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FM 21-30

WAR DEPARTMENT BASIC FIELD MANUAL

ARDEN W. EMERICK, JR.

CONVENTIONAL SIGNS, MILITARY SYMBOLS, AND ABBREVIATIONS

WAR DEPARTMENT • OCTOBER 1943

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This manual supersedes FM 21-30, 26 November 1941, including C 1, 9 May 1942, and C 2, 27 July 1942.

WAR DEPARTMENT • OCTOBER 1943

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WAR DEPARTMENT,
WASHINGTON 25, D. C., 15 October 1943.

FM 21–30, Conventional Signs, Military Symbols, and Abbreviations, is published for the information and guidance of all concerned.

[A. G. 300.7 (21 May 43).]

BY ORDER OF THE SECRETARY OF WAR:

G. C. MARSHALL,
Chief of Staff.

OFFICIAL:

J. A. ULIO,
Major General,
The Adjutant General.

DISTRIBUTION:

B and H (5); R (10); Bn (5), 1 (10); C (10).
(For explanation of symbols see FM 21–6.)

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BASIC FIELD MANUAL

Conventional signs, military symbols, and abbreviations

CHANGES No. 1

WAR DEPARTMENT,
WASHINGTON 25, D. C., 21 April 1944.

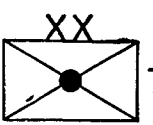
FM 21-30, October 1943 is changed as follows:

27. APPLICATION OF SPECIAL SYMBOLS.

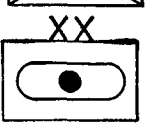
* * * * *

The following are added to Chart 33.—Examples—Field Artillery (page 70).

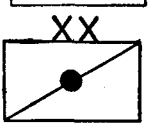
Division Artillery 7th Infantry Division---



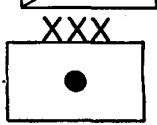
Division Artillery 2d Armored Division----



Division Artillery 4th Cavalry Division---



Corps Artillery III Corps----------



[A. G. 300.7 (24 Mar 44).]
579701°—44—AGO 272

BY ORDER OF THE SECRETARY OF WAR:

G. C. MARSHALL,
Chief of Staff.

OFFICIAL:

J. A. ULIO,
Major General,
The Adjutant General.

DISTRIBUTION:

As prescribed in paragraph 9a, FM 21–6: B and H (5); R (10); Bn (5) except Bn 1 (10); C (10); RTC (800); UTC (800).

For explanation of symbols, see FM 21–6.

AGO 272

U. S. GOVERNMENT PRINTING OFFICE: 1944

BASIC FIELD MANUAL

CONVENTIONAL SIGNS, MILITARY SYMBOLS AND ABBREVIATIONS

CHANGES No. 2

WAR DEPARTMENT
WASHINGTON 25, D. C., 15 February 1945

FM 21–30, 15 October 1943, is changed as follows:

Chart 1, page 3, change note to read as follows:

NOTE.—Information on grids, World Polyconic, U. S. Domestic, State, and British Grids will be found in FM 21–26.

Chart 10, page 25, ninth symbol:

Hospital ---------- Hosp ■ or ✚

Chart 11, page 26, change note to read as follows:

NOTE.—Scales larger than * * * smaller, omit wells and tanks. No pipe lines are shown on **topographical** maps of any scale.

Chart 13, page 37:

Add the following between third and fourth symbols:

Coast Artillery ----------

Delete note 1.

24. COLOR. When colors are * * * shown in red. **Symbols for mine field areas, demolitions, road blocks, and other engineer obstacle activities, are executed in green. (See chart 21, p. 53.)** The only exceptions are the following:

* * * * *

Chart 15, page 42, fourth symbol, change "91 Fi" to "91 Ftr."

Chart 16, page 43, tenth symbol:

Self-propelled antiaircraft artillery ---------- (SP)

Chart 17, page 44:

Fifteenth symbol, change "Fi" to "Ftr."

Delete twenty-second symbol.

Chart 17, page 45:

Fourth symbol, change "Blue" to "Green."

Twelfth and thirteenth symbols are changed to read as follows:

Normal **barrage,** Battery B, 105-mm howitzer (100 by 200 yards).

Emergency **barrage,** Battery B, 105-mm howitzer (100 by 200 yards).

Add the following symbol:

Artillery concentration (200 yards in diameter; concentration number in symbol)----------

Add the following chart:

Harbor defense boundary-------

Plotting room----------

Magazine----------

Casemated battery----------

Turreted battery----------

Shielded battery----------

Mine casemate----------

Harbor entrance control post----

Loops----------

Sono-buoys----------

Heralds----------

Plot of ship's course:

Target No. 1 battleship-------

Chart 18.1.—Coast Artillery Corps activities.

25. ROAD AND BRIDGE CLASSIFICATION. On topographic maps, * * * symbols and abbreviations.

* * * * *

b. General characteristics of roads and bridges.

(1) *Traffic lanes.*

1, 2, 3, etc. * * * for light two-way traffic.

2— Two-lane roadway having occasional one-lane defiles, and suitable for moderate two-way traffic.

* * * * *

Chart 21, page 52:

First symbol, change "Blue" to "Green."

Symbols 14 to 19 are changed to the following:

Single string of antitank mines----

Booby-trapped antitank mine----

Double antitank mine----------

Double **booby-trapped** antitank mine----------

Antipersonnel mine----------

Trip wire----------

Chart 21, page 53, delete the note, "To be reproduced in *green* (in black if green is not available)."

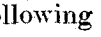
Chart 21, page 54, first symbol:

Submarine mines, controlled.

(This symbol indicates one **13**-mine group, and a separate symbol is used for each group. As it appears * * * the mine group.)

