

## Alpine Rescue Team – SPOT Response

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**Purpose:** Guidance in handling responses to SAR missions initiated by or involving SPOT satellite messenger devices.

### Background:

SPOT is a family of personal devices designed to share position information in non-emergency situations and to activate a response similar to a 911 call in emergency situations. Unlike the similar PLB technology, in which the hardware is produced by commercial firms and the service provided by the US Government, SPOT hardware and services are both provided by a commercial firm using the GlobalStar LEO satellite constellation. SPOT requires the purchase of annual subscriptions to activate various types and levels of services. The Basic service provides for emergency activation.

There are several versions of SPOT hardware in the field. One type is a completely standalone unit. Another is a piece of equipment that connects to Android and iPhone smartphones via Bluetooth and is controlled via an installed app. Under ideal circumstances the SPOT units have accuracy comparable to consumer grade GPS units, or about 5 meters.

In non-emergency situations positions and messages can be sent to designated individuals via email and text messages, and to public and private websites. An emergency message which SPOT refers to as an SOS is sent to their GEOS Rescue Coordination Center which in turn contacts local law enforcement to notify them of an activation, provide location, and information on the owner of the SPOT unit. **Position information is delivered to local authorities in decimal degree coordinates using the WGS 84 datum.**

If activated positions are transmitted every 10 minutes in non-emergency situations, and can also be sent on-demand. If the SOS function is activated the unit attempts to transmit position every 5 minutes. Battery life on fresh lithium batteries when transmitting SOS locations is claimed to be 3 – 6 days for SPOT messenger and 4-5 days for SPOT Connect.

### Procedures:

1. A SPOT SOS notification will be delivered to a County PSAP, in our case the Clear Creek or JeffCo Dispatch facilities from the RCC. During an activation they will provide location of the unit and information on the unit's owner.
  - a. An SOS should be treated in the same manner as a 911 call.
  - b. ML's should assume that the last coordinates transmitted is near the true position of the subject and should dispatch search teams to that location.
    - i. Subsequent position updates should help determine if the subject is stationary or mobile, and if the latter direction of travel.
      1. GEOS Response Coordination Center: 936-582-3191
  - c. Since the coordinates are in decimal degrees, WGS 84 and Alpine's standard is UTM, NAD 27 either convert the locations to UTM at Ops for the field team or have a single field team member enter the lat/long coordinates and datum into a handheld GPS while others retain UTM format. If at all possible do not ask field teams to convert the coordinates themselves while enroute to the subject.
2. If a subject who is known to have a SPOT unit is missing but there has been no SOS it may still be possible to use SPOT information to aid in a search.
  - a. Check if Reporting Parties or friends are aware of the subject's use of SPOT and most importantly if the subject has created a SPOT website that allows others to monitor location on a near-real time basis. If such a website exists obtain the URL and password (if required)

from the RP and check for recent locations.

- i. Note: this may be best done by a team member at their home with a solid Internet connection rather than trying to do so from Ops via a wireless data connection.
  - ii. SPOT also allows for sending geotagged posts to the social media sites Twitter and Facebook. Check to see if the subject uses such services and if there have been any recent updates that may contain location information.
- b. SPOT also provides the ability to capture location information within the user's account on SPOT's registration and account management system. If the subject is known to use SPOT this possibility should be investigated and account logon credentials obtained. **Note that SPOT requires a request to access a personal account to come from Law Enforcement.** The contact information for account access is:
- i. GEOS Response Coordination Center: 936-582-3191 (Once SOS mode is initiated)
  - ii. SPOT Customer Service Call Center 1 (866) OK1-SPOT . (During operating hours only. Hours Monday-Friday: 8 AM to Midnight North American EST.)
  - iii. Globalstar's 24/7 Law Enforcement Hotline : 408-933-4840 (After operating hours)
- c. The URL for account access is: <https://login.findmespot.com/>

**Cautions:**

Treat a SPOT location as the center of a search area and not as "the" location. It is a GPS unit and is subject to degradation due to all the same factors impacting standalone GPS units: satellite constellation configuration, obstructions, multipathing, other GPS units or electronics interfering, etc. Confidence in location will increase if it remains relatively constant over a period of time with recurring updates.

The SPOT Connect unit uses a smartphone app to manage the functions of the unit. This app puts a heavy drain on the smartphone battery. Be aware that even if the smartphone battery dies the unit continues to function with its final settings. An SOS transmit can be activated from the unit itself; it does not require the smartphone app.

**Developed to assist the SAR mission incident commanders of Alpine Rescue Team. Provided as-is for the consideration of SAR units. Other SAR units should develop local protocols as appropriate and necessary for your agency's use.**