

Aeroplane, Helicopter PPL

040 00 00 00 HUMAN PERFORMANCE

040 01 00 00 HUMAN FACTORS: BASIC CONCEPTS

040 01 01 00 Human Factors in aviation

040 01 01 02 Becoming a competent pilot

040 02 00 00 BASIC AVIATION PHYSIOLOGY AND HEALTH MAINTENANCE

040 02 01 01 The **atmosphere** – composition – gas Laws

040 02 01 02 **Respiratory and circulatory** systems

– oxygen requirement of tissues

– functional anatomy

– main forms of hypoxia (hypoxic and anaemic)

– sources, effects and countermeasures of carbon monoxide

– counter measures, hypoxia

– symptoms of hypoxia

– hyperventilation

– the effects of accelerations on the circulatory system hypertension and coronary heart disease

040 02 02 00 **Man and Environment**

040 02 02 01 Central, peripheral and autonomic **nervous systems**

040 02 02 02 **Vision**

– functional anatomy

– visual field, foveal and peripheral vision

– binocular and monocular vision

– monocular vision cues

– night vision

– visual scanning and detection techniques and importance of “lookout” defective vision

040 02 02 03 **Hearing**

– descriptive and functional anatomy

– flight related hazards to hearing hearing loss

040 02 02 04 **Equilibrium**

– functional anatomy

– motion and acceleration

– motion sickness

040 02 02 05 Integration of **sensory inputs**

– spatial disorientation: forms, recognition, avoidance

– illusions: forms, recognition, avoidance, physical origin

– physiological origin

– psychological origin

– approach and landing problems

040 02 03 00 **Health and hygiene**

040 02 03 01 Personal hygiene personal **fitness**

040 02 03 02 **Body rhythm** and **sleep** rhythm disturbances symptoms, effects, management

040 02 03 03 **Problem areas for pilots** common minor ailments including cold, influenza and gastrointestinal upset, entrapped gases, baro-trauma (scuba diving), obesity, food hygiene, infectious diseases, nutrition, various toxic gases and materials

040 02 03 04 **Intoxication**

- tobacco – alcohol – caffeine – drugs and selfmedication

040 03 00 00 BASIC AVIATION PSYCHOLOGY

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040 03 01 00 Human **information processing**

040 03 01 01 **Attention and vigilance**

- selectivity of attention
- divided attention

03 01 02 **Perception**

- perceptual illusions
- subjectivity of perception
- processes of perception

040 03 01 03 **Memory**

- sensory memory
- working/short term memory
- long term memory to include motor memory (skills)

040 03 02 00 **Human error** and reliability

040 03 02 01 **Reliability of human behaviour**

040 03 02 04 **Error generation**

- social environment (group, organisation)

040 03 03 00 **Decision making**

040 03 03 01 **Decisionmaking concepts**

- structure (phases)
- limits
- risk assessment practical application

040 03 04 00 Avoiding and managing errors: **cockpit management**

040 03 04 01 **Safety awareness**

- risk area awareness
- **situational awareness**

040 03 04 04 **Communication**

- verbal and nonverbal communication

040 03 05 00 **Human behaviour**

040 03 05 01 **Personality and attitudes**

- development
- environmental influences

040 03 05 03 Identification of **hazardous attitudes** (error proneness)

040 03 06 00 **Human overload** and underload

040 03 06 01 Arousal

040 03 06 02 **Stress**

- definition(s)
- anxiety and stress
- effects of stress

040 03 06 05 **Fatigue** and stress management types, causes and symptoms of fatigue effects of fatigue

- coping strategies
- management techniques
- health and fitness programmes