Chart 24, page 58:

Under "Petroleum supply," add the following symbol:

Pumping station 

Under "Traffic and traffic control," add the following symbol:

Culvert

27. APPLICATION OF SPECIAL SYMBOLS. The following examples * * * the desired information. **The examples shown illustrate some of the possible combinations; because of frequent changes in Tables of Organization they do not always represent actual units.** The following diagram * * * are built up:

Chart 26, page 63, fifth and sixth symbols, change "Pcht" to "Prcht."

Chart 26, page 64, last symbol:

Battery A, 105th Antiaircraft Artillery Automatic Weapons Battalion (self-propelled)

Chart 28, page 66:

Second symbol, change "IV Fi" to "IV Ftr."

Third symbol, change "18 Fi" to "18 Ftr."

Seventh symbol, change "66 Serv" to "66 Sv."

Chart 29, page 67:

Third symbol, change "1 Wpn" to "1 Wpns."

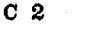
Fourth symbol, change "Wpn" to "Wpns."

Last symbol, change "Park, Mechanized Cavalry Group" to "Proposed Park, Cavalry Group, Mechanized."

Chart 30, page 68:

First symbol, change "1 Serv Avn" to "1 Sv Avn."

Third symbol, change to read:

Company B, 2d Chemical Mortar Battalion ---------- 

Fourth symbol, delete entire line and symbol.

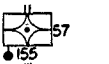
Chart 31, page 68, delete entire chart and substitute the following:

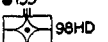
Command Post, Harbor Defense ----------

Command Post, Antimotor Torpedo Boat Battalion ----------

Searchlight Battery, 104th Coast Artillery Battalion, HD ----------

912th Coast Artillery Battalion (Railway) ..

57th Coast Artillery Battalion (155-mm gun) ---------- 

98th Coast Artillery Group, Harbor Defense .. 

Observation Post, Harbor Defense ----------

Chart 31.—Examples—Coast Artillery Corps.

Chart 32, page 69:

Fourth symbol, change "126 Mtn" to "126 Mt."

Sixth symbol, change "Pcht" to "Prcht."

Chart 33, page 70:

Fifth symbol, change "Serv" to "Sv."

Twelfth symbol, change "125 Pcht" to "125 Prcht."

Last symbol, change designation to "Forward Observer Post, Battery A, 1st Field Artillery Battalion."

Chart 34, page 71:

Eighth symbol, change "Wpn A" to "Wpns A."

Twelfth symbol, change "502 Pcht" to "502 Prcht."

Chart 36, page 73:

Third and eighth symbols, change "Serv" to "Sv."

Tenth symbol, change unit designation to "1st Ordnance Company (Medium Maintenance)."

Chart 37, page 74, last symbol, delete entire line and symbol.

Chart 38, page 75, third and eighth symbols, change "Tt" to "TT."

30. LIST OF ABBREVIATIONS AND ITS USES.

* * * * *

List

A

* * * * *

air base	AB
Airborne	**Abn**

* * * * *

antiaircraft balloon	AA/B
antiaircraft operations officer	**AAOO**
antiaircraft operations room	**AAOR**
antimechanized	AMecz

* * * * *

Antisubmarine Command	Antisub Comd
antitank	**AT**
appendix	App

* * * * *

armor-piercing	AP
Army Engineer Service	A Engr Sv
Army headquarters	AHQ
Army medical laboratory	A Med Lab
Army medical service	**A Med Sv**

Army Postal Service	APS
* * *	* *
automatic	Auto
automatic weapons	**Auto Wpns**
aviation gasoline	Agas
* * *	* *

C

* * *	* *
collecting (company) (point) (station)	Coll (Co) (Pt) (Sta)
column	**Colm**
combat (car) (zone)	C (Car) (Z)
* * *	* *
commercial	Coml
communication	Com
* * *	* *

D

dead reckoning	D/R
defense	**Def**
delivered or delivery	Delv
* * *	* *

E

echelon	**Ech**
electrical or electrician	Elec
* * *	* *
exclusive	Excl
executive	**Ex**

F

field	**Fld**
field laboratory	F Lab
* * * * *	
field train	F Tr
fighter	**Ftr**
fighter control area	FCA
* * * * *	
final protective line	FPL
fire-direction center	**FDC**
first lieutenant	1st Lt
* * * * *	
flash ranging	FR
forward	**Fwd**
forward interpretation unit	FIU
forward observer	**Fwd Obsr**
* * * * *	
from	Fr

G

* * * * *	
general service schools	GSS
general service	Gen **Sv**
general support	G/S
* * * * *	
ground control interception	GCI
group	**Gp**
groupment	Gpmt
* * * * *	

H

* * * * *	
headquarters	Hq
headquarters and service (battery) (company) (troop)	H&S (Btry) (Co) (Tr) or Hq & Sv (Btry) (Co) (Tr)
heavy machine gun	**HMG**
heavy bombardment	**HB**
heavy weapons company	Hv **Wpns** Co
highway	Hwy
highway transportation officer	HTO
holding and reconsignment point	**HRP**
horizontal control operator	HCO
* * * * *	
hospital	Hosp
howitzer	**How**

M

machine gun	**MG**
machinist	Machst
* * * * *	
material	Mat
mechanic	**Mech**
mechanized	**Mecz**
medium (tank)	M (Tk)
messenger	**Msgr**
meteorologist	Mtgst
mil	$\underline{m}$
military attaché	Mil Att or MA
* * * * *	
Mobilization Training Program	MTP

mortar	**Mort**
motorcyclist	Mtrclt
motor gasoline	Mgas
motorized	**Mtz**
Motor oil	Moil
motor transport	**MT**
motor-tricycle	Mtricl
mountain	**Mt**
move	Mv
* * * * *	

O

objective	**Obj**
observation post	OP
observer	**Obsr**
officer in charge	o/c
* * * * *	

P

pack	**Pk**
parachutist	**Prchst**
park	Prk
* * * * *	
patrol boat	PAT Bt
personnel	**Pers**
photograph or photographic	Photo
pigeon	Pgn
pilot	**Plt**
pioneer and demolition section	P & D Sec
* * * * *	
prisoner	Pris
proving ground	**Pr Gr**
pursuit	**Pur**

