## General aeronautical knowledge (AK)

### RARO: RPL aeronautical radio operator

* + - 1. Reserved
      2. Aeronautical radio telephony
         1. Operation of aeronautical radio systems

Meets the English language to Aviation English language standard (AEL).

Recall the phonetic alphabet and the method of transmitting numerals.

Recall the correct use of aircraft call-signs.

State standard radio procedures for outside controlled airspace (OCTA).

State how transmission of time is conducted.

State how to listening to the radio.

State how to establish and maintain communications.

State the hazards of clipped transmissions and the consequences.

Correct procedure for the conduct of a routine pre-flight test of an aircraft radio-telephone, including the following:

use of radio transmit and receive selector switches;

turning radio on;

selecting correct frequencies;

use of squelch control;

selection of radio navigation equipment;

correct use of a microphone;

use of intercom and public address system;

voice activated systems.

Describe the correct procedure for routine fault finding and correction.

State the standard phraseology to be used to report aircraft positions in the circuit and the required calls for local flights.

State the responsibilities of an aeronautical radio operator in relation to the following:

secrecy of communications;

unauthorised transmissions.

Describe the function of each of the following components of an aeronautical radio system:

power source/battery switch;

radio master;

fuses and circuit breakers;

microphone;

transmitter;

receiver;

antenna;

headphones and speaker.

Describe the difference between a distress and an emergency message and the standard phrases used in both cases.

Accurately extract radio failure procedures from ERSA.

In relation to the use of an aeronautical radiotelephone, describe the controls used to transmit and receive, including audio panel selections.

* + - * 1. Radio waves

Describe the basic principles and characteristics of radio waves, wave propagation, transmission and reception for the following:

radio frequency band ranges (MF, HF, VHF, UHF);

properties of radio waves and the effective range of transmissions;

propagation of paths of radio waves:

1. ground waves;
2. sky waves;

factors affecting the propagation of radio waves and reception:

1. terrain;
2. ionosphere;
3. sun spot activity;
4. interference from electrical equipment;
5. thunderstorms;
6. power attenuation;

radio antennas:

1. characteristics of antennas;
2. use of antennas.

Describe the limitations of VHF and HF signals and factors affecting quality of reception and range of signal.