NIGHT HAWK®

STOP STICK® Inside

Remote Tire Deflation Device

USER MANUAL

www.psemc.com

www.stopstick.com

PACIFIC SCIENTIFIC
ENERGETIC MATERIALS COMPANY

StopTech Ltd.

Legal & Warranty Information

It is the policy of Pacific Scientific Energetic Materials Company to warrant its hardware products, manufactured at its production facilities at no additional cost to the BUYER for a period of 12 months starting from the date of shipment from the FOB point identified in the contract. This is a twelve month limited warranty only that at the time of shipment the product is to be of merchantable quality, and free of defects in materials and workmanship that would cause the product to fail to conform to the performance requirements as may be identified in the contract document.

This warranty will not extend to services (engineering or other), nor data, either or both of which may be covered under other terms of the contract document. Nor is this warranty to cover fitness for a particular process, nor results obtained by the use of product(s) either singly or in combination with other products, including other SELLER products. SELLER's sole liability under this warranty shall be limited to replacement or repair of the product(s), or refund of the purchase price thereof, at SELLER option. All transportation charges for warranty returns and re-shipment of repaired or replaced goods shall be borne by the SELLER.

This warranty will be in lieu of, and excluded all other warranties express or implied, as to merchantability, fitness for a particular purpose, or arising by operation or law or otherwise, and in no event is SELLER to be liable for incidental or other consequential damages. Any claim by the BUYER under this warranty must be asserted within the aforesaid 12-month period, and will be subject to verification by SELLER examination of the product(s) in question. All returns are to be received and handled in accordance with the SELLER approved Government/Customer Owned material procedures.

StopTech, Ltd.

WARRANTY POLICY

The STOP STICK® is warranted to be free from defects in design, material and workmanship, for a period of twelve months after the date of shipment to the purchaser or FIRST USER. If any STOP STICK® is determined to be defective, StopTech, Ltd. will replace the item at no charge under the following conditions:

1. The user must notify StopTech, Ltd. of the defect in writing.

2. The STOP STICK® and any related equipment were properly installed and/or deployed. And, the defect was not in any way caused by operator negligence, accident or wear and tear under normal use.

3. When requested, the STOP STICK® must be returned to StopTech, Ltd. for inspection.

4. This warranty is void if the product has been dismantled or altered in any way.

5. No one may change or extend this warranty unless both StopTech, Ltd. and the user otherwise agree in writing.

6. Neither StopTech, Ltd. nor its marketing affiliates shall be responsible for the use of the information contained herein, and you must make your determination as to the suitability for your own use, for the safety of your Department, and the general public.

7. THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES EXPRESSED OR IMPLIED, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS. THIS WARRANTY SUPERSEDES ANY OTHER COMMUNICATION BETWEEN THE PARTIES, INCLUDING ANY WARRANTY INFORMATION OR DISCLAIMERS AS CONTAINED IN STOPTECH, LTD.'S OR THE USER's INVOICES.

8. StopTech, Ltd. and its marketing affiliates shall not be liable for any consequential loss or damages resulting directly or indirectly from the use of the STOP STICK®, including, but not limited to, damages to property or injury to persons.

FCC ID: RSJNIGHTHAWKV2

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and
(2) This device must accept any interference received, including interference that may cause undesired operation.

The user is cautioned that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This equipment has been tested and found to comply with the limits for a class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

* Reorient or relocate the receiving antenna.
* Increase the separation between the equipment and receiver.
* Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
* Consult the dealer or an experienced radio/TV technician for help.

The user is cautioned that changes and modifications made to the equipment without the approval of manufacturer could void the user's authority to operate this equipment.

Important Note: To comply with FCC RF exposure compliance requirements, the following antenna installation and device operating configurations must be satisfied - This device and its antenna(s) must not be co-located or operating in conjunction with any other antenna or transmitter."

Declaration of Conformity

TRADE NAME	Nighthawk V2
MODEL NUMBER	836275
COMPLIANCE TEST REPORT NUMBER	
COMPLIANCE TEST REPORT DATE	
RESPONSIBLE PARTY (IN USA)	Pacific Scientific Energetic Materials Company (California) LLC
ADDRESS	3601 Union Road Hollister, CA 95023
TELEPHONE	831-630-5306

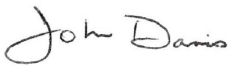
This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If the unit does cause harmful interference to radio or television reception, please refer to your user's manual for instructions on correcting the problem.

I the undersigned, hereby declare that the equipment specified above conforms to the above requirements.

Place: Hollister, CA

Date: May 29, 2014

Signature: 

Full Name: John Davis
Position: Vice President Programs & Contracts

SAFETY INFORMATION

The NightHawk® Remote Tire Deflation Device should only be used in strict compliance with your department's policies and regulations.