R

* * * * *	
Delete: ration distributing point	RDP
* * * * *	
Delete: retired	Ret
* * * * *	

S

Delete: sales Commissary (Battalion) (Company)	Sales Comm (Bn) (Co)
* * * * *	
sentenced	Sentd
service	**Sv**
shipment	**shpmt**
shipping ticket	**ST**
* * * * *	
special troops	Sp Trs
squad	**Sqd**
squadron	**Sq**
staff	Stf
staging area (company)	St Ar (Co)
standing operating procedure	**SOP**
* * * * *	
Delete: supply point	SP
Delete: support line	SL

T

tactical	Tac
tank	**Tk**

Tank Destroyer	TD
* * * * *	
Delete: telegram	Telg
telegraph	**Tg**
telegraph printer	Tgp
telephone	**Tp**
teletypewriter, **teletype**	**TT**
teletypewriter center	**TTC**
theater headquarters	THQ
* * * * *	
traffic control station	TCS
trailer	**Tlr**
train commander	Tn **Comdr**
training circular	TC
* * * * *	

V

vehicle	**Veh**
vertical control operator	VCO
* * * * *	

W

* * * *	
water tank (battalion) (train)	W Tk (Bn) (Tn)
weapons carrier	**Wpns** Carr
weapons (troop) (platoon)	**Wpns** (Tr) (Plat)
weather	**Wea**
welder	Wldr
white phosphorus	**WP**
winch	Wn
wing	**Wg**
wrecker	Wkr

APPENDIX
LIST OF REFERENCES

Mapping **and Charting**	AR 300–15
* * * * *	
Delete: Coast Artillery, Reference Data	FM 4–155
* * * * *	
Delete: Obstacle Technique	FM 5–30
* * * * *	
Delete: Field Artillery, Reference Data	FM 6–130
Medical Department, Reference Data	FM 8–55
Signal Corps, Reference Data	TM 11–462
Delete: Armored Force Field Manual, Tactics and Technique	FM 17–10
* * * * *	
Delete: Soldier's Handbook	FM–21–100
* * * * *	

[AG 300.7 (11 Jan 45)]

BY ORDER OF THE SECRETARY OF WAR:

OFFICIAL:
J. A. ULIO
Major General
The Adjutant General

G. C. MARSHALL
Chief of Staff

DISTRIBUTION:

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For explanation of symbols, see FM 21–6.

U. S. GOVERNMENT PRINTING OFFICE: 1945

BASIC FIELD MANUAL

CONVENTIONAL SIGNS, MILITARY SYMBOLS, AND ABBREVIATIONS

CHANGES No. 3

WAR DEPARTMENT
Washington 25, D. C., 28 February 1945

FM 21–30, 15 October 1943, is changed as follows:

Part IV (Added)
Photo Interpretation Symbols

Chapter 11
List of Photo Interpretation Symbols

---

31. GENERAL. The symbols listed in this chapter are prescribed for use in photographic interpretations. They have been approved for joint use of the Army and Navy. These symbols are used in the annotation of aerial photographs and the preparation of overlays, reports, terrain models, and sketches from aerial photographic interpretation information.

32. ADDITIONAL SYMBOLS. When symbols listed herein or combinations thereof do not give complete information, supplementary notations should be added. In special cases where no symbols can be found that apply, improvised symbols may be used provided they are explained in the legend and do not conflict with authorized symbols.

33. SIZE OF SYMBOLS. The size of photo interpretation symbols shall be consistent with the scale of the finished material.

34. DIRECTIONS FOR ANNOTATION.

a. Location of weapon and emplacement symbols.

The "gun" axis of weapon and emplacement symbols indicates their direction of fire and shall be considered as the top of the symbol.

Where possible, the center of the base of the symbol is the exact location of the indicated weapon, or emplacement.

Where the scale of a photograph is such that one symbol is used to denote a battery position containing several weapons, the symbol will encompass the entire area concerned and will have a numerical indication of the number of weapons involved.....

In some instances, the density of defenses will necessitate a "pointer" line being drawn from the symbol to the exact location of the indicated weapon .....

Certain symbols designate areas rather than pin points—in which case they indicate the boundaries concerned.....

Combinations of symbols are encouraged in order to keep written annotations to a minimum.

b. Material index.

If the type of material utilized in the construction of an emplacement or obstacle can be determined, the appropriate "MATERIAL INDEX" will be added beneath the symbol.

C — CONCRETE
M — MASONRY
S — STEEL
L — LOG
W — WOOD
E — EARTH

c. Annotation colors.

Cultural	**BLACK**
Plant growth.....	**GREEN**
Topography	**BROWN**
Hydrography.....	**BLUE**
Defenses	**RED**
d. Unidentified	**(?)**

35. WEAPONS.

a. General.

Caliber (numeral on left side of appropriate gun symbol indicates caliber of piece in millimeters) .....

Battery, with number of guns (numeral on right side of appropriate gun symbol indicates number of pieces in battery) ...

Emplaced weapons—See paragraph 32.

Weapon or emplacement, destroyed.....

Weapon, dummy.....

Weapon, doubtful....

b. Antiaircraft.

Heavy (75-mm. and over).....

Automatic (13.2–40-mm.).....

Twin mount.....

Triple mount.....

Machine gun (6.5–7.7-mm.).....

Dual-purpose.....

Self-propelled (heavy).

Railway (heavy).....

Ship.....

Tower.....

c. Antitank.

Heavy (over 75-mm.).

Medium (50–75-mm.).

Light (less than 50-mm.).....

Self-propelled (heavy).

d. Coast defense.

Superheavy (over 240-mm.).....

Heavy (over 175-mm.).

Medium (105–175-mm.).....

