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Document Control Sheet
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Designation: Chairman for the Sub Committee Fixed Long Line Class D Best Practice

If you have suggestions for improving this document forward your recommendations to Helicopter Association of Canada Chair of the Air Taxi Committee.

Record of Issues

<table>
<thead>
<tr>
<th>Issue No</th>
<th>Issue Date</th>
<th>Nature of Amendment</th>
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<tbody>
<tr>
<td>1.0</td>
<td>November 2009</td>
<td>Compiled Draft</td>
</tr>
<tr>
<td>1.1</td>
<td>February 2011</td>
<td>Draft Revision</td>
</tr>
<tr>
<td>1.2</td>
<td>May 2011</td>
<td>Draft Revision</td>
</tr>
<tr>
<td>1.3</td>
<td>July 2011</td>
<td>Draft revision</td>
</tr>
<tr>
<td>1.4</td>
<td>August 2011</td>
<td>Final Draft for Committee review</td>
</tr>
<tr>
<td>1.5</td>
<td>February 2012</td>
<td>Final edit for submission for board review</td>
</tr>
<tr>
<td>1.6</td>
<td>March 2012</td>
<td>Final revision for Board submission</td>
</tr>
<tr>
<td>1.7</td>
<td>October 2012</td>
<td>Edits as directed by HAC BOD</td>
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Preamble
The Helicopter Association of Canada would like to thank the following people and the companies they represented at the time, in their efforts and contributions to the creation of the Best Practice:

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Special thanks to:
To the many others who offered advice, encouragement and help along the way.
1.0 Introduction

1.1 Purpose
The HAC Fixed Long Line Class D Best Practice is meant to serve as guidance for helicopter operators when developing, maintaining and training their respective Fixed Long Line Class D Programs (here in also referred to as Class D program(s)). It also highlights interaction with the End User Organization (EOU) that is supplying the technicians and possible the Static Long Line Class D gear.

1.2 Scope
This best practice is intended to be reviewed and understood by HAC Members, Operators and clients of operators involved with Fixed Long Line Class D operations.

1.3 Document Layout
The HAC Fixed Long Line Class D Best Practice Document structure consists of 9 chapters (including this Introduction). Each chapter is divided into Sections (general headings). Each chapter is numbered with Sections using incremental decimal numbering.

1.4 Chapter Purpose & Scope
Each chapter begins with Purpose and Scope sections. The Purpose section is meant to summarize the chapter’s intent. The Scope section describes who should review and be knowledgeable of the Chapter material.

1.5 Basic Class D Requirements
For a Helicopter Company to participate in Fixed Long Line Class D operations it must at a minimum:
- Have Company Operations Manual that contains a Class D section.
- Have Transport Canada approved Company Operations Specification for Class D.
- Follow the appropriate sections of CASS and CARS.
1.0 Introduction, continued

1.6 Fixed Long Line Class D Best Practice

This Best Practice lays out guidance on pilot selection, training, operations, risk management strategies and assurance for Fixed Long Line Class D work. It describes a Helicopter Company’s in house Class D program. The Helicopter Company’s Class D program defines internal pilot selection and training. Final crew training (EUO technician & pilot) and specific Class D task training are done in conjunction with the participating agency/company to meet Transport Canada requirements.

Figure 1 Static Long Line Class D Best Practice
2.0 Pilot Qualification Prior to Class D Training

2.1 Purpose
This Chapter will define the qualifications and proficiency needed for pilots to participate in a Fixed Long Line Class D program (here in also referred to as Class D program(s)). The Class D program should quantify what pilot past experiences and demonstrable skills are needed to enter the training.

2.2 Scope
This Chapter is meant to be reviewed and understood by persons responsible for a Helicopter Company’s Class D Program or tasked with the establishment of such a program.

2.3 Overview
The Helicopter Company Class D program consists of the following parts:
- Pilot Selection
- Pilot Training
Pilot Selection is the first part of the program.

2.4 Pilot Experience & Demonstrable Competencies
The validation of Pilot experience is the responsibility of the Company Chief Pilot.

Selection of Pilot Candidates for the Class D training is the responsibility of the Company Operations Manager.

Pilots entering in to Class D operations training will have the following minimum experience as set out in the CASS:
- Hold a current PPC/ PCC
- Have initial and recurrent training by company as per C.O.M. and CARS.
- At least 2,000 hours total helicopter pilot flight time;
- At least 200 hours on the aircraft type which the pilot is to fly on initial assignment to rescue operations and at least 25 hours on types to be used thereafter;
- At least 1,000 hours experience in the operational area the Class D service is to be provided in. For the purposes of this document the definition of a mountainous environment will be found in Designated Airspace Handbook (TP 1820) - Designated Mountainous Areas 1 or 2.
2.4 Pilot Experience & Demonstrable Competencies, continued

Additional requirements should include:

- Approved HAC Mountain Course for operations in Designated Airspace Handbook (TP 1820) - Mountainous Areas 1 or 2.
- 100 hrs. of long line/Vertical reference flying
- Demonstrate competencies in flight operations (handling, decision making, etc.) in the representative operational area or an area of equal or greater difficulty than that of the proposed operational area (area of the Class D operation is to be performed). Operations staff should pay careful attention to regional operational differences and their impact on the flying profile and pilot candidates past experience. For example: A Chief Pilot may deem a pilot with mountain flying competency capable of performing HETS in a prairie operational area even with out any prairie experience. The reverse may not be considered to be true.
- If Pilot Candidate has prior Class D training on different Aircraft types than the Pilot Candidate will be using for HETS then the Pilot Candidate should have 50 hrs. on Aircraft type that will be used for the Class D tasking.
- 10 hrs. long lining on type.
- Personal suitability to task.

2.5 Demonstrable Pilot Skill Set

Validation of minimum skill performance required to enter the Helicopter Company Class D program is the responsibility of the Company Chief Pilot.

Pilots entering in to Class D operations and training should have the following minimum demonstrable skills:

- Appropriate control of aircraft in representative operational area:
  - During reconnaissance of unprepared landing spots demonstrate appropriate knowledge of wind direction, terrain influence on wind direction and resulting influence on appropriate approach/ departure paths.
  - Landing and takeoff from unprepared landing spots while demonstrating awareness of power requirements, wind direction, terrain influence on wind direction and resulting influence on approach/ departure paths.
  - Response to emergencies in keeping with the appropriate standards in the Company Pilot Proficiency Check process.
- Appropriate control of long line load in representative operation:
  - Ability to handle loads with precision and in a controlled manner demonstrating appropriate speed and caution; while inserting and extracting representative loads in confined spaces and other locations that are representative of operational area.
2.0 Pilot Qualifications Prior to Class D Training, continued

2.5 Demonstrable Pilot Skill Set, continued

- Demonstrate knowledge of:
  - Task related risks
  - Mountain terrain features, wind direction, and influence of terrain on wind direction and speed.
  - Specific environmental hazards and their impact on operations. Example: working in the wire environment understanding type of wires structure and hazards related to working in the energized environment.