The NightHawk® device should only be used by fully trained personnel. Failure to use the device as designed can result in damage to property and potential injury or death to users and/or bystanders.

Personnel using the NightHawk® should be fully trained in the proper use of the device, and have a complete understanding of the correct tactical uses of the device.

The NightHawk® uses Stop Stick® tire deflation modules. Stop Sticks® contain very sharp metal spikes. Do not attempt to repair or dismantle individual Stop Stick® modules.

Unexpected sudden deflation of tires can result in loss of vehicle control and serious accidents. Do not use the NightHawk® device in situations where bystanders could be injured as a result of suspect vehicles losing control

Never use the NightHawk® device on motorcycles or other vehicles with less than four wheels.

The NightHawk® device should only be used when the operator has a clear, unobstructed view of the roadway and oncoming vehicles.

Always make sure that other law enforcement personnel involved in a pursuit are aware of the potential deployment of the NightHawk® device. Never deploy the device if there is the potential to deflate the tires of law enforcement agency vehicles. Always communicate potential deployment to appropriate individuals.

The NightHawk® device uses a gas generator cartridge in a launch tube assembly to propel the Stop Stick® sleeve across the roadway. Never activate the device
in close proximity to people, vehicles, or structures to avoid damage due to the launching of the sleeve.

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1 INTRODUCTION

This product has been designed and manufactured to exact specifications. Modification of this product in any respect can be dangerous.

The NightHawk® Remote Tire Deflation Device has been designed and manufactured to be used only by law enforcement, security, and military personnel that are trained in the proper handling, storage, use, application, and maintenance of this product. This product may cause unintended damage to property and serious injuries, including death, to the user and those in the vicinity of the product. Pacific Scientific EMC disclaims liability for any personal injury or property damage that results from operation of a product which has been modified from the original design, or for use of the product that is not consistent with the manufacturer's written instructions. Carefully read the instructions in this manual. Dispose of the product in accordance with applicable law. For further information please contact Pacific Scientific EMC at 480-763-3000.

1-1. Description

The NightHawk® Remote Tire Deflation Device is a self-contained device that enables law enforcement officers to deploy a Stop Stick® tire deflation strip using a hand-held remote control. The ability to deploy the Stop Stick® remotely provides additional security and safety for the law enforcement officer. The NightHawk® unit is positioned beside the roadway ahead of the suspect vehicle. When the vehicle approaches, the officer activates the unit using a trigger on the hand-held remote, launching the Stop Sticks® across the roadway. Once the suspect vehicle has passed, the officer uses the trigger a second time to retract the Stop Sticks®, allowing pursuit vehicles to pass safely.

1-2. How It Works

NightHawk® utilizes a gas generator cartridge similar to the ones used to quickly inflate automotive airbags. The gas generator cartridge is contained in the launch tube assembly. The launch tube assembly propels a weighted sack (called a drogue) across the roadway. As the drogue is launched, it pulls a nylon sleeve containing 10 Stop Sticks® with it. The entire action is accomplished in less than two seconds. After the suspect vehicle has passed, the hand-held remote trigger activates a small electrically-powered winch that pulls the Stop Sticks® out of the roadway permitting pursuit vehicles and other traffic to pass without tire deflation.

1-3. Controls and Indicators

Figure 1 shows the primary user controls and indicators.

Figure 1. Controls and Indicators

2 PRE-DEPLOYMENT

The NightHawk® Remote Tire Deflation Device should ONLY be used by authorized personnel who have been properly trained in its use. Improper use of the NightHawk® can result in damage to property and/or serious injury or death.

2-1. Proper Use of the Device

The NightHawk® device should only be used under conditions that present the least possible risk to law enforcement officers, the general public, and suspects. Officers should be fully trained in the correct operation of the device. Deployment of the NightHawk® should only be executed in accordance with the policies and procedures of your agency.

2-2. Situation Considerations

There are other factors besides location that should be considered before deploying the NightHawk®. One key factor is speed. When placing the device be mindful of surroundings especially near an active roadway. The user should look for forward markers to determine where the position of the target vehicle will pass to properly time deployment of the Stop Sticks, allowing for the 2 second deploy. The table below shows the approximate lead distance for placement of the device relative to vehicle speeds.

