### 723.98 Training Program

The syllabus of each training program shall include the programmed time allotted and the subject matter to be covered.

### (1) General Training Standard

- (a) Manuals, if applicable, shall be provided during training to each trainee on the subject matter to be taught.
- (b) Relevant training aids such as fire extinguishers, life preservers, rafts, aircraft components, static aircraft, etc. shall be available for the program being presented.
- (c) Comprehensive examinations shall be used to validate competence of the trainee.

### (2) Flight Crew Training on a Contract Basis

An air operator may contract crew member training to another organization provided:

- (a) the arrangement is clearly provided for in the approved training program;
- (b) the outside organization uses the manuals and publications used by the air operator (SOPs, Rotorcraft Flight Manual, Aircraft Operating Manual, if applicable, Company Operations Manual, etc.);
- (c) the air operator ensures that the training is conducted in accordance with the approved program;
- (d) where type training is conducted, the training is provided on the type and model operated by the air operator unless otherwise provided for in the approved training program; and

- (e) the air operator maintains training records as required by Subpart 703 of the *Canadian Aviation Regulations*.

**(3) Training and Qualifications of Training Personnel**

- (a) **Instructor - Ground Training**
    - (i) has satisfied the air operator that he or she has the knowledge and skills required to conduct the training; and
    - (ii) if conducting helicopter type training, has successfully completed the ground school for the type of helicopter.
- (b) **Qualifications and Responsibilities of a Training Pilot (Flight)**
    - (i) **Qualifications**
        - (A) hold the licence and ratings appropriate for the type of helicopter and type of operation; and
        - (B) know the contents of the Rotorcraft Flight Manual, Aircraft Operating Manual (if applicable), Approved Check Pilot Manual, Company Operations and Training Manuals and the operator's Standard Operating Procedures for the helicopter type, and the provisions of the regulations and standards.
          (amended 1998/06/01)
    - (ii) **Responsibilities**

      The Training Pilot is responsible for monitoring the operation and identifying problems which may require the provision of extra training or changes in operational procedures. The training pilot is responsible, together with the Chief Pilot, for the establishment and promulgation of the standards and

piloting techniques with which flight crew will be expected to comply during flight operations and which the flight crew will be required to demonstrate during initial and recurrent checks. Particular responsibilities are:

- (A) conducting ground, synthetic flight training device and flight training of all flight crew in accordance with the approved training program;
- (B) supervision of the standards and recommending amendments to their respective aeroplane operating manuals and standard operating procedures;
- (C) maintaining the air operator's training records;
- (D) liaison with crew scheduling concerning training details; and
- (E) any responsibilities assigned by the Chief Pilot.

- (c) **Qualifications and Responsibility of a Training Pilot (Synthetic Training Device)**
  - (i) **Qualifications**
    - (A) hold or have the licence and ratings appropriate for the type of helicopter and type of operation;
    - (B) have completed the air operator's ground school and synthetic training device program for the type of helicopter;
    - (C) have successfully completed within the past 12 months a Pilot Proficiency Check in the

synthetic training device or helicopter for that type;

- (D) know the contents of the Aircraft Operating Manual (if applicable), Rotorcraft Flight Manual, Operations and Training Manuals and as applicable the Approved Check Pilot Manual and the air operator's Standard Operating Procedures for the helicopter type, and the provisions of the regulations and standards; and
- (E) have received instruction on the operation of the synthetic training device from an instructor qualified to operate the synthetic training device.

- (ii) **Responsibilities**

  The Training Pilot is responsible for monitoring the operation and identifying problems which may require the provision of extra training or changes in operational procedures. The training pilot is responsible, together with the Chief Pilot, for the establishment and promulgation of the standards and piloting techniques with which flight crew will be expected to comply during flight operations and which the flight crew will be required to demonstrate during initial and recurrent checks. Particular responsibilities are:

  - (A) conducting ground and synthetic flight training of all flight crew in accordance with the approved training program;
  - (B) supervision of the standards and recommending amendments to their respective helicopter operating manuals and Standard Operating Procedures;

- (C) maintaining the air operator's training records;
- (D) liaison with crew scheduling concerning training details; and
- (E) any responsibilities assigned by the Chief Pilot.