- Demonstrate appropriate related skill in vertical reference operations:
  - Power management: Pilot Candidate can remain with in aircraft limits during reference work.
  - Aircraft Control: Pilot Candidate controls aircraft in an appropriate manner during long line operations.
  - Load Control: Pilot Candidate controls load in in such a way that the load travels in a smooth manner and arrives on target with out excessive swing or altitude change.
  - Load Accuracy: Pilot Candidate controls the load in a way that no inadvertent contact with ground or obstacles occurs. Pilot Candidate can verbalize intended target area for load insertion and can place the load with in the area identified.
  - Rate of descent: Pilot Candidate does not enter a rate of decent or flight profile that could lead to vortex ring state.
  - Terrain/obstacle clearance: Pilot Candidate can show appropriate depth perception to accurately estimate clearances from terrain and obstacles fro aircraft and load.
  - Use of external gauge(s) (if available- recommended configuration if possible) and/ or internal gauge(s): Pilot Candidate can verbalize maximum and minimum values attained during operation of first limiting indicator for type during reference work.

- Demonstrate precision long line skills (with a standard long line no less than 50ft long) in the following scenarios or equivalent scenarios that will demonstrate the needed level of performance (as deemed appropriate by Chief Pilot). Long line length used should be representative of operational area needs.
  - Hold a human representative load (250 lbs) in a 2m sq. area 1-2 m off the ground for 2 minute.
  - With a representative load (250lbs) transition smoothly from forward flight to a hover while placing the load in a 1m sq. area without a prolonged hover (< 1minute)

* Pilot Candidates should be aware Class D training will require completion of long line performance drill.
3.0 Initial Pilot Class D Training

3.1 Purpose
This Chapter describes the training steps for a Helicopter Company Fixed Long Line Class D program’s (here in also referred to as Class D program(s)) Initial Class D Pilot Training. The program is meant as a way for Helicopter Companies to internally prepare pilots for Class D tasking. The training provides the helicopter company with the assurance that the pilot is competent to undertake the Class D task. To meet Transport Canada requirements for provision of Class D service, pilots will need to complete Crew Training (6.0) with the respective EUO.

3.2 Scope
This Chapter is meant to be reviewed and understood by:
- Designated Company person(s) responsible for a Helicopter Company’s Class D Program (or establishing such a program).
- Company designated person(s) responsible for Flight Training
- Company Chief Pilot & Company Operations Manager

3.3 Overview
The Helicopter Company Class D Training will cover:
- Classroom (ground school) training
  - Initial/ recurrent Pilot Candidate training to proficiency.
  - The Pilot Candidate flight training syllabus can be combined in one session or done over several sessions; as deemed appropriate by the Chief Pilot provided the training goals are met and the Pilot Candidate proficiency is demonstrated in:
    - Vertical Reference
    - Class D Flight Training
    - Emergency Procedures Flight Training
3.0 Initial Pilot Class D Training, continued

3.4 Training Records & Grading

Training records should be kept for each training session for a period of three years. The Helicopter Company is solely responsible for the generation, retention and upkeep of the Pilot Class D training records. Training records should use a consistent method of recording performance in the different areas of skills and knowledge.

Pilot Candidates competency will be recorded on a 1 to 4 scale.

- 4 – Exceeds Requirement
- 3 – Satisfactory: Pilot meets the objectives.
- 2 – Satisfactory with Briefing: Pilot does not meet the objectives efficiently, but does not compromise the safety of the aircraft and crew.
- 1 – Unsatisfactory: Pilot does not meet the objectives and/or compromises the safety of the aircraft and/or crew.

3.5 Determining Proficiency of Pilot Candidates

Designated Trainers should record performance after each training flight. The flight-training curriculum should be reflected in the different performance (skill and knowledge) categories of the training record. There should be definitive criteria for determining when a Pilot Candidate has demonstrated proficiency and when the Pilot Candidate requires further training.

Utilizing the recording method described in 4.4 a program may determine proficiency requirements in a following manner (example only):

- **Pilot Candidate deemed competent**: no score lower than 3 in any performance category.
- **Pilot Candidate requires additional training in specific categories**: any single recording of 2 in any category.
- **Pilot Candidate requires additional training**: any score of 1 or scoring 2 in two categories or more will require the Pilot Candidate to re-commence of complete training curriculum.

3.6 Helicopter Company Class D Classroom Trainers

Flight training should be conducted by:

- Company Check Pilot
- Or other Company designated person responsible for training.
- Where the Company Operations Manager approves and deems appropriate third party training may be done providing the training syllabus meets the Company Operations Manual training requirements.

3.7 Helicopter Company Class D Flight Trainers

Class D Flight Training is to be conducted by a designated trainer as appointed by the Helicopter Operator. The designated flight trainer will have an appropriate background in instruction (as deemed adequate by the Chief Pilot). The trainer will be competent at instructing: in flight emergencies, vertical reference work, and have Class D experience. Example: Company Training Pilot or Chief Pilot or an external qualified trainer with no less than 3 years of Class D experience and at least 10 training cycles of live load operations above experience and skill.
3.0 Initial Pilot Class D Training, continued

3.8 Classroom Training & Syllabus

Classroom (ground school) can occur with the partnered EUO or as a standalone pilot training course. The course should initially consist of 8 hours of training concluding with a written examination. For Recurrent Classroom Training see 5.4.

The classroom syllabus should include:

- **Regulatory Requirements:****
  - Review of CASS and CARS information related to Class D

- **Company Information:****

- **Aircraft Performance:**
  - Example: Weight and balance configurations, WAT chart, performance charts, AC manual and AC limitations in configuration. Note: a 10% power reserve is required for mission.

- **Human Factors (training should also be done with EUO Crew):****
  - Essential Crew Resource Management specific for tasking.
    - The psychology of an emergency and hierarchy of operational safety (self, team, patient)
    - Highlight of difference in nature of work- higher sense of urgency, greater on site operational pressures to perform task in face of increasing risk.
    - Identifying of crew decision making workload and the sharing responsibilities
    - Decision making process and final decision responsibility for aircraft safety with non-flying crew
    - Fundamentals of communication and common communication failures.
    - Communication protocol between Pilot and non-flying crew
      - Check phrases
      - Warning phrases

  - Pilot Decision Making Course to be completed prior to training

- **Wire Environment Awareness & Flight Operations:**
  - If appropriate in operational area. Course can be internally delivered by Helicopter Operator or provided by an external provider.
3.0 Initial Pilot Class D Training, continued

3.8 Classroom Training, continued

The classroom syllabus continued:

