

REGULATIONS OF THE CIVIL AVIATION BOARD
NUMBER 74
ON THE QUALIFICATIONS OF APPLICANTS FOR PERSONNEL

By virtue of Section 15 (2) and Section 44 (3) of the Air Navigation Act B.E 2497, the Civil Aviation Board, with the approval of the Minister of Transport, has issued the regulations concerning the qualifications of the applicant for the personnel as follows:

Article 1. The Regulations of the Civil Aviation Board, Number 68 shall be repealed. The announcement is made on the 27th day of September B.E. 2549.

Article 2. In this regulations,

“Aeroplane” means a power-driven heavier-than-air aircraft, deriving its lift in flight chiefly from aerodynamic reactions on surfaces which remain fixed under given conditions of flight;

“Helicopter” means a heavier-than-air aircraft supported in flight chiefly by the reactions of the air on one or more power-driven rotors on substantially vertical axes;

“Powered-lift” means a heavier-than-air aircraft capable of vertical take-off, vertical landing, and low-speed flight, which depends principally on engine-driven lift devices or engine thrust for the lift during these flight regimes and on non-rotating aerofoil(s) for lift during horizontal flight;

“Airship” means a power-driven lighter-than-air aircraft;

“Gilder” means a non-power-driven heavier-than-air aircraft, deriving its lift in flight chiefly from aerodynamic reactions on surfaces which remain fixed under given conditions of flight;

“Balloon” means a non-power-driven lighter-than-air aircraft;

“Solo flight time” means flight time during which a student pilot is the solo occupant of an aircraft;

“Pilot-in-command under supervision” means co-pilot performing, under the supervision of the pilot-in-command, the duties and functions of a pilot-in-command, in accordance with a method of supervision certified by the Director General;

“Director General” means the Director General of the Civil Aviation Department.

Section 3. The applicant for the Personnel shall have qualifications as follows:

3.1 A student pilot

- (1) Age: The applicant shall be not less than 17 years of age;
- (2) Medical fitness: The applicant shall hold a Class 2 Medical

Assessment.

3.2 An aeroplane private pilot, helicopter private pilot, power-lift private pilot and airship private pilot:

- (1) Age: The applicant shall be not less than 17 years of age;
- (2) Medical fitness: The applicant shall hold a Class 2 Medical

Assessment;

(3) Knowledge: The applicant shall have the following knowledge:

A. Air law in relation to:

1) Rules and regulations relevant to the holder of a private pilot licence;

2) Rules of the air;

3) Altimeter setting procedures;

4) Appropriate air traffic services practices and procedures.

B. Aircraft general knowledge in relation to:

1) Principles of operation and functioning of powerplants, systems and instruments;

2) Operating limitations of the category of aircraft and powerplants as applied for the licence; and operational information from the flight manual or other appropriate documents.

For helicopters and powered-lifts, the applicant shall have additional knowledge in relation to functioning of transmission. For airships, the applicant shall have additional knowledge in relation to physical properties and practical application of gases.

C. Flight performance, planning and loading in relation to:

1) Effects of loading and mass distribution on flight characteristics; mass and balance calculations;

2) Use and practical application of take-off, landing and other performance data;

3) Pre-flight and en-route flight planning appropriate to private operations under VFR; preparation and filing of air traffic services flight plans; air traffic services procedures; position reporting procedures; altimeter setting procedures; and operations in areas of high-density traffic.

D. Human performance in relation to private pilots including principles of threat and error management.

E. Meteorology in relation to elementary aeronautical meteorology; use of, and procedures for obtaining, meteorological information; altimetry; hazardous weather conditions.

F. Navigation in relation to air navigation and dead-reckoning techniques; and use of aeronautical charts.

G. Operational procedures in relation to:

1) Application of threat and error management to operational performance;

2) Altimeter setting procedures;

3) Use of aeronautical documentation such as AIP, NOTAM, aeronautical codes and abbreviations;

4) Precautionary and emergency procedures, including action to be taken to avoid hazardous weather, wake turbulence and other operating hazards. In the case of helicopters and powered-lifts, the applicant shall have additional knowledge in relation to settling with power; ground resonance; retreating blade stall; dynamic rollover and other operating hazards; safety procedures associated with flight in VMC.

H. Principles of flight

I. Radiotelephony in relation to communication procedures and phraseology; and action to be taken in case of communication failure.

(4) Skill: The applicant shall have the following skills:

An aeroplane private pilot shall have completed flight time as a pilot of aeroplanes not less than 60 hours, or not less than 40 hours if completed during a course of training approved by the Director General from a training organization approved by the Director General. Experience under the supervision of a flight instructor in a flight simulation training device approved by the Director General is acceptable as part of the total flight time of 60 hours or 40 hours, as the case may be. Credit for such experience shall be limited to a maximum of 5 hours.