**(4) Training Program Standards**

Ground training programs shall provide a means of evaluating the trainee after completion of the syllabus by completion of an examination with a review and correction of any errors. Training examinations should be comprehensive, and periodically reviewed and updated.

Type training programs are to be titled as to the type to which they apply and include the number of instructional hours to be provided. They should be performance oriented and stress the operation (normal, emergency and malfunctions) of the helicopter systems and equipment. Instruction related to components and systems that flight crews cannot control, influence or operate should be minimized.

**(5) Company Indoctrination Training**

This training is required upon employment for all persons assigned to an operational control function, including base managers, pilots and persons responsible for flight following. The program shall ensure that persons involved in control of flight operations are aware of their responsibilities, know company reporting relationships and are competent to fulfil their assigned duties related to flight operations. Company indoctrination training shall include, as applicable:

- (a) the *Canadian Aviation Regulations* and applicable Standards;

- (b) Air Operator Certificate and Operations Specifications;
- (c) company organization, reporting relationships and communication procedures, including duties and responsibilities of flight crew members and the relationship of those duties to other crew members;
- (d) flight planning and operating procedures;
- (e) fuelling procedures including procedures for fuelling with passengers on board and fuel contamination precautions;
- (f) critical-surface contamination and safety awareness program;
- (g) passenger safety briefings and safe movement of passengers to/from the helicopter;
- (h) use and status of the Company Operations Manual including maintenance release procedures and accident/incident reporting procedures;
- (i) use of minimum equipment lists (if applicable);
- (j) aircraft icing and other meteorological training appropriate to the area of operations;
- (k) navigation procedures and other specialized operations applicable to the operator;
- (l) accident/incident reporting;
- (m) passenger on board medical emergency;
- (n) handling of disabled passengers;
- (o) carriage of external loads;
- (p) operational control system;
- (q) weight and balance system procedures;
- (r) standard operating procedures (if applicable); and

- (s) pre-flight crew member briefing.

**(6) Technical Ground Training - Initial and Recurrent**

This training shall ensure that each flight crew member is knowledgeable with respect to helicopter systems and all normal, abnormal and emergency procedures. The following subjects shall be included:

- (a) helicopter systems operation and limitations as contained in the Helicopter Flight Manual and Aircraft Operating Manual, and Standard Operating Procedures;
- (b) operation of all equipment that is installed in all helicopters of the same type operated by the air operator;
- (c) differences in equipment that is installed in all helicopters of the same type in the air operator's fleet;
- (d) applicable Standard Operating Procedures for pilot flying and pilot not flying duties for normal, abnormal and emergency procedures for the helicopter;
- (e) helicopter performance and limitations; and
- (f) weight and balance procedures.

Technical ground training shall be conducted annually.

**(7) Synthetic Flight Training Device**

- (a) A Synthetic Flight Training Device has two classifications:
    - (i) Full flight simulator (FFS); and
    - (ii) Flight Training Device (FTD).

**(8) Level A or B Training Program (if applicable)**
(amended 2008/12/30)

An air operator with an approved Level A or B training program using a Level A, or better, FFS approved in accordance with the

Aeroplane and Rotorcraft Simulator Manual is permitted to conduct most initial, upgrade and recurrent training in that simulator. Additionally, flight training in a helicopter must be carried out for general handling and landing manoeuvres for initial and upgrade training.
(amended 2008/12/30)

- (a) The following training in Standard Operating Procedures for normal, abnormal and emergency operation of the helicopter systems and components shall be carried out in the FFS:
    - (i) use of checklists;
    - (ii) flight crew co-operation, command and co-ordination;
    - (iii) helicopter and cargo fire on the ground and while airborne;
    - (iv) engine fire and failure;
    - (v) effects of engine icing and anti-ice operation;
    - (vi) take-off, landing and flight with the critical engine inoperative and engine inoperative performance capabilities;
    - (vii) flight control failures and abnormalities;
    - (viii) hydraulic, electrical and other system failures;
    - (ix) failure of navigation and communication equipment;
    - (x) pilot incapacitation - recognition and response during various phases of flight;
    - (xi) steep turns (45 degrees of bank), and other flight characteristics such as unusual attitudes (as applicable for initial and upgrade only);

