

Aircraft Flight Operation Regulations

Re-edited 257 articles promulgated on September 28, 2000.

Amendment to Articles 97, 98, 129, 131, 169, 241, 242 and 244, promulgated on March 30, 2001.

Amendment to Articles 1, 2, 19, 21, 32, 76, 91, 94, 96, 103, 110, 112~114, 116, 120, 121, 134, 138, 151, 153, 169, 172, 174, 177, 179, 194, 209, 220, 226, 227, 231, 232 and 245, addition of Articles 27-1, 28-1, 72-1, 147-1, 185-1, 193-1, and 215-1 promulgated on October 3, 2002.

Amendment to Articles 72-1, 193-1 promulgated on February 13, 2003.

Amendment to Articles 110, 112, 113, 121, 227, and 232 promulgated on December 30, 2004.

Amendment to Articles 2, 3, 8, 23, 42, 43, 44, 72-1, 89, 91, 103, 110, 111, 112, 113, 115, 117, 120, 121, 124, 125, 126, 131, 134, 136, 143, 146, 148, 149, 156, 161, 165, 166, 170, 171, 174, 182, 193-1, 213, 220, 225, 227, 228, 229, 231, 232, 235, 237, 242, 245, 247, 249 and 250 , addition of Articles 4-1, 8-1, 43-1, 46-1, 46-2, 46-3, 127-1, 131-1, 131-2, 131-3, 131-4, 142-1, 170-1, 209-1, 222-1, 242-1, 242-2 and 250-1, promulgated on January 17, 2007.

Amendment to all Articles, and promulgated on December 11, 2008.

Amendment to Articles 2, 8, 8-1, 12, 31, 42, 54, 57, 66, 67, 68, 68, 70, 71, 72, 77, 81, 94, 98, 109, 113, 115, 116, 118, 119, 120, 128, 133, 154, 160, 173, 185, 188, 189, 190, 199, 202, 202-1, 220, 222, 223, 225, 229, 244, 248, 251, 254, 258, 259, 263, 276, 282, 284, 346, and attachment 2, 5, 6, 8, 12, 15, 19, 20, 20-1, 20-2, 33, and promulgated on December 30, 2009.

Amendment to Article 316 promulgated on July 18, 2011.

Amendment to Articles 2, 9, 10, 57, 75, 94, 95, 99, 101, 113, 119, 125, 130, 132, 133, 134, 135, 136, 138, 142, 143, 144, 144-1, 145, 145-1, 151, 188, 199, 202-1, 204, 207-1, 208, 209, 210, 217, 220-1, 225, 227, 227-1, 228, 234, 240, 242, 244, 246, 248, 248-1, 250, 252, 261, 262, 263, 263-1, 264, 266, 270, 281, 282, 284, 285-1 To 285-32, 286-1, 287, 289, 292, 295-1, 299, 300, 308-1, 313-1, 318, 346, 346-1, 347, 349, 352 and promulgated on March 19, 2013.

MINISTRY OF TRANSPORTATION AND COMMUNICATIONS Order is hereby given, for designating the date of enforcement to be 1st, August 2013 for the promulgated Article 36, 36-1, 36-2, 37, 37-2 to 43-1, 76-1 and 192 amendment to "Aircraft Flight Operation Regulations" and date of enforcement to be 1st, January 2014 for the promulgated Article 37-1 amendment to the aforesaid Regulations.

Amendment to Article 274 promulgated on August 28, 2013.

Amendment to Article 84, 202-1, and 233 promulgated on July 30, 2014.

Amendment to Article 2, 16, 17, 49, 50, 77, 78, 148, 172, 209, 225, 274, 289, 319; attachment 2, 28 and 33 promulgated on October 8, 2015.

Amendment to Article 99, 240, 308-1 promulgated on December 23, 2016.

Amendment to Article 7, 17, 109, 111, 112, 113-1, 114, 118, 142, 144-1, 146, 150, 152, 161, 163, 164, 167 to 169, 173, 177, 187, 244, 246, 247, 248-1, 273, 276, 279, 285-24, 285-25, 343,

attachment 2, 5, 17, 18-1, 20 and 31, addition of Articles 8-2, 8-3, deletion of Article 145, 184 and attachment 12 promulgated on July 13, 2018.

Amendment to Article 351-1 promulgated on May 20, 2020.

Amendment to Article 199 and 284 promulgated on March 12, 2021.

Chapter 1 - General

Article 1

This regulation is established in accordance with Article 41-1, paragraph 2 of the Civil Aviation Act (the “**Act**”).

Article 2

Definitions:

1. Civil air transport enterprise. An aircraft operation involving the transport of passengers or property for compensation or hire.
2. General aviation enterprise. An enterprise engaging in the aviation business other than Civil air transport enterprise for compensation, including aerial tourism, survey, photographing, fire-fighting, searching, paramedic, hauling and lifting, spraying and dusting, drone-hauling service, business charter, as well as other authorized aviation service.
3. Aircraft operator (operator). A person, corporation or government organization engaged in an aircraft operation.
4. Crew/Crew member. A person assigned by an operator to duty on an aircraft during flight.
5. Flight crew member. A licensed crew member charged with duties essential to the operation of an aircraft during flight.
6. Cruise relief pilot. A flight crew member who is assigned to perform pilot tasks during cruise flight, to allow the pilot-in-command or a co-pilot to obtain planned rest but may not act as a pilot-in-command nor perform take-off or landings on left seat..
7. Single flight crew. A composition of flight crew during aircraft flight time no less than the required by the flight manual for that type of aircraft. It shall include a pilot in command, a co-pilot and a flight engineer if applicable.
8. Multiple flight crew. During flight, it shall include a pilot-in-command, a cruise relief

pilot and a co-pilot; or a pilot in command, a cruise pilot, a co-pilot and two flight engineers; or a pilot-in-command, a captain, a co-pilot and two flight engineers.

9. Double flight crew. During flight, it shall include a pilot-in-command, a captain, and two co-pilots; or one pilot in command, one cruise pilot, two co-pilots and two flight engineers; or a pilot-in-command, a captain, two co-pilots, and two flight engineers, or one pilot-in command, one cruise pilot, two co-pilots, and two flight engineers.
10. Pilot-in-Command (PIC). The pilot designated by the operator, or the owner, as being in command and charged with the safe conduct of a flight.
11. Cabin crew member. A crew member who performs, in the interest of safety of passengers, duties assigned by the operator or the pilot-in-command of the aircraft, but who shall not act as a flight crew member.
12. Flight manual. A manual approved by the State of Design or a manual accepted by the Civil Aeronautics Administrations(CAA), Minister of Transportations and Communications(MOTC) and associated with the certificate of airworthiness, containing limitations within which the aircraft is to be considered airworthy, and instructions and information necessary to the flight crew members for the safe operation of the aircraft.
13. Flight operations manual. A manual established by the operator, containing general policy, regulations and limitations for the flight operations of the aircraft. The manual is established in accordance with CAA and aircraft manufacture's instructions.
14. Aircraft operating manual. A manual, established by the aircraft manufacturer, or amended by the specified operator containing normal, abnormal and emergency procedures, checklists, limitations, performance information, details of the aircraft systems and other material relevant to the operation of the aircraft.
15. General maintenance manual. A manual established by the operator, containing general policy, requirements and standards for the maintenance of each type aircraft operated by the operator. The manual is established in accordance with CAA and aircraft manufacture's instructions and other material relevant to the maintenance of the aircraft.
16. Aeronautical charts. A representation of a portion of the Earth, its culture and relief, specifically designated to meet the requirements of air navigation.
17. Alternate aerodrome. Alternate aerodromes include the following:
 - a) Take-off alternate. An alternate aerodrome at which an aircraft can land should this become necessary shortly, after take off.
 - b) En route alternate. An alternate aerodrome at which an aircraft would be able to land

after experiencing an abnormal or emergency condition while en route.

- c) Destination alternate. An alternate aerodrome to which an aircraft may proceed should it become either impossible or inadvisable to land at the aerodrome of intended landing.

18. Flight time. The time regarded for the calculation from the moment that flight crew members commence the flight duty and the limitation of flight time log.

- a) Airplane. The total time from the moment an airplane first moves for the purpose of taking off until the moment it finally comes to rest after landing.

- b) Helicopters. The total time from the moment a helicopter's rotor blades start turning until the moment the helicopter finally comes to rest at the end of the flight, and the rotor blades are stopped.

19. Service time. The total time from the moment an aircraft lifts off the ground until the moment it touches down at the end of the flight. It is for calculation and record keeping of service time of the aircraft, engine, propeller, installations and equipment thereof, unless the maintenance manual requires otherwise.

20. Duty Period. A period which starts when a flight or cabin crew member is required by an operator to report for or to commence a duty and ends when that person is free from all duties. These duties are, but are not limited to: flight duty, administrative work, training, positioning and standby; should have been included into duty rosters.

21. Rest period. A continuous and defined period of time, subsequent to and/or prior to duty, during which flight or cabin crew members are free of all duties.

22. Rest place. Flight crew member's residence, or hotel, or dormitory provided by the operator for accommodations of flight crew members.

23. Sleeping berths. Equipment on board an aircraft on which a flight crew member may lay down and rest.

24. Dangerous goods. Articles or substances classified by CAA in accordance with Article 43, paragraph 3 of the Act.

25. Aerodrome operating minima. The limits of usability of an aerodrome for takeoff and landing, expressed in terms of runway visual range and/or visibility, decision altitude/height (DA/H) or minimum descent altitude/height (MDA/H).

26. Visual reference. The visual aids of the approach area that should have been in view for a sufficient time for the pilot to make an assessment of the aircraft position and rate of change of position, in relation to the desired flight path.

27. Decision height (DH). A specified height in the precision approach or approach with vertical guidance at which a missed approach must be initiated if the required visual reference to continue the approach has not been established. Decision height (DH) is referenced to the threshold elevation.
28. Decision attitude (DA). A specified attitude in the precision approach or approach with vertical guidance at which a missed approach must be initiated if the required visual reference to continue the approach has not been established. Decision attitude (DA) is referenced to mean sea level.
29. Flight recorder. Any type of recorder installed in the aircraft for the purpose of complementing accident/incident investigation. It includes the flight data recorder and cockpit voice recorder.
30. Pressure-altitude. An atmospheric pressure expressed in terms of altitude that correspond to that pressure in the Standard Atmosphere.
31. Cabin pressure altitude. A cabin pressure expressed in terms of altitude that corresponds to that pressure in the Standard Atmosphere.
32. Runway visual range (RVR). The range over which the pilot of an aircraft on the centreline of a runway can see the runway surface markings or the lights delineating the runway or identifying its centreline.
33. Minimum descent altitude (MDA). A specified altitude in a non-precision approach or circling approach below which descent must not be made without the required visual reference. Minimum descent altitude (MDA) is referenced to mean sea level.
34. Minimum descent height (MDH). A specified height in a non-precision approach or circling approach below which descent must not be made without the required visual reference. Minimum descent height (MDH) is referenced to the aerodrome elevation or to the threshold elevation if that is more than 2 m (7 ft) below the aerodrome elevation. A minimum descent height for a circling approach is referenced to the aerodrome elevation.
35. Master minimum equipment list (MMEL). A list established for a particular aircraft type by the organization responsible for the type design with the approval of the State of Design containing items, one or more of which is permitted to be unserviceable at the commencement of a flight. The MMEL may be associated with special operating conditions, limitations or procedures.
36. Minimum equipment list (MEL). A list which provides for the operation of aircraft, subject to specified conditions, with particular equipment inoperative, prepared by an operator in conformity with, or more restrictive than, the MMEL established for the aircraft

type. The MEL shall be approved by the CAA before implementation.

37. Configuration deviation list (CDL). A list established by the organization responsible for the type design with the approval of the State of design which identifies any external parts of an aircraft type which may be missing for the aircraft to continue service, and contains, where necessary any information on the associated operating limitations and performance correction. The MEL shall be approved by the CAA before implementation.
38. Emergency locator transmitter (ELT). Generic term describing equipment which broadcast distinctive signals on designated frequencies and, depending on application, may be automatically activated by impact or be manually activated. An ELT may be any of the following:
- a) Automatic fixed ELT (ELT (AF)). An automatically activated ELT which is permanently attached to an aircraft.
 - b) Automatic portable ELT (ELT (AP)). An automatically activated ELT which is rigidly attached to an aircraft but readily removable from the aircraft.
 - c) Automatic deployable ELT (ELT (AD)). An ELT which is rigidly attached to an aircraft and which is automatically deployed and activated by impact, and, in some cases, also by hydrostatic sensors. Manual deployment is also provided.
 - d) Survival ELT (ELT(S)). An ELT which is removable from an aircraft, stowed so as to facilitate its ready use in an emergency, and manually activated by survivors.
39. Visual meteorological conditions (VMC). Meteorological conditions expressed in terms of visibility, distance from cloud and ceiling equal or better than specified minima
40. Instrument meteorological conditions (IMC). Meteorological conditions expressed in terms of visibility, distance from cloud and ceiling less than the minima specified for visual meteorological conditions.
41. Obstacle clearance height (OCH). The lowest height above the elevation of the relevant runway threshold or the aerodrome elevation as applicable, used in establishing compliance with appropriate obstacle clearance criteria. Obstacle clearance height is referenced to the threshold elevation or in the case of non-precision approaches to the aerodrome elevation or the threshold elevation if that is more than 2 m (7 ft) below the aerodrome elevation. An obstacle clearance height for a circling approach is referenced to the aerodrome elevation.
42. Obstacle clearance altitude (OCA). The lowest altitude above the elevation of the relevant runway threshold or the aerodrome elevation as applicable, used in establishing compliance with appropriate obstacle clearance criteria. Obstacle clearance altitude is referenced to mean sea level or in the case of non-precision approaches to the aerodrome

elevation or the threshold elevation if that is more than 2 m (7 ft) below the aerodrome elevation. An obstacle clearance height for a circling approach is referenced to the aerodrome elevation.

43. Approach and landing operations using instrument approach procedures. Instrument approach and landing operations are classified as follows:

- a) Precision approach and landing operations. An instrument approach and landing using precision lateral and vertical guidance with minima as determined by the category of operation.
- b) Non-precision approach and landing operations. An instrument approach and landing which utilizes lateral guidance but does not utilize vertical guidance.
- c) Approach and landing operations with vertical guidance. An instrument approach and landing which utilizes lateral and vertical guidance but does not meet the requirements established for precision approach and landing operations.

44. Categories of precision approach and landing operations:

- a) Category I (CAT I) operation. A precision instrument approach and landing with a decision height not lower than 60m (200 ft) and with either a visibility is not less than 800m or a runway visual range not less than 550m.
- b) Category II (CAT II) operation. A precision instrument approach and landing with a decision height lower than 60 m (200 ft) but not lower than 30 m (100 ft) and runway visual range not less than 300 m.
- c) Category IIIA (CAT IIIA) operation. A precision instrument approach and landing with decision height lower than 30 m (100 ft) and a runway visual range not lower than 175m.
- d) Category IIIB (CAT IIIB) operation. A precision instrument approach and landing height not lower than 15 m (50 ft) and runway visual range less than 175m but not less than 50m.
- e) Category IIIC (CAT IIIC) operation. A precision instrument approach and landing with no decision height and no runway visual range limitations.

45. Performance-based navigation . Area navigation based on performance requirements for aircraft operating along an ATS route, on an instrument approach procedure or in a designated airspace.

46. Initial training. The training required for a crew member who has not been qualified and served in the same position on another aircraft of the same type.

47. Transition training. The training required for crew member who is qualified and serves in the same position on another aircraft type.
48. Upgrade training. The training required for a crew member who is qualified and serves as a co-pilot or a flight engineer on a specific aircraft type before he/she serves as a pilot-in-command or a co-pilot on that aircraft respectively.
49. Recurrent training. The training for qualified crew member in a certain type of aircraft, to maintain their proficiency to meet the standard requirement.
50. Re-qualification training. The training required for crew members previously trained, who have become unqualified due to not meeting within the recurrent training requirements or the proficiency checks. The training requirement scope shall be dependent upon the duration of disqualification and the on type experience of the applicant.
51. Minimum Navigation Performance Specification. For flights in defined airspace, where an aircraft shall be provided with minimum navigation performance specifications.
52. Night. The hours between the end of evening civil twilight and the beginning of morning civil twilight.
53. Congested area. In relation to a city, town or settlement, any area which is substantially used for residential, commercial or recreation purposes.
54. Large aircraft.
- Airplane. An airplane of a maximum certificated take-off mass of over 5700 kg.
- Helicopter. A helicopter of a maximum certificated take-off mass of over 3175 kg.
55. Small aircraft.
- Airplane. An airplane of a maximum certificated take-off mass of 5700 kg or less.
- Helicopter. A helicopter of a maximum certificated take-off mass of 3175 kg or less.
56. Helicopter. A heavier-than-air aircraft supported in flight chiefly by the reaction of the air on one or more power-driven rotors on substantially vertical axes.
57. Performance class 1 helicopter. Operations with performance such that, in the event of a critical power-unit failure, performance is available to enable the helicopter to safely continue the flight to an appropriate landing area, unless the failure occurs prior to reaching the take-off decision point (TDP) or after passing the landing decision point (LDP), in which cases the helicopter must be able to land within the rejected take-off or landing area.
58. Performance class 2 helicopter. Operations with performance such that, in the event of

critical power-unit failure, performance is available to enable the helicopter to safely continue the flight to an appropriate landing area, except when the failure occurs early during the take-off manoeuvre or late in the landing manoeuvre, in which cases a forced landing may be required.

- 59. Performance class 3 helicopter. Operations with performance such that, in the event of a power-unit failure at any time during the flight, a forced landing will be required.
- 60. Helideck. A heliport located on a floating or fixed offshore structure.
- 61. Heliport. An aerodrome or a defined area or a structure intended to be used wholly or in part for the arrival, departure and surface movement of helicopters.
- 62. Elevated heliport. A heliport located on a raised structure on land.
- 63. Helicopter operating minima. The limit of usability of a heliport for take-off/landing expressed in terms of runway visual range/ visibility, decision altitude/height (DA/H) minimum descent altitude (MDA/H) and cloud conditions.
- 64. Defined point after take-off (DPATO). The point, within the take-off and initial climb phase, before which the helicopter's ability to continue the flight safely, with one engine inoperative, is not assured and a forced landing may be required.
- 65. Defined point before landing (DPBL). The point, within the approach and landing phase, after which the helicopter's ability to continue the flight safely, with one engine inoperative, is not assured and a forced landing may be required.
- 66. Take-off decision point (TDP). The point used in determining take-off performance from which, a power-unit failure occurring at this point, either a rejected take-off may be made or a take-off safely continued.
- 67. Landing decision point. The point used in determining landing performance from which, a power-unit failure occurring at this point, the landing may be safely continued or a balked landing initiated.
- 68. Point of no return. The point on a flight at which, due to fuel consumption, an aircraft is no longer capable of returning to its aerodrome of origin safely. After passing the point of no return, the aircraft has no option but to continue to destination or alternate aerodrome.
- 69. Take-off and initial climb phase. That part of the helicopter flight from the start of take-off to 300 m (1,000 ft) above the elevation of the final approach and take-off area (FATO), if the flight is planned to exceed this height, or to the end of the climb in the other cases.
- 70. En-route phase. That part of the helicopter flight from the end of the take-off and initial climb phase to the commencement of the approach and landing phase.

71. Final approach and take-off area (FATO). A defined area over which the final phase of the approach manoeuvre to hover or landing is completed and from which the take-off manoeuvre is commenced. Where the FATO is to be used by helicopters operating in performance Class 1, the defined area includes the rejected take-off area available.
72. Approach and landing phase. That part of the flight from 300 m (1000 ft) above the elevation of the FATO, if the flight is planned to exceed this height, or from the commencement of the descent in the other cases, to landing or to the bailed landing point.
73. Autorotation. A rotorcraft flight condition in which the lifting rotor is driven entirely by action of the air when the rotorcraft is in motion.
74. Flight plan. Specified information provided to air traffic services units, relative to an intended flight or portion of a flight of an aircraft.
75. Operational flight plan. The operator's plan for the safe conduct of the flight based on consideration of meteorological conditions, aircraft performance, fuel requirements, flight route structure, other operating limitations and relevant expected conditions on the route to be followed and at the aerodromes concerned.
76. Take-off safety speed. It is the minimum climbing speed in the event of sudden failure of the critical power-unit at all speeds down to the lowest speed corresponding with the operating limits of remaining power unit.
77. Initial airworthiness. An airworthiness certificate first issued to the specific type of an aircraft by R.O.C.
78. Operational control. The exercise of authority over the initiation, continuation, diversion or termination of a flight in the interest of the safety of the aircraft and the regularity and efficiency of the flight.
79. Human Factors principles. Principles which apply to aeronautical design, certification, training, operations and maintenance and which seek safe interface between the human and other system components by proper consideration to human performance.
80. Ultra long-haul flight. A continuous nonstop flight which has at least 16 consecutive hours of flight time.
81. Acrobatic flight. An intentional maneuver involving an abrupt change in an aircraft's attitude, an abnormal attitude, or abnormal acceleration not necessary for normal flight.
82. Rebuilt power plant. Restoration of the powerplant to the applicable airworthiness standards by disassembly, cleaning, inspection, repair, reassembly, and test to the same tolerances and limits as a new item in accordance with methods, techniques, and practices

acceptable to the CAA.

83. Flight duty period. A period which commences when a crew member is required to report for duty that includes a flight or a series of flights and which finishes when the airplane finally comes to rest at the end of the last flight on which he/she is a crew member.
84. Travelling time. The time which crew member travel to the place designated by operator for the report for duty, or rest after being released from duty.
85. Positioning time. A period of time for transferring of a non-operating crew member from place to place as a passenger at the behest of the operator.
86. Home base. The location nominated by the operator to the crew member from where the crew member normally starts and ends a duty period or a series of duty periods.
87. Head-up display (HUD). A display system that presents flight information into the pilot's forward external field of view.
88. Enhanced vision system (EVS). A system to display electronic real-time images of the external scene achieved through the use of image sensors.
89. Free balloon flight operation. A flight carried out by free balloon involving the transport of passengers.
90. Free balloon tethered activity. A free balloon which is moored to the surface of the earth or an object.

Article 3

In an in-flight emergency situation requiring immediate action, the pilot in command may deviate from any rule or article to the extent required to meet that emergency. Each pilot-in-command who deviates from a rule or article shall notify the appropriate local authorities without delay. The pilot-in-command shall also notify CAA within 24 hours.

Article 4

An operator shall ensure that all employees when abroad know that they must comply with the laws, regulations and procedures of those States in which operations are conducted.

Article 5

Operators shall ensure that flight crew members demonstrate the ability to speak and understand the English language used for radiotelephony communications as specified in Regulations Governing Licenses and Ratings for Airmen.

Article 6

An operator shall ensure that all pilots are familiar with the laws, regulations and procedures, pertinent to the performance of their duties, prescribed for the areas to be traversed, the aerodromes to be used and the air navigation facilities relating thereto.

Article 7

An operator or a designated representative shall have responsibility for operational control.

Responsibility for operational control shall be delegated only to the pilot-in-command or aircraft dispatcher (collectively, “Flight Dispatcher”); if a Flight Dispatcher is delegated, the operator shall formulate the operational control and supervision procedures and submit to CAA for approval, and may implement such delegation only after CAA’s approval.

If an emergency situation which endangers the safety of the aircraft or persons becomes known first to the flight operation officer (Flight Dispatcher), action by that person shall include, where necessary, notification to the appropriate authorities of the nature of the situation without delay, and requests for assistance if required.

Article 8

An operator shall ensure that the pilot-in-command has available on board the airplane all the essential information concerning the search and rescue services in the area over which the airplane will be flown.

An operator shall carry the lists on the airplane containing information on the emergency and survival equipment carried on board the airplane. The information shall include, as applicable, the number, colour and type of life rafts and pyrotechnics, details of emergency medical supplies, water supplies and the type and frequencies of the emergency portable radio equipment. An operator shall at all times have available the aforementioned lists for immediate communication to rescue coordination centres.

Article 8-1

CAA may designate the airport operator to perform the inspection of an operator documents on its aircraft as required in accordance with Article 38 of the Act, Articles 109 and 244 of the Aircraft Flight Operation Regulations.

When the above aforementioned tests are designated by CAA in accordance with the preceding paragraph, the name of the designee, the commissioned items and regulations shall be promulgated on the government bulletin.

Article 8-2

The operator shall maintain the flight logbook and daily maintenance record according to the following specifications:

1. Flight logbook: It shall contain the date, flight time, flight number, name and duty assignment of crewmembers, departing and landing airports or place of departure and arrival, and other items of each flight, and shall be certified by the pilot-in-command.
2. Daily maintenance record: It shall contain the details of all maintenance, repair and inspection, remedial measures for deficiency and malfunctioning, records of belated deficiency modification, all types of service works and other service items before each flight, which shall be certified by licensed aircraft maintenance engineer in charge thereof, and the flight shall commence only after such records are signed by the pilot in command.

The flight logbook and maintenance records in the preceding paragraph shall be recorded in real time in chronological order with indelible ink, which may not be recorded in the same document, and shall be kept for a minimum period of one year.

The operator may establish and use electronic documentation system for the keeping and certification of the flight logbook and maintenance records in paragraph 1 herein after obtaining CAA's approval.

Article 8-3

The operator shall have the aircraft tracking capability to track the position of the airplanes which it operates throughout its area of operations, to preserve information and data, and to assist in the coordination of search and rescue from November 8, 2018,

The operator shall ensure that it has the capability to track the position of an airplane through automated reporting at least every 15 minutes for the portion(s) of the in-flight operation(s) that is planned in an oceanic area(s) under the following conditions:

1. The airplane has a maximum certificated take-off mass of over 45,500 kg and a seating capacity greater than 19; and
2. Where an air traffic services unit obtains airplane position information at greater than 15 minute intervals.

The operator shall establish the capabilities and procedures in compliance with the two preceding paragraphs, and implement the procedures after obtaining CAA's approval.

Chapter 2 - Civil Air Transport Operations

Section 1: Flight Operations

Article 9

From 1 January 2009, an operator shall establish and implement a safety management system acceptable to the CAA which, as a minimum:

1. Identifies safety hazards;

2. Ensures that remedial action necessary to maintain an acceptable level of safety is implemented;
3. Provides for continuing monitoring (auditing) and regular assessment of the safety level achieved; and
4. Aims to make continuous improvement to the overall level of safety.

The safety management system as set out in the preceding paragraph shall clearly define lines of safety accountability throughout the operator's organization, including a direct accountability for safety on the management level, and comply with attachment 1.

An operator of an aircraft of a maximum certificated take-off mass in excess of 27,000 kg shall establish and maintain a flight data analysis programme as part of the safety management system in paragraph 1 above.

The flight data analysis programme as set out in the preceding paragraph shall be non-punitive and contain adequate safeguards to protect the source(s) of the data.

Article 10

An operator shall establish a flight safety documents system, for the use and guidance of operational personnel, as part of its safety management system.

Article 11

An operator shall ensure that a flight will not be commenced unless it has been ascertained by every reasonable means available that facilities directly required on such flights for the safe operation of the aircraft and the protection of the passengers are adequate for the type of operation for which the flight is to be conducted and are adequately operated for this purpose. The operator shall also ensure that any inadequacy of facilities observed in the course of operations is reported to the authority responsible for them, without delay.

Article 12

An operator shall not engage in civil air transport operations unless the submitted Operations Specifications (two copies for same one) is approved and the Operations Specifications (ICAO format) is issued by CAA (refer to attachment 2).

An operator shall ensure the validity of the Operations Specifications and shall not engage in civil air transport operations when the Operations Specifications become invalid.

Article 13

An operator shall arrange full-time and qualified administrative personnel as follows: Director of Flight Operations, Chief Pilot, Director of Maintenance, Director of Quality Control and Director of Flight Safety. The arrangement of such personnel shall be reported to

CAA for acceptance.

Article 14

No person may serve as Director of Operations unless he/she knows the content of the operator's operations manual, operations specifications and all other pertinent regulations and rules that are necessary for the proper performance of his duties and

1. Holds or has held, an airline transport pilot licence and rating and has at least three years of experience as pilot in command of a large aircraft; or
2. Has at least three years of experience as a Director of flight Operations of an operation using large aircraft or a position of comparable responsibility.

Article 15

No person may serve as Chief Pilot unless he/she knows the content of the operator's operations manual and operations specifications, and all other pertinent regulations and rules that are necessary to the proper performance of his duties and

1. Holds a valid air transport pilot licence with at least one of the type ratings of the aircraft used by the operator; and
2. Has at least 3 years of experience as pilot in command of a large aircraft. However CAA may grant a deviation from the requirement of this article if it finds that the person has equivalent experience.

Article 16

No person may serve as Director of Maintenance unless he/she is familiar with the maintenance part of the operator's manual and operations specifications, the applicable maintenance rules and regulations and

1. Either holds or has held a valid aircraft maintenance engineer certificate and mechanical related experience for at least 3 years; or
2. Has an experience in the maintenance on aircraft of transportation category for 5 years or more, and at least one year of which was in a supervisory capacity.

Article 17

No person may serve as Director of Quality Control unless he/she is familiar with the maintenance parts of the operator's manual and operations specifications, the applicable maintenance rules and regulations and

1. Holds a valid aircraft maintenance engineer certificate for at least 3 years; and

2. Has at least 3 years of diversified maintenance experience on aircraft in a civil air transport enterprise or certificated repair station, 1 year of which must be in the capacity as maintenance inspector or quality assurance personnel.

Article 18

No person may serve as Director of Flight Safety unless he/she knows the operator's manual, operations specifications and the applicable rules and regulations pertinent to the performance of his duties and

1. Has received training for professional Flight Safety Management Programme and holds the accomplishment certificate for such programme; and
2. Has at least 3 years experience in the areas of flight operations, maintenance or flight safety.

Article 19

An operator shall provide appropriate training to familiarize its management personnel in all regulatory requirements, pertinent manuals and orders.