Light (less than 105-mm.).....

Howitzer, superheavy (over 240-mm.).....

Howitzer, heavy (over 175-mm.).....

Howitzer, medium (120–175-mm.)....

Howitzer, light (less than 120-mm.).....

e. Field artillery.

Heavy (over 175-mm.).

Medium (105–175-mm.).....

Light (less than 105-mm.).....

Howitzer, heavy (over 175-mm.).....

Howitzer, medium (120–175-mm.)....

Howitzer, light (less than 120-mm.).....

Self-propelled (heavy).

f. Railway artillery.

Railway gun.....

Railway gun on turntable.....

g. Infantry weapons.

Machine gun, heavy...

Machine gun, light....

Machine gun, field of fire.....

Mortar (annotate size).

Mortar, barrage (annotate size).....

Rocket projector, single (annotate size).....

Rocket projector, multiple (annotate size)..

h. Vehicles.

Vehicle, animal drawn.

Vehicle, armored .....

Vehicle, motor .....

36. EMPLACEMENTS.

If the type of material utilized in the construction of the emplacement can be determined, the appropriate "MATERIAL INDEX" will be added beneath the symbol.

Emplacement, unoccupied .....

Emplacement, covered..

Example—4-gun, 240-mm. heavy coast defense battery in covered concrete emplacements .....

Fire control center....

Fire control, radar...

Fire control, visual....

Foxhole (if in quantity, outline area and annotate: Foxholes)...

Observation post.....

Observation post, artillery.....

Observation tower.....

Pillbox (axis of gun indicates direction of fire. Show size of gun if known.)....

Bunker.....

Casemate or blockhouse..

Sniper post .....

Personnel shelter, above ground.....

Personnel shelter, below ground.....

Strong point.....

Trench, communication.....

Trench (with firing bays) .....

Trench, fire.....

Weapons pit (infantry) . . . . .

37. OBSTACLES.

If the type of material utilized in the construction of the obstacle can be determined, the appropriate "MATERIAL INDEX" will be added beneath the symbol.

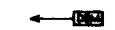
a. Obstacles, land.

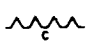
Antitank barrier . . .

Antitank ditch . . . . .

Antitank ditch, covered . . . . .

Barrage balloon . . . .

Demolition charge . . 

Obstacles, fixed . . . . 

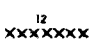
Obstacles, movable .

Stakes (plot position) . . . . .

Road block, demolition . . . . .

Road block, partial .

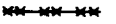
Road block, total . . .

Wire, broad area (base of symbol indicates location of first strand. Depth of zone, in feet, is indicated by numerals) . . . . 

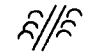
Wire, concertina, single . . . . .

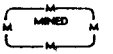
Wire, concertina, double . . . . .

Wire, single-fence . .

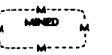
Wire, double-fence . 

Mines . . . . .

Mine field gap . . . . . 

Mined area, land . . . 

b. Obstacles, underwater.

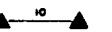
Mined area, water . 

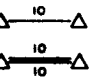
Obstacle, large fixed

Tetrahedron, ramp, or hedgehog, fixed . . . . .

Tetrahedron, ramp, or hedgehog, movable . . . . .

Stakes, piles, or rails (plotted by position) . . . . .

Tetrahedron, ramp or hedgehog, fixed (in line — numeral indicates number of tetrahedra, etc., between precisely located points) . . 

Tetrahedron, ramp or hedgehog, movable (in multiple rows, show by line) . . . . . 

When used with wire or mines, use proper symbols, use "MATERIAL INDEX" where known . . . . .

38. MILITARY AREAS.

Barracks area . . . . .

Bivouac area . . . . .

Command post . . . . .

Command post area .

Military occupation .

New construction . .

Park, armored (outline area, indicate type where possible, and show numerically the number of vehicles) . . . . .

Park, engineer equipment (outline area and indicate type where possible) . . . . .

Park, motor (outline area, indicate type where possible, and show numerically the number of vehicles) . . . . .

Park, ordnance (outline area, indicate type where possible, and show numerically the number of vehicles) . . . . .

Stores, area (area of stores to be included in a solid ring) . . . . .

Ammunition . . . . .

Buried . . . . .

Coal . . . . .

Engineer . . . . .

Chemical . . . . .

Loose . . . . .

Lumber . . . . .

Oil or gas . . . . .

Water . . . . .

Tent, area . . . . .

Tent . . . . .

39. TERRAIN FEATURES.

a. Installations (cultural).

Blast wall (line conforms to shape of installation protected) . . . . .

Retaining wall . . . . .

Building.....

Building, buried . . .

Building, dug-in . . .

Building, revetted . .

Building, under construction.....

Cable .....

Cable, buried.....

Cemetery .....

Church.....

Excavation.....

Hospital.....

Pipe line, buried...

Pipe line, overhead.

Pipe line, surface...

Railroad, double-track.....

Railroad, electrified.

Railroad, narrow gauge .....

Railroad, single-track.....

Road, primary (show number of lanes in figures. Minimum width of 1 lane is 8 feet).....

Road, secondary (show number of lanes in figures. Minimum width of 1 lane is 8 feet).....

Path or trail.....

Bridge, indicate width in feet and constructional material by "MATERIAL INDEX".....

Bridge, out.....

Bridge, ponton.....

For engineer classification of roads and bridges, see paragraphs 25a, b, and c, pp. 47 through 49.

School.....

Stone fence.....

Tank, buried .....

Tank farm.....

Tank, fuel .....

Tank, gasometer . . .

Tank, water.....

Tower, unspecified or obstruction . . .

Tower, water. . . . . .

Underground entrance . . . . . .

Well derrick . . . . . .

Windmill . . . . . .

Canal. . . . . .

Culvert. . . . . .

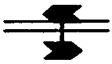
Dam. . . . . .

Drainage ditch . . . .

Flood gate . . . . . .

