

TECHNICAL MANUAL

**PROCEDURES FOR THE DESTRUCTION OF
AVIATION GROUND SUPPORT EQUIPMENT
[FSC 4920)
TO PREVENT ENEMY USE**

This copy is a reprint which includes current
pages from Change 1.

HEADQUARTERS, DEPARTMENT OF THE ARMY 12 NOVEMBER 1971

WARNING

PRECAUTIONARY DATA

Personnel performing procedures and practices which are implied in this technical manual shall observe the following warnings. Disregard of these warnings and precautionary information can cause serious injury or death.

FLAMMABLE MATERIALS. Use extreme care when handling flammable liquids. Do not allow an open flame within 50 feet when using gasoline. Remove container from the area and Ignite from a distance.

EXPLOSIVES. Use extreme care when handling explosives of any type. Detonation or burning of certain types may produce poisonous fumes.

CHANGE }
No. 1 }

HEADQUARTERS
DEPARTMENT OF THE ARMY
WASHINGTON, D.C., 4 February 1971

**PROCEDURES FOR THE DESTRUCTION OF
AVIATION GROUND SUPPORT EQUIPMENT (FSC 4920)
TO PREVENT ENEMY USE**

TM 750-244-1-4, 12 November 1971, is changed as follows:

1. Remove and insert pages as indicated below:

	Remove pages	Insert pages
Table of Contents	i/(ii blank)	i/(ii blank)
Chapter 2, Section II	2-3 and 2-4 2-9 and 2-10	2-3 thru 2-4A 2-9 thru 2-11

2. New or changed text material is indicated by a vertical bar in the margin. An illustration change is indicated by a miniature pointing hand.

3. Retain this sheet in front of manual for reference purposes.

By Order of the Secretary of the Army:

Official:

VERNE L. BOWERS,
Major General, United States Army,
The Adjutant General.

W. C. WESTMORELAND,
General, United States Army,
Chief of Staff.

DISTRIBUTION:

To be distributed in accordance with DA Form 12-31 (qty rqr block no. 94) requirements for Organizational Maintenance Instructions for all Fixed and Rotor Wing Aircraft.

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CHAPTER 1

INTRODUCTION

Section I. GENERAL

1-1. Scope.

This manual covers methods and instructions for the destruction of ground support equipment (GSE) when capture or abandonment to an enemy is imminent.

1-2. Purpose.

The purpose of this manual is to guide personnel in quick, effective, and safe means of rendering inoperative or of destroying equipment which is in imminent danger of capture by an enemy.

CAUTION

Do not destroy any equipment except upon the order of proper authority.

1-3. Reporting of Errors.

Reporting of errors, omissions, and recommendations for improving this publication by the individual user is encouraged. Reports should be submitted on DA Form 2028 (Recommended Changes to Publications) and forwarded directly to Commanding General, US Army Aviation Systems Command, ATTN AMSAV-R-M, PO Box 209, St. Louis, Missouri 63166.

Section II. PRELIMINARY CONSIDERATIONS

1-4. General.

The responsible unit commander makes the decision either to destroy the equipment or render it inoperative.

Based on this decision, orders are issued which cover the desired extent of destruction.

NOTE

Whatever method of destruction is employed, it is essential that vital parts and corresponding repair parts be destroyed.

1-5. Planning.

Standing operating procedures for all units should contain a plan for the destruction of all ground support equipment. Such a plan will insure that the maximum and most effective damage is done to the material and will deny the use of equipment to the enemy. It should outline the required extent of demolition and include priorities of destruction. If explosives are to be used, the amounts required should be indicated. The plan must be flexible enough in its designation of time, equipment, and personnel to meet any situation. In order to make cannibalization by the enemy impossible, equipment operators should be familiar with the priority sequence in which essential parts, including extra parts, are to be destroyed. They should also be familiar with the sequence to be followed for total destruction.

Section III. PRIORITIES FOR DESTRUCTION

1-6. General.

- a. Priority must always be given to the destruction of classified equipment and associated documents.

b. When lack of time and/or stores prevent complete destruction of equipment, priority is to be given to the destruction of essential parts, and the same parts are to be destroyed on all like equipment.

c. A guide to priorities for destruction of repair parts for various groups of equipment is contained herein.

1-7. Equipment Installed in Vehicles.

Equipment installed in vehicles should be destroyed in accordance with the priorities for the equipment itself, taking into account the relative importance of the installed equipment and the vehicle itself.

1-8. Repair Parts.

The same priority for destruction of repair parts of a major item necessary to render that item inoperable must be given to the destruction of similar repair parts in storage areas.

1-9. Priorities for Destruction of Parts of Military Technical Equipment.

Table 1-1 lists the equipment, priority, and parts to be destroyed, applicable to ground support equipment.

Table 1-1. Priorities for Destruction of GSE

EQUIPMENT	PRIORITY	PARTS
Vehicles (Mobile) pump/Injector/distributor	1	Carburetor/fuel
	2	Engine block and cooling system
	3	Tires and suspension system
	4	Mechanical or hydraulic system
Test Stand Hydraulic	1	Manifold and carburetor
	2	Cylinder block
	3	Battery
	4	Relief valves
	5	Control panels
	6	Low pressure filter
	7	Hydraulic reservoir
Test Sets APU's and coil	1	Carburetor, fuel pump, governor,
		cover
and	2	Engine crankcase, cylinder head,
		breaker point housing
Test Sets Electronic	1	Power supply and/or generator set
	2	Control consoles cable systems
	3	Automatic devices high voltage
compo-		nents
	4	Mechanical components

Section IV. DEGREE OF DAMAGE

1-10. General.

Methods of destruction should achieve such damage to equipment and essential spare parts that it will not be possible to restore the equipment to usable condition in the combat zone, either by repair or cannibalization.

1-11. Classified Equipment.