Article 20

An operator shall provide, for the use and guidance of operations personnel, a CAA approved flight operations manual containing procedures required by regulation. The manual shall be amended or revised as is necessary to ensure that the information contained therein is kept up to date.

An operator and its airmen shall perform their duties in accordance with the rules or procedure prescribed in the manuals mentioned in the preceding paragraph, with no exception.

Article 21

An operator shall establish respective training programmes for personnel of different areas in operations which will be carried into effect after approval by CAA.

The programmees in the preceding paragraph shall include a CRM programme to ensure that all operations personnel are properly instructed in their particular duties and responsibilities and the relationship of such duties to the operation as a whole.

An operator shall establish a system to keep all training records for CAA's inspection.

Article 22

The helicopter rotor shall not be turned under power or operated for taxi without a qualified pilot at the controls.

An aircraft shall not be taxied on the movement area of an aerodrome unless the person at the controls:

1. Has been duly authorized by the operator or a designated agent;
2. Is qualified to use the radio; and
3. Has received instruction from a competent person in respect of aerodrome layout routes, signs, markings, lights, air traffic control signals and instructions, radio phraseology and procedures, and is able to conform to the operational standards required for safe aircraft movement at the aerodrome.

Article 23

No one may perform power-back operations unless the operator has established procedures for such operations and has been approved by CAA.

Article 24

An operator shall ensure that when passengers, cargo or mail are being carried, no emergency or abnormal situations shall be simulated.

Article 25

The checklist provided in accordance with Article 97, paragraph 2, shall be used by flight crews prior to, during and after all phases of operation and in emergencies. It must be in compliance with the operating procedures in the Aircraft Operating Manual, Flight Manual or other documents associated with a certificate of airworthiness. The design and utilization of operating manuals, procedures and checklists shall observe Human Factors principles.

Article 26

An operator shall establish operational procedures designed to ensure that an airplane being used to conduct precision approaches crosses the threshold by a safe margin, with the airplane in the landing configuration and attitude.

Article 27

An operator may be permitted to establish minimum flight altitudes for those routes flown for which minimum flight altitudes have been established by the state, provided they shall not be less than those established by that state. If the minimum altitudes have not been established by the state flown over, the operator shall establish minimum altitude, which are no less than the instrument flight altitude standards that required by the flight operation regulations.

Article 28

An operator shall establish aerodrome operating minima for each aerodrome to be used in operations. Such minima shall not be lower than any that may be established for such aerodromes by the State in which the aerodrome is located. If the aerodrome operating minima has not been established by the State in which the aerodrome is located, the operator shall establish such minima, which will be carried into effect after approval by CAA.

Article 29

When establishing the aerodrome operating minima, the operator shall take full consideration of the following:

1. The type performance and operating characteristics of the aircraft;
2. The composition of the flight crew, their competence and experience;
3. The dimensions and characteristics of the runway that may be selected for use;
4. The adequacy and performance of the available visual and non-visual ground aids;
5. The equipment available on the aircraft for the purpose of navigation and control of the flight path during the approach to landing and the missed approach;
6. The obstacles in the approach and missed approach areas and the obstacle clearance altitude/height for the instrument approach procedures;
7. The means to determine and report meteorological conditions; and
8. The obstacles in the climb out areas and necessary clearance margins.

Article 30

An operator shall not conduct CAT II / CAT III instrument approach and landing unless runway RVR information can be provided and meet CAT II / CAT III's requirements.

Article 31

When an operator evaluates minima flight altitudes, the operator shall take full consideration of the following:

1. The accuracy and reliability with which the position of the aircraft can be determined;
2. The inaccuracies in the indications of the altimeters used;
3. The characteristics of the terrain;
4. The probability of encountering unfavorable meteorological conditions;
5. Possible inaccuracies in aeronautical charts;

6. Airspace restrictions; and

7. The instrument flight altitude standards required by the flight operations regulation.

Article 32

An operator shall comply with attachment 3 to operate in adverse weather.

Article 33

An operator shall maintain fuel records and oil for a period of three months for CAA inspection.

Article 34

An operator shall ensure the operation competency and safety for an aircraft type newly introduced into service by complying with the following requirements before operations for compensation or hire:

1. Before such operations, airplane shall have been flown at least 50 hours of proving tests, and at least 10 hours of which shall be flown at night.
2. Before such operations, helicopters shall have been flown at least 25 hours of proving tests, and at least 2 hours of which shall be flown at night.

The required hours as set out in the preceding paragraph may be reduced, if CAA determines that a satisfactory level of proficiency has been demonstrated to justify the reduction, but shall not be reduced less than 25 hours for airplane and 10 hours for helicopters. The time requirement for night flight shall not be reduced.

Article 35

For each flight, the operator shall designate one pilot to act as pilot-in-command.

An operator shall establish an order of succession in the company's pertinent manuals of flight operations in the event of the pilot-in-command's incapacitation.

Article 36

An operator shall maintain current records of flight time, flight duty periods, rest periods, duty periods and standby of all its crew members for a continuous 12-month period.

Article 36-1

An agreement in which details the working time of crew member(s) per Labor Standards Act, shall be endorsed by operator and crew member(s) and approved by the local competent authorities before implementation.

Article 36-2

Duty rosters should cover a period of at least 14 days; duty and rest periods shall be identified.

The crew member should be adequately rested prior the commencement of his/her flight duty; the operator should not require a crew member to perform flight duty if it is known or suspected that the crew member is fatigued to the extent that the safety of flight may be adversely affected.

The operator shall acknowledge that where the crew member is fatigued to the extent that the safety of flight may be adversely affected as stated in the preceding paragraph may not carry out flight duty.

Article 37

Flight crew Flight time limitations.

1. Flight time limitations for a standard flight crew composition:

- a) An operator may schedule a pilot to fly no more than 8 hours for domestic flights during any consecutive 24 hours. The pilot shall be given a rest period of no less than 10 consecutive hours at the end of 8 scheduled hours of flight duty. On international flights, a pilot may not fly more than 10 hours during any consecutive 24 hours. If a pilot has flown on international flights not exceeding 8 hours during any 24 consecutive hours, the pilot shall be given a rest period of no less than 10 hours. If a pilot has flown on international flight exceeding 8 hours during any 24 consecutive hours, the pilot shall be given a rest period no less than 18 hours. An operator may schedule a pilot to fly no more than 8 hours for domestic and international composite flights, then a rest period of no less than 10 consecutive hours must be provided. If domestic and international flights were scheduled during same duty period, then flight time limitation should follow that of international flight.
- b) A pilot shall be given a rest period of 30 consecutive hours during any 7 consecutive days. And, for a pilot who is assigned to act as a member of single flight crew, the total flight time shall not exceed 32 hours during any 7 consecutive days.

2. Flight time limitations for multiple flight crew composition:

- a) An operator may assign a pilot to a flight duty not exceeding 16 hours during any 24 consecutive hours on board an aircraft of which is provided with sleeping berths. If the aircraft is not equipped with sleeping berths but is provided with resting seats in the passenger cabin, the pilot may not exceed 12 hours flight duty. If the pilot has flown more than 10 hours but less than 12 hour, the pilot shall be given a rest period of no less

than 18 consecutive hours. If the pilot has flown more than 12 hours, then a rest period of no less than 24 consecutive hours must be provided.

b) A pilot shall be given a rest period of 30 consecutive hours during any 7 consecutive days.

c) If flight and duty time of multiple flight crew does not exceed the limits of standard flight crew, the rest time period calculation should follow that of standard flight crew

3. Flight time limitations for double flight crew composition:

a) No operator may assign a pilot to flight duty not exceeding 18 hours during any 24 consecutive hours on board an aircraft of which is provided with sleeping berths. At the end of this flight if the crew has flown in excess of 16 hours, the crew shall be given a rest period of no less than 22 consecutive hours. If the flight time is 16 hours or less, then a rest period of 18 consecutive hours shall be given after the flight duty period.

b) If the aircraft is not equipped with sleeping berths, the aircraft shall have rest seats in the passenger cabin for the pilots. The pilot may fly no more than 12 hours on board such aircraft and at the end of this flight the pilot shall be given a rest period of no less than 18 consecutive hours.

c) A pilot shall be given a rest period of 30 consecutive hours during any 7 consecutive days.

Flight crew on flight duty of aircraft flown between two points which has a time zone difference of 6 hours or more and stay more than 48 hours in such different time zone, shall not be scheduled for another flight duty within 48 hours at the end of such flight, except if the next scheduled flight destination is in the same time zone as that of the previous flight or is within 3 hours time zone difference of the previous stop.

If flight and duty time of double flight crew does not exceed the limitation for multiple flight crew or standard flight crew, the rest period should follow that of multiple flight crew or standard flight crew.

An operator shall establish procedures in the flight operation manual to regulate the flight crew rest in turn and record the abnormal situations during flight.

A total of flight crew member's flight time may not exceed more than 120 hours during 30 consecutive days and may not exceed more than 300 flight hours during 90 consecutive days and may not exceed more than 1,000 flight hours during 12 calendar month period.

Article 37-1

Flight time and flight duty period limitations of cabin crew:

1. An operator may schedule a cabin crew to perform no more than 8 hours flight time and 12 hours flight duty period for domestic flights during any consecutive 24 hours. On international flights, a cabin crew may not perform more than 10 hours flight time and 14 hours flight duty period during any consecutive 24 hours. If domestic and international flights were scheduled during same duty period, then flight time limitation should follow that of international flight.
2. Operator may extend such limitation set forth in international flights in the preceding paragraph with adequate cabin crew rostering when rest seats or sleeping berths are available. The extended flight time shall not exceed 16 hours and for flight duty time is 20 hours.

Under an extraordinary event or circumstance beyond control (such as war, strike, riot, act of God, etc.), the limitations on flight time and flight duty period of cabin crew established in subparagraph 2 of the preceding paragraph could be exceeded. However there is a maximum rostered hours limitation on flight time (18 hours) and flight duty time (24 hours) respectively.

Cabin crew on flight duty of aircraft flown between two points which has a time zone difference of 6 hours or more and stay more than 48 hours in such different time zone, shall not be scheduled for another flight duty within 48 hours at the end of such flight, except if the next scheduled flight destination is in the same time zone as that of the previous flight or is within 3 hours time zone difference of the previous stop.

Operator should lay down its procedures of in-flight cabin crew composition and in-flight relief in operations manual(s); the guidance for recording unusual conditions incorporated as part of the procedures.

A total of cabin crew's flight time may not exceed 120 hours during consecutive 30 days.

Article 37-2

The minimum rest period immediately before commencing a flight duty period or positioning may not be less than 10 hours.

Operator may not schedule a crew member for more than 3 consecutive days of night operations during local time 0200 and 0500 at which flight duty begins.

The crew member shall be given a rest period of at least 34 consecutive hours immediately after being released from flight duty if he/she has performed 2 consecutive days of night operations during local time 0200 and 0500 at which flight duty begins.

The crew member shall be given a rest period of at least 54 consecutive hours immediately after being released from flight duty if he/she has performed 3 consecutive days of night operations during local time 0200 and 0500 at which flight duty begins.

Operator could be free from the conditions set forth in previous 2 paragraphs as long as at least 14 consecutive hours given to crew member after such operations.

Article 38

Flight duty period limitations of flight crew:

1. Single flight crew. An operator may assign a pilot to a flight duty period up to 12 consecutive hours for domestic flights or a flight duty period up to 14 consecutive hours for international flights. If the domestic and international flights are dispatched during single assignment, duty time limitation should follow that of international flights.
2. Multiple flight crew. An operator may assign a pilot to a flight duty period up to 18 consecutive hours.
3. Double flight crew. An operator may assign a pilot to a flight duty period up to 24 consecutive hours.

Article 38-1

The cabin crew shall be given a rest period of no less than 9 consecutive hours at the end of 8 hours of flight duty period; 12 consecutive hours shall be given when the flight duty period extended but no more than 12 hours; 20 consecutive hours shall be given when the flight duty period extended but no more than 16 hours; and 24 consecutive hours shall be given when the flight duty period exceeds 16 hours.

At least 30 consecutive hours of rest period shall be given during any 7 consecutive days.

Article 38-2

Opportunities for crew member to consume a meal must be arranged when the flight duty period exceeds 6 hours.

Article 38-3

A series of duty periods accumulated prior to the commencement of flight duty shall be taken as part of flight duty periods.

The summation of sequential duty periods accumulated after the crew member being released from flight duty, together with flight duty period, may not exceed the flight duty periods limitations set forth in Article 38 and 37-1.

Article 38-4

Flight duty period shall commence from the time report for duty for the crew member standby at rest place. But for the one standby at non-rest place, the flight duty period shall commence from the time he/she performs a standby duty.

Article 39

Except for flight training, the flight crew shall not perform more take-offs and landings prescribed herein in any flight duty period:

1. International flights – 6 times.
2. Domestic flights – 12 times. If flight time is less than 20 minutes, the numbers of takeoff and landing allowed may be increased to 16 times.

If domestic and international flights are dispatched during single assignment, the limitation for international flights should be followed.

Article 39-1

The cabin crew shall not perform more take-offs and landings prescribed herein in any flight duty period:

1. International flights – 6 times.
2. Domestic flights – 12 times. If flight time is less than 20 minutes, the numbers of takeoff and landing allowed may be increased to 16 times.

If domestic and international flights are dispatched during single assignment, the limitation for international flights should be followed.

Article 40

An operator shall adjust assignment of crew members or assign additional crew members for a flight to avoid exceeding flight duty period limitations due to flight delays.

Article 41

In between the time that crew member reports for duty and the commencement of flight duty, if the crew member has rested for more than 3 hours in a proper rest place arranged by the operator, such rest period shall be taken as duty period but excluded from the flight duty period.

Article 42

After the commencement of a flight duty, no prolongation of a flight duty period is allowed unless the flight crew has rested for more than 3 hours in a proper rest place arranged by the operator. On occasions of flight delay, the flight duty period may be extended by half of such rest period; in no circumstances should the total period of the extended flight duty period plus the rest period exceed 24 consecutive hours.

If a flight is dispatched in accordance with the paragraph 2 of Article 38 with multiple flight

crew, and in-flight diversion occurs due to an extraordinary event or circumstance beyond control (such as war, strike, riot, act of God, etc.), the pilot-in-command, after a thorough evaluation for the safety of the flight, may extend the flight duty period by two hours without the restriction as prescribed in the preceding paragraph.

Article 43

Travelling time spent by a crew member in transit between the place of rest and the place of reporting for duty is not counted as duty; travelling time shall not be taken as part of a rest period when the crew member is required to travel from a non-home base place.

Time spent positioning is part of a duty period.

A allowance of 30 minutes is to be added at the end of flight time to allow for the completion of post flight duties. This allowance added shall not be less than the actual time required by crew member.

Article 43-1

The maximum crew member duty period may not exceed 230 hours in any 30 consecutive days. The period may only be extended to a maximum of 260 hours in connection with required standby and positioning.

Article 44

Upon CAA's approval, when an operator engages in government emergency transportation missions, the flight time limitations for the flight crew members in such operation may be extended up to 1,200 hours during any 12 consecutive calendar month period.

Article 45

Before the aircraft commences take-off, the operator shall ensure that all passengers are made familiar with the following:

1. Non-smoking policy.
2. Restrictions to the use of the electronic devices.
3. The use of seat belts, including instructions on how to fasten and unfasten the seat belts.
4. The location of emergency exits.
5. The location and use of life jackets.
6. The location and use of oxygen masks.
7. Other emergency equipment provided for individual use or for collective use.

Cabin crew member shall conduct an individual briefing of each person who may need assistance of another person to move expeditiously to an exit in the event of an emergency. Brief the person and attendant, if any, on the routes to each appropriate exit and on the most appropriate time to begin moving to an exit in the event of an emergency; and inquire of the person and attendant, if any, as to the most appropriate manner of assisting the person.

Each operator shall carry on each passenger-carrying aircraft, in convenient locations for use of each passenger, printed cards supplementing the oral briefing and containing diagrams of, and methods of operating, the emergency exits, and other instructions necessary for use of emergency equipment.

Each card must contain information that is pertinent only to the specific type and model aircraft used for that flight.

An operator shall establish an exit seating programme which includes identification of exits for each type of aircraft, exit seating procedures, aerodrome information and exit passenger information cards for use and guidance to pertinent personnel.

An operator shall ensure the operation requirements from paragraph 1 to paragraph 5 herein this article be incorporated in related manuals.

Article 46

An operator shall ensure that all passengers are informed to fasten seat belts or shoulder harness for take-off and landing. When encountering turbulence or emergency in flight, passengers shall also be informed to take appropriate actions by the crew member.

An operator shall ensure that passengers are informed to fasten seat belts while being seated, even with the seat belt signs off after take-off.

An operator shall not allow passengers to occupy any cabin crew seat unless approved by CAA.

Article 47

When an aircraft engages in passenger-carrying operations with the equipage of auto inflated slides, it shall not be moved on ground or operated for flight, unless the auto inflated slides installed has been armed for evacuation.

Article 48

An operator shall incorporate in its operations specifications a carry-on baggage programme, which includes type-specific acceptable amount, weight, size of carry-on baggage and screening procedures required. Such carry-on baggage programme shall be approved by CAA.

Carry-on baggage shall be securely stowed in overhead bins or under passenger seats in order to prevent shifting or falling from its stowage compartment unless CAA approved to do so. In addition, all baggage or cargo must be stowed in a manner not hindering the use of any emergency equipment and the access to the emergency exits.

An operator shall ensure that no aircraft is pushing back or commencing taxi without verifying that each piece of carry-on baggage is adequately and securely stowed.

Article 49

To prevent interference with navigation and telecommunications during flight, all personal portable electronic devices used by airman, cabin crew or passengers shall comply with Article 43-2, paragraph 2 of the Act.

Article 50

Any airman, cabin crew or passengers smoking in an aircraft, the pilot- in-command shall report to Aviation Police Office to comply with Article 119-2 of the Act.

Article 51

No person may consume any alcoholic beverage on board except for those served by the operator.

An operator shall ensure that no alcoholic beverage is served in its aircraft to the person who:

1. Appears to be intoxicated.
2. Escorts a person or is under escort.
3. Is legally armed.

An operator may refuse the boarding of a person who appears to be intoxicated.

Article 52

An operator shall ensure that no drinks or meals are served to passengers while the aircraft is in the phases of taxi, take-off or landing.

No operator may take off, or land unless each food and beverage tray and seat back tray table is secured in its stowed position.

No operator may move an aircraft on the surface, take off, or land unless each passenger serving cart is secured in its stowed position.

No operator may permit an aircraft to take off or land unless each movie screen that extends into an aisle is stowed.

Article 53

An operator shall ensure that no passenger serving cart is left unattended in the aisles by cabin crew member; the cart is securely parked while in stationary service.

Cabin crew member shall ensure that during the take-off and landing phase of an aircraft, all passenger serving carts are adequately and securely stowed in appropriate stowage compartments.

An operator shall establish procedures for reporting deficiencies in restraining devices of a passenger serving cart.

The operations requirements aforementioned from paragraph 1 to paragraph 3 shall be incorporated in Cabin crew manuals.

Section 2: Flight Preparation

Article 54

A flight shall not be commenced until flight preparation documents have been completed and certified by the pilot-in-command that:

1. The aircraft is airworthy;
2. The instruments and equipment for the particular type of operation to be undertaken, are installed and are sufficient for the flight;
3. A maintenance release has been issued for the aircraft;
4. The mass of the aircraft and center of gravity location are such that the flight can be conducted safely, taking into account the flight conditions expected;
5. Any load carried is properly distributed and safely secured;
6. A check has been completed indicating that the operating limitations can be complied with for the flight to be undertaken; and
7. Operational flight planning has been complied with.

Except for the maintenance release aforementioned in subparagraph 3 of the preceding paragraph shall be kept for a period of one year or more, an operator shall retain completed flight preparation documents for at least 3 months.

Article 55

An operational flight plan shall be completed for every intended flight. The operational flight plan shall be approved and signed by the pilot-in-command and if situation allows, the Flight

Dispatcher. A copy shall be filed with the operator or a designated agent.

Article 56

An operator shall describe in the operation manual or operational flight plan, minimum en-route flight altitudes, and operating minima for destination and alternate aerodrome.

Article 57

For a flight to be conducted in accordance with the instrument flight rules, at least one destination alternate aerodrome shall be selected and specified in the operational flight plan, unless:

1. The duration of the flight is less than 6 hours flight time and the meteorological conditions prevailing are such that at the estimated time of arrival at the aerodrome of intended landing, and for a period one hour before and one hour after such time, approach and landing may be made under visual meteorological conditions; or
2. The aerodrome of intended landing is isolated and there is no suitable destination alternate aerodrome.

Helicopters operating under the conditions aforementioned in the subparagraph 2 of the preceding paragraph shall have a point of no return selected and filed in the operational flight plan.

Article 58

When determining suitable off-shore alternates for helicopter operations, mechanical reliability of critical control systems and critical components shall be considered and the following taken into account:

1. The offshore alternates shall be used only beyond a point of no return. Prior to the point of no return on-shore alternates shall be used;
2. One engine inoperative performance capability shall be attainable prior to arrival at the alternate;
3. Deck availability shall be guaranteed;
4. Weather information must be reliable and accurate; and
5. Offshore alternates should not be used when it is possible to carry enough fuel to have an on-shore alternate.

Article 59

A take-off alternate aerodrome shall be selected and specified in the operational flight plan if

the weather conditions at the aerodrome of departure are at or below the applicable aerodrome operating minima or it would not be possible to return to the aerodrome of departure for other reasons.

Article 60

The take-off alternate aerodrome shall be located within the following distances from the aerodrome of departure:

1. Airplane having two power-units, not more than a distance equivalent to one hour at the single-engine cruise speed; and
2. Airplane having three or more power-units, no more than a distance equivalent to two hours at the one engine inoperative cruise speeds.

Article 61

For an aerodrome to be selected as a take-off alternate, the available information shall indicate, that at least one hour before and one hour after the estimated time of arrival, the conditions will be at or above the aerodrome operating minima for that operation.

Article 62

A flight to be conducted in accordance with visual flight rules shall not be commenced unless current meteorological reports or forecasts indicate that the meteorological conditions will be such as to render compliance with these rules.

Article 63

A flight to be conducted in accordance with instrument flight rules shall not be commenced unless information is available which indicates that the conditions at the aerodrome of intended landing will be at or above the aerodrome operating minima.

Article 64

A flight to be operated in known or expected icing conditions shall not be commenced unless the aircraft is certificated and equipped to cope with such conditions.

Article 65

An operator shall ensure that pressurized aircraft operated in expected thunderstorms or severe meteorological conditions is equipped with weather radar and functions normally.

Article 66

A flight shall not be commenced unless the aircraft carries sufficient fuel and oil to ensure that it can safely complete the flight. While calculating the amount of fuel and oil to be carried, the

following must be taken into account:

1. Forecast meteorological conditions;
 2. Expected air traffic control routings and traffic delays;
 3. Instrument approach and possible missed approach over destination aerodrome; and
 4. The procedures prescribed in the operations manual for loss of pressurization, where applicable, or failure of one power-unit while en route.
 5. Any other contingencies that may delay aircraft landing or increased fuel and/or oil consumption.
 6. CAA approved contingency fuel and oil for any other expected and unexpected delay.
- CAA may adjust the fuel and oil regulatory requirements for the operations in special routes or aerodromes based on the safety of flight.

Article 67

Piston-engined airplane shall carry a sufficient amount of fuel in compliance with the following requirements:

1. When a destination alternate is not required, in terms of Article 57, paragraph 1, subparagraph 1, the flight shall carry sufficient fuel to fly to the aerodrome to which the flight is planned and there after for 45 minutes at the cruising level.
2. When a destination alternate is not required, in terms of Article 57, paragraph 1, subparagraph 2.
 - a) The flight shall carry sufficient fuel to fly to the aerodrome to which the flight is planned and thereafter for 45 minutes, plus 15 percent of the flight time planned to be spent at the cruising level(s); or
 - b) The flight shall carry sufficient fuel to fly to the aerodrome to which the flight is planned and, plus a cruising fuel of two hours.
3. When a destination alternate is required, either:
 - a). The flight shall carry sufficient fuel to fly to the aerodrome to which the flight is planned , thence to the most critical (in term of fuel consumption) alternate aerodrome specified in the operational flight plans and thereafter for a period of 45 minutes, or
 - b). To fly to the alternate aerodrome via any predetermined point and thereafter for 45 minutes, provided that this shall not be less than the amount required in the item a) or b) of the preceding subparagraph,.

Article 68

Turbine-engined airplane, when a destination alternate aerodrome is not required in terms of article 57, paragraph 1, subparagraph 1, shall carry sufficient fuel to allow the aircraft to fly to the aerodrome which the flight is planned, and additionally to fly for 30 minutes at holding speed at 1,500 ft above the aerodrome to which the flight is planned under standard temperature conditions and contingency fuel.

Article 69

Turbine-engined airplane, when a destination alternate aerodrome is required, shall carry sufficient fuel to allow the aircraft either:

1. To fly to and execute an approach, and a missed approach, at the aerodrome to which the flight is planned, and thereafter:
 - a) To fly to the alternate aerodrome specified in the operational and ATS flight plans;
 - b) and then to fly for 30 minutes at holding speed at 1,500 ft above the alternate aerodrome under standard temperature conditions, and approach and land; and
 - c) Contingency fuel, or
2. To fly to the alternate aerodrome via any predetermined point and thereafter for 30 minutes at 1500 ft above the alternate aerodrome and contingency fuel, provided that fuel shall not be less than the amount of fuel required to fly to the aerodrome to which the flight is planned and thereafter for two hours at normal cruise consumption.

Article 70

Airplane equipped with turbojet engines, when a destination is isolated and there is no suitable (destination) alternate aerodrome, shall carry sufficient fuel to fly to the aerodrome to which the flight is planned and thereafter for two hours at normal cruise consumption.

Article 71

Helicopter flights conducted in accordance with visual flight rules (VFR) shall carry a sufficient amount of fuel to allow the helicopter:

1. To fly to the heliport of which the flight is planned and thereafter to fly for a period of 20 minutes at best-range speed; and
2. Contingency fuel.

Article 72

Helicopter flights conducted in accordance with instrument flight rules (IFR) shall carry

sufficient amount of fuel in compliance with the following requirements:

1. In terms of Article 57, paragraph 1, subparagraph 1, when no alternate is required, to fly to the heliport to which the flight is planned, and thereafter:
 - a) To fly for 30 minutes at holding speed at 1,500ft above the destination heliport under standard temperature conditions, and approach and land; and
 - b) Contingency fuel.
2. In terms of Article 57, paragraph 1, subparagraph 2, when an alternate is not required, to fly to the destination aerodrome to which the flight is planned and thereafter for a period of 2 hours at normal cruise.
3. When an alternate aerodrome is required, the fuel to allow the aircraft to fly to the destination aerodrome to which the flight is planned, and:
 - a) To fly to the alternate aerodrome specified in the operational flight plans;
 - b) To fly for 30 minutes at holding speed at 1,500 ft. above the alternate aerodrome under standard temperature conditions, and approach and land; and
 - c) Contingency fuel.

Article 73

For Aircraft operating in domestic flights, due to short flight legs or limited refuelling facilities in aerodromes, an operator may use CAA approved simplified operational flight plans for flight operations. However, the fuel carried shall be in accordance with those prescribed in Article 66 through Article 72.

Article 74

An aircraft in flight may be re-dispatched to another destination, provided that the fuel carried shall be in accordance with those prescribed in Article 66 through Article 72.

Article 75

An airplane shall not be refuelled when passengers are embarking, on board or disembarking unless:

1. It is properly attended by qualified personnel ready to initiate and direct an evacuation of the airplane; and
2. Two-way communication shall be maintained between the ground crew supervising the refuelling and the qualified personnel on board the airplane.

Helicopters shall not be refuelled when passengers are embarking, on board, disembarking or while the rotor blades are turning unless approved by CAA.

Article 76

Unless the operation has been specifically approved by CAA, an airplane with two turbine power-units shall not be operated on a route where the flight time at single-engine cruise speed to an adequate en-route alternate aerodrome exceeds a 60 minutes under wind calm condition.

An airplane operated under ETOPS shall have adequate en-route alternate aerodromes specified in the operational flight plan in accordance with Attachment 4.

Article 76-1

Operator with approval from CAA for executing ultra long-haul flight, could be exempted from the limitations set forth in Article 37, 37-1 and 38, on flight time and flight duty period of crew member.

Article 77

A flight to be operated at flight altitudes at which the atmospheric pressure in personnel compartments will be less than 10000 feet (Absolute pressure 700 hPa) shall not be commenced unless sufficient stored breathing oxygen is carried to supply:

1. All crew members and 10 per cent of the passengers for any period in excess of 30 minutes that the pressure in compartments occupied by them will be between 10000 feet and 13000 feet (Absolute pressure 700 hPa and 620 hPa); and
2. The crew and passengers for any period that the atmospheric pressure in compartments occupied by them will be less than 25000 feet (Absolute pressure 376 hPa).

A flight to be operated with a pressurized aircraft shall not be commenced unless a sufficient quantity of stored breathing oxygen is carried to supply all the crew members and passengers, as is appropriate to the circumstances of the flight being undertaken.

1. In the event of loss of pressurization, for any period that the atmospheric pressure in any compartment occupied by them would be less than 10000 feet.
2. When an aircraft is operated at flight altitudes at which the atmospheric pressure is less than 25 000 feet there shall be no less than a 10-minute supply for the occupants of the passenger compartment.
3. When an aircraft is operated at flight altitudes at which the atmospheric pressure is less

than 25 000 feet, or which, if operated at flight altitudes at which the atmospheric pressure is more than 25 000 feet and cannot descend safely within four minutes to a flight altitude at which the atmospheric pressure is equal to 13 000 feet.