When the applicant has flight time as a pilot of aircraft in other categories, the Director General may determine in a notification that such experience shall be used as flight time of aeroplanes.

The applicant shall have completed not less than 10 hours of solo flight time, including not less than 5 hours of solo cross-country flight time with at least one cross-country flight totaling not less than 270 km (150 NM) in the course of which full-stop landings at two different aerodromes shall be made.

A helicopter private pilot shall have completed flight time as a pilot of helicopters not less than 60 hours, or not less than 40 hours if completed during a course of training approved by the Director General from a training organization approved by the Director General. Experience under the supervision of a flight instructor in a flight simulation training device approved by the Director General is acceptable as part of the total flight time of 60 hours or 40 hours, as the case may be. Credit for such experience shall be limited to a maximum of 5 hours.

When the applicant has flight time as a pilot of aircraft in other categories, the Director General may determine in a notification that such experience shall be used as flight time of helicopters.

The applicant shall have completed not less than 10 hours of solo flight time, including not less than 5 hours of solo cross-country flight time with at least one cross-country flight totaling not less than 180 km (100 NM) in the course of which full-stop landings at two different aerodromes shall be made.

A powered-lift private pilot shall have completed flight time as a pilot of powered-lifts not less than 40 hours, and shall have received not less than 20 hours of dual instruction time from a flight instructor. Experience under the supervision of a flight instructor in a flight simulation training device approved by the Director General is acceptable as part of the total flight time of 40 hours or 20 hours, as the case may be. Credit for such experience shall be limited to a maximum of 5 hours.

When the applicant has flight time as a pilot of aircraft in other categories, the Director General may determine in a notification that such experience shall be used as flight time of powered-lifts.

The applicant shall have completed not less than 10 hours of solo flight time, including not less than 5 hours of solo cross-country flight time with at least one cross-country flight totaling not less than 270 km (150 NM) in the course of which full-stop landings at two different aerodromes shall be made.

An airship private pilot shall have completed flight time as a pilot of airships not less than 25 hours, including at least:

A. 3 hours of cross-country flight time totaling not less than 45 km (25 NM);

- B. 5 take-offs and 5 landings to a full stop at an aerodrome with each landing involving a flight in the traffic pattern at an aerodrome;
- C. 3 hours of instrument time; and
- D. 5 hours as pilot assuming the duties of the pilot-in-command under the supervision of the pilot-in-command.

3.3 A multi-crew pilot:

- (1) Age: The applicant shall be not less than 18 years of age;
- (2) Medical fitness: The applicant shall hold a Class 1 Medical Assessment;
- (3) Knowledge: The applicant shall have the knowledge as specified in 3.5 (3) for the applicant for the airline transport pilot;
- (4) Skill: The applicant shall have completed in the training course approved by the Director General from a training organization certified by the Director General not less than 240 hours as pilot flying and pilot not flying of actual and simulated flight.

Flight experience in actual flight under paragraph one shall include at least the experience requirements at 3.2 for private pilots, training night flying and flight by reference solely to instruments, and flying a turbine-powered aeroplane certified by the Director General with a minimum crew of at least two pilots, or in a flight simulation training device approved by the Director General.

3.4 An aeroplane commercial pilot, helicopter commercial pilot, powered-lift commercial pilot and airship commercial pilot:

- (1) Age: The applicant shall be not less than 18 years of age;
- (2) Medical fitness: The applicant shall hold a Class 1 Medical Assessment;
- (3) Knowledge: The applicant shall have the following knowledge:
 - A. Air law in relation to:
 - 1) Rules and regulations relevant to the holder of a commercial pilot licence;
 - 2) Rules of the air;
 - 3) Appropriate air traffic services practices and procedures.
 - B. Aircraft general knowledge in relation to:
 - 1) Principles of operation and functioning of powerplants, systems and instruments;
 - 2) Operating limitations of the category of aircraft and powerplants as applied for the licence; and operational information from the flight manual or other appropriate documents;

3) Use and serviceability checks of equipment and systems of appropriate aircraft;

4) Maintenance procedures for airframes, systems and powerplants of appropriate aircraft. For helicopters and powered-lifts, the applicant shall have additional knowledge in relation to transmission. For airships, the applicant shall have additional knowledge in relation to physical properties and practical application of gases;

C. Flight performance, planning and loading in relation to:

1) Effects of loading and mass distribution on aircraft handling, flight characteristics and performance; mass and balance calculations;

2) Use and practical application of take-off, landing and other performance data;

3) Pre-flight and en-route flight planning appropriate to commercial operations under VFR; preparation and filing of air traffic services flight plans; air traffic services procedures; altimeter setting procedures. In the case of powered-lifts, helicopters and airships, the applicant shall have additional knowledge in relation to effects of external loading on handling.

