



WINCO

POWERLINE SERVICES

Lineman's Safety Manual

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About This Document

This document was developed to give 3rd party linemen a basic overview of helicopter safety, work methods and procedures for working with or acting as crew members onboard Winco aircraft. Additionally, the test in the back of this document is to be used to determine that the contents of this manual are thoroughly understood by the lineman. Successful completion of this manual and the accompanying test does not guarantee competency. The procedures and process outlined herein should be utilized only by properly trained personnel and should be used in conjunction with good judgment and sound decision making practices. If at any time there is question concern or conflict regarding the contents of this manual or subsequent training, it is the duty and obligation of any party involved to immediately suspend work until the situation is resolved.

Definitions

Autorotation – An emergency situation where the helicopter can make a landing without engine power by using the inertia stored in the rotor system, altitude and airspeed to glide and cushion the landing.

Collective – Pilot's flight control that is by his left hand, used for adjusting power setting and blade pitch (which controls altitude)

Crew Resource Management (CRM) - A state of heightened awareness where crew members use clear communication and acknowledgements to discuss the task at hand.

Emergency Procedure - A procedure to executed in the event of an emergency

Job/ Safety Briefing – See Tailboard/Tailgate

Non- Pilot Crew Members – A person (Other than a Pilot) assigned a duty on-board an aircraft in flight i.e. a lineman

Positioning Harness – Rodsman (Web rebar assembly) attached to the lineman's belt used for positioning. Harnesses may or may not have a center pelican hook.

Prerequisite – Training or certification or equipment required to perform the task.

Shoulder Harness – A harness that is worn over the shoulders and around the arms and provides a dorsal (back) ring for attachment of the shock lanyard

Standard procedure – Normal procedure for accomplishing a given task

Tailboard – The pilot and/ or crew foremen shall conduct the pre-work safety and procedures meeting. Each person must fully understand their responsibility prior to start of work. ANY SIGNIFICANT CHANGE IN THE OPERATING PLAN REQUIRES A NEW BRIEFING THAT COVERS THE CHANGES.

Personnel Qualifications

Due to limitations on aircraft performance, equipment ratings and applicable laws, the following personnel qualifications are perquisites for Winco's Helicopter Lineman Training Program.

- Winco reserves the right to refuse any lineman access to its equipment due to lineman's weight, skills, and/or experience.
- 4th step or higher Apprentice or Journeyman Lineman as per local bargaining agreement stipulations.
- Qualified Climber
- Winco requires ongoing random drug screening of all linemen assigned to helicopter work. Drug testing will be coordinated between Winco's Safety Department and Corporate Safety.

General Rules

Required Personal Protective Equipment (PPE):

Linemen working beneath the aircraft:

- ANSI Z89.1 approved helmet or hard hat
- ANSI Z87.1 safety glasses
- Work Gloves
- Hearing Protection is highly recommended
- Work Boots

Lineman working onboard the aircraft (skid work):

- ANSI Z89.1 hard hat with three point chin strap or flight helmet
- ANSI Z87.1 safety glasses
- Linesman's Belt
- Positioning harness (Rodsman)
- Cotton, Nomex, FR clothing or appropriate job-specific clothing
- Work Gloves
- Hearing Protection
- Work Boots

Lineman performing tower transfers or suspended beneath the aircraft:

- ANSI Z89.1 approved helmet or hard hat with three point chin strap
- ANSI Z87.1 safety glasses
- Linesman's Belt
- Positioning harness (Rodsman)
- Shoulder harness
- ANSI Z359.1 shock lanyard or similar (personal fall arrest system)
- Cotton, Nomex, FR clothing or appropriate job-specific clothing
- Work Gloves
- Hearing Protection
- Work Boots

* Other jobsite specific requirements may apply

Basic Helicopter Safety

Working beneath the helicopter

As part of a line crew you may be asked to work beneath a helicopter to hook up suspended loads. Dust and debris is the largest potential hazard when working beneath a helicopter. Use of safety glasses or even goggles may not provide complete eye protection if linemen are working beneath a helicopter in dusty areas. If a load staging area is dusty it must be watered down to contain the dust. In some cases, the area may need to be watered multiple times each day. All loose items near the load staging area must be secured to ensure that the helicopter's rotor down wash does not blow any debris at personnel, or suck any debris into the engine/ rotor system. Loads must be rigged so that they will not shift in flight, substantial shifts in weight could lead to a load release or damage to the helicopter. Never throw items near a helicopter. Static is generated by any rotor system, however, because Winco normally uses minimally conductive am-steel lines static should not be an issue. Gloves are required for the lineman's safety regardless.

