



Helicopter Long Line/ External Load (Class B) Operations

Standard
Operating
Procedure

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1.0 Purpose

This SOP provides:

- Guidelines and Procedures to follow for mitigating the risks and ensuring the safe completion of light, intermediate and medium helicopter Long line/ External Load Operations.

2.0 Roles and Prerequisites

| Role(s) | Quantity Required | Prerequisites |
|-----------|-------------------|--|
| Pilot | 1 or more | <ol style="list-style-type: none">Qualified Pilot1000 hrs Pilot in Command, 50 hours on type200 hrs Long Line experienceContractor Orientation Handbook reviewed and signedUtility Flight Operations Training, Parts 1 & 2SaskPower Skill Check or Evaluation Completed |
| Personnel | 1 or more | <ol style="list-style-type: none">Basic Helicopter Safety trainingUtility Flight Operations Training, Parts 1 & 2External Load/ Long Line Certification |

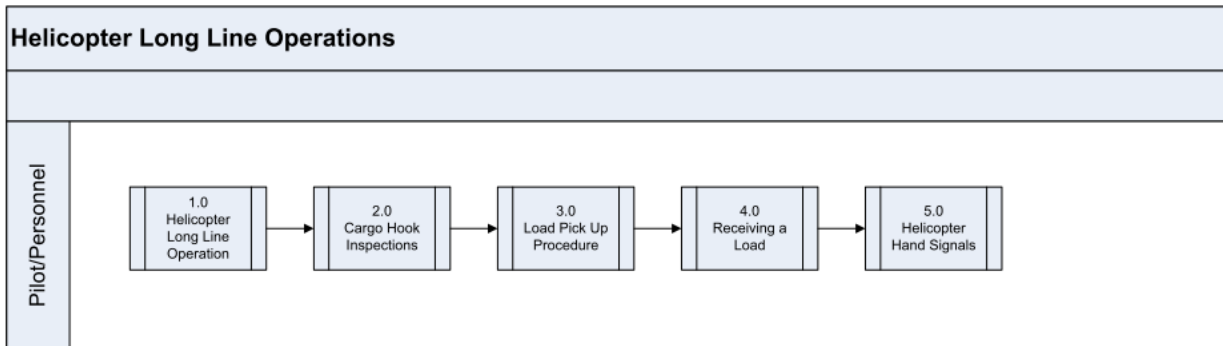
3.0 Tools and Equipment

Minimum Tools and Equipment Required:

- Serviceable Helicopter
- Helicopter Long Lines (with appropriate load rating)
- All required Operational Equipment (with appropriate Load ratings) i.e Swivels, Buckets, Cargo Nets, Slings, Straps, etc
- Cargo/ Belly hook (Certified & Tested)
- Remote Hook (Certified & Tested)
- Static Hook (Optional)
- Fly baskets (Certified)
- Approved communication device e.g. P25 radio (compatible with helicopter communication device)
- Backup radios with spare batteries

4.0 Procedure

High Level Flowchart



The following requirements shall be met prior to the start of the procedure:

- Complete Flight Risk Assessment
- Complete Hazard Aspect and Risk Assessment
- Complete Helicopter Tailboard
- Applicable personal protective equipment (PPE) is available and in good condition

The Procedure

1.0 Helicopter Long Line Operation

1.1 Communication

1.1.1 Personnel shall communicate as follows:

- *Dedicated personnel shall direct helicopter operations; one at the pickup location and one at drop location, when required. They will be the only ones directing the helicopter during long line procedures, and should not be directly involved with the loading and unloading from the long line, unless necessary (e.g. on a structure).*
- *Personnel directing helicopter long line operations shall wear an approved communication device that will allow for continuous communication with the pilot in command at all times. The work group must be on a dedicated channel as to avoid other radio chatter/ interference.*
- *In the event of communication device failure, and aborting the current long line operation isn't feasible, hand signals predetermined in the Helicopter Tailboard will be used by the directors to complete the specific long line operation. Long line operations will not continue until communication systems have been re-established.*

NOTE: In the case of basic transport and drop long line operations, and communication cannot be re-established, revisit the Helicopter Tailboard, document and communicate the use of hand signals and work may continue.

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1.2 Operational Requirements

1.2.1 Personnel shall adhere to the following operational requirements:

- *Personnel are not permitted on board the helicopter while long line operations are being completed.*
- *All long line crew members must participate in, review and sign the Helicopter Tailboard. The tailboard forms must include all known hazards and a review of the Helicopter Booking Form. All personnel will have dedicated tasks and be aware of responsibilities.*
- *Flights with a slung load are prohibited over built up areas, personnel or vehicles on the ground. Carrying loads over buildings, structures, and wire is not recommended, (it is understood that due to flight paths, it may be required, but should be kept to a minimum) unless they are directly involved with the work being completed. Traffic control must be a consideration if the flight path is over roads and/or highways as well as the staging area. All vehicular movement in the staging area will be prohibited while the lift is being executed.*
- *All other work groups in the fly zone shall be made aware of long line operations and the flight paths used during long line procedures.*
- *Long line operational flights must be limited to eight (8) hours of long line operations, with a maximum ten (10) hours flight time limit per day.*
- *All long line operational flights must have an initial reconnaissance flight prior to any detailed slinging operations commencing. This will allow the pilot to determine the site hazards and the long line requirements. The details of the reconnaissance flight should be documented on the Helicopter Tailboard should new information arise that will affect the operation.*
- *Fly yards and long line flight operations areas must be clear of all debris and loose items that may affect the safety of the crew or helicopter by the expected rotor down wash.*
- *Personnel must establish a safe muster area where crew members are expected to go to should there be an emergency situation with the helicopter flight or long line load. The safe muster area must be marked and agreed upon with the crew and pilot as part of the Helicopter Tailboard discussion.*
- *Personnel at the load pick up and drop locations must establish a recommended two (2) escape routes (when working off a structure, escape routes may not be possible). Mark the escape routes for easy reference, if practicable. These escape routes must be agreed upon with crew and pilot as part of the Helicopter Tailboard.*
- *During the Helicopter Tailboard, flight paths and work areas shall be discussed in regards to aborting loads in emergency situations. Preferable locations for unplanned releases and hazard areas shall be made known.*



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- *All rigging components must be inspected prior to start of long line/ External Load operations.*
- *The weight of all loads to be lifted will be predetermined using a 5% performance restriction, prior to helicopter booking. Loads must also be weighed by the pilot using the onboard load indicator device(s) prior to the start of the operation.*
- *During the Helicopter Tailboard, means for emergency transportation and evacuation shall be discussed, especially in remote locations. Some things to include are landing sites, tower rescue, emergency response (contacts/procedures), etc.*
- *A ground wind direction indicator (e.g. wind sock, stake with staking tape, etc.) will be installed at load pick up and drop locations.*
- *As weather conditions may cause hazards, wind and precipitation must be taken into account. There is also high potential for lightning/static hazards to ground personnel hooking and unhooking loads when storms are in the area. The recommendations of the pilot shall be adhered to.*

2.0 Cargo Hook Inspections

NOTE: Prior to the beginning of all long line/ external load operations, all mechanical and electrically operated cargo hooks shall be tested to ensure the releases are functioning properly.

2.1 Cargo Hook Inspection

2.1.1 Personnel shall conduct a pre-flight inspection of the cargo hooks, including a visual inspection, as well as testing the operation of both the manual and electrical release mechanisms.

- *To perform a cargo hook inspection:*
 - One crew member is required to be under the aircraft to exert pressure on the hook, and the pilot must be in the cockpit to operate the releases.
 - Crew member exerts approximately 5lbs of pressure on the hook while the pilot activates the release. The hook must open freely each time the switch is activated.
 - Perform the same test with the manual release lever by pulling sharply downward on the hook lip assembly with the hook in the closed position and none of the releases being activated. The hook must not open.
 - Check the operation of the external release knob, located on the left side of the hook assembly.
 - Finally, with the long line load ring in the hook assembly, swing the load ring to the limits of travel in all directions. The hook must remain in the closed position; however, the hook must be able to open at all points through the limit of travel.
- *Ensure the hook has a safety latch and weighs at least 15 pounds to allow for safe flight with an empty sling. Never fly with an un-weighted sling or net.*



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- *Lead lines and long lines should be shorter or much longer than the distance between the hook and the tail rotor to avoid entanglement.*
- *All rigging components must meet or exceed the requirements of Occupational Health and Safety Regulations. It is recommended that the rigging gear has a load rating of 2.5 times more than the maximum load capacity of the aircraft.*
- *Gravel, sand and cement products must be transported in approved engineered containers.*
- *A designated hook-up person and signal person must be identified at the tailboard. This should not be the same individual unless there is only one person available to complete the task.*

3.0 Load Pick Up Procedure

NOTE: Rotor wash can create loose debris (tree branches, light tools, hardware, etc.), resulting in dusty conditions that can reduce visibility for both ground personnel and pilot.

3.1 Load Pick Up

3.1.1 Personnel shall complete the load pick up procedure as follows:

- *Ensure sling load is positioned in the center of the drop zone.*
- *Upon helicopter approach to the drop zone, the signal person must advise the pilot on:*
 - Clearance from obstructions
 - Wind conditions at the drop zone (signal person to stand with back to the wind)
 - Hook height above the ground
- *Ensure only essential workers are in the drop zone at the time the pilot is placing the hook.*
- *The hook should be landed next to the load to allow for grounding of the hook.*
- *Pilot should then displace the helicopter to the side to allow for hook up.*
- *When making multiple lifts of various materials, the director shall inform the pilot of the particulars of the load, such as number of pieces and weights during pick up.*

NOTE: To avoid becoming entangled with the long line, the hook-up person must not step over the long line or hook at any time.

- *Under the direction of the signal person, the hook-up person attaches the load to the hook and moves to the pilot side front off center of the helicopter within view of the pilot, and through communication indicates the load is ready for lifting. It is important to ensure workers are not in a position between the load and a fixed object in case of accidental swing (pinch points).*



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- *The helicopter is then positioned directly above the slung load. Under the direction of the signal person, the load is lifted from the ground and then flown out.*

4.0 Receiving a Load

4.1 Receiving a Load

4.1.1 Personnel shall adhere to the following when receiving a load:

- *All non-essential workers must be clear of the drop zone.*
- *Upon helicopter approach to the drop zone, the signal person must advise the pilot on:*
 - Clearance from obstructions
 - Wind conditions at the drop zone (signal person to stand with back to the wind)
 - Load height above the ground or structure
- *Under the direction of the signal person, the pilot will set the load in place and release it from the remote electric hook, if applicable. It is important to ensure the weight of the load has been removed from the line and the load is on a stable surface before releasing.*

NOTE: It is important to have stable drop locations when releasing loads in precise locations (workers on structures).

- *If a manual hook is being used, under the direction of the signal person, the hook-up person releases the load from the hook and moves to the side front off center of the helicopter within view of the pilot, and through communication indicates the load is ready to release.*
- *Under the direction of the signal person, the helicopter can now leave the drop zone.*
- *Non-essential workers can enter the area after the helicopter has cleared the drop zone.*