Lock. . . . . .

Lock, double . . . . . .



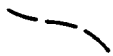
b. Topography.

Cliff. . . . . .

Cliff, rocky . . . . . .

Slope . . . . . .

Ridge line . . . . . .



Sand dunes . . . . . .

Cut. . . . . .

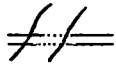
Fill. . . . . .

Lake. . . . . .

Lake, dry . . . . . .

River or stream . . . .

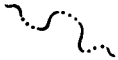
Ford. . . . . .



Direction of flow. . .

Stream, bed. . . . . .

Stream, intermittent . . . . .



Falls or rapids. . . . .

Well. . . . . .

Spring . . . . . .

Tidal flats. . . . . .

Inundated (overflowed land) . . . .

c. Vegetation.

Area of specific vegetative type (on photographs) . . . . .

Brush . . . . .

Coniferous forest . .

Deciduous forest . . .

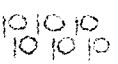
Grassland . . . . .

Hedges . . . . .

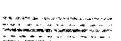
Mangrove . . . . .

Orchard or plantation . . . . .

Palms . . . . .

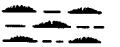
Rain forest or jungle . . . . . 

Rice field . . . . .

Sugarcane . . . . . 

Stump land . . . . .

Swamp forest . . . . .

Swamp or marsh . . . 

Tree . . . . .

NOTE.—Areas containing the above, or other, types of vegetation should be outlined and annotated with the type indicated.

40. ELECTRONICS.

Direction finder . . . . .

Power station . . . . .

Power transmission line (obstruction) . . . . .

Power transmission line (not obstruction) . . . . .

Radar . . . . .

Radio navigational aid .

Radio station . . . . .

Radio transmitter . . . . .

Searchlight . . . . .

Searchlight, radar-controlled . . . . .

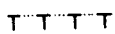
Sound locator.....

Tower, control.....

Tower, light.....

Tower, radio.....

Tower, signal.....

Telephone or telegraph line... 

Transformer station...

Weather station.....

41. NAVAL AND HYDROGRAPHY.

a. Naval.

ANCHORAGES:

Ship.....

Ship, emergency.....

Ship with complete facilities.....

BUOYS AND LIGHTS:

Buoy, bell, etc.....

Buoy, lighted.....

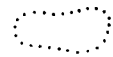
Buoy, unspecified.....

Lightship.....

Light, unspecified.....

Crane.....

DANGERS:

Danger, area..... 

Rock, awash.....

Rock, sunk.....

Wreck, awash.....

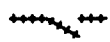
Wreck, sunk.....

Dredge.....

Drydock.....

Drydock, floating..

Marine railway....

Net, submarine.... 

Net, torpedo.....

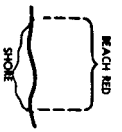
VESSELS:

Merchant (indicate type by "JMST" code designation. See PI Handbook).....

Naval (indicate type by standard U. S. Navy designation. See PI handbook) . . . . .

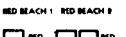
b. Beach studies and depth determination.

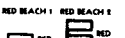
BEACHES:



Location and extent.

Gradient (slope) . . %

Center . . . . . 

Left flank (from sea) . . . . . 

Right flank (from sea) . . . . .

BEACH MATERIAL:

Block or boulder . . .

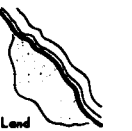
Gravel or cobble . . .

Kelp or seaweed . . .

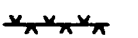
Mud or silt . . . . .

Pebble . . . . .

Bed rock . . . . .

Sand . . . . . 

Shingle . . . . .

Sea wall (*see also* "OBSTACLES, UNDER-WATER") . . . . . 

c. Offshore.

BOTTOM MATERIAL (use same designations as for "BEACH MATERIAL"):

Block or boulder . . .

Shingle . . . . .

Gravel or cobble . . .

Kelp or seaweed . . .

Mud . . . . .

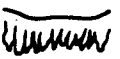
Pebble . . . . .

Rock . . . . .

Sand . . . . .

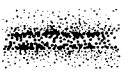
REEFS, BARS, AND SHOALS:

Edge of coral reef . .

Edge of rock reef . . . 

Edge of sand bar . . .

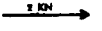
Sand bar, exposed (above datum) . .

Sand bar, unexposed (below datum) . . 

Coral head, area . . .

Coral head, isolated .

TIDES AND CURRENTS:

Ebb, KN—Speed of current in knots . . 

Flood . . . . .

General . . . . .

d. Wave and surf symbols for depth determination.

Wave length L

Distance of outermost breakers from datum line . . . . . L_b

Wave period . . . . . P

Wave velocity C

Wave height (trough to crest) . . . . . H

Angle of wave crest with bottom contours . . . . . α (alpha)

Angle of breakers with beach . . . . . D

Velocity of longshore current in knots . . . . C_L

Subscript "o" reflects to values in deep water . . . . . o Example - C_o

High water datum.

Low water datum.

Soundings in fathoms 6

Soundings in feet . . . . . (6)

Contours, hydrographic . . . . .

Critical line special purposes .....

WAVE AND SURF CONDITIONS:

Breakers .....

Surf line .....

NOTE.—Additional symbols and abbreviations for hydrographic designations should conform to those published in H. O. No. 8.

42. AIR FIELDS AND SEAPLANE BASES.

Aircraft .....

Aircraft, damaged .....

Aircraft, dummy .....

Aircraft, revetment ....

Aircraft, revetment under construction ....

Aircraft, shelter .....

Airfield, complete facilities .....

Airfield, refueling facilities .....

Landing ground, no facilities .....

Seaplane base, complete facilities .....

Seaplane base, refueling facilities .....

Seaplane anchorage, no facilities .....

Seaplane, ramp .....

43. DAMAGE ASSESSMENT.

a. Bomb plot.

Single bomb certain, with crater .....