Classified equipment must be destroyed in such a degree as to prevent duplication by, or revealing means of, operation or function to the enemy.

1-12. Associated Classified Documents.

Any classified documents, notes, instructions, or other written material pertaining to function, operation, maintenance, or employment, including drawings or part lists, must be destroyed in a manner to render them useless to the enemy.

1-3/(1-4 blank)

CHAPTER 2

METHODS OF DESTRUCTION

Section I. DESCRIPTION AND ORDER OF METHODS OF DESTRUCTION

2-1. General.

The following methods of destroying ground support equipment may be used either singly or in combination.

The actual method or methods used in a given situation depend on the time, personnel, and means available. It should be emphasized that in planning destruction operations, methods should be considered in the order of priority (in sequence) as shown in the following paragraphs.

2-2. Self-destruction Devices.

a. Description. These are normally built-in devices that will partially or completely destroy the equipment.

b. Instructions for Use. These devices are usually well marked and may be activated very easily, normally, by switch action.

WARNING

Extreme care should be taken if self-destruction devices are of flammable or explosive type materials.

NOTE

If self-destruction devices are installed they should be activated before other forms of destructive methods are used. Explosives may blow parts of classified material to safety where they may be found by the enemy.

2-3. Mechanical Means.

Material may be destroyed by mechanical means by using sledge hammers, crowbars, picks, axes, and any other available heavy tools capable of rendering the equipment inoperable. Normally, the order of destruction for the components of ground support equipment should be as follows.

a. Power supply (engines, electrical cables), control panel Instruments, pressure lines, valves, and electrical connections.

b. Hydraulic systems, fuel pumps, carburetors, magnetos, and cooling systems.

c. Wheels, axles, housing, and frames.

2-4. Improper Operation.

Improper operation of ground support equipment may be accomplished by various methods as follows:

a. On equipment utilizing gasoline engines, pour sugar or sand in fuel tank, drain engine crankcase of oil, disconnect radiator hose, and run engine at full throttle until failure occurs.

b. On electrical equipment, generators, etc., close off all cooling vents and run at full speed to cause overheating and bearing failure. Criss-cross wiring to cause short circuits to burn out fuses, etc.

c. On hydraulic equipment, pour sand in the hydraulic reservoir and let the sand be drawn through the hydraulic system.

2-5. Fire.

Proper concentration of equipment to be burned will provide a hotter more destructive fire. Rags, clothing, or canvas should be packed under and around equipment to be destroyed. It should then be soaked with gaso

line, oil, or diesel fuel. Electrical equipment, including motor or generator armature windings, and other wiring is effectively destroyed by burning. Also parts made of low-melting-point metal may be almost completely destroyed by fire.

WARNING

Use extreme care when handling flammable liquids. Do not allow an open flame within 50 feet when using gasoline.

NOTE

Engine or transmission parts heated to less than a dull red heat are not seriously damaged, provided they are lubricated immediately after a fire to prevent corrosion.

2-6. Gunfire.

Fire on equipment with the heaviest available weapons required to demolish it.

2-7. Use of Natural Surroundings.

Disposal of equipment or denial of equipment to the enemy may be accomplished by one of the following:

a. Scattering and Concealment. Remove all easily accessible vital parts such as carburetors, high pressure hoses, pressure gages, and valves and scatter them through dense foliage, bury them in dirt or sand, or throw them in a lake, stream, well, or other body of water.

b. Submersion. Totally submerge equipment in a body of water to provide water damage and concealment. Salt water will do the greatest damage to metal parts.

2-8. Demolition (Explosives).

For Information and use of explosives refer to FM 5-25, Explosives and Demolitions.

NOTE

Placement of a demolition charge can be the difference between minor damage or complete destruction.

Section II. SPECIAL INSTRUCTIONS (DEMOLITION EXPLOSIVES)

2-9. General.

This section includes detailed instructions for destroying ground support equipment by utilizing explosives. Since it is impractical to list each individual item of ground support equipment within the Army Inventory, typical items have been selected to be used as guidelines in placing explosives for destroying the equipment.

WARNING

When material is destroyed by explosives, the flying fragments create a hazard; therefore, demolition by explosives must be accomplished in an area free of personnel.

NOTE

The order of placement of explosives for items in the following paragraphs is to be used as a guide. However, it is recommended that the order given be used if the situation permits. You will note that the order given begins at the power source.

2-10. Fixed and Bench Type Test Equipment (TYPICAL).

a. *Test Stand Aircraft Electrical.* Place as many of the following charges as the situation permits and detonate them simultaneously with a detonating cord and a suitable detonator (see figure 2-1).

- (1) One 1/2-pound charge on top of circuit selector switch.
- (2) One 1/2-pound charge below meter
- (3) One 1/2-pound charge on top of T-3 variable control.
- (4) One 1/2-pound charge on top of terminal board.
- (5) One 1/2-pound charge on top of impedor box.
- (6) One 1/2-pound charge between fan motors.

b. *Test Stand Ignition Magneto.* Place as many of the following charges as the situation permits and detonate them simultaneously (see figure 2-2).

- (1) One 1/2-pound charge under drive motor.
- (2) One 1/2-pound charge under blower and motor.
- (3) One 1/2-pound charge on each separate segment of the instrument panel.
- (4) One 1/2-pound charge under speed increaser.
- (5) Four 1/2-pound charges in power unit.

c. *Test Stand Aircraft Generator.* Place as many of the following charges as the situation permits and detonate them simultaneously with a detonating cord and a suitable detonator (see figure 2-3).

- (1) Two 1/2-pound charges inside the starter box.
- (2) One 1/2-pound charge on the varidrive motor.
- (3) One 1/2-pound charge on the electric remote control.
- (4) One 1/2-pound charge inside the varidrive housing.
- (5) Two 1/2-pound charges on the gear case.
- (6) One 1/2-pound charge on the blower motor.