- Description of Task
- Decision-making criteria for Pilot to perform Task vs. suspend Task.
- Agency/ Company Provider Operating Guidelines (optional if content will be covered in Crew Training):
  - Agency general briefing
    - Topics that explain the agency policies & procedures
  - Program specific briefing
    - Structure (Org chart)
    - Safety program
    - Operational Policy & Procedure; SOPs
    - Pilot and Crew Roles and responsibilities
    - Review relevant sections of Operations Manuals including equipment
- Review of equipment/system components, assembly, limitations & use.
- Equipment orientation/ inspection/ servicing/ maintenance/ documentation/ flight manual supplements
- Review communications:
  - Specific commands and responses as related to performance of task and emergency procedures.
  - Radio communications
  - Hand communication
- Demonstrate proficiency in installation and rigging of the aircraft (optional if covered in Crew Training)
- Understanding of Crewmember responsibilities

3.9 Initial Classroom Training Written Test

The written test will be no less than 25 questions and accurately reflect the content of the Classroom session.
### 3.0 Initial Pilot Class D Training, continued

#### 3.10 Pilot Pre-Flight Briefings

A Pre Flight Briefing for all Class D flight training (per flight) will be conducted by the flight trainer and Pilot Candidate. It will include:

- W&B calculation documented
- Performance calculation documented (as appropriate for AC type), this includes maintaining a 10% power reserve during mission.
- Weather review
- Discussion on how emergencies will be carried out.
- Typical go/ no go decision tools
- Hover entry and exit procedures
- Mission progression- specific to the type of Class D to be performed
- Entanglement and emergency procedure during training.
- If precision vertical reference drill is to be performed then discuss specifics of the drill.
- Ensuring the training aircraft has had a passing power assurance check with in an appropriate period of time prior to training commencement.

#### 3.11 Pilot Candidate Demonstration of Proficiency in Vertical Reference

Prior to Class D Flight Training the Pilot Candidate will be able to demonstrate appropriate vertical reference proficiency (i.e. load control and precision movements). The Helicopter Company Class D program should have a defined precision long line test that adequately measures a Pilot Candidate’s vertical reference skills. An example of a precision demonstration of vertical reference:

**Description:** Using a standard long line no less than 50 ft. pickup an approximate 100 lb. to 200 lb. (45 kg. To 91 kg) Load - i.e. log or drum and hover with the load in a vertical position about **1 to 2 meters** over a target circle of **2 meter diameter**. Pilot will hold hover for **two minutes**.

**Location:** On open ground away from trees or other obstacles.

**Objective:** To observe the pilot’s depth perception. Observe the amount of movement of the helicopter itself as well as the movement of the external load.

Other tests may be performed such as the Barrel Test (see Appendix A). EUOs may wish to observe a reference test to confirm pilot competency.

**Note:** EUOs may wish to observe a vertical reference test to confirm pilot competency. The majority of End User Organizations (i.e. Parks Canada, Province of BC; EMBC approved SAR groups, BC MOF, other qualified EUOs, etc. set out in their policies a pilot approval process, which may include carrying out a pilot vertical reference proficiency evaluation or other operational evaluation of the pilot. The air operator and EUO have the option of jointly coordinating the vertical reference evaluation phase.
3.0 Initial Pilot Class D Training, continued

3.12 Pilot Class D Flight Training

Class D Flight Training conducted by Helicopter Operator’s designated trainer. Example: Company Training Pilot or Chief Pilot or an external qualified trainer with no less than 3 years of Class D experience and at least 10 training cycles of live load operations. A standard long line may be used in place of a Class D system. The intent of the flight is to build vertical reference proficiency with a representative live load. Pilot Candidates will train until able to demonstrate competency.

- The flight training will consist of:
  - Placing representative loads in increasingly difficult areas (confined or mountainous areas).
  - Demonstrate appropriate speed and precision of load placement
  - Insertion techniques in operational environment
  - Extraction techniques in operational environment
  - Precision hovering
  - Precision load control in confined areas
  - Approach aborts will be demonstrated.

- A precision long line drill. The drill should be the same drill used for validating pilot proficiency. An example of a precision drill for Static Long Line is the Barrel Test (3 Barrel Drop Zones X 3 circuits in a time that the Designated Trainer deems appropriate for conditions. 6 minutes to complete the drill, in calm, favorable conditions, has been used by a variety of organizations as a standard.).

Sites used should be representative of the level of difficulty of the operational environment. The pilot candidate will demonstrate ability to control the load, maintain hover for duration needed for tasking, not over react to any errors or unintended load movements to the satisfaction of the trainer.

3.13 Training for In Flight Emergencies

In Flight Emergency training for all Class D task types will consist of two main training methods:

1. Briefing of procedures.
2. Flight training consisting of simulating the specific type of emergency during the Class D configuration and in appropriate phase of flight operations (use of standard long line acceptable).
3.0 Initial Pilot Class D Training, continued

3.14 Briefing for In Flight Emergencies

When training in flight emergencies during Class D Operations the following abnormal flight/ emergencies will be briefed prior to Emergency Flight Training:
- Jammed pedals, left right neutral
- Loss of tail rotor thrust
- Hydraulic failures
- Engine failure
- Emergency and caution lights
- Fire in Cabin
- Fire in Engine
- Communication Failure

In addition to above these topics will be briefed only:
- Entangled Line
- Injured Technician

The following emergencies will be simulated in flight with representative load and long line.
- Jammed pedals, left right neutral
- Hydraulic failures
- Engine failures in cruise (optional).

*Please note: Performing auto rotational training (power recover) with a long line is at the discretion of the helicopter company. The risk during the exercise is significantly increased and specific training precautions should be taken to mitigate this increase in risk.*

Where appropriate the simulated emergency is carried out with the pilot in command (Pilot Candidate) signaling when the load would be released. At the point the pilot indicates that he/ she would release the load, the training pilot evaluates the appropriateness of the height to finish the emergency successfully and 'survivability' of the release conditions for Class D Technicians/ Operators. It is recommended that only essential crew for the purpose of training should be on board. Pilot Candidates and Training Pilot should practice/ simulate Essential Crew and Pilot communication during the exercises to help enforce emergency communication protocol between Essential Crew members and Pilot in Command.

**All Abnormal Flight/ Emergency training** to be conducted with Company designate trainer (restrict other crew or observers on board wherever possible) with standard long line attached with representative load. Pilot Candidates will train until able to demonstrate competency.
3.0 Initial Pilot Class D Training, continued

3.16 Class D Pilot Proficiency Summary

Proficiency for Initial Class D trained Pilot Candidates will be demonstrated thru performance of:
- Successful completion of written test after classroom session.
- Vertical Reference Test (optional for recurrent trainees with currency in Vertical Reference Work) *Barrel Test
- Class D Briefing demonstrating appropriate knowledge
- Class D Training Flights demonstrating appropriate vertical reference skill and response to emergencies during vertical reference operations (with standard long line and representative load).
4.0 Pilot Class D Recurrent Training

4.1 Purpose
This Chapter is meant to detail steps for Fixed Long Line Class D Pilot Recurrent Training (here in also referred to as Class D program(s)). The Helicopter Company Class D Recurrent Training provides the helicopter company with the assurance that the pilot is proficient to perform the Class D task.