All flight crew members, when engaged in performing duties essential to the safe operation of an aircraft in flight, shall use breathing oxygen continuously whenever the circumstances prevail for which its supply has been required in the preceding 2 paragraphs.

Section 3: In Flight Procedures

Article 78

All flight crew members shall use breathing oxygen continuously whenever the cabin pressure altitude is above 10000 feet.

Article 79

A flight shall not be continued towards the destination aerodrome, unless the latest available information indicates that at the expected time of arrival, a landing can be effected at that aerodrome or at least one destination alternate aerodrome in compliance with the operating minima. Except in case of emergency, an aircraft shall not continue its approach-to-land at any aerodrome beyond a point at which the limits of the operating minima specified for that aerodrome would be infringed.

Article 80

To perform instrument approach, a flight shall comply with the following:

1. An instrument approach shall not be continued beyond the outer marker fix in case of precision approach, or below 300 m (1 000 ft) above the aerodrome in case of non - precision approach, unless the reported visibility or controlling RVR is above the specified minimum.
2. If, after passing the outer marker fix in case of precision approach, or after descending below 300 m (1 000 ft) above the aerodrome in case of non-precision approach, the reported visibility or controlling RVR falls below the specified minimum, the approach may be continued to DA/H or MDA/H. In any case, an aircraft shall not continue its approach-to-land at any aerodrome beyond a point at which the limits of the operating minima specified for that aerodrome would be infringed.

Where RVR is used in the preceding paragraph, the controlling RVR is the touchdown RVR, unless otherwise specified by other states.

Article 81

A pilot for making meteorological observations on board aircraft in flight and for recording and reporting them shall be in compliance with AOR herein and the appropriate procedures prescribed by regulations.

Article 82

Hazardous flight conditions encountered other than those associated with meteorological conditions, shall be reported to the appropriate air traffic control unit as soon as possible. The reports so rendered shall give such details as may be pertinent to the safety of other aircraft.

Article 83

All aircraft operated in accordance with instrument flight rules shall comply with the instrument flight procedures published by the state in which the aerodrome is located.

Section 4: Aircraft Performance & Operating Limitations

Article 84

An aircraft shall be operated in compliance with the terms of its certificate of airworthiness and within the approved operating performance and limitations contained in its flight manual.

While developing a code of performance for aircraft operation, all possible factors which may affect the aircraft performance shall be taken into account.

The helicopter performance operating limitations shall be in compliance with those in Attachment 5.

The airplane performance operating limitations applicable to turbine-powered subsonic transport type airplanes over 5 700 kg maximum certificated take-off mass having two or more engines shall be in compliance with those in Attachment 6.

Article 85

Performance class 3 helicopters shall only be operated in conditions of weather or illumination, and over such routes and diversions there from, that permit a safe forced landing to be executed in the event of engine failure.

The conditions in the preceding paragraph apply also to performance class 2 helicopters prior to the take off critical point after take-off and after the landing critical point before landing.

Article 86

Performance class 1 and class 2 helicopters may be operated to and from elevated heliports or helidecks. Only class 1 helicopter may be operated to and from elevated heliports in congested area.

Article 87

Performance of helicopters during take-off and initial climb phase, shall meet the following requirements:

1. Operations in performance Class 1. The helicopter shall be able, in the event of the failure of the critical power-unit being recognized at or before the take-off decision point, to discontinue the take-off and stop within the rejected take-off area available or, in the event of the failure of the critical power-unit being recognized at or after the take-off decision point, to continue the take-off, clearing all obstacles along the flight path by an adequate margin until the helicopter is in a position to comply with the subparagraph 1, paragraph 1 of Article 88.
2. Operations in performance Class 2. The helicopter shall be able, with all power unit operating, clearing all obstacles along the flight path by an adequate margin until the helicopter is in a position to comply with the subparagraph 1, paragraph 1 of Article 88; and, in the event of the failure of the critical power-unit at any time after reaching DPATO, to continue the take-off, clearing all obstacles along the flight path by an adequate margin until the helicopter is in a position to comply with subparagraph 1, paragraph 1 of Article 88. Before the DPATO, failure of the critical power-unit may cause the helicopter to force-land; therefore the conditions stated in Article 85 shall apply.
3. Operations in performance Class 3. The helicopter shall be able, with all power units operating, clearing all obstacles along the flight path by an adequate margin until the helicopter is in a position to comply with subparagraph 2, paragraph 1 of Article 88. When at any point of the flight path, failure of a power-unit will cause the helicopter to force-land, the conditions stated in Article 85 shall apply.

Article 88

Performance of helicopters during en-route phase shall meet the following requirements:

1. Operations in performance Classes 1 and 2. The helicopter shall be able, in the event of the failure of the critical power-unit at any point in the en-route phase, to continue the flight to a site at which the conditions of the first or the second subparagraph in the first paragraph of Article 89 can be met, without flying below the appropriate minimum flight altitude at any point.
2. For performance class 3 helicopters. The helicopter shall be able, with all power-units operating, to continue along its intended route or planned diversions, without flying at any point below the appropriate minimum flight altitude. At any point below the flight path, failure of a power-unit will cause the helicopter to force landing, therefore the conditions stated in Article 85 shall apply.

A helicopter equipped with 3 or more power-units shall be able, with the failure of any 2 power-units, to continue the flight to an appropriate site for landing.

Article 89

Performance of helicopters during approach and landing phase shall meet the following requirements:

1. Operations in performance Class 1. In the event of the failure of the critical power-unit being recognized at any point during the approach and landing phase, before the landing decision point, the helicopter shall, at the destination and at any alternate, after clearing all obstacles in the approach path, be able to land and stop within the landing distance available or to perform a balked landing and clear all obstacles in the flight path by an adequate margin equivalent to that specified in Article 87, subparagraph 1. In case of the failure occurring after the landing decision point, the helicopter shall be able to land and stop within the landing distance available.
2. Operations in performance Class 2. The helicopter shall be able, with all power units operating, clearing all obstacles along the flight path by an adequate margin and to land at landing area. In the event of the failure of the critical power-unit before the DPBL, the helicopter shall, at the destination and at any alternate, after clearing all obstacles in the approach path, be able either to land and stop within the landing distance available or to perform a balked landing and clear all obstacles in the flight path by an adequate margin equivalent to that specified in Article 87, subparagraph 2. After the DPBL, failure of a power-unit may cause the helicopter to force-land; therefore the conditions stated in Article 85 shall apply.
3. For performance class 3 helicopters. The helicopter with all power-units operating shall, at the destination and any alternate, after clearing all obstacles in the approach path by a safe margin, be able to land and stop within the landing area or to perform a balked landing and clear all obstacles in the flight path by an adequate margin, equivalent to that specified in Article 87, subparagraph 3. At any point of the flight path, failure of a power-unit will cause the helicopter to force landing; therefore the conditions stated in Article 85 shall apply.

Article 90

The airplane shall be able, in the event of critical power-unit failing at any point in the take-off, either to discontinue the take-off and stop within the accelerate-stop distance available or to continue the take-off and to clear all the obstacles along the flight path by an adequate margin until the airplane is in a position to comply with the en-route one power unit inoperative phase.

Article 91

An airplane with two power-units shall be able, in the event of the failure of the critical power-unit at any point along the intended route, to continue the flight until the condition in Article 93 can be met, without flying below the minimum flight altitude at any point.

Article 92

In the case of airplane having three or more powered-units, the aircraft shall be able, in the event of any two power units becoming inoperative at any point of a route, to continue the flight to an en-route alternate aerodrome and land.

Article 93

An airplane shall, at the aerodrome of intended landing and at any alternate aerodrome, after clearing all obstacles in the approach path by a safe margin and, be able to stop within the landing distance available.

Article 94

An operator shall develop procedures in accordance with obstacle data to comply with Article 87, 88 and 90.

An operator shall take into account the charting accuracy when assessing the compliance of Article 87, 88 and 90.

Section 5: Aircraft Instrument, Equipment & Flight Documents

Article 95

Instruments, equipment and flight documents shall be installed or carried on any type of aircraft in accordance with the airworthiness standards of the state of design, CAA's regulations, and the type of operation under which the aircraft is engaged.

Article 96

An operator shall make and keep current a Minimum Equipment List and Configuration Deviation List (MEL/CDL see Attachment 7), approved by CAA, which will enable the pilot-in-command to determine whether a flight may be commenced or continued from any intermediate stop should any instrument, equipment or system become inoperative.

Article 97

The instruments installed in an aircraft shall be sufficient for the flight crew to operate the aircraft, carrying out any procedures required, and shall offer related information to meet the operation limitations to be observed in expected flight conditions.

An operator shall establish aircraft type-specific aircraft operating manuals, for the use and guidance of operation personnel and flight crew, the content of which shall include the normal, abnormal, emergency procedures and detailed system descriptions, and related essential checklists for that type of aircraft.

Article 98

An aircraft shall be equipped with accessible and adequate medical supplies such as first-aid kits, medical kits and universal precaution kits. The number, equipment and the medical contents required shall be in compliance with Attachment 8.

Article 99

An aircraft shall be equipped with approved portable fire extinguishers, the required number of which shall be installed in compliance with Attachment 9. The fire extinguishing agents contained in the fire extinguisher shall not generate toxic gas in the aircraft when discharged.

For the aircraft which the certificate of airworthiness is first issued on or after 31st of December 2011, halon-emitting fire extinguishers shall not be installed in its lavatory.

For the aircraft which the certificate of airworthiness is first issued on or after 31st of December 2016, halon-emitting portable fire extinguishers shall not be installed.

An pressurized or non-pressurized aircraft, for which the certificate of airworthiness is first issued on or after 1st of July 2002, shall equipped with protective breathing equipment (PBE), which meets the aircraft type certification of the state of design, in order to prevent crew from the smoke, carbon dioxide or other harmful gases during fire fighting, or an oxygen deficiency caused by cabin depressurization. The number of PBE required to be installed shall be in compliance of Attachment 10.

If one aircraft, due to special circumstances, is not capable of meeting the compliance date of Halon alternatives that prescribed in paragraph 3 of this article, the operator shall submit an application to CAA for its discretion for release of such due date requirement. Along with its application, the operator shall expressly provide clear description of ground for application and the relevant information, if deemed applicable.

Article 100

An operator shall ensure that the equipments installed in compliance of Article 98 and Article 99 are replaced before expired.

Article 101

Each flight crew seat shall be fitted with a safety harness. The safety harness for each pilot seat shall incorporate a device which will automatically restrain the flight crew's torso in the

event of rapid deceleration.

The cabin crew seat in an passenger-carrying airplane shall be fitted with a safety harness for the use of each cabin crew member, and be able to fulfil the requirement in respect to emergency evacuation.

The cabin crew seat stated in the preceding paragraph shall be mounted near a required floor level emergency exit.

An operator shall ensure that a seat or berth with safety belt is provided to each occupant who has reached his or her second birthday, for the use of whom during the take-off, landing and enroute phases.

The child restraint system shall be approved by CAA or other states authorities.

Article 102

Aircraft compartment interiors, such as ceiling panels, wall panels, partitions, floor covering, textiles (including draperies and upholstery), seat cushions, padding, decorative and non-decorative coated fabrics, and furnishings, shall be tested and certified for the capabilities of fire blocking and resistance by CAA designated agencies or organizations, except for those that have been approved by the state of design where the standards are accepted by CAA.

Article 103

An airplane shall be equipped with an axe, to break the fuselage when the cabin door or emergency exit cannot be opened.

Article 104

An airplane with a seating capacity of more than 60 but less than 100, shall have one battery-powered megaphone in the passenger cabin where it would be readily accessible to a normal cabin crew seat. For aircraft with a seating capacity of 100 passengers or more, two megaphones are required. One must be installed at the forward end and the other at the most rearward location where it would be readily accessible to a normal cabin crew seat.

Article 105

A passenger-carrying airplane shall be equipped with emergency lighting of independent power source for each emergency exit, except for non-transportation category airplane.

Article 106

A passenger-carrying aircraft, which is required to be dispatched with a cabin crew member, shall be equipped with flashlights powered by dry battery. The location of the flashlight shall be readily accessible to a normal cabin crew seat.

Article 107

An aircraft shall be equipped with means of ensuring that the following information and instructions are informed and notified to passengers:

1. When seat belts are to be fastened and when the seat backs are to be up- righted.
2. When and how oxygen equipment is to be used.
3. Restrictions on smoking.
4. Location and use of life jackets or equivalent individual floatation devices.
5. Location and method of opening emergency exits.

Article 108

An aircraft shall carry spare electrical fuses of appropriate ratings for replacement of those accessible in flight.

Article 109

An aircraft shall carry, in addition to documents required by Article 38 of the Act, the following approved and updated documents/manuals:

1. Airplane flight manual.
2. Flight operations manual.
3. Aeronautical charts.
4. Aircraft operating manual.
5. MEL.
6. Cabin crew manual.
7. English version of the Air Operator Certificate.
8. Operation Specifications (ICAO format).
9. The Noise Certificate in English.

A flight dispatched without cabin crew member may be exempted from the manual requirement in subparagraph 6 of the preceding paragraph.

With respect to the documents set out in subparagraphs 1 through 6, Paragraph 1 herein, and the documents set out in subparagraphs 3 through 5, Paragraph 1, Article 38 of the Act, the operator may set up electronic manual or electronic signing and file keeping system, and

implement the above procedures after obtaining CAA's approval.

Article 110

If areas of the fuselage suitable for break-in by rescue crews in emergency are marked on an airplane, such areas shall be marked in red or yellow, and shall be outlined in white to contrast with the background. The lines for such marking shall be 9 cm × 3 cm, and be no more than 2 m between adjacent markings.

The diagrams of the break-in markings as set out in the preceding paragraph are set out in Attachment 11.

Article 111

An aircraft shall be equipped with a flight data recorder (FDR) capable of recording essential information of a flight, in order to serve the purpose of aircraft accident investigation. The specifications of a flight data recorder shall be in compliance with the international flight standards approved and adopted by CAA. However, an aircraft may be exempted from this requirement if the manufacturer of which provides no technical bulletin for such modifications, and if there is no possibility to obtain the STC issued by our nation, the United States, EASA or the state of design to perform such modifications.

The flight data recorder shall be activated before flight, and shall not be deactivated in flight. However, in the case of an aircraft accident or aircraft serious incident, the flight data recorder shall be deactivated when the flight ends, and shall not be re-activated until the flight data has been retrieved. This requirement shall apply to aircraft incident where CAA so requires.

An operator shall perform routine operational check of the flight data recorder system to ensure the continuous serviceability of the recorders.

Article 112

The minimum record time and information of the flight data recorder is capable shall comply with the international flight standards as approved and adopted by CAA.

Article 113

An airplane when operated in accordance with the instrument flight rules, or when the airplane cannot be maintained in a desired attitude without reference to one or more flight instruments, shall be equipped with:

1. A magnetic compass;
2. An accurate timepiece indicating the time in hours, minutes and seconds;
3. Two pressure altimeters indicators;

4. An airspeed indicating system with means of preventing malfunctioning due to either condensation or icing;
5. A turn and slip indicator, an attitude indicator and a heading indicator; these instruments may be installed as a combination of instruments in flight director system;
6. A means of indicating whether the power supply to the gyroscopic instrument is adequate;
7. A means of indicating in the flight crew compartment the outside air temperature;
8. A rate-of-climb and descent indicator.

A helicopter when operated in accordance with the instrument flight rules, or when the airplane cannot be maintained in a desired attitude without reference to one or more flight instruments, shall be equipped with:

1. A magnetic compass;
2. An accurate timepiece indicating the time in hours, minutes and seconds;
3. Two sensitive pressure altimeters indicators;
4. An airspeed indicating system with means of preventing malfunctioning due to either condensation or icing;
5. A slip indicator;
6. An attitude indicator for each required pilot;
7. One additional attitude indicator;
8. A heading indicator;
9. A means of indicating whether the power supply to the gyroscope instrument is adequate;
10. A means of indicating in the flight crew compartment the outside air temperature;
11. A rate of climb and descent indicator;
12. A stabilization system, unless it has been demonstrated to the satisfaction of the certifying authority which is acknowledged by CAA that the helicopter possesses, by nature of its design, adequate stability without such a system.

All airplanes of a maximum take-off weight of over 5 700 kg, also helicopters operating in performance Class 1 or 2, shall be fitted with an emergency power supply, independent of the main electrical generating system, for the purpose of operating and illuminating, for a minimum period of 30 minutes. The emergency power supply shall be automatically operative after the total failure of the main electrical generating system and clear indication shall be

given on the instrument panel that the attitude indicator(s) is being operated by emergency power.

Those instruments that are used by any one pilot shall be so arranged as to permit the pilot to see their indications readily from his or her station, with the minimum practicable deviation from the position and line of vision normally assumed when looking forward along the flight path.

Article 113-1

Where aircrafts are equipped with HUD and/or EVS, the training materials and procedures for the use of such systems shall be approved by CAA.

The operator, in the course of implementing the system and training as set out in the preceding paragraph approved by CAA, shall comply with the international flight standards as approved and adopted by CAA.

Article 114

All aircraft when operated as VFR flight shall be equipped with a magnetic compass; an accurate timepiece indicating the time in hours, minutes and seconds; a sensitive altimeter, an airspeed indicator and such additional instruments or equipment as may be prescribed by CAA.

VFR flights, which are operated as controlled flights, shall be equipped in accordance with Article 113.

Article 115

Amphibians or seaplanes shall be equipped with one anchor (drogue), and for each passenger, one life jacket or equivalent individual floatation device stowed in a position easily accessible from the seat or berth of the person for whose use it is provided; equipment for making the sound signals prescribed in the International Regulations for preventing collisions at sea shall also be installed.

Article 116

Amphibians or landplanes, when operates under either one of the following conditions, shall carry for each passenger one life jacket or equivalent individual floatation device shall be equipped with a means of electric illumination for the purpose of facilitating the location of persons stowed in a position easily accessible from the seat or berth of the person for whose use it is provided.

1. Flying over water and at a distance of more than 50 NM away from the shore; or
2. Flying en route over water beyond gliding distance from the shore; or

3. During take-off or landing at an aerodrome, the take-off and approach path is over water.

Unless approved by CAA, amphibians or landplanes with a seating capacity of 19 or less shall not be operated under the conditions as set out in the preceding paragraph without any cabin crew member on board, and in addition, be equipped with life-saving rafts in sufficient numbers to carry all passenger on board.

Article 117

A long-range over-water flight indicates either one of the following conditions:

1. Twin-engine airplane with alternate aerodromes planned, used over routes on which the airplane may be over water and away from land at more than a distance corresponding to 120 minutes at cruising speed for one power-unit inoperative or 400 NM; or
2. An airplane having three or more power-units, with alternate aerodromes planned, used over routes on which the airplane may be over water and away from land at more than a distance corresponding to 120 minutes at cruising speed for two power-units inoperative or 400 NM; or
3. All airplanes, other than the ones mentioned in the preceding two subparagraphs herein this article, used over routes on which the airplane may be over water and away from land at more than a distance corresponding to 30 minutes at normal cruising speed or 100 NM.

When determining the distance away from land aforementioned in each subparagraph in the preceding paragraph of this article, the shorter one applies.

Article 118

An airplane operated on long-range over-water flights shall be equipped with the life-saving and survival kits or equipment as follows:

1. Life-saving rafts in sufficient numbers to carry for all passenger on board, stowed so as to facilitate their ready use in an emergency provided with such life-saving equipment including means of sustaining life as is appropriate to the flight to be undertaken, and equipment for making the pyrotechnical distress signals in according with ICAO Annex 2, Appendix 1.
2. The life jacket and equivalent individual flotation device shall be equipped with a means of electric illumination and should be easily accessible from each seat or berth.
3. After January 1, 2018, on all airplanes of a maximum certificated takeoff mass of over 27,000 kg, a securely attached, automatically activated underwater locating device operating at a frequency of 8.8 kHz and for a minimum of 30 days shall be installed, which shall not be installed in wings or empennage. Provided, however, that such installation is

not feasible due to peculiar circumstances, the operator may submit explanation and relevant documents to CAA, and may be exempted from this requirement with CAA's approval.

An airplane shall be equipped with the ELTs as follows:

1. From 1 July 2008, an airplane with a seating capacity of more than 19 passengers shall be equipped with 1 automatic ELT or 2 ELTs of either type, except for the airplane which is in compliance with paragraph 2.
2. An airplane with a seating capacity of more than 19 passengers, for which the certificate of airworthiness is first issued on or after 1 July 2008, shall be equipped with 2 sets of ELT or more, one of which shall be automatic.
3. From 1 July 2008, an airplane, with a seating capacity of 19 passengers or less, shall be equipped with 1 or more ELT of any type, except for which is in compliance with paragraph 4.
4. An airplane with a seating capacity of 19 passengers or less, for which the certificate of airworthiness is first issued on or after 1 July 2008, shall be equipped with one automatic ELT or more.

ELT equipped per this article shall be in compliance with ICAO Annex 10, Volume III.

Article 119

All helicopters intended to be flown over water shall be fitted with a permanent or rapidly deployable means of floatation, and the life jacket shall be worn by flight crew during all phases of flight so as to ensure a safe ditching of the helicopter when:

1. Flying over water at a distance from land corresponding to more than 10 minutes normal cruising speed when operating in performance Class 1 or 2; or
2. Flying over water beyond autorotational or safe forced landing distance from land when operating in performance Class 3.

Helicopters operating in performance class 1 or 2 and operating in accordance with subparagraph 1 of the preceding paragraph above shall be equipped with:

1. One life jacket, or equivalent individual flotation device, with a means of electric illumination, for each person on board, stowed in a position easily accessible from the seat or berth of the person for whose use it is provided.
2. Life-saving rafts in sufficient numbers to carry for all persons on board, stowed so as to facilitate their ready use in emergency, provided with such life-saving equipment, including means of sustaining life as is appropriate to the flight to be undertaken and equipment for

making the pyrotechnical distress signals described in ICAO Annex 2, Appendix 1.

Helicopters operating in performance Class 3 when operating beyond autorotational distance from land, all persons on board shall wear one life jacket or equivalent individual flotation device.

In the case of helicopters operating in performance Class 2 or 3, when taking off or landing at a heliport where, the take-off or approach path is so disposed over water that in the event of a mishap there would be likelihood of a ditching, at least the equipment required in paragraph 2, subparagraph 1 shall be carried.

Article 120

Helicopters shall be equipped as following:

1. From 1 July 2008, class 1 and class 2 high performance helicopters shall be equipped with at least one than one automatic ELT. In terms of Article 119, paragraph 1, subparagraph 1, when flying over water, shall be equipped with at least one than one automatic ELT and a life-saving raft or life jacket to have at least one ELT of any type.
2. From 1 July 2008, class 3 high performance helicopter shall be equipped with at least one than one automatic ELT. In terms of Article 119, paragraph 1, subparagraph 2, when flying over water, shall be equipped with at least one than one automatic ELT and a life-saving raft or life jacket to have at least one ELT of any type.

ELT equipped per this article shall be in compliance with ICAO Annex 10, Volume III.

Article 121

Aircraft when operated across land areas which have been designated by the State concerned as areas in which search and rescue would be especially difficult shall be equipped with ELT as follows:

1. All aircraft for which the individual certificate of airworthiness is first issued on or after 1 January 2003 shall be equipped with at least one automatic ELT.
2. On or before 31 December 2004, all aircraft shall be equipped with at least one ELT.
3. On or after 1 January 2005, all aircraft shall be equipped with at least one automatic ELT. However, compliance may be extended until 31 December 2005, for aircraft that were issued a certificate of airworthiness on or before 1 January 2003.

ELT equipped per the preceding paragraph shall be in compliance with ICAO Annex 10, Volume III.

All aircraft as set out in paragraph 1 above shall be equipped with life-saving equipment

(including means of sustaining life) as may be appropriate to the area overflown and signalling devices are in compliance with ICAO Annex 2, Appendix 1.

Article 122

All helicopters on over-water flights and all airplanes on long-range over-water flights shall be certified for ditching over water by the state of design.

Article 123

Aircraft intended to be operated at a cabin pressure altitude higher than 10,000ft shall be equipped with oxygen storage and dispensing apparatus capable of storing and dispensing the oxygen supplies. Aircraft intended to be operated at flight altitudes higher than 10,000ft shall be provided with means of maintaining a cabin pressure altitude lower than 10,000ft or shall be provided with oxygen supplies in compliance with Article 77. Pressurized aircraft operated above 25,000ft shall be equipped with a device to provide positive warning to the pilot of any dangerous loss of pressurization.

Aircraft for which the certificate of airworthiness was first issued on or after 9 Nov 1998, and which are intended to be operated at flight altitudes higher than 25,000ft, or which, if operated at flight altitudes of 25,000ft or lower, cannot descend safely within four minutes to a flight altitude of 13,000ft, shall be provided with automatically deployable oxygen equipment and oxygen supplies in compliance with Article 77. The total number of oxygen dispensing units shall exceed the number of passenger and cabin crew seats by at least 10 per cent.

Article 124

All aircraft shall be equipped with suitable anti-icing and/or de-icing devices when operated in circumstances in which icing conditions are reported to exist or expected to be encountered. All accumulation of ice and other contaminants shall be removed to keep the aircraft in airworthy condition prior to take-off.

An operator shall not operate or, plan to operate aircraft in expected, suspected or known ground icing conditions, unless the aircraft has been inspected for its icing condition, and, if necessary, has been given appropriate de-icing/anti-icing treatment.

Article 125

All aircraft when operated at night shall be equipped, in addition to the equipment specified in Article 113:

1. Taxi light;
2. Two landing lights or one having two separately energized filaments;

3. Illumination for all instruments and equipment;
4. Lights in all passenger cabin;
5. Navigation and anti-collision lights; and
6. An electric torch for each crew member station.

Specifications for lights of an airplane as contained in subparagraphs 1, 2 and 5 of the preceding paragraph shall be in compliance with Attachment 13.

Article 126

All aircraft intended to be operated above 49,000 ft. shall carry equipment to measure and indicate continuously the dose rate of total cosmic radiation being received and the cumulative dose on each flight. The display unit of the equipment shall be readily visible to a flight crew member.

Article 127

All aircraft with speed limitations expressed in terms of Mach number shall be equipped with a Mach number indicator. Annex 6 Part I Ch.6.14.

Article 128

All turbine-engined airplanes of a maximum certificated take-off mass in excess of 5,700 kg or authorized to carry more than nine passengers shall be equipped with a ground proximity warning system which has a forward looking terrain avoidance function.

All turbine-engined airplanes of a maximum certificated take-off mass in excess of 15 000 kg or authorized to carry more than 30 passengers shall be equipped with a ground proximity warning system which has a forward looking terrain avoidance function.

All piston-engined airplanes of a maximum certificated take-off mass in excess of 5,700 kg or authorized to carry more than nine passengers shall be equipped with a ground proximity warning system which has a forward looking terrain avoidance function.

A ground proximity warning system as set forth in the preceding 3 paragraphs shall provide automatically a timely and distinctive warning to the flight crew when the airplane is in potentially hazardous proximity to the earth's surface. A ground proximity warning system shall provide warnings of the following circumstances:

1. Excessive descent rate.
2. Excessive terrain closure rate.
3. Excessive altitude loss after take-off or go-around.

4. Unsafe terrain clearance while not in landing configuration
5. Excessive descent below the instrument glide path.

All aircraft, which are operated linking Taiwan to Chi-Mei and Wan-An (Penghu county), Lan-Yu and Lyudao (Taitung county), and linking between other offshore islands, with a maximum certificated take off mass between 5,700kg and 15,000kg, may be exempted from the requirement of the ground proximity warning system prescribed in paragraph 1 through paragraph 3 of this article after approved by CAA.

Article 129

All turbine-engined airplanes of a maximum certificated take-off mass in excess of 5,700 kg or authorized to carry more than 19 passengers shall be equipped with an airborne collision avoidance system (ACAS II).

All turbine-engined airplanes of a maximum certificated take-off mass in excess of 15,000 kg or authorized to carry more than 30 passengers shall be equipped with an airborne collision avoidance system (ACAS II).

The requirement of an airborne collision avoidance system aforementioned in the preceding 2 paragraphs may be waived by CAA approval under any one of the following conditions:

1. The manufacturer of the aircraft does not provide the Service Bulletins (SB) which meets the requirements for the alteration to ACAS II as outlined in ICAO Annex 10, volume IV.
2. The operator is unable to obtain from the aviation industry market, the Supplemental Type Certificates (STC) issued by CAA, FAA, EASA or the state of design, for such alteration.
3. All airplanes, which are operated linking Taiwan to Chi-Mei and Wan-An (Penghu county), Lan-Yu and Lyudao (Taitung county), and linking between other offshore islands, with a maximum certificated take off mass between 5,700kg and 15,000kg.

The airborne collision avoidance system installed in accordance with the article herein shall comply with the requirements prescribed in ICAO Annex 10, Volume IV.

Article 130

All aircraft shall be operated in compliance with the aircraft noise abatement standards and civil aircraft noise control rules.

Section 6: Aircraft Communication & Navigation Equipment

Article 131

An aircraft shall be provided with radio communication equipment capable of conducting

two-way communications for aerodrome control purposes, for receiving meteorological information at any time during flight; and conducting two-way communication at any time during flight with at least one aeronautical station and any other aeronautical stations on such frequencies as may be prescribed by the appropriate authority.

The radio communication equipment required in accordance with the preceding paragraph shall provide for communication on the aeronautical emergency frequency 121.5.

In addition to the requirements set out in paragraph 1, flights in defined portions of airspace or on routes where an RCP type has been prescribed, shall:

1. Be provided with communication equipment which will enable it to operate in accordance with the prescribed RCP type(s); and
2. Be authorized by the State of the Operator for operations in such airspace.

Article 132

An aircraft shall be provided with navigation equipment which will enable it to proceed in accordance with:

1. Operational flight plan; and
2. Requirements of air traffic services.

On flights in which it is intended to land under instrument meteorological conditions an aircraft shall be provided with radio equipment capable of receiving signals providing guidance to a point from which a visual landing can be effected. This equipment shall be capable of providing such guidance at each aerodrome at which it is intended to land and at any designated alternate aerodromes.