Vehicle Speed (mph)	Device Lead Distance (ft.)
30	90
40	120
50	150
60	180
70	210
80	240
90	270
100	300
110	330
120	360

2-3. Location Considerations

There are a number of factors that should be considered before using the NightHawk®. The location selected for deployment plays a key role in the success or failure of the operation. The following factors should be considered:

- **Traffic Control:** The NightHawk® should only be deployed in locations where traffic is controlled, and access is limited to the suspect vehicle and pursuit vehicles. Avoid deploying the device in locations where normal public traffic might interfere with the operation.
- **Road Surface:** The Stop Stick® tire deflation sticks work in a variety of terrain.
- **Visibility:** The NightHawk® should be located such that officers can clearly observe the roadway a considerable distance before and after the deployment zone.
- **Potential Avoidance:** The Stop Sticks® should be deployed in a location that will make it difficult for the suspect vehicle to avoid the device. Officers should try to position the device where the vehicle cannot easily drive off the roadway or turn onto another roadway to avoid the Stop Sticks®.
- **Safety of the General Public:** For maximum safety, it is recommended that officers deploy NightHawk® away from the general public to minimize the risk to bystanders.
- **Obstructions:** Avoid deploying the device in locations where the suspect vehicle could lose control and crash into buildings or structures.

2-4. Placement on the Roadway

Figure 2A illustrates the proper placement of the NightHawk® unit beside the roadway. The important factor is the distance from the edge of the roadway. **The unit should be 12 feet from the edge of the target lane**. The tether for the nylon sleeve is 12 feet long (null zone). There are no Stop Sticks® in the 12 foot null zone.

NOTE: The Null Zone provides an additional safe distance for the Officer and the NightHawk® from oncoming traffic.

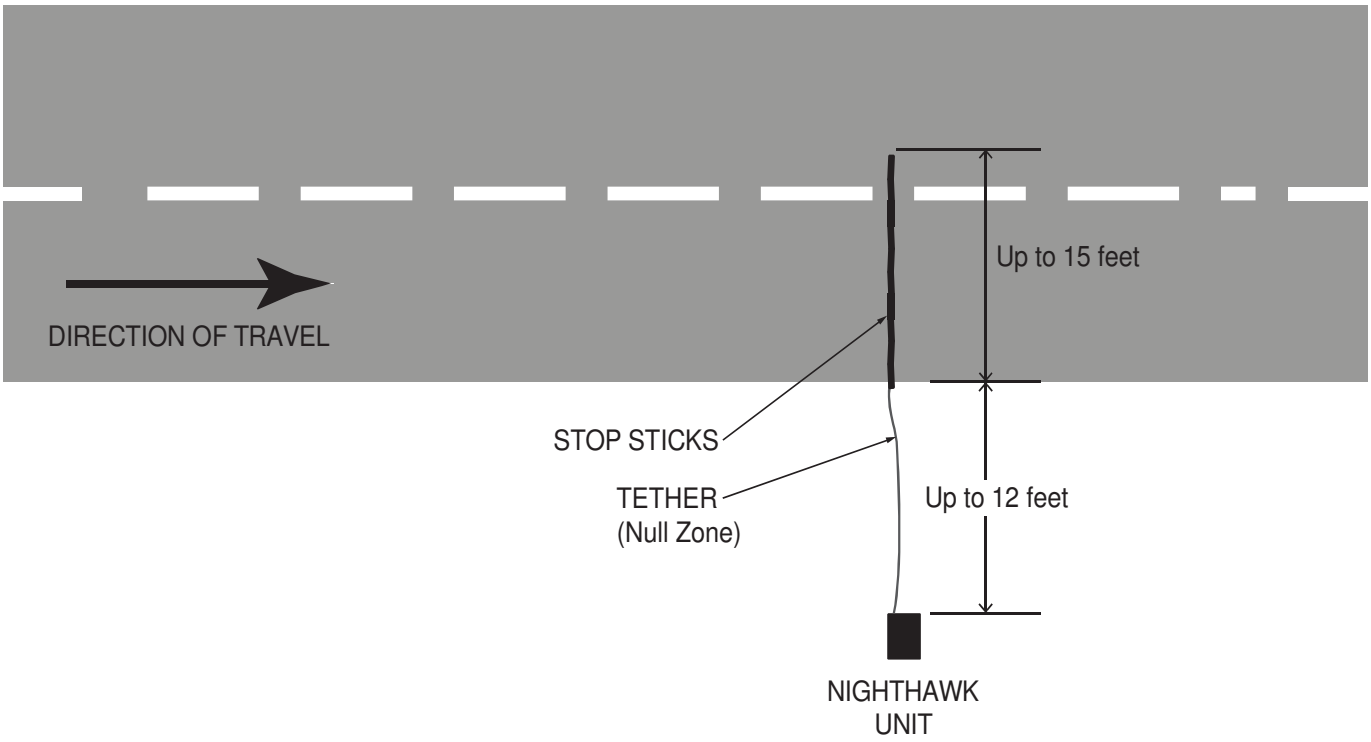


Figure 2A. Placement of NightHawk®

2-5. Battery and System Status Check

2-5.1. External System Readiness Check

The NightHawk® system should be checked to verify it is ready for use. This check will show the battery has sufficient charge to operate the unit and the new launch tube is loaded and ready. The external system readiness check button and indicator are located near the carrying handle. (Figure 2B-1)

- STEADY **GREEN**: Battery level is good and new launch tube is loaded and ready.
- BLINKING **RED**: Battery level is marginal; should be charged at the earliest opportunity. New launch tube is loaded and ready.
- STEADY **RED**: Battery is **NOT** sufficient to operate or launch tube expended and needs to be replaced.