Note: To meet Transport Canada requirements for provision of Class D service, pilots will need to complete Crew Training (5.0) with the respective EUO.

4.2 Scope
This chapter is to be reviewed and understood by Company Class D designated trainer: CCP, Chief Pilot Company, Operations Manager.

4.3 Overview
Recurrent Pilot Class D training and demonstration of proficiency will:

- Occur every 12 months. Valid to the first day of the thirteenth month
- Be conducted by Helicopter Company designated training pilots.

Example: Company Training Pilot or Chief Pilot or an external qualified trainer with a total of 3 years of Class D experience and at least 10 cycles of live load operations.

4.4 Training Records
As per 3.4. Training records should be kept for each training session for a period of three years. The Helicopter Company is solely responsible for the generation, retention and upkeep of the Pilot Class D training records. Training records should use a consistent method of recording performance in the different areas of skills and knowledge. Pilot Candidates competency will be recorded on a 1 to 4 scale.

- 4 – Exceeds Requirement
- 3 – Satisfactory: Pilot meets the objectives.
- 2 – Satisfactory with Briefing: Pilot does not meet the objectives efficiently, but does not compromise the safety of the aircraft and crew.
- 1 – Unsatisfactory: Pilot does not meet the objectives and/or compromises the safety of the aircraft and/or crew.
4.0 Pilot Class D Recurrent Training, continued

4.5 Determining Proficiency of Pilot Candidates

Designated Trainers should record performance after each training flight. The flight-training curriculum should be reflected in the different performance (skill and knowledge) categories of the training record. There should be definitive criteria for determining when a Pilot Candidate has demonstrated proficiency and when the Pilot Candidate requires further training to attain proficiency.

Utilizing the recording method described in 4.4 a program may determine proficiency requirements in a following manner (example only):

- **Pilot Candidate deemed competent**: no score lower than 3 in any performance category.
- **Pilot Candidate requires additional training in specific categories**: any single recording of 2 in any category.
- **Pilot Candidate requires additional training**: any score of 1 or scoring 2 twice will require the Pilot Candidate to re-commence training curriculum.

4.6 Recurrent Class Room Training

Recurrent training curriculum should contain the same content as per 3.8. Recurrent Classroom training does not require a predetermined length of time provided the curriculum is covered in a manner that allows for student learning and classroom interaction. Recurrent ground training will conclude with an exam.

The written test will be no less than 25 questions and accurately reflect on the content of the Classroom session (as per Section 3.9)

4.7 Recurrent Classroom Training Written Test

As per 3.10. **A Pre Flight Briefing for all Class D flight training (per flight) will be conducted**. It will include:

- W&B calculation documented
- Performance calculation documented (as appropriate for AC type), able to maintain a 10% power reserve for mission configuration
- Weather review
- Discussion on how emergencies will be carried out.
- Typical go/ no go decision tools
- Hover entry and exit procedures
- Mission progression- specific to the type of Class D to be performed
- Entanglement and emergency procedure during training.
- Ensuring the training aircraft has had a passing power assurance check with in an appropriate period of time prior to training commencement.

If precision vertical reference drill is to be performed then discuss specifics of the drill
4.0 Pilot Class D Recurrent Training, continued

4.9 Recurrent Pilot Class D Flight Training

Class D Flight Training conducted by Helicopter Operator’s designated trainer. Example: Company Training Pilot or Chief Pilot or an external qualified trainer with a total of 3 years of Class D experience and at least 10 cycles of live load operations. A standard long line may be used in place of a Class D system. The intent of the flight is to verify vertical reference proficiency with a representative live load. The recurrent Pilot Candidate does not need to perform the vertical reference test as they did in their initial Class D training. Pilot Candidates will train until able to demonstrate proficiency in precision long line vertical reference.

- The recurrent flight training will consist of:
  - The Pilot Candidate placing a representative load in confined areas and terrain similar to the intended operational area. Appropriate power management, selection of approach & departure paths, AC & load control and precision will be part of the skills demonstrated. In flight emergencies can be demonstrated at the same time provided pre-flight briefing is performed (see 4.11).

(A Pilot Candidate will be deemed current in Vertical Reference work and will not have to demonstrate proficiency providing they have vertical reference experience in the past 120 days and are deemed proficient by the Chief Pilot.)

If the Pilot Candidate proficiency is not met they will perform a vertical reference drill or continue to train until they can display proficiency to the Chief Pilot appropriate vertical reference skill.

4.10 Recurrent Training for In Flight Emergencies

In Flight Emergency training will consist of two main training methods:

1. Briefing of procedures.
2. Flight training consisting of simulating the specific type of emergency during the Class D configuration and in appropriate phase of flight operations (use of standard long line acceptable).

4.11 Briefing for In Flight Emergencies

When training in flight emergencies during Class D Operations the following abnormal flight/ emergencies will be briefed prior to Emergency Flight Training:

- Jammed pedals, left right neutral
- Loss of tail rotor thrust
- Hydraulic failures
- Engine failure
- Emergency and caution lights
- Fire in Cabin
- Fire in Engine
- Communication Failure

In addition to above these topics will be briefed only:

- Entangled Line
- Injured Technician
4.0 Pilot Class D Recurrent Training, continued

4.12 In Flight Emergency Training

The following emergencies will be simulated in flight with representative load and long line.

- Jammed pedals, left right neutral
- Hydraulic failures
- Engine failures in cruise (optional).

* Please note: Performing auto rotational training (power recover) with a long line is at the discretion of the helicopter company. The risk during the exercise is significantly increased and specific training precautions should be taken to mitigate this increase in risk.

Where appropriate the simulated emergency is carried out with the pilot in command (Pilot Candidate) signaling when the load would be released. At the point the pilot indicates that he/ she would release the load, the training pilot evaluates the appropriateness of the height to finish the emergency successfully and ‘survivability’ of the release conditions for Class D Technicians/ Operators. It is recommended that only essential crew for the purpose of training should be on board. Pilot Candidates and Training Pilot should practice/ simulate Essential Crew and Pilot communication during the exercises to help enforce emergency communication protocol between Essential Crew members and Pilot in Command

All Abnormal Flight/ Emergency training to be conducted with Company designate trainer (restrict other crew or observers on board wherever possible) with standard long line attached with representative load in accordance with regulations. Pilot Candidates will train until able to demonstrate competency.

Please note: The risk during the training exercises involving long line operations is significantly increased and specific training precautions should be taken to mitigate this increase in risk.

4.13 Recurrent Training Class D Pilot Proficiency Prior to Crew Training Summary

Proficiency for Recurrent Pilot Candidates will be demonstrated thru performance of:

- Successful completion of written test after classroom session.
- Class D Briefing demonstrating appropriate knowledge
- Simulated Class D Training flights using representative class D loads.
5.0 Crew Training

5.1 Purpose
The Chapter provides guidance for a Helicopter Company in regards to what:

- Crew Training syllabus should consist of.
- Pilots and rescuers will need to do in order to meet Transport Canada requirements.