2-11. Mobile Type Test Equipment (TYPICAL).

a. *Test Stand Hydraulic.* Place as many of the following charges as the situation permits, and detonate them simultaneously (see figure 2-4)

- (1) One 1-pound charge under engine block at gear box.
- (2) One 1/2-pound charge each at the fuel pump, carburetor, and magneto
- (3) One 1-pound charge on each side of control panel.
- (4) One 2-pound charge on hydraulic fluid pump.
- (5) Two 1-pound charges on the right side of the engine between the manifold piping
- (6) One 1-pound charge between the generator and engine block, and a 1-pound charge under the starting motor.
- (7) One 1-pound charge between outlet lines.
- (8) One 1-pound charge on outlet selector valve
- (9) One 1-pound charge on each axle near each wheel.
- (10) One 1/2-pound charge between housing and fuel tank.
- (11) One 1-pound charge in opening in drawbar.

b. *Test Stand Hydraulic.* Place the following charges and detonate them simultaneously with detonating cord and a suitable detonator (see figure 2-5).

- (1) Two 1/2-pound charges on the engine.
- (2) One 1/2-pound charge on the battery.
- (3) One 1/2-pound charge on the hydraulic pump.
- (4) Two 1/2-pound charges on the reservoir.
- (5) One 1/2-pound charge on each wheel.

c. *Test Stand Generator.* Place as many of the following charges as the situation permits and detonate them simultaneously with detonating cord and a suitable detonator (see figure 2-6).

- (1) One 1-pound charge on the engine.
- (2) One 1/2-pound charge on the battery.
- (3) Two 1/2-pound charges on the instrument and control panel.
- (4) One 1/2-pound charge on control panel compartment
- (5) One 1/2-pound charge on each generator.

2-11.1. Mobile Semitrailer Mounted Shop Set (TYPICAL).

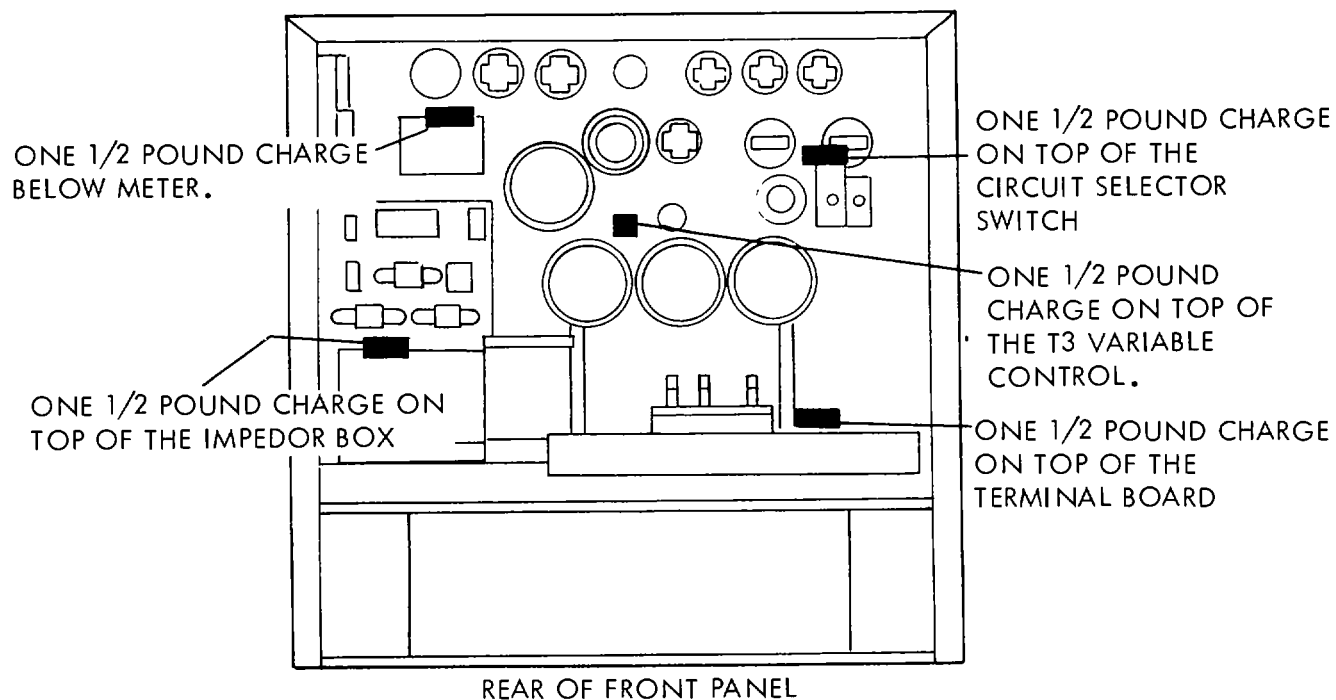
- a. Remove and empty portable fire extinguishers.
- b. Prepare 3 charges (1 charge equals 2 ea 1 lb blocks). Place charges as follows and detonate them simultaneously with detonating cord and a suitable detonator (see figure 2-7).