NOTE: The battery indicator on the outside of the case does not indicate the status of the hand-held remote. Refer to *Hand-Held Remote Battery Check*.

2-5.2. System Status Check

Inside the case, when the power switch is turned on a system status indicator will indicate the battery's charge and launch tube condition (Figure 2B-2); The status LED will indicate as follows for different states:

- STEADY **GREEN**: Battery level is good; Launch tube reset completed. System is ready to go.
- BLINKING **RED**, FOLLOWED BY STEADY **GREEN**: Battery level is low, but system will still function properly. Launch tube is loaded.
- STEADY RED: System is NOT ready to go. Either the battery charge is too low to operate the unit, or the system controller has not been reset following launch.

2-5.3. Hand-Held Remote

The hand-held remote battery should be checked to verify it has sufficient charge to operate the unit. To check the remote battery press and hold the "Arm" button on the remote.

- STEADY **GREEN**: Battery level is good; system is ready to go.
- BLINKING **RED FOLLOWED BY STEADY GREEN**: Battery level is marginal and should be charged at the earliest opportunity. System will still function properly.
- STEADY **RED or LED not lit**: Battery is **NOT** sufficient and unit will not operate.

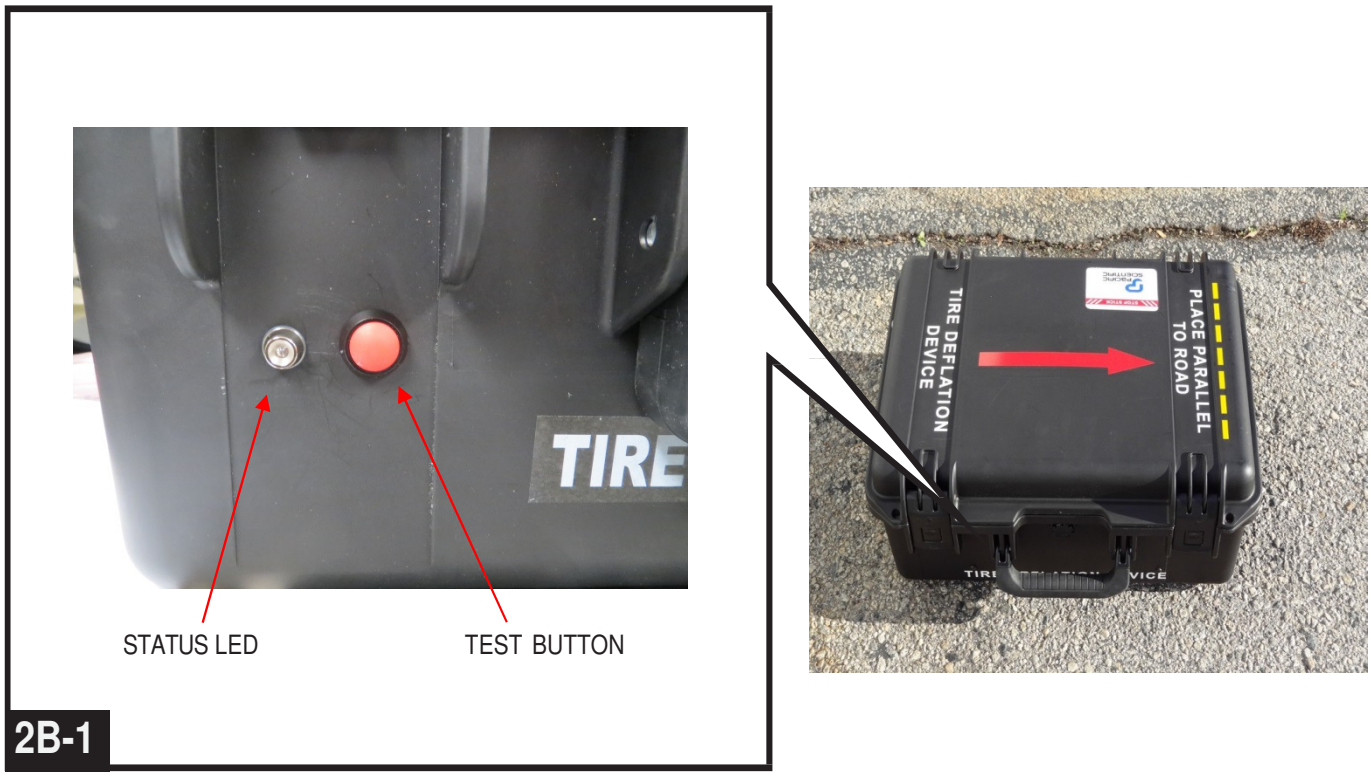


Figure 2B. Battery and Status Check

3 DEPLOYMENT

NightHawk® launches the Stop Sticks® with significant velocity. Do not activate the unit if there is any possibility the drogue could impact individuals in the path of the launch.

Launching Stop Sticks® produces a very loud noise (similar to a .38 caliber round). Make sure there are no people within 10 feet of the unit when it is activated.

Perform these steps to use the NightHawk®.

1. Place the NightHawk® on the ground up to 12 feet from the edge of the roadway, oriented with the red arrow on the case pointing in the direction of the road (Figure 3-1).

2. Release the two latches and COMPLETELY raise the lid open (Figure 3-2).

3. Remove the hand-held remote from the case, being mindful to not actuate the Arm or Fire button (Figure 3-3).

4. Prior to deployment, lift the switch guard (**RED**) and set the power switch to the ON position. Check the System Status indicator and verify that it is illuminated **GREEN**, indicating the unit is ready to launch (Figure 3-4).

Once the power switch is set to ON, the unit is activated. Exercise extreme caution when handling the hand-held remote to avoid accidental launch.