5.2 Scope
This Chapter is meant to be reviewed by the:

- Helicopter Company Operations Manager
- Helicopter Company Chief Pilot
- End User Organization Accountable Manager
- End User Organization Instructors

5.3 Overview
Helicopter Companies should require the End User Organization (EVO) to establish that they have a training syllabus and can prove proficiency that meet the signed Memorandum of Understanding (see Chapter 8). Crew Training (crew is defined as the pilot in command, essential crew and rescue/ work technicians) must consist of both classroom and flight training. Crew Training allows the Helicopter Company (pilots) and the End User Organization (technicians) to:

- Train together and develop operational proficiency
- Meet Transport Canada Class D requirements

There needs to be a close working relationship between the helicopter operator and the end user organization. Operational training may include pilot skill confirmation by the end user organization. There may be a need to perform live load operational training to fulfill the Memorandum of Understanding. Refer CASS section 722. 21 (paragraph 4 & 5) CASS section 722(2)(b)(viii) and 722(4)

Operators should ensure they are dealing with a credible End User Organization and that the End User Organization can provide competent Crew.
5.0 Crew Training, continued

5.4 Classroom

Classroom training should include of:

- Review of End User Organization Operating Guidelines
- Review of Memorandum of Understanding
- Review case studies of what can go wrong and operational evolutions in the terrain they will be working in.
- Review of equipment & system components, assembly, limitations and use.
- Review communication:
  - Specific commands and responses as related to performance of task and emergency procedures
  - Radio communications
  - Visual communication
- Equipment orientation/ inspection/ servicing/ maintenance/ documentation
- Demonstrate proficiency in installation and rigging of the aircraft
- Understanding of Crewmember responsibilities
- People leading operations should review and understand evaluation of situations and how to determine appropriate response (go no go decision tools); be aware of aircraft limitations, CARS.

Training must include:

- Mock up training and review of:
  - Rigging of equipment
  - Communication procedures
  - Simulation of task (both technicians and pilot tasks).

5.5 Practical Ground Training

5.6 Time Counted Towards Transport Canada Requirements

Time spent performing operational training with Human External Cargo with one End User Group can count towards other End User Memorandum of Understanding HEC requirements. End Users should ensure that the past experience was of similar equipment, mission requirements and environments. Pilots will still need to attend all Crew Training for each End User Organization meeting all operational training with representative loads.

Time spent performing Class D Operations will count towards Memorandum of Understanding time requirements for Human External Cargo training requirements. Representative loads should be used to satisfy Crew Operational Training when pilot has previously met above stated time requirements. This allows pilots to minimize the total time they perform live load missions (training and real world) while maintaining requirements set out in CARS, CASS and the Helicopter Company’s MOU(s). This is in keeping with the spirit of Chapter 7.
5.0 Crew Training, continued

5.7 Flight Training, continued

Flight training will consist of:
- The briefing for the training session will cover:
  - Review:
  - Communication and planning:
    - Aircrew to review performance calculations. (Ensure aircraft has passed a power assurance check in an appropriate time length prior to training)
    - Specific commands and responses as related to performance of task and emergency response as related to task
    - Radio & Hand communications
  - Hover entry and exit procedures (optional)
  - Go/ no go decision tools
  - Mission progression
  - Crew Deployment
  - Review of Emergency Procedures: intercom failure, Aircraft Failure in OGE Hover, Catastrophic Failure and Part Power Loss
  - Emergency procedure during training.
    - Pilot/ Crew to conduct scenarios from start up to shut down requiring:
      - Use of decision tools to decide on go/ no go for mission
      - Recognizance of site (ensuring a 10% power margin exists for configuration used)
      - Appropriate mission tasks
    - Sites used should be representative of the level of difficulty of the operational environment.
    - Scenarios and total flight time for pilots and rescuers should satisfy the Memorandum of Understanding between Helicopter Company and the Participating Agency/ Company.

Human External Cargo flight time should be minimized but still meet Crew training needs as outlined in the specific MOU between End User Group and Helicopter Company. Training scenarios should highlight the requirements of the pilot tasks while allowing Crew to train in the environment into which they have been inserted. Additional End User Crew training and validation of competency in operating environment should occur outside the HETS training. The End User Organizations should provide some form of assurance that their crews are competent to operate in the environment into which they will be inserted.
6.0 Class D Operations

6.1 Purpose
This Chapter outlines the essential elements of End User Organization and Helicopter Company methods of work performing Class D tasks.

6.2 Scope
This Chapter is meant to be reviewed by the:
- Helicopter Company Operations Manager
- End User Organization Accountable Manager

6.3 Overview
After Crew Training the participating End User Organization and the Helicopter Company can provide Class D services if:
- All staff meets CARS and CASS requirements.
- A Memorandum of Understanding is in effect.

6.4 Equipment Storage
Class D equipment will:
- Be securely stored in an appropriate and secure designated area separate from other operational equipment.
- Equipment storage is appropriately labeled for easy identification.
- Have equipment logs available with system so history of use and inspections.

6.5 Maintenance & Inspection
Class D equipment will:
- Be maintained in an operational condition. Unless otherwise specified by the manufacturer or MOU it will be the providing End User Organization responsibility to maintain in an operational condition.
- Be inspected by a qualified* Class D operator/technician on a regular time interval, as well as, after each use prior to storage. Unless otherwise specified by the manufacturer or MOU it is the responsibility of the providing Helicopter Company/End User Organization to inspect and maintain the Class D system. Pilot will be familiar with inspection criteria.
- A means of tracking equipment expiry shall be in place. Unless otherwise specified by the manufacturer or MOU it is the responsibility of the providing Helicopter Company/EUO to track equipment expiry.
- Time expired or damaged equipment shall be tagged out and placed in quarantined area.

* Qualified in this case means operator/technician has received manufacturer training and displayed proficiency in the manufacturer’s care and inspection criteria.
6.0 Class D Operations, continued

6.6 Memorandum of Understanding
Memoranda of Understanding (MOU) or other written agreement such as a contract, which meets the requirements of the CARS and CASS shall exist between the air carrier and user group. If a MOU/agreement does not exist between a user organization and an air carrier then operations shall not proceed.

The MOU/agreement shall:
- Be reviewed annually by the air carrier and user organization.
- Specify an understanding that the owner of equipment is responsible for inspection, maintenance, storage, and record keeping.
- Contain a glossary of terms and commonly used acronyms.

6.7 Currency
A Pilot is deemed current in Class D operations when they have undergone:
- Initial or annual recurrent Class D Validation as per section 3.0 or 4.0
- Initial or annual recurrent crew training as per section 6.3 to meet the Memorandum of Understanding.
- Performed a Human External Cargo operation (training or otherwise) within the last 12 months. Live load flight time has met the Memorandum of Understanding, CASS, and CARs.
- Vertical reference work in the last 120 days and can display to the Chief Pilot appropriate precision control and speed for a Human External Cargo load in representative environment with a representative load and appropriate length of long line.