Flight under VFR, the flight crew shall find a land mark as reference check point but its distance shall not be more than 60 NM in between, unless approved by CAA.

Article 133

For operations where a Performance Based Navigation (PBN) specification(s) has been prescribed, attachment 15 and following conditions shall be complied:

1. Navigation equipment is operated in accordance with the PBN specification(s); and
2. Operations has been approved by CAA.

Article 134

For flights in defined portions of airspace where, based on Regional Air Navigation Agreement, minimum navigation performance specifications (MNPS) are prescribed, an

airplane shall be provided with navigation equipment which:

1. Continuously provides indications to the flight crew of adherence to or departure from track to the required degree of accuracy at any point along that track;
2. Has been authorized by CAA for the MNPS operations concerned; and

When operating under minimum navigation performance specification in north Atlantic, the requirements in Attachment 16 shall be met.

Article 135

For flight in defined portions of airspace where a reduced vertical separation minimum (RVSM) of 1,000ft (300m) is applied between FL 290 and FL 410, the airplane:

1. Shall be provided with equipment which is capable of:
 - a) Indicating to the flight crew the flight level being flown;
 - b) Automatically maintaining a selected flight level;
 - c) Providing an alert to the flight crew when a deviation occurs from the selected flight level. The threshold for the alert shall not exceed $\pm 300\text{ft}$; and
 - d) Automatically reporting pressure altitude.
2. The operator has instituted appropriate procedures in respect of continued airworthiness (maintenance and repair) practices and programmes.
3. The operator has instituted appropriate flight crew procedures for operations in RVSM airspace.
4. Shall be authorized by the CAA for operation in the airspace concerned and in compliance with Attachment 17.

For the airplane or fleet being authorized on the conditions prescribed in the preceding paragraph, the following requirements shall be complied:

1. Receiving the reports of height-keeping performance issued by the monitoring agencies; and
2. Taking immediate corrective action for individual aircraft, or aircraft type groups, identified in such reports as not complying with the height-keeping requirements for operation in airspace where RVSM is applied.

Operator shall ensure that a minimum of two airplanes of each aircraft type grouping of the operator have their height-keeping performance monitored, at least once every two years or

within intervals of 1 000 flight hours per airplane, whichever period is longer. If an operator aircraft type grouping consists of a single airplane, monitoring of that airplane shall be accomplished within the specified period.

Article 136

The navigation equipment installation shall be such that the failure of any single unit required for either communications or navigation purposes or both will not result in the other unit required for communications or navigation purposes.

The airplane shall be sufficiently provided with navigation equipment to ensure that, in the event of the failure of one item of equipment at any stage of the flight, the remaining equipment will enable the airplane to navigate in accordance with Article 132. For flights in defined portions of airspace where PBN, MNPS or RVSM is applied, Article 133, 134 or 135 shall be adopted as applicable.

Article 137

An operator shall establish, for the electronic navigation data products that have been processed for application in the air and on the ground, procedures for ensuring that the process applied and the products delivered have met acceptable standards of integrity and that the products are compatible with the intended function of the equipment that will use them; such electronic navigation data products shall not be used without being approved by CAA.

An operator shall implement procedures that ensure the timely distribution and insertion of current and unaltered electronic navigation data to all aircraft that require it.

Article 138

Aircraft operated in the Taipei FIR shall be equipped with a ATC transponder capable of reporting its call sign and pressure-altitude.

The pressure-altitude reporting ATC transponder aforementioned in the preceding paragraph shall be operated in compliance with Annex 10, Volume IV.

An airplane for which the individual certificate of airworthiness is first issued on or after 1 January 2009 shall be equipped with a data source that provides pressure-altitude information with a resolution of 7.62m (25ft), or better.

On or after 1 January 2012, an airplane shall be equipped with a data source that provides pressure-altitude information with a resolution of 7.62 m (25 ft), or better. The operator may be authorized by CAA to operate without the installation of equipment with such resolution in the area of operations or routes which have been prescribed in its operations specification if there is no regulatory requirement for doing so.

Section 7: Aircraft Maintenance

Article 139

An operator shall bear the primary responsibility for the proper maintenance of its aircraft including the airframe, power plant, propeller, appliance, and their parts and maintained in an airworthy condition.

An operator may contract its maintenance programme to a person, group of persons, or maintenance organization approved by CAA but the operator remains accountable for the maintenance operations aforementioned in the preceding paragraph.

After the maintenance of aircraft aforementioned in the preceding paragraph has been completed, the maintenance release shall be signed by a CAA approved person or group of persons or maintenance organizations to indicate its airworthy condition.

Article 140

The issue of a maintenance organization approval by CAA shall be dependent upon the applicant demonstrating compliance with the requirements for such organizations.

The maintenance organization aforementioned in the preceding paragraph shall have the necessary technical data, equipment, tools and material to perform the work for which it is approved. Storage facilities shall be provided for parts, equipment, tools and material. Storage conditions shall be such as to provide security and prevent deterioration of and damage to stored items.

Article 141

Operators shall provide, for the use and guidance of maintenance and operational personnel concerned, a GMM which shall be carried into effect after acceptance of CAA. A designated maintenance organization shall conduct maintenance in accordance with GMM of the operator.

An operator shall ensure that the GMM is amended as necessary to keep the information therein up to date and complete. If an amendment to GMM is required, such amendment shall only be carried into effect after acceptance of CAA.

The maintenance organizations and personnel employed by an operator shall conduct aircraft maintenance in compliance with GMM, without infringement.

The operator shall provide, for the use and guidance of maintenance and operational personnel concerned, a maintenance programme approved by the CAA.

The design and application of the operator's maintenance programme shall observe Human

Factors principles.

Copies of all amendments to GMM and the maintenance programme shall be furnished promptly to all organizations or persons to whom GMM and the maintenance programme have been issued.

Article 142

An operator shall file a request with CAA to complete the aging airplane inspection and records review before the due date as follows, failing which no flight thereon may be undertaken:

1. An airplane that has passed its 24th year in service as of December 8, 2003, shall complete its first inspection and records reviews on or before December 5, 2007, and thereafter subsequent inspections and records reviews at no more than seven-year intervals.
2. An airplane that has passed its 14th year but not its 24th year in service as of December 8, 2003, shall complete its first inspection and records reviews on or before December 4, 2008, and thereafter subsequent inspections and records reviews at no more than seven-year intervals.
3. An airplane that has not passed its 14th year in service as of December 8, 2003, shall have its first aging inspection and records review within five years after the start of its 15th year in service, and thereafter subsequent inspections and records reviews at no more than seven-year intervals.

During the inspection and records review, the operator shall demonstrate to CAA that the maintenance of age-sensitive parts and components of the airplane have been adequate and timely enough to ensure the highest degree of safety.

Each operator must notify CAA at least 60 days before the date on which the aging airplane and airplane records will be made available for the inspection and records review. In the event that an operator cannot complete the subsequent inspection and records review within the due date set out in paragraph 1 herein, a request for an extension up to 90 days may be submitted to CAA.

An operator must make available to CAA each airplane for which an inspection and records review is required under this Section, in a condition for inspection specified by CAA, together with records containing the following information:

1. Total years in service of the airplane;
2. Total time in service of the airframe;
3. Total flight cycles of the airframe;

4. Date of the last inspection and records review required by this Section;
5. Current status of life-limited parts of the airframe;
6. Time since the last overhaul of all structural components required to be overhauled on a specific time basis;
7. Current inspection status of the airplane, including the time since the last inspection required by the inspection programme under which the airplane is maintained;
8. Current status and methods of compliance as follows:
 - a) Applicable airworthiness directives;
 - b) Corrosion prevention and control programme.
9. The inspections and procedures required in Article 144;
10. A list of major structural alterations; and
11. A report of major structural repairs and the current inspection status for those repairs.

Article 143

For airplane beyond the applicable flight cycle in Attachment 18, an operator shall establish and implement the Repair Assessment Programme approved by CAA.

On or after December 16, 2008, no operator may operate a turbine-powered transportation category airplane with a type certificate issued after January 1, 1958, and either a maximum type certificated passenger seating capacity of 30 or more, or a maximum type certificated payload capacity of 7,500 pounds or more, unless instructions for maintenance and inspection of the fuel tank system are incorporated in its maintenance programme. These instructions must address the actual configuration of the fuel tank systems of each affected airplane and must be approved by the Regulatory Authority of manufacturer and CAA.

Article 144

After December 20, 2010, an operator may not operate a turbine-powered transport category airplane with a type certificate issued after January 1, 1958, and either a maximum type certificated passenger seating capacity of 30 or more, or a maximum type certificated payload capacity of 7,500 pounds or more, unless the following requirements have been met:

1. The maintenance programme for the airplane includes damage-tolerance-based inspections and procedures for aircraft structure susceptible to fatigue cracking that could contribute to a catastrophic failure. These inspections and procedures must take into account the adverse affects repairs, alterations, and modifications may have on fatigue cracking and the

inspection of this aircraft structure; and

2. The damage-tolerance-based inspections and procedures aforementioned in the preceding subparagraph, including any revisions, must be approved by the state of design. The operator must incorporate the damage-tolerance-based inspections and procedures in the CAA-approved maintenance programme.

Article 144-1

For any transport category, turbine-powered airplane with a type certificate issued after January 1, 1958, regardless of whether the maximum takeoff gross weight is a result of an original type certificate or a later design change, and with a maximum takeoff gross weight greater than 75,000 pounds, or with a maximum takeoff gross weight less than 75,000 pounds for which a limit of validity of the engineering data that supports the structural maintenance programme is required, its operator shall incorporate into its maintenance programme the airworthiness limitations containing the above limit of validity, and shall implement such maintenance programme with CAA's approval.

The airworthiness limitations in the preceding paragraph shall be implemented pursuant to Attachment 18-1.

Article 145

(Deleted)

Article 145-1

No operator may operate a turbine-powered transport category airplane with a type certificate issued after January 1, 1958, and either a maximum type certificated passenger capacity of 30 or more, or a maximum type certificated payload capacity of 7,500 pounds or more, unless the inspection and procedures for electrical wiring interconnection systems (EWIS) which is approved by the Regulatory Authority of airplane manufacturer are incorporated into the maintenance programme for that airplane and approved by the CAA.

Article 146

Operators shall prepare a training programme for their maintenance personnel and conduct training upon CAA's approval.

An operator shall ensure that all its maintenance personnel receive initial and continuation training appropriate to their assigned tasks and responsibilities. The maintenance personnel shall be trained to be competence of planning, performing, supervising, inspecting and releasing the work to be performed.

In order to reduce human induced incidents or accidents, the training programme established

by the operator shall, include training in maintenance resource management, and in knowledge and skills related to human performance, including coordination with other maintenance personnel and flight crew.

Where Article 142 through Article 145-1 apply to any airplane, the training program of its operator shall consist of training of aging airplanes maintenance.

Article 147

Operators shall establish a system of inspection, identifying required inspection item and ensure the inspections of aircraft maintenance, overhaul and alterations, which have been completed by qualified authority personnel in accordance with the requirements of the aircraft maintenance control manual.

Operator shall establish a quality assurance system to ensure that all maintenance is performed in compliance with regulatory requirements.

Article 148

The person signing a maintenance release shall be either the holder of a valid CAA aircraft maintenance engineer certificate, or the holder of a valid mechanic license acceptable to CAA, and shall ensure that operations in regard to maintenance and maintenance release be conducted as authorized by GMM.

The requirement of a maintenance release shall not be waived unless the request for waiver and pertinent procedures for such operation has been approved by CAA. Thereafter, under any one of the following conditions, and with no malfunction occurs to the aircraft, for the flight crew who have completed the approved training, the requirement of a maintenance release may be waived after the pilot-in-command has conducted a transit check and recorded the completion of the check in the maintenance log book:

1. The aircraft has been diverted to, or has made a technical landing at an alternate aerodrome where a person qualified to sign the maintenance release is not available.
2. Helicopters performing special operations such as emergency fire fighting and searching and rescue.
3. Aircraft with a seating capacity of 19 passengers or less, departed from distant islands, such as the Cimei and Wan-an of Penghu County, the Lanyu and Lyudau of Taitung County, and other off-shore islands.

Article 149

The repairs or alternations of aircraft shall comply with pertinent airworthiness regulatory requirements of CAA.

Procedures shall be established by an operator to ensure that the approved/accepted supporting data of repairs or alternations in compliance with the airworthiness requirements are retained.

Article 150

An operator shall retain the following records:

1. The total time in service (hours, calendar time and cycles, as appropriate) of the aircraft, daily time in service; and time in service since the last overhaul;
2. The total time in service (hours, calendar time and cycles, as appropriate) of the life limited components and time in service since the last overhaul subject to a mandatory overhaul life;
3. The current status of compliance with all mandatory continuous airworthiness requirements;
4. Appropriate details of alternations and repairs to the aircraft and its major components;
5. The current aircraft status of compliance with the maintenance programme; and
6. The detailed maintenance records to show that all requirements for the signing of maintenance release have been met.

The records in subparagraphs 1 to 5 of the preceding paragraph shall be kept for a period of 2 years after the unit to which they refer has been permanently withdrawn from service. The records in subparagraph 6 shall be kept until the time the work has been repeated or replaced by other work, minimum of one year.

Daily maintenance work and maintenance release records shall be recorded with indelible ink and kept for a minimum period of one year.

The operator may establish and use electronic documentation system for the keeping and certification of the records set out in paragraph 1 herein after obtaining CAA's approval.

In the case of a change of operator, the records shall be transferred to the new operator.

Article 151

An operator shall comply with the following airworthiness requirements:

1. An operator of large aircraft shall monitor and assess maintenance and operational experience with respect to continuous airworthiness and establish a reliability control programme approved by CAA. Such information as prescribed in the programme shall report through the system specified by CAA; and
2. An operator of large aircraft shall obtain and assess continuous airworthiness information

and recommendations available from the organization responsible for the type design and shall implement resulting action considered necessary in accordance with CAA accepted procedures.

Article 152

The maintenance personnel shall be given a rest period of at least 24 consecutive hours during any seven consecutive days of his/her duty. However, due to special operations conditions at outer stations, this requirement may be waived when the total duty hours of such maintenance personnel are less than 40 hours per week and an agreement reached by the employer and employee both parties has been accepted by the local labor authorities, or for those who are performing emergency duties.

Section 8: Flight Crew

Article 153

The number and composition of the flight crew shall not be less than those specified in the flight operations manual or operating manual and aircraft flight manual. Flight crew members may be increased or replaced when necessitated by considerations related to the type of aircraft used, the type of operation involved and the duration of flight between points where flight crews are changed.

Flight Crew shall operate aircraft in accordance with the procedures, standards and limitations prescribed in operating manuals and aircraft flight manuals without infringement, unless when there is a proper cause necessitating a deviation.

The number and composition of the flight crew specified in flight operations manual and operating manual shall not be different, as those have the same specifications.

Article 154

Duties of pilot-in-command:

1. The pilot-in-command shall be responsible for the operation and safety of the aircraft and for the safety of all crew members, passengers and cargo on board during flight time, and may take actions as necessary in the event of an emergency;
2. The pilot-in-command shall ensure that the checklists are complied with in detail;
3. The pilot-in-command shall be responsible for reporting all known or suspected defects in the aircraft to the operator at the termination of the flight; and
4. The pilot-in-command shall be responsible for notifying the nearest appropriate authority by the quickest available means of any accident or incident involving the aircraft.

Article 155

The regulations of flight crew members at crew member station are as follows:

1. During take-off and landing, all flight crew members required to be on flight deck duty shall be at their stations;
2. En route, all flight crew members required to be on flight deck duty shall remain at their stations except when their absence is necessary for the performance of duties in connection with the operation of the airplane or for physiological needs;
3. All flight crew members shall keep their seat belts fastened when at their stations, and shall keep the safety harness fastened during the take-off and landing phases. All other flight crew members shall keep their safety harnesses fastened during the take-off and landing phases unless the shoulder straps interfere with the performance of their duties, in which case the shoulder straps may be unfastened but the seat belt must remain fastened; and
4. Flight crew members, when at their stations, shall not read any books, magazines or newspapers irrelevant to the flight operations.

Article 156

Flight crew members shall be adequately trained in order to be capable of operating aircraft and using the communication equipment.

Article 157

All flight crew members required to be on flight deck duty shall communicate through boom or throat microphones while aircraft below the transition level/altitude.

Article 158

An operator shall ensure that, before commencing a flight, each flight crew member assigned to duty holds and carries with him/her a valid license which is issued by CAA and appropriate to the type of operations.

Article 159

An operator shall, for each type of airplane, assign to all flight crew members the necessary functions they are to perform in an emergency or in a situation requiring emergency evacuation. These functions include the use of all emergency and life-saving equipment required to be carried. Recurrent training in accomplishing these functions shall be contained in the operator's training programme and shall include instruction in the use of all emergency and life-saving equipment required to be carried, and drills in the emergency evacuation of the airplane.

Article 160

An operator shall establish and maintain a ground and flight training programme approved by CAA, which ensures that all flight crew members are adequately trained to perform their assigned duties.

Ground and flight training shall be conducted by qualified instructors in training facilities approved by CAA. The training programme shall consist of ground and flight training in the type(s) of aircraft on which the flight crew member serves, and, for the aircraft to be served, in the area of proper flight crew coordination, VFR and IFR procedure, crew resource management, special training on ultra long-haul flight, and training in all types of emergency and abnormal situations or procedures caused by power plant, airframe or systems malfunctions, fire, the transport of dangerous goods or other abnormalities.

The training shall ensure that all flight crew members know the functions for which they are responsible and the relation of these functions to the functions of other crew members, particularly in regard to abnormal or emergency procedures. The training programme shall be given on a recurrent basis, and shall include an assessment of competence.

Article 161

Training programmes for each type of aircraft shall comprise the following items:

1. Type Initial training.
2. Upgrade training.
3. Transition training.
4. Recurrent training.
5. Re-qualification training.

The recurrent training aforementioned in subparagraph 4 of the preceding paragraph shall be completed prior to the checks as stated in Article 173. Provided, however, that this requirement may be waived with CAA's approval.

Article 162

An operator shall not assign a pilot to act as pilot-in-command of an aircraft unless that pilot has made at least three take-offs and landings within the preceding 90 days on the same type of aircraft for which the pilot holds the type rating.

Article 163

An operator shall not assign a pilot to act as a captain of an aircraft unless that pilot has made

at least three take-offs and landings within the preceding 90 days on the same type of aircraft for which the pilot holds the type rating or in a full flight simulator approved for the purpose.

An operator shall not assign a pilot, who has not made at least three take-offs and landings during the preceding 90 days as set out in the preceding paragraph, to act as a captain of an aircraft unless that pilot completes the training prescribed in the training programmes and the training as follows:

1. Under the supervision of a check airman, make at least three takeoffs and landings in the aircraft or in a full flight simulator; and
2. The takeoffs and landings required in the preceding subparagraph must include:
 - a) At least one takeoff with a simulated failure of the most critical power-plant;
 - b) At least one landing from an ILS approach to the lowest ILS minimum authorized for the operator; and
 - c) At least one landing to a full stop.

A captain who receives trainings aforementioned in the preceding paragraph in a full flight simulator shall:

1. Have previously logged 100 hours of flight time in the same type aircraft in which he is to serve; and
2. Be observed on the first two landings made in operations under this part by an approved check airman who acts as pilot in command and occupies a pilot seat. The landings must be made in weather minimums that are not less than those contained in the operator's operations specifications for Category I Operations, and must be made within 45 days following completion of full flight simulator training.

When using a full flight simulator to accomplish any of the requirements in paragraphs 1 and 2, each required flight crew member position must be occupied by an appropriately qualified person and the full flight simulator must be operated as if in a normal in-flight environment without use of the repositioning features of the full flight simulator.

A check airman who observes the takeoffs and landings prescribed in this Section shall certify that the person being observed as captain is proficient and qualified to perform flight duty in operations and may require any additional manoeuvres that are determined necessary to make this certifying statement.

For the qualification of the check airman, refer to Attachment 19.

Article 164

An operator shall not assign a pilot to act in the capacity of cruise relief pilot in a type or variant of a type of aircraft unless, within the preceding 90 days that pilot has either:

1. Operated as a pilot-in-command, co-pilot or cruise relief pilot on the same type of aircraft;
or
2. Carried out recurrent training including normal, abnormal and emergency procedures specific to cruise flight on the same type of aircraft or in a full flight simulator approved for the purpose by CAA, and has practiced approach and landing procedures, where the approach and landing procedure practice may be performed as the pilot monitor.

Article 165

An operator may not schedule any pilot to serve as pilot of an aircraft, unless within the preceding 12 calendar months that pilot has passed a line check in which he has satisfactorily performed the duties and responsibilities of a pilot in the types of aircraft he is to fly.

The line check aforementioned in the preceding paragraph shall be conducted by the check airman.

A line check given to the pilot within a period of one month before or after the month in which the check is due, is considered to be given on the month due for the determination of next due date for line check.

Article 166

An operator shall not assign a pilot to act as pilot-in-command of an aircraft on an aerodrome, route or within an area specified by the operator.

To obtain the route qualifications aforementioned in the preceding paragraph, the pilot shall comply as follows:

1. Each such pilot shall demonstrate to the operator adequate knowledge of the route to be flown and the aerodromes, which are to be used. This shall include knowledge of:
 - a) The terrain and minimum safe altitude.
 - b) The seasonal meteorological conditions.
 - c) The meteorological, communication, air traffic facilities, services and procedures.
 - d) The search and rescue procedures.
 - e) The navigational facilities and procedures.
 - f) Procedures applicable to the flight paths over heavily populated areas and areas of high air traffic density, obstructions, physical aerodrome lay out, lighting, approach aide,

arrival, departure, holding, instrument approach procedures and applicable operating minima.

2. The acquisition of pilot-in-command qualification for such route or aerodrome shall be implemented under one of the conditions as follows:

- a) Accompanied by a pilot who is qualified for the aerodrome as a member of the flight crew or as an observer on the flight deck.
- b) The approach to the aerodrome is not over difficult terrain and the instrument approach procedures and aids available are similar to those with which the pilot is familiar.
- c) A margin approved by CAA is added to the normal operating minima.
- d) The descent from the initial approach altitude can be made by day in visual meteorological conditions.
- e) The aerodrome concerned is adjacent to another aerodrome at which the pilot-in-command is currently qualified to land.
- f) The operator qualifies the pilot in command to land at the aerodrome concerned by means of an adequate pictorial presentation.

Article 167

Due to certain environmental factors or terrain, CAA or an operator may designate an aerodrome or route as special ones for which an operator shall not assign a pilot as pilot-in-command to operate in such flight unless:

- 1. Within the preceding 12 months, the pilot has acted as a flight crew member or observer in the aircraft or full flight simulator; or
- 2. The pilot has operated on the special route or made at least one take-off and landing at the special aerodrome under the supervision of a qualified instructor or check airman; or
- 3. The pilot has completed the CAA approved training programme which incorporate diagrams and text in detail for the special aerodrome or route.

Article 168

An operator shall not assign a first officer to operate at the flight controls of an aircraft during take-off and landing unless that first officer has made at least three take-offs and landings within the preceding 90 days on the same type of aircraft or in a full flight simulator approved by CAA.

An operator shall not assign a pilot, who has not made at least 3 take-offs and landings during

the preceding 90 days as set out in the preceding paragraph, to act as a first officer of an aircraft unless that pilot has received the training prescribed in the training programmes and the training as follows:

1. Under the supervision of a check airman, make at least three takeoffs and landings in the type of aircraft in which that person is to serve or in a full flight simulator; and
2. The takeoffs and landings required in the preceding paragraph must include:
 - a) At least one takeoff with a simulated failure of the most critical power plant.
 - b) At least one landing from an ILS approach to the lowest ILS minimum authorized for the operator.
 - c) At least one landing to a full stop.

A first officer who performs the maneuvers prescribed in the preceding paragraph in a full flight simulator must:

1. Have previously logged 100 hours of flight time in the same type aircraft in which he is to serve; and
2. Be observed on the first two landings made in operations under this part by an approved check airman who acts as pilot in command and occupies a pilot seat. The landings must be made in weather minimums that are not less than those contained in the operator's operations specifications for Category I Operations, and must be made within 45 days following the completion of full flight simulator training.

When using a full flight simulator to accomplish any of the requirements aforementioned in paragraphs 1 and 2, each required flight crew member position must be occupied by an appropriately qualified person and the full flight simulator must be operated as if in a normal in-flight environment without use of the repositioning features of the full flight simulator.

A check airman who observes the takeoffs and landings prescribed in this Section shall certify that the person being observed as a first officer is proficient and qualified to perform flight duty in operations and may require any additional maneuvers that are determined necessary to make this certifying statement.

Article 169

Pilots who are older than 60 years of age shall not engaged in single pilot operations.

Article 170

The assignment of flight duty for airplane pilots shall meet the following criteria:

1. Except for aircraft newly introduced into service, within 120 days after the satisfactory completion of an aircraft type rating check, the pilot shall acquire the line operating experience of no less than 50 hours of flight time or 20 landings in the aircraft type in which the pilot is to serve.
2. The training for line operating experience shall focus on respective phases in flight, which include the phases of take-off, climb, cruise, approach and landing. The pilot of initial operating experience shall perform flight duty in respective phase of flight at least 4 times.
3. When a pilot is assigned to operate other aircraft type before the completion of the initial operating experience of an aircraft type, re-qualification training shall be given before that pilot can be reassigned to a flight duty of such aircraft type.
4. Except for aircraft newly introduced into service, the pilot-in-command shall not be assigned a flight duty with a junior first officer unless either one of them has acquired an operating experience of no less than 75 hours flight time.
5. The acquisition of initial operating experience for newly hired pilots shall be conducted under the supervision of an instructor pilot or a check airman. The flight time in which a pilot serves as an observer is not considered as part of operating experience.
6. In any flight, when a first officer has not logged 100 hours of flight time in the aircraft type in which he is to flight, the captain shall perform the take-off and landing when the visibility is less than 1,200 m or when the runway intended to be landed is covered with water, slush or ice.

Article 171

A pilot shall have logged at least 200 hours of flight time in an aircraft type before he is to perform test flights after maintenance or inspection, or to perform special ferry flight of such aircraft type. When the minimum flight crew members of such aircraft are two, both pilots qualified as aforementioned in this article shall be assigned to such duty.

Article 172

An operator shall not schedule any person to serve as a flight engineer on an aircraft, unless he/she has had at least 50 hours of flight time as a flight engineer in that type within the preceding 6 months. The CAA may qualify him or her when familiarity and competency has been determined for that type aircraft.

Article 173

An operator shall ensure that the pilot technique and the ability to execute emergency procedures are checked in such a way as to demonstrate the pilot's competence to the

standards established by the operator and CAA.

A flight crew who holds a pilot license with several variants of the same type of airplane or different types of airplanes with similar characteristics may be given a combined similar aircraft type-rating check approved by CAA.

For the operator who operates the flight under instrument flight rules, the checks set out in paragraph 1 herein shall be to ensure that its flight crew have the capabilities to operate instrument flight.

The checks set out in paragraphs 1 and 2 herein shall be performed by check airman at least twice within any 12 months from the date on which the flight crew has passed the check or the re-qualification check. The interval of such two checks shall be between 4 months and 8 months. And, the content of the subsequent check shall not be identical with the previous check.

Article 174

An operator shall maintain a record of the qualification of the pilot including flight hours, training received, proficiency checks and personal profile for CAA inspection.

Article 175

When a medical certificate can be obtained only with correcting lenses, the applicant may be assessed as fit provided that such correcting lenses are worn during the exercise of the privileges of the license or rating applied for or held; and, in addition, a pair of suitable correcting spectacles is kept readily available during the exercise of the privileges of the applicant's license.

Article 176

Flight crew members shall wear a company uniform for duty and have a flashlight available and readily accessible for use.

Section 9: Flight Dispatcher

Article 177

Duties of Flight Dispatchers are:

1. Dispatch aircraft.
2. Assist the pilot-in-command in flight preparation and provide the relevant information.
3. Assist the pilot-in-command in preparing the operational and ATS flight plans and file the ATS plan with the appropriate ATS unit.

4. Furnish the pilot-in-command, while in flight, by appropriate means of information, which may be necessary for the safe conduct of the flight.
5. In the event that the position of the airplane cannot be ascertained through the automated reporting mechanism as set out in Article 8-3, paragraph 2, and that communication with the pilot cannot be established, the nearest air traffic services where the location of airplane was last known shall be notified immediately.

Article 178

In the event of an emergency, a Flight Dispatcher shall:

1. Initiate such procedures as outlined in the operations manual while avoiding taking any action that would conflict with ATC procedures; and
2. Convey safety-related information to the pilot-in-command that may be necessary for the safe conduct of the flight, including information related to any amendments to the flight plan that become necessary in the course of the flight.

Article 179

No person shall be allowed to exercise the privileges of a Flight Dispatcher, unless he/she holds a Flight Dispatcher license issued by CAA and has the experience and knowledge listed in the following subparagraphs:

1. Within the preceding 12 months, at least one observation flight on the flight deck of an aircraft over any area in which that individual is authorized to exercise the privileges of a Flight Dispatcher;
2. An operator shall ensure the Flight Dispatcher know the contents of FOM and the communication and navigation equipment used in the aircraft;
3. An operator shall ensure the Flight Dispatcher know the seasonal meteorological conditions and the source of meteorological information in the region for which he/she is responsible, the effects of meteorological conditions on radio reception in the aircraft, the characteristics and operation limitations of respective navigation equipment used, and the aircraft loading instructions; and
4. A Flight Dispatcher. Shall also demonstrate a competency level acceptable to the operator in performing the duties prescribed in the preceding article.

Article 180

A Flight Dispatcher must be familiar with all pertinent flight operations regulations and procedures relating to the performance of his duties, and shall perform flight dispatch duty in

accordance with them.