5. Move to a safe location away from the roadway, making sure you have a clear line of sight to the roadway, including clear vision of the approach to the deployment location.

6. **IMPORTANT:** The system deploys in two seconds. Operator must anticipate the arrival of the suspect vehicle and activate the launch before the vehicle passes the unit's location. (Refer to Speed Table 2-2.)

7. Press and hold the ARM button on top of the hand-held remote, check for green light, continue to hold down the button, then press AND RELEASE the FIRE button also on the top of the remote to launch the Stop Sticks® (Figure 3-5).

8. After the vehicle passes the unit, retract the Stop Sticks® by repeating the button sequence of step 7 (Press and hold the ARM button, then press AND RELEASE the FIRE button.)

NOTE: If you do not wish to retract the Stop Sticks®, power off the NightHawk® unit by setting the power switch to the OFF position, to prevent accidental retraction.

PLACE UNIT 12 FEET
FROM ROADWAY

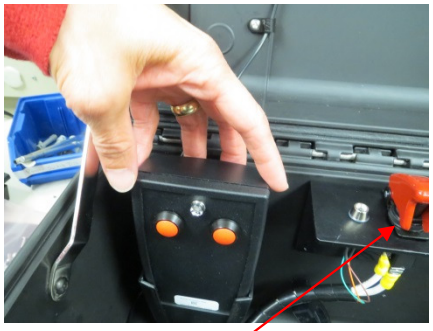
MAKE SURE RED ARROW POINTS TOWARD
THE ROAD

3-1

RELEASE LATCHES
AND FULLY OPEN COVER

3-2

REMOVE HAND-HELD
REMOTE



POWER SWITCH

3-3

LIFT SWITCH GUARD AND TURN
POWER SWITCH ON

VERIFY SYSTEM STATUS
LIGHT IS GREEN

3-4

PRESS AND HOLD ARM BUTTON
THEN PRESS AND RELEASE FIRE BUTTON
TO LAUNCH STOP STICKS

REPEAT SEQUENCE TO
RETRACT STOP STICKS

3-5

Figure 3. Deployment

4 POST-DEPLOYMENT

After each NightHawk® deployment the unit must be taken to a secure location/ depot for resetting. Do not attempt to do this from the roadway.

4-1. Inspection

After the NightHawk® is used, the unit should be inspected to determine what actions must be taken to return the unit to service. If any components are determined to be damaged or defective during inspection, contact StopTech, Ltd, for replacement materials. Be sure to perform all steps in paragraphs 4-2 through 4-5 in their entirety before re-fielding the unit. If a vehicle runs over the Stop Sticks®, the segments that were impacted by the vehicle's tires must be replaced.

4-2. Repacking Stop Sticks®

After any maintenance or deployment, the Stop Sticks® must be repacked into the NightHawk® case. Follow these steps to repack the unit.

NOTE: It is important for the Stop Sticks® to be properly packed into the case to ensure a successful deployment. Pay careful attention to the way the Stop Sticks® are oriented in the tray.