Single bomb certain, no crater .....

Single bomb probable, no crater .....

One or more bombs certain in vicinity of arrowhead .....

One or more bombs probable in vicinity of arrowhead .....

Bomb burst, area of fragmentation.

Fire location .....

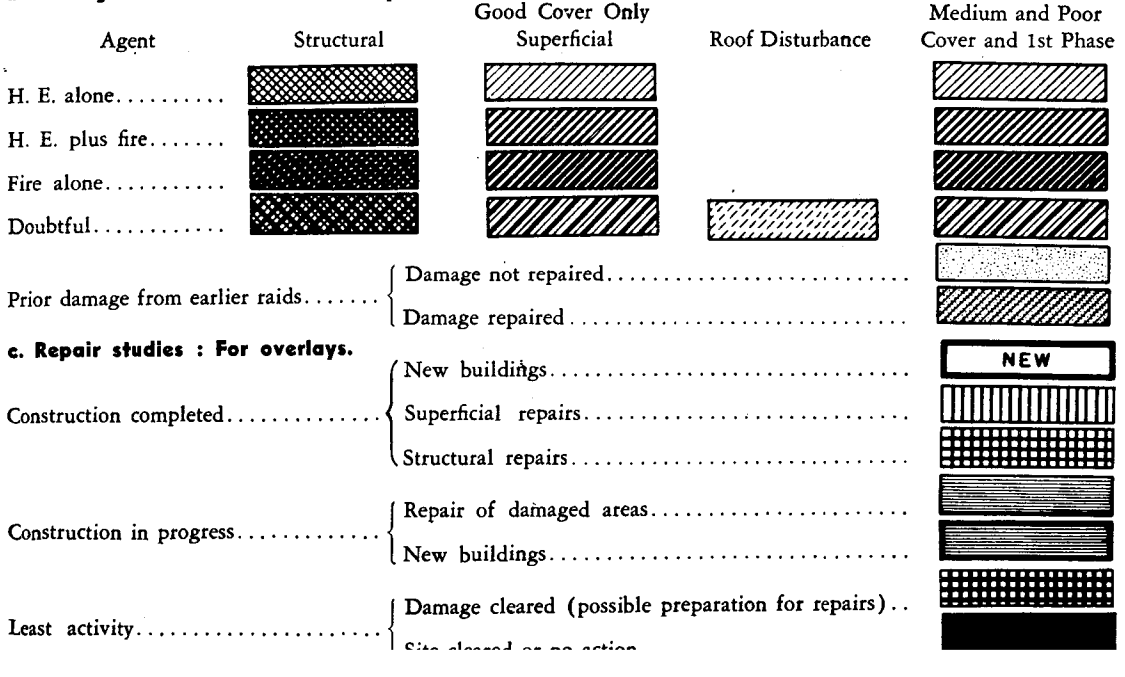
Cloud obscured .....

Smoke obscured .....

Line of flight .....

Nadir point .....

b. Damage assessment : For overlays.



d. Damage assessment : For photographs (color index).

NOTE.—Symbols are similar to those used on overlays with differentiation by color.

H. E. alone	GREEN
H. E. plus fire	PURPLE
Fire alone	RED
Doubtful	YELLOW

e. Repair studies : For photographs (color index).

NOTE.—Symbols: Outline for clearance completed, cross hatch for repairs in progress, solid for repairs completed.

To structural damage	PURPLE
To superficial damage	GREEN
To roof disturbance	YELLOW
First aid repairs	BLUE
New buildings	RED
Condition of area or site (clearance or no action)	BLACK

[AG 300.7 (14 Feb 45)]

BY ORDER OF THE SECRETARY OF WAR:

OFFICIAL:

J. A. ULIO
Major General
The Adjutant General

G. C. MARSHALL
Chief of Staff

U. S. GOVERNMENT PRINTING OFFICE 634771

This manual supersedes FM 21-30, 26 November 1941, including C 1, 9 May 1942 and C 2, 27 July 1942.

PART I

GENERAL MAPPING

CHAPTER 1 · GENERAL

1. PURPOSE. This manual gives in convenient form the abbreviations and general symbols which have been authorized for military use. It contains technical symbols and instructions for the map maker, and military symbols for the use of those in the military service. Persons engaged in the preparation of maps should also be guided by AR 300-15, TM 5-230, and Bulletin 788, Topographical Instructions of the United States Geological Survey. Those whose duties require them to read foreign topographic and military maps should consult FM 30-22.

Symbols other than those shown herein may be used provided they do not conflict with any authorized symbols and are explained in a legend.

2. SCOPE. Part I of this manual deals with general topographic, hydrographic, and air navigational symbols, and abbreviations prescribed for use on all United States maps. Part II contains symbols of a military nature authorized by the War Department. Part III gives authorized military abbreviations.

3. SIZE. **a.** In general, topographical symbols resemble the objects which they represent. The symbols vary in

size with the scale of the map. On small-scale maps, the symbols are reduced to their most elementary form and do not conform to scale. As the scale is increased, the symbols assume more nearly the shape and scaled size of the object represented.

b. The symbols in this book are generally of a size suitable for use on a map of scale 1:62,500, unless otherwise noted.

4. COLOR. The symbols are shown in appropriate color for a four-color map. When less than four colors are used, the colors in the symbols shown in chapters 2, 3, and 5 which are not used will be executed in black ink.

5. LETTERING. Civil divisions are indicated by VERTICAL ROMAN type; natural water features by *SLANT ROMAN* type, or italic; natural land features by **VERTICAL GOTHIC** type; and works of man by ***SLANT GOTHIC*** type. On hastily prepared military maps, the lettering may vary considerably from these standards.

6. MARGINAL DATA. The data shown on chart 1 are given, where practicable, in the margins of all maps, photomaps, or aerial photographs, and usually in the places indicated by the encircled figures. On military maps, overlays, and field sketches, only essential information concerning the kind of map, orientation, date of preparation, source, and scale are shown, and then not necessarily in the margins. For detailed information on marking aerial photographs see FM 30–21.

