

# **SONIC SENTINEL<sup>®</sup>**

## **MODEL 14-1 Lite**



## ***USER'S MANUAL***

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## 1. Introduction

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Thank you for purchasing the Sonic Sentinel Model 14-1 Lite Sound Cannon. It is designed to humanely discourage wildlife from occupying undesirable or unsafe locations. Preventing such habitation can help avoid property damage, fines, injury to wildlife, and loss of human life.

## 2. Safety Precautions

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Safe operation of the Sonic Sentinel Model 14-1 Lite Sound Cannon is the operator's sole responsibility and requires strict observation of the safety precautions outlined below. Failure to do so will void the manufacturer's warranty and could result in property damage, serious injury, or death.



1. **Explosive Propane Gas** - For outdoor use only. No smoking or open flame within 50 feet. Never point cannon toward people, obstruct the barrel, or attempt to fire projectiles. Do not alter the LPG regulator or tank connector in any way. Use only with OPD equipped tanks of not more than 40lbs.



2. **Extreme Sound** - Hearing protection must be worn within 50 feet of cannon while in operation.



3. **High Voltage** - Do not touch any components under the black plastic electronics cowling when the power switch is in the on position or without first disconnecting the battery terminals.



4. **Lead Acid Battery** - Do not puncture, short, or reverse polarity. Replace only with battery of same type and rating. Dispose of in accordance with local laws and regulations.

### 3. Product Specifications

<b>Model 14-1 (M14-1) Lite Specifications</b>	
Sound Pressure Level:	130dB @ 1m
Selectable Firing Frequency:	30sec – 2hr with 2 Random Modes and Multi-Shot (1, 2, or 3)
Chronometer Precision:	+/- 1%
Operating Temperature Range:	-5°F – 140°F (-20°C – 70°C)
LPG Efficiency: (LPG Tank Not Included)	~ 20,000 Cycles (20lb Tank)
Electrical Draw:	< 0.2mA Standby 0.0004Ah Per Cycle
Battery Requirements: (Battery Not Included)	12VDC Lead-Acid Deep Cycle (≥30Ah)
Dimensions (w/o Monopod)	40in (101.6cm) L 10in (25.4cm) W 5in (12.7cm) H
Weight (w/o LPG Tank)	Cannon: 17.5lb (7.9kg) Monopod: 3.0lb (1.4kg) Shipping: 27.0lb (12.2kg)
Emissions Compliance:	FCC: Part 15, Subpart B EN: 61000-6-3:2007 ICES: 001, Issue 4

## 4. Initial Setup

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1. Remove the M14-1 Lite cannon and monopod from their packaging. Retain packing material for future transportation needs.
2. Select a suitable outdoor location for the M14-1 Lite cannon that meets the following criteria:
  - a. Firm, level surface that can accommodate driving the monopod's ground stake to a depth of 10in and support the cannon without tipping

**Note:** The M14-1 Lite is also compatible with our optional, collapsible, heavy duty tripod.

- b. Sufficient space for the M14-1 Lite cannon and user supplied battery and propane tank
- c. Free of debris and combustible material
- d. Clearly visible to passers-by
- e. Facing downwind relative to prevailing winds
- f. Away from residential or other sound sensitive areas

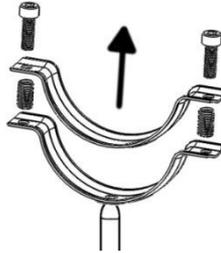
**Note:** The M14-1 Lite cannon is capable of producing sound levels that may violate local noise ordinances. Ensuring legal operation of the M14-1 Lite is the operator's sole responsibility and should only be conducted only in accordance with local laws and regulations.

- g. As close to the desired deterrent zone as possible taking the above factors into consideration.
3. Using your foot or a mallet, drive the monopod to a depth of 10in. Apply force only to the top of the steel support gusset. Do not strike the barrel clamp!

**Note:** The top of the triangular support gusset should be even with the ground surface when fully driven.

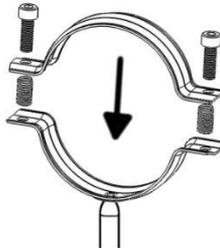
4. Install M14-1 Lite cannon onto monopod:

- a. Remove bolts and springs from barrel clamp at top of monopod (Fig. 1).



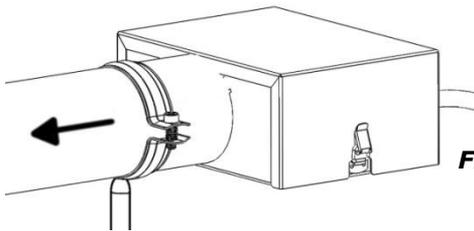
**Figure 1**

- b. Rotate top half of clamp 180 degrees and *loosely* re-install springs and bolts (Fig. 2).