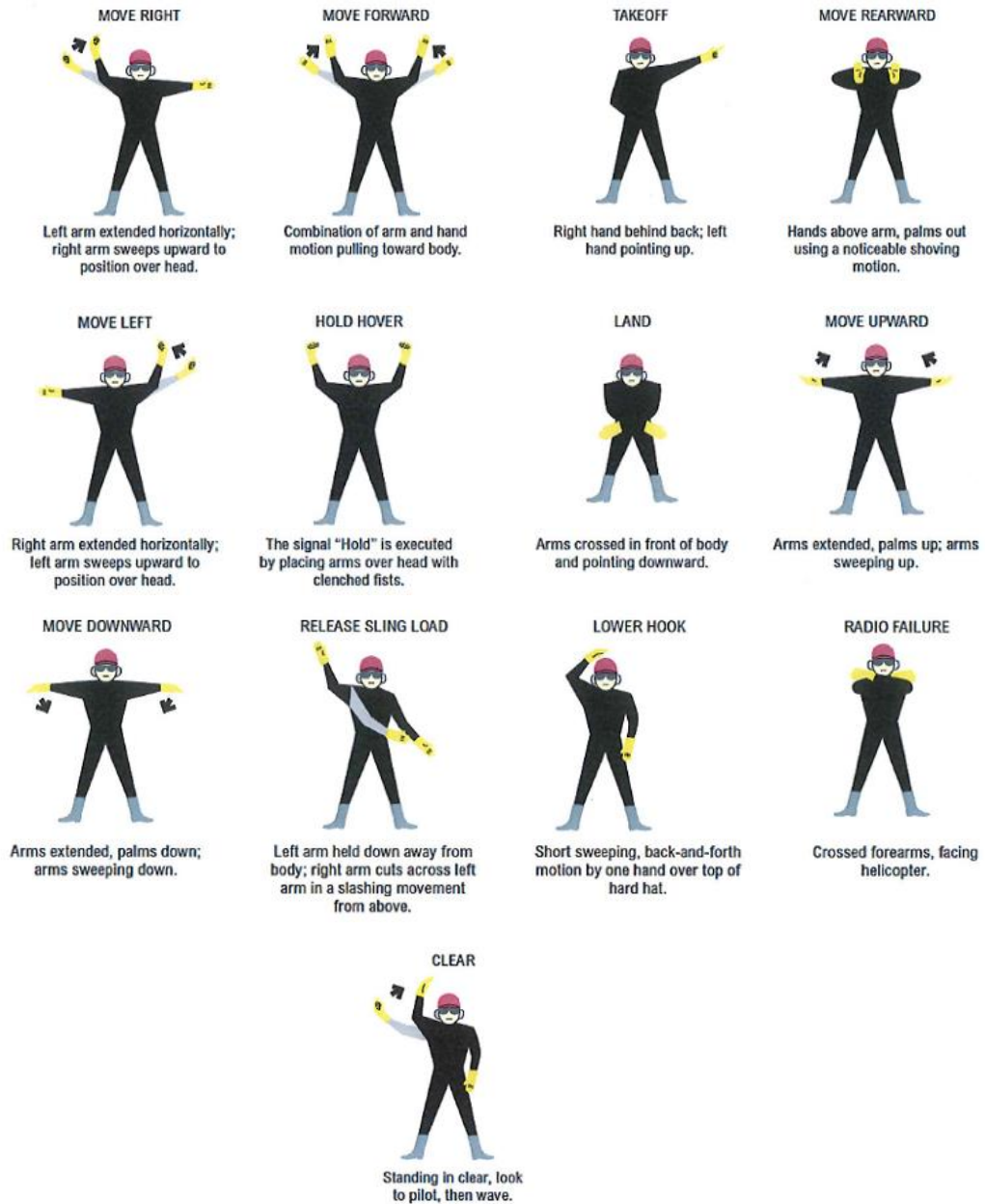
5.0 Helicopter Hand Signals

NOTE: In the event of radio communication failure, hand signals may be utilized as a means of directing helicopter movement.

5.1 Helicopter Hand Signals

5.1.1 Personnel shall communicate using the following hand signals as predetermined in the Helicopter Tailboard:


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5.0 Components

The following is a list of components for this SOP which can be accessed through the SOP System:

| Component Name | Component Type | Component Description | Location of Component |
|----------------|----------------|-----------------------|-----------------------|
|----------------|----------------|-----------------------|-----------------------|

| | | |
|---|---|---|
|  | <h2>Helicopter Long Line/ External Load (Class B) Operations</h2> | <p>Standard Operating Procedure</p> |
|---|---|---|

| | | | |
|---|-----------|--|--|
| Helicopter Long Line Operations - Flowchart | Flowchart | The high and mid-level flowchart for this Standard Operating Procedure | SOP Online - SOP Bundle: Helicopter Long Line Operations |
|---|-----------|--|--|

6.0 Acronyms, Definitions and Symbols

Acronyms and Abbreviations

NOTAM - Notice to Airmen

PPE - Personal Protective Equipment

Definitions

Grounding of the Hook - when the hook contacts an area at ground potential to eliminate the possibility of shock from static electricity built up on the aircraft.

Symbols

N/A

7.0 Policies and Regulatory Requirements

This SOP is a result of the following regulations, policies, industry standards, and corporate directives and standards:

Regulatory Requirement(s)

- Transport Canada Regulations and Policies
- NOTAM Documentation
- Canadian Aviation Regulations
- Basic Helicopter Safety Training
- Electrical Awareness Training
- Grounding and Bonding Training
- Applicable Occupational Health and Safety Regulations
- Standard Protection Code Training

Policies

- N/A

Standards

- N/A



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Other

- N/A

8.0 References

References

N/A