When working beneath a helicopter:

- Use communication procedures discussed in the tailboard (radio or hand signals) to signal the pilot. Only one person shall be designated as the signal person and he/she shall wear distinctive clothing or a mark on his/her hard hat.
- Wet down the area if dust is present.
- Watch for, and dispose of or contain any items that may be light enough to be blown by the helicopter down wash.
- Never throw items near a helicopter
- Secure loads in a manner that will not allow them to shift during flight.
- Avoid standing directly beneath a suspended load.
- Loads should be pushed, rather than pulled if ground positioning is required.
- Grasp the hook as soon as it comes into reach and control it until it is out of your reach.
- Use Proper hand signals (Appendix A)
- Use proper head signals:
 - Shaking head left to right is down
 - Shaking head up and down is up

Before you board a helicopter:

- Know how to shut down the helicopter in the event of an emergency.
- Turning off the master switch will not stop the engine or rotors.
- In the event of an emergency landing the lineman should know how to:
 - Roll the throttle to idle (if Possible)
 - Depress the button on the red fuel valve and simultaneously pull toward you. (The engine may take a few moments to shut off).
 - Disconnect the battery by opening the battery bay door and unscrewing the knob.
 - Separate the battery cables from the terminals.

Entering and Exiting the Helicopter

In some cases it may be necessary to enter or exit a helicopter while it is running. The helicopter main rotor, tail rotor and turbine exhaust pose significant hazards to personnel on the ground. The tail rotor can be nearly invisible because of its high speed. The main rotor, while seemingly too high to be a concern, can droop significantly due to a wind gust or control input. Additionally, upward sloping terrain near the landing site may reduce clearances even more. Arms as well as any tools and equipment carried should be kept below the head at all times.



Figure 1

When entering or exiting a helicopter while it is running always:

- Wait for the pilot to signal you to approach/exit the aircraft.
- Approach/exit in the areas indicated by the green or yellow arcs.
- Approach/exit only on level areas or areas sloping down from the helicopter.
- Keep arms and all tools below the head at all times.
- Secure any loose tools or clothing that may blow off due to rotor downwash.

Note: Approach paths on some other helicopters are different.

Working onboard the helicopter

Lineman working onboard the helicopter must understand that they are not passengers. They are crew members, and have a role in ensuring safe conduct of the operation. Safety considerations for individual procedures will be separated by procedure; however, the following basics apply to all persons onboard:

- Take an active role in ensuring the safe conduct of the operation. Be a second set of eyes for the pilot when not involved in another task that requires your full attention. Notify the pilot if you see anything of concern to you. Notify the pilot to suspend or abort the operation if you ever feel un-safe.
- Keep all items within the aircraft secure during doors off flight.
- Buckle seatbelts when not in use.
- Know the location of the fire extinguisher and first aid kit onboard the aircraft.
- Never throw items within or out of the aircraft.
- Know your role in emergency procedures; the pilot will conduct a brief review in the tailboard meeting.
- If hotsticks are required for a particular task, the shortest sticks useable shall be used to reduce the chance of main rotor contact.

Tower Transfer (Skid)

1.1 Purpose

This Procedure describes the lineman's role in Winco's standard procedure for a tower transfer from the skid.

1.1 Scope

This procedure covers only the lineman's role in Winco's standard procedure for tower transfers from the skid. All general company policies and procedures still apply.

