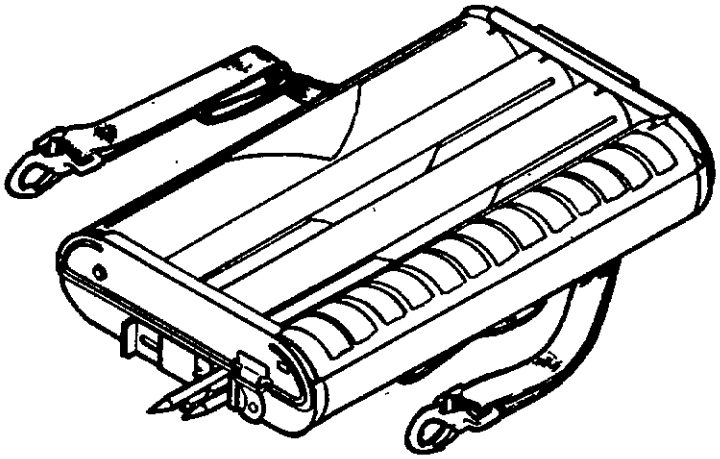
TECHNICAL MANUAL

OPERATOR'S MANUAL FOR MARKING SET, CONTAMINATION: NUCLEAR, BIOLOGICAL, CHEMICAL (NBC) (9905-12-124-5955)



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

HEADQUARTERS, DEPARTMENT OF THE ARMY

23 AUGUST 1982

WARNING

Sharp ends of mounting stake could tear C-B protective clothing and expose user to contamination. Be careful when using stakes.

For first aid in a toxic environment see chapter 11 of FM 21-11.

CHANGE

NO. 1

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington, DC, 31 August 1987

Operator's Manual

MARKING SET, CONTAMINATION: NUCLEAR,

BIOLOGICAL, CHEMICAL (NBC)

(9905-12-124-5955)

TM 3-9905-001-10 is changed as follows:

1. New or changed material is indicated by a vertical bar in the margin of the page.

2. The first aid warning on the WARNING page is changed as follows:
"For first aid in a toxic environment, see FM 21-11, First Aid for Soldiers."

3. Remove old pages and insert new pages as indicated below:

Remove Pages	*Insert Pages*
i (i blank)	i/(i blank)
1-1 and 1-2	1-1 and 1-2
2-7 and 2-8	2-7 and 2-8
A-1/A-2 blank)	A-1 /(A-2 blank)
B-1/C-1/D-1 (B-2/C-2/D-2 blank)	B-1/C-1 (B-2/C-2 blank)
None	D-1 and D-2
Three blank DA Forms 2028-2 and envelopes	Three blank DA Forms 2028-2 and envelopes
Authentication page	Authentication page

4. File this change sheet in the back of the publication for reference purposes.

By Order of the Secretary of the Army:

E. C. MEYER
General, United States Army
Chief of Staff

Official:

ROBERT M. JOYCE
Brigadier General, United states Army
The Adjutant General

Distribution:

To be distributed in accordance with DA Form 12-28, quantity required block 225 for Operator Maintenance Requirements for Equipment, Marking Set, Contamination.

Technical Manual

No. 3-9905-001-10

HEADQUARTERS
DEPARTMENT OF THE ARMY
Washington, DC, 23 August 1982

Operator's Manual

MARKING SET, CONTAMINATION: NUCLEAR, BIOLOGICAL, CHEMICAL (NBC)

(9905-12-124-5955)

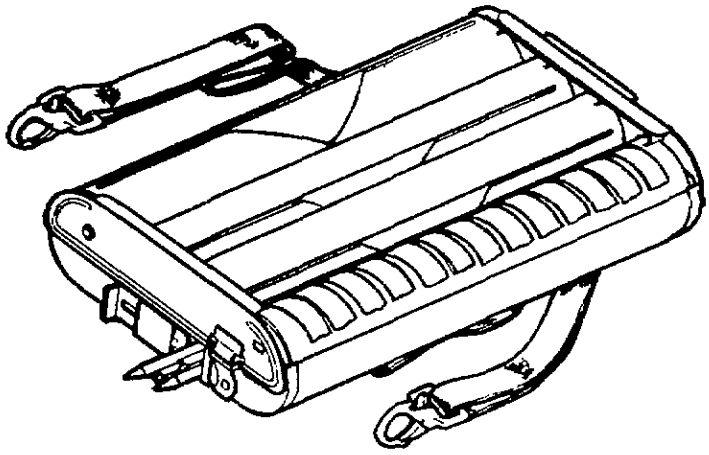
REPORTING ERRORS AND RECOMMENDING IMPROVEMENTS

You can help improve this manual. If you find any mistakes or if you know a way to improve the procedures, please let us know. Mail your letter, DA Form 2028 (Recommended Changes to Publications and Blank Forms), or DA Form 2028-2 located in the back of this manual direct to Commander, US Army Armament, Munitions and Chemical Command, ATTN: AMSMC-MAR-T(A), Aberdeen Proving Ground, MD 21010-5423. A reply will be furnished to you.

CHAPTER 1

INTRODUCTION

SECTION I. GENERAL INFORMATION



SCOPE

This manual contains operation data for the NBC Contamination Marking Set.

This marking set provides the necessary equipment to mark contaminated areas as defined by FM 3-3.

The purpose of this manual is to show how each part of your marking set can be used. The purpose IS NOT to set policy on how to mark contaminated areas. NBC Detection Teams will continue to follow their Standard Operating Procedures using this marking set as a tool to accomplish their mission.

MAINTENANCE FORMS AND RECORDS

Department of the Army forms and procedures used for equipment maintenance will be those prescribed by DA-PAM 738-750. The Army Maintenance Management System (TAMMS).

REPORTING EQUIPMENT IMPROVEMENT RECOMMENDATIONS (EIR'S)

If your marking set needs improvement, let us know. Send us an EIR. You, the user, are the only one who can tell us what you don't like about your equipment. Let us know why you don't like the design or performance. Put it on an SF 368 (Quality Deficiency Repot. Mail t to us at: Commander, US Army Armament, Munitions and Chemical Command, ATTN: AMSMC-QAD, Rock Island, IL 61299-6000. We'll send you a reply.

NOMENCLATURE CROSS REFERENCE LIST

COMMON NAME	*OFFICIAL NOMENCLA TURE*
Marking Set	Marking Set, Contamination: Nuclear, Biological, Chemical (NBC)
Stake	Mounting Stake

SECTION II. EQUIPMENT DESCRIPTION

EQUIPMENT CHARACTERISTICS, CAPABILITIES, AND FEATURES

- Lightweight
- Portable.
- Easy access to marking equipment.
- Usable in all climatic conditions.
- Operable in teams or individually.
- Easy to use in C-B protective clothing.
- Expendable.
- Ready to use; no preparation needed.

LOCATION AND DESCRIPTION OF MAJOR COMPONENTS

FLAG CONTAINERS

Each container holds 20 marking flags:

20 white flags for marking nuclear contamination.

20 blue flags for marking biological contamination.

20 yellow flags for marking chemical contamination.

