



The Commonwealth of Massachusetts

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Department of Public Safety

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1010 Commonwealth Avenue, Boston, Ma. 02215

November 20, 1986

LAB.NO. F86-1210 - Examination of Material in Connection with Explosion on Truck in driveway at 295 Willard Street, Quincy on September 1, 1986.

On October 17, 1986, Explosives Technician Leo Voght of the Division of Fire Prevention delivered to this laboratory a sample of debris which had been removed from the scene of the above explosion.

Examination was to be made for evidential traces and explosive residues in this debris which was submitted by Explosive Technician Leo Voght and Detective William Lanergan of the Quincy Police Department.

EXAMINATION

Gross and microscopic examination revealed that the submitted sample of debris consisted of the following:

a) Remains of an "Artillery Flash Simulator":

1. Two partially-blackened pieces of an approximately 2½"-long x 1½"-diameter, translucent plastic tube having a wall thickness of about 1/16". Chemical and energy dispersive x-ray examination of deposits on the inside surfaces of the pieces of plastic identified the following ingredients: aluminum, barium, and the nitrite and sulfide ions.
2. Two partially-blackened pieces of an approximately 4"-long x 1 3/4"-diameter, brown-and-grey cardboard tube having a wall thickness of about 1/8".
3. Six partially-blackened pieces of an approximately 4½"-long x 2"-diameter white plastic tube which had a wall thickness of about 1/8" and was labelled in black "SIMULATOR FLASH ARTILLARY: LOW 84H008". A series of longitudinal raised ribs was present on the inside surface of the plastic tube which had four 1" x 1" x 1/8"-thick plastic protuberances on the surface about 9/16" from one end.
4. Two partially-blackened pieces of an approximately 1 7/8"-diameter x 1/16"-thick, translucent plastic disc.

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5. A two-prong plug consisting of a white plastic housing with two 3/8"-long x 3/32"-diameter cylindrical prongs on one side and two sections of white-insulated wire on the opposite side.

b) Portions of a radio signal receiver:

1. An approximately 2½" x 3" x 3/4"-thick portion of a black plastic housing which was labelled "TYCO R/C MADE BY TAIYO IN KOREA" and contained one size AA "Rayovac" battery.

2. Three size AA "Rayovac" batteries.

c) Two 6-volt "Duracell" batteries: Two 1 3/8" x 1 7/8" x 5/16"-thick batteries labelled "6 VOLT DURACELL SIZE J BATTERY 7K67". Soldered to the terminals of one battery were the following sections of wire: a 3 3/4"-long section of grey-insulated, 22-gage stranded copper wire attached to the positive terminal; and a 1½"-long section of dark-blue insulated, 26-gage stranded copper wire attached to the negative terminal.

d) Microswitch with wiring attached: A double-throw toggle switch which was labelled "MICROSWITCH 6AT1-T2" and had three terminals on the bottom. The position of the switch closed the circuit to two of the terminals to which were soldered the following sections of grey-insulated, 22-gage stranded copper wire:

1. An approximately 9"-long section with one end soldered to the central terminal. Adherent to a blob of solder on the free end of the wire were several strands of 0.005"-diameter copper wire consistent with 26-gage wire.

2. An approximately 9"-long section with one end soldered to an outside terminal, the free end of the wire had solder on the surface.

A 3½"-long section of 26-gage, dark-blue insulated, stranded copper wire was taped to the surface of the above wires by a wrapping of 3/4"-wide black vinyl tape located about 1½" from the switch.

Taped to the surface of wires (1) and (2) by several wrappings of black vinyl tape was an approximately 19"-long section of grey-insulated, 22-gage stranded copper wire having solder on each end and a tape wrapping on the surface. Removal of the tape wrapping revealed that the 19"-long section of wire was composed of two sections of wire which had lengths of about 9" and 10", respectively, and had been soldered together. One end of an approximately 1"-long section of dark-blue insulated, 26-gage stranded copper wire had been soldered to the junction of those wires.

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e) Circular magnet: An approximately 4 7/16"-diameter x 1/4"-thick circular magnet which had a 4 3/16"-diameter x 1/8"-thick steel plate on each circular surface. The exposed surface of one plate had been covered with superimposed layers of 2"-wide aluminum-colored tape.

f) Miscellaneous material:

1. An approximately 75 3/4"-long section of grey insulated, 22-gage stranded copper wire having solder on one end.
2. An approximately 2"-long section of dark-blue insulated, 26-gage stranded copper wire having a 1/4"-long x 1/32"-wide curved strip of brass soldered to one end.
3. Several superimposed pieces of aluminum-colored tape to which was adherent an approximately 2 1/2"-long section of dark-blue insulated, 26-gage stranded copper wire.
4. A torn piece of 3/4"-wide black vinyl tape to which was adherent three fragments of an approximately 1/32"-thick blue plastic housing.

CONCLUSION

The submitted sample of debris consisted of the following articles which are described in detail above: (a) the remains of an "Artillery Flash Simulator" originally charged with an explosive mixture of aluminum dust, barium nitrate, and sulfur; (b) portions of a battery-operated radio signal receiver; (c) two 6-volt "Duracell" batteries and wiring; (d) a double-throw microswitch with wiring attached; (e) a circular magnet with aluminum-colored tape on one surface; and (f) miscellaneous material consisting of pieces of wire and tape and fragments of a blue plastic housing.

FRH/lp
Report to: Expl. Techn. Voght
Division of Fire Prevention

cc: Det. William Lahergan
Quincy Police Dept.

Francis R. Hankard
Francis R. Hankard
Assistant Chief of Laboratory
Crime Laboratory

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COMMONWEALTH OF MASSACHUSETTS

Suffolk, ss.

Francis R. Hankard, whom I know to be a Chemist of the Massachusetts Department of Public Safety, appeared before me and affirmed the attached to be the results of the examination made on LAB.NO. F86-1210, an Explosion in Quincy on September 1, 1986.

Sworn and subscribed to before me this 11th day of December 1986.

Marjorie Z. Swift
NOTARY PUBLIC

My Commission Expires Oct. 1, 1993