- (xii) helicopter performance for climb, cruise, holding, descent and landing;
- (xiii) normal and performance limited take-offs;
- (xiv) take-off and landing data calculations;
- (xv) rejected take-off procedures;
- (xvi) passenger and crew evacuation;
- (xvii) FMS, EGPWS, ACAS and specialized equipment (where available);
  (amended 2008/12/30)
- (xviii) inadvertent encounters with moderate or severe in-flight icing conditions where the helicopter is certified for flight into known icing conditions (where available); and
  (amended 2008/12/30; no previous version)
- (xix) loss of pressurization and emergency descent (if applicable).
  (amended 2008/12/30; no previous version)

- (b) Where the air operator seeks authorization for flight in IMC, the following training in flight planning and instrument flight procedures shall be included:
  - (i) departure, enroute, holding and arrival; and
  - (ii) all types of instrument approaches and missed approaches in minimum visibility conditions using all levels of automation available (as applicable).
- (c) In addition to the training in an approved Level A or B FFS Training Program, the following flight training on the helicopter type shall be carried out:
  (amended 2008/12/30)
  - (i) interior and exterior preflight checks;

- (ii) ground handling;
- (iii) hover, normal take-off, visual circuit (where possible) and landing;
- (iv) a simulated engine inoperative approach and landing;
- (v) simulated engine failure procedures during take-off and missed approach (at a safe altitude and airspeed);
- (vi) no electronic glide slope approach and landing; and
  (amended 2008/12/30; no previous version)
- (vii) approaches where the simulator lacks the capability.
  (amended 2008/12/30; no previous version)

- (d) If a Level A, or better, FFS has differences in performance, systems, or cockpit layout and configuration from the air operator's helicopter, additional training on these differences shall be provided.
  (amended 2008/12/30)

**(8.1) Level C Training Program (if applicable)**
(amended 2008/12/30; no previous version)

- (a) For the purpose of this provision, "similar helicopter" means helicopters listed in the Schedule to this subsection.
- (b) An air operator with an approved Level C training program using a Level C, or better, FFS approved in accordance with the Aeroplane and Rotorcraft Simulator Manual is permitted zero flight time training for candidates on initial training who have experience on a similar helicopter with the same operator or who have verifiable currency on a similar helicopter within the previous two years. Candidates who do not qualify shall undergo

helicopter flight training in accordance with those items listed in paragraph 723.98(8)(c) above.

- (c) In addition to those items of training required in paragraphs 723.98(8)(a) and (b), the training in an approved Level C, or better, FFS shall include:
    - (i) manoeuvring of the helicopter on the ground,
    - (ii) crosswind take-offs and landings to 100% of the published crosswind component, and
    - (iii) a visual training program in the flight simulator to ensure VFR flight skills, covering scenarios of dusk and night with variable weather and visibilities. This program shall include:
        - (A) normal and crosswind take-offs, visual circuits and landings with variable wind, runway illusion and surface conditions,
        - (B) engine inoperative approach and landing,
        - (C) engine failure procedures during take-off and missed approach,
        - (D) no electronic glide slope approach and landing, and
        - (E) approaches and landings with flight control failures and abnormalities.
- (d) If a Level C, or better, FFS has differences in performance, systems, or cockpit layout and configuration from the air operator's helicopter, additional training on these differences shall be provided.

**Schedule – Full Flight Simulator Grouping – Helicopters**

- (a) The following helicopters are "similar helicopters" for the purpose of FFS Grouping:
    - (i) Agusta 109 and 119, all model series,
    - (ii) Bell 47, all model series (including Bell 47T),
    - (iii) Bell 206, all model series (including 206 LT),
    - (iv) Bell 222, 230 and 430, all model series,
    - (v) Bell 204, 205, 210 and 212, all model series,
    - (vi) Bell 212 and 412, all model series,
    - (vii) Enstrom F28, 280 and 480, all model series,
    - (viii) Eurocopter AS 350, AS 355 and EC 130, all model series,
    - (ix) Eurocopter SA 330, AS 332 and EC 225, all model series,
    - (x) Eurocopter SE 313/3130, SE 316/3160 and SA 313 thru 319 (Alouette II / Lama / Alouette III), all model series,
    - (xi) Eurocopter SA 360, SA/AS 365 and EC 155, all model series,
    - (xii) Eurocopter BK 117 and EC 145, all model series,
    - (xiii) Eurocopter BO 105, all model series,
    - (xiv) Hiller 12E and 12ET, all model series,
    - (xv) Hughes/Schweizer Models 269, 300, 330 and 333, all model series,
    - (xvi) McDonnell Douglas/Hughes 500(369), 520, 530 and 600, all model series,
    - (xvii) McDonnell Douglas MD 900, 901 and 902 Explorer, all model series,