RIBBON CONTAINER

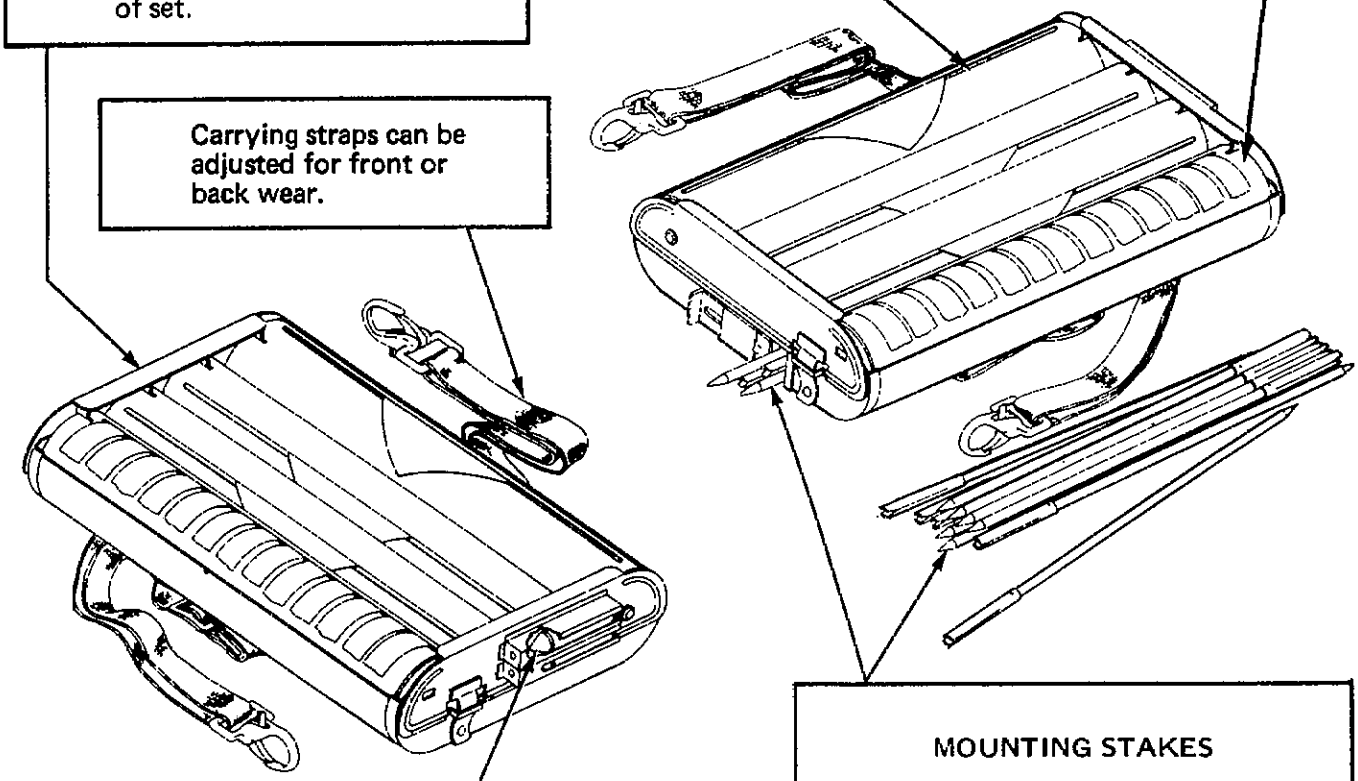
Holds 13 separate rolls of yellow marking ribbon.

Ribbon used to provide a way to hang flags between poles or other objects.

CARRYING CONTAINER

Holds all individual parts of set.

Carrying straps can be adjusted for front or back wear.



CRAYONS

Red crayons used to mark information on flags.

MOUNTING STAKES

48 stakes stored in bottom of carrying container.

Used to make poles for hanging flags and attaching marking ribbon.

EQUIPMENT DATA

CARRYING CONTAINER WITH COMPONENTS

- Weight (approximate) ..... 10.0 lb (4.5 Kg)
- Length ..... 13.6 in. (345mm)
- Width ..... 9.3 in. (235 mm)
- Height ..... 3.6 in. (90 mm)

MOUNTING STAKES

- Length ..... 11.4 in. (290 mm)
- Quantity ..... 48 ea

MARKING FLAGS

- Quantity Nuclear ..... 20 white (marked ATOM)
- Quantity Biological ..... 20 blue (marked BIO)
- Quantity Chemical ..... 20 yellow (marked GAS)

MARKING RIBBON

- Quantity rolls ..... 13 ea
- Length of each roll (approximate) ..... 66 ft (20 m)

CHAPTER 2

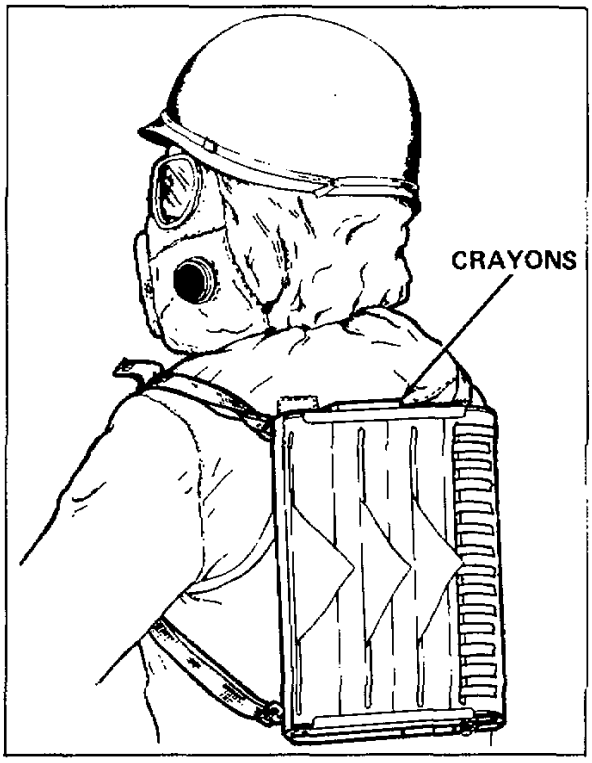
OPERATING INSTRUCTIONS

GENERAL

Use carrying straps to wear marking set so it is comfortable for you. Generally it is best to wear set on front when working alone and on back when working in teams

- *Front wear* - Loop top carrying strap around shoulders. Make sure ribbon container is at bottom as shown. Unhook bottom carrying strap and loop around waist. Rehook bottom strap to carrying container. Adjust straps so set is snug.

- *Back wear* - Put arms through carrying straps as shown below. Make sure crayons are at top. Adjust straps so set is snug.