6.8 Communications
During Class D Operations pilots shall ensure:
- There exist specific commands and responses as related to performance of tasks and emergency procedures among essential crew.
- All involved have radio communication.
- In the event radio communications are not practical there exists a pre-mission agreed to method for hand communication.

During critical maneuvers crew and pilot should ensure:
- Sterile Cockpit practices are followed
- Radio silence is enforced on other persons with radios in the area allowing pilot and essential crew to communicate.
6.0 Class D Operations, continued

6.9 Mission Oversight and Flight Following

During any Class D operations there is sufficient oversight to ensure:
  o Adequate resourcing is supplied to the mission.
  o Oversight has set criteria and decision tools in place to accurately measure and decide (go- no go) the need to use Class D tasks appropriately.
  o Users conduct appropriate planning.
  o Methods to flight follow aircraft used during mission. Flight following can be done on site in situation or by other body off site provided the main objectives for the program are met. The person responsible has a method to trigger emergency response plan.

During any Class D operations there exists a method/ plan to provide appropriate emergency response to any accident/ incident during operations.

6.10 Emergency Response

It is the responsibility of the participating EUO/ Helicopter Company to establish:
  o Minimum crew (other than Aircrew) qualifications appropriate for work to be conducted.

It is the responsibility of the participating End User Organization to ensure:
  o Appropriate governing regulations (Work Safe BC. CLC, etc.) are followed for:
    o Risk assessment for work to be conducted.
    o Staff training requirements.
    o Staff competency and supervision requirements
    o Staff personal protection equipment is appropriate and available.

It is the responsibility of the participating End User Organization to ensure it has in place:
  o Appropriate safety reporting system is in place to capture hazard, incident and accident reports.
  o Safety Management System or equivalent to demonstrate appropriate management of reported events/ issues.
7.0 Risk Management

7.1 Purpose
This Chapter outlines common risk management strategies to minimize risk. A combination of strategies needs to be tailored to the specific tasks being undertaken by the Helicopter Company and End User Organization.

7.2 Scope
This Chapter is meant to be reviewed by the:
  o Helicopter Company Operations Manager or designate
  o End User Organization Accountable Manager

7.3 Training
During Class D training:
  o Pilot in Command calculates performance for given configuration and environment to ensure a 10% power reserve.
  o Throughout flight training, where practical representative loads should be used in substitution of human loads.
  o Only essential crew to be on board during missions and training.
  o Only Pilot Candidate and designated Pilot Trainer to be on board during emergency training.
  o Appropriate emergency response plan in place for training participants in the event of an accident/incident.
  o Pre training cycle planning meetings should be held prior to training cycles to clarify roles and responsibilities.
  o Overall exercise coordination by appointment of training supervision staff. Number and type of supervising positions dependent on type of training, End User Organization and Helicopter Company. (I.E. Common position titles: Exercise Coordinator, Incident Commander, and Safety Officer). Positions main function is to facilitate training activity and oversee safety.
  o ICS used for onsite operations.
  o Appropriate method of communication between all training participants and training supervisors.
  o Clear, concise common terminology and a method to communicate between all participants is recommended. Identification of an emergency or imminent danger or hazard are examples of issues that require easy notification between all participants.

7.4 Program Design
It is recommended that any system or program that has Class D tasks incorporated in to the work performed has:
  o Managers and Job Planners that have an oversight process that measures the risk and need for Class D tasks before staff is assigned to the work.
  o Mission/Work guidelines that describes the most common tasking
  o A hazard reporting system
  o Pre mission/work briefing.
  o Embedded risk management decision tools (example: go-no go) tools for crews participating in Class D operations.
  o Post mission/work debriefing.
7.0 Risk Management, continued

7.5 Execution of a Mission/Work

During the performance of Class D work (including emergency response) staff should consider:

- Ensuring simplest/lowest risk method of work is used before higher risk methods are undertaken. Each method should be evaluated using a consistent process that takes into account all relevant operational factors. A formal decision tool is recommended for operational leaders who are deciding actions in the field.
- Limiting the total time live loads are exposed to flight given the alternative does not expose crew or subjects to increased risk. For example choosing the two closest appropriate spots to begin and end a task could limit the total exposure for the live load.

Helicopter Companies should keep in mind that the use of Class D and the resulting risk of exposure to Human External Cargo need to be viewed in the context of the entire operation and the non-aviation risks associated with the task at hand. The tool is one option among many – each tool is chosen to achieve the goal and minimize the overall aggregate risk.

7.6 Helicopter Type Selection

The Helicopter Company, End User Organization (EUO) and Client (if a third party is contracting the service from the former two) should jointly determine helicopter type selection for Class D tasks prior to any task commencement. The selection should be based on risk assessment of the Class D task and operational environment. The risk assessment process should take into account relevant operational realities, including but not limited to:

- Total exposure time of live loads (including frequency of tasks)
- Type of operational environment and related hazards for example:
  - Limited forced landing areas
  - Falls onto steep terrain
  - Lack of conventional access to terrain
  - Wires – energized or non-energized
- Consequence (severity of outcome) of helicopter related emergencies occurring in the environment.
- Helicopter performance in rescue configuration and projected altitude and conditions.

At a minimum, the decision on type of helicopter to be used for Class D work should be in keeping with the CASS and CAR’s requirements. See appropriate regulation section (CAR 702.21 2(a) CASS 722.21 (2)).

The resulting Risk Assessment as described above should outline the total level risk defined and accepted by the stakeholders involved.
### 7.0 Risk Management, continued

| 7.7 Equipment Manufacturer | Equipment shall meet regulatory requirements for the Helicopter Company's operating jurisdiction. Equipment shall have STC or LSTC certificates. End Users shall ensure harnesses and rescue liters meet jurisdictional regulatory needs. Manufacturers shall provide for common user equipment failure reporting method and alert End User Organizations and Helicopter Companies when there is an equipment issue confirmed. |
| 7.8 Aviation Fuel Management | Helicopter Companies should follow a recognizable standard in fuel management and testing. Examples of Aviation Fuel Standards:  
  - CAN/CSA-B836-05  
  - OGP 420  
  - US Forest Service Interagency Helicopter Operations Guide (IHOG) |
8.0 Assurance

8.1 Purpose
The Chapter describes the need and possible methods for the End User Organization, Contracting Client, and the Helicopter Operator to measure Class D programs and operations.

8.2 Scope
The Chapter should be reviewed and understood by the Helicopter Operator’s Company Operations Manager and the respective End User Organization/ Contracting Client organizations’ Accountable Manager.

8.3 End User/Client Training & Operations Assurance
Helicopter Company’s will have a process that allows them to understand the End User organization’s Class D program prior to engaging in joint training or operations. Possible options include any one or all of the list below:

- Site visit with review of physical records and manuals (as well as other appropriate documentation)
- Organizational Questionnaire
- Target interviews (Intercept Assessment) with members of the End User Organization. The goal being the interview helps confirm knowledge, type of training and qualifications of End User Organization members.