D. Human performance in relation to human performance including principles of threat and error management.

E. Meteorology in relation to:

1) Interpretation and application of aeronautical meteorological reports, charts and forecasts; use of, and procedures for obtaining, meteorological information, pre-flight and in-flight, and altimetry;

2) Aeronautical meteorology; climatology of relevant areas in respect of the elements having an effect upon aviation; the movement of pressure systems, the structure of fronts, and the origin and characteristics of significant weather phenomena which affect take-off, en-route and landing conditions;

3) Causes; recognition and effects of icing; frontal zone penetration procedures; and hazardous weather avoidance.

F. Navigation in relation to air navigation, including the use of aeronautical charts, instruments and navigation aids; an understanding of the principles and characteristics of appropriate navigation systems; and operation of airborne equipment.

In the case of airships, the applicant shall have additional knowledge in relation to:

1) Use, limitation and serviceability of avionics and instruments necessary for control and navigation;

2) Use, accuracy and reliability of navigation system used in departure, en-route, approach and landing phases of flight, identification of radio navigation aids.

G. Operational procedures in relation to:

1) Application of threat and error management to operational performance;

2) Use of aeronautical documentation such as AIP, NOTAM, and aeronautical codes and abbreviations;

3) Altimeter setting procedures;

4) Precautionary and emergency procedures;

5) Operational procedures for carriage of freight; potential hazards associated with dangerous goods;

6) Requirements and practices for safety briefing to passengers, including precautions to be observed when embarking and disembarking from aircraft.

In the case of helicopters and powered-lifts, the applicant shall have additional knowledge in relation to settling with power, ground resonance; retreating blade stall; dynamic rollover, and other operating hazards; safety procedures associated with flight in VMC.

H. Principles of flight

I. Radiotelephony in relation to communication procedures and phraseology, and action to be taken in case of communication failure.

(4) Skill: The applicant shall have the following skills:

An aeroplane commercial pilot shall have completed in the training course on commercial pilots approved by the Director General from a training organization approved by the Director General not less than 200 hours of flight time as a pilot of aeroplanes. Experience under the supervision of a flight instructor in a flight simulation training device approved by the Director General is acceptable as part of the total flight time of 200 hours. Credit for such experience shall be limited to a maximum of 10 hours. The applicant shall have completed in aeroplanes not less than:

A. 100 hours as pilot-in-command;

B. 20 hours of cross-country flight time as pilot-in-command, including a cross-country flight totaling not less than 540 km (300 NM) in the course of which full-stop landings at two different aerodromes shall be made; and

C. 10 hours of instrument instruction time of which not more than 5 hours may be instrument ground time.

When the applicant has flight time as a pilot of aircraft in other categories, the Director General may determine in a notification that such experience shall be used as flight time of aeroplanes.

A helicopter commercial pilot shall have completed in the training course on commercial pilots approved by the Director General from a training organization approved by the Director General not less than 150 hours of flight time as a pilot of helicopters. Experience under the supervision of a flight instructor in a flight simulation training device approved by the Director General is acceptable as part of the total flight time of 150 hours. Credit for such experience shall be limited to a maximum of 10 hours. The applicant shall have completed in helicopters not less than:

A. 35 hours as pilot-in-command;

B. 10 hours of cross-country flight time as pilot-in-command, including a cross-country flight in the course of which landings at two different aerodromes shall be made; and

C. 10 hours of instrument instruction time of which not more than 5 hours may be instrument ground time.

When the applicant has flight time as a pilot of aircraft in other categories, the Director General may determine in a notification that such experience shall be used as flight time of helicopters.

A powered-lift commercial pilot shall have completed in the training course on commercial pilots approved by the Director General from a training organization approved by the Director General not less than 150 hours of flight time as a pilot of powered-lifts. Experience under the supervision of a flight instructor in a flight simulation training device approved by the Director General is acceptable as part of the total flight time of 200 hours. Credit for such experience shall be limited to a maximum of 10 hours. The applicant shall have completed in powered-lifts not less than:

A. 50 hours as pilot-in-command;

B. 10 hours of cross-country flight time as pilot-in-command, including a cross-country flight totaling not less than 540 km (300 NM) in the course of which full-stop landings at two different aerodromes shall be made; and

C. 10 hours of instrument instruction time of which not more than 5 hours may be instrument ground time.

When the applicant has flight time as a pilot of aircraft in other categories, the Director General may determine in a notification that such experience shall be used as flight time of power-lifts.