- (xviii) Sikorsky S 55 and S 55T, all model series,
- (xix) Sikorsky S 58 and S 58T, all model series,
- (xx) Sikorsky S 61 and S 62, all model series,
- (xxi) Sikorsky S 70, all model series, and
- (xxii) Sikorsky S 76, all model series.

- (b) Any type of helicopter not shown in paragraph (a) above has not been considered for similar grouping and should be treated separately.

**(8.2) Level D Training Program (if applicable)**
(amended 2008/12/30; no previous version)

- (a) An air operator with an approved Level D training program using a Level D FFS approved in accordance with the Aeroplane and Rotorcraft Simulator Manual is permitted zero flight time training.
- (b) In addition to the training required for a Level C program, a VFR training program in the Level D FFS of at least 4 hours per crew (2 hours as pilot flying and 2 hours as pilot not flying) is required to ensure visual flight skills to cover either day or dusk and night with variable weather and visibility scenarios. This program shall include the following:
  - (i) normal and crosswind take-offs, and visual circuits and landings, with variable wind, runway illusion and surface conditions,
  - (ii) engine inoperative approach and landing,
  - (iii) engine failure procedures during take-off and missed approach,
  - (iv) no visual aids approaches and landings, and

- (v) approaches and landings with flight control failures and abnormalities.

**Information Note:**

Where a pilot demonstrates a satisfactory level of performance in visual manoeuvres, the air operator may use the time specified in subparagraph 723.98(8.2)(b)(i) as additional training to that required by any of the Level C requirements.

- (c) If a Level D FFS has differences in performance, systems, or cockpit layout and configuration from the air operator's helicopter, additional training on these differences shall be provided.

**(9) Reserved**
(amended 2008/12/30)

**(10) Helicopter Only Flight Training Program**

Any simulated failures of helicopter systems shall only take place under operating conditions which do not jeopardize safety of flight.

- (a) Standard Operating Procedures for normal, abnormal and emergency operation of the helicopter systems and components, including:
  - (i) use of checklists, including interior and exterior pre-flight checks;
  - (ii) manoeuvring of the helicopter on the ground (if applicable);
  - (iii) aspects of crew co-operation;
  - (iv) hover, normal take-off, visual circuit, approach and landing;
  - (v) simulated helicopter and cargo fire on the ground and while airborne;

- (vi) simulated engine fire and failure;
- (vii) briefings on the effects of airframe and engine icing and anti-ice operation;
- (viii) take-off, landing and flight with the critical engine simulated inoperative, and engine inoperative performance capabilities;
- (ix) simulated hydraulic, electrical and other system failures;
- (x) simulated flight control failures and degraded states of operation, while in flight and during take-off and landing (as applicable);
- (xi) simulated failure of navigation and communication equipment;
- (xii) simulated pilot incapacitation - recognition and response;
- (xiii) steep turns (45 degrees of bank) and other flight characteristics (as applicable for initial and upgrade only);
- (xiv) helicopter performance;
- (xv) rejected take-off procedures;
- (xvi) briefing on crew and passenger evacuation procedures; and
- (xvii) specialized equipment (where applicable).

- (b) Flight planning and instrument flight procedures, where the air operator is authorized for VFR flight at night or flight in IMC:
  - (i) departure, enroute, holding and arrival; and
  - (ii) all types of instrument approaches and missed approaches in simulated minimum visibility conditions

using all levels of automation available, (as applicable).

**(11) Emergency Procedures Training for Pilots**

This training is required on an annual basis and shall include instruction in the location and operation of all emergency equipment. Training devices approved to simulate flight operating emergency conditions, static helicopters, ground demonstrations, classroom lectures, films or other devices may be used for training provided the method used ensures that each flight crew member is adequately trained in the operation or use of all emergency equipment. Where practical training is required, it shall be completed on initial training and every three years thereafter.