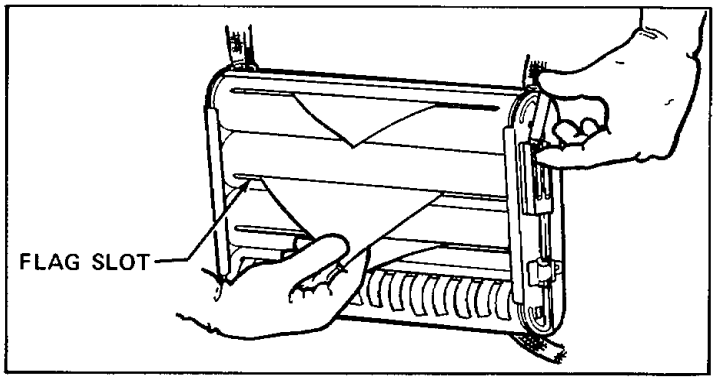


The operating instructions will show three basic examples to explain how to use each part in this set. It is important to remember that these examples are used only to show how the parts of the marking set work. The examples DO NOT set Department of the Army policy on marking contaminated areas. NBC Detection Teams will continue to follow present policies.

EXAMPLE 1 - ATTACHING FLAGS TO SINGLE OBJECTS

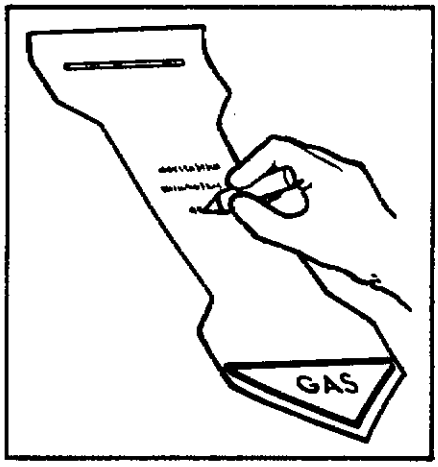
NOTE

Flag may hang up inside flag container. Pry apart flag slot with point of stake and pull flag out slowly.

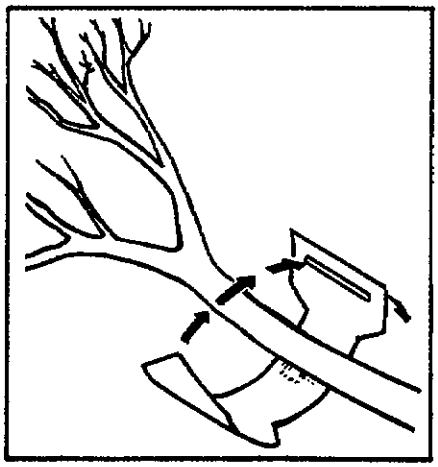


1. Pull flag from container:
   - white for nuclear contamination
   - blue for biological contamination
   - yellow for chemical contamination

2. Remove crayon from side of marking set.

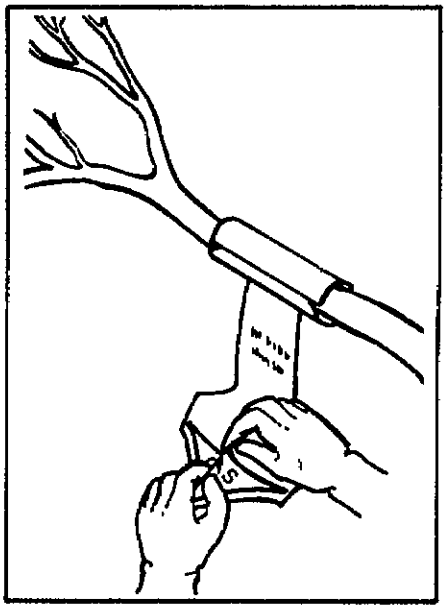


3. Mark required information on neck of flag with crayon. Return crayon to holder.



NOTE
Make sure lettering on flag faces away from contaminated area.

4. Attach flag to object.



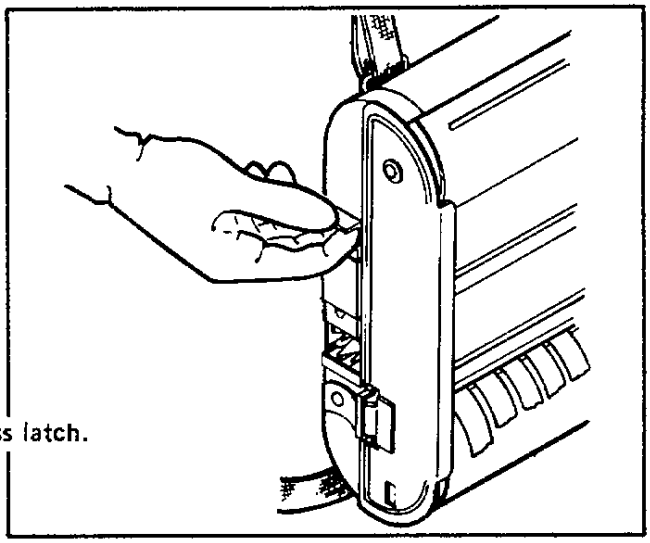
5. Fold flag from its bottom tip to top of printed triangle: this will keep flag from curling.

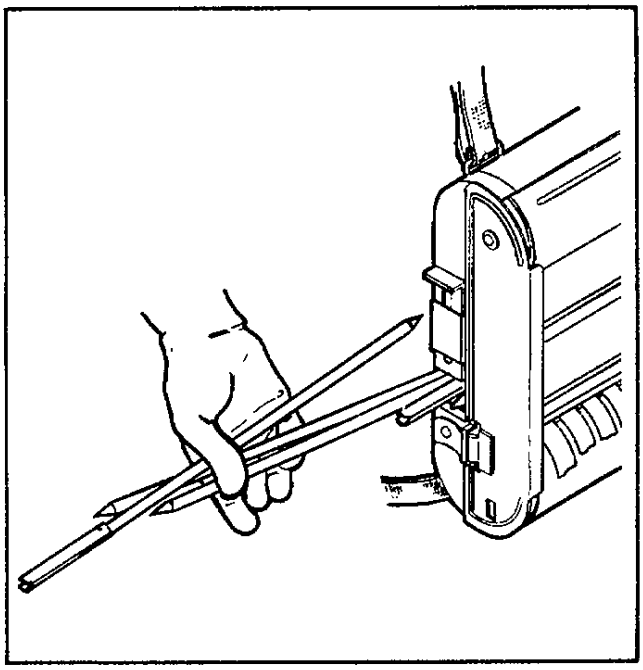
EXAMPLE 2 - MARKING LARGE OBJECTS OR SMALL AREAS

WARNING

Be careful when using mounting stakes. Stakes could tear C-B protective clothing.

1. Open mounting stake access latch.

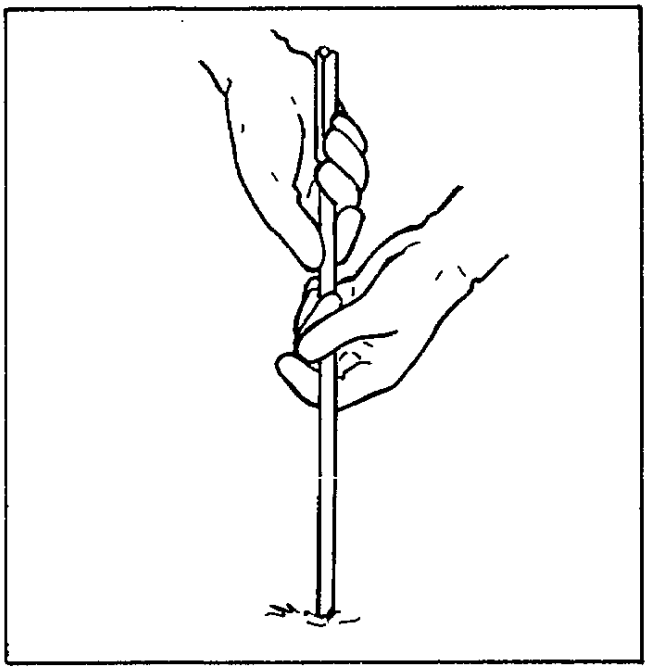




2. Remove at least three stakes to make a pole.

NOTE

Do not use more than four stakes together. Pole bends too easily with five stakes.

