

## SYLLABUS

### 1. RTR Certificate and Licence Written exam

#### I. Regulations and Procedure

- i. International Telecommunication Convention and Radio Regulations.
- ii. General and Aeronautical 'Q' Code signals and other abbreviations as contained in Annex10 (vol. I & II) of ICAO.
- iii. General Radio-telephone Communication procedure and radio telephone communication procedure for distress, urgency and direction finding.
- iv. Procedure for distress communication in maritime mobile service.
- v. Words and figures spelling used in radio telephony.
- vi. Licensing requirement of installation and operation of radio apparatus used in aircraft.
- vii. Minimum requirement of radio equipment to be carried on aircraft as prescribed in Annexure 6 of the ICAO and DGCA in India.
- viii. FIR in India and main Radio communication and Navigation facilities available together with principal frequencies to be used for communication and navigation within India.
- ix. Meteorological codes, Pre Flight briefing service and their usages.
- x. Knowledge of notices to airmen issued by the Civil Aviation Authorities in India, as applicable to the Aeronautical mobile and Air traffic control services.

#### II. Radio Principles and Practice:

- i. Electrical units such as volt, Ampere, Ohm and Watt, Wavelength, frequency and their relationship.
- ii. Radio frequency propagation day and night frequencies, skip distance fading ground shadow and its effect on communication choice of frequencies to attain maximum efficiency in handling air ground HF communications.
- iii. System employed for air ground communications including ,intercommunications and announcing system of aircraft,
- iv. Radio-navigation Aids, operation of microphones and headphones, squelch, AVC , Volume control tuning of transmitter, simplex and duplex operation; advantages and disadvantages of Radio telephone communication; limitations of range due to frequency interference etc.

#### III. Radio Telephony:

- i. General operating procedures: Transmitting technique, Transmission of letters, Transmission of numbers, Transmission of time, Standard words and phrases, Call signs, Call signs for aeronautical stations, Aircraft call signs, Communications, Establishment and continuation of communications, Transfer of communications, Issue of clearance and read-back requirements, Test procedures.
- ii. General phraseology: An explanation of the role of phraseologies and plain language in radiotelephony communications, Level instructions, Position

reporting, Flight plans

- iii. Aerodrome control: aircraft: Departure information and engine starting procedures, Push-back, Taxi instructions, Take-off procedures, Aerodrome traffic circuit, Final approach and landing, Go around, after landing, essential aerodrome information.
- iv. General ATS surveillance service phraseology: Identification and vectoring, Traffic information and avoiding action, Secondary surveillance radar, Radar assistance to aircraft with radio communications failure, Alerting phraseologies
- v. Aerodrome control: vehicles: Movement instructions, Crossing runways, Vehicles towing aircraft
- vi. Approach control: IFR departures, VFR departures, IFR arrivals, VFR arrivals, Vectors to final approach, Surveillance radar approach, Precision radar approach.
- vii. Area control: Area control units, Position information, Level information, Flights joining airways, Flights leaving airways, Flights crossing airways, Flights holding en route, ATS Surveillance, Automatic Dependent Surveillance (ADS), Oceanic control
- viii. Distress and urgency procedures and communications failure procedures: Distress messages, Aircraft in distress, Imposition of silence, Termination of distress and silence, Urgency messages, Emergency descent, Aircraft communications failure.
- ix. Transmission of meteorological and other aerodrome information: Runway Visual Range (RVR), Runway surface conditions
- x. Miscellaneous flight handling: Selective Calling (SELCAL), Fuel dumping, Wake turbulence, Wind shear, Direction finding, ACAS manoeuvres.