NOTE: It is important to get the retraction line properly routed and secured. This will aid in packing the Stop Sticks® into the case and prevent inadvertent tangling of the line during deployment.

a. Inspect the retraction line and insert through the fabric loops and Velcro tabs along the nylon sleeve. Make sure each Velcro tab is securely fastened around the retraction line (Figure 4A-1).

b. Attach nylon sleeve tether to tray using small clip (Figure 4A-2)

c. At the case, pull in tether and layer it in the bottom of the tray in back-and-forth fashion (Figure 4A-3).

d. Place the first Stop Stick® into the tray closest to the lid as shown (Figure 4A-4).

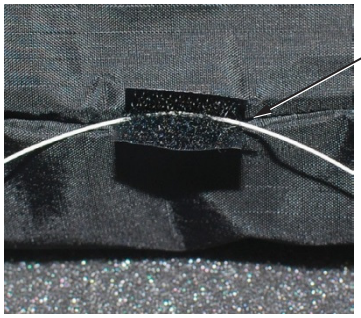
e. Fold the nylon sleeve over and place the second Stop Stick® next to and underneath the first Stop Stick® as shown.

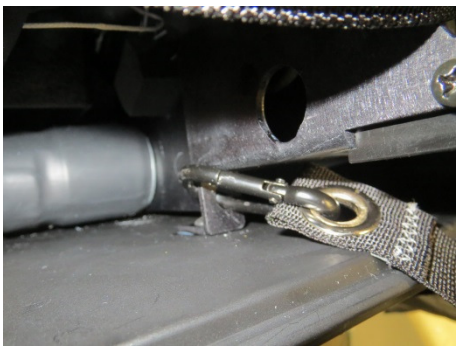
f. Continue this pattern, packing the first five Stop Sticks® in the bottom of the tray, in alternating fashion (Figure 4A-5).

g. Fold the nylon sleeve over again and place the sixth Stop Stick® on top of the bottom layer. The sixth Stop Stick® will be furthest away from the lid. Continue the folding pattern, with the last Stop Stick® closest to the lid, and directly on top of the first Stop Stick® (Figure 4A-6).

NOTE: When packed correctly the position of the exit clip will be facing away from the opening of the launch tube.

4A-1





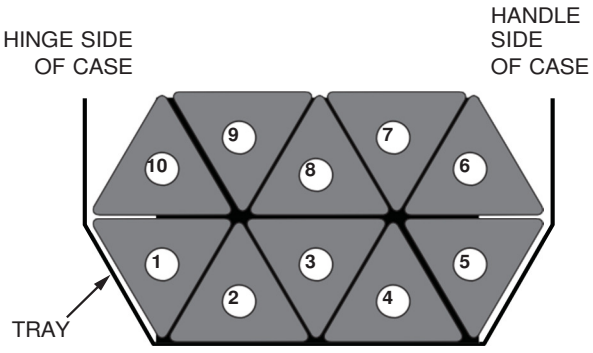
4A-2 ATTACH TETHER TO TRAY USING MALL CLIP (top right side of box)

4A-3 TETHER AND RETRACTION STRING LAYERED IN TRAY

4A-4 FIRST STOP STICK WITH TETHER TO THE LEFT SIDE

4A-5 STOP STICKS LAYERED IN TRAY IN ALTERNATING FASHION

4A-6 LAST STOP STICK WITH LOOP END (AND CLIP) TO THE LEFT SIDE



4A-7 END VIEW OF STOP STICKS LOADED IN TRAY

Figure 4A. Repacking

4-3. Replacing Stop Sticks® and/or Nylon Sleeve

Follow these steps to replace the Stop Stick® segments and/or the nylon sleeve.

NOTE: The nylon sleeve is divided into five pockets, each pocket holding two Stop Sticks®. Each sleeve pocket has an opening for removing/inserting Stop Sticks®.

a. Lay out the nylon sleeve completely in a straight line.

b. Remove Stop Sticks® from pockets as necessary. If replacing nylon sleeve, remove all Stop Sticks and detach nylon sleeve from the clip securing it to the tray.

c. If replacing Stop Sticks® after a deployment, carefully inspect each Stop Stick and replace any Stop Sticks® that show signs of damage.

NOTE: All Stop Sticks® have a squared end and a beveled end. All Stop Sticks® must be inserted into the nylon sleeve oriented in the same direction, with the squared end closest to the tether end of the sleeve (Figure 4B).

d. Insert Stop Sticks® into nylon sleeve pockets, with the squared end of each stick closest to the tether end of the sleeve.

e. Once all the Stop Sticks® are inserted into the nylon sleeve, refer to paragraph 4-2 and repack the Stop Sticks® into the NightHawk®.