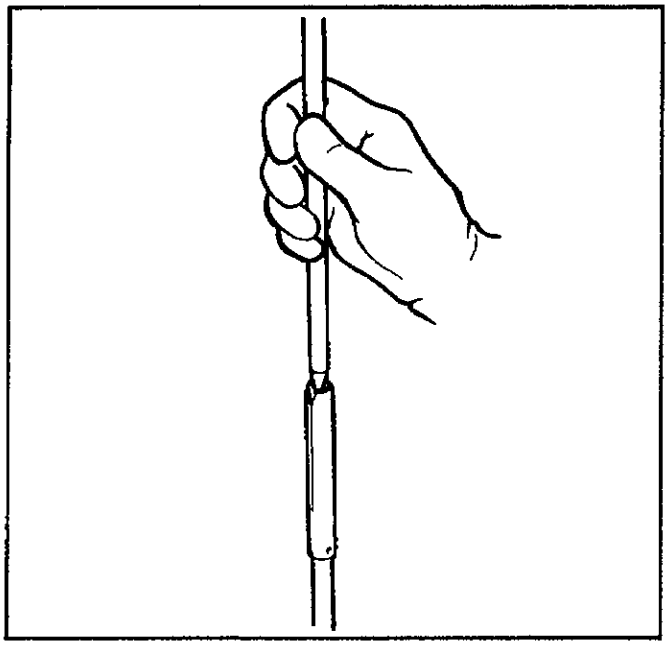


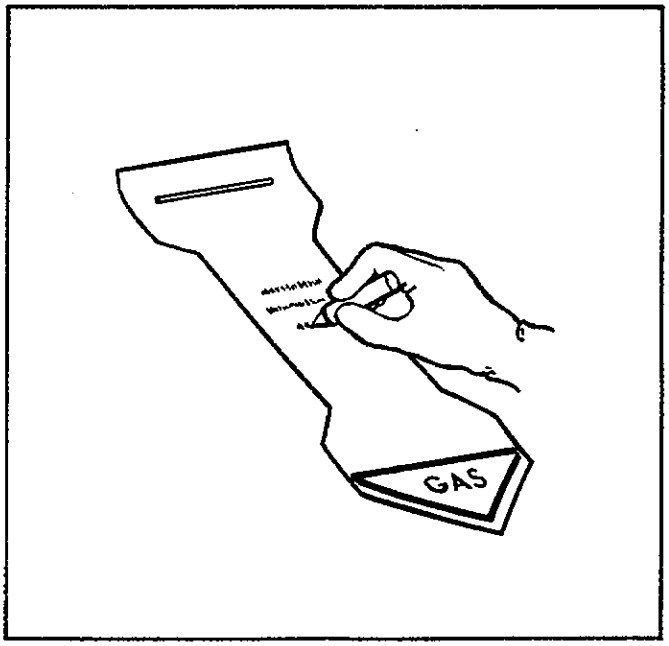
3. Stick first stake in ground next to object or area to be marked.

NOTE

You may need to pound first stake into ground using a rock or other object. This will damage stake but will start a hole in which to place an undamaged stake. Keep damaged stake to use as a tool for starting holes for other stakes.

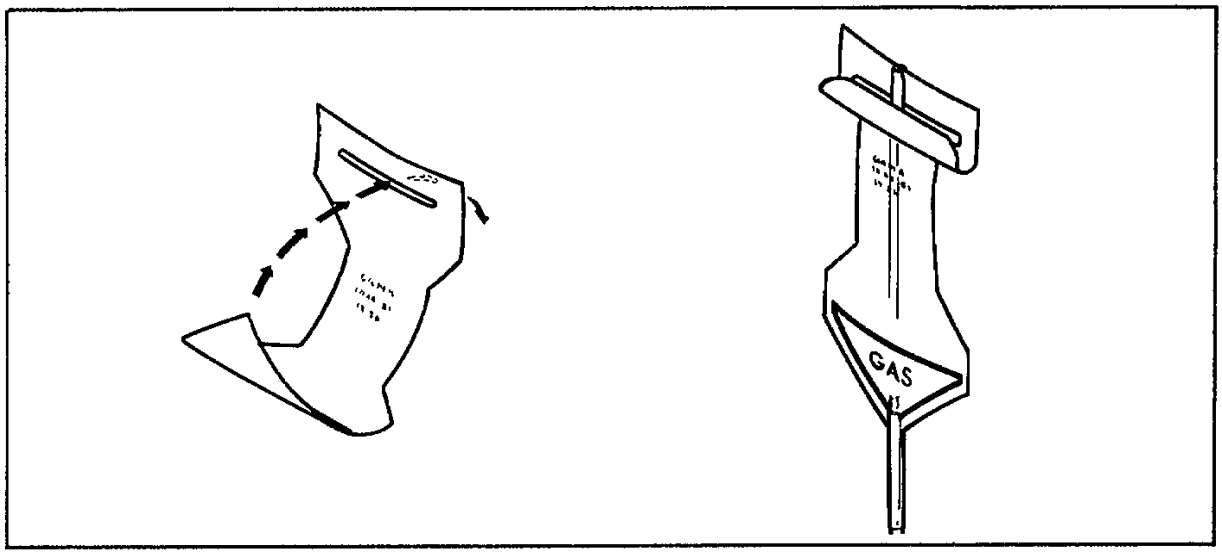
EXAMPLE 2 - MARKING LARGE OBJECTS OR SMALL AREAS (CONT)





4. Add two sakes to first stake. For more height, such as in bushy areas, add one more stake.

5. Pull out flag and mark with crayon as shown in example 1, steps 1 thru 3.



NOTE

Make sure lettering on flag faces away from contaminated object or area.