- (a) fire in the air and on the ground;
- (b) use of fire extinguishers, including practical training;
- (c) operation and use of emergency exits, including practical training;
- (d) passenger preparation for an emergency landing or ditching, (as applicable) including practical training;
- (e) emergency evacuation procedures, including practical training;
- (f) donning and inflation of life preservers (when equipped), including practical training;
- (g) removal from stowage, deployment, inflation and boarding of life rafts/slide rafts (when equipped), including practical training;
- (h) pilot incapacitation, including practical training;
- (i) hijacking, bomb threats and other security procedures;
- (j) passenger on board medical emergency; and

- (k) special emergency procedures where the helicopter is used on MEDEVAC operations, including patient evacuation in emergency situations.

**(12) Regaining Qualifications Training**

For operators using a Level B, C, or D FFS, approved in accordance with the Aeroplane and Rotorcraft Simulator Manual, or the helicopter, the following must be completed for all pilots who have not maintained their recency qualifications in accordance with paragraph 703.88(1)(b) of the *Canadian Aviation Regulations* for a period between 90 and 180 days.

- (a) a briefing on changes that have occurred to the helicopter or its operation since the last flight; and
- (b) three take-offs and landings (which may be carried out as part of a PPC where one has come due).

**(13) Flight Follower Training**

Persons assigned the duties of the flight follower shall receive training in at least the following:

- (a) company indoctrination;
- (b) duties and responsibilities;
- (c) communication procedures;
- (d) applicable regulations and standards;
- (e) flight preparation procedures as applicable to assigned duties;
- (f) procedures in the event of an emergency or overdue aircraft;
- (g) accident and incident reporting procedures; and
- (h) requirements of the approved Company Operations Manual as applicable to the duties and responsibilities.

### (14) Helicopter Surface Contamination Training

An approved surface contamination initial and recurrent training program is required for all operations personnel to ensure they are aware of hazards and procedures for ice, frost and snow critical contamination on helicopters. The training program shall include:

- (a) responsibility of the pilot-in-command and other operations personnel;
- (b) regulations related to operations in icing conditions;
- (c) weather conducive to ice, frost and snow contamination;
- (d) inspection before flight and removal of contamination;
- (e) in-flight icing recognition; and
- (f) hazards related to critical-surface contamination by ice, frost and snow.

### (15) Minimum Equipment List (MEL) Training

When a Minimum Equipment List (MEL) has been approved for use on a helicopter type, the air operator shall provide the following training to flight crew members, maintenance personnel, and to persons exercising operational control as applicable:
(amended 2004/12/01)

- (a) training for maintenance personnel shall include instruction on those sections of the Maintenance Control Manual which address the MEL, placarding of inoperative equipment, maintenance release, and any other MEL related procedures;
  (amended 2004/12/01)
- (b) training for flight crew members and operational control personnel shall include instruction on the purpose and use

of an MEL, air operator MEL procedures, elementary work as applicable and the responsibility of the pilot in command;
(amended 2004/12/01)

- (c) recurrent training shall be conducted when required to ensure air operator personnel are aware of any changes to the MEL or MEL procedures.

**(16) Transportation of Dangerous Goods**

All training required by the Transportation of Dangerous Goods Regulations.

**(17) Lower than Standard Take-off Weather Minima (RVR 600 feet)**

Authority to conduct 600 RVR take-offs shall be subject to approval of a training program using an approved synthetic training device for the type of helicopter to be used and capable of depicting RVR 600' take-off conditions. Training is required for the pilot-in-command only unless the air operator authorizes the second-in-command to conduct 600 feet RVR take-offs in which case the second-in-command shall complete the same training.

The training program shall include:

- (a) take-off alternate requirements;
- (b) one engine inoperative performance requirements;
- (c) responsibility for obstacle clearance and visibility requirements;
- (d) take-off runway requirements;
- (e) helicopter equipment requirements;
- (f) pilot qualification requirements; and
- (g) training in the synthetic training device shall include normal take-offs under RVR 600 feet conditions and

rejected take-offs under RVR 600 feet conditions, including engine failures and system malfunctions.

**(18) Lower than Standard Decision Height**

**Category 1 Instrument Landing system Approach Minima**

**Reported Visibility RVR 1200 feet - Decision Height 100 feet**

Authority to conduct approaches to 100 feet DH with 1200 RVR is subject to approval of a training program using an approved synthetic training device for the helicopter type to be used. The training device shall be capable of depicting IMC to 100 feet DH.