BEVEL END OF STOP STICK
CLOSEST TO DROGUE END OF SLEEVE

SQUARE END OF STOP STICK
CLOSEST TO TETHER END OF SLEEVE

INSERT STOP STICKS IN NYLON SLEEVE

4B

Figure 4B. Replacing Stop Sticks®

4-4. Replacing Launch Tube

Only trained personnel should attempt replacing Launch tube! Always ensure the end of the launch tube is pointed away from personnel and never look down the launch tube.

Always ensure the operator replacing the launch tube has direct control over the location of the hand-held remote. Prevent misplacement and/or inadvertent operation of the hand-held remote during the reloading operation.

Read the following instructions completely to familiarize yourself with the sequence of events prior to attempting to reload the system.

Each time the NightHawk® is activated, the launch tube must be replaced. Follow these steps to replace the launch tube.

a. Place the unit on a suitable work surface. A suitable surface should be a little higher than waist high and capable of supporting approximately 50 pounds or more. Position the unit with the handle towards the operator, and the red arrow pointing toward the right.

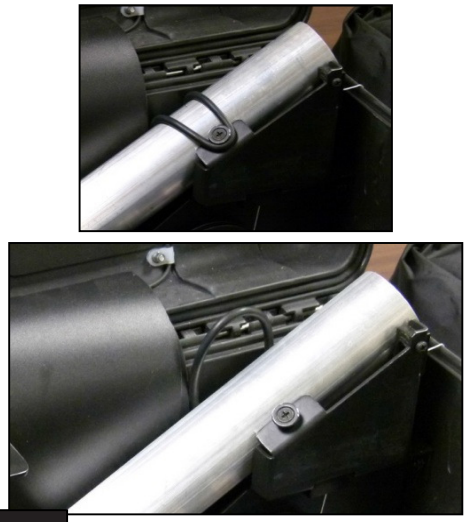
b. Open the case and make sure the power switch is in the OFF position.

c. Remove the hand-held remote and place in a secure location near the left side of the case.

d. Disconnect the launch tube electrical connector (Figure 4C-1).

e. Release the anchor strap by lifting the strap from its position around the button located on the deployment system bracket (Figure 4C-2).

4C-1 LAUNCH TUBE ELECTRICAL CONNECTOR



4C-2 LAUNCH TUBE ANCHOR STRAP

Figure 4C. Launch Tube Removal

f. Lift the right (output) end of the launch tube from its support, and then slide the tube toward the right to free the breech end from its support bracket.

NOTE: The new launch tube will have a safety plug installed at one end and a short electrical harness exiting the breech end.

g. Install the new launch tube with the MUZZLE END TOWARD THE RIGHT, and the PLUG END TOWARD THE LEFT.

NOTE: Make sure that the breech end of the launch tube is seated firmly into the holder and the wires are not pinched. Be careful to make sure the retention strap is not trapped below the launch tube.

h. Attach the anchor strap around the launch tube by carefully placing the open loop of the strap around the retention button. Make sure that the strap is routed over the launch tube.

i. Connect the electrical connector coming from the controller in the NightHawk® case to the connector on the short harness coming from the breech end of the launch tube (fig. 4D-1).

j. Remove the safety plug from the end of the launch tube.

k. Attach the loop at the end of the drogue strap to the supplied clip at the end of the nylon sleeve containing the Stop Sticks® (Figure 4D-2)

l. The launch tube will have a string. Remove the tape securing the string and gently extend the string approximately two (2) feet.

m. Insert the drogue into the launch tube and push it down into the tube as far as possible (fig 4D-3). Only the tether portion should extend from the open end of the launch tube. At this point, you should have the tether and the string hanging from the end of the launch tube.

n. Attach the tether and the string to the loop at the end of the nylon sleeve using the supplied clip.

o. Make sure that both the tether and string are routed neatly to avoid being caught on any system components during deployment.

NOTE: Each hand-held remote is coded to work with a specific NightHawk® unit. Do not switch remotes between units or they will not operate!

p. Replace the hand-held remote in the case.

q. Ensure all people are clear down range.

NOTE: If the status LED does not illuminate green refer to paragraph 4-5 and reset the controller.

4D-1 ATTACH DROGUE STRAP TO NYLON SLEEVE

4D-2 RECONNECT ELECTRICAL CONNECTOR

4D-3 INSERT DROGUE IN LAUNCH TUBE

Figure 4D. Launch Tube Replacement

4-5. System Reset

Each time the NightHawk® unit is deployed, the system must be reset. Follow these steps to reset the system.

a. Set the power switch to the ON position. The status LED will be **RED**, indicating the system is not ready for deployment.

b. Locate the system controller in the bottom of the case. On the controller locate the reset button. It should be illuminated **RED** (Figure 4E-2).

c. Press the reset button, then set the power switch to the OFF position.

d. Set the power switch back to the ON position. The system status light should be **GREEN**, indicating the unit is charged and ready for deployment.

e. Set the power switch to the OFF position. Close and latch the case lid.

