0:30
Techniques of applied-instruction. Classroom instruction Techniques, training aids, lectures, briefings and student participation / discussion.	5:00	34:00	The time spent in practice under this item will involve the applicants refreshing their technical knowledge, and developing their classroom instruction techniques. It will also include discussion between applicants and advice on teaching from the supervising instructor.	- : -
Techniques of applied instruction. Flight instruction techniques, cockpit environment, post - and in - flight judgement and decision - making.	4:00	34:00	The time spent in practice will be mainly directed to the giving of pre - flight briefings. It will allow the applicants to develop their ability to give a practical and short briefing (10 - 15 minutes) to a student pilot. The briefing will outline in a logical sequence the flight lesson to be undertaken.	- : -
Assessment of student performance.	2:00	- : -	Emphasis should be placed on the validity of questions used in progress tests.	1:00
Analysis of student errors.	2:00	- : -	Emphasis should be placed on the need to give encouragement to the student.	1:00
Training programme development.	5:00	15:00	The time spent in practice will be directed towards the planning of classroom lesson periods and the development of the applicants ability to construct lesson plans.	- : -
Human Performance and limitations relevant to flight instruction.	5:00	- : -	Scenarios relevant to good judgment and decision making should be set and analysed.	1:00
Hazards involved in simulating systems failure and malfunctions in the aeroplane during flight.	2:00	- : -	Examples of hazards should cover a broad range of light aircraft and types of operation and not to be confined to the aircraft used on the course.	1:00
Training administration	2:00	- : -	General revision of relevant documents.	1:00
TOTAL	35:00	83:00		7:00

Fig. IH 1.3 Suggested theoretical knowledge instruction for the flight instructor course (JAA, 1997).

## 1.2 The instructor course

A typical instructor course covers both *what to say* and *how to say it*. It will train you in ground and flying instructional techniques and refresh your technical knowledge. Your ground and air teaching skills will be brought to a sufficiently high standard. *Fig. IH 1.3* is an example of a suggested theoretical knowledge section of a flight instructor course (JAA, 1997).

### The instructor examination

Every flight instructor applicant must pass a skill test given by a Flight Instructor Examiner (FIE). The test format may vary slightly, but the following is a typical test arrangement (UK CAA 1998). The examiner will give you a summary of what will take place. This will include:

- General briefing by the examiner
- Pre-flight briefing, given by you, covering the main air exercises
- Airborne part of the test that will last about 1 hour and 30 minutes
- Oral ground examination covering how to teach
- Short lecture given by you
- Conclusion and debriefing given by the examiner.

The examiner will conduct the test in a relaxed atmosphere and try to make you comfortable. The test will take four to six hours. The examiner will check your licence and the training records from your instructor course. You must present aeroplane documentation, flight manual and approved checklists. The

examiner will be acting as your student during the flight test. You must give clear and precise instructions and demonstrate good teaching techniques and good technical understanding. You will normally be the pilot in command and responsible for the flight. Your flying ability and airmanship will be evaluated throughout the entire flight. The examiner will pay close attention to:

- Your ability to communicate and transfer knowledge and skills
- Your flying ability, airmanship and efficient use of time and airspace
- Your knowledge of exercises and organization of the training
- Standardization of exercises
- Your analysis and correction of faults.

*You must give clear and precise instructions and demonstrate good teaching techniques and good technical understanding.*

The examiner will make notes in order to give you an effective debriefing. This may make some candidates nervous because they do not understand that this is a normal procedure. Note taking does not mean that errors have been made.

### The instructor test preflight briefing

The test will start with the examiner's general briefing. The examiner will inform you about the main exercises you will teach during the flight test. After the general briefing, you will be given about 15 to 20 minutes to prepare your pre-flight briefing. Notes may be used, but you must demonstrate good knowledge of the exercises. You should not plan on reading from a manuscript. Do not use notes and visual aids as 'crutches' to compensate for poor subject matter knowledge.

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## The instructor practical flight test

Your 'train-the-trainer' will assist you in preparing for the practical test. The exact format will vary depending on which ratings you are being tested for. One part of the test will cover exercises in which the examiner acts as your student. You will be expected to demonstrate and talk the 'student' through the exercise. The 'student' will make typical beginner's mistakes and you are expected to identify and correct these errors.

however, expect questions requiring in depth explanations. Make sure you understand the question and seek clarification if you are in doubt. You will also be asked to give a lecture lasting no more than 45 minutes. The subject of this lecture will be determined by the examiner and given to you in advance. The lecture should be given to a small audience, if available, at your school at that time. The lecture should be 'formal'. Make use of available presentation aids as well as traditional 'chalk and talk'. The examiner will

*The aim of the oral exam is to ensure that you have the required knowledge of what to say and the teaching skills and ability to pass this knowledge on.*



Fig. IH 1.4

## The instructor test oral examination

A typical oral examination will take between 1.5 and 2 hours depending on the type of test and your performance. The aim of the oral exam is to ensure that you have the required knowledge of what to say and the teaching skills and ability to pass this knowledge on. You must have a good understanding of established teaching methods. The examiner should not ask 'trick' questions. You should

*The examiner will evaluate both the technical content (what you say) and the manner of presentation (how you say it).*

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## The instructor test debriefing

The examiner will normally start with your pass/fail result followed by a debriefing. The test assessment will be based on factors such as:

- Did you teach the subject in a technically correct manner?
- Were your teaching methods standardised?
- Was your ability to pass along knowledge adequate?
- Did you have sufficient background knowledge of ground subjects and air exercises?
- How good was your aeroplane handling and airmanship?