An airship commercial pilot shall have completed in not less than 200 hours of flight time as a pilot of aircraft. The applicant shall have completed not less than:

- A. 50 hours as a pilot of airships;
- B. 30 hours in airships as pilot-in-command or pilot-in-command under supervision, to include not less than:
 - 1) 10 hours of cross-country flight time; and
 - 2) 10 hours of night flight.
- C. 40 hours of instrument instruction time of which 20 hours shall be in flight and 10 hours in flight in airships; and
- D. 20 hours of flight training in airships in the areas of operation specified in a notification by the Director General.

3.5 An aeroplane airline transport pilot, helicopter airline transport pilot, and powered-lift airline transport pilot:

- (1) Age: The applicant shall be not less than 21 years of age;
- (2) Medical fitness: The applicant shall hold a Class 1 Medical Assessment;
- (3) Knowledge: The applicant shall have the following knowledge:
 - A. Air law in relation to:
 - 1) Rules and regulations relevant to the holder of an airline transport pilot licence;
 - 2) Rules of the air;
 - 3) Appropriate air traffic services practices and procedure.
 - B. Aircraft general knowledge in relation to:
 - 1) General characteristics and limitations of electrical hydraulic; pressurization and other aircraft systems; flight control systems, including autopilot and stability augmentation;
 - 2) Principles of operation, handling procedures and operating limitations of aircraft powerplants; effects of atmospheric conditions on engine performance; relevant operational information from the flight manual or other appropriate document;
 - 3) Operating procedures and limitations of the relevant category of aircraft; effects of atmospheric conditions on aircraft performance in accordance with the relevant operational information from the flight manual;
 - 4) Use and serviceability checks of equipment and systems of appropriate aircraft;
 - 5) Flight instruments, compasses, turning and acceleration errors, gyroscopic instruments, operational limits and precession effects; practices and procedures in the event of malfunctions of various flight instruments and electronic display units;

6) Maintenance procedures for airframe, systems and powerplants of appropriate aircraft.

In the case of helicopters and powered-lifts, the applicant shall have additional knowledge in relation to transmission.

C. Flight performance, planning and loading in relation to:

1) Effects of loading and mass distribution on aircraft handling, flight characteristics and performance; mass and balance calculations;

2) Use and practical application of take-off, landing and other performance data, including procedures for cruise control;

3) Pre-flight and en-route operational flight planning, preparation and filing of air traffic services flight plans, air traffic services procedures; altimeter setting procedures. In the case of helicopters and powered-lifts, the applicant shall have additional knowledge in relation to effects of external loading on handling.

D. Human performance in relation to airline transport pilots, including principles of threat and error management.

E. Meteorology in relation to:

1) Interpretation and application of aeronautical meteorological reports, charts and forecasts; codes and abbreviations; use of, and procedures for obtaining, meteorological information, pre-flight and in-flight; and altimetry;

2) Aeronautical meteorology; climatology of relevant areas in respect of the elements having an effect upon aviation; the movement of pressure systems, the structure of fronts, and the origin and characteristics of significant weather phenomena which affect take-off, en-route and landing conditions;

3) Causes, recognition and effects of icing, frontal zone penetration procedures; and hazardous weather avoidance.

In the case of aeroplanes and powered-lifts, the applicant shall have additional knowledge in relation to practical high altitude meteorology, including interpretation and use of weather reports, charts and forecasts, and jetstreams.

F. Navigation in relation to:

1) Air navigation, including the use of aeronautical charts, radio navigation aids and area navigation systems; specific navigation requirements for long-range flights;

2) Use, limitation and serviceability of avionics and instruments necessary for the control and navigation of aircraft;

3) Use, accuracy and reliability of navigation system used in departure, en-route, approach and landing phases of flight; identification of radio navigation aids;

4) Principles and characteristics of self-contained and external-referenced navigation systems; operation of airborne equipment.

G. Operational procedures in relation to:

1) Application of threat and error management to operational performance;

2) Interpretation and use of aeronautical documentation such as AIP, NOTAM, and aeronautical codes and abbreviations;

3) Precautionary and emergency procedures; and safety practices;

4) Operational procedures for carriage of freight, potential hazards associated with dangerous goods;

5) Requirements and practices for safety briefing to passengers, including precautions to be observed when embarking and disembarking from aircraft.

In the case of helicopters and powered-lifts, the applicant shall have additional knowledge in relation to settling with power, ground resonance, retreating blade stall, dynamic rollover, and other operating hazards; safety procedures associated with flight in VMC.

H. Principles of flight

I. Radiotelephony in relation to communication procedures and phraseology, and action to be taken in case of communication failure.