WARNING

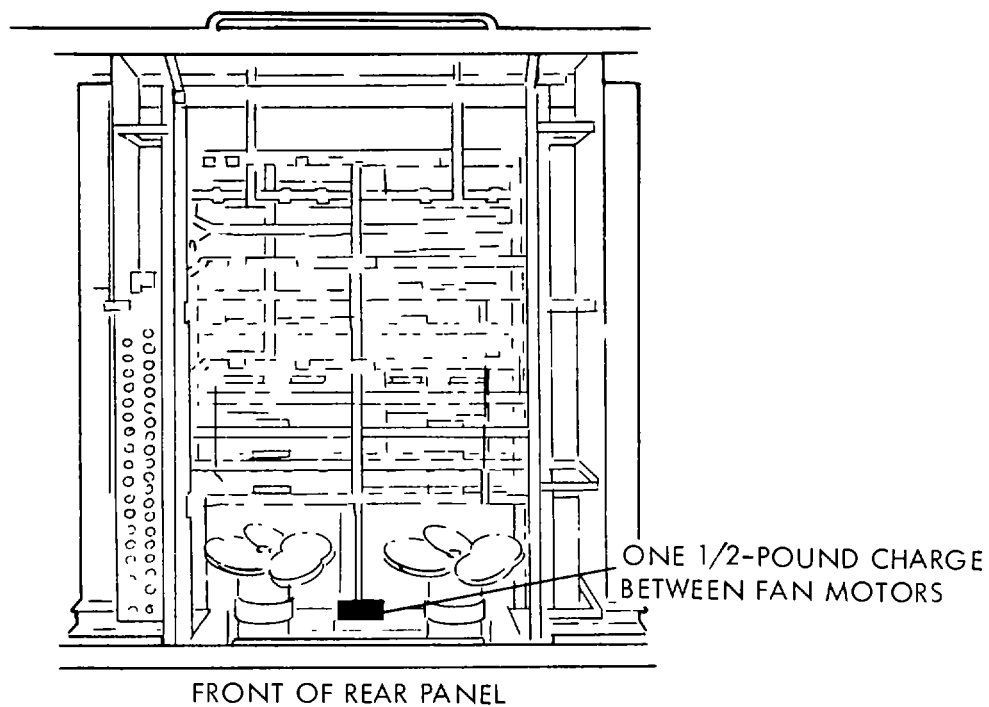
Keep detonating cord safety fuses or blasting caps separated from the charges until required for use.

- (1) Place 1 charge of explosive on the front of the shop on the platform between the generator and the storage compartment.
- (2) Place 1 charge of explosive on the floor at the approximate center of the shop van.
- (3) Place 1 charge of explosive on the shop floor at the approximate center width of the shop van 6 feet from the rear wall.