1.2 Prerequisites

- PPE per General Rules section of this document.
- Lineman approved per task approval section of this document.
- Hotsticks shotguns or other tools capable of reaching the rotor system shall be of the shortest length practical to accomplish a given job.
- Personnel qualifications per page three of this document.

1.3 Standard Procedure

1.3.1 Departing the Landing Site

Before departing the landing site the lineman shall:

- Fully understand the work to be performed, the tailboard, and the procedures for performing it.
- Be in position on the skid with his shock lanyard attached as shown in figure 3.
- Be in position on the skid with positioning belt (Rodsman) attached as shown in figure 3.
- Know the location of the pilots collective and understand the seriousness of inadvertently contacting it.
- Have all tools and supplies stowed in a secure yet accessible manner.
 - The lineman shall communicate, "**Ready for takeoff**" when appropriate.



Figure 2

1.3.2 Final Check

The pilot will initiate an approach to a stabilized hover at a point adjacent to but clear of the structure to perform various cross checks.

The lineman can assist the pilot by:

- Verifying status of the line (Energized or de-energized) is according to operational plan.
- Verifying that the helicopter is next to the correct tower.
- Pointing out birds or objects near the flight path of the helicopter.
- Pointing out any out of ordinary sights, sounds, or odors.
 - Crewmembers shall announce their readiness by communicating "**Go for the Structure**".

1.3.3 Final Approach to the Structure

- When moving from the helicopter to the structure, the lineman shall position him/herself so as not to be pinched between the helicopter and the structure.
- Prior to transfer an examination of the portion of the structure to be transferred to must be accomplished to verify the structure is safe and will support the lineman's weight.
- Once in position the helicopter will be bonded to the structure or wire to dissipate any static charges and place both the aircraft and structure or wire in the same potential.

1.3.4 Bonding the Helicopter to the Structure

- The types of structure and wind conditions dictate how the pilot will dissipate the static/induced electrical potential and bond the helicopter to the structure.
 - Wood structures almost always require the helicopter to be bonded via a cable to either the static wire, if it is bonded to the structure ground or the cross support for the static wire.
 - Steel structures may or may not require cable bonding due to metal to metal skid to tower contact.
 - There may be numerous locations to place the skid on the structure to equalize the potential.
- If wind conditions are such that the helicopter cannot be operated without small corrections, a cable bond shall be used to prevent inadvertent bonding release during the transfer.
- It is required that, whatever the helicopter is bonded to, it must be the same object that the lineman transfers onto.
- In the case of an isolated static system, grounds from the structure to the wire may have to be used if the Lineman cannot safely transfer without coming in contact with the static.
- If this is the case the helicopter shall be bonded to the wire and then the wire grounded to the structure, in that order.
- Ensure that an insulated static is not a phase wire to power tower lights in the vicinity of an airport, heliport or a seaport, etc.
- If it is determined that the static is a phase, it must be cleared by the utility prior to starting work.

1.3.5 Lineman Transfer to the Structure

- Every piece of equipment and material shall be placed onto the structure in a way so as to prevent any contact with the lower phases.
- Handlines, hoists, grounds, splices, cables all have the potential to come into contact with the phases and must be tied up in a manner to prevent inadvertent release.
- Equipment shall be placed in a manner that does not interfere with the hand and footholds that will be used for the lineman transfer.
- The lineman shall remove his positioning belt (Rodsman) from the helicopter attachment. Lineman shall not leave the harness hanging by one D ring, this will prevent the harness from catching on the helicopter.
- Once released and with the helicopter in position, the lineman shall unsnap his large carabineer (attached to the shock lanyard) from the helicopter and attach it to the structure, then proceed onto the structure. (The pilot shall position the aircraft so the lineman can reach the tower without over-extending himself. **Do Not over-reach**)
- If transferring to a wood pole without crossarms or attachment provisions, this transfer can take place using a pole strap and lineman's boots.
- The lineman's hands must be free of equipment or tools for the transfer.
- The lineman will then attach the positioning belt to the structure. The lineman will then wait in that position until the helicopter has cleared the structure.
- In cases where the crew is utilizing cable bonds the lineman will remove the cable bond from the structure and place it onto the helicopter. **Note:** The cable bond must have an approved insulation device that facilitates handling without the possibility of electrical shock.
- During a transfer the lineman shall never be safe-tied off to the structure and the helicopter at the same time.
- The pilot shall always have the option to depart the structure at any time for whatever reason. The practice of un-belted his primary safety and then removing the shock lanyard from the helicopter and attaching it to the structure will, in the event of an emergency, prevent the lineman from falling. This also allows the pilot the option of performing an emergency procedure.