In the case of an aeroplane airline transport pilot and powered-lift airline transport pilot, in addition to the above subjects, the applicant shall have met the knowledge requirements for the instrument rating at 38 (1).

(4) Skill: The applicant shall have the following skills:

An aeroplane airline transport pilot shall have completed not less than 1,500 hours of flight time as a pilot of aeroplanes. Experience under the supervision of a flight instructor in a flight simulation training device approved by the Director General is acceptable as part of the total flight time of 100 hours. Credit for such experience shall be limited to a maximum of 25 hours. The applicant shall have completed in aeroplanes not less than:

A. 500 hours as pilot-in-command under supervision or 250 hours, either as pilot-in-command, or made up by not less than 70 hours as pilot-in-command and the necessary additional flight time as pilot-in-command under supervision;

B. 200 hours of cross-country flight time, of which not less than 100 hours shall be as pilot-in-command or as pilot-in-command under supervision;

C. 75 hours of instrument time of which not more than 30 hours may be instrument ground time; and

D. 100 hours of night flight as pilot-in-command or as co-pilot.

When the applicant has flight time as a pilot of aircraft in other categories, the Director General may determine in a notification that such experience shall be used as flight time of aeroplanes.

A helicopter airline transport pilot shall have completed not less than 1,000 hours of flight time as a pilot of helicopters. Experience under the supervision of a flight instructor in a flight simulation training device approved by the Director General is acceptable as part of the total flight time of 100 hours. Credit for such experience shall be limited to a maximum of 25 hours. The applicant shall have completed in helicopters not less than:

A. 250 hours, either as pilot-in-command, or made up by not less than 70 hours as pilot-in-command and the necessary additional flight time as pilot-in-command under supervision;

B. 200 hours of cross-country flight time, of which not less than 150 hours shall be as pilot-in-command or as pilot-in-command under supervision;

C. 30 hours of instrument time of which not more than 10 hours may be instrument ground time; and

D. 50 hours of night flight as pilot-in-command or as co-pilot.

When the applicant has flight time as a pilot of aircraft in other categories, the Director General may determine in a notification that such experience shall be used as flight time of helicopters.

A powered-lift airline transport pilot shall have completed not less than 1,500 hours of flight time as a pilot of powered-lift. Experience under the supervision of a flight instructor in a flight simulation training device approved by the Director General is acceptable as part of the total flight time of 1500 hours. The applicant shall have completed in powered-lift not less than:

A. 250 hours, either as pilot-in-command, or made up by not less than 70 hours as pilot-in-command and the necessary additional flight time as pilot-in-command under supervision;

B. 100 hours of cross-country flight time, of which not less than 50 hours shall be as pilot-in-command or as pilot-in-command under supervision;

C. 75 hours of instrument time of which not more than 30 hours may be instrument ground time; and

D. 25 hours of night flight as pilot-in-command or as co-pilot.

When the applicant has flight time as a pilot of aircraft in other categories, the Director General may determine in a notification that such experience shall be used as flight time of powered-lifts.

3.6 Instrument Rating for aeroplanes, helicopters, powered-lifts and airships.

(1) Knowledge: The applicant shall have the following knowledge:

A. Air law in relation to:

- 1) Rules and regulations relevant to flight under IFR;
- 2) Related air traffic services practices and procedures.

B. Aircraft general knowledge for the aircraft category being sought in relation to:

1) Use, limitation and serviceability of avionics, electronic devices and instruments necessary for the control and navigation of aircraft under IFR and in instrument meteorological conditions; use and limitations of autopilot; compasses, turning and acceleration errors; gyroscopic instruments, operational limits and precession effects; practices and procedures in the event of malfunctions of various flight instruments;

2) Maintenance procedures for airframes, systems and powerplants of aircraft.

C. Flight performance and planning for the aircraft category being sought in relation to:

1) Pre-flight preparations and checks appropriate to flight under IFR;

2) Operational flight planning, preparation and filing of air traffic services flight plans under IFR, altimeter setting procedures;

D. Human performance relevant to instrument flight in aircraft including principles of treat and error management.

E. Meteorology in relation to:

1) Application of aeronautical meteorology, interpretation and use of reports, charts and forecasts; codes and abbreviations; use of, and procedures for obtaining, meteorological information, altimetry;

2) Causes, recognition and effects of icing; frontal zone penetration procedures; hazardous weather avoidance.

In the case of helicopters and powered-lifts, the applicant shall have additional knowledge on effects of rotor icing.

F. Navigation for the aircraft category being sought in relation to:

1) Practical air navigation using radio navigation aids;

2) Use, accuracy and reliability of navigation systems used in departure, en-route, approach and landing phases of flight; identification of radio navigation aids.