The Helicopter Company may include the following topics as part of any assurance process:

- Organization meets jurisdictional requirements to carry out operations. For example: liability insurance, WCB coverage for staff, Company can work/ operate in the country or area of tasking.
- Organization can show staff is appropriately trained and qualified to work in environment that they will be inserted into.
- Training curriculum meets Best Practice requirements.
- Organization can show staff is appropriately trained to conduct Class D Static Long Line operations.
- Organization can show staff is appropriately trained to instruct in Class D Static Long Line operations.
- Class D gear meet regulatory requirements.
- Organization performs appropriate gear inspection and maintains records showing such.
- Organization can show staff is appropriately trained to perform inspections of gear.
- Organization has a formal safety program (preferably equivalent to TC SMS or HRSDC CLC Part II Hazard Management program) that includes an all hazard reporting system.
8.0 Assurance, continued

8.4 Use of Third Party Auditors

Helicopter Company’s may wish to employ a third party to examine the End User Organization’s Class D Program. Helicopter Companies should ensure that the Third Party is:

- Familiar with Class D Operations
- Understands this Best Practice and related regulatory requirements.
- Trained in formal assurance processes. Example: ISO audit training or similar formal audit training.
- Able to provide appropriate liability coverage for services rendered.
Appendix A Sub Committee Terms of Reference
A.0 Class D Sub Committee Terms of Reference

A.1 Objectives
This Sub-Committee aims to develop a best practice document, which will provide guidelines and clarification for Class D Static Long Line operations. The document will be submitted to the Board for approval and further, to Membership for comments. After approval, the document will cease to be a draft and will be embraced by HAC member companies and their customers as Class D Best Practices as presented by HAC.

The Sub-Committee will advise, educate and consult with HAC members and those involved in the helicopter industry on Class D best practices to achieve its objective.

A.2 Membership
The Class D Best Practices Sub-Committee includes representatives of the HAC Operator membership, Government Agencies and corporate consumers who are HAC associate members, individual HAC members involved in Class D practices, as well as representatives of the Air Rescue Association of Canada (“ARAC”), which includes "User" members (rescue/response organizations) and "Operator" members (air carriers) involved in Class D practices.

A.3 Special Advisors
The sub-committee shall have the power to invite non-members who may be able to make useful contributions to the committee.

A.4 Sub-Committee Officers
Unless otherwise mandated by the Board of Directors, the sub-committee shall have a Chairperson, Vice Chairperson, and Recording Secretary at a minimum; as well as up to three additional Directors may be elected. The Recording Secretary position may be held in addition to any of the other positions. The sub-committee must decide and vote for all officers for each term. Officers may be elected to other executive positions after completing time in another position.

A.5 Election of Officers
The sub-committee’s officers shall be nominated and elected by the members of the sub-committee.
## A.0 Class D Sub Committee Terms of Reference, continued

### A.6 Terms of Office

The sub-committee executive terms shall be set up so that not all positions on the Executive are up for election at the same time. The Chairperson shall be elected and the terms of the position shall commence following his/her election and continue for three years. The Vice Chairperson and the Recording Secretary shall be elected and the terms of each position shall commence following his/her election and continue for two years. The Directors shall be elected and the terms of each director position shall commence following his/her election and continue for one year. If an officer resigns or is unable to complete his/her term of office, any remaining officer(s) of the Committee shall convene a Committee meeting to elect a member to serve the term remaining for the vacated office. This meeting can be accomplished by a conference telephone call with the majority of Committee Members participating. Call to be arranged and paid for by HAC Headquarters.

### A.7 Chair & Vice Chair

In consultation with the sub-committee and the Air-Taxi Committee Chair, the sub-committee Chair and Vice Chair shall set meetings and discussions, create agendas and distribute information to sub-committee members.

### A.8 Other Items

The Class D Best Practices sub-committee will develop industry best practices and recommendations for the consideration of the HAC Board and may consult with any or all HAC members.

Sub-Committee meetings are conducted in compliance with the Canadian Combines and Antitrust law requirements.

Sub-Committee activities are consistent with HAC’s Objectives as set out in its Letters Patent.

Ensure that Minutes or Decision Records of each meeting are recorded and copies provided as heretofore mentioned.

Advise the HAC President & CEO and/or Chair of the Board; of any desired financial support or Board action.

No statement of position or any release on behalf of the HAC will be made by any member of the Sub-Committee to any outside organization without prior approval of the HAC President or Chair of the Board.

With the consensus of the Class D Sub-Committee and the Sub-Committee Chair and Vice Chair, the Sub-Committee may make application to the HAC Board of Directors for a change to these Terms of Reference.

### A.9 Amendment to these Theses Terms of Reference

Version 1.7 October 2012
Appendix B Sample Precision Long Line Drills
SAMPLE PRECISION LONG LINE DRILL

The drill consists of flying under the direction of a designated training pilot. The drill is divided into three phases and sub-divided into a number of components. At each stage the pilot will be advised of the objectives of the component by the designated training pilot. Throughout the drill (where appropriate) the pilot must communicate verbally with the designated training pilot concerning the reasons for all his control actions and decisions, and any pertinent observations he is making as pilot-in-command in response to the conditions or hazards affecting the operation.

A) MARKING SYSTEM

Pilots will be marked on a 1 to 4 scale.
4 - Excellent; Pilot demonstrates proficiency and exceeds objective.
3 - Good; Pilot demonstrates proficiency.
2 - Fair; Pilot does not demonstrate proficiency, but does not compromise the safety of the aircraft and crew.
1 – Further training Required; Pilot does not demonstrates proficiency and/or compromises the safety of the aircraft and/or crew.

- Designated-training pilot may use increments of .5 (half a mark).
- Pilots must achieve a three (3) average with no failures in any component of the drill.
- Designated-training pilot should be fully familiar with the objectives of each part of the drill.
- Failures should be accompanied by clear explanations.

B) DRILL DESCRIPTION

The Drill is divided into three phases;

Phase 1 - concerns long lining/vertical reference operations and allows the pilot to demonstrate ability to handle typical long lining requirements in mountainous terrain. This phase also includes accuracy and speed test to judge the pilot's long lining precision and efficiency.

Phase 2 - consists of general mountain flying similar to the type of flying encountered during searches and aerial surveys. Landing conditions are included in this phase to simulate the requirement to place crews in mountainous terrain. (This phase can be altered to allow the flying to be done in the operational area or an equivalent area if the mission/task does not include mountainous areas.)

Note: This Phase can be waived if the User has had extensive experience working with the candidate pilot during mountain flying operations including personnel placement in mountainous terrain (i.e. hover exit/entry, mountain landings, etc).