The training program shall include:

- (a) capabilities and limitations of the ILS and visual aids;
- (b) operational characteristics and limitations of the airborne system to be used such as the flight director, automatic approach coupler and systems and devices peculiar to the applicant's installation, such as missed approach guidance and failure warning systems;
- (c) individual crew duties, including approach briefing, two-pilot challenge and response communication rule, pilot incapacitation procedures and pilot-monitored approach procedure with emphasis on the need to continually monitor flight instruments until the attitude and descent path have been visually assessed; and
- (d) training in the synthetic training device shall include the effects of wind shear and turbulence, recognition and reaction to malfunctions encountered prior to and after reaching the missed approach point, ILS approaches to landings from 100/1200 feet RVR conditions and missed approaches during which practical malfunctions and emergencies are introduced.

**(19) Area Navigation Systems (RNAV)**

- (a) **General Training**
  (amended 2003/03/01)
    - (i) To qualify for the use of RNAV systems on IFR operations, an air operator shall have an approved flight crew training and qualifications program for use of the system. Flight crew shall have completed the appropriate training and have completed an in-flight check or an equivalent check in an approved synthetic training device. This qualification check shall be conducted by a Transport Canada inspector or an authorized air operator check pilot.
    - (ii) Training shall be in the following areas:
        - (A) pre-flight;
        - (B) normal operation of the system;
        - (C) procedures for manually updating the system;
        - (D) methods of monitoring and cross checking the system;
        - (E) action in the event of discrepancy between systems and method of determining which is the most accurate or reliable system;
        - (F) the procedure for regaining track after deliberate or accidental deviation from the cleared track;
        - (G) Standard Instrument Departure (SID), Standard Terminal Arrival Route (STAR), and terminal procedures (if applicable);
        - (H) operation in areas of compass unreliability;
        - (I) malfunction procedures, including re-synchronization (if applicable);

- (J) terminal procedures;
- (K) waypoint symbology, plotting procedures and record keeping duties/practices; and
- (L) post-flight.

- (b) **Ground Training - Non-Integrated Receivers (Panel Mount GPS Receivers)**
(amended 2003/03/01; no previous version)

  An air operator shall ensure that the training program candidates are trained to proficiency in each of the elements associated with the following areas:

  - (i) Knowledge with respect to the following:
    - (A) the GPS system, including:
      - (I) GPS system components and aircraft equipment;
      - (II) the composition of satellite constellation;
      - (III) the minimum number of satellites required for 2-D and 3-D navigation;
      - (IV) the basic concept of satellite ranging;
      - (V) factors affecting the accuracy of GPS signals; and
      - (VI) the World Geodetic Survey 84 (WGS 84) datum and the effect of using any other datum;
    - (B) human factors applicable to the use of GPS and how errors may be reduced or eliminated;
    - (C) company standard operating procedures for using GPS units; and
    - (D) procedures for reporting GPS problems and database errors.

- (ii) Ability to perform the following operational tasks:
  - (A) select appropriate operational modes;
  - (B) recall categories of information contained in the database;
  - (C) predict RAIM availability;
  - (D) enter and verify user defined waypoints;
  - (E) recall and verify database waypoints;
  - (F) interpret typical GPS navigational displays including latitude/longitude, distance and bearing to waypoint, course deviation indication (CDI), desired track (DTK), track made good (TMG), actual track (TK), cross track error and any other information appropriate for the equipment used;
  - (G) intercept and maintain GPS defined tracks;
  - (H) determine navigation information appropriate for the conduct of the flight including ground speed (GS), estimated time of arrival (ETA) for next waypoint and destination;
  - (I) recognition of waypoint passage;
  - (J) use of 'direct to' function;
  - (K) link enroute portion of GPS flight plan to approach;
  - (L) conduct SIDs, STARs, terminal area procedures and holds;
  - (M) retrieve, verify and conduct GPS stand alone approaches; and
  - (N) conduct GPS missed approaches.