G. Operational procedures for the aircraft category being sought in relation to:

1) Application of threat and error management of operational performance.;

2) Interpretation and use of aeronautical documentation such as AIP, NOTAM, aeronautical codes and abbreviations, and instrument procedure charts for departure, en-route, descent and approach;

3) Precautionary and emergency procedures; safety practices associated with flight under IFR; obstacle clearance criteria.

H. Radiotelephony in relation to communication procedures and phraseology as applied to aircraft operations under IFR; action to be taken in case of communication failure.

(2) Skill: The applicant shall hold a pilot licence for the aircraft category being sought and have completed in the training course on flight instruments approved by the Director General from a training organization approved by the Director General and shall have completed not less than:

A. 50 hours of cross-country flight time as pilot-in-command of aircraft in categories acceptable to the Director General, of which not less than 10 hours shall be in the aircraft category being sought; and

B. 40 hours of instrument time in aircraft of which not more than 20 hours, or 30 hours where a flight simulator is used, may be instrument ground time. The ground time shall be under the supervision of flight instructors, including threat and error management.

3.7 Flight instructor rating appropriate to aeroplanes, helicopters, powered-lifts and airships.

(1) Knowledge: The applicant for a commercial pilot shall have knowledge as specified in 3.4 (3), and shall have the following knowledge:

A. Techniques of applied instruction;

B. Use of training aids, including flight simulation training devices;

C. Human performance relevant to flight instruction including principles of threat and error management;

D. Hazards involved in simulating system failures and malfunctions in the aircraft.

(2) Skill: The applicant shall have completed in the training course on flight instructors approved by the Director General and shall have skill as specified in 3.4 (4) for the aircraft category being sought.

3.8 Glider Pilot

- (1) Age: The applicant shall be not less than 16 years of age;
- (2) Medical fitness: The applicant shall hold a Class 2 Medical

Assessment;

knowledge:

- (3) Knowledge: The applicant shall have the following

- A. Air law in relation to:
 - 1) Rules and regulations relevant to the holder of a glider pilot licence;
 - 2) Rules of the air;
 - 3) Appropriate air traffic services practices and procedures.
- B. Aircraft general knowledge in relation to:
 - 1) Principles of operation of glider systems and instruments;
 - 2) Operating limitations of glider and relevant operational information from the flight manual or other appropriate documents.
- C. Flight performance and planning in relation to:
 - 1) Effects of loading and mass distribution on flight characteristics; and mass and balance considerations;
 - 2) Use and practical application of launching, landing and other performance data;
 - 3) Pre-flight and en-route flight planning appropriate to operations under VFR; appropriate air traffic services procedures; altimeter setting procedures; operations in areas of high-density traffic.
- D. Human performance relevant to the glider pilot including principles of threat and error management.
- E. Meteorology in relation to application of elementary aeronautical meteorology; use of, and procedures for obtaining, meteorological information altimetry.
- F. Navigation in relation to air navigation and dead-reckoning techniques; and use of aeronautical charts.
- G. Operational procedures in relation to:
 - 1) Use of aeronautical documentation such as AIP, NOTAM, aeronautical codes and abbreviations;
 - 2) Different launch methods and associated procedures;
 - 3) Appropriate precautionary and emergency procedures, including action to be taken to avoid hazardous weather, wake turbulence and other operating hazards.
- H. Principles of flight relating to gliders.

(4) Skill: The applicant shall have completed not less than 6 hours of flight time as a pilot of gliders including 2 hours of solo flight time during which not less than 20 launches and landings have been performed.

When the applicant has flight time as a pilot of aeroplanes, the Director General may determine that such experience is acceptable as flight time for gliders under paragraph one.

3.9 Balloon Pilot

- (1) Age: The applicant shall be not less than 16 years of age;
- (2) Medical fitness: The applicant shall hold a Class 2 Medical Assessment;
- (3) Knowledge: The applicant shall have the following knowledge:
- A. Air law in relation to:
- 1) Rules and regulations relevant to the holder of a balloon pilot licence;
 - 2) Rules of the air;
 - 3) Appropriate air traffic services practices and procedures.
- B. Aircraft general knowledge in relation to:
- 1) Principles of operation of glider [*sic*] systems and instruments;
 - 2) Operating limitations of glider [*sic*] and relevant operational information from the flight manual or other appropriate documents;
 - 3) Physical properties and practical application of gases used in free balloons.
- C. Flight performance and planning in relation to:
- 1) Effects of loading and mass calculations;
 - 2) Use and practical application of launching, landing and other performance data, including the effect of temperature;
 - 3) Pre-flight and en-route flight planning appropriate to operations under VFR; appropriate air traffic services procedures; altimeter setting procedures; operations in areas of high-density traffic.
- D. Human performance relevant to the balloon pilot including principles of threat and error management.
- E. Meteorology in relation to application of elementary aeronautical meteorology; use of, and procedures for obtaining, meteorological information altimetry.
- F. Navigation in relation to air navigation and dead-reckoning techniques; and use of aeronautical charts.
- G. Operational procedures in relation to:

1) Use of aeronautical documentation such as AIP, NOTAM, aeronautical codes and abbreviations;
 2) Different launch methods and associated procedures;
 3) Appropriate precautionary and emergency procedures, including action to be taken to avoid hazardous weather, wake turbulence and other operating hazards.