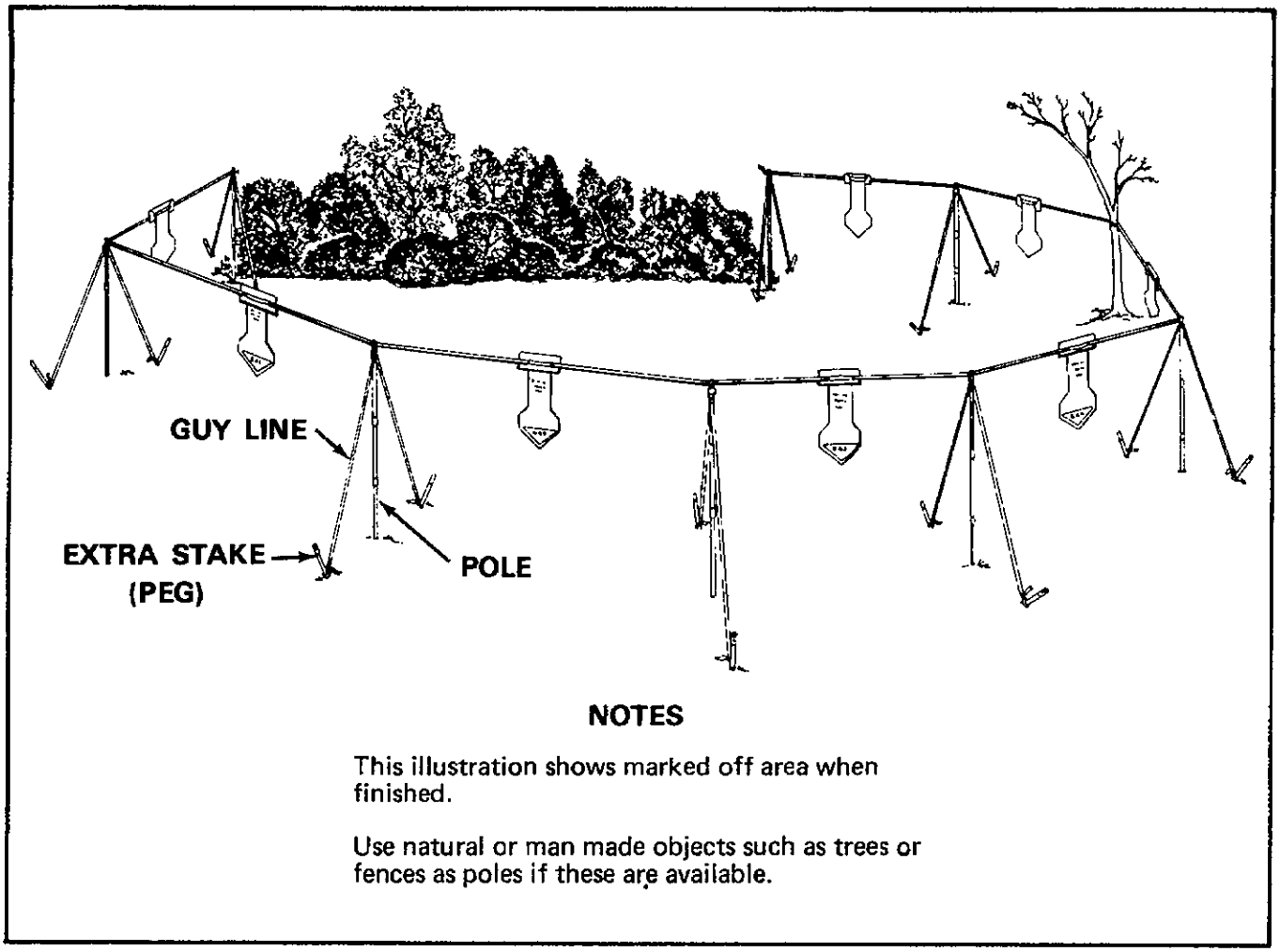
6. Fold and attach flag to pole using slit at top of flag.

7. Tuck bottom tip of flag into slit of mounting stake.

EXAMPLE 3 - MARKING LARGE AREAS

WARNING

Be careful when using mounting stakes. Stakes could tear C-B protective clothing.



NOTES

This illustration shows marked off area when finished.

Use natural or man made objects such as trees or fences as poles if these are available.

1. Make up and place pole in ground, page 2-3 steps 1 thru 4.
2. Lay two extra stakes next to pole.
3. Repeat steps 1 and 2 for each pole you need to surround contaminated area.

NOTE

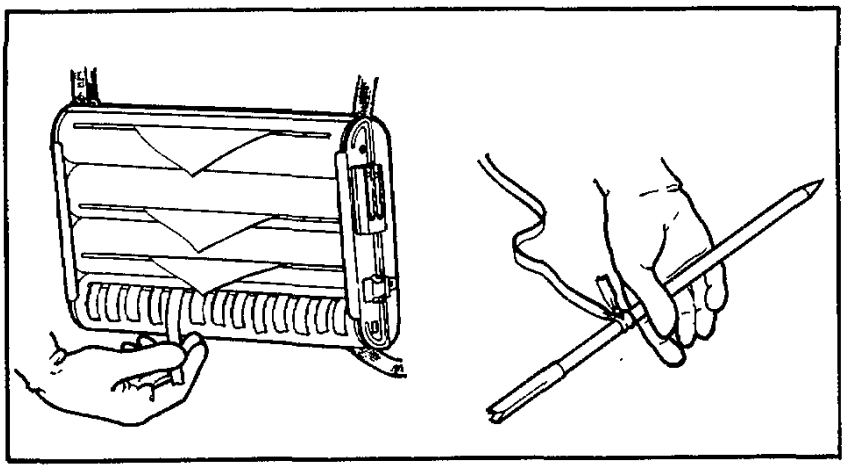
Poles should be about 5 to 6 feet apart.

EXAMPLE 3 - MARKING LARGE AREAS (CONT)

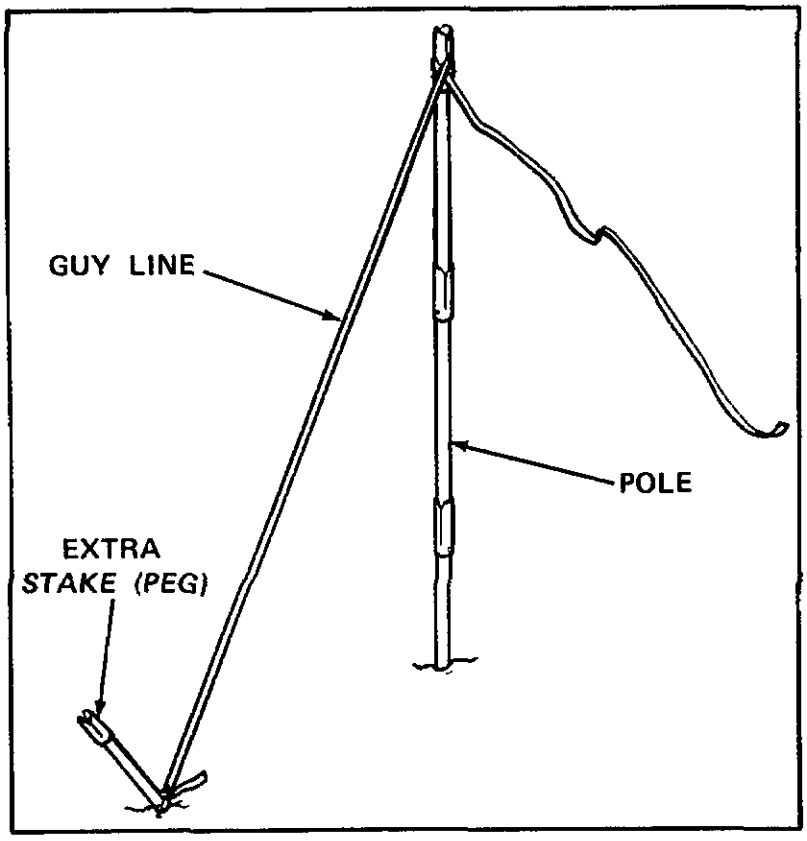
4. Make guy lines for each pole as follows:

NOTE

Ribbon may roll back inside container. Use point of stake to reach inside opening and pull ribbon back out



a. Tie end of one ribbon roll to one of the stakes left out for use as a peg. Do not tear off ribbon yet.