Article 181

A Flight Dispatcher who has ceased to exercise the privileges of his/her license for twelve months or more shall not be assigned to such duty unless being given another Flight Dispatcher training by the operator.

Section 10: Manuals, Forms, Records and Reports

Article 182

An operator shall establish an Aircraft Maintenance Control Manual and other pertinent manuals with contents as specified in Attachment 20.

The manuals established by the operator set out in the preceding paragraph shall not contradict to pertinent regulations and the operations specifications approved by CAA. Whenever there is any conflict between these manuals and the regulations or operations specifications, the regulations or operations specifications override these manuals.

Article 183

The aircraft flight logbook shall contain the following items:

1. Aircraft nationality and registration.
2. Date.
3. Names of crew members.
4. Duty assignment of crew members.
5. Place of departure.
6. Place of arrival.
7. Time of departure.
8. Time of arrival.
9. Hours of flight.
10. Nature of flight (scheduled or non-scheduled).
11. Notes of incidents/observations if any.
12. Signature of person in charge.

Article 184

(Deleted)

Article 185

(Deleted)

Article 186

An operator shall ensure, in the event that the aircraft becomes involved in an accident or incident, that CAA will be notified immediately, and shall also ensure the preservation of all related flight recorder records, the associated flight data recorders, and their retention in safe custody pending their disposition for an investigation.

Article 187

An operator shall report to the CAA and the aircraft manufacturer where it discovers any failure, malfunction, defect or other incident involving the aircraft, engine, propeller or equipment and the parts which meet the notification requirement set out in the Regulations for Aircraft Flight Safety-related Events. Where necessary, the state of design of such aircraft shall also be notified of such events.

An operator shall establish a continuing monitoring and reporting system for its schedule flights on a daily bases and summarized the flight delay, flight cancellation, air turn back and diversion which caused by the mechanical interruption in the “mechanical interruptions monthly report” to the CAA before the 10th day of the following month. However, an operator who submits the monthly reports in accordance with the CAA approved reliability control programme may be exempted for the aforementioned requirement.

Section 11: Cabin Crew member

Article 188

An operator shall assign at least one cabin crew member to a flight operated by an aircraft with a seating capacity of more than 19 but less than 51 passengers. For an aircraft with a seating capacity of more than 50 but less than 101 passengers, at least 2 cabin crew member shall be assigned to such flight, and for each increment in the seating capacity of 50 passengers, at least one more cabin crew member shall be added, in order to effect a safe and expeditious evacuation of the airplane, and the necessary functions to be performed in an emergency or a situation requiring emergency evacuation. The operator shall assign these functions for each type of airplane. Except for a ferry flight or a flight approved by CAA in advance.

An operator shall specify the requirements of minimum cabin crew member as set out in the preceding paragraph in operations specifications.

During the phases of passenger embarking and disembarking, an operator shall ensure that the required number of cabin crew member aforementioned in paragraph 1 remain in the cabin compartments in order to deal with the safety related issues.

An operator shall ensure that during take-off, landing and when the pilot-in-command so directs, cabin crew members shall be seated as near as practicable to the designated emergency exits with seat belt on or, when provided, safety harness fastened and shall be uniformly distributed throughout the aircraft.

During taxi, cabin crew members required by paragraph 1 must remain at their duty stations with safety belts and shoulder harnesses fastened except to perform duties related to the safety of the aircraft and its occupants.

Cabin crew members shall wear a company uniform for duty and have a flashlight available and readily accessible for use.

Article 189

An operator shall establish a cabin crew manual which will be followed accordingly by the cabin crew members.

The cabin crew manual in the preceding paragraph shall be kept up to date and the operator shall ensure that all necessary information contained therein shall be accepted by CAA.

When an operator assigns the cabin crew member to accomplish a pre-departure check of normal and emergency equipment in the cabin, the cabin crew member's duties, adequate procedures and instructions should be included in the cabin crew manual.

An operator shall incorporate, in its cabin crew manual, a report procedure for in flight emergency, incident, fire, or malfunctions/damage of a system and cabin crew member shall be trained to be familiar with the procedure, and make such report promptly to pilot-in-command for evaluation and taking appropriate actions.

Article 190

An operator shall establish a cabin crew training programme which will be carried into effect after approval by CAA.

No person shall be assigned as a cabin crew member unless the training has been completed and the test given is satisfactory.

An operator shall ensure that cabin crew member receive recurrent training on a regular interval to ensure that each cabin crew member is:

1. Competent to execute those safety duties and functions which the cabin crew member is

assigned to perform in the event of an emergency or in a situation requiring emergency evacuation, including assisting the mentally or physically handicapped;

2. Drilled and capable in the use of emergency and lifesaving equipment required to be carried, such as life jackets, life-saving rafts, evacuation slides, emergency exits, portable fire extinguishers, oxygen equipment, first aid kits, medical kits and universal precaution kits;
3. When serving on airplanes operated at altitudes of 10 000 ft or above, knowledgeable as regards the effect of lack of oxygen and physiological phenomena accompanying a loss of pressurization;
4. Aware of other cabin crew members' assignments and functions in the event of an emergency; and
5. Knowledgeable about human performance as related to passenger cabin safety duties including flight crew-cabin crew coordination.

Cabin crew member shall complete the recurrent training twice within every 24 months. The interval between two recurrent trainings shall be no less than 8 months but no more than 16 months.

An operator shall ensure cabin crew member receive the recurrent training in regard to dangerous goods every 24 months, in order to ensure cabin crew member be aware of the types of dangerous goods which may, and may not, be carried in a passenger cabin.

Article 191

An actual demonstration of emergency evacuation procedures shall meet the following requirements:

1. For an aircraft with a seating capacity of more than 44 passengers, in 90 seconds.
2. An operator shall conduct an actual demonstration of emergency evacuation prior to passenger-carrying operations of an aircraft with a seating capacity of more than 44 passengers and first introduced into service, or after a major modification in the cabin compartments.
3. Annual trainings or regular demonstrations of emergency evacuation may be conducted in an emergency evacuation training mock-up.

Article 192 (Deleted)

Section 12: Security

Article 193

The flight crew compartment doors in passenger-carrying aircraft shall be securely closed and locked in flight. An operator shall provide means by which cabin crew member can discreetly notify the flight crew in the event of unlawful interference which may endanger the safety of flight.

From 1 November 2003, all passenger-carrying aircraft of a maximum certificated take-off mass in excess of 45,500 kg or with a passenger seating capacity greater than 60 shall be equipped with an approved flight crew compartment door that is designed to resist penetration by small arms fire and grenade shrapnel, and to resist forcible intrusions by unauthorized persons. This door shall be capable of being locked and unlocked from either pilot's station.

All aircraft equipped with a flight crew compartment door as described in the preceding paragraph shall be closed and locked from the time all cabin entry doors are closed following embarkation until any such door is opened for disembarkation, except when necessary to permit access and egress by authorized persons of the operator or CAA.

All aircraft which are equipped with a flight crew compartment door described in paragraph 2 shall be provided with means for monitoring from either pilot's station the entire door area outside the flight crew compartment to identify persons requesting entry and to detect suspicious behaviour or potential threat.

In case where operators cannot comply with the above terms, they shall submit documents and statements for CAA approval to extend the compliant date.

If an operator fails to conduct the alterations of flight crew compartment door and the associated monitoring device prescribed herein this article, a request for the extension of deadline shall be filed with CAA along with detail explanations and pertinent certificates.

Article 194

No person may be admitted into the flight crew compartment of an aircraft except for the authorized personnel and Flight Dispatchers of the operator. However, CAA authorized personnel may be exempted from the restrictions herein this article.

Article 195

An operator shall ensure that there is on board a checklist of the procedures to be followed in searching for a bomb. The checklist shall be supported by information on the least risk bomb location specific to the aircraft.

Article 196

An operator shall establish and maintain a training programme that enables crew members to act in the most appropriate manner to minimize the consequences of acts of unlawful

interference.

An operator shall also establish and maintain a training programme to acquaint appropriate employees with preventive measures and techniques in relation to passengers, baggage, cargo, mail, equipment, stores and supplies intended for carriage on an aircraft so that they contribute to the prevention of acts of sabotage or other forms of unlawful interference.

As a minimum, this programme as mentioned in the preceding paragraph shall include the following elements:

1. Determination of the seriousness of any occurrence;
2. Crew communication and coordination;
3. Appropriate self-defence responses;
4. Use of non-lethal protective devices assigned to crew members whose use is authorized by CAA;
5. Understanding of behaviour of terrorists so as to facilitate the ability of crew members to cope with hijacker behaviour and passenger responses;
6. Live situational training exercises regarding various threat conditions;
7. Flight deck procedures to protect the airplane; and
8. Aircraft search procedures and guidance on least-risk bomb locations (where practicable).

Article 197

Following an act of unlawful interference, the pilot-in-command shall submit, without delay, a report of such an act to CAA and the designated local authority.

Article 198

Operators shall ensure that security checks of the aircraft cabin have been conducted before take-off and after landing. Any suspicious objects found, shall be reported immediately to the local CAA authority.

An operator shall ensure that no cargo, baggage or passenger may be loaded onto an aircraft unless the security checks of which have been completed.

Article 199

An operator shall establish a programme to conduct random tests for narcotic drugs and alcohol for operations personnel such as flight crew, cabin crew member, Flight Dispatchers and maintenance personnel. The records for such tests shall be retained for review.

CAA may conduct regular or random tests for narcotic drugs and alcohol for operations personnel aforementioned in the preceding paragraph.

Test standards for narcotic drugs and alcohol are as follows:

1. For narcotic drugs test: the test result of a Urine specimen shall be negative.
2. For Alcohol test: In the test result, the concentration of alcohol shall not be more than 0.02% in blood, or exceed 0.1mg per litre in breath.

Any person who fails either test prescribed in preceding paragraph shall not engage in flight related operations; this restriction also applies to the refusal of test.

CAA may delegate the tests of drugs and alcohol as prescribed in paragraph 2 to the airport operator.

When CAA delegates the tests in accordance with the preceding paragraph, the name of the designee, the commissioned items and regulations shall be promulgated on the government bulletin.

During the period of the Central Epidemic Command Center was set up, an operator shall establish disease control management measures according to "Operational Principles for R.O.C (Taiwanese) Airlines Air Crewmembers to Implement Health Control Measures for Epidemic Prevention" which was approved by Central Epidemic Command Center and published by CAA.

An operator and its employees shall comply with preceding paragraph of disease control management measures.

Article 200

For operators of civil air transport enterprise engage in non-revenue flight operations, the regulations in Chapter 4 apply.

Chapter 3 - General Aviation Operations

Section 1: In-flight Procedures

Article 201

An operator and pilot-in-command shall ensure that a flight will not be commenced unless the aircraft is airworthiness. The operator shall also ensure that any inadequacy of facilities observed in the course of operations is reported to the authority responsible for them, without delay.

Article 202

An operator shall not engage in general aviation operations unless the submitted Operations

Specifications (two copies for same Opspecs) is approved by CAA (refer to attachment 2).

An operator shall ensure the validity of the Operations Specifications (ICAO format) and shall not engage in general aviation operations if the Operations Specifications ceases to be valid.

Article 202-1

A general aviation operator engaged in spraying and dusting operations shall operate in compliance with attachment 20-1.

A general aviation operator engaged in rotorcraft external-load operations shall operate in compliance with attachment 20-2.

A general aviation operator engaged in free balloon flight operations and free balloon tethered operations shall operate in compliance with attachment 20-3.

A general aviation operator using single-engine turbine-powered airplanes engaged in operations shall operate in compliance with Article 234, Article 249, Article 251, Article 271 and attachment 20-4.

Article 203

An operator shall establish and maintain flight safety accident prevention and self-audit programme to be filed with CAA for approval.

Article 204

An operator shall provide, for the use and guidance of operations personnel on board, a CAA approved flight operations manual containing procedures required by regulation. The manual shall be amended or revised as is necessary to ensure that the information contained therein is kept up to date.

An operator and its airmen shall perform their duties in accordance with the rules or procedure prescribed in the manuals as set out in the preceding paragraph with no exception.

Article 205

An operator shall establish respective training programmes for personnel on board of different areas in operations. The implementation of such programmes is subject to the approval of CAA.

The programmes in the preceding paragraph shall include a CRM programme to ensure that all operations personnel on board are properly instructed in their particular duties and responsibilities and the relationship of such duties to the operation as a whole.

An operator shall establish a system to keep all training records for CAA's inspection.

Article 206

Except for being approved by local authority in which the aerodrome is located, the pilot-in-command shall not operate the aircraft below aerodrome operating minima.

If the aerodrome operating minima has not been established by the State in which the aerodrome is located, the operator shall establish such minima which will be carried into effect after approval by CAA.

Article 207

Operator shall comply with Attachment 3 to operate in adverse weather.

Article 207-1

An operator shall maintain current records of flight time, flight duty periods, rest periods, duty periods and standby of all its crew members for a continuous 12-month period.

Article 208

The pilot-in-command shall ensure that crew members and passengers are familiar by means of a printed illustration or to the location and the use of:

1. Seat belts.
2. Emergency exits.
3. Life jackets.
4. Oxygen equipment.
5. Other emergency equipment for individual use.

Article 209

To prevent interference with navigation and telecommunications during flight, all personal portable electronic devices used by airman, cabin crew or passengers shall comply with Article 43-2, paragraph 2 of the Act.

Article 210

A flight shall not be commenced until flight preparation documents have been completed and certified by the pilot-in-command that:

1. The aircraft is airworthy;
2. The instruments and equipment for the particular type of operation to be undertaken are installed and are sufficient for the flight;

3. A maintenance release has been issued for the aircraft;
4. The mass of the aircraft and center of gravity location are such that the flight can be conducted safely, taking into account the flight conditions expected;
5. Any load carried is properly distributed and safely secured;
6. A check has been completed indicating that the operating limitations can be complied with for the flight to be undertaken; and
7. Operational flight planning has been complied with.

Except for the maintenance release aforementioned in subparagraph 3 of the preceding paragraph shall be kept for a period of 12 months or more, an operator shall retain completed flight preparation documents for at least 3 months.

The operator shall develop procedures to ensure the pilot in command check and comply with paragraph 1.

Article 211

Before commencing a flight, the pilot-in-command shall be familiar and understand with all available meteorological information appropriate to the intended flight.

Preparation for an IFR flight to destination other than departure aerodrome shall include a study of available current weather reports and forecasts and the planning of an alternative course of action to provide for the eventuality that the flight cannot be completed as planned because of weather conditions.

Article 212

A flight to be conducted in accordance with visual flight rules shall not be commenced unless current meteorological reports or forecasts indicate that the meteorological conditions will be such as to render compliance with these rules.

Article 213

A flight to be conducted in accordance with instrument flight rules shall not be commenced unless information is available which indicates that the conditions at the aerodrome of intended landing will be at or above the aerodrome operating minima.

Article 214

For a flight to be conducted in accordance with the instrument rules, at least one destination alternate aerodrome shall be selected and specified in the flight plan unless:

1. Estimated destination has standard instrument arrival procedures.

2. The latest weather information indicates that one hour before and after the estimate time of arrival at the aerodrome, the approach and landing may be conducted under the following visual meteorological conditions:
 - a) For airplane: a cloud base of at least 1,000 ft above the minimum associated with the instrument approach procedure and a visibility of at least 5.5km or 4km more than the minimum associated with the procedure.
 - b) For helicopters: a cloud base of at least 400.ft above the minimum associated with the instrument approach procedure and a visibility of at least 1.5km more than the minimum associated with the procedure.
3. If helicopter flight to an aerodrome of intended landing is isolated and there is no suitable destination alternate aerodrome. The flight plan shall include a selected point of no return.
4. For helicopters flight, the isolated destination has standard instrument arrival procedures.

Article 215

The operator or the pilot in command shall notify the Flight Control and Coordination Center and the contents of the flight plan, one day before the intended flight.

Article 216

A flight shall not be continued towards the destination aerodrome, unless the latest available information indicates that at the expected time of arrival, a landing can be effected at that aerodrome or at least one destination alternate aerodrome in compliance with the operating minima. Except in case of emergency, an aircraft shall not continue its approach-to-land at any aerodrome beyond a point at which the limits of the operating minima specified for that aerodrome would be infringed.

Article 217

To perform instrument approach, a flight shall comply with the following:

1. An instrument approach shall not be continued beyond the outer marker fix in case of precision approach, or below 300 m (1 000 ft) above the aerodrome in case of non - precision approach, unless the reported visibility or controlling RVR is above the specified minimum.
2. If, after passing the outer marker fix in case of precision approach, or after descending below 300 m (1 000 ft) above the aerodrome in case of non-precision approach, the reported visibility or controlling RVR falls below the specified minimum, the approach may be continued to DA/H or MDA/H. In any case, an aircraft shall not continue its

approach-to-land at any aerodrome beyond a point at which the limits of the operating minima specified for that aerodrome would be infringed.

Where RVR is used in the preceding paragraph, the controlling RVR is the touchdown RVR, unless otherwise specified by State criteria.

Article 218

An aircraft without anti-icing and/or de-icing devices shall not operate in circumstances in which icing conditions are reported to exist or expected to be encountered. All accumulation of ice and other contaminants shall be removed to keep the aircraft in airworthy condition prior to take-off.

An operator shall not operate or, plan to operate aircraft in expected, suspected or known ground icing conditions, unless the aircraft has been inspected for its icing condition, and, if necessary, has been given appropriate de-icing/anti-icing treatment.

Article 219

When determining suitable off-shore alternates for helicopter operations, mechanical reliability of critical control systems and critical components shall be considered and the following taken into account:

1. The offshore alternates shall be used only beyond a point of no return. Prior to the point of no return on-shore alternates shall be used;
2. One engine inoperative performance capability shall be attainable prior to arrival at the alternate;
3. Deck availability shall be guaranteed;
4. Weather information must be reliable and accurate; and
5. Offshore alternates should not be used when it is possible to carry enough fuel to have an on-shore alternate.

Article 220

A flight shall not be commenced unless the aircraft carries sufficient fuel and oil to ensure that it can safely complete the flight. While calculating the amount of fuel and oil to be carried, the following must be taken into account:

1. Forecast meteorological conditions;
2. Expected air traffic control routings and traffic delays;
3. Instrument approach and possible missed approach over destination aerodrome; and

4. The procedures prescribed in the operations manual for loss of pressurization, where applicable, or failure of one power-unit while en route.
 5. Any other contingencies that may delay aircraft landing or increased fuel and/or oil consumption.
 6. CAA approved contingency fuel for any other expected and unexpected delay.
- CAA may adjust the fuel and oil regulatory requirements for the operations in special routes or aerodromes based on the safety of flight.

Article 220-1

An operator shall maintain fuel records for a period of three months for CAA inspection.

Article 221

Airplane flight in accordance with the instrument flight rules shall carry a sufficient amount of fuel in compliance with the following requirements:

1. When a destination alternate aerodrome is not required, in terms of Article 214, the flight shall carry sufficient fuel to fly to the aerodrome to which the flight is planned and thereafter for 45 minutes at cruising level.
2. When a destination alternate aerodrome is required, the flight shall carry sufficient fuel to fly to the aerodrome to which the flight is planned, thence to an alternate aerodrome, thereafter for 45 minutes at cruising level.

Article 222

Helicopter flights conducted in accordance with visual flight rules (VFR) shall carry a sufficient amount of fuel to allow the helicopter:

1. To fly to the heliport of which the flight is planned and thereafter to fly for a period of 20 minutes at best-range speed;
2. Contingency fuel.

Article 223

Helicopter flights conducted in accordance with instrument flight rules (IFR), when no alternate heliport is required in terms of Article 214, shall carry sufficient amount of fuel in compliance with the following requirements:

1. To fly to the heliport to which the flight is planned, and thereafter to fly for 30 minutes at holding speed at 1,500ft above the destination heliport under standard temperature conditions,

2. Contingency fuel.

Helicopter flight in accordance with instrument flight rules and an alternate is required, the flight shall carry sufficient fuel in compliance with the following requirements:

1. To fly to the alternate heliport specified in the operational flight plans.
2. To fly for 30 minutes at holding speed at 1,500 ft. above the alternate heliport under standard temperature conditions, and approach and land.
3. Contingency fuel.

Helicopter flight in accordance with instrument flight rules and when no suitable alternate is available, the flight shall carry sufficient amount of fuel to allow flight to the heliport to which the flight is planned and thereafter for 2 hours at holding speed's consumption.

Article 224

An aircraft in flight may be re-dispatched to another destination, provided that the fuel carried shall be in accordance with those prescribed in Article 220 through Article 223.

Article 225

A flight to be operated at flight altitudes at which the atmospheric pressure in personnel compartments will be less than 10000 feet (Absolute pressure 700 hPa) shall not be commenced unless sufficient stored breathing oxygen is carried to supply:

1. All crew members and 10 per cent of the passengers for any period in excess of 30 minutes that the pressure in compartments occupied by them will be between 10000 feet and 13000 feet (Absolute pressure 700 hPa and 620 hPa); and
2. The crew and passengers for any period that the atmospheric pressure in compartments occupied by them will be less than 25000 feet (Absolute pressure 376 hPa).

A flight to be operated with a pressurized aircraft shall not be commenced unless a sufficient quantity of stored breathing oxygen is carried to supply all the crew members and passengers, as is appropriate to the circumstances of the flight being undertaken.

1. In the event of loss of pressurization, for any period that the atmospheric pressure in any compartment occupied by them would be less than 10000 feet.
2. When an aircraft is operated at flight altitudes at which the atmospheric pressure is less than 25 000 feet there shall be no less than a 10-minute supply for the occupants of the passenger compartment.
3. When an aircraft is operated at flight altitudes at which the atmospheric pressure is less

than 25 000 feet, or which, if operated at flight altitudes at which the atmospheric pressure is more than 25 000 feet and cannot descend safely within four minutes to a flight altitude at which the atmospheric pressure is equal to 13 000 feet.

All flight crew members, when engaged in performing duties essential to the safe operation of an aircraft in flight, shall use breathing oxygen continuously whenever the circumstances prevail for which its supply has been required in the preceding 2 paragraphs.

Article 226

The helicopter rotor shall not be turned under power or operated for taxi without a qualified pilot at the controls.

An aircraft shall not be taxied on the movement area of an aerodrome unless the person at the controls:

1. Has been duly authorized by the operator or a designated agent;
2. Is qualified to use the radio; and
3. Has received instruction from a competent person in respect of aerodrome layout routes, signs, markings, lights, air traffic control signals and instructions, radio phraseology and procedures, and is able to conform to the operational standards required for safe aircraft movement at the aerodrome.

Article 227

An airplane shall not be refuelled when passengers are embarking, on board or disembarking unless:

1. It is properly attended by qualified personnel on board ready to initiate and direct an evacuation of the airplane; and
2. Two-way communication shall be maintained between the ground crew supervising the refuelling and the qualified personnel on board the airplane.

Helicopters shall not be refuelled when occupants are embarking, on board, disembarking or while the rotor blades are turning unless approved by CAA.

Article 227-1

An airplane operated under ETOPS shall have adequate en-route alternate aerodromes specified in the operational flight plan in accordance with Attachment 4.

Section 2: In Flight Procedures

Article 228

The operator shall ensure that during take-off and landing and whenever by reason of turbulence or any emergency occurring during flight, except for those passengers on board a free balloon, all personnel on board the aircraft shall be secured in their seats by means of the seat belts or harnesses provided, and shall be instructed in any such emergency action.

When encountering turbulence or emergency in flight, all personnel on board the aircraft shall also be informed to take appropriate actions by the crew member.

Article 229

A pilot shall make meteorological observations on board aircraft in flight and recording and reporting of them shall be in compliance with “Rules of the Air” and the appropriate procedures prescribed by regulations.

Article 230

Hazardous flight conditions encountered other than those associated with meteorological conditions, shall be reported to the appropriate air traffic control unit as soon as possible. The reports so rendered shall give such details as may be pertinent to the safety of other aircraft.

Article 231

The pilot in command shall be responsible for ensuring that a flight will not be commenced if any flight crew member is physically unable to perform duties from any cause such as injury, sickness, fatigue, under the influence of alcohol or drugs.

The flight shall not be continued when a flight crew member’s capability is significantly affected by fatigue, sickness or anoxia.

Article 232

All aircraft operated in accordance with instrument flight rules shall comply with the instrument flight procedures published by the state in which the aerodrome is located.

Section 3: Aircraft Performance & Operating Limitations

Article 233

An aircraft shall be operated in compliance with the terms of its certificate of airworthiness and within the approved operating performance and limitations contained in its flight manual.

While developing a code of performance for aircraft operation, all possible factors which may affect the aircraft performance shall be taken into account.

The helicopter performance operating limitations shall be in compliance with those in Attachment 5.

The airplane performance operating limitations applicable to turbine-powered subsonic transport type airplanes over 5 700 kg maximum certificated take-off mass having two or more engines shall be in compliance with those in Attachment 6.

Article 234

An operator shall ensure that the single-engine aircraft operations on the routes or the areas, in the meteorological conditions expected for the flight, and in the event of engine failure, is capable of reaching a place at which a safe forced landing can be made. For landplanes, a place on land is required; for amphibian, a place on water or land is required.

No operator may operate a single-engine aircraft to perform over-the-top operation, unless the latest weather reports or forecasts, or any combination of them, indicate that the weather along the planned route (including takeoff and landing) allows flight under VFR under the ceiling and that the weather is forecast to remain so within 1 hour before the estimated time of arrival at the destination.

Article 235

Placards, listings, instrument markings, or combinations thereof, containing those operating limitations prescribed by CAA, shall be displayed in the aircraft.

Article 236

Performance class 1 and class 2 helicopters may be operated to and from elevated heliports or helidecks. Only class 1 helicopter may be operated to and from elevated heliports in congested area.

Section 4: Aircraft Instruments, Equipments & Flight Documents

Article 237

Instruments, equipment and flight documents shall be installed or carried on any type of aircraft in accordance with the airworthiness standards of the state of design, CAA's regulations, and the type of operation under which the aircraft is engaged.

Article 238

The instruments installed in an aircraft shall be sufficient for the flight crew to operate the aircraft, carrying out any procedures required, and shall offer related information to meet the operation limitations to be observed in expected flight conditions.

An operator shall establish aircraft type-specific aircraft operating manuals, for the use and guidance of operation personnel on board and flight crew, the content of which shall include

the normal, abnormal, emergency procedures and detailed system descriptions, and related essential checklists for that type of aircraft. The design of the manual, procedures and checklists shall observe Human Factors principles.

Checklists are provided in accordance with the procedures of Aircraft Operating Manual, shall be used by flight crews during all phases of operation and emergencies. It must be in compliance with the operating procedures in the Aircraft Operating Manual, Flight Operations Manual or other documents associated with certificate of airworthiness.

Article 239

An aircraft shall be equipped with accessible and adequate medical supplies such as first-aid kits or medical kits. The number, equipment and the medical contents required shall be in compliance with Attachment 8.

Article 240

An aircraft shall be equipped with approved portable fire extinguishers, the required number of which shall be installed in compliance with Attachment 21. The fire extinguishing agents contained in the fire extinguisher shall not generate toxic gas in the aircraft when discharged.

For the aircraft which the certificate of airworthiness is first issued on or after 31st of December 2011, halon-emitting fire extinguishers shall not be installed in its lavatory.

For the aircraft which the certificate of airworthiness is first issued on or after 31st of December 2016, halon-emitting portable fire extinguishers shall not be installed.

If any aircraft described in the preceding paragraph, due to special circumstances, is not capable of meeting the compliance date of Halon alternatives that prescribed in the previous paragraph of this article, the operator shall submit an application to CAA for its discretion for release of such due date requirement. Along with its application, the operator shall expressly provide clear description of ground for application and the relevant information, if deemed applicable.

Article 241

Aircraft compartment interiors, such as ceiling panels, wall panels, partitions, floor covering, textiles (including draperies and upholstery), seat cushions, padding, decorative and non-decorative coated fabrics, and furnishings, shall be tested and certified for the capabilities of fire blocking and resistance by CAA designated agencies or organizations, except for those has been approved by the state of design where the standards are accepted by CAA.

Article 242

Each flight crew seat shall be fitted with a safety harness. The safety harness for each pilot seat shall incorporate a device which will automatically restrain the occupant's torso in the

event of rapid deceleration.

An operator shall ensure that a seat or berth with safety belt is provided to each occupant who has reached his or her second birthday, for the use of whom during the take-off, landing and enroute phases.

The child restraint system shall be approved by CAA or other states authorities.

The three preceding paragraphs shall not apply to free balloons.

Article 243

An aircraft shall carry spare electrical fuses of appropriate ratings for replacement of those accessible in flight.

Article 244

An aircraft shall carry, in addition to documents required by Article 38 of the Act, the following approved and updated documents/manuals:

1. Aircraft flight manual;
2. Other flight operation limitation related manuals;
3. The latest navigation charts for planned routes and alternates; and
4. Procedures and visual signals for pilot in command during mid-air interception action.
5. The Noise Certificate in English.
6. Air Operator Certificate for a general aviation operator engaging in Business Charter in English.
7. Operation Specifications for operators engaging in Business Charter (ICAO format).

Free balloon does not need to carry the documents described in subparagraph 5 to 7.

With respect to the documents set out in subparagraphs 1 through 4, paragraph 1 herein, and the documents set out in subparagraphs 1 through 3, Paragraph 1, Article 38 of the Act, the operator may set up electronic manual or electronic signing and file keeping system, and implement the above procedures after obtaining CAA's approval.

Article 245

If areas of the fuselage suitable for break-in by rescue crews in emergency are marked on an aircraft, such areas shall be marked in red or yellow, and shall be outlined in white to contrast with the background. The lines for such marking shall be 9 cm × 3 cm, and be no more than 2 m between adjacent markings.

The diagrams of the break-in markings as set out in the preceding paragraph are set out in Attachment 11.