Change 1 2-4



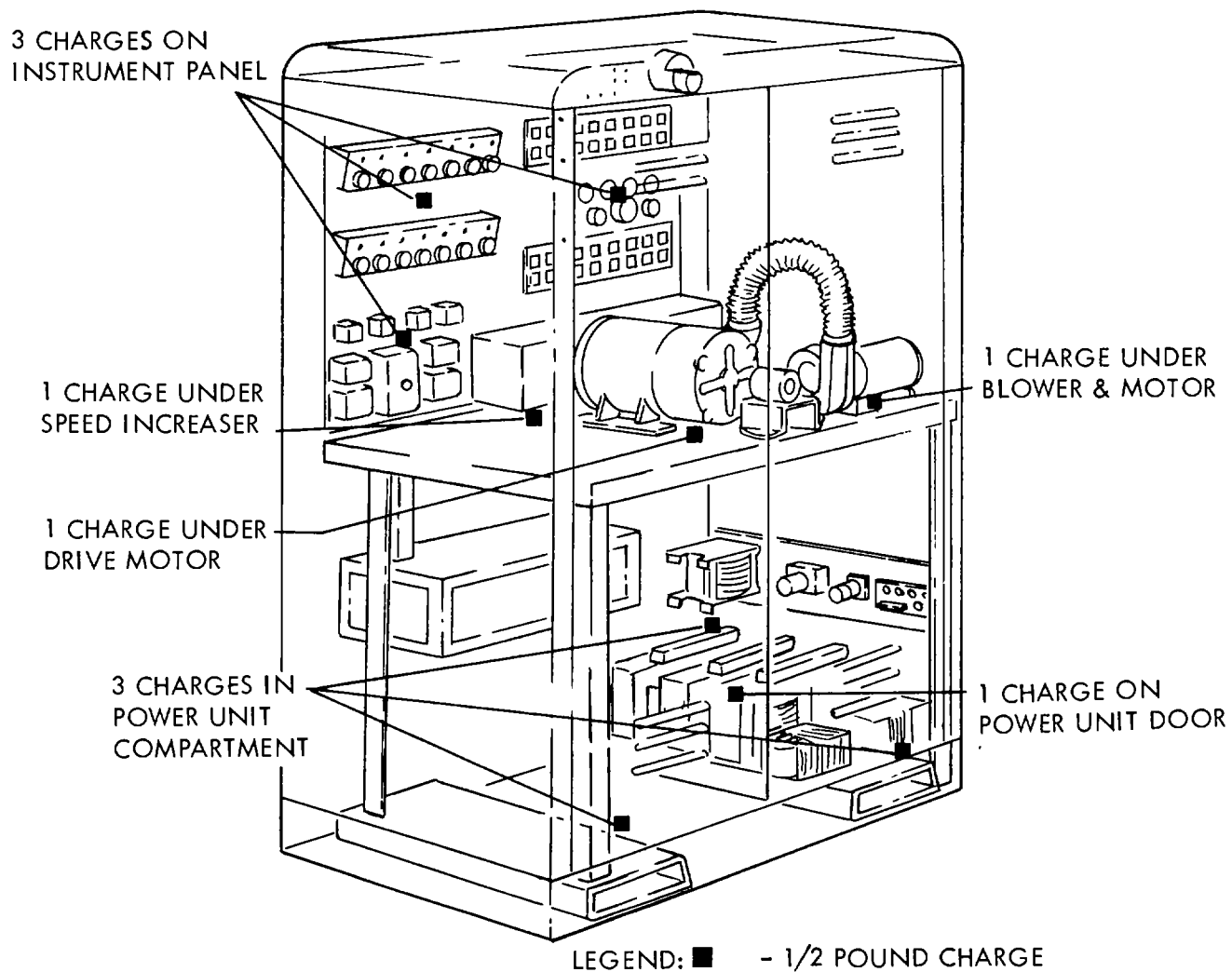
LEGEND ■ 1/2 POUND CHARGE



AV036833

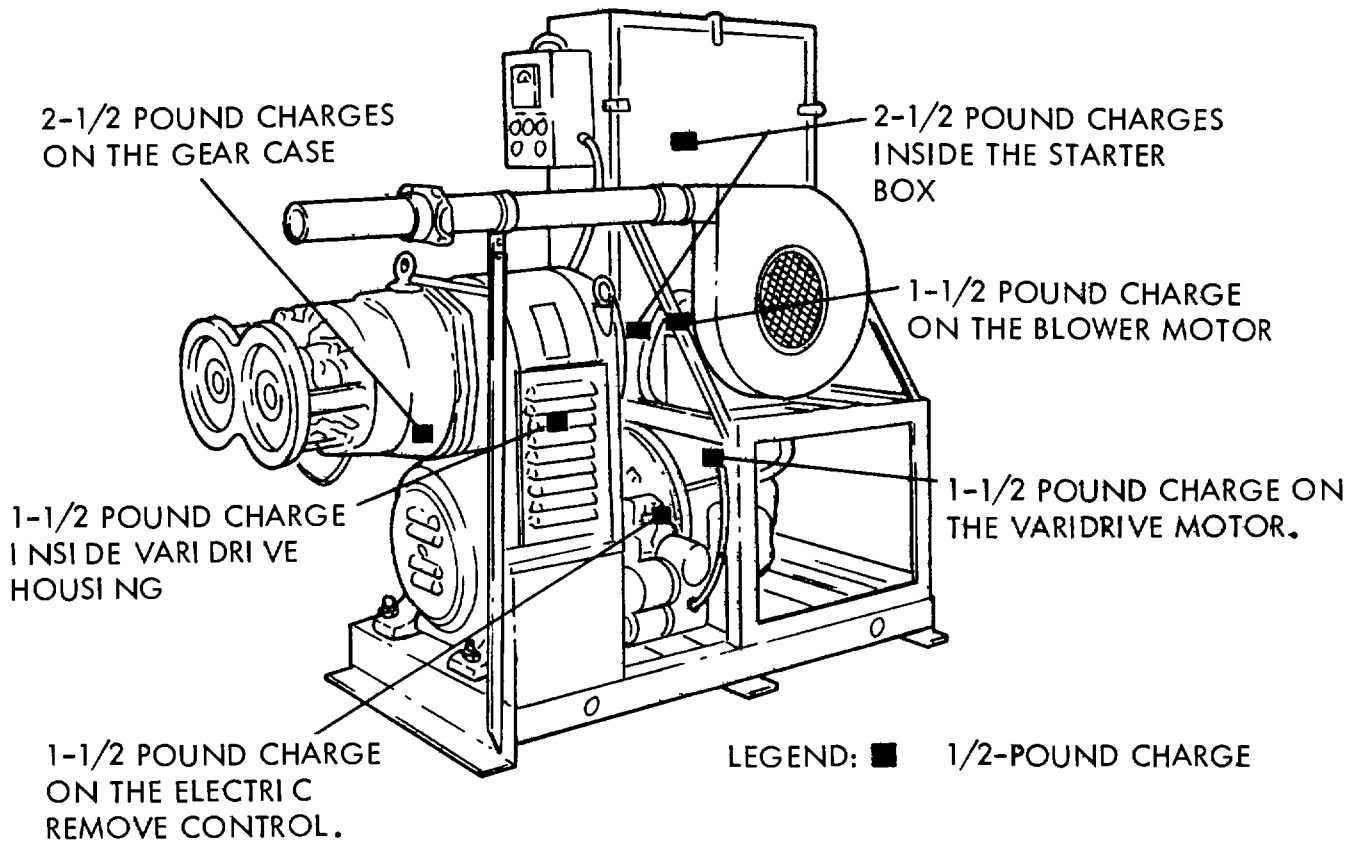
Figure 2-1. Placement of Charges on Aircraft Electrical Test Stand,