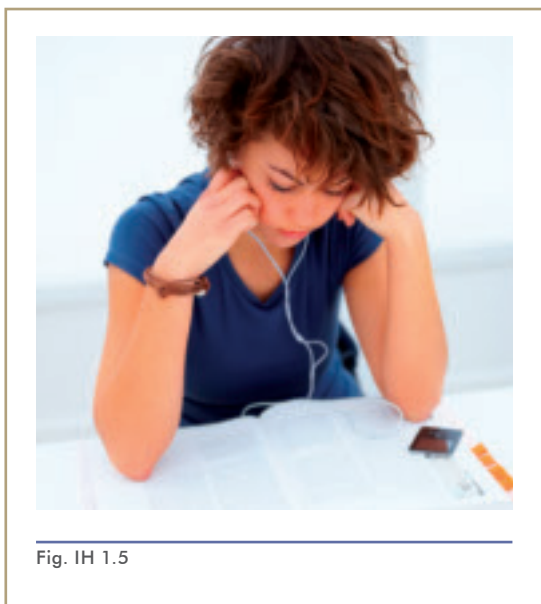


Fig. IH 1.5

### 1.3 How to read this book

This book is designed to supplement an approved instructor course. It should be used in combination with proper education given by a 'train-the-trainer' approved to give instruction for the rating that you are seeking. This book is not a legal document and is written in an informal manner. It is compiled in a practical 'need to know' manner. I have tried

to avoid advanced psychology and extensive legal phraseology. Those who need more in depth information should consult specialised publications. The appendix at the back of this book has a list of suggested reading. This book has several features designed to help you get the most out of your studies. These include:

- **Margin** - The margin is designed to leave space for your notes. Use this space for comments, questions and to explain new words. You can also use the margin to translate new words into your native language if English is not your first language.
- **Margin summaries** - Essential points from the text have been emphasized. This will help you identify the most important topics. You are still encouraged to add your own additional notes.
- **Italic text** - This book uses *italic* text to point out new words and terms.
- **New words** - Definitions and important terminology are listed at the end of each chapter.
- **Index** - An alphabetic listing of important words is located at the end of this book.
- **Glossary** - A glossary of words and definitions is located at the end of this book.
- **Abbreviations** - A list of abbreviations is located at the end of this book.
- **References** - This book is based on a number of books, scientific documents and research papers. Some references are listed in parentheses for example (*CAA, 1989*). These and additional other references are listed at the end of this book.

*The margin is designed to leave space for your notes. Use this space for comments, questions and to explain new words. You can also use the margin to translate new words into your native language if English is not your first language.*

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NORDIAN A.S. have a number of other theoretical knowledge books, computer based training material (CBT), web based training, distance learning courses, training handbooks, manuals and audio visual training aids that can be used for various courses.

Information about some of these is located at the NORDIAN web site:

*<http://www.nordian.net>*



Fig. IH 1.6 NORDIAN ATPL Theoretical Knowledge Books.

## 1.4 Quick overview of this book

### Chapter 1 | Introduction

How to use this book.

### Chapter 2 | Learning

How adults are motivated to learn. Memory and techniques that can be used to improve learning.

### Chapter 3 | Teaching

Elements that should be included in effective teaching. How to prepare and give lectures.

### Chapter 4 | Training Development

What is a syllabus? How to make good learning objectives and lesson plans. Introduction to instructional systems design. How to produce and use training aids.

### Chapter 5 | Ground Instruction

How to give classroom lectures and briefings. Teaching methods and techniques that can be used for instruction and evaluation.

### Chapter 6 | Flight Instruction

How to prepare and conduct flight instruction. Typical steps involved in effective in-flight training. Safety considerations and case studies. How to prepare and give constructive debriefs after air exercises.

### Chapter 7 | Flight Instructor Techniques and Methods

A closer look at in-flight instructor tasks covering communication, integrated instruction, task saturation, workload and why students fail. Introduction to simulators and synthetic flight instruction.

### Chapter 8 | Safety and Human Factors

Airmanship, attitudes, judgement and decision-making. Human error, safety in flight instruction, instructor awareness, instructor take-over skills and case studies.

### Chapter 9 | Facilitation

Use of student and crew centred briefings. What is facilitation and why is it an efficient tool to teach soft skills such as problem solving and safe attitudes?

### Chapter 10 | Behavioral Attitudes and Decision-making

A closer look at hazardous attitudes that have caused many accidents. We will discuss how instructors can teach behavior modification strategies to prevent accidents caused by poor judgement.

### Chapter 11 | Documents and Training Records

Why 'paper work' is an important part of any training organization. A discussion of why instructors must understand how to use manuals, handbooks, documents and training records.