

LICENCE WITHOUT TYPE RATING
CATEGORY "A" - PRESSURISED AEROPLANES
PAPER II

1. Aircraft structure:

- Light alloys, iron and steel
- recognition and general characteristics of metals used
- Identification of corrosion
- Corrosion treatment during repair
- Commonly used fasteners and joint methods
- Honey comb
- Reinforced plastic / epoxy materials, applications
- Floors
- Seats - crew, passenger, "Crash" situation
- Main structures - fuselage / wing
- Stressed skin - diagrams and longerons
- Integral fuel tank
- Load paths
- Empennage
- Windows doors and hatches
- Fail - safe application
- Fatigue effects and control
- Bonded type construction
- Sealing compounds
- Maintenance programs - structural surveys
- NDT programs
- Large aircraft paint and protective finishing processes
- Venting and draining - sound proofing

3. Systems:

5. Ground handling:

- Jacking, trestling, slinging, towing, tie down
- Servicing activities
- Storage
- Painting - protective finish / external markings
- Weighing and centre of gravity determination, weighing report

7. Safety Equipment:

- Fire extinguishers - hand
- Life Jackets
- Life rafts
- Seat belts / harness - passenger / crew
- Slides, rafts, dinghies
- Loud hailers
- Survival equipment
- Portable oxygen

- Smoke masks / hoods
- Notices / placards

9.Oxygen:

- Bottle storage, distribution, regulation
- Masks - passenger / crew
- Safety features and requirements
- Drop - out system
- Chemical systems
- Therapeutic provisions
- Bottle checks and precautions
- Toilets, waste and water, galley services:
- Toilets, servicing provision
- Toilet flushing systems - pump over heat protection
- Water - washing, hot / cold, potable
- Potable water - health protection
- Pressure control
- Water heating systems - safety precautions
- Waste collection and drainage
- Galleys - refrigerators, food and drink, ice - health protection
- Lifts, safety factors
- Catering trolleys

11.Baggage:

- Automatic systems - pallets and containers
- Restraint and securing
- Dangerous goods

13.Electrical:

- **3 phase a.c.power generation system**
- Control and protection , transformer rectifier units , cables and terminals
- Basic electronic - hardware printed circuit boards
- Built - in testing provisions
- Static inverters
- Multiplex - basic principles
- Logic - basic principles

15.Pneumatic:

- Bleed air pneumatic systems
- Systems supplied
- Bleed air valves
- Mass , flow , pressure and temperature control and indication
- Ducting
- Leak detection
- Alternate supply - APU and ground cart

17.Ice and rain protection :

- Main plane / tail hot air anti-ice systems

- Control and indication
- Leak / over heat - detection / protection
- Ice detection
- Rain repellent
- Wind screen wipers
- laminated windscreen heating
- Waste water discharge
- Pitot / static sensors

19.Air conditioning:

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- Cabin blower / bleed air supply
 - Heat exchangers
 - Cold air units / air cycle machines
 - Vapour cycle systems
 - Humidity , control systems
 - Mass, flow, pressure and temp. control and indication
 - Leakage detection and protection
 - Ventilation requirements
 - Passenger service unit air supply
 - Water extraction
 - Recirculation

21.Pressurization:

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- Outflow control - electric , electronic and pneumatic
 - Maximum differential and negative pressure control
 - cabin altitude and rate of change
 - Emergency dump and manual control
 - Ditching
 - Cabin altitude warning
 - Entrance / access / baggage door sealing and locking
- Indications and warnings