1.3.7 Departure From the structure

- The lineman shall ensure all objects, (bonding, personal safety gear and etc) are clear between the helicopter and the structure.
 - The lineman shall communicate, “**Clear to leave**” when appropriate.
- The lineman shall verify that the helicopter is clear to continue departure and immediately notify the pilot if any potential hazards are observed.

1.3.8 Lineman Transfer to the Helicopter

- The lineman shall return to the drop off point for helicopter pick up unless other arrangements have been made.
- The lineman shall bond the helicopter to the same source utilizing procedure step 1.3.4.
- The lineman shall remove his positioning belt (Rodsman) from the structure attachment. Lineman shall not leave the harness hanging by one D ring, this will prevent the harness from catching on the structure.
- The lineman shall unsnap the large carabineer (attached to the shock lanyard) from the structure and secure it to the helicopter as seen in figure 3.
- The lineman will then transfer to the helicopter.
- The lineman shall fasten his position belt (Rodsman) to the handle as seen in figure 3.
- The lineman shall transfer the equipment and materials back onto the helicopter.
- The bond cable shall be removed.
 - The lineman shall communicate, “**Clear to depart**” when appropriate.
- The lineman shall verify that the helicopter is clear to continue departure and immediately notify the pilot if any potential hazards are observed.

Note: At times when a pilot or lineman needs to communicate faster than a mic can be keyed and verbal messages can be sent a pilot or lineman may use the bump technique to get one another’s attention. A pilot can rock the helicopter or a lineman can shift his weight rapidly to do the same. If a pilot gives you the bump stop what you are doing and wait for further communication, he may be trying to warn you of something dangerous you were about to do.



Lineman Emergency Procedure:

In any and all emergencies, Linemen should immediately stop all work, hold tightly to the aircraft using the handle attach point, and move head and upper body into the passenger compartment of the aircraft. Linemen should not un-belt themselves or attempt to climb into the rear passenger compartment unless instructed by the pilot.

Tower Transfer or Jobsite Transfer (Longline)

2.1 Purpose

This Procedure describes the lineman's role in Winco's standard procedure for a tower transfer or jobsite transfer from the longline.

2.2 Scope

This procedure covers only the lineman's role in Winco's standard procedure longline transfers. All general company policies and procedures still apply.

2.2 Prerequisites

- PPE per General Rules section of this document
- Lineman approved per task approval section of this document
- Personnel qualifications per page three of this document



Figure 4

2.3 Standard Procedure

2.3.1 Departing the Landing Site

Before departing the landing site the lineman shall:

- Fully understand the work to be performed, the tailboard, and the procedure for performing it.
- Attach his shock lanyard to the 5000 lb. load rated ring as seen in figure 4.
- Attach his positioning belt (Rodsman) as seen in figure 4.
- Attached all tools or equipment to the hook in a secure manner.
 - The lineman shall communicate, "**Ready for takeoff**" when appropriate.

2.3.2 Final Check

The pilot will initiate an approach to a stabilized hover at a point adjacent to but clear of the landing area to perform various cross checks.