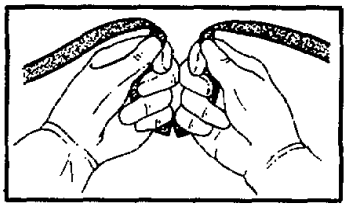


b. Stick peg in ground about 1 1/2 to 2 feet from pole.

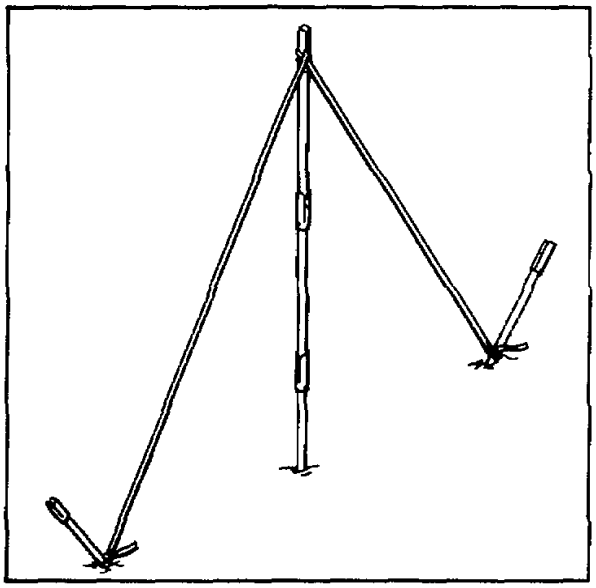
c. Keep pulling out enough ribbon to reach top of pole and slide ribbon into sit at top of pole.

d. Loop ribbon around pole once and keep pulling out enough ribbon to reach about 1 1/2 to 2 feet on opposite side.

e. Tear ribbon with hands. When you tear the ribbon, keep it flat and pull steadily until it rips. Don't let it bunch. Another way is to wrap it in both hands, keep it flat, and pull steadily. Tie ribbon to second extra stake.



f. Stick stake in ground.



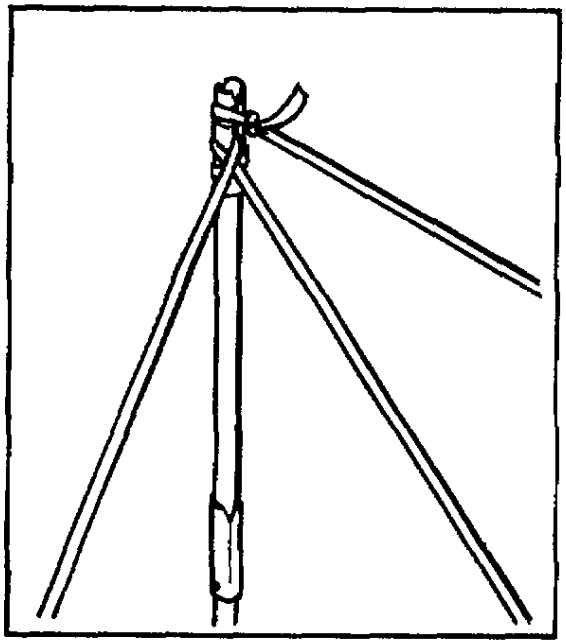
NOTE

Additional guy lines may be added for stability if necessary.

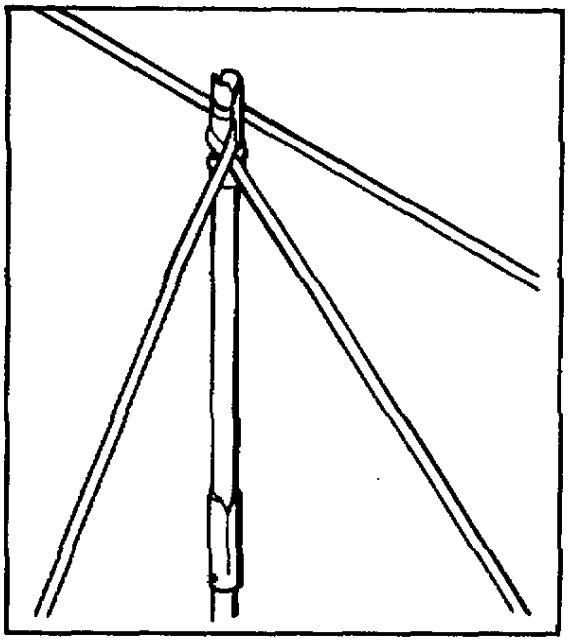
5. Connect each pole with ribbon as follows:

NOTE

If your ribbon roll runs out, tie end of ribbon to new roll and continue.

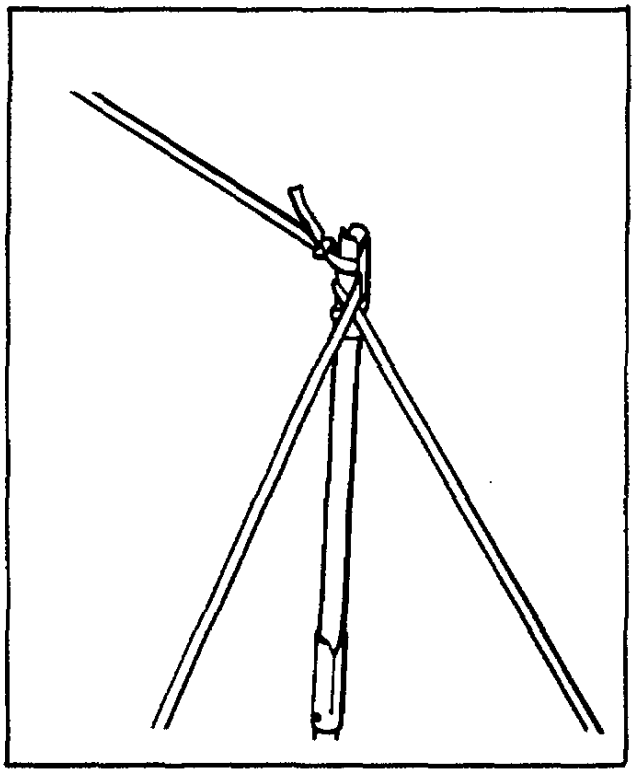


a. Pull out ribbon and slip end into slit at top of first pole and tie a knot. Do not tear off ribbon from roll yet.

