

**KEY FACTS  
AND  
HANDLING QUESTIONS**

Vol. 1

**JAR-FCL  
Type Examples**

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**KEY FACTS**  
And  
**HANDLING QUESTIONS**

**Vol 1**

*By Mike Burton*

Theoretical General Knowledge

Mass and Balance

Performance

Principles of Flight

## **Preface**

Modern aircraft are very complex machines, demanding the highest skills from the flight crews of today. You are entering into a highly professional occupation in which you will have to acquire knowledge levels far above those of most other occupations. To progress you must learn, to learn you must study. By study and learning I hope one day you will become that Professional Airline Captain.

Good Luck, I wish you well.

**Mike Burton**  
**Aviation Instructor**  
*Author and Consultant*

# **CONTENTS**

## **AIRCRAFT GENERAL KNOWLEDGE**

Airframes

Systems

Powerplants

Instruments

Electrics

Electronics

Autoflight

## **MASS AND BALANCE**

## **PERFORMANCE**

## **PRINCIPLES OF FLIGHT**

Principles of Flight

Propellers

# GENERAL KNOWLEDGE

## AIRFRAMES

### GENERAL

1. In a monocoque construction the skin of the structure takes all of the load.
2. In a semi-monocoque construction the skin takes part of the load.
3. Stressed skin construction, in most cases, is a structure where the skin takes part of the load.
4. In a wing structure the control surfaces are fitted to the rear spar.
5. The definition of Stiffness in an aircraft structure is the ratio of stress over strain.
6. The main spar of a wing is generally located at approximately one quarter the chord length from the wing leading edge.
7. Primary control stops are located at the control surface end of the control run.
8. Secondary control stops are located at the control column end of the control run.
9. When the primary control stops are engaged there is a small clearance at the secondary control stops.
10. An American (Barrel) type turnbuckle is in safety when not more than three threads are showing.
11. A British type turnbuckle ( Rod Type) is in safety when the inspection holes are totally obstructed by the rod thread.
12. If a control cable is placed under high, or excessive tension, controls will be more difficult to move.
13. Excessive tension of a control cable will cause increased wear to cables and pulleys.
14. High ambient temperatures will cause cable tension to increase as the aircraft structure will expand at a greater rate than the cable.
15. Most modern aircraft are of a semi monocoque construction employing stressed skin.