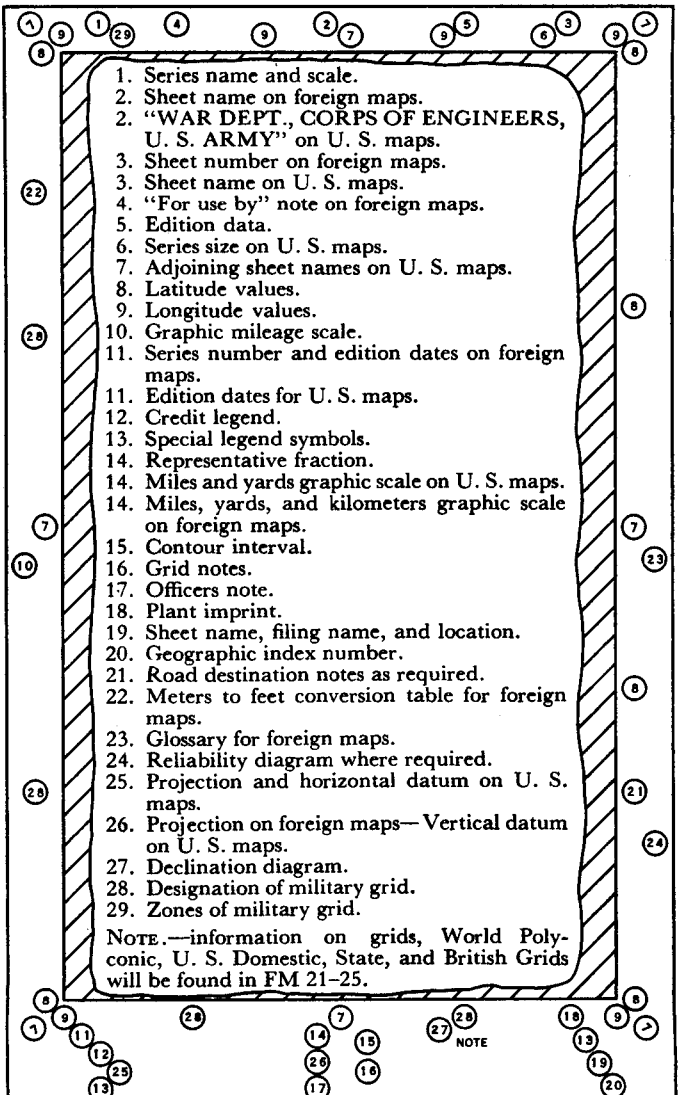


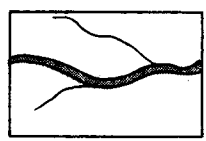
Chart 1.—Marginal data for maps, photomaps, and aerial photographs.

CHAPTER 2

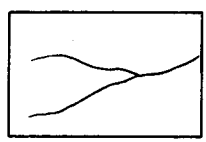
PRIMARY TOPOGRAPHIC SYMBOLS

7. GENERAL. This chapter gives the symbols used on United States maps for drainage, relief, and land classification. For topographic abbreviations, see chapter 6.

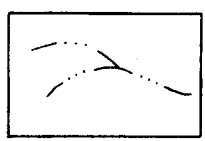
Perennial stream (large).....



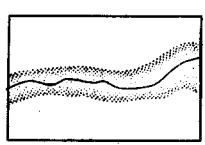
Perennial stream (small).....



Intermittent stream.....



Stream with wash. Dark blue line indicates limit of permanent stream. Brown wash symbol indicates size of normal maximum channel. Intermittent stream in interior of wash will be shown if no permanent stream exists.



Anastomosing or braided stream.....

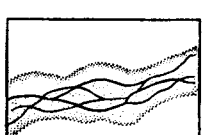
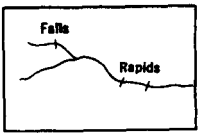


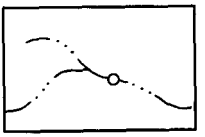
Chart 2.—Drainage.

Falls and rapids—large scale map.....

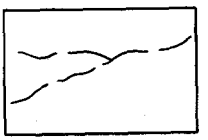
Falls and rapids—small scale map.....



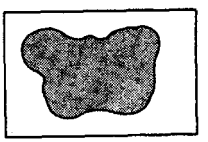
Waterhole.....



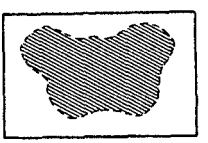
Probable drainage, unsurveyed.....



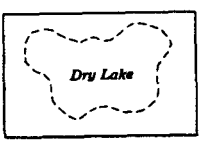
Lakes and ponds: (permanent).....



Lakes and ponds: (intermittent).....



Lake or pond (dry bed) and claypans (with appropriate text).....



Lakes and ponds (salt-permanent).....

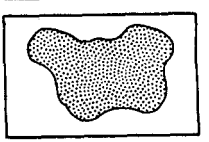
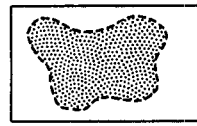
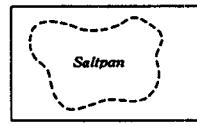


Chart 2.—Drainage—Continued.

Lakes and ponds (salt-intermittent)....



Lakes and ponds (salt-dry) (saltpans) (with appropriate text).....

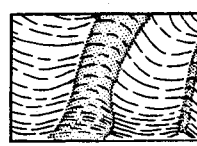


Spring.....

Wells and water tanks.....

Glaciers, form lines showing flow.....

Glacial surface moraine.....



Snow field.....