- (iii) Ability to conduct the following operational and serviceability checks:
  - (A) database currency and area of operation;
  - (B) receiver serviceability;
  - (C) RAIM status;
  - (D) CDI sensitivity;
  - (E) position indication; and
  - (F) number of satellites acquired and, if available, satellite position information.
- (iv) Ability to recognize and take appropriate action for all GPS warnings and messages including, where applicable:
  - (A) "loss of RAIM";
  - (B) "2D navigation";
  - (C) "In Dead Reckoning Mode";
  - (D) "database out of date";
  - (E) "GPS fail";
  - (F) "barometric input fail";
  - (G) "power/battery low" or "fail";
  - (H) "parallel offset on"; and
  - (I) "satellite fail".

- (c) **Ground Training - Integrated Receivers (Flight Management Systems)**
  (amended 2003/03/01; no previous version)

  An air operator shall ensure that the training program candidates are trained to proficiency in each of the elements associated with the following areas:

- (i) Knowledge with respect to the following:
  - (A) the GPS system and theory of operation, including:
    - (I) GPS system components and aircraft equipment;
    - (II) the composition of satellite constellation;
    - (III) the minimum number of satellites required for 2-D and 3-D navigation;
    - (IV) the basic concept of satellite ranging;
    - (V) factors affecting the accuracy of GPS signals; and
    - (VI) the WGS84 datum and the effect of using any other datum; and
  - (B) human factors applicable to the use of GPS and how errors may be reduced or eliminated (i.e. maintaining situational awareness);
- (ii) Ability to perform the following operational tasks:
  - (A) predict RAIM availability;
  - (B) link enroute portion of GPS flight plan to approach;
  - (C) conduct GPS stand alone approaches; and
  - (D) conduct GPS missed approaches;
- (iii) Ability to conduct the following operational and serviceability checks:
  - (A) RAIM status;
  - (B) CDI sensitivity; and

        - (C) number of satellites acquired and, if available, satellite position information;
    - (iv) Ability to recognize and take appropriate action for all GPS warnings and messages including, where applicable:
        - (A) "loss of RAIM";
        - (B) "2D navigation";
        - (C) "GPS fail";
        - (D) "barometric input fail"; and
        - (E) "satellite fail".
- (d) **Flight Training**
  (amended 2003/03/01; no previous version)
    - (i) Pilots shall complete flight training in the use of GPS for approach and other associated duties for each crew position they are authorized to occupy. Flight training may be completed in an aircraft, or in a level A or higher simulator that is equipped with the same model of GPS receiver (or a model determined by the Minister to be sufficiently similar) that is installed in the company aircraft.
    - (ii) Flight training shall be conducted by a designated training pilot who has completed the company ground training program approved by the Minister, and demonstrated proficiency in the use of the model of GPS (or a model determined by the Minister to be sufficiently similar), to an approved check pilot.
    - (iii) The following initial flight training and checking, and currency requirements apply to aircraft operated under Subpart 703 of the *Canadian Aviation Regulations* conducting single-pilot IFR GPS approaches where persons other than flight crew are

carried. Before a pilot is assigned as the pilot-in-command (PIC) of a single-pilot IFR operation using GPS for an instrument approach, the following requirements shall be met:

- (A) within the preceding ninety days, and while under the direct supervision of a designated training pilot, the pilot shall conduct a minimum of ten (10) GPS approaches of which:
  - (I) five (5) approaches are conducted in actual or simulated instrument meteorological conditions (IMC) to the prescribed landing minima,
  - (II) three (3) approaches, including a published missed approach, at least two of which are conducted in actual or simulated IMC, and
  - (III) two (2) approaches are conducted using different initial approach waypoints (IAWPs);
- (B) completion of all of the requirements listed in clause (A) shall be recorded in the pilot's training file together with the following information:
  - (I) registration and type of the aircraft, or type of simulator, used for the GPS approaches;
  - (II) manufacturer and model number of GPS equipment used;
  - (III) date, name and number of approaches conducted in total, in IMC, with missed approaches and from which IAWP; and
  - (IV) certification by the designated training pilot attesting to the training given to the pilot;
- (C) the pilot shall successfully demonstrate his/her proficiency in GPS operations as part of a PPC or as a separate check ride conducted by an approved

company check pilot or a Transport Canada Inspector and shall be certified as proficient; and

- (D) currency requirements shall be demonstrated by conducting GPS instrument approaches during the PPC.