**Figure 2**

- c. Slide barrel of M14-1 Lite cannon into barrel clamp and align over **CLAMP** decal (Fig. 3).



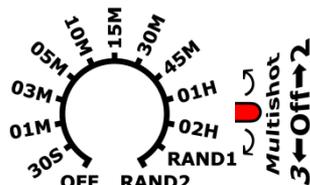
**Figure 3**

- d. Tighten barrel clamp bolts with the provided 6mm wrench.
5. Place a user supplied, 12VDC, deep cycle battery (>30Ah recommended) on level ground next to the M14-1 Lite within reach of the battery clamps.

**Note:** Approximate battery drain in amp hours per day can be calculated according to the following formula:  
**Ah/day = (1440 / ignition delay in min.) \* 0.001**

6. Remove the M14-1 Lite's top shroud by releasing the latches on either side and lifting it free.
7. Set delay timer to desired firing interval (Fig. 4):

- a. **OFF:** Delay timer is disabled, but cannon can be triggered remotely via activation modules.
- b. **RANDOM:** Cannon will fire randomly every 1-10min (**RAND1**) or every 5-30min (**RAND2**).



**Figure 4**     **Figure 5**

**Note:** To reduce battery charging intervals, firing frequencies of less than 5min should be avoided in conjunction with our activation modules.

8. Set multi-shot switch (right of delay timer, Fig. 5) to desired shot count: center=1, up=2, or down=3.
9. Reinstall top shroud and secure both latches.
10. Connect propane tank (not included):
  - a. Place a user supplied, 20-30lb propane tank on level ground next to the M14-1 Lite within reach of the regulator's OPD connector.
  - b. Securely fasten the M14-1 Lite regulator's OPD connector to the propane tank valve.

## 5. Operation

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1. Ensure that all of the following conditions are met before proceeding:
  - a. Barrel of M14-1 Lite is not obstructed and is pointed away from people and objects
  - b. Propane tank connection is secure
  - c. No sources of ignition are present
  - d. Any persons within 50 feet of cannon are wearing ear protection.

2. Open propane tank valve and connect the battery
  - a. Connect the negative (-) clamp to your battery's negative (-) black terminal.
  - b. Connect positive (+) red clamp to your battery's positive (+) red terminal.

**Note:** There is a 30 sec. power-up delay, during which the M14-1 Lite cannon will not activate, to provide adequate time to safely clear the immediate area.

**Note:** Battery voltage should be monitored periodically and the battery recharged when it reaches 11.6VDC. Allowing it to discharge further may reduce battery life.

3. Following the power-up delay, the M14-1 Lite cannon will begin firing at the delay timer interval configured during initial setup.

**Note:** There is a 30 sec. post-fire delay, during which the M14-1 Lite cannon will not activate, to prevent wasteful and potentially hazardous continuous firing.

4. When in the "OFF" position, the delay timer is disabled, but the cannon can still be triggered remotely via activation modules.

**Note:** When the M14-1 Lite cannon is used in conjunction with any of Sonic Sentinel's activation modules, the delay timer's current countdown is reset and begins anew after each commanded detonation.

5. Change the location and detonation frequency of the M14-1 Lite cannon frequently to prevent wildlife from habituating to its effect.