The lineman can assist the pilot by:

- Pointing out birds or objects near the flight path of the helicopter.
- Pointing out any out of ordinary sights, sounds, or odors.
- Pointing out any other hazards en-route, or at the landing site.
- Verifying that the helicopter is next to the correct tower/pole at the correct site.
- Verifying status of the line (Energized or de-energized) is according to the operational plan. (Tower Transfer only)
 - Crewmembers shall announce their readiness by communicating "**Go for the Structure**"

2.3.3 Landing (Jobsite Transfer Only)

As the aircraft approaches the jobsite the lineman shall:

- Bend his knees slightly to absorb the impact.
- Un-hook his positioning belt followed by his shock lanyard and then any other tools or equipment attached to the hook.
 - The lineman shall communicate, “**Clear to leave**” when appropriate.
- The lineman shall verify that the helicopter is clear to continue departure and immediately notify the pilot if any potential hazards are observed.

2.3.4 Final Approach to the Structure

- Prior to transfer the lineman must examine the portion of the structure to be transferred to in order to verify the structure is not rotten, oxidized or damaged to the point that it may not support the lineman’s weight.

2.3.6 Lineman Transfer to the Structure

- The lineman shall then unstrap his large carabineer (attached to the shock lanyard) from the 5000 lb. load rated ring and attach it to the structure.
- The lineman will then transfer to the structure.
- The lineman’s hands must be free of equipment or tools for the transfer.
- The lineman will then detach the positioning belt (Rodsman) from the longline and then attach it to the structure. The lineman will then wait in that position until the helicopter has cleared the structure.
- **Simultaneous attachment to the line and the tower is permitted because the pilot has the capability to jettison the load if for any reason he must pull away.**
- Every piece of equipment and material shall be placed onto the structure in a way so as to prevent any contact with the lower phases.
- Handlines, hoists, grounds, splices, and cables all have the potential to come into contact with the phases and must be tied up in a manner to prevent inadvertent release.
- Equipment shall be placed in a manner that does not interfere with the hand and footholds that will be used for the lineman transfer.

2.3.7 Departure From the structure

- The lineman shall ensure all objects, (bonding, personal safety gear and etc.) are clear between the longline and the structure.
 - The lineman shall communicate, “**Clear to leave**” when appropriate.
- The lineman shall verify that the helicopter is clear to continue departure and immediately notify the pilot if any potential hazards are observed.

2.3.8 Lineman Transfer to the Helicopter

- The lineman shall return to the drop off point for helicopter pick up unless other arrangements have been made.
- The lineman shall attach all tools or equipment to the hook in a secure manner.
- The lineman shall unsnap the large carabineer from the structure and secure it to the 5000 lb. load rated ring as seen in figure 4.
- The lineman shall attach his positioning belt (Rodsman) as seen in figure 4.
- The lineman shall then verify that the longline and everything attached to it is clear of the structure.
 - The lineman shall communicate, “**Clear to depart**” when appropriate.
- The lineman shall verify that the helicopter is clear to continue departure and immediately notify the pilot if any potential hazards are observed.

Note: At times when a pilot or lineman needs to communicate faster than a mic can be keyed and verbal messages can be sent a pilot or lineman may use the bump technique to get one another’s attention. A pilot can rock the helicopter or a lineman can shift his weight rapidly to do the same. If a pilot gives you the bump stop what you are doing and wait for further communication, he may be trying to warn you of something dangerous you were about to do.



Lineman Emergency Procedure:

Should an emergency arise that requires an autorotation while a lineman is suspended beneath the aircraft the pilot will release the lineman as he reaches the ground. The lineman should be prepared for a fairly hard impact and should avoid the falling shackle and the quickly descending helicopter.

Mid-span Work (Skid)

3.1 Purpose

This Standard Operating Procedure describes the lineman's role in Winco's standard procedure for mid-span work from the skid including: splicing and sleeving, marker ball installation, spacer installation, bird diverter installation, crossing guard installation.

3.2 Scope

This procedure covers only the lineman's role in Winco's standard procedure for mid-span work from the skid. All general company policies and procedures still apply.

3.3 Prerequisites

- PPE per General Rules section of this document.
- Lineman approved per task approval section of this document.
- Personnel qualifications per page three of this document.

3.4 Standard Procedure

3.4.1 Departing the Landing Site

Before departing the landing site the lineman shall ensure that:

- The lineman is belted into the helicopter via the positioning belt.
- The positioning belt (Rodsman) shall be attached to load rated handle found just beneath the rear door as pictured in Figure 5.
- The proper tools and materials must be loaded onboard in an accessible manner.