NOTE: If the system status light remains RED, repeat steps 4-5 a-d, if status remains RED then check battery. (Refer to section 2-5.1.)

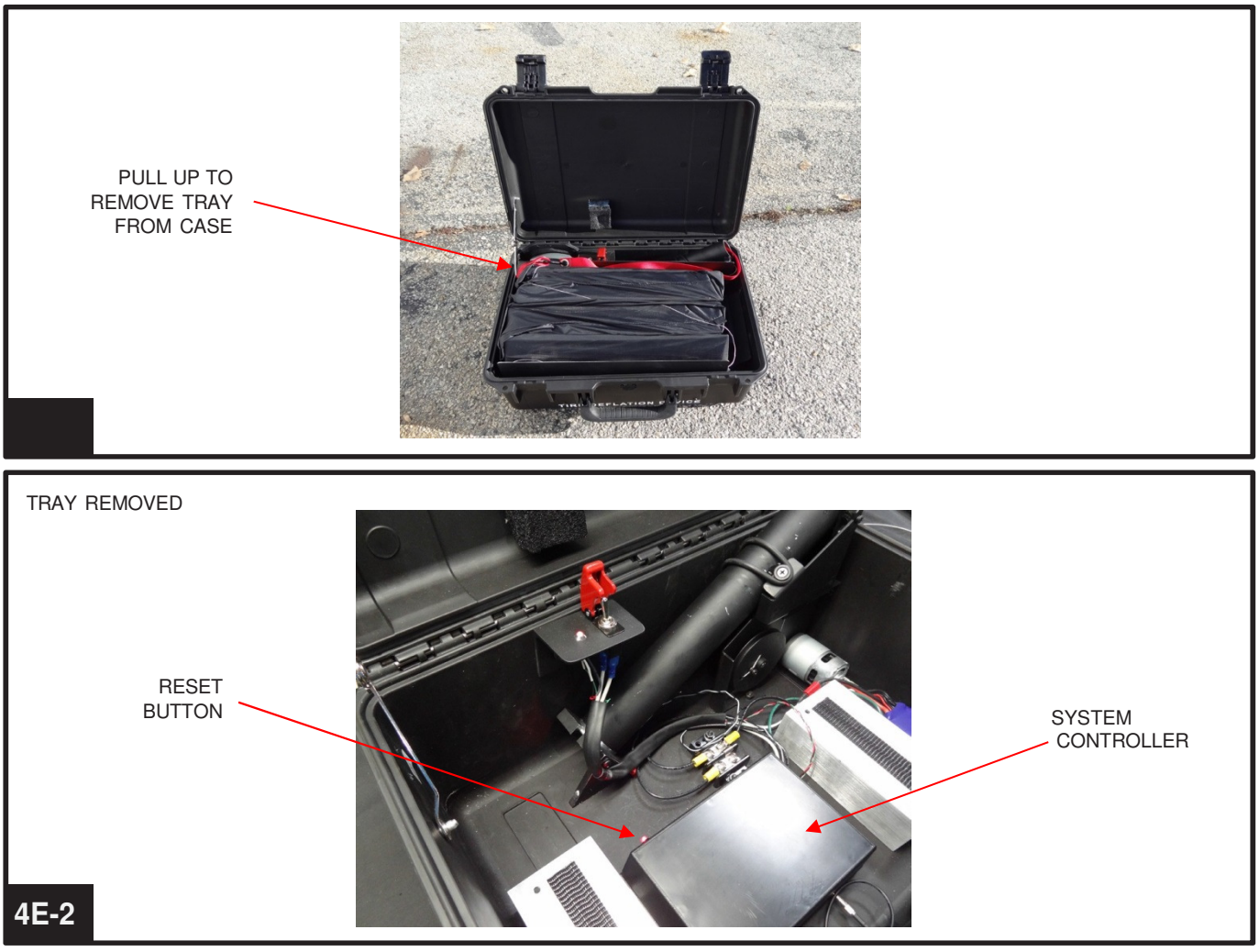


Figure 4E. System Reset

For more Information...

For more information regarding NightHawk®, please contact us at:

StopTech, Ltd.

365 Industrial Dr.
Harrison, OH 45030 USA

Phone: (800) 537 0102 / (513) 202 5500

Fax: 513 202 0240

www.stopstick.com

Visit the NightHawk® Product Page and Video at: