

CALIFORNIA STATE THREAT ASSESSMENT CENTER
CALIFORNIA DEPARTMENT OF FORESTRY AND FIRE PROTECTION



JOINT BULLETIN

(U//FOUO) A Practical Test of the 'Ember Bomb' as Described in *Inspire*, Issue 9

(U) Scope

(U//FOUO) On May 9, 2012 the California Department of Forestry and Fire Protection (CAL FIRE) conducted a practical evaluation of the 'Ember Bomb' incendiary device as described in the ninth issue of *Inspire*, a magazine published by al-Qa'ida in the Arabian Peninsula (AQAP).

(U) Background

(U//FOUO) The eighth and ninth issues of *Inspire*, published on May 2, 2012, are the first issues of the magazine published since the deaths of Anwar al-Awlaki and Samir Khan in September 2011. Al-Awlaki will likely be best remembered for his role in actively promoting the targeting of Western assets via AQAP propaganda, to include *Inspire* magazine and video interviews. Similarly, Samir Khan will have a legacy as the *Inspire* editor who implemented production values on par with many commercial publications.

(U//FOUO) Each issue of *Inspire* features the ongoing series "Open Source Jihad." The series, which began with the first issue in 2010, includes articles describing the practical application of terrorist tactics, techniques, and procedures. One of the first articles, entitled "Make a bomb in the kitchen of your Mom," provided step-by-step instructions for constructing a pipe bomb. Other topics have included the proper methods for employing an AK-47 type weapon, operational planning consideration, and how to establish secure electronic communications.

(U//FOUO) The latest article in the series is entitled "It is of your freedom to ignite a firebomb," which provides a selected history of wildland fires, planning considerations for setting wildland fires, detailed instructions for building a device to initiate a wildland fire, and some of the anticipated societal consequences to a wildland fire.

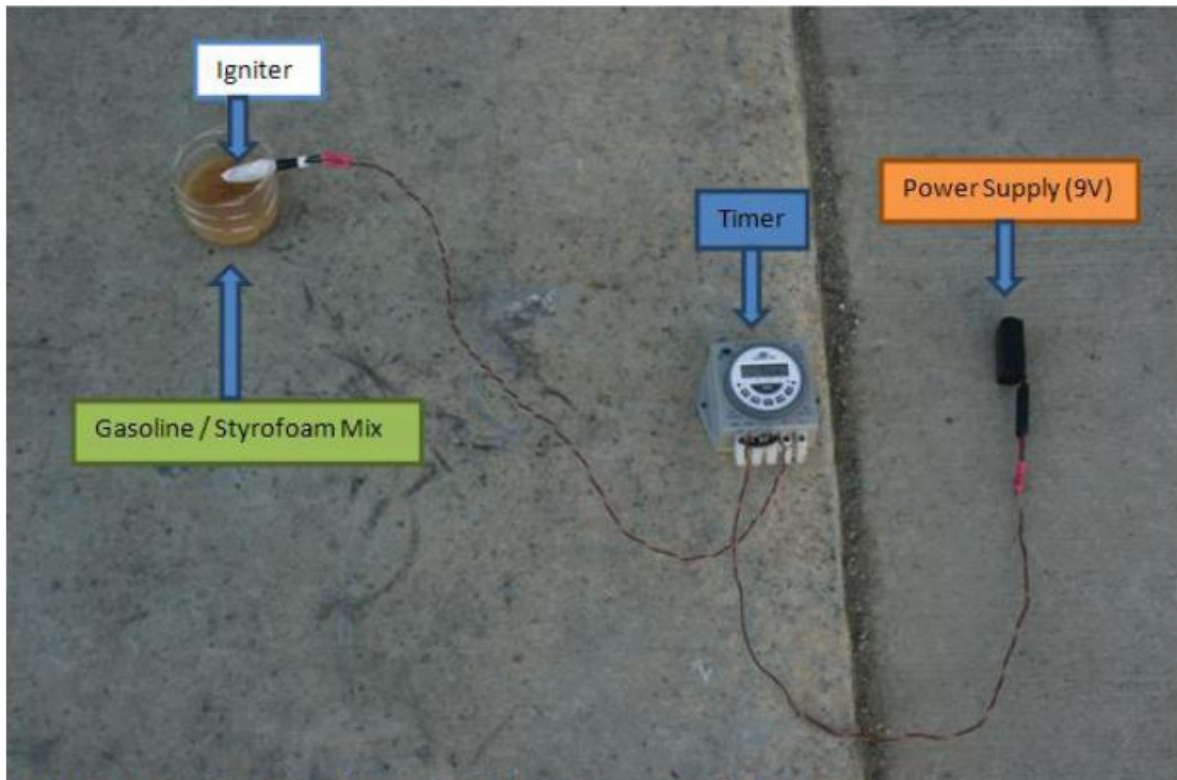
(U) Test Setup

(U//FOUO) The setup of the ember bomb was executed on a concrete pad at Cal Fire's training facility in Lone, California on 9 May 2012 (Figure 1).

- (U//FOUO) The device container was constructed from the lower half of an empty, regular-sized plastic water bottle, and filled with approximately two ounces of gasoline.
- (U//FOUO) Styrofoam was mixed in until the fuel formed a gel-like consistency.



- (U//FOUO) The igniter utilized the 'ignition lamp/match head' method from the article, and was secured to the lip of the container, approximately two inches above the fuel, with tape.
- (U//FOUO) The igniter was connected to a digital timer with a 9 volt power source.



(U//FOUO) Figure 1. Photo of the 'Ember Bomb' prior to the first ignition attempt.

(U) The Test

(U//FOUO) Initial testing of the device was accomplished via the electric timer and 'ignition lamp', however, the 'ignition lamp' did not provide enough heat to sustain the combustion of the gasoline/Styrofoam mixture (Figure 2). Subsequent manual ignition of the fuel was accomplished with a match.



(U//FOUO) Figure 2. Container and fuel mixture following the failed ignition attempt.

- (U//FOUO) Possible reasons the ‘ignition lamp’ failed to sustain combustion include:
 - (U//FOUO) Insufficient number of match heads was placed inside the broken lamp; or
 - (U//FOUO) The ignition source was too far away from the fuel mixture.
- (U//FOUO) Once fully ignited, the device burned for 11 minutes and 58 seconds.
- (U//FOUO) During the burn, the device produced a plume of dark, black smoke; this differs from the white/gray smoke normally associated with wildland fires (Figures 3 through 5).
- (U//FOUO) At no point during the test were embers produced. The device concentrated heat in one location.



(U//FOUO) Figure3. During the burn, the 'Ember Bomb' burned with low intensity and produced dark-black smoke. Note the complete lack of ember production.



(U//FOUO) Figure 4. The device burned with the average intensity shown here. The duration of the burn was 11 minutes and 58 seconds.



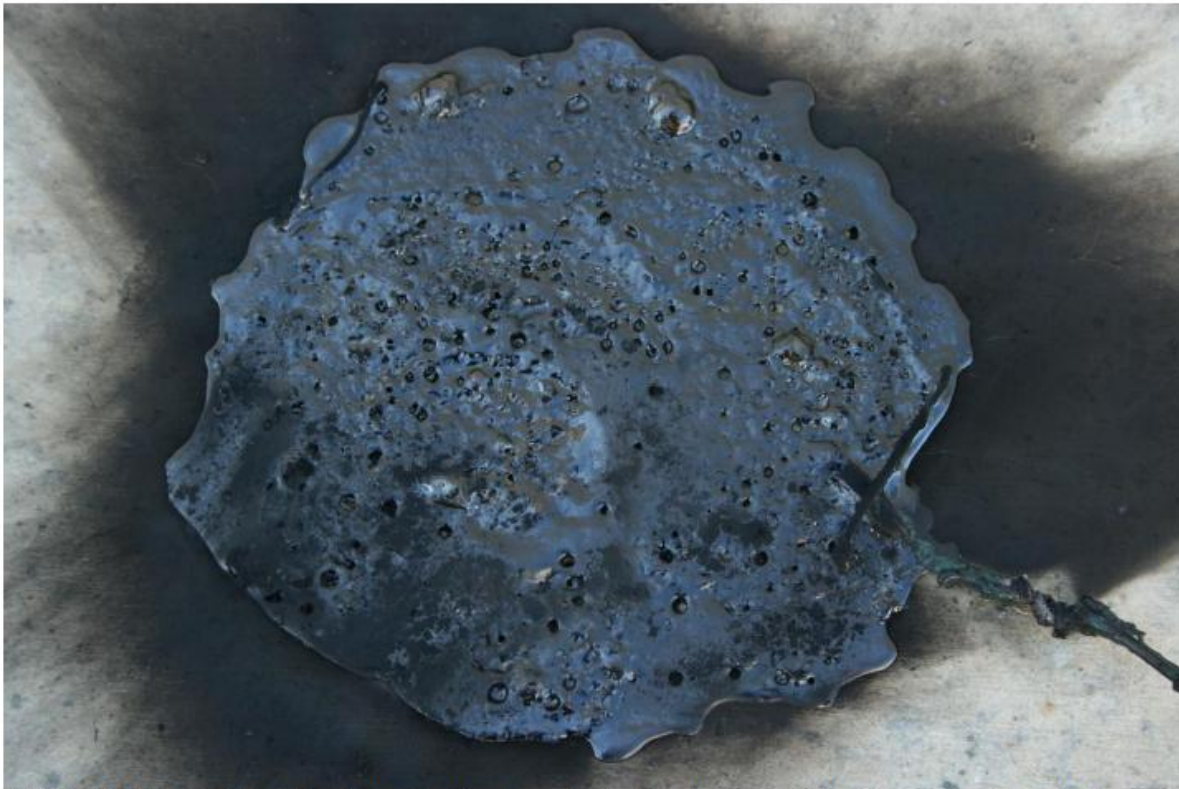
(U//FOUO) Figure 5. The device burned into an obsidian-like residue approximately 8-inches in diameter.



(U) Items Observed Following the Burn

(U//FOUO) The following items were noted at the conclusion of the burn (Figure 6). Those pertaining to the igniter residue are specific to the ignition method used for this test. Other ignition methods will almost certainly leave different quantities and types of residue.

- (U//FOUO) The obsidian-like substance smelled strongly of gasoline.
- (U//FOUO) A portion of the water bottle container remained on the underside of the obsidian-like substance.
- (U//FOUO) The center of the obsidian-like substance was pitted.
- (U//FOUO) A pair of wires with melted plastic from the 'ignition lamp/match head' remained near the obsidian-like substance (Figure 7).
- (U//FOUO) The remains from the match used during the second ignition attempt were embedded in the obsidian-like substance.



(U//FOUO) Figure 6. Residue following the burn. Note the glassy, obsidian-like edges, the slight gasoline sheen to the remnants, and the pitting in the center.



(U//FOUO) Figure 7. Close-up of the residue following the burn. Note the burned remains the match used to ignite the device after the electric igniter failed (left-center in picture), and the remains of the electrically initiated lamp connected to the wires.

(U//FOUO) Observations Regarding the 'Ember Bomb'

(U//FOUO) The 'Ember Bomb' device is an effective heat source and will ignite vegetation; however, we judge it is highly impractical based on the amount of energy and time it takes to construct the device, and the amount of physical evidence that will likely remain following its use. Throughout the nearly 12 minute burn, the device remained only a localized heat source (i.e., it did not produce any embers to ignite other fires), and because of this, there appears to be little practicality associated with employing this method versus others that would likely leave far less physical evidence, such as manually starting a burn with a cigarette lighter (though, we do acknowledge this method lacks the time delay component of the 'Ember Bomb.')

(U//FOUO) Concerning preoperational planning and associated indicators, an individual planning and executing a wildland arson in accordance with the methods described in *Inspire*, Issue 9, will most likely construct a test device (possibly a complete device, or just an igniter) as proof of concept test. A wildland arsonist is probably not aware of jurisdictional boundaries, and it is possible that residue (e.g.,



a broken and burned out lamp with wires, or the black obsidian-like substance) may be encountered by civilians or public servants in other than wildland areas following one of the aforementioned proof-of-concept tests.

(U) Administrative Note

(U) For comments or questions related to the content or dissemination of this document, please contact the California State Threat Assessment Center (STAC) at (916) 874-1100 or STAC@calema.ca.gov.

(U) Tracked By: HSEC-2.1.1.4, HSEC-8.3.1, HSEC-8.3.4, HSEC-8.5.2, HSEC-8.6.1, HSEC-8.6.3, HSEC-8.8.1

(U) Feedback: The STAC and CAL FIRE encourage your feedback using the survey found at <http://www.surveymonkey.com/s/KXCYPF>.