

# **SINGLE SKID, TOE-IN, AND HOVER EXIT/ENTRY PROCEDURES**

## **Definition**

STEP is defined as Single-Skid, Toe-In and Hover Exit/Entry Procedures. There are three separate STEP maneuvers to be conducted in this mission profile:

- Single-skid: One skid or a portion of one skid is in contact with the surface while the other skid is (due to terrain considerations) not in contact with the surface.
- Toe-in: The toes (forward portion of the skids) are in contact with the surface, while the rear portion of the skids are not in contact with the surface.
- Hover: The helicopter remains in a hover above the surface of the terrain.

## **Background**

STEP is a common flight maneuver that has been used throughout the world for many years by the military, law enforcement, SAR and heli-skiing. The National Park Service has utilized STEP for many years for rescue, fire, animal capture and utility projects. Prior to STEP being approved for BLM wildland fire, it had been used extensively by BLM cadastral crews in Alaska since 2003, with each Alaska exclusive use helicopter conducting 200-300 operational STEPs annually. In 2015 Salt Lake Helitack became the first BLM fire suppression helitack program to be approved for emergency firefighter STEP operations. In 2017 the program was approved for firefighter insertion/extraction.

## **Justification**

Single Skid, Toe-In, and Hover Exit/Entry Procedures (STEP) support the timely initial attack of wildland fires by providing insertion of firefighters, as well as allowing for the evacuation of injured or incapacitated wildland firefighters where the slope or nature of the terrain does not meet helicopter flight manual requirements for full skid tube placement, or zero pitch (no lift produced) in the rotor blades. Much of the Western U.S. landscape and particularly the Great Basin is conducive to STEP operations i.e., sage flats, ridgelines, and rocky outcroppings.

STEP landings expedite a more efficient and effective way to insert personnel when confronted with difficult landing zones in mountainous and steep angle terrain. Such landings allow trained firefighters or rescue personnel to be inserted near wildland fires and accident scenes that may otherwise be difficult to access with a helicopter. In addition to extricating a “yellow” or “red” patient a STEP extraction of a “green patient” would be acceptable when the patient is in terrain that could pose a hazard to crews trying to extricate them over steep and difficult terrain. In addition to providing access and egress during emergencies, these landings also reduce the amount of time firefighters and rescuers spend approaching potentially complex and dangerous fire environments.

## **Operations**

An approved annual operations plan outlines minimum policies, procedures, qualifications, training requirements and equipment for a STEP program utilizing the associated exclusive use helicopter. Prior to STEP operations, the Incident Commander (IC), dispatch or the assigned Air

Attack will be notified. Prior to any STEP mission, the STEP Helicopter Manager will brief all personnel involved as to the nature of the mission, location, and pertinent information to accomplish the objective. The information will include the anticipated STEP procedure (Toe-In, Single Skid or Hover), environmental concerns (e.g., weather, wind, terrain, landing areas, pressure altitude, LCES, safety zones, aerial and other hazards), individual responsibilities, and incident specific information. An operational risk assessment utilizing the STEP Green Amber Red (GAR) model will be completed by all STEP participants, including the pilot. The GAR may be completed on the ground or in flight. The Go/No-Go decision matrix will be reviewed in flight prior to any STEP procedure.

### **Currently**

Since 2015, BLM fire helitack crews have completed hundreds of operational STEP's and thousands of initial training and recurrency STEP's. Today there are currently 5 BLM fire helitack crews approved for STEP (Elko, Moab, Moki, Las Vegas, and Salt Lake) Common operational STEP's include initial attack fire suppression, helispot construction and medical extraction. Recently there has been great interest from other BLM exclusive use helitack crews, along with other fire agencies including the USFS and BIA. This interest has grown to allow non-BLM employees to participate in STEP training with the BLM to gain exposure to STEP operations.