Change 1 2-4A



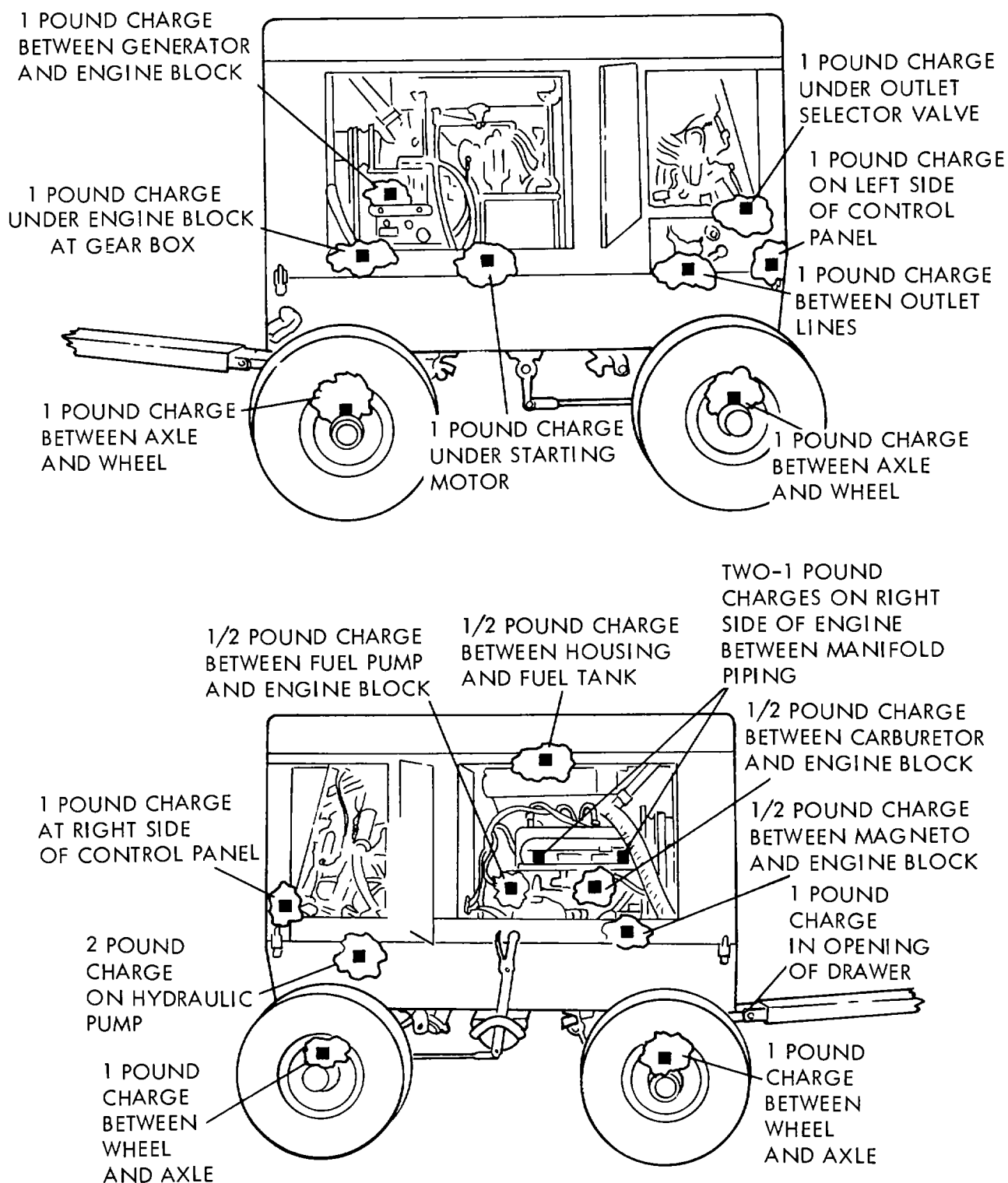
AV036834

Figure 2-2. Placement of Charges on Ignition Magneto Test Stand



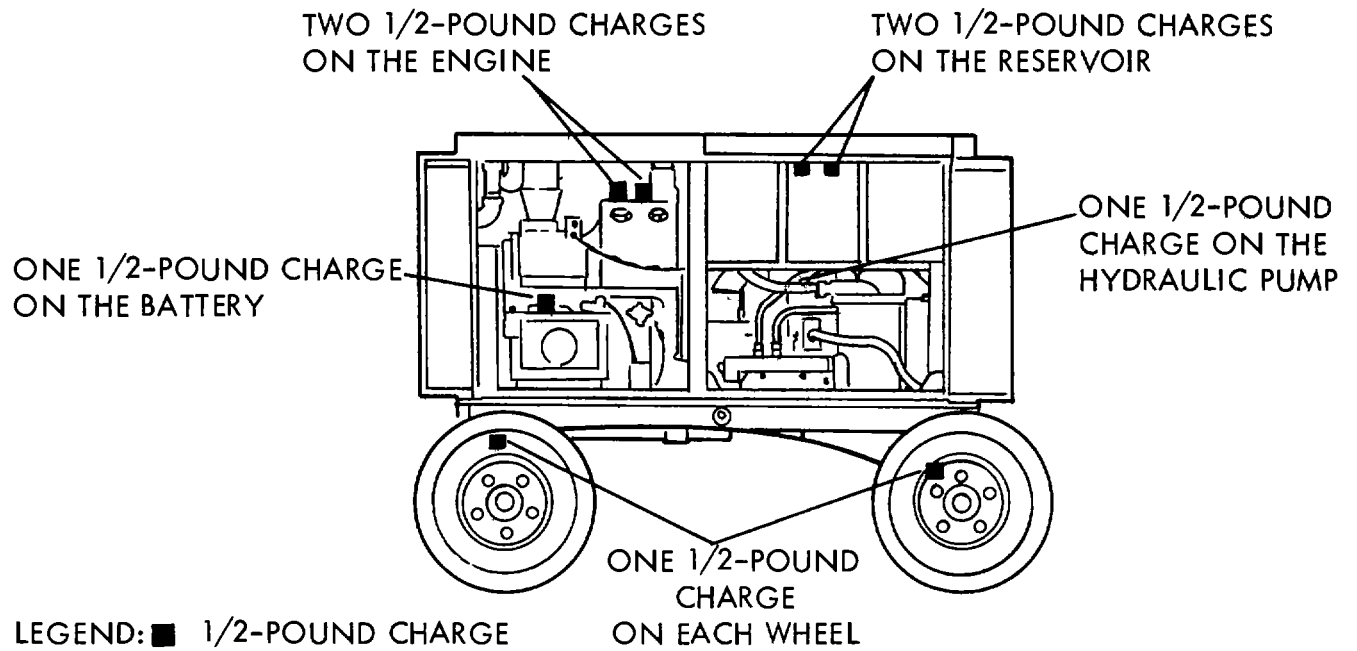
AV036835

Figure 2-3. Placement of Charges on Aircraft Generator Test Stand.



AV036836

Figure 2-4. Placement of Charges on Hydraulic Test Stand



A V036837

Figure 2-5. Placement of Charges on Hydraulic Test Stand.