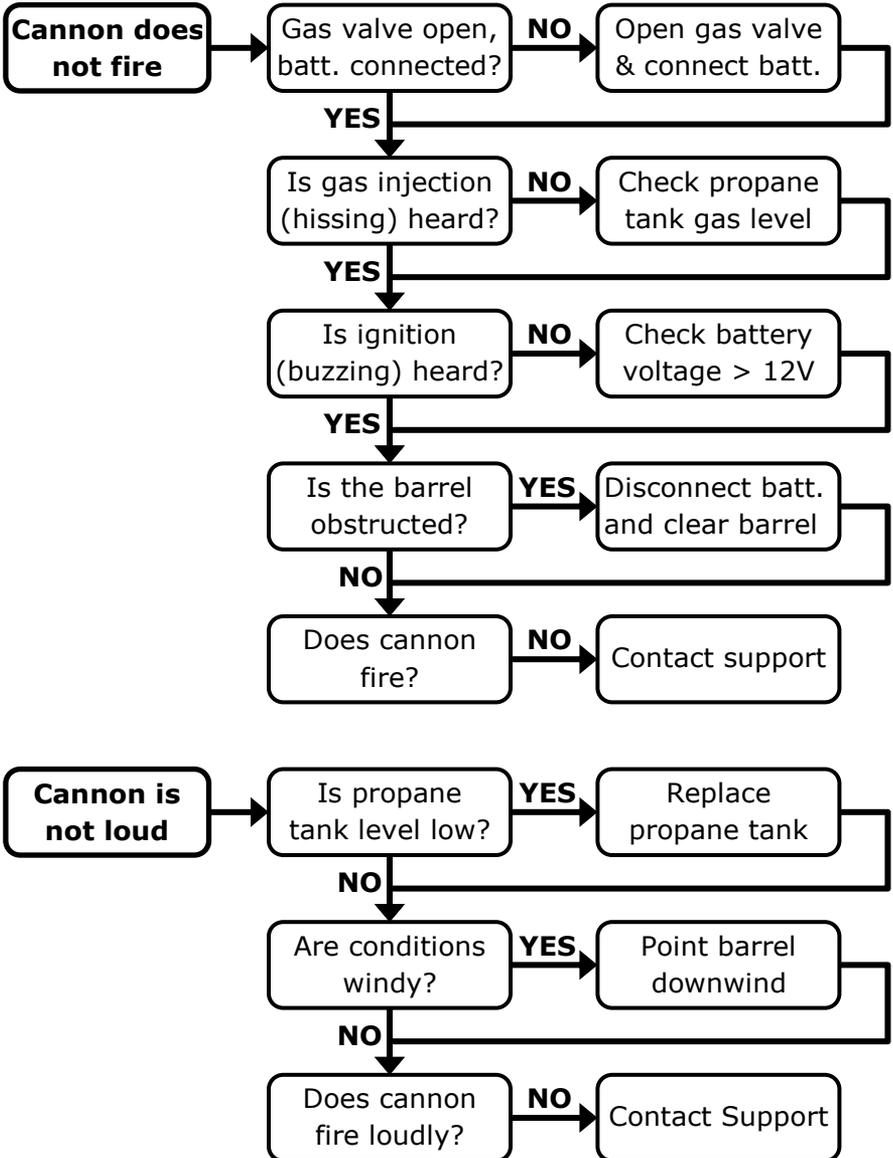
**Caution:** *A/ways* disconnect the battery and close the propane tank valve *before* removing the top shroud to update the delay timer!

6. Close propane tank valve and disconnect the battery when not in use to prevent unexpected firing.

## 6. Troubleshooting

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The following flowchart outlines several common problems and their solutions. For other questions, please contact [support@sonicsentinel.com](mailto:support@sonicsentinel.com).



## 7. Legal

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### **Applicability:**

1. These Terms apply to any transaction between Sonic Sentinel, LLC (hereafter known as "Seller") and its customers (hereafter known as "Buyer" or "Buyers"). The Terms are integral to any purchase agreement, invoice, order form, or other document(s) pertaining to the sale of, or the offer to sell, Seller's products. The placement of any order for Seller's products and/or the use of Seller's products implies an agreement to these Terms in full.
2. Buyer's ability to purchase and/or use Seller's products is expressly predicated on Buyer's acceptance of these terms and conditions. Any purchase of product shall be considered a contractual agreement by Buyer to Seller's Terms as provided here: [www.sonicsentinel.com/legal](http://www.sonicsentinel.com/legal).

### **Limitation of Seller's Liability:**

1. Seller shall not be liable for any general or special damages arising from the use or misuse of the Model 14-1 Lite Sound Cannon and its accessories (hereafter known as "Product"). No warranty is provided by Seller beyond replacement due to defects in manufacturing and is limited to a refund of the purchase price. Seller's warranty is exclusive of all other warranties, and any implied warranty of merchantability and/or implied warranty of fitness for a purpose is hereby disclaimed.
2. Buyer is solely responsible for determining the suitability of Seller's products for a purpose intended by Buyer or Buyer's customers. Seller has tested products only as explained in Seller's product specifications and this manual. Buyer agrees not to use Seller's products in any way not specified by Seller's instructions and product descriptions. Buyer shall assume all responsibility for any claims, losses, damages, demands, and expenses incurred by the use or misuse of Seller's products, including the incorporation of Seller's products into other goods for sale by the Buyer.
3. Seller does not authorize or otherwise endorse Buyer to make any modification or change to Product. Any changes or modifications made by Buyer to Product, which are not expressly approved by Seller in writing, shall render any and all warranties invalid.