**(20) Transportability of Pilot Proficiency Check**

Transportability of Pilot Proficiency Checks from one air operator to another is permitted subject to the hiring air operator providing the following training, which shall be specified in the approved operations/training manual:

- (a) company indoctrination;
- (b) pilot ground and emergency procedures training on each type of helicopter the pilot is assigned, sufficient to cover the air operator procedures and equipment differences;
- (c) standard operating procedures review; and
- (d) the hiring air operator records the PPC validity and expiration date in company records.

**(21) Survival Equipment Training**

Training for all crew members shall include the following:

- (a) survival concepts;
- (b) contents of the survival equipment kit; and
- (c) how to use the survival equipment carried on board as appropriate for the operation.

**(22) Aircraft Servicing and Ground Handling Training for Pilots**

- (a) Fuelling procedures:

    - (i) types of fuel, oil and fluids used in the helicopter;
    - (ii) correct fuelling procedures; and
    - (iii) procedures for checking fuel, oil and fluids and the proper securing of caps.
- (b) use of tow bars;
- (c) installation of protective covers on the helicopter; and
- (d) procedures for operating in cold weather, such as:
    - (i) moving the helicopter out of a warm hangar when precipitation is present;
    - (ii) procedures for applying de-icing and anti-icing fluids for the helicopter type including critical flight controls post application inspections; and
    - (iii) engine and cabin pre-heating procedures, including proper use of related equipment.

**(23) Persons Assigned on Board Duties**

Where an air operator has assigned on-board duties to a non-flight crew member, that person shall be given adequate initial and annual training to perform the procedures relevant to the duties with which the person is to be involved including, as applicable:

- (a) the authority of the pilot-in-command;
- (b) means of communication;
- (c) a general description of the helicopter in which the person is to serve and the proper use of cabin installed systems controls;
- (d) procedures for the handling of normal, abnormal, and emergency situations including:

    - (i) safe movement in the vicinity of the helicopter and safe movement to and from the helicopter;
    - (ii) briefing of passengers;
    - (iii) handling of passengers;
    - (iv) securing of the cabin;
    - (v) location, operation and use of emergency, life-saving and survival equipment carried, including practical training;
    - (vi) fire fighting, including practical training;
    - (vii) location, operation and use of emergency exits, including practical training;
    - (viii) passenger preparation for an emergency landing or ditching, including practical training; and
    - (ix) evacuation, including practical training; and
- (e) knowledge of the relationship of the procedures with respect to those of the other crew members.

**(24) Controlled Flight into Terrain (CFIT) Avoidance Training**

Air operators shall provide the following initial and biennial CFIT avoidance training to all flight crew members operating helicopters approved for flight under instrument meteorological conditions:
(amended 2000/06/01; no previous version)

- (a) factors that may lead to CFIT accidents and incidents;
- (b) CFIT prevention strategies; and
- (c) methods of improving situational awareness.

**(25) Crew Resource Management Training**
(effective 2019/01/31)

An air operator shall provide Crew Resource Management Training (CRM) to flight crew, flight attendants, dispatchers/flight followers, ground crew and maintenance personnel, as applicable, in accordance with paragraphs (a) and (b) of this subsection.

**Information Note**: The training described in this subsection will be tailored to the needs and size of the organization. CRM training should cover the operator's safety culture, its company culture, the type of operations and the associated procedures of the operator. This should include areas of operations that may lead to particular difficulties or involve unusual hazards.

(effective 2020/12/09)

- (a) Initial training is to be conducted every three years and shall cover the following items :
    - (i) threat and error management;
    - (ii) communications;
    - (iii) situational awareness;
    - (iv) pressures and stress;
    - (v) fatigue;
    - (vi) workload management;
    - (vii) decision making;
    - (viii) leadership and team building;
    - (ix) automation and technology management; and
    - (x) relevant case study.
- (b) Annual training in safety and emergency procedures shall comprise of a joint participation of flight crew, flight attendants, dispatchers/flight followers, ground crew and

maintenance personnel, as applicable, and shall cover the following items:

- (i) threat and error management;
- (ii) an in-depth review of a minimum of three additional core elements as found in subparagraphs (a)(ii) through (a)(ix);
- (iii) relevant case study;
- (iv) a review and discussion of current safety trends within the operator’s specific operation(s) and industry; and
- (v) crew member evacuation drills, including debriefing.