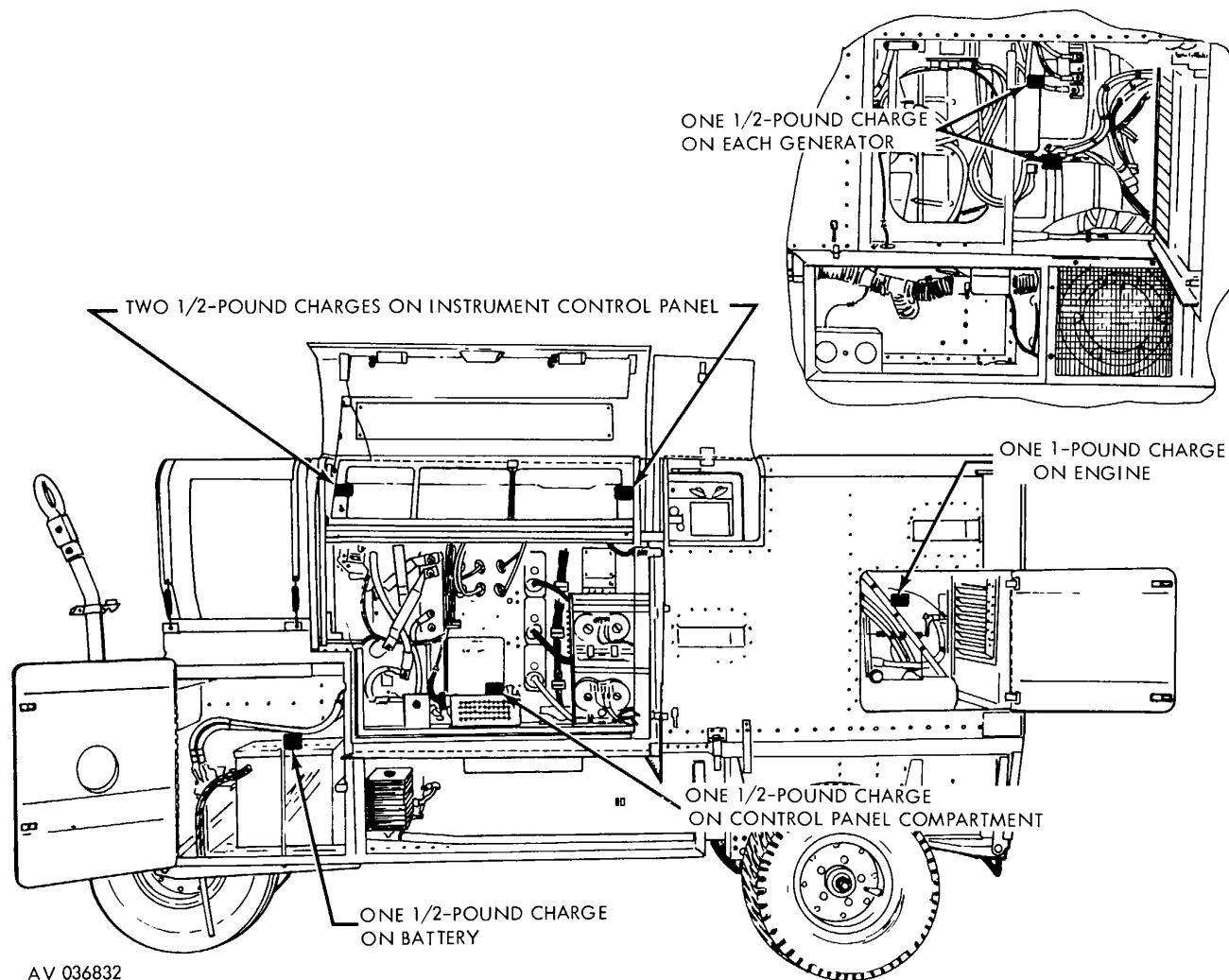


Figure 2-6. Placement of Charges on Test Stand Generator Set.