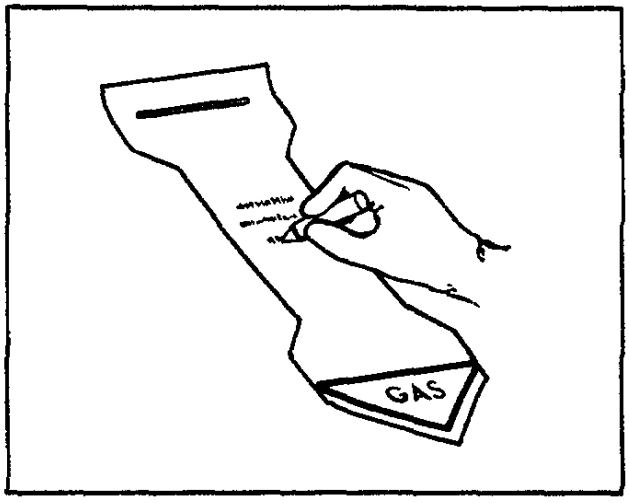


b. Keep pulling out ribbon and connect each pole by sliding ribbon into slit and making one loop around pole.

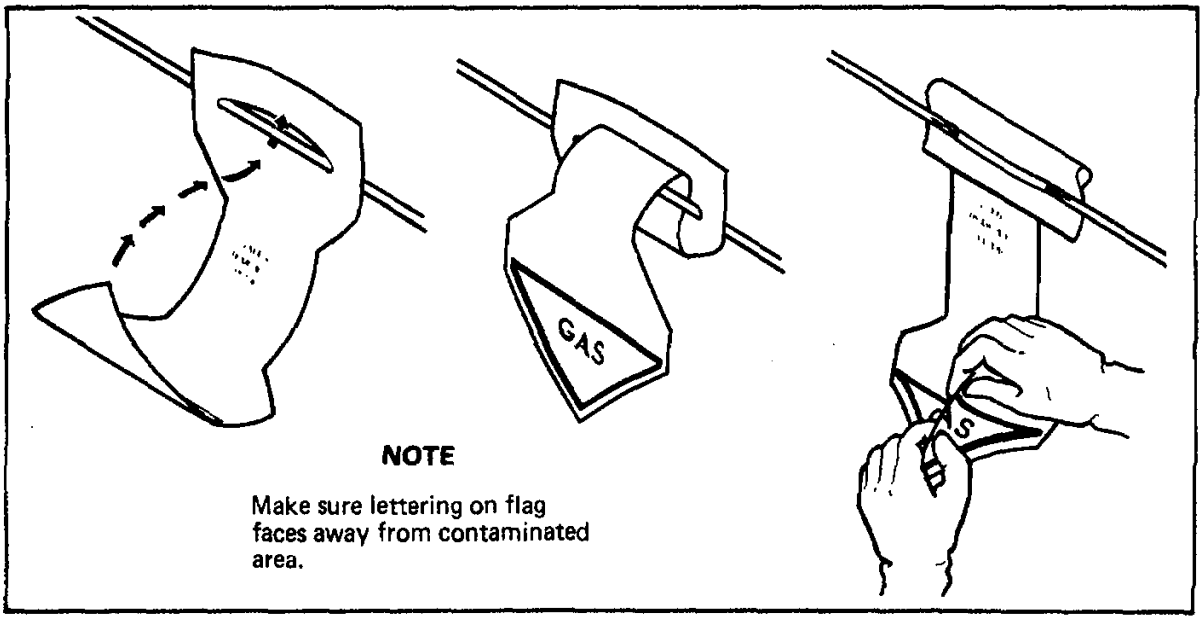
EXAMPLE 3 - MARKING LARGE AREAS (CONT)



c. When you have reached last pole, tear off ribbon with hands and tie to pole.



6. Pull out flag and mark with crayon as shown in example , steps 1 thru 3.



7. Attach flag to stretched out ribbon.

8. Fold flag from its bottom tip to top of printed triangle; this will keep flag from curling.

APPENDIX A

REFERENCES

SCOPE

This appendix lists all forms, field manuals, and technical manuals referenced in this manual.

FORMS

Quality Deficiency Report	SF 368
Recommended Changes to Publications and Blank Forms	DA Form 2028

FIELD MANUALS

First Aid for Soldiers	FM 21-11
NBC Contamination Avoidance	FM 3-3

DEPARTMENT OF THE ARMY PAMPHLETS

The Army Maintenance Management System (TAMMS)	DA PAM 738-750

APPENDIX B

COMPONENT OF END ITEM AND BASIC ISSUE ITEMS LIST

Not applicable to the marking set

APPENDIX C

ADDITIONAL AUTHORIZATION LIST

Not applicable to the marking set

APPENDIX D

EXPENDABLE/DURABLE SUPPLIES AND MATERIALS LIST

Section I. INTRODUCTION

SCOPE

This appendix lists expendable/durable supplies and materials needed to operate and maintain the marking set. This listing is for informational purposes only and is not authority to requisition the listed items. These items are authorized by CTA 50-970, Expendable/Durable items (Except Medical, Class V, Repair Parts, and Heraldic Items), or CTA 8-100, Army Medical Department Expendable/Durable Items.

EXPLANATION OF COLUMNS

- *Column (1) - Item Number*- This number is assigned to the entry in the listing and is referenced in the narrative instructions to identify the material (e.g., “Use GAS warning flag sign, item 5, app D”).

- *Column (2) - Level*- This column identifies the lowest level of maintenance that requires the listed item.

  C - Operator/Crew

- *Column (3) - National Stock Number* - This is the National stock number assigned to the item; use it to request or requisition the item.

- *Column (4) - Description* - Indicates the Federal item name and, if required, a description to identify the item. The last line for each item indicates the Federal Supply Code for Manufacturer (FSCM) in parentheses followed by the par number.

- *Column (5) - Unit of Measure U/M)* - Indicates the measure used in performing the actual maintenance function. This measure is expressed by a two-character alphabetical abbreviation (e.g, ea, in., pr). If the unit of measure differs from the unit of issue, requisition the lowest unit of issue that will satisfy your requirements.

Section II. EXPENDABLE/DURABLE SUPPLES AND MATERIALS LIST

(1) ITEM NUMBER	(2) LEVEL	(3) NATIONAL STOCK NUMBER	(4) DESCRIPTION	(5) U/M
1	C	7510-12-120-9355	CRAYON, MARKING: red (D9478) 5180-0052-16-4	EA
2	C	9905-12-133-0113	MARKING RODS (C0794) 9905-009281	EA
3	C	9905-12-132-2579	SIGN: warning fag ATOM - color white (D1839) 99019 ITEM A	EA
4	C	9905-12-132-2578	SIGN: warning flag BIO - color blue (D1839) 99019 ITEM B	EA
5	C	9905-12-132-2580	SIGN: warning flag GAS - color yellow (D1839) 99019 ITEM C	EA
6	C	8315-12-132-2577	TAPE, TEXTILE: ribbon, rayon, yellow (D9478) 8315-0021	EA

By Order of the Secretary of the Army:

E. C. MEYER
General, United States Army
Chief of Staff

Official:

ROBERT M. JOYCE
Brigadier General, United States Army
The Adjutant General

Distribution:

To be distributed in accordance with DA Form 12-38, Operator Maintenance Requirements for Detector Testers and Tool Kits.