Figure 5

- The lineman shall communicate, **“Ready for takeoff”** when appropriate.

3.4.2 Final Check

The pilot will initiate an approach to a stabilized hover at a point adjacent to but clear of the wire. The lineman shall complete the following while hovering:

- The lineman shall establish the proper vertical and lateral visual references.
- If the span is a transposition span, it shall be communicated to the pilot.
- The slope of the wire should not be such that the wire will rise above the pilot's eye level within the radius of the rotor disk.
 - The lineman shall announce their readiness by communicating **“Go for the Wire”** The helicopter shall then proceed to the wire.

3.4.3 Approach to the Wire

- The lineman will cross check the helicopter position and announce distances to the wire.

3.4.4 Operations While at the Wire

- Hover time at the wire shall be limited to 10 minutes.
- The lineman shall communicate to the pilot any hazards that he/she identifies as well as any abnormal indicators
- The pilot and lineman are co-responsible for the safe and successful completion of the operation.

3.4.5 Lineman's Procedure's

- The helicopter will be bonded to the wire before any work activity takes place.

3.4.5.1 Splicing/Sleeving

- If the mission requires a splice to be installed over an existing sleeve for a safety it is not necessary to jack the wire together.
- If a sleeve is being installed "performs" or grips shall be installed outside the splice or sleeve area.
- A hoist of the capacity greater than sag tension will be installed onto the grips and jacked up to take the load.
- If the wire is to be separated a "mack" (temporary bond) shall be installed around the wire separation to equalize the potential.
- A new sleeve or splice will be installed.
- The hoist relaxed then removed.
- The "mack" is then removed
- Finally the helicopter bond is removed. Note: On the larger conductors the distance required between grips and "macks" may exceed the lineman's reach. The helicopter may have to reposition to work either end of the work area. If this is the case then the bond will have to be removed and the helicopter repositioned and re-bonded.
- All tools or supplies must remain secure or stowed at all times.

3.4.5.2 Marker Ball installation

- Marker balls that have outside preform wrap may be installed with half of the bolts in place.
- The marker ball will be spread slightly then installed over the wire, install the rest of the bolts, tighten the bolts, and then wrap the preforms.
- Marker balls that have the preforms on the inside will require the halves to be installed on the wire separately.

- When Marker Ball installation is complete remove the helicopter wire bond.
- All tools or supplies must remain secure or stowed at all times.

3.4.5.3 Spacer installation

- The old spacer shall be removed and replaced or a new spacer shall be installed.
- All tools or supplies must remain secure or stowed at all times.

3.4.5.4 Bird Diverter Installation

- Install the Bird Diverter.
- All tools or supplies must remain secure or stowed at all times.

3.4.6 Departure from the Wire

- The lineman shall ensure all objects, (bonding, personal safety gear and etc) are clear between the helicopter and the wire.
 - The lineman shall communicate, “**Clear to depart**” when appropriate.

Note: At times when a pilot or lineman needs to communicate faster than a mic can be keyed and verbal messages can be sent a pilot or lineman may use the bump technique to get one another’s attention. A pilot can rock the helicopter or a lineman can shift his weight rapidly to do the same. If a pilot gives you the bump stop what you are doing and wait for further communication, he may be trying to warn you of something dangerous you were about to do.



Warning #1

Mid-span Illusions – Using wire as a visual reference can subject the crew to a whole host of optical illusions.

Caution: Lack of visual reference during mid-span work can and has led to main rotor/ tail rotor contact with the wire and will cause injury or death to the crewmembers of the helicopter.



Lineman Emergency Procedure:

In any and all emergencies while still onboard the aircraft, Linemen should immediately stop all work, hold tightly to the aircraft using the handle attach point, and move head and upper body into the passenger compartment of the aircraft. Linemen should not un-belt themselves or attempt to climb into the rear passenger compartment unless instructed by the pilot.