## **8. Parts View & Listing**

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The following M14-1 Lite replacement individual parts and assemblies are available:

<u>Parts</u>	<u>Part #</u>
1. Injector Assembly	00006
2. Ignition Control Module	00007
3. Barrel Assembly	00009
4. Coil Assembly	00010
5. Spark Plug	00011
6. Wiring Harness*	00013
7. Propane Regulator	00014
8. Lower Shroud & Cowling	00015
9. Upper Shroud	00016L
10. Monopod Barrel Clamp	00018
11. Propane Filter	00019

The following M14-1 Lite accessories are available:

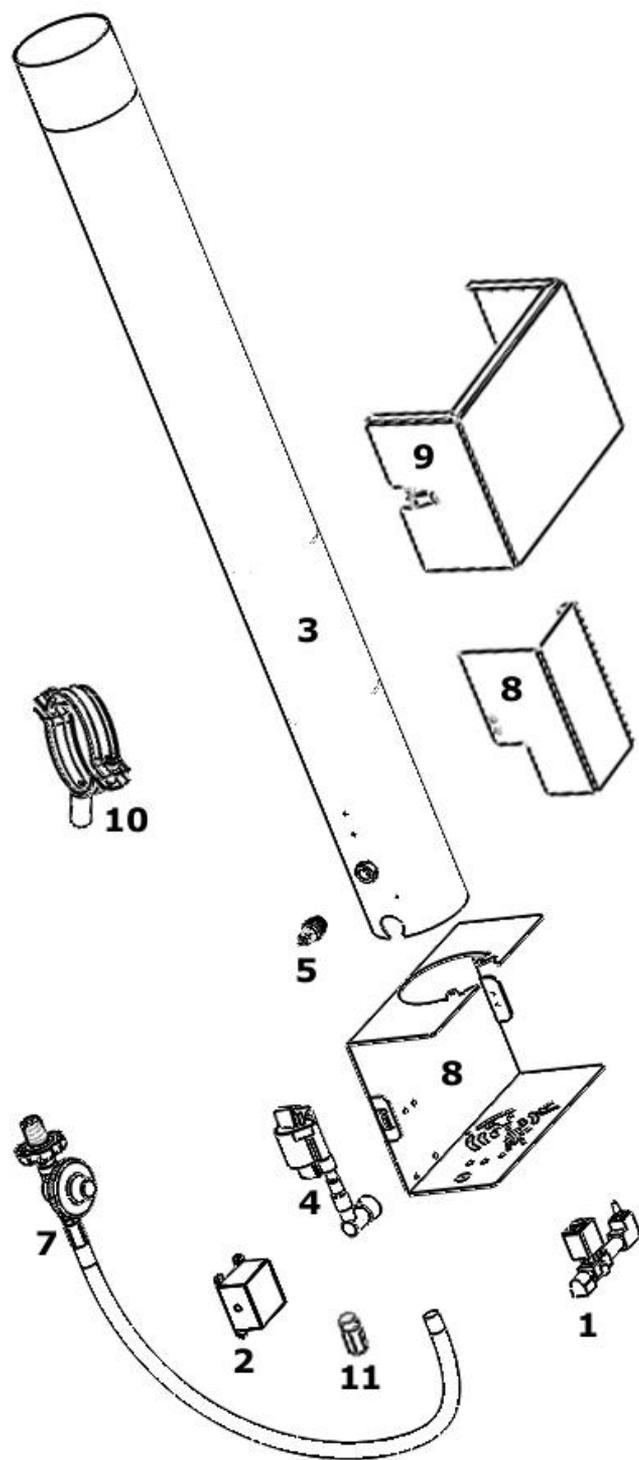
<u>Accessories*</u>	<u>Part #</u>
1. Collapsible Tripod	00003
2. Monopod Stake	00005
3. Tripod Extension (24in)	00020
4. Tripod Feet (Set of 3)	00021
5. Nighttime Deactivation	00022
6. Battery Charger (12VDC)	00023
7. Propane Level Sensor	00024
8. Programmable Timer	00025
9. 360° Rotating Tripod	00026

The following M14-1 Lite activation modules are available:

<u>Activation Modules*</u>	<u>Part #</u>
1. Push-Button Remote Controls	00030-32
2. XBee Radio Modules	00033-36
3. Motion Detection Modules	00037-39

To purchase parts and accessories, and for more information, visit <http://www.sonicsentinel.com>.

\* Not Pictured



## 9. Warranty

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Seller warrants Product against defects in materials or workmanship for a period of 1 year from the date of original sale. No warranty is provided by Seller beyond replacement due to defects in manufacturing and is limited to a refund of the purchase price. Seller's warranty is exclusive of all other warranties, and any implied warranty of merchantability and/or implied warranty of fitness for a purpose is hereby disclaimed.

## 10. Compliance

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**FCC (Federal Communications Commission):** 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 residential or commercial installations. This equipment generates, uses, and can radiate radio frequency energy and, may cause harmful radio interference.

**IC (Industry Canada):** This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Industry Canada ICES-001, Issue 4.

**EN (European Norm):** This equipment has been tested and found to comply with the limits defined by EN 61000-6-3:2007 for electromagnetic emissions in light industrial applications.