Article 246

An aircraft shall be equipped with a flight data recorder (FDR) capable of recording essential information of a flight, in order to serve the purpose of aircraft accident investigation. The specifications of a flight data recorder shall be in compliance with the international flight standards approved and adopted by CAA. However, an aircraft may be exempted by the approval of CAA under the following conditions:

1. The manufacturer of which provides no technical bulletin for such modifications, and if there is no possibility to obtain the STC issued by our nation, the United States, EASA or the state of design to perform such modifications.
2. The aircraft will be deregistered before 30 September 2005.
3. Free balloon category.

The flight data recorder shall be activated before flight, and shall not be deactivated in flight. However, in the case of an aircraft accident or aircraft serious incident, the flight data recorder shall be deactivated when the flight ends, and shall not be re-activated until the flight data has been retrieved. This requirement shall apply to aircraft incident where CAA so requires.

An operator shall perform routine operational check of the flight data recorder system to ensure the continuous serviceability of the recorders.

Article 247

The minimum record time and information of which the flight data recorder is capable shall comply with the international flight standards as approved and adopted by CAA..

Article 248

An airplane when operated in accordance with the instrument flight rules, or when the airplane cannot be maintained in a desired attitude without reference to one or more flight instruments, shall be equipped with:

1. A magnetic compass;
2. An accurate timepiece indicating the time in hours, minutes and seconds;
3. Two pressure altimeters indicators;
4. An airspeed indicating system with means of preventing malfunctioning due to either condensation or icing;

5. A turn and slip indicator, an attitude indicator and a heading indicator; these instruments may be installed as a combination of instruments in flight director system;
6. A means of indicating whether the power supply to the gyroscopic instrument is adequate;
7. A means of indicating in the flight crew compartment the outside air temperature;
8. A rate-of-climb and descent indicator.

A helicopter when operated in accordance with the instrument flight rules, or when the airplane cannot be maintained in a desired attitude without reference to one or more flight instruments, shall be equipped with:

1. A magnetic compass;
2. An accurate timepiece indicating the time in hours, minutes and seconds;
3. Two sensitive pressure altimeters indicators;
4. An airspeed indicating system with means of preventing malfunctioning due to either condensation or icing;
5. A slip indicator;
6. An attitude indicator for each required pilot;
7. One additional attitude indicator;
8. A heading indicator;
9. A means of indicating whether the power supply to the gyroscope instrument is adequate;
10. A means of indicating in the flight crew compartment the outside air temperature;
11. A rate of climb and descent indicator;
12. A stabilization system, unless it has been demonstrated to the satisfaction of the certifying authority which is acknowledged by CAA that the helicopter possesses, by nature of its design, adequate stability without such a system.

All airplanes of a maximum take-off weight of over 5 700 kg, also helicopters operating in performance Class 1 or 2, shall be fitted with an emergency power supply, independent of the main electrical generating system, for the purpose of operating and illuminating, for a minimum period of 30 minutes. The emergency power supply shall be automatically operative after the total failure of the main electrical generating system and clear indication shall be given on the instrument panel that the attitude indicator(s) is being operated by emergency power.

Those instruments that are used by any one pilot shall be so arranged as to permit the pilot to see their indications readily from his or her station, with the minimum practicable deviation from the position and line of vision normally assumed when looking forward along the flight path.

Article 248-1

Aircraft equipped with head-up displays (HUD) and/or enhanced vision systems (EVS), the operator shall provide the use of such systems and training approved by CAA.

The operator, in the course of implementing the system and training as set out in the preceding paragraph approved by CAA, shall follow the international flight standards as approved and adopted by CAA.

Article 249

Besides the preceding article's prescription, a single-engine aircraft carrying passengers when operated under IFR flight shall be equipped with:

1. Two independent electrical power generating sources each of which is able to supply all probable combinations of continuous in-flight electrical loads for required instruments and equipment; or in addition to the primary electrical power generating source, a standby battery or an alternate source of electric power that is capable of supplying 150% of the electrical loads of all required instruments and equipment necessary for safe emergency operation of the aircraft for at least one hour; and
2. Two independent sources of energy of which at least one is an engine-driven pump or generator, each of which is able to drive all required gyroscopic instruments powered by, or to be powered by, that particular source and installed so that failure of one instrument or source, does not interfere with the energy supply to the remaining instruments or the other energy source.

A continuous in-flight electrical load stated in subparagraph 1 of the preceding paragraph includes one that draws current continuously during flight, such as radio equipment, electrically driven instruments, and lights, but does not include occasional intermittent loads.

For single-engine aircraft in all cargo operations only, the rate of turn indicator has a source of energy separate from the bank and pitch and direction indicators.

Article 250

All aircraft when operated as VFR flight shall be equipped with a magnetic compass; an accurate timepiece indicating the time in hours, minutes and seconds; a sensitive altimeter, an airspeed indicator and such additional instruments or equipment as may be prescribed by

CAA

VFR flights, which are operated as controlled flights, shall be equipped in accordance with the preceding article.

The 2 preceding paragraphs shall not apply to free balloons.

Article 251

Amphibians or landplanes, shall be equipped with one sea anchor, one anchor (drogue), and for each passenger, one life jacket or equivalent individual floatation device stowed in a position easily accessible from the seat or berth of the person for whose use it is provided; equipment for making the sound signals prescribed in the “International Regulations for Preventing Collisions” at sea shall also be installed.

Amphibians or landplanes, when operates under either one of the following conditions, shall carry for each personnel on board one life jacket or equivalent individual floatation device, stowed in a position easily accessible from the seat or berth of the person for whose use it is provided.

1. Flying over water and at a distance of more than 50 NM away from the shore; or
2. Flying en route over water beyond gliding distance from the shore; or
3. During take-off or landing at an aerodrome, the take-off and approach path is over water.

The single-engine airplane fly over water more than 100 NM from the shore or multi -engine airplane with one engine inoperative fly over water more than 200 NM away from the shore shall carry and store the life-saving rafts that are enough for all personnel on board provided with such life-saving equipment including means of sustaining life is appropriate to the flight to be undertaken, and equipment for making the pyrotechnical distress signals in according with ICAO Annex 2, Appendix 1.

Article 252

All helicopters intended to be flown over water shall be fitted with a permanent or rapidly deployable means of floatation, so as to ensure a safe ditching of the helicopter when:

1. Flying over water at a distance from land corresponding to more than 10 minutes normal cruising speed in the case of performance class 1 or 2 helicopters; or
2. Flying over water beyond auto-rotational or safe forced landing distance from land in the case of performance class 3 helicopters.

Performance class 1 and 2 helicopters operating in accordance with subparagraph 1 of the preceding paragraph shall be equipped with:

1. One life jacket or equivalent individual floatation device with a means of electric illumination, for each personnel on board, stowed in a position easily accessible from the seat or berth of the person for whose use it is provided; and
2. Life-saving rafts in sufficient number to carry for all personnel on board, stowed so as to facilitate their ready use in emergency, provided with such life-saving equipment, including means of sustaining life as is appropriate to the flight to be undertaken and equipment for making the pyrotechnical distress signals described in ICAO Annex 2 Appendix 1.

Performance class 3 helicopters, when operating beyond autorotation distance from land, shall be equipped with one life jacket or equivalent individual floatation device for each personnel on board, stowed in a position easily accessible from the seat or berth of the person for whose use it is provided.

In the case of performance class 2 and class 3 helicopters taking off or landing at a heliport, the take-off or approach path is so disposed over water that in the event of a mishap there would be likelihood of a ditching, as least the equipment required in paragraph 2, subparagraph 1 shall be carried.

Article 253

All helicopters on over-water flights and all airplanes on long-range over-water flights shall be certified for ditching over water by the state of design.

Article 254

Aircraft when operated across land areas which have been designated by the State concerned as areas in which search and rescue would be especially difficult shall be equipped with life-saving equipment (including means of sustaining life) and signalling devices which are in compliance with ICAO Annex 2, Appendix 1.

Article 255

A flight to be operated above pressure (altitudes) 700hpa (10,000ft) in personnel on board compartments shall not be commenced unless sufficient stored breathing oxygen is carried to supply.

An aircraft intended to be operated at flight altitude above 10,000ft shall maintain pressure (altitude) in personnel on board compartments lower than 700hpa (10,000ft) or be equipped with oxygen storage and dispensing apparatus capable of storing and dispensing the oxygen supplies required in Article 225.

Pressurized aircraft intended to operate above pressure (altitude) 376hpa (25,000ft) shall be equipped with a device to provide positive warning to the pilot of any dangerous loss of

pressurization.

Aircraft for which the certificate of airworthiness was first issued on or after 9 Nov 1998, and which are intended to be operated at flight altitudes higher than 25,000ft, or which, if operated at flight altitudes of 25,000ft or lower, cannot descend safely within four minutes to a flight altitude of 13,000ft, shall be provided with automatically deployable oxygen equipment and oxygen supplies in compliance with Article 225.

The total number of oxygen dispensing units shall exceed the number of passenger and cabin crew seats by at least 10 per cent.

Article 256

All aircraft when operated at night shall be equipped, in addition to the equipment specified in Article 248:

1. Taxi light;
2. Two landing lights or one having two separately energized filaments;
3. Illumination for all instruments and equipment;
4. Lights in all passenger cabin;
5. Navigation and anti-collision lights; and
6. An electric torch for each crew member station.

Specifications for lights of an airplane as contained in subparagraphs 1, 2 and 5 of the preceding paragraph shall be in compliance with Attachment 13

Article 257

All aircraft shall be operated in compliance with the aircraft noise abatement standards and civil aircraft noise control rules.

Article 258

All turbine-engined airplanes of a maximum certificated take-off mass in excess of 5,700 kg or authorized to carry more than nine passengers shall be equipped with a ground proximity warning system which has a forward-looking terrain avoidance function.

A ground proximity warning system as set forth in the preceding paragraphs shall provide automatically a timely and distinctive warning to the flight crew when the airplane is in potentially hazardous proximity to the earth's surface. A ground proximity warning system shall provide warnings of the following circumstances:

1. Excessive descent rate.

2. Excessive altitude loss after take-off or go-around.

3. Unsafe terrain clearance

All turbine-engined airplanes of a maximum certified take-off mass in excess of 5,700kg or authorized number of seats to carry more than 9 passengers, for which the individual certificate of airworthiness is first issued on or after 1 JAN 2011, shall be equipped with a ground proximity warning system, as a minimum, warnings of at least the following circumstances:

1. Excessive descent rate;

2. Excessive terrain closure rate;

3. Excessive altitude loss after take-off or go-around;

4. Unsafe terrain clearance while not in landing configuration;

5. Excessive descent below the instrument glide path.

The aircraft stated in paragraph 1 herein may be exempted from the requirement of being equipped with a ground proximity warning system which has a predictive terrain hazard warning, provided that the manufacturers do not provide alteration Service Bulletins (SB) for incorporating the terrain alert function to the GPWS, and the operator is not able to obtain, from the aviation industry in stock market, the Supplement Type Certificate (STCs) is issued by CAA , FAA or EASA for necessary alteration.

Article 259

Airplanes shall be equipped with the emergency locator transmitter (ELT) as follows:

1. From 1 July 2008, all airplanes shall be equipped with at least one ELT of either type, except for the airplanes which is in compliance with paragraph 2.

2. An airplane which the certificate of airworthiness is first issued on or after 1 July 2008, shall be equipped with more than one automatic ELT.

Helicopters shall be equipped with the emergency locator transmitter (ELT) as follows:

1. From 1 July 2008, performance class 1 or 2 helicopters shall be equipped with one or more automatic ELT. In terms of Article 119, paragraph 1, subparagraph 1, when flying over water, more than one automatic ELT and a life-saving raft or life jacket to have at least one ELT of any type.

2. From 1 July 2008, class 3 high performance helicopter shall be equipped with more than one automatic ELT. In terms of Article 119, paragraph 1, subparagraph 2, when flying over water, more than one automatic ELT and a life-saving raft or life jacket to have at least one ELT of any type.

ELT equipped in accordance with this article shall be in compliance with ICAO Annex 10, Volume III.

Article 260

All aircraft with speed limitations expressed in terms of Mach number shall be equipped with a Mach number indicator. Annex 6, Part I, Ch.6.14.

Section 5: Aircraft Communication and Navigation Equipment

Article 261

An aircraft shall be provided with radio communication equipment capable of conducting two-way communications for aerodrome control purposes, for receiving meteorological information at any time during flight; and conducting two-way communication at any time during flight with at least one aeronautical station and any other aeronautical stations on such frequencies as may be prescribed by the appropriate authority.

The radio communication equipment required in accordance with the preceding paragraph shall provide for communication on the aeronautical emergency frequency 121.5.

An airplane to be operated on a flight to which the provisions of on extended flights over water or on flights over designated land areas apply shall, unless exempted by CAA, be provided with radio communication equipment capable of conducting two-way communication at any time during flight with such aeronautical stations and on such frequencies be prescribed by the appropriate authority.

In addition to the requirements as set out in the 3 preceding paragraphs, flights in defined portions of airspace or on routes where an RCP type has been prescribed, shall:

1. Be provided with communication equipment which will enable it to operate in accordance with the prescribed RCP type(s); and
2. Be authorized by the State of the Operator for operations in such airspace.

The preceding 4 paragraphs shall not apply to free balloons equipped with walkie-talkie devices and operated in an uncontrolled airspace.

Article 262

An aircraft shall be provided with navigation equipment which will enable it to proceed in accordance with:

1. Operational flight plan; and
2. Requirements of air traffic services.

On flights in which it is intended to land under instrument meteorological conditions an aircraft shall be provided with radio equipment capable of receiving signals providing guidance to a point from which a visual landing can be effected. This equipment shall be capable of providing such guidance at each aerodrome at which it is intended to land and at any designated alternate aerodromes.

An aircraft shall be provided with navigation equipment which will enable it to proceed in accordance with:

1. Operational flight plan; and
2. Requirements of air traffic services.

On flights in which it is intended to land under instrument meteorological conditions an aircraft shall be provided with radio equipment capable of receiving signals providing guidance to a point from which a visual landing can be effected. This equipment shall be capable of providing such guidance at each aerodrome at which it is intended to land and at any designated alternate aerodromes.

Flight under VFR, the flight crew shall find a land mark as reference check point but its distance shall not be more than 60 NM in between, unless approved by CAA.

Article 263

For flight in defined portions of airspace or on routes where a Performance Based Navigation (PBN) type has been prescribed, an aircraft shall be provided with navigation equipment as described in attachment 15 which:

1. Shall be provided with navigation equipment which will enable it to operate in accordance with the prescribed PBN operations; and
2. Has been approved by CAA.

Article 263-1

For flights in defined portions of airspace where, based on Regional Air Navigation Agreement, minimum navigation performance specifications (MNPS) are prescribed, an airplane shall be provided with navigation equipment which:

1. Continuously provides indications to the flight crew of adherence to or departure from track to the required degree of accuracy at any point along that track;
2. Has been authorized by CAA for the MNPS operations concerned; and
3. When operating under minimum navigation performance specification in north Atlantic, the requirements in Attachment 16 shall be met.

Article 264

For flight in defined portions of airspace where a reduced vertical separation minimum (RVSM) of 1,000ft (300m) is applied between FL 290 and FL 410, the airplane:

1. Shall be provided with equipment which is capable of:
 - a) Indicating to the flight crew the flight level being flown;
 - b) Automatically maintaining a selected flight level;
 - c) Providing an alert to the flight crew when a deviation occurs from the selected flight level. The threshold for the alert shall not exceed $\pm 300\text{ft}$; and
 - d) Automatically reporting pressure altitude.
2. The operator has instituted appropriate procedures in respect of continued airworthiness (maintenance and repair) practices and programmes.
3. The operator has instituted appropriate flight crew procedures for operations in RVSM airspace.
4. Shall be authorized by the CAA for operation in the airspace concerned and in compliance with Attachment 17.

For the airplane or fleet being authorized on the conditions prescribed in the preceding paragraph, following requirements shall be complied:

1. Receiving the reports of height-keeping performance issued by the monitoring agencies; and
2. Taking immediate corrective action for individual aircraft, or aircraft type groups, identified in such reports as not complying with the height-keeping requirements for operation in airspace where RVSM is applied.

Operator authorized by the CAA for RVSM operation shall ensure that a minimum of two airplanes of each aircraft type grouping of the operator have their height-keeping performance monitored, at least once every two years or within intervals of 1 000 flight hours per airplane, whichever period is longer. If an operator aircraft type grouping consists of a single airplane, monitoring of that airplane shall be accomplished within the specified period.

Article 265

The navigation equipment installation shall be such that the failure of any single unit required for either communications or navigation purposes or both will not result in the other unit required for communications or navigation purposes.

Article 266

(Deleted)

Article 267

Aircraft operated in the Taipei FIR shall be equipped with a transponder capable of reporting its call sign and pressure-altitude, unless approved by CAA.

Section 6: Aircraft Maintenance

Article 268

An operator shall bear the primary responsibility for the proper maintenance of its aircraft including the airframe, power plant, propeller, appliance, and their parts and maintained in an airworthy condition.

An operator shall establish a maintenance organization with the approval of CAA. The issue of a maintenance organization approval by CAA shall be dependent upon the applicant demonstrating compliance with the requirements for such organizations.

The maintenance organization aforementioned in the preceding paragraph shall have the necessary technical data, equipment, tools and material to perform the work for which it is approved. Storage facilities shall be provided for parts, equipment, tools and material. Storage conditions shall be such as to provide security and prevent deterioration of and damage to stored items.

An operator may contract its maintenance programme to a person, group of persons, or maintenance organization approved by CAA but the operator remains accountable for the maintenance operations aforementioned in the preceding paragraph.

After the maintenance of aircraft aforementioned in the preceding paragraph has been completed, the maintenance release shall be signed by a CAA approved person or group of persons or maintenance organizations to indicate its airworthy condition.

Article 269

Operators shall provide, for the use and guidance of maintenance and operational personnel on board concerned, a GMM which shall be carried into effect after acceptance of CAA. A designated maintenance organization shall conduct maintenance in accordance with GMM of the operator.

An operator shall ensure that the GMM is amended as necessary to keep the information therein up to date and complete. If an amendment to GMM is required, such amendment shall only be carried into effect after acceptance of CAA.

The maintenance organizations and personnel on board employed by an operator shall conduct aircraft maintenance in compliance with GMM, without infringement.

The operator shall provide, for the use and guidance of maintenance and operational personnel on board concerned, a maintenance programme approved by the CAA.

The design and application of the operator's maintenance programme shall observe Human Factors principles.

Copies of all amendments to GMM and the maintenance programme shall be furnished promptly to all organizations or persons to whom GMM and the maintenance programme have been issued.

Article 270

An operator shall file a request with CAA to complete the aging airplane inspection and records review before the due date as follows. During the inspection and records review, the operator shall demonstrate to CAA that the maintenance of life limited parts and components of the airplane have been adequate and timely enough to ensure the highest degree of safety.

1. An airplane that has passed its 24th year in service as of December 8, 2003, shall complete its first inspection and records reviews on or before December 5, 2007, and thereafter subsequent inspections and records reviews at no more than seven-year intervals.
2. An airplane that has passed its 14th year but not its 24th year in service as of December 8, 2003, shall complete its first inspection and records reviews on or before December 4, 2008, and thereafter subsequent inspections and records reviews at no more than seven-year intervals.

An airplane that has not passed its 14th year in service as of December 8, 2003, shall have its first aging inspection and records review within five years after the start of its 15th year in service, and thereafter subsequent inspections and records reviews at no more than seven-year intervals.

In the event of an operator cannot complete the inspection and records review within the due date as set out in the preceding paragraph, a request for an extension up to 90 days may be submitted to CAA.

An operator must make available to CAA each airplane for which an inspection and records review is required under this Section, in a condition for inspection specified by CAA, together with records containing the following information:

1. Total years in service of the airplane;
2. Total time in service of the airframe;

3. Total flight cycles of the airframe;
4. Date of the last inspection and records review required by this Section;
5. Current status of life-limited parts of the airframe;
6. Time since the last overhaul of all structural components required to be overhauled on a specific time basis;
7. Current inspection status of the airplane, including the time since the last inspection required by the inspection programme under which the airplane is maintained;
8. Current status and methods of compliance as follows:
 - a) Applicable airworthiness directives;
 - b) Corrosion prevention and control programme.
9. The inspections and procedures required in Article 144;
10. A list of major structural alterations; and
11. A report of major structural repairs and the current inspection status for those repairs.

Each operator must notify CAA at least 60 days before the date on which the airplane and airplane records will be made available for the inspection and records review.

Article 271

An operator operates single-engine aircraft carrying passengers under IFR flight, shall incorporate into and implement its maintenance programme approved by CAA either:

1. The manufacturer's recommended engine trend monitoring programme, which includes an oil analysis, if appropriate; or
2. A regulatory authority of manufacturer approved engine trend monitoring programme that includes an oil analysis at each 100 hour interval or at the manufacturer's suggested interval, whichever is more frequent.

The operator shall record and maintain in the engine maintenance records the results of each maintenance, test and inspection required by the applicable engine trend monitoring programme.

Article 272

Operators shall prepare a training programme for their maintenance personnel on board and conduct training upon CAA's approval.

An operator shall ensure that all its maintenance personnel on board receive initial and continuation training appropriate to their assigned tasks and responsibilities. The maintenance personnel on board shall be trained to be competence of planning, performing, supervising, inspecting and releasing the work to be performed.

In order to reduce human induced incidents or accidents, the training programme established by the operator shall, include training in maintenance resource management, and in knowledge and skills related to human performance, including coordination with other maintenance personnel on board and flight crew.

Article 273

Operators shall establish a system of inspection, identifying required inspection item and ensure the inspections of aircraft maintenance, overhaul and alterations, which have been completed by qualified authority personnel on board in accordance with the requirements of the aircraft maintenance control manual.

An operator shall report to the CAA and the aircraft manufacturer where it discovers any failure, malfunction, defect or other incident involving the aircraft, engine, propeller or equipment and the parts which meet the notification requirement set out in the Regulations for Aircraft Flight Safety-related Events. Where necessary, the state of design of such aircraft shall also be notified of such events.

Article 274

The person signing a maintenance release shall be either the holder of a valid CAA aircraft maintenance engineer certificate, or the holder of a valid mechanic license acceptable to CAA, and shall ensure that operations in regard to maintenance and maintenance release be conducted as authorized by GMM.

The requirement of a maintenance release shall not be waived unless the request for waiver and pertinent procedures for such operation has been approved by CAA. Thereafter, under any one of the following conditions and with no malfunction occurs to the aircraft, for the flight crew who have completed the approved training, the requirement of a maintenance release may be waived after the pilot-in-command has conducted a transit check and recorded the completion of the check in the maintenance log book:

1. The aircraft has been diverted to, or has made a technical landing at an alternate aerodrome where a person qualified to sign the maintenance release is not available; or
2. Helicopters performing special operations such as emergency fire fighting and searching and rescue; or
3. Aircraft with a seating capacity of 19 passengers or less, departed from distant islands, such

as the Cimei and Wan-an of Penghu County, the Lanyu and Lyudau of Taitung County, and other off-shore islands.

For aircraft of general aviation enterprise engaged in business charter flight operation, the requirement of a maintenance release shall not be waived unless the request for waiver and pertinent procedures for such operation has been approved by CAA. Thereafter, with no malfunction occurrence to the aircraft and no maintenance actions taken, for the flight crew who have completed the approved training, the requirement of a maintenance release may be waived after the flight crew has conducted a before flight check and recorded the completion of the check in the maintenance log book.

Article 275

The repairs or alternations of aircraft shall comply with pertinent airworthiness regulatory requirements of CAA.

Procedures shall be established by an operator to ensure that the approved/accepted supporting data of repairs or alternations in compliance with the airworthiness requirements are retained.

Article 276

An operator shall retain the following records:

1. The total time in service (hours, calendar time and cycles, as appropriate) of the aircraft, daily time in service; and time in service since the last overhaul;
2. The total time in service (hours, calendar time and cycles, as appropriate) of the aircraft and its life limited components and time in service since the last overhaul subject to a mandatory overhaul life;
3. The current status of compliance with all mandatory continuous airworthiness requirements;
4. Appropriate details of alternations and repairs to the aircraft and its major components;
5. The current aircraft status of compliance with the maintenance programme; and
6. The detailed maintenance records to show that all requirements for the signing of maintenance release have been met.

The records in subparagraphs 1 to 5 of the preceding paragraph shall be kept for a period of 2 years after the unit to which they refer has been permanently withdrawn from service. The records in subparagraph 6 of the preceding paragraph shall be kept until the time the work has been repeated or replaced by other work, minimum of one year.

Daily maintenance work and maintenance release records shall be recorded with indelible ink and kept for a minimum period of one year.

The operator may establish and use electronic documentation system for the keeping and certification of the records set out in paragraph 1 herein after obtaining CAA's approval.

In the case of a change of operator, the records set out in paragraph 1 shall be transferred to the new operator.

Article 277

The maintenance personnel on board shall be given a rest period of at least 24 consecutive hours during any seven consecutive days of his/her duty, except for those who are performing emergency duties.

Section 7: Flight Crew

Article 278

An operator shall ensure that, before commencing a flight, each flight crew member assigned to duty holds and carries with him/her a valid license which is issued by CAA and appropriate to the type of operations.

The pilot-in-command of an aircraft equipped with an airborne collision avoidance system (ACAS II) shall ensure that each flight crew member has been appropriately trained to competency in the use of ACAS II equipment and the avoidance of collisions.

When a medical certificate can be obtained only with correcting lenses, the applicant may be assessed as fit provided that such correcting lenses are worn during the exercise of the privileges of the license or rating applied for or held; and, in addition, a pair of suitable correcting spectacles is kept readily available during the exercise of the privileges of the applicant's license.

Flight crew members shall wear a company uniform for duty and have a flashlight available and readily accessible for use.

Article 279

The number and composition of the flight crew shall not be less than those specified in the flight operations manual or aircraft operating manual and flight manual. Flight crew members may be increased or replaced when necessitated by considerations related to the type of aircraft used, the type of operation involved and the duration of flight between points where flight crews are changed.

Flight Crew shall operate aircraft in accordance with the procedures, standards and limitations

prescribed in aircraft operating manuals and flight manuals without infringement, unless when there is a proper cause necessitating a deviation.

It is not allowed to have contradictory procedures appear from flight operations manual and aircraft operating manuals in paragraph 1.

An operator shall ensure that the technique and the ability of the flight crew to execute emergency procedures are checked in such a way as to demonstrate the flight crew's competence to the standards established by the operator and CAA. The checks set out in paragraphs 1 and 2 herein shall be performed by check airman at least once within any 12 months from the date on which the flight crew has passed the check or the re-qualification check.

The check procedures as set out in Article 173 shall apply to the flight crew who are engaged in the commercial chartered flight operations and the pilot-in-command who is engaged in the general aviation operations.

For the qualification of the check airman, refer to Attachment 19.

Article 280

An operator shall assign a co-pilot in the aircraft while operating an aircraft carrying passengers under IFR.

Article 281

The regulations of flight crew members at crew member station are as follows:

1. During take-off and landing, all flight crew members required to be on flight deck duty shall be at their stations.
2. En route, all flight crew members required to be on flight deck duty shall remain at their stations except when their absence is necessary for the performance of duties in connection with the operation of the airplane or for physiological needs.
3. All flight crew members shall keep their seat belts fastened when at their stations, and shall keep the safety harness fastened during the take-off and landing phases. All other flight crew members shall keep their safety harnesses fastened during the take-off and landing phases unless the shoulder straps interfere with the performance of their duties, in which case the shoulder straps may be unfastened but the seat belt must remain fastened.
4. Flight crew members, when at their stations, shall not read any books, magazines or newspapers irrelevant to the flight operations.

Subparagraph 3 of the preceding paragraph shall not apply to free balloons.

Article 282

Flight crew member flight time limitations:

1. A flight crew member may not fly more than 8 hours during any 24 consecutive hours and shall be given at least a rest period of 10 consecutive hours.
2. A flight crew member shall be given a rest period at least 24 consecutive hours within 7 days work.
3. A flight crew member may not fly more than 32 hours during any 7 consecutive days.
4. A flight crew member may not fly more than 100 hours during 30 consecutive days.
5. A flight crew member may not fly more than 1,000 hours during consecutive 12-calendar-month.

Aircraft emergency medical service shall be conducted in compliance with the following requirements:

1. A flight crew member can be dispatched, after being given at least a rest period of 10 consecutive hours, to be on standby for the duty of aircraft emergency medical service by the operator.
2. A flight crew member on standby for the duty of aircraft emergency medical service shall be given at least a rest period of 8 consecutive hours during any 24 consecutive hours.
3. An operator may schedule a pilot to fly no more than 10 accumulated hours for aircraft emergency medical service during any consecutive 24 hours.

The flight time, duty time and rest period for flight crew members engaging in business charter operations shall be compliance with Articles 37 to 44 of this regulation.

Section 8: Security

Article 283

No person may be admitted into the flight crew compartment of an aircraft except for the authorized personnel on board and Flight Dispatchers of the operator. However, CAA authorized personnel on board may be exempted from the restrictions herein this article.

Article 284

An operator shall establish a programme to conduct random tests for narcotic drugs and alcohol for operations personnel such as flight crew, cabin crew member, Flight Dispatchers and maintenance personnel. The records for such tests shall be retained for review.

CAA may conduct regular or random tests for narcotic drugs and alcohol for operations personnel as set out in the preceding paragraph.

Test standards for narcotic drugs and alcohol are as follows:

1. For narcotic drugs test: the test result of a Urine specimen shall be negative.
2. For Alcohol test: In the test result, the concentration of alcohol shall not be more than 0.02% in blood, or exceed 0.1mg per litre in breath.

Any person who fails either test prescribed in the preceding paragraph or exceed 0mg per litre in breath but not exceed the regulated standard shall not engage in flight related operations; this restriction also applies to the refusal of test.

CAA may delegate the tests of drugs and alcohol as prescribed in paragraph 2 to the airport operator.

When CAA delegates the tests in the preceding paragraph, the name of the designee, the commissioned items and regulations shall be promulgated on the government bulletin.

During the period of the Central Epidemic Command Center was set up, an operator that operate business charter shall establish disease control management measures according to "Operational Principles for R.O.C (Taiwanese) Airlines Air Crewmembers to Implement Health Control Measures for Epidemic Prevention" which was approved by Central Epidemic Command Center and published by CAA.

An operator and its employees shall comply with preceding paragraph of disease control management measures.

Article 285

For operators of general aviation enterprise engage in non-revenue flight operations,

Section 8-1: Extra equipments and operations requirement to operate with large and transport category airplane

Article 285-1

General aviation operator operations with large and transport category airplane shall be subject to the Standards and Recommended Practices as set out in Sections 1 to 8 of Chapter 3 and this Chapter.

Article 285-2

The operator shall establish and implement a safety management system acceptable to the CAA that, as a minimum:

1. Identifies safety hazards;
2. Ensures that remedial action necessary to maintain an acceptable level of safety is implemented;
3. Provides for continuing monitoring (auditing) and regular assessment of the safety level achieved; and
4. Aims to make continuous improvement to the overall level of safety.

The safety management system as set out in the preceding paragraph shall clearly define lines of safety accountability throughout the operator's organization, including a direct accountability for safety on the management level, and comply with attachment 1.

Article 285-3

An operator shall ensure that when passengers are being carried, no emergency or abnormal situations shall be simulated in-flight.

Article 285-4

An operator may be permitted to establish minimum flight altitudes for those routes flown for which minimum flight altitudes have been established by the state, provided they shall not be less than those established by that state. If the minimum altitudes have not been established by the state flown over, the operator shall establish minimum altitude, which are no less than the instrument flight altitude standards that required by the flight operation regulations.

Article 285-5

A take-off alternate aerodrome shall be selected and specified in the operational flight plan if the weather conditions at the aerodrome of departure are at or below the applicable aerodrome operating minima or it would not be possible to return to the aerodrome of departure for other reasons.

Article 285-6

The take-off alternate aerodrome shall be located within the following distances from the aerodrome of departure:

1. Airplane having two power-units, not more than a distance equivalent to one hour at the single-engine cruise speed; and
2. Airplane having three or more power-units, no more than a distance equivalent to two hours at the one engine inoperative cruise speeds.

Article 285-7

For an aerodrome to be selected as a take-off alternate, the available information shall indicate, that at least one hour before and one hour after the estimated time of arrival, the conditions will be at or above the aerodrome operating minima for that operation.

Article 285-8

Airplanes operating above FL 25,000 feet shall have available at the flight duty station a quick-donning type of oxygen mask which will readily supply oxygen upon demand.

Article 285-9

Duties of pilot-in-command:

1. The pilot-in-command shall be responsible for the operation and safety of the aircraft and for the safety of all crew members, passengers and cargo on board during flight time, and may take actions as necessary in the event of an emergency;
 2. The pilot-in-command shall ensure that the checklists are complied with in detail;
 3. The pilot-in-command shall be responsible for reporting all known or suspected defects in the aircraft to the operator at the termination of the flight; and
 4. The pilot-in-command shall be responsible for notifying the nearest appropriate authority by the quickest available means of any accident or incident involving the aircraft.
- In the event that the pilot-in-command is incapacitated the operator shall designate a person to take place regulated in the operation or others manuals.

Article 285-10

An operator shall establish a procedure to ensure that each piece of carry-on baggage is adequately and securely stowed.

Article 285-11

An operator shall make and keep current a Minimum Equipment List and Configuration Deviation List (MEL/CDL see Attachment 7), approved by CAA, which will enable the pilot-in-command to determine whether a flight may be commenced or continued from any intermediate stop should any instrument, equipment or system become inoperative.

Article 285-12

An airplane shall carry documents to comply with Article 244 and carry the operations manual and a Minimum Equipment List and Configuration Deviation List.

Article 285-13

An aircraft shall be equipped with means of ensuring that the following information and

instructions are informed and notified to passengers:

1. When seat belts are to be fastened and when the seat backs are to be up- righted.
2. When and how oxygen equipment is to be used.
3. Restrictions on smoking.
4. Location and use of life jackets or equivalent individual floatation devices.
5. Location and method of opening emergency exits.

Article 285-14

An airplane when operated in accordance with the instrument flight rules, or when the airplane cannot be maintained in a desired attitude without reference to one or more flight instruments, shall be equipped with Article 248 requirements and 2 independent attitude indicating and calculating systems.

Article 285-15

An operator shall ensure that pressurized airplane operated in expected thunderstorms or severe meteorological conditions is equipped with weather radar and functions normally.

Article 285-16

All turbine-engined airplanes of a maximum certificated take-off mass in excess of 15 000 kg or authorized to carry more than 30 passengers, for which the individual airworthiness certificate is first issued after 1 January 2007, shall be equipped with an airborne collision avoidance system (ACAS II).

Article 285-17

All flight crew members required to be on flight deck duty shall communicate through boom or throat microphones while aircraft below the transition level/altitude.

Article 285-18

An operator shall establish, for the electronic navigation data products that have been processed for application in the air and on the ground, procedures for ensuring that the process applied and the products delivered have met acceptable standards of integrity and that the products are compatible with the intended function of the equipment that will use them; such electronic navigation data products shall not be used without being approved by CAA.

An operator shall implement procedures that ensure the timely distribution and insertion of current and unaltered electronic navigation data to all aircraft that require it.

Article 285-19

For each flight, the operator shall designate one pilot to act as pilot-in-command.

Article 285-20

An operator shall, for each type of airplane, assign to all flight crew members the necessary functions they are to perform in an emergency or in a situation requiring emergency evacuation. These functions include the use of all emergency and life-saving equipment required to be carried. Recurrent training in accomplishing these functions shall be contained in the operator's training programme and shall include instruction in the use of all emergency and life-saving equipment required to be carried, and drills in the emergency evacuation of the airplane.

Article 285-21

An operator shall establish and maintain a ground and flight training programme approved by CAA, which ensures that all flight crew members are adequately trained to perform their assigned duties.

The training programs in the preceding paragraph shall include skills related to human performance.

Article 285-22

An operator shall ensure that each flight crew member assigned to duty holds a valid license and are competent to carry out assigned duties.

Article 285-23

The operator of an airplane equipped with an airborne collision avoidance system (ACAS II) shall ensure that each flight crew member has been appropriately trained to competency in the use of ACAS II equipment and the avoidance of collisions.

Article 285-24

An operator shall not assign a pilot to act as a captain of an aircraft unless that pilot has made at least three take-offs and landings within the preceding 90 days on the same type of aircraft for which the pilot holds the type rating or in a full flight simulator approved for the purpose.

Article 285-25

An operator shall not assign a first officer to operate at the flight controls of an aircraft during take-off and landing unless that first officer has made at least three take-offs and landings within the preceding 90 days on the same type of aircraft or in a full flight simulator approved by CAA.

Article 285-26

An operator shall comply with the following airworthiness requirements:

1. An operator of large aircraft shall monitor and assess maintenance and operational experience with respect to continuous airworthiness and establish a reliability control programme approved by CAA. Such information as prescribed in the programme shall report through the system specified by CAA; and
2. An operator of large aircraft shall obtain and assess continuous airworthiness information and recommendations available from the organization responsible for the type design and shall implement resulting action considered necessary in accordance with CAA accepted procedures.

Article 285-27

For airplane beyond the applicable flight cycle in Attachment 18, an operator shall establish and implement the Repair Assessment Programme approved by CAA.

On or after December 16, 2008, no operator may operate a turbine-powered transportation category airplane with a type certificate issued after January 1, 1958, and either a maximum type certificated passenger seating capacity of 30 or more, or a maximum type certificated payload capacity of 7,500 pounds or more, unless instructions for maintenance and inspection of the fuel tank system are incorporated in its maintenance programme. These instructions must address the actual configuration of the fuel tank systems of each affected airplane and must be approved by the Regulatory Authority of manufacturer and CAA.

Article 285-28

After December 20, 2010, an operator may not operate a turbine-powered transport category airplane with a type certificate issued after January 1, 1958, and either a maximum type certificated passenger seating capacity of 30 or more, or a maximum type certificated payload capacity of 7,500 pounds or more, unless the following requirements have been met:

1. The maintenance programme for the airplane includes damage-tolerance-based inspections and procedures for aircraft structure susceptible to fatigue cracking that could contribute to a catastrophic failure. These inspections and procedures must take into account the adverse affects repairs, alterations, and modifications may have on fatigue cracking and the inspection of this aircraft structure; and
2. The damage-tolerance-based inspections and procedures aforementioned in the preceding subparagraph, including any revisions, must be approved by the state of design. The operator must incorporate the damage-tolerance-based inspections and procedures in the CAA-approved maintenance programme.

Article 285-29

The operators shall determine requirement for cabin crew for each type of airplane , based on seating capacity or the number of passengers carried, in order to effect a safe and expeditious emergency evacuation of the airplane.

Article 285-30

An operator shall ensure that during take-off, landing and when the pilot-in-command so directs, cabin crew members shall be seated as near as practicable to the designated emergency exits with seat belt on or, when provided, safety harness fastened and shall be uniformly distributed throughout the aircraft.

Article 285-31

During taxi, cabin crew members required must remain at their duty stations with safety belts and shoulder harnesses fastened except to perform duties related to the safety of the aircraft and its occupants.

Article 285-32

An operator shall establish a cabin crew training programme which will be carried into effect after approval by CAA.

Chapter 4 - Supplement Provision

Section 1: Flight operation

Article 286

Regulations specified in this Chapter applicable to operations other than those mentioned in Chapter 2 and Chapter 3.

Unless otherwise specified, all personnel on board aircraft should follow regulations in this Chapter.

Article 286-1

An operator shall maintain current records of flight time, flight duty periods, rest periods, duty periods and standby of all its crew members for a continuous 12-month period.

Article 287

No person may operate an aircraft that is type certificated unless the pilot-in-command proficiency check and recent flight experience meets the requirements in Attachment 22.

Article 288

Except as provided in paragraph 3 herein, no person may operate a civil aircraft without

complying with the operating limitations specified in the approved aircraft Flight Manual, or its equivalent, markings, and placards, or as otherwise prescribed by the CAA.

No person may operate a registered aircraft unless there is available in the aircraft a current approved aircraft Flight Manual, approved manual material, markings, and placards, or any combination thereof approved by the CAA.

Any person taking off or landing a helicopter at a heliport constructed over water may make such momentary flight as is necessary for takeoff or landing through the prohibited range of the limiting height-speed envelope established for the helicopter if that flight through the prohibited range takes place over water on which a safe ditching can be accomplished and if the helicopter is amphibious or is equipped with floats or other emergency flotation gear adequate to accomplish a safe emergency ditching on open water.

Article 289

To prevent interference with navigation and telecommunications during flight, all personal portable electronic devices used by airman, cabin crew or passengers shall comply with Article 43-2, paragraph 2 of the Act.

Section 2: Flight Preparation

Article 290

Each pilot in command shall, before beginning a flight, become familiar with all available information concerning that flight. This information must include:

1. For a flight under IFR or a flight not in the vicinity of an airport, weather reports and forecasts, fuel requirements, alternatives available if the planned flight cannot be completed, and any known traffic delays of which the pilot in command has been advised by ATC;
2. For any flight, runway lengths at airports of intended use, and the following takeoff and landing distance information:
 - a) For an approved Aircraft Flight Manual, or its equivalent, containing takeoff and landing distance data is required, the takeoff and landing distance data contained therein; and
 - b) Other reliable information appropriate to the aircraft, relating to aircraft performance under expected values of airport elevation and runway slope, aircraft gross weight, and wind and temperature.

Article 291

The regulations of flight crew members at crew member station as follows:

1. During take-off and landing, all flight crew members are required to be on seat of their duty position.
2. En route. All flight crew members are required to be on flight deck duty and shall remain at their stations except for physiological needs.
3. All flight crew members shall keep their seat belts fastened while on their duty positions, and fasten their shoulder harnesses during take-off and landing. All other than cockpit crew unless the shoulder straps interfere with the performance of their duties, in this case, the shoulder straps may be unfastened but the seat belt must remain fastened.
4. Any flight crew member shall not read any materials in cockpit, that is irrelevant to the flight operations.

Article 292

Before take-off, the pilot-in-command shall ensure that crew members and passengers are familiar by means of a printed illustration or to the location and the use of;

1. Seat belts.
2. Emergency exits:
3. Life jackets:
4. Oxygen dispensing equipment: and
5. Other emergency equipment for individual use including in passenger briefing cards.

When carrying person onboard aircraft, pilot-in-command should alert to use the seat belt and should harness during take-off and landing. When encounter turbulence or emergency during flight, should alert the personnel on board the appropriate action. This does not include seaplane, helicopter with floating device, or personnel on board working on floating docking station.

An aircraft shall be equipped with a seat or berth for each person who is over two years of age. A seat belt for each seat and a restraining belt for each berth must be provided for the use during take-off, landing, and in flight.

When using the baby chair should be approved by CAA or other governing authority.

Article 293

No person may operate a civil aircraft that is being used for flight instruction unless that aircraft has fully functioning dual controls. However, instrument flight instruction may be

given in a single-engine aircraft equipped with a single, functioning throw over control wheel in place of fixed, dual controls of the elevator and ailerons when:

1. The instructor has determined that the flight can be conducted safely; and
2. The person manipulating the controls has at least a private pilot certificate with appropriate category and class ratings.

No person may operate a civil aircraft in simulated instrument flight unless:

1. The other control seat is occupied by a safety pilot who possesses at least a private pilot certificate with category and class ratings appropriate to the aircraft being flown.
2. The safety pilot has adequate vision forward and to each side of the aircraft, or a competent observer in the aircraft adequately supplements the vision of the safety pilot; and
3. Except in the case of lighter-than-air aircraft, that aircraft is equipped with fully functioning dual controls. However, simulated instrument flight may be conducted in a single-engine aircraft, equipped with a single, functioning, throw over control wheel, in place of fixed, dual controls of the elevator and ailerons, when:
 - a) The safety pilot has determined that the flight can be conducted safely; and
 - b) The person manipulating the controls has at least a private pilot certificate with appropriate category and class ratings.

No pilot may be in charge of aircraft type rating certificate check or proficiency check unless he is fully qualified to act as pilot in command of the aircraft.

Article 294

No person may begin a flight in an airplane under VFR conditions unless (considering wind and forecast weather conditions) there is enough fuel to fly to the first point of intended landing and, assuming normal cruising speed:

- 1 During the day, to fly after that for at least 30 minutes.
2. At night, to fly after that for at least 45 minutes.

No person may begin a flight in a helicopter under VFR conditions unless (considering wind and forecast weather conditions) there is enough fuel to fly to the first point of intended landing and, assuming normal cruising speed, to fly after that for at least 20 minutes

Article 295

No person may operate a civil aircraft in IFR conditions unless it carries enough fuel (considering weather reports and forecasts and weather conditions) to:

1. Complete the flight to the first airport of intended landing;
2. Fly from that airport to the alternate airport; and
3. Fly after that for 45 minutes at normal cruising speed

No person may operate a helicopter in IFR conditions unless it carries enough fuel (considering weather reports and forecasts and weather conditions) to:

1. Complete the flight to the first airport of intended landing;
- 2 Fly from that airport to the alternate airport; and
3. Fly after that for 30 minutes at normal cruising speed.

Airplane or helicopter meets the requirements specified below does not need to carry fuel stated in subparagraph 2, paragraph 1 and subparagraph 2, paragraph 2:

1. A standard instrument approach procedure to, or a special instrument approach procedure has been issued by the CAA to the operator for, the first airport of intended landing; and
2. For aircraft. For at least 1 hour before and for 1 hour after the estimated time of arrival, the ceiling will be at least 2,000 feet above the airport elevation and the visibility will be at least 4,800 meters.
3. For helicopters. At the estimated time of arrival and for 1 hour after the estimated time of arrival, the ceiling will be at least 1,000 feet above the airport elevation, or at least 400 feet above the lowest applicable approach minima, whichever is higher, and the visibility will be at least 3,200 meters.

Article 295-1

An operator shall maintain fuel records for a period of three months for CAA inspection.

Article 296

Unless otherwise authorized by ATC, each person filing an IFR flight plan must include an alternate airport unless:

1. A standard instrument approach procedure to, or a special instrument approach procedure has been issued by the CAA to the operator for, the first airport of intended landing; and
2. For aircraft. For at least 1 hour before and for 1 hour after the estimated time of arrival, the ceiling will be at least 2,000 feet above the airport elevation and the visibility will be at least 4,800 meters.
3. For helicopters. At the estimated time of arrival and for 1 hour after the estimated time of

arrival, the ceiling will be at least 1,000 feet above the airport elevation, or at least 400 feet above the lowest applicable approach minima, whichever is higher, and the visibility will be at least 3,200 meters.

Unless otherwise authorized by the CAA, no person may include an alternate airport in an IFR flight plan unless appropriate weather reports or weather forecasts at that airport will be at or above the following weather minima:

1. If an instrument approach procedure has been published, or a special instrument approach procedure has been approved by the CAA to the operator, for that airport, the following minima apply:
 - a) For aircraft: The alternate airport minima specified in that procedure, or if none are specified the following standard approach minima: For a precision approach procedure, ceiling 600 feet and visibility 3,200 meters. For a nonprecision approach procedure, ceiling 800 feet and visibility 3,200 meters.
 - b) For helicopters: Ceiling 200 feet above the minimum for the approach to be flown, and visibility at least 1,600 meters but never less than the minimum visibility for the approach to be flown, and
2. If no instrument approach procedure has been published in aerodrome and no special instrument approach procedure has been approved by the CAA to the operator, for the alternate airport, the ceiling and visibility minima are those allowing descent from the MEA, approach, and landing under VFR.

Article 297

No person may operate a civil aircraft in a Category II or III operation unless:

1. The flight crew of the aircraft consists of a pilot in command and a second in command who hold the appropriate authorizations and ratings
2. Each flight crew member has adequate knowledge of, and familiarity with, the aircraft and the procedures to be used; and
3. The instrument panel in front of the pilot who is controlling the aircraft has appropriate instrumentation for the type of flight control guidance system that is being used.

Unless otherwise authorized by the CAA, no person may operate a civil aircraft in a Category II or Category III operation unless each ground component required for that operation and the related airborne equipment is installed and operating.

Unless otherwise authorized by the CAA, no pilot operating an aircraft in a Category II or Category III approach that provides and requires use of a DA/DH may continue the approach below the authorized decision height unless the following conditions are met:

1. The aircraft is in a position from which a descent to a landing on the intended runway can be made at a normal rate of descent using normal maneuvers, and where that descent rate will allow touchdown to occur within the touchdown zone of the runway of intended landing.
2. At least one of the following visual references for the intended runway is distinctly visible and identifiable to the pilot:
 - a) The approach light system, except that the pilot may not descend below 100 feet above the touchdown zone elevation using the approach lights as a reference unless the red terminating bars or the red side row bars are also distinctly visible and identifiable.
 - b) The threshold.
 - c) The threshold markings.
 - d) The threshold lights.
 - e) The touchdown zone or touchdown zone markings.
 - f) The touchdown zone lights.

The authorized DH as approved in the preceding paragraph shall refer to the height of the following:

1. The DH prescribed by the approach procedures.
2. The DH prescribed for the pilot in command.
3. The DH for which that aircraft is equipped.

Unless otherwise authorized by the CAA, each pilot operating an aircraft shall immediately execute an appropriate missed approach whenever, prior to touchdown, the requirements set out in paragraph 2 herein are not met.

No person operating an aircraft using a Category III approach without decision height may land that aircraft except in accordance with the provisions of the operating limitations approved by the CAA.

Article 298

No person may operate a aircraft in a Category II or a Category III approach operation unless:

1. There is available in the aircraft a current and CAA approved Category II or Category III manual, as appropriate, for that aircraft;
2. The operation is conducted in accordance with the procedures, instructions, and limitations in the appropriate manual; and
3. The instruments and equipment listed in the manual that are required for a particular Category II or Category III operation have been inspected and maintained in accordance with the maintenance programme contained in the manual.

Each operator must keep a current copy of each approved manual required as set out in paragraph 1, subparagraph 1 of this article at its principal base of operations and must make each manual available for inspection.

Section 3: Aircraft Instrument, Equipment, and Flight Documentations

Article 299

No person may operate a powered civil aircraft unless that aircraft contains the instruments, equipment and flight documentations and meets the airworthiness requirements of the state of design of that aircraft and provisions set forth by CAA for the type of operation, and also in compliance with Attachment 23.

A free balloon installed instruments and equipments shall comply with Attachment 20-3.

Article 300

Except for compliance with those requirements prescribed in paragraph 5 to 7 of this article, no person may operate a civil aircraft unless it is equipped with approved automatic type ELT.

Each ELT required in the preceding paragraph must be attached to the aircraft in such a manner that the probability of damage to the transmitter in the event of crash impact is minimized. Fixed and deployable automatic type transmitters must be attached to the aircraft as far aft as practicable.

The battery of ELT shall be replaced or charged when:

1. When the transmitter has been in use for more than 1 cumulative hour; or
2. When 50 percent of their useful life (or, for rechargeable batteries, 50 percent of their useful life of charge) has expired, as established by the transmitter manufacturer under its approval.

The new expiration date for replacing (or recharging) the battery must be legibly marked on the outside of the transmitter and entered in the aircraft maintenance record. Subparagraph 2

of preceding paragraph of this article does not apply to batteries that are essentially unaffected during probable storage intervals.

Each ELT required in paragraph 1 of this article must be inspected within 12 calendar months after the last inspection for:

1. Proper installation;
2. Battery corrosion;
3. Operation of the controls and crash sensor; and
4. The presence of a sufficient signal radiated from its antenna.

No person other than required crew members may be carried aboard an aircraft being ferried in the condition mentioned below:

1. Ferry a newly acquired aircraft from the place where possession of it was taken to a place where the ELT is to be installed; and
2. Ferry an aircraft with an inoperative ELT from a place where repairs or replacements cannot be made to a place where they can be made.

Paragraph 1 of this article shall not apply to:

1. For turbojet-powered aircraft which first time airworthiness before January 1, 2004; or
2. Aircraft while engaged in training operations conducted entirely within a 50-nautical mile radius of the airport from which such local flight operations began; or
3. Aircraft while engaged in flight operations incident to design and testing; or
4. New aircraft while engaged in flight operations incident to their manufacture, preparation, and delivery; or
5. Aircraft certificated for research and development purposes; or
6. Aircraft while used for showing compliance with regulations, crew training, exhibition, air racing, or market surveys; or
7. Aircraft equipped to carry not more than one person; or
8. Free balloon.
9. An aircraft during any period for which the transmitter has been temporarily removed for inspection, repair, modification, or replacement.

Subparagraph 9 of preceding paragraph shall comply with the following:

1. No person may operate the aircraft unless the aircraft records contain an entry which includes the date of initial removal, the make, model, serial number, and reason for removing the transmitter, and a placard located in view of the pilot to show “ELT not installed.”; and
2. No person may operate the aircraft more than 90 days after the ELT is initially removed from the aircraft.

Article 301

No person may operate an aircraft during the period from sunset to sunrise unless the following requirements are met

1. Operate an aircraft unless it has lighted position lights; and
2. Park or move an aircraft in, or in dangerous proximity to, a night flight operations area of an airport unless the aircraft:
 - a) Is clearly illuminated.
 - b) Has lighted position lights and in an area that is marked by obstruction lights.
3. Anchor an aircraft unless the aircraft has lighted anchor lights or is in an area where anchor lights are not required on vessels.

No person may operate an aircraft that is equipped with an anti-collision light unless it has lighted. However, the anticollision lights need not be lighted when the pilot-in-command determines that, because of operating conditions, it would be in the interest of safety to turn the lights off.

Article 302

Regulations regarding the use of oxygen aboard aircraft shall meet the requirements stated in Article 77, 78, and 123.

At flight altitudes above flight level 350 unless one pilot at the controls of the aircraft is wearing and using an oxygen mask that is secured and sealed and that either supplies oxygen at all times or automatically supplies oxygen whenever the cabin pressure altitude of the aircraft exceeds 14,000 feet (MSL).

While at or below flight level 410, the pilot need not wear and use an oxygen mask if there are two pilots at the controls and each pilot has a quick-donning type of oxygen mask that can be placed on the face with one hand from the ready position within 5 seconds, supplying oxygen and properly secured and sealed. If for any reason at any time it is necessary for one pilot to leave the controls of the aircraft when operating at flight altitudes above flight level

350, the remaining pilot at the controls shall put on and use an oxygen mask until the other pilot has returned to that crew member station.

Article 303

No person may operate an aircraft with inoperative instruments or equipment installed unless the conditions listed in Attachment 24 are met. This does not apply to those who receive special flight permit from the CAA to conduct such flight.

Article 304

Aircraft equipped with ATC transponder shall meet the requirements specified in paragraphs 1 and 2 of Article 138.

Article 305

No person may operate any automatic pressure altitude reporting equipment associated with an ATC transponder:

1. When deactivation of that equipment is directed by ATC;
2. Unless, as installed, that equipment was tested and calibrated to transmit altitude data corresponding within 125 feet (on a 95 percent probability basis) of the indicated or calibrated datum of the altimeter normally used to maintain flight altitude, with that altimeter referenced to 1013.25 hPa of pressure for altitudes from sea level to the maximum operating altitude of the aircraft; and
3. Unless the altimeters and digitizers in that equipment meet the standards as set forth in Article 23, paragraph 1 of the Act.

Article 306

No person may operate a turbojet-powered aircraft unless that aircraft is equipped with an approved altitude alerting system or device that is complied with provisions described in Attachment 25. Owner or operator must establish procedures for flight crew member the use of the altitude alerting system or device.

The preceding paragraph of this article does not apply to any operation of an aircraft that has an experimental certificate or to the operation of any aircraft for the following purposes:

1. Ferrying a newly acquired aircraft from the place where possession of it was taken to a place where the altitude alerting system or device is to be installed.
2. Continuing a flight as originally planned, if the altitude alerting system or device becomes inoperative after the airplane has taken off; however, the flight may not depart from a place where repair or replacement can be made.

3. Ferrying an aircraft with any inoperative altitude alerting system or device from a place where repairs or replacements cannot be made to a place where it can be made.
4. Conducting an airworthiness flight test of the aircraft.
5. Ferrying an airplane to a place for the purpose of registering it in a foreign country.
6. Conducting a demonstration of the operation of the airplane.
7. Training foreign flight crews in the operation of the aircraft before ferrying it to a place outside the country for the purpose of registering it in a foreign country.

Article 307

Any traffic alert and collision avoidance system installed in an aircraft must be approved by the CAA.

Each person operating an aircraft equipped with an operable traffic alert and collision avoidance system as set out in the preceding paragraph shall have that system on and operating.

Article 308

For an airplane manufactured after March 30, 2002, no person may operate a turbine-powered airplane configured with six or more passenger seats, excluding any pilot seat, unless that airplane is equipped with an approved ground proximity warning system.

For an airplane manufactured on or before March 29, 2002, no person may operate a turbine-powered airplane configured with six or more passenger seats, excluding any pilot seat, after March 29, 2005, unless that airplane is equipped with an approved ground proximity warning system.

The use of ground proximity warning system, system audio and visual warnings for flight crew and procedures in response to the ground proximity warning system shall be contained in the Airplane Flight Manual.

The ground proximity warning system shall meet the standards as set forth in Article 23, paragraph 1 of the Act.

Article 308-1

For the aircraft which the certificate of airworthiness is first issued on or after 31st of December 2011, halon-emitting fire extinguishers shall not be installed in its lavatory.

For the aircraft which the certificate of airworthiness is first issued on or after 31st of December 2016, halon-emitting portable fire extinguishers shall not be installed.

If any aircraft described in the preceding paragraph, due to special circumstances, is not capable of meeting the compliance date of Halon alternatives that prescribed in the previous paragraph of this article, the operator shall submit an application to CAA for its discretion for release of such due date requirement. Along with its application, the operator shall expressly provide clear description of ground for application and the relevant information, if deemed applicable.

Section 4: Special Flight Operations

Article 309

No person may operate an aircraft in aerobatic flight stated in the item below unless authorized by the CAA:

1. Over any congested area of a city, town, or settlement; or
2. Over an open air with assembly of persons; or
3. Within the lateral boundaries of the surface areas of Class B, Class C, Class D, or Class E airspace designated for an airport; or
4. Within 5 miles of the center line of any airway; or
5. Below an altitude of 1,500 feet above the surface; or
6. When flight visibility is less than 5,000 meters.

Article 310

No person may flight test an aircraft except over open water, or sparsely populated areas, having light air traffic.

Article 311

When parachute is provided by aircraft owner or operator to pilots and occupants for emergency, it must meet the requirements described in Attachment 26.

Article 312

No person may operate a civil aircraft for purpose of towing unless approved by the CAA or meeting the requirements described in Attachment 27.

Article 313

No person may operate an aircraft that has an experimental certificate for other than the purpose for which the certificate was issued.

No person may operate an aircraft that has an experimental certificate outside of an area assigned by the CAA until it is shown that:

1. The aircraft is controllable throughout its normal range of speeds and throughout all the maneuvers to be executed; and
2. The aircraft has no hazardous operating characteristics or design features.

Unless otherwise authorized by the CAA in special operating limitations, no person may operate an aircraft that has an experimental certificate over a densely populated area or in a congested airway. The CAA may issue special operating limitations for particular aircraft to permit takeoffs and landings to be conducted over a densely populated area or in a congested airway, in accordance with terms and conditions specified in the authorization in the interest of safety in air commerce.

Each person operating an aircraft that has an experimental certificate shall:

1. Advise each person carried on board the experimental natured aircraft;
2. Operate under VFR, day only, unless otherwise specifically authorized by the CAA; and
3. Notify the control tower of the experimental natured aircraft when operating the aircraft into or out of airports with operating control towers.

CAA may prescribe additional limitations when CAA considers necessary.

Article 313-1

An aircraft engaged in free balloon flight operation or free balloon tethered activity shall carry airworthiness certificate onboard and shall be operated by a qualified airman.

An aircraft engaged in free balloon tethered activity shall be approved by CAA.

Section 5: Aircraft Maintenance

Article 314

The owner or operator of an aircraft is primarily responsible for maintaining that aircraft in an airworthy condition.

No person may perform maintenance, preventive maintenance, or alterations on an aircraft other than as described in this Section and Regulation for Aircraft Airworthiness Certification and Maintenance Management.

The operator shall provide, for the use and guidance of maintenance and operational personnel on board concerned, a maintenance programme approved by the CAA.

Article 315

Each owner or operator of an aircraft:

1. Shall have that aircraft inspected as prescribed in this Section.
2. Shall ensure that maintenance personnel make appropriate entries in the aircraft maintenance records that indicating the aircraft has been approved for return to service;
3. Shall have any inoperative instrument or item of equipment repaired, replaced, removed, or inspected at the next required inspection, in accordance with provisions described in Attachment 24.

Article 316

No person may operate any aircraft that has undergone maintenance unless:

1. It has been approved for return to service by a person authorized;
2. The maintenance record entry required has been made.

No person may carry any person (other than crew members) in an aircraft that has been maintained, rebuilt, or altered in a manner that may have appreciably changed its flight characteristics or substantially affected its operation in flight until an appropriately rated pilot flies the aircraft, makes an operational check of the maintenance performed or alteration made, and logs the flight in the aircraft records.

The aircraft does not have to be flown as required in the preceding paragraph herein if, prior to flight, ground tests, inspection, or both show conclusively that the maintenance, preventive maintenance, rebuilding, or alteration has not appreciably changed the flight characteristics or substantially affected the flight operation of the aircraft.

For aircraft of general aviation enterprise engaged in non-revenue flight operation, the requirement of a maintenance release shall not be waived unless the request for waiver and pertinent procedures for such operation has been approved by CAA. Thereafter, with no malfunction occurrence to the aircraft and no maintenance actions taken, for the flight crew who have completed the approved training, the requirement of a maintenance release may be waived after the flight crew has conducted a before flight check and recorded the completion of the check in the maintenance log book.

Article 317

Except as provided in paragraph 3 of this article, no person may operate an aircraft unless, within the preceding 12 calendar months, it has had:

1. An annual inspection has been performed.
2. An inspection for the issuance of an airworthiness certificate in accordance with

Regulations Governing the Certification for Aviation Products, Appliances and Parts.

Except as provided in paragraph 3 of this article, no person may operate an aircraft carrying any person (other than a crew member) for hire, and no person may give flight instruction for hire in an aircraft which that person provides, unless within the preceding 100 hours of time in service the aircraft has received an annual or 100-hour inspection and been approved for return to service in accordance with Regulation for Aircraft Airworthiness Certification and Maintenance Management or has received an inspection for the issuance of an airworthiness certificate in accordance with Regulations Governing the Certification for Aviation Products, Appliances and Parts. The 100-hour limitation may be exceeded by not more than 10 hours while en route to reach a place where the inspection can be done. The excess time used to reach a place where the inspection can be done must be included in computing the next 100 hours of time in service.

Provisions described in the 2 preceding paragraphs herein do not apply to:

1. An aircraft that carries a valid special flight permit or a current experimental certificate; or
2. An aircraft inspected in accordance with an approved aircraft inspection programme by CAA; or
3. An aircraft subject to the requirements of paragraph 4 of this article; or
4. Turbine-powered helicopter when the operator elects to inspect that helicopter in accordance with paragraph 5 of this article.

Each owner or operator of an aircraft desiring to use a progressive inspection programme must submit a written request to the CAA in accordance with provisions described in Attachment 28.

No person may operate a large airplane, turbojet multiengine airplane, turbopropeller-powered multiengine aircraft, or turbine-powered helicopter unless the replacement times for life-limited parts specified in the aircraft specifications, type data sheets, or other documents approved by the CAA are complied with.

The airplane or turbine-powered helicopter, including the airframe, engines, propellers, rotors, appliances, survival equipment, and emergency equipment, shall be inspected in accordance with this article.

The owner or operator of each airplane or turbine-powered helicopter must select, identify in the aircraft maintenance records, and use one of the following programmes for the inspection of the aircraft:

1. A continuous airworthiness inspection programme that is part of a continuous airworthiness

maintenance programme currently in use by a person holding an air carrier enterprise certificate or a general aviation certificate; or

2. An approved inspection programme which is recommended by the manufacturer.
3. Any other inspection programme established by the owner or operator of that aircraft and approved by the CAA. That approved inspection programme shall include the following:
 - a) Instructions and procedures for the conduct of inspections for the particular make and model airplane or turbine-powered helicopter, including necessary tests and checks. The instructions and procedures must set forth in detail the parts and areas of the airframe, engines, propellers, rotors, and appliances, including survival and emergency equipment required to be inspected.
 - b) A schedule for performing the inspections that must be performed under the programme expressed in terms of the time in service, calendar time, number of system operations, or any combination of these.

When owner or operator changes from one inspection programme under the preceding paragraph herein to another, the time in service, calendar times, or cycles of operation accumulated under the previous programme must be applied in determining inspection due times under the new programme.

Article 318

Aircraft owner or operator shall establish airframe structure repair assessment programme and instructions for maintenance and inspection of the fuel tank system as described in Article 143.

Aircraft owner or operator shall comply with Article 145-1 to establish the inspection and procedures for electrical wiring interconnection systems (EWIS) which is approved by the Regulatory Authority of airplane manufacturer are incorporated into the maintenance programme for that airplane and approved by the CAA.

Article 319

No person may operate an airplane, or helicopter, in controlled airspace under IFR unless:

1. Within the preceding 24 calendar months, each static pressure system, each altimeter instrument, and each automatic pressure altitude reporting system has been tested and inspected and found to comply with requirements in Attachment 29.
2. Except for the use of system drain and alternate static pressure valves, following any opening and closing of the static pressure system, that system has been tested and inspected, and comply with requirements in Attachment 29 and Attachment 30

3. Following installation or maintenance on the automatic pressure altitude reporting system of the ATC transponder where data correspondence error could be introduced, the integrated system has been tested, inspected, and found to comply with Attachment 29.

The tests required by the preceding paragraph of this article must be conducted by:

1. The manufacturer of the airplane, or helicopter, on which the tests and inspections are to be performed;
2. A certificated repair station properly equipped to perform those functions and holding:
 - a) An instrument rating, Class I, or a limited instrument rating appropriate to the make and model of appliance to be tested; or
 - b) A limited rating appropriate to the test to be performed; or
3. An airframe rating appropriate to the airplane, or helicopter, to be tested; or
4. A CAA approved aircraft maintenance engineer with B2 rating certificate.

Altimeter and altitude reporting equipment approved under Article 23, paragraph 1 of the Act are considered to be tested and inspected as of the date of their manufacture.

No person may operate an airplane, or helicopter, in controlled airspace under IFR at an altitude above the maximum altitude at which all altimeters and the automatic altitude reporting system of that airplane, or helicopter, have been tested.

Article 320

No persons may use an ATC transponder unless, within the preceding 24 calendar months, the ATC transponder has been tested and inspected and found to comply with requirements described in Attachment 30.

Following any installation or maintenance on an ATC transponder where data correspondence error could be introduced, the integrated system has been tested, inspected, and found to comply with requirements described in Attachment 30.

The tests and inspections specified in the preceding 2 paragraphs of this article must be conducted by either:

1. A certificated repair station properly equipped to perform those functions and holding:
 - a) A radio rating, Class III;
 - b) A limited radio rating appropriate to the make and model transponder to be tested;
 - c) A limited rating appropriate to the test to be performed;

- d) A holder of Air Carrier certificate as operated in accordance with provisions set forth in Chapter 2 or Chapter 3 of these regulations who holds an approved continuous airworthiness maintenance programme; or
- 2. The manufacturer of the aircraft on which the ATC transponder to be tested is installed, if the ATC transponder was installed by that manufacturer.

Article 321

Whenever the CAA finds that revisions to an approved aircraft inspection programme are necessary for the continued adequacy of the programme, the owner or operator must, after notification by the CAA, make any changes in the programme found to be necessary by the CAA.

Article 322

Except for work performed in accordance with Article 319 and Article 320, each owner or operator shall keep the maintenance records for the periods specified in Attachment 31.

Article 323

Any owner or operator who sells an aircraft shall transfer to the purchaser, at the time of sale, the maintenance records of that aircraft, to the purchaser, in compliance with Attachment 31. The records need to be agreed by the purchaser and be ready for inspection by CAA.

Article 324

The owner or operator may use a new maintenance record, without previous operating history, for an aircraft engine rebuilt by the manufacturer or by an agency approved by the manufacturer.

Each manufacturer or agency that grants zero time in use to an engine rebuilt by it shall enter in the new record:

- 1. A signed statement of the date the engine was rebuilt;
- 2. Each change made as required by airworthiness directives; and
- 3. Each change made in compliance with manufacturer's service bulletins.

Section 6: Large and Turbine-Powered Multiengine Aircrafts

Article 325

Aircraft perform any of flight operation listed below should follow the provisions described in this Section:

1. Ferry or training flights.
2. Flight demonstration without compensation.
3. Other non-profitable flights.

Article 326

The pilot in command of an airplane shall ensure that the following flying equipment and aeronautical charts and data, in current and appropriate form, are accessible for each flight at the pilot station of the airplane:

1. A flashlight having at least two size “D” cells, or the equivalent, that is in good working order.
2. A cockpit checklist.
3. Pertinent aeronautical charts.
4. Each pertinent navigational en-route, terminal area, and approach and letdown chart.
5. In the case of multiengine airplanes, one-engine inoperative climb performance data.

Each cockpit checklist must contain the following procedures and shall be used by the flight crew members when operating the airplane:

1. Before starting engines.
2. Before takeoff.
3. Cruise.
4. Before landing.
5. After landing.
6. Stopping engines.
7. Emergencies.

Each emergency cockpit checklist procedure required by subparagraph 7 of the preceding paragraph must contain the following procedures, as appropriate:

1. Emergency operation of fuel, hydraulic, electrical, and mechanical systems.
2. Emergency operation of instruments and controls.
3. Engine inoperative procedures.
4. Any other procedures necessary for safety.

Article 327

Each pilot in command of an airplane shall, before beginning a flight, become familiar with the Airplane Flight Manual for that airplane, if one is required, and with any placards, listings, instrument markings, or any combination thereof, containing each operating limitation prescribed for that airplane by the CAA.

Each required member of the crew shall, before beginning a flight, become familiar with the emergency equipment installed on the airplane to which that crew member is assigned and with the procedures to be followed for the use of that equipment in an emergency situation.

Article 328

No person may operate an airplane unless that airplane is equipped with the instruments and equipment required for IFR operations under provisions described in attachment 23. No person may conduct night flight unless an electric landing light is installed and be in operable condition.

Article 329

No person may take off an airplane for a flight over water more than 50 nautical miles from the nearest shore unless that airplane is equipped with a life preserver or an approved flotation means for each occupant of the airplane.

Except as provided in paragraph 3 of this Section, no person may take off an airplane for flight over water more than 30 minutes flying time or 100 nautical miles from the nearest shore, whichever is less, unless it has on board the following survival equipment:

1. A life preserver, equipped with an approved survivor locator light, for each occupant of the airplane.
2. Enough life-saving rafts (each equipped with an approved survival locator light) of a rated capacity and buoyancy to accommodate the occupants of the airplane.
3. At least one pyrotechnic signaling device for each life-saving raft.
4. One self-buoyant, water-resistant, portable emergency radio signaling device that is capable of transmission on the appropriate emergency frequency or frequencies and not dependent upon the airplane power supply.
5. A lifeline which complied with the airworthiness standards describe in Article 23, paragraph 1 of the Act.

The required life-saving rafts, life preservers, and signaling devices must be installed in conspicuously marked locations and easily accessible in the event of a ditching without appreciable time for preparatory procedures.

A survival kit, appropriately equipped for the route to be flown, must be attached to each required life-saving raft.

Article 330

Except as provided in paragraphs 2 and 3 of this article, no person may take off an airplane for a flight over water more than 30 minutes flying time or 100 nautical miles from the nearest shore unless it has at least the following operable equipment:

1. Radio communication equipment appropriate to the facilities to be used and able to transmit to, and receive from, at least one communication facility from any place along the route:
 - a) Two transmitters.
 - b) Two microphones.
 - c) Two headsets or one headset and one speaker.
 - d) Two independent receivers.
2. Appropriate electronic navigational equipment consisting of at least two independent electronic navigation units capable of providing the pilot with the information necessary to navigate the airplane within the airspace assigned by air traffic control. However, a receiver that can receive both communications and required navigational signals may be used in place of a separate communications receiver and a separate navigational signal receiver or unit.

A person may operate an airplane from a place where repairs or replacement cannot be made to a place where they can be made, if not more than one of each of the dual items of radio communication and navigational equipment specified in the preceding paragraphs of this article malfunctions or becomes inoperative.

When both VHF and HF communications equipment are required for the route and the airplane has two VHF transmitters and two VHF receivers for communications, only one HF transmitter and one HF receiver is required for communications.

Article 331

No person may operate an airplane unless it is equipped with the emergency equipment listed in this Article.

The emergency equipment in the preceding paragraph shall comply with the following:

1. Must be inspected in accordance with Article 317 to ensure its continued serviceability and immediate readiness for its intended purposes;
2. Must be readily accessible to the crew;
3. Must clearly indicate its location and method of operation; and
4. When carried in a compartment or container, must have that compartment or container marked as to contents and date of last inspection.

Portable fire extinguishers must be provided for use in crew, personnel on board, and cargo compartments in accordance with the following:

1. The type and quantity of extinguishing agent must be suitable for the kinds of fire likely to occur in the compartment where the extinguisher is intended to be used.
2. At least one portable fire extinguisher must be provided and located on or near the flight deck in a place that is readily accessible to the flight crew.
3. At least one portable fire extinguisher must be conveniently located in the personnel on board compartment of each airplane accommodating more than six but less than 31 passengers, and at least two portable fire extinguishers must be conveniently located in the passenger compartment of each airplane accommodating more than 30 passengers.
4. Portable fire extinguishers must be installed and secured in such a manner that they will not interfere with the safe operation of the airplane or adversely affect the safety of the crew and passengers. They must be readily accessible and, unless the locations of the fire extinguishers are obvious, their stowage provisions must be properly identified.

First aid kits for treatment of injuries likely to occur in flight or in minor accidents must be provided.

Each airplane accommodating more than 19 passengers must be equipped with a crash axe.

Each passenger-carrying airplane must have a portable battery-powered megaphone or megaphones readily accessible to the crew members assigned to direct emergency evacuation, installed as follows:

1. One megaphone on each airplane with a seating capacity of more than 60 but less than 100 passengers, at the most rearward location in the passenger cabin where it would be readily accessible to a normal flight attendant seat. However, the CAA may grant a deviation from the requirements of this subparagraph if the CAA finds that a different location would be more useful for evacuation of persons during an emergency.

2. On each airplane with a seating capacity of 100 or more passengers, one megaphone installed at the forward end and one installed at the most rearward location where it would be readily accessible to a normal flight attendant seat.

Article 332

No person may operate an airplane carrying passengers unless it is equipped with signs that are visible to passengers and flight attendants to notify them when smoking is prohibited and when safety belts must be fastened. The signs must be so constructed that the crew can turn them on and off. They must be turned on during airplane movement on the surface, for each takeoff, for each landing, and when otherwise considered to be necessary by the pilot in command.

The pilot in command of an airplane that is not required to be equipped as provided in paragraph 1 of this article shall ensure that the passengers are notified each time that it is necessary to fasten their safety belts and when smoking is prohibited.

If passenger information signs are installed, no passenger or crew member may smoke while any “no smoking” sign is lighted nor may any passenger or crew member smoke in any lavatory.

Each passenger required by Article 292 to occupy a seat or berth shall fasten his or her safety belt about him or her and keep it fastened while any “fasten seat belt” sign is lighted.

Each passenger shall comply with instructions given him or her by crew members regarding compliance with paragraphs 2 to 4 of this article.

Article 333

Before each takeoff, the pilot in command of an airplane carrying passengers shall ensure that all passengers have been familiar with the following:

1. Smoking. Each passenger shall be briefed on when, where, and under what conditions smoking is prohibited.
2. Use of safety belts and shoulder harnesses. Each passenger shall be briefed on when, where, and under what conditions it is necessary to have his or her safety belt and, if installed, his or her shoulder harness fastened about him or her.
3. Location and means for opening the passenger entry door and emergency exits;
4. Location of survival equipment;
5. Ditching procedures and the use of flotation equipment for a flight over water; and
6. The normal and emergency use of oxygen equipment installed on the airplane.

The briefing required by the preceding paragraph shall be given by the pilot in command or a member of the crew. It may be supplemented by printed cards for the use of each passenger containing:

1. A diagram of, and methods of operating, the emergency exits; and
2. Other instructions necessary for use of emergency equipment.

Each card as set out in the preceding paragraph must be carried in convenient locations on the airplane for the use of each passenger and must contain information that is pertinent only to the type and model airplane on which it is used.

Article 334

No person may operate a transport category airplane unless it is equipped at each seat at a flight deck station or flight attendant station with a combined safety belt and shoulder harness which comply with the airworthiness standards described in Article 23, paragraph 1 of the Act, or the safety belt and shoulder harness restraint systems may be designed to the inertia load factors established under the certification basis of the airplane.

Article 335

No pilot in command of an airplane having a seating capacity of more than 19 passengers may permit a passenger to stow baggage aboard that airplane except:

1. In a suitable baggage or cargo storage compartment, or as provided in Article 336; or
2. Under a passenger seat in such a way that it will not slide forward under crash impacts severe enough to induce the ultimate inertia forces.

Article 336

No pilot in command may permit cargo to be carried in any airplane unless:

1. It is carried in an approved cargo rack, bin, or compartment installed in the airplane;
2. It is secured by means approved by the CAA; or
3. It is carried in accordance with each of the following:
 - a) It is properly secured by a safety belt or other tie down having enough strength to eliminate the possibility of shifting under all normally anticipated flight and ground conditions.
 - b) It is packaged or covered to avoid possible injury to passengers.
 - c) It does not impose any load on seats or on the floor structure that exceeds the load

limitation for those components.

d) It is not located in a position that restricts the access to or use of any required emergency or regular exit, or the use of the aisle between the crew and the passenger compartment.

e) It is not carried directly above seated passengers.

When cargo is carried in cargo compartments that are designed to require the physical entry of a crew member to extinguish any fire that may occur during flight, the cargo must be loaded so as to allow a crew member to effectively reach all parts of the compartment with the contents of a portable fire extinguisher.

Article 337

No pilot may take off an airplane that has:

1. Frost, snow, or ice adhering to any propeller, windshield, or power plant installation or to an airspeed, altimeter, rate of climb, or flight attitude instrument system;
2. Snow or ice adhering to the wings or stabilizing or control surfaces.

Except for an airplane that has ice protection or those for transport category airplane type certification, no pilot may fly:

1. Under IFR into known or forecast moderate icing conditions; or
2. Under VFR into known light or moderate icing conditions unless the aircraft has functioning de-icing or anti-icing equipment protecting each propeller, windshield, wing, stabilizing or control surface, and each airspeed, altimeter, rate of climb, or flight attitude instrument system.

Except for an airplane that has ice protection or those for transport category airplane type certification, no pilot may fly an airplane into known or forecast severe icing conditions.

If current weather reports and briefing information relied upon by the pilot in command indicate that the forecast icing conditions that would otherwise prohibit the flight will not be encountered during the flight because of changed weather conditions since the forecast, the restrictions in paragraphs 2 and 3 herein based on forecast conditions do not apply.

Article 338

No person may operate the following airplanes without a pilot who is designated as second in command of that airplane:

1. A large airplane, except that airplane is type certificated for operation with one pilot and no second in command is required.

2. A turbojet-powered multiengine airplane for which two pilots are required under the type certification requirements for that airplane.
3. A commuter category airplane, except that a person may operate a commuter category airplane notwithstanding paragraph 1, that has a passenger seating configuration, excluding pilot seats, of nine or less without a pilot who is designated as second in command if that airplane is type certificated for operations with one pilot.

No person may designate a pilot to serve as second in command, nor may any pilot serve as second in command, of an airplane required under this article to have two pilots unless that pilot meets the qualifications for second in command.

Article 339

Except ferry flight or approved by CAA, each airplanes having more than 19 but less than 51 personnels on board, one flight attendant is required during flight operation. Each airplanes having more than 50 but less than 101 personnels on board, two flight attendant is required during flight operation. For airplanes having more than 100 personnels on board, two flight attendants plus one additional flight attendant for each unit (or part of a unit) of 50 passengers above 100.

No person may serve as a flight attendant on an airplane unless that person has demonstrated familiarity with the necessary functions to be performed in an emergency or a situation requiring emergency evacuation and is capable of using the emergency equipment installed on that airplane.

Article 340

No operator may taxi an aircraft on the surface, take off, or land when any food, beverage, or tableware furnished by the operator is located at any passenger seat.

No operator may take off or land unless each food and beverage tray and seat back tray table is secured in its stowed position.

No operator may permit an aircraft to taxi on the surface, take off, or land unless each passenger serving cart is secured in its stowed position.

No operator may permit an aircraft to take off or land unless each movie screen that extends into the aisle is stowed.

Each passenger shall comply with instructions given by a crew member with regard to compliance with this Section.

Section 7: Additional Equipment and Operating Requirements for Large

and Transport Category Aircraft

Article 341

No person may operate a transport category airplane in air commerce unless that airplane is equipped with an aural speed warning device that complies with the airworthiness standards described in Article 23, paragraph 1 of the Act.

Article 342

No person may take off any transport category airplane which is not driven by turbine-powered engine unless:

1. The takeoff weight does not exceed the authorized maximum takeoff weight for the elevation of the airport of takeoff;
2. The elevation of the airport of takeoff is within the altitude range for which maximum takeoff weights have been determined;
3. Normal consumption of fuel in flight to the airport of intended landing will leave a weight on arrival not in excess of the authorized maximum landing weight for the elevation of that airport; and
4. The elevations of the airport of intended landing and of all specified alternate airports are within the altitude range for which the maximum landing weights have been determined.

No person may take off a transport category airplane which driven by turbine-powered engine unless:

1. The takeoff weight does not exceed the takeoff weight specified in the Airplane Flight Manual for the elevation of the airport and for the ambient temperature existing at the time of takeoff;
2. Normal consumption of fuel in flight to the airport of intended landing and to the alternate airports will leave a weight on arrival not in excess of the landing weight specified in the Airplane Flight Manual for the elevation of each of the airports involved and for the ambient temperatures expected at the time of landing;
3. The takeoff weight does not exceed the weight shown in the Airplane Flight Manual to correspond with the minimum distances required for takeoff, considering the elevation of the airport, the runway to be used, the effective runway gradient, the ambient temperature and wind component at the time of takeoff, and, if operating limitations exist for the minimum distances required for takeoff from wet runways, the runway surface condition (dry or wet). Wet runway distances associated with grooved or porous friction course runways, if provided in the Airplane Flight Manual, may be used only for runways that are

grooved or treated with a porous friction course (PFC) overlay, and that the operator determines are designed, constructed, and maintained in a manner acceptable to the CAA.

4. Where the takeoff distance includes a clearway, the clearway distance is not greater than one-half of takeoff run distance.
5. The accelerate-stop distance is no greater than the length of the runway plus the length of the stopway (if present); and
6. The takeoff distance is no greater than the length of the runway plus the length of the clearway (if present); and
7. The takeoff run distance is no greater than the length of the runway.

Article 343

No person may operate a large aircraft or transport category aircraft unless it is equipped with a flight recorder. The recorders of which are capable of recording essential information of a flight and sufficient for investigation if aircraft involved in accident or incident. Specific specifications to the recorder shall comply with the international flight standards approved and adopted by CAA.

The flight data recorder shall be activated before flight, and shall not be deactivated in flight. However, in the case of an aircraft accident or aircraft serious incident, the flight data recorder shall be deactivated when the flight ends, and shall not be re-activated until the flight data has been retrieved. This requirement shall apply to aircraft incident where CAA so requires.

The following operation conditions shall be exempted from the restrictions as set out in paragraph 1 herein:

1. Ferry an aircraft with an inoperative flight recorder from a place where repair or replacement cannot be made to a place where they can be made;
2. Continue a flight as originally planned, if the flight recorder becomes inoperative after the aircraft has taken off;
3. Conduct an airworthiness flight test during which the flight recorder or cockpit voice recorder is turned off to test it or to test any communications or electrical equipment installed in the aircraft; or
4. Ferry a newly acquired aircraft from the place where possession of it is taken to a place where the flight recorder is to be installed.
5. Flight with inoperative flight data recorder, the following should be observed:
 - a) For not more than 15 days while the flight recorder is inoperative and/or removed for

repair provided that the aircraft maintenance records contain an entry that indicates the date of failure, and a placard is located in view of the pilot to show that the flight recorder or cockpit voice recorder is inoperative.

- b) For not more than an additional 15 days, a certificated person authorized to return an aircraft to service certifies in the aircraft maintenance records that additional time is required to complete repairs or obtain a replacement unit.

Article 344

Owner or operator may ferry a four- engine large airplane or three-turbine-engine airplane, with one engine inoperative, to a place capable to complete the repair as it follows the provisions described in Attachment 32.

Article 345

No person may operate a large aircraft unless materials used in aircraft interior compartment comply with the airworthiness standards described in Article 23, paragraph 1 of the Act.

Article 346

For flight in defined portions of airspace or on routes where a Performance Based Navigation (PBN) type has been prescribed, a large aircraft shall be provided with navigation equipment as described in attachment 15 which:

1. Shall be provided with navigation equipment which will enable it to operate in accordance with the prescribed PBN operations; and
2. Has been approved by CAA.

Article 346-1

For flights in defined portions of airspace where, based on Regional Air Navigation Agreement, minimum navigation performance specifications (MNPS) are prescribed, an airplane shall be provided with navigation equipment which:

1. Continuously provides indications to the flight crew of adherence to or departure from track to the required degree of accuracy at any point along that track;
2. Has been authorized by CAA for the MNPS operations concerned; and
3. When operating under minimum navigation performance specification in north Atlantic, the requirements in Attachment 16 shall be met.

Article 347

For flight in defined portions of airspace where a reduced vertical separation minimum

(RVSM) of 1,000ft (300m) is applied between FL 290 and FL 410, the airplane:

1. Shall be provided with equipment which is capable of:
 - a) Indicating to the flight crew the flight level being flown;
 - b) Automatically maintaining a selected flight level;
 - c) Providing an alert to the flight crew when a deviation occurs from the selected flight level. The threshold for the alert shall not exceed ± 300 ft; and
 - d) Automatically reporting pressure altitude.
2. The operator has instituted appropriate procedures in respect of continued airworthiness (maintenance and repair) practices and programmes.
3. The operator has instituted appropriate flight crew procedures for operations in RVSM airspace.
4. Shall be authorized by the CAA for operation in the airspace concerned and in compliance with Attachment 17.

The airplane or fleet being authorized on the conditions as set out in the preceding paragraph shall comply with the following:

1. Receiving the reports of height-keeping performance issued by the monitoring agencies; and
2. Taking immediate corrective action for individual aircraft, or aircraft type groups, identified in such reports as not complying with the height-keeping requirements for operation in airspace where RVSM is applied.

Operator authorized by the CAA for RVSM operation shall ensure that a minimum of two airplanes of each aircraft type grouping of the operator have their height-keeping performance monitored, at least once every two years or within intervals of 1 000 flight hours per airplane, whichever period is longer. If an operator aircraft type grouping consists of a single airplane, monitoring of that airplane shall be accomplished within the specified period.

Section 8: Security

Article 348

No person may admit to the flight deck of an aircraft unless the person being admitted is a crew member, flight operations officer or specifically authorized by the operator or by CAA.

Article 349

No person with the following condition can act as a flight crew:

1. Alcohol concentration: A test result indicates 0.02% in blood or the alcohol density in breath exceeds 0.1 mg per liter.
2. Prohibited drugs: Urine sample with a positive result.
3. Personnel on board who refuses to accept above mentioned test.

CAA may conduct regular or random tests for narcotic drugs and alcohol for operations personnel as set out in the preceding paragraph.

Any person who fails either test prescribed in the preceding paragraph or exceed 0 mg per litre in breath but not exceed the regulated standard shall not act as crew-member.

Except for emergency situation, flight crew shall not carry persons under the influence of alcohol and drug.

CAA may delegate the tests of drugs and alcohol as prescribed in paragraph 2 to the airport operator.

When CAA delegates the tests in accordance with the preceding paragraph, the name of the designee, the commissioned items and regulations shall be promulgated on the government bulletin.

Chapter 5 - Supplement Provision

Article 350

An operator shall make a seat available on the flight deck and/or cabin on aircraft for CAA inspectors while conducting official inspecting duties.

Article 351

The terminologies used in this regulation in Chinese and English equivalents are listed in Attachment 33.

Article 351-1

If the deadline of the qualification requirements of assigned pilot or dispatcher stipulated in Article 162 to 165, Article 167, Article 168, Article 170, Article 173, Article 179, Article 279, Article 285-24, Article 285-25 of this regulation cannot be met due to the epidemic during the period of the Central Epidemic Command Center was set up, the operator shall submit an application and provide relevant supporting documents to CAA . Those who have applied for review and approval by the CAA may be extended for three months.

Those who have been approved for extension, and still affected by the epidemic during the

extension, can apply to the CAA further extension in accordance with the provisions of the preceding paragraph.

Article 352

This regulation becomes effective on the date of its publication, but the date for effective of the Article 36 to 43-1, Article 76-1 and Article 192 which promulgated on March 19, 2013, shall be enacted by MOTC.