Comprehensive Patrols

4.1 Purpose

This Standard Operating Procedure describes the lineman's role in Winco's standard procedure for Comprehensive patrols. The purpose of a Comprehensive Patrol is to inspect and document, condition of the lines, insulators, structures and right of way or additional considerations as requested by the utility.

4.2 Scope

This procedure covers only aspects that apply specifically to the lineman's role in Winco's standard procedure for *Comprehensive patrols*. All general company policies and procedures still apply.

4.3 Prerequisites

- Lineman approved per task approval section of this document.
- The pilot and lineman shall review the route of flight prior to departure to discuss the best direction of patrol considering:
 - Sunlight Glare/ Issues.
 - Weather frontal activity/Wind direction.
 - Fuel Stop locations.
 - Locations of known crossings.
 - Locations of known elevated obstructions.
 - Emergency Plans.
 - Any other safety considerations.
- Communications expectations including mandatory call outs shall be discussed prior to flight.

4.4 Responsibilities

- Who is in control? The pilot is always in command of the helicopter. The pilot is aware of the aircraft and his/her personal limitations. As such, the pilot's decision must be respected in safety of flight situations. Where the flight is not in jeopardy, the patrolman shall recommend the activities of the flight such as patrol speed, height above and distance from the conductor, etc. The pilot ultimately determines whether such recommendations can be safely implemented.
- Everyone on board the helicopter is responsible for the ultimate safety of the task. This includes scanning ahead of the helicopter for obstacles or hazards and communicating them to one another. Safety teamwork in the cockpit (CRM) will greatly increase the safety of the flight and reduce the chance for a patrol accident. The crew will do well to remember that most patrol accidents are the result of a collision with wires or obstructions and that the patrolman is nearly always the resident expert in that environment, not the pilot.

- If the patrolman or the pilot is not familiar with the lines being patrolled, extra time should be spent incorporating added safety measures into the mission which could include a reduction in patrol speeds.
- The pilot has full operational authority.
- The patrolman has the responsibility and the obligation stop the mission if he/she feels it has become unsafe.
- The pilot and patrolman are co-responsible for the safe and successful completion of the operation.

Restrictions

- No easterly patrols within one hour of sunrise and no westerly patrols within one hour of sunset. Flight following procedures shall be established.
- Generally speaking, both the pilot and patrolman efficiencies drop below an acceptable level after five hours "on the line". The patrol should be scheduled to keep actual patrol times less than five hours, unless special provisions are provided which will assure preservation of situational awareness.
- Sub-transmission voltage (69KV or less) lines will not be patrolled when there are winds in excess of 25 knots, or there is a gust spread in excess of 15 knots.
- Patrols shall not begin in any type of falling precipitation.
- Communications should be limited to line patrol and safety issues while on patrol.

Mandatory callouts: It is essential that patrol crews know, understand and use the mandatory callouts while conducting low level flight operations. The callouts require a response from the other crewmember. No response after two successive callouts is cause to abort operations immediately. The abort may be called by any crewmember. Examples: Crossing ahead (detail the number and direction), Wire, Stop, Up, Down, Abort, Birds (direction), Clear left/right, Air traffic (direction), Crop duster (direction), Blowing dust or wind devils. Crossings should be announced as soon as they are observed, and then re-called at approximately 500 to 800 feet or next span.











Refresher Training

If at any time a lineman is away from helicopter work with Winco for more than 90 days or the pilot feels the training is required, refresher training shall be performed on the following subject areas.

- Crewmember duties
- Ground safety
- Transfer techniques
- Bonding/grounding requirements
- PPE requirements
- Equipment selection and utilization
- Any other area the pilot feels must be addressed