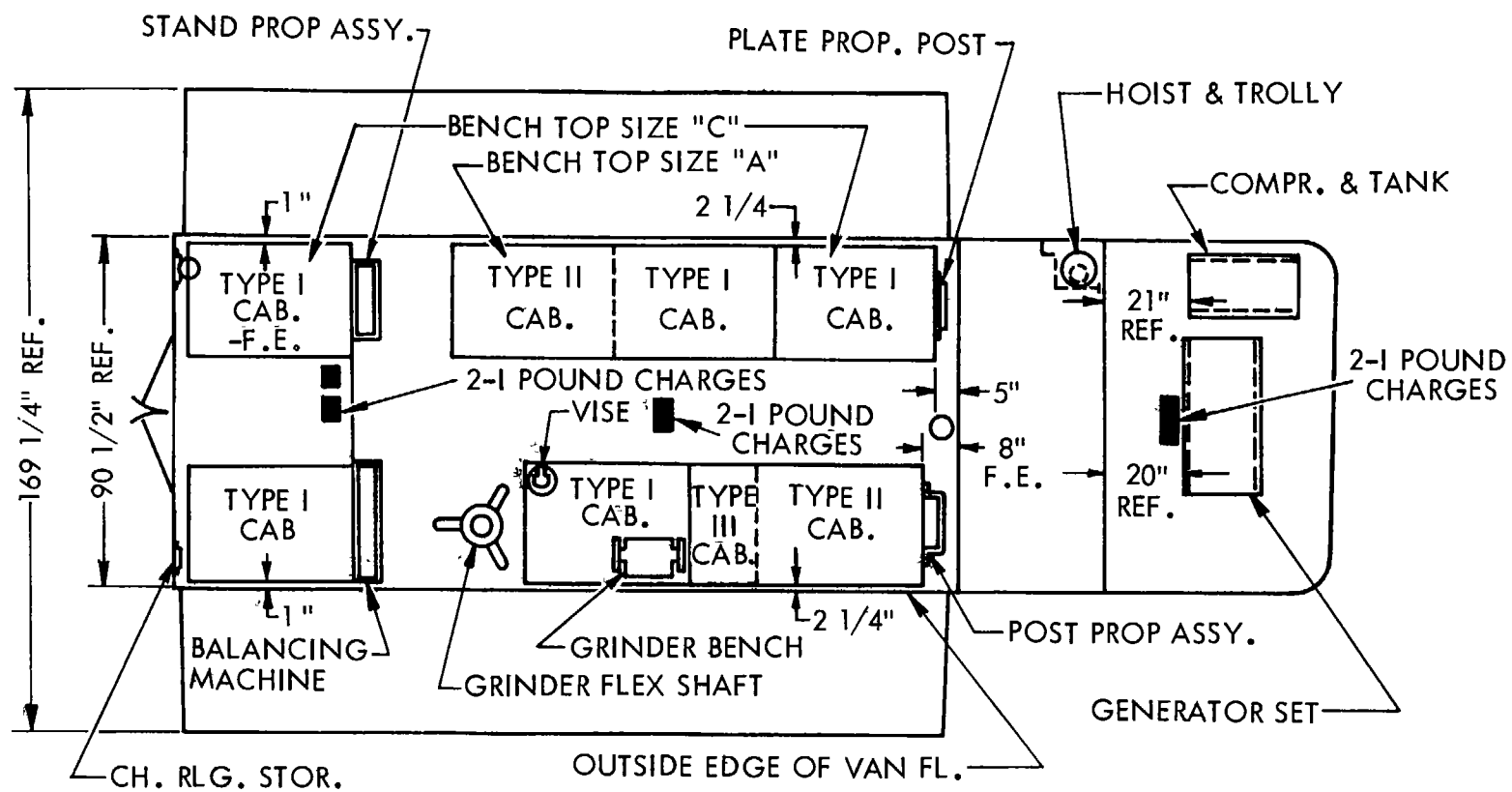


Figure 2-7. Placement of Charges on Shop Set Semitrailer Mounted.

2-12. Training.

All operators should receive thorough training in the destruction of equipment they are responsible for operating. Simulated destruction, using the methods listed in prior paragraphs of this TM, should be included in the training program. It must be emphasized in training, that demolition operations are usually necessitated by critical situations when time available for carrying out destruction is limited. For this reason, it is necessary that operators be thoroughly familiar with methods of destruction of equipment, and be able to carry out demolition instructions without reference to this or any other manual.

This publication has been printed for the use of all concerned.

By Order of the Secretary of the Army:

W.C. WESTMORELAND,
General, United States Army,
Chief of Staff.

Official:

VERNE L BOWERS,
Major General, United States Army,
The Adjutant General.

DISTRIBUTION:

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DA FORM 1 JUL 79 2028-2

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The Metric System and Equivalents

Linear Measure

1 centimeter = 10 millimeters = .39 inch
 1 decimeter = 10 centimeters = 3.94 inches
 1 meter = 10 decimeters = 39.37 inches
 1 dekameter = 10 meters = 32.8 feet
 1 hectometer = 10 dekameters = 328.08 feet
 1 kilometer = 10 hectometers = 3,280.8 feet

Weights

1 centigram = 10 milligrams = .15 grain
 1 decigram = 10 centigrams = 1.54 grains
 1 gram = 10 decigrams = .035 ounce
 1 decagram = 10 grams = .35 ounce
 1 hectogram = 10 decagrams = 3.52 ounces
 1 kilogram = 10 hectograms = 2.2 pounds
 1 quintal = 100 kilograms = 220.46 pounds
 1 metric ton = 10 quintals = 1.1 short tons

Liquid Measure

1 centiliter = 10 milliliters = .34 fl. ounce
 1 deciliter = 10 centiliters = 3.38 fl. ounces
 1 liter = 10 deciliters = 33.81 fl. ounces
 1 dekaliter = 10 liters = 2.64 gallons
 1 hectoliter = 10 dekaliters = 26.42 gallons
 1 kiloliter = 10 hectoliters = 264.18 gallons

Square Measure

1 sq. centimeter = 100 sq. millimeters = .155 sq. inch
 1 sq. decimeter = 100 sq. centimeters = 15.5 sq. inches
 1 sq. meter (centare) = 100 sq. decimeters = 10.76 sq. feet
 1 sq. dekameter (are) = 100 sq. meters = 1,076.4 sq. feet
 1 sq. hectometer (hectare) = 100 sq. dekameters = 2.47 acres
 1 sq. kilometer = 100 sq. hectometers = .386 sq. mile

Cubic Measure

1 cu. centimeter = 1000 cu. millimeters = .06 cu. inch
 1 cu. decimeter = 1000 cu. centimeters = 61.02 cu. inches
 1 cu. meter = 1000 cu. decimeters = 35.31 cu. feet

Approximate Conversion Factors

<i>To change</i>	<i>To</i>	<i>Multiply by</i>	<i>To change</i>	<i>To</i>	<i>Multiply by</i>
inches	centimeters	2.540	ounce-inches	Newton-meters	.007062
feet	meters	.305	centimeters	inches	.394
yards	meters	.914	meters	feet	3.280
miles	kilometers	1.609	meters	yards	1.094
square inches	square centimeters	6.451	kilometers	miles	.621
square feet	square meters	.093	square centimeters	square inches	.155
square yards	square meters	.836	square meters	square feet	10.764
square miles	square kilometers	2.590	square meters	square yards	1.196
acres	square hectometers	.405	square kilometers	square miles	.386
cubic feet	cubic meters	.028	square hectometers	acres	2.471
cubic yards	cubic meters	.765	cubic meters	cubic feet	35.315
fluid ounces	milliliters	29.573	cubic meters	cubic yards	1.308
pints	liters	.473	milliliters	fluid ounces	.034
quarts	liters	.946	liters	pints	2.113
gallons	liters	3.785	liters	quarts	1.057
ounces	grams	28.349	liters	gallons	.264
pounds	kilograms	.454	grams	ounces	.035
short tons	metric tons	.907	kilograms	pounds	2.205
pound-feet	Newton-meters	1.356	metric tons	short tons	1.102
pound-inches	Newton-meters	.11296			

Temperature (Exact)

°F	Fahrenheit temperature	5/9 (after subtracting 32)	Celsius temperature	°C
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