Phase 3 - is under actual HEC operational conditions. The pilot will be required to perform personnel placement utilizing the "Sling Rescue" method, and may be required to perform other maneuvers such as glacier and soft snow landings, broken ground/off-level landings, and hover exits or entry evolution.
C) DRILL COMPONENTS
The Drill will be concerned with but not limited exclusively to the following subject components:

Phase 1: LONG LINING

1.1 BUCKET SLINGING / BARREL DRILL
Description: The candidate pilot will be required to perform a number of maneuvers using either the 55-foot or 105 foot long line. The following sequence of drill will be performed 3 times and each sequence must be completed within 3 minutes. The total of the drill components must be completed within 6 minutes.
1. Place a 100 lb. to 200 lb. (45 kg. To 91 kg.) load on an elevated 1.2 meter (4 ft X 4 ft) square platform (e.g. plywood or pallet on fuel drums), so the load rests securely on the platform;
2. Place the load onto the top of a 45 gallon fuel drum so the load sits securely by its own weight; and
3. Place the load inside an open 45-gallon fuel drum and remove it. The drum will have a sandbag inside to partially stabilize it.

Note: The drill circuit for the above sequences should be set-up so that there is a distance of at least 50 ft. between each drop zone.
Location: Low elevation field/open area with moderate winds.
Objective: This drill demands precision and skill and often generates stress on the candidate pilot. Observe whether the candidate pilot's performance improves or deteriorates as it progresses. Observe how candidate pilot recovers from difficulties.

1.2 SLINGING - MOUNTAINSIDE
Description: Using either the 55 ft or 105 ft long-line with a 100 lb. To 200 lb. (45 kg. to 90 kg.) load (bucket or similar load) attached, the designated training pilot will identify various hypothetical victim locations. The candidate pilot will be asked to choose a suitable location in the same vicinity for delivery of a rescuer and than carry out the simulated delivery.

Note: Designated examiner is on board.
Location: Steep broken mountain face with various vegetation communities.
Objective: To assess the pilot's awareness of "sling rescue" techniques and its limitations, pilot's assessment and evaluation of sites and judgment.

Note: The site does not necessarily have to be flat enough to accept the load. Simulate delivery of a rescuer by touching the ground with the load.
SAMPLE PRECISION LONG LINE DRILL, continued

OPTIONAL PHASE 1 DRILL COMPONENTS
The following are Optional Phase 1 Drill Components that the designated training pilot may require the candidate pilot to perform.

1.3 VERTICAL REFERENCE WITH EXTERNAL LOAD

Description: Using either a 55 ft. or 105 ft. long line (standard HEC long-line lengths) pickup an approximate 100 lb. to 200 lb. (45 kg. To 91 kg) Load - i.e. log or drum and hover with the load in a vertical position about 1 to 2 meters over a target circle of 2 meter diameter. Candidate Pilot will hold hover for two minutes.

Location: On open ground away from trees, which could be used for vertical reference.

Objective: To observe the candidate pilot's depth perception. Observe the amount of movement of the helicopter itself as well as the movement of the external load.

Note: The pilot's reaction to any wind if present.

Phase 2: GENERAL MOUNTAIN FLYING
The candidate pilot must be completely familiar with and demonstrate good to excellent ability to perform all necessary maneuvers associated with the following terrain types:
Ridge tops, saddles, cirques, steep terrain including mountain faces and gullies, canyons, shoulders, forests, and water;

Phase 3: RESCUE
The candidate pilot will be required to perform a number of realistic simulations in a variety of mountainous terrain including locations at higher altitude; locations may involve glaciations, snowfields, or anywhere a rescuer may be required. This phase involves actual use of the “Sling Rescue” (HEC) methods.

Description: The candidate pilot will deliver rescuers to a series of typical rescue sites using either the 55 ft or 105 ft. long line.

Location: Precipitous mountain terrain.

Objective: The candidate pilot should be able to adequately recognize sites, observe for hazards, carryout a power check, etc. Pilot should adequately relocate the sites after clear instructions from rescuers. The rescuers must be delivered and retrieved by a smooth direct flight path. The missions include delivery of individual rescuers to rescue sites, then re-placement of rescuers on alternative sites, and then retrieval of two rescuers to the staging landing zone (LZ) locations. One flight should include transport of a litter containing a hypothetical victim and attendant.
Appendix C Sample of Pilot Training Record
## CLASS “D” FIXED LINE
FLIGHT EMERGENCY TRAINING RECORD

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*Note: When training in flight emergencies during Class D Operations the following abnormal flight/emergencies will be briefed prior to Emergency Flight Training.*

### 1. Pre Flight Emergency Briefing

- Releasing the Belly Band (spotter)
- Remote Safety Hook release (pilot)
- Fixed Pedal Failure
- Loss of Tail Rotor thrust
- Hydraulics Failure

**Autorotation:** Engine Failure (Single Engine Helicopter) Hover & In Flight

**Single Engine Failure:** (Twin Engine Helicopter) Hover & In Flight

- Fire in the cabin
- Caution/Warning Lights
- Communications Failure

*The following emergencies marked with an asterisk will be simulated in flight with representative load and long line.*

### 2. In Flight Emergency procedures

- Releasing the Belly Band (spotter)
- Remote Safety Hook release (pilot)
- *Fixed Pedal Failure*
- *Loss of Tail Rotor thrust*
- *Hydraulics Failure*

**Autorotation:** Engine Failure (Single Engine Helicopter) Hover

*In Flight*

**Single Engine Failure:** (Twin Engine Helicopter) Hover

*In Flight*

- Fire in the cabin
- Caution/Warning Lights
- Communications Failure

### Comments:

Both Training Pilot and Trainee must sign this document.

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Training Pilot: ___________________ Trainee: ___________________

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Version 1.7 October 2012

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Marking Scale

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43
# CLASS “D” FIXED LINE
## BASIC FLIGHT TRAINING RECORD

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Check Details | U | S/B | S | E | Comments |

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### 2. Demonstrable Competencies

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**Comments:**

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Both Training Pilot and Trainee must sign this document.

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<th>Trainee</th>
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**Version 1.7 October 2012**
Appendix D Sample of Pilot Risk Management Decision Tool
HETS Go-No-Go Flowchart

HETS extraction request

Are environmental conditions safe for HETS?

Information Gathering
Patient condition
Incident Location – Details of Access, closest helipad
Known Hazards

Severity of injury?

Will the timeframe of ground based rescue compromise the patient?

Does access / evacuation over ground based route present unacceptable hazards to rescuer(s) / patient?

Use HETS

What is the quickest method to access / evac the patient?

Ground Access

Ground Based Rescue

The decision to evacuate a patient using HETS should be reassessed once the HETS rescuer is on scene and able to use first-hand information to determine the need for HETS evacuation based on severity of the injury, rescue timeframe and objective hazards.

Factors to be considered in the decision making:
- Weather present & forecast
- Patient and rescuer safety
- Patient Medical considerations
- Transport time to advanced care
- Available daylight
- Manpower requirements
- Terrain, cutline condition, etc.

*** Some clients may require onsite Objective Managerial Authority prior to proceeding with HETS. Ie. Shell Oil

SAMPLE ONLY