Appendix A

Nonverbal Communication Hand Signal Chart

<p>MOVE RIGHT</p>  <p>Left arm extended horizontally; right arm sweeps upward to position over head.</p>	<p>HOLD HOVER</p>  <p>The signal "Hold" is executed by placing arms over head with clenched fists.</p>
<p>MOVE LEFT</p>  <p>Right arm extended horizontally; left arm sweeps upward to position over head.</p>	<p>TAKEOFF</p>  <p>Right hand behind back; left hand pointing up.</p>
<p>MOVE FORWARD</p>  <p>Combination of arm and hand movement in a collecting motion pulling toward body.</p>	<p>LAND</p>  <p>Arms crossed in front of body and pointing downward.</p>
<p>MOVE REARWARD</p>  <p>Hands above arm, palms out using a noticeable shoving motion.</p>	<p>MOVE UPWARD</p>  <p>Arms extended palms up; arms sweeping up.</p>
<p>RELEASE SLING LOAD</p>  <p>Left arm held down away from body. Right arm cuts across left arm in a slashing movement from above.</p>	<p>MOVE DOWNWARD</p>  <p>Arms extended, palms down; arms sweeping down.</p>

Winco Inc. Helicopter Lineman's Safety Test

Name _____ Company _____ Date _____

True or false

1. The Lineman is a crewmember onboard the aircraft.
 True False
2. The best way to approach the helicopter is from the rear.
 True False
3. The lineman should safety off to the tower and the helicopter to achieve 100% fall protection during a skid transfer.
 True False
4. When working from a helicopter on lines in a corridor it is necessary to use Equipotential Bonding.
 True False
5. A three point chinstrap or flight helmet is required for work from the skid.
 True False
6. A tailboard or tailgate is only required to be done once each day.
 True False
7. A shoulder harness is required for longline jobsite transfers.
 True False
8. Seatbelts should be left unbuckled during flight to allow for quick access when getting back into the helicopter.
 True False
9. When choosing a hot stick for skid work, the longer the better.
 True False
10. It is permissible for a lineman to attach his shock lanyard to a grapple hook on the end of a longline.
 True False

11. The pilot alone has the authority to stop a mission.
 True False
12. Generally speaking power line patrol times should be limited to 8 hours on the line each day.
 True False
13. Hover time near a wire should be limited to 10 minutes.
 True False
14. The pilots collective is in his right hand, between his legs.
 True False
15. It is permissible to safety to both the longline and the tower during a longline transfer.
 True False
16. Safety glasses are not required on the skid.
 True False
17. Water should be used to wet down the landing area as needed to keep dust down.
 True False
18. Helicopters can be used on energized lines without concern for electrical flashover.
 True False
19. Exit from a helicopter should be performed on the down-slope side.
 True False
20. The lineman is responsible to communicate that all ropes and equipment are free of the structure before the helicopter is moved away.
 True False

Lineman Name (Print)

Lineman signature

Pilot Name (Print)

Pilot Signature

This form to be returned Winco headquarters for ID production

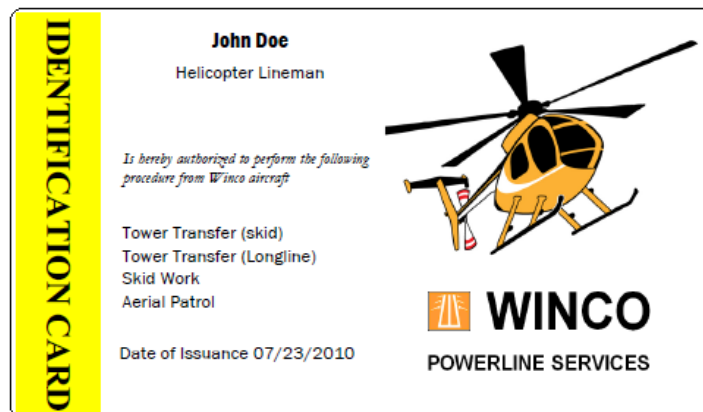
I _____ have received training in the following
(Print Lineman Name)
areas and am comfortable with the following activities.

I _____ have provided the above named lineman
(Print Pilot Name)
hands on training was provided in the following areas and hereby find
him/her capable to perform work in the following activities.

- Tower Transfer (Skid)
- Tower Transfer (Longline)
- Jobsite Transfer (Longline)
- Skid Work
- Aerial Patrol

Lineman Signature _____

Pilot Signature _____



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