*U.S. Government Printing Office: 2001 461-711/21507

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DATE SENT
Date you mail this form

PUBLICATION NUMBER	PUBLICATION DATE	PUBLICATION TITLE
TM 3-9905-001-10	Date of TM	Operator's Manual, Marking Set, Contamination: NBC

BE EXACT. . .PIN-POINT WHERE IT IS

PAGE NO	PARAGRAPH	FIGURE NO	TABLE NO
2-3	Exam 2		

IN THIS SPACE TELL WHAT IS WRONG AND WHAT SHOULD BE DONE ABOUT IT:

Add paragraph 7:

Tuck bottom tip of flag into slit of mounting stake.

Reason: To keep marking flag from curling up.

SAMPLE

PRINTED NAME, GRADE OR TITLE, AND TELEPHONE NUMBER
David K. Storms
E-5, Autovon 584-4415

SIGN HERE: David K. Storms

DA FORM 1 JUL 79 2028-2 PREVIOUS EDITIONS ARE OBSOLETE.

P.S.--IF YOUR OUTFIT WANTS TO KNOW ABOUT YOUR RECOMMENDATION MAKE A CARBON COPY OF THIS AND GIVE IT TO YOUR HEADQUARTERS.

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TEAR ALONG PERFORATED LINE

Commander
US Army Armament Materiel Readiness Command
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Aberdeen Proving Ground, MD 21010

TEAR ALONG DOTTED LINE

RECOMMENDED CHANGES TO EQUIPMENT TECHNICAL PUBLICATIONS

THEN...JOT DOWN THE DOPE ABOUT IT ON THIS FORM, CAREFULLY TEAR IT OUT, FOLD IT AND DROP IT IN THE MAIL!

SOMETHING WRONG WITH THIS PUBLICATION?

FROM: (PRINT YOUR UNIT'S COMPLETE ADDRESS)

DATE SENT

PUBLICATION NUMBER	PUBLICATION DATE	PUBLICATION TITLE
TM 3-9905-001-10	23 Aug 82	Operator's Manual for Marking Set, Contamination: NBC

BE EXACT...PIN-POINT WHERE IT IS

PAGE NO.	PARAGRAPH	FIGURE NO.	TABLE NO.

IN THIS SPACE TELL WHAT IS WRONG AND WHAT SHOULD BE DONE ABOUT IT:

PRINTED NAME, GRADE OR TITLE, AND TELEPHONE NUMBER

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DEPARTMENT OF THE ARMY

OFFICIAL BUSINESS

TEAR ALONG PERFORATED LINE

Commander
US Army Armament Materiel Readiness Command
ATTN: DRSAR-MAS-C
Aberdeen Proving Ground, MD 21010

THE METRIC SYSTEM AND EQUIVALENTS

'NEAR MEASURE

. Centimeter = 10 Millimeters = 0.01 Meters = 0.3937 Inches
1 Meter = 100 Centimeters = 1000 Millimeters = 39.37 Inches
1 Kilometer = 1000 Meters = 0.621 Miles

'VEIGHTS

Gram = 0.001 Kilograms = 1000 Milligrams = 0.035 Ounces
1 Kilogram = 1000 Grams = 2.2 lb.
1 Metric Ton = 1000 Kilograms = 1 Megagram = 1.1 Short Tons

LIQUID MEASURE

1 Milliliter = 0.001 Liters = 0.0338 Fluid Ounces
1 Liter = 1000 Milliliters = 33.82 Fluid Ounces

SQUARE MEASURE

1 Sq. Centimeter = 100 Sq. Millimeters = 0.155 Sq. Inches
1 Sq. Meter = 10,000 Sq. Centimeters = 10.76 Sq. Feet
1 Sq. Kilometer = 1,000,000 Sq. Meters = 0.386 Sq. Miles

CUBIC MEASURE

1 Cu. Centimeter = 1000 Cu. Millimeters = 0.06 Cu. Inches
1 Cu. Meter = 1,000,000 Cu. Centimeters = 35.31 Cu. Feet

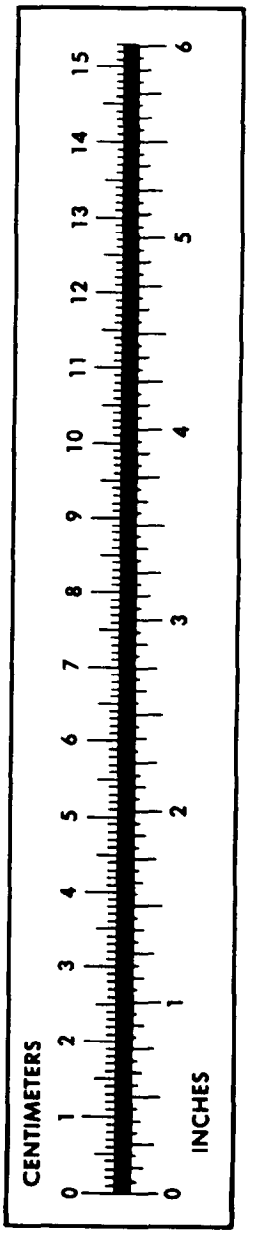
TEMPERATURE

5/9(°F - 32) = °C
212° Fahrenheit is evuivalent to 100° Celsius
90° Fahrenheit is equivalent to 32.2° Celsius
32° Fahrenheit is equivalent to 0° Celsius
9/5C° + 32 =°F

APPROXIMATE CONVERSION FACTORS

TO CHANGE	TO	MULTIPLY BY
Inches	Centimeters	2.540
Feet	Meters	0.305
Yards	Meters	0.914
Miles	Kilometers	1.609
Square Inches	Square Centimeters	6.451
Square Feet	Square Meters	0.093
Square Yards	Square Meters	0.836
Square Miles	Square Kilometers	2.590
Acres	Square Hectometers	0.405
Cubic Feet	Cubic Meters	0.028
Cubic Yards	Cubic Meters	0.765
Fluid Ounces	Milliliters	29.573
ıts	Liters	0.473
arts	Liters	0.946
allons	Liters	3.785
Ounces	Grams	28.349
Pounds	Kilograms	0.454
Short Tons	Metric Tons	0.907
Pound-Feet	Newton-Meters	1.356
Pounds per Square Inch	Kilopascals	6.895
Miles per Gallon	Kilometers per Liter	0.425
Miles per Hour	Kilometers per Hour	1.609

TO CHANGE	TO	MULTIPLY BY
Centimeters	Inches	0.394
Meters	Feet	3.280
Meters	Yards	1.094
Kilometers	Miles	0.621
Square Centimeters	Square Inches	0.155
Square Meters	Square Feet	10.764
Square Meters	Square Yards	1.196
Square Kilometers	Square Miles	0.386
Square Hectometers	Acres	2.471
Cubic Meters	Cubic Feet	35.315
Cubic Meters	Cubic Yards	1.308
Milliliters	Fluid Ounces	0.034
Liters	Pints	2.113
Liters	Quarts	1.057
ers	Gallons	0.264
ms	Ounces	0.035
ograms	Pounds	2.205
Metric Tons	Short Tons	1.102
Newton-Meters	Pounds-Feet	0.738
Kilopascals	Pounds per Square Inch	0.145
lometers per Liter	Miles per Gallon	2.354
meters per Hour	Miles per Hour	0.621



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