H. Principles of flight relating to balloons.

(4) Skill: The applicant shall have completed not less than 16 hours of flight time as a pilot of balloons including at least 8 launches and ascents of which one must be solo.

3.10 Air Traffic Controller

(1) Age: The applicant shall be not less than 21 years of age and not excess 60 years of age;

(2) Medical fitness: The applicant shall hold a Class 3 Medical Assessment;

(3) Knowledge: The applicant shall have the following knowledge:

A. Air law in relation to rules and regulations relevant to the air traffic controller;

B. Air traffic control equipment in relation to principles, use and limitations of equipment used in air traffic control;

C. General knowledge in relation to principles of flight; principles of operation and functioning of aircraft, powerplants and systems; aircraft performance relevant to air traffic control operations;

D. Human performance relevant to air traffic control, including threat and error management;

E. Meteorology in relation to aeronautical meteorology, use and appreciation of meteorological documentation and information; origin and characteristics of weather phenomena affecting flight operations and safety; altimetry.

E. Meteorology in relation to application of elementary aeronautical meteorology; use of, and procedures for obtaining, meteorological information altimetry.

F. Navigation in relation to principles of air navigation; principles, limitation and accuracy of navigation systems and visual aids; and

G. Operational procedures in relation to air traffic control, communication, radiotelephony and phraseology procedures (routine, non-routine and emergency); use of the relevant aeronautical documentation; safety practices associated with flight.

(4) Skill: The applicant shall have completed a training course on air traffic control approved by the Director General and shall have not less than three months of satisfactory service engaged in the actual control of air traffic under the supervision of appropriately rated air traffic controller. The experience as specified in 3.11 (4) for air traffic controller rating for each category, shall be deemed as part of the experience specified in this paragraph.

3.11 Air traffic controller ratings shall comprise the following categories: aerodrome control rating; approach control procedural rating; approach control surveillance rating, approach precision radar control rating; area control procedural rating; area control surveillance rating.

(1) Knowledge: The applicant shall have the following knowledge:

- A. Airspace structure;
- B. Applicable rules, procedures and source of information;
- C. Air navigation facilities;
- D. Air traffic control equipment and its use;
- E. Terrain and prominent landmarks;
- F. Characteristics of air traffic;
- G. Weather phenomena; and
- H. Emergency and search and rescue plans.

In the case of aerodrome control rating, the applicant shall have additional knowledge in relation to aerodrome layout physical characteristics and visual aids.

In the case of approach control surveillance rating, approach precision radar control rating, and area control surveillance rating, the applicant shall have additional knowledge in relation to:

- A. Principles, use and limitation of the relevant ATS surveillance systems and associated equipment; and

B. Procedures for the provision of the ATS surveillance system, including procedures to ensure appropriate terrain clearance.

(4) Skill: The applicant shall have completed a training course on air traffic control approved by the Director General and provided, under the supervision of an appropriately rated air traffic controller:

A. In the case of air traffic control rating: an aerodrome control service, for a period of not less than 90 hours or one month, whichever is greater, at the unit for which the rating is sought.

B. In the case of approach control procedural rating, approach control surveillance rating, area control procedural rating, and area control surveillance rating, the control service for which the rating is sought, for a period of not less than 180 hours or three months, whichever is greater, at the unit for which the rating is sought.

C. In the case of approach precision radar control rating, not less than 200 precision approaches of which not more than 100 shall have been carried out on a radar simulator for that purpose as certified by the Director General. Not less than 50 of those precision approaches shall have been carried out at the unit and on the equipment for which the rating is sought.

If the privileges of the approach control surveillance rating include surveillance radar approach duties, the experience shall include not less than 25 plan position indicator (PPI) approaches on the surveillance equipment of the type in use at unit for which the rating is sought and under the supervision of an appropriately rated air traffic controller.

The experience specified in A., B., and C. shall have been completed within the 6-month period immediately preceding application.

When the applicant already holds an air traffic controller rating in another category, the Director General may specify in a notification the reduction of the experience required in A., B., and C. as maybe appropriate.

3.12 Flight dispatcher:

(1) Age: The applicant shall be not less than 21 years of age;

(2) Knowledge: The applicant shall have the following knowledge:

- A. Air law in relation to rules and regulations relevant to the holder of a flight dispatcher licence; air traffic services practices and procedures.
- B. Aircraft general knowledge in relation to:
- 1) Principles of operation of aeroplane powerplants, systems and instruments;
 - 2) Operating limitations of aeroplane and powerplants;
 - 3) Minimum equipment list.
- C. Flight performance calculation and planning procedures in relation to:
- 1) Effects of loading and mass distribution on aircraft performance and flight characteristics; mass and balance calculations;
 - 2) Operational flight planning; fuel consumption and endurance calculations; alternate aerodrome selection procedures; en-route cruise control; extended range operation;
 - 3) Preparation and filing of air traffic services flight plans;
 - 4) Basic principles of computer-assisted planning systems.
- D. Human performance relevant to dispatch duties.
- E. Meteorology in relation to:
- 1) Aeronautical meteorology; the movement of pressure systems; the structure of fronts, and the origin and characteristics of significant weather phenomena which affect take-off, en-route and landing conditions; and hazardous weather conditions;
 - 2) Interpretation and application of aeronautical meteorological reports, charts and forecasts; codes and abbreviations; use of, and procedures for obtaining meteorological information.
- F. Navigation in relation to principles of air navigation with particular reference to instrument flight.
- G. Operational procedures in relation to:
- 1) Use of aeronautical documentation;
 - 2) Operational procedures for the carriage of freight and dangerous goods;
 - 3) Procedures relating to aircraft accidents and incidents; emergency flight procedures;
 - 4) Procedures relating to unlawful interference and sabotage of aircraft.

H. Principles of flight relating to the appropriate category of aircraft.

I. Radio communication in relation to procedures for communicating with aircraft and relevant ground stations.

(3) Skill: The applicant shall have gained the following experience:

A. A total of two years of service in any one or in any combination of the following capacities inclusive, provided that in any combination of experience the period serviced in any capacity shall be at least one year:

1) A flight crew member in air transportation; or
2) A meteorologist in an organization dispatching aircraft in air transportation; or

3) An air traffic controller; or a technical supervisor of flight operations officers or air transportation flight operations systems; or

B. At least one year as an assistant in the dispatching of air transport; or

C. Have completed a course of training approved by the Director General. The applicant shall have served under the supervision of a flight operations officer at least ninety working days within the six months immediately preceding the application.

Article 4. Standards for issuance of each Medical Assessment shall be in accordance with those specified in a notification by the Director General which shall not be lower than Annex 1 (latest edition) of the Convention. The applicant for the personnel shall not use narcotics, [or] drink or take alcohol, psychedelic drugs, sedatives [or] other psychoactive substances in a way that constitutes a direct hazard to the applicant.

Article 5. Crediting of flight time as specified in the matter of skill shall be as follows:

(1) A student pilot or the holder of a pilot licence shall be entitled to be credited in full with all solo, dual instruction and pilot-in-command flight time towards the total flight time required for the initial issuance of a pilot licence or the issuance of a higher grade of pilot licence;

(2) The holder of a pilot licence, when acting as co-pilot at a pilot station of an aircraft certificated for operation by a single pilot but required by the Director General to be operated with a co-pilot, shall be entitled to be credited with not more than 50 per cent of the total flight time required for a higher grade of pilot licence;

(3) The holder of a pilot licence, when acting as co-pilot at a pilot station of an aircraft certificated to be operated with a co-pilot, shall be entitled to be credited in full with this flight time towards the total flight time required for a higher grade of pilot licence;

(4) The holder of a pilot licence, when acting as pilot-in-command under supervision, shall be entitled to be credited in full with this flight time towards the total flight time required for a higher grade of pilot licence.

Article 6. Certification of a course of training and certification of a training organization shall be in accordance with the rules and procedures specified in a notification by the Director General.

Article 7. A person who has completed a course of training at a training organization approved before the date this Regulations comes into force shall be a qualified person as specified in relation to skill.

Article 8. All rules, notifications and orders issued by virtue of the Regulations of the Civil Aviation Board, Number 68 on qualifications of applicants for personnel, shall remain in force as long as it is not inconsistent with or contradictory to this Regulations.

Article 9.¹ This Regulations shall come into force upon expiration of 30 days from the date following the date of its publication in the Government Gazette.

Notified on this 5th day of November B.E. 2550

Admiral Theera Haocharoen

Minister of Transport

Chairman of Civil Aviation Board

¹ Government Gazette, Volume 125, Special Part 10 ng, p. 7, 16 January 2551.