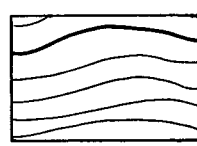
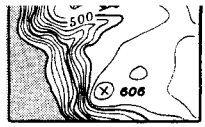
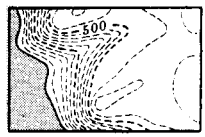


***Chart 2.—Drainage*—Continued.**

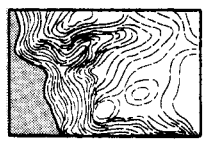
Contours (blue if under water).....



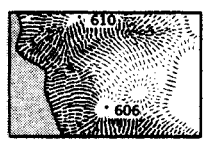
Contours (approximate only).....



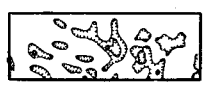
Form lines (no definite interval).....



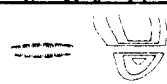
Hachures.....



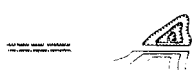
Depression contours.....



Cuts.....



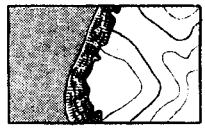
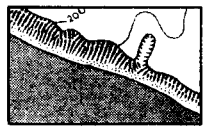
Fills (Where high railroad or highway embankments occur, the use of hachures to represent the bank or grade is recommended instead of extensive use of depression contours covering large areas of the sheet.)

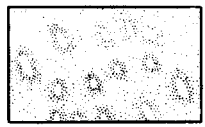


Mine dump (ore).....

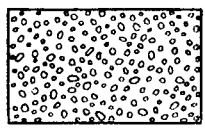
Tailings.....

Chart 3.—Relief.

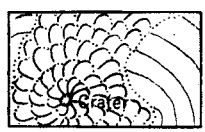
Bluffs
- Rocky (or use contours) . . . . . 
- Other than rocky (or use contours) 

Sand and sand dunes . . . . . 

Washes . . . . .

Gravel . . . . . 

Rocky land . . . . .

Lava . . . . . 

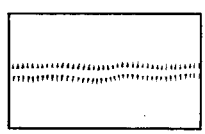
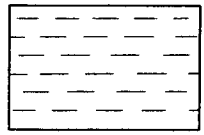
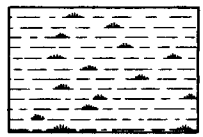
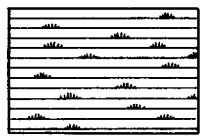
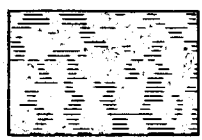
Moraine, or esker . . . . . 

*Chart 3.—**Relief***—Continued.

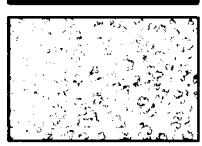
Overflowed land . . . . . 

Marsh (if peat bog add appropriate text) . . . . . 

Salt marsh . . . . . 

Cypress swamp . . . . . 

Woodland (or as shown below) . . . . .

Woodland (or broadleaved trees) . . . . . 

Logged-off or burned-off area . . . . .

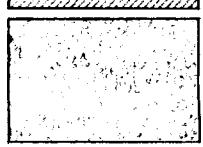
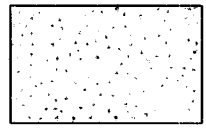
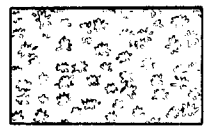
Dense woods or jungle growth . . . . . 

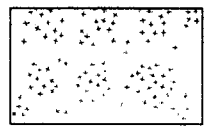
Chart 4.—Land classification.

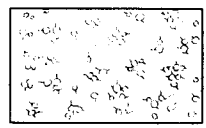
Pine (or narrow leaved trees) . . . . . 

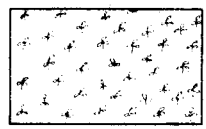
Palm . . . . .

Palmetto . . . . . 

Mangrove . . . . .

Bamboo . . . . . 

Cactus . . . . . 

Banana . . . . . 

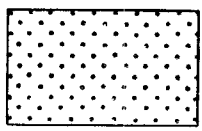
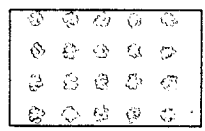
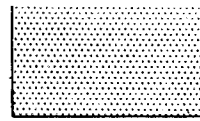
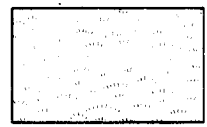
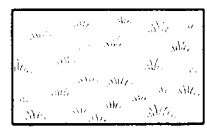
Orchard . . . . .  or 

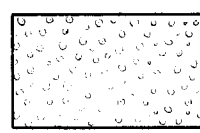
Chart 4.—Land classification—Continued.

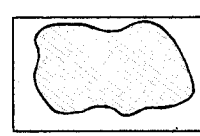
Vineyard . . . . . 

Grassland in general . . . . . 

Tall tropical grass . . . . . 

Cultivated fields in general (Scale 1:31,680 and larger) . . . . .

Cotton . . . . . 

Rice field . . . . . 

Sugarcane . . . . .

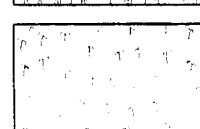
Corn . . . . . 

Chart 4.—Land classification—Continued.

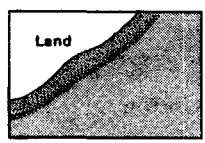
CHAPTER 3

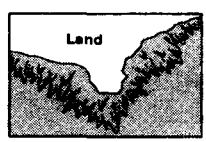
HYDROGRAPHY

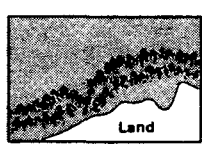
8. GENERAL. This chapter gives hydrographic and aids to navigation symbols used on United States maps. These symbols are approved by the United States Coast and Geodetic Survey. For hydrographic abbreviations, see chapter 6.

Shore lines { Surveyed .....
Unsurveyed .....

Shores (high and low water lines and areas between)

In general ..... 

Rocky ledges .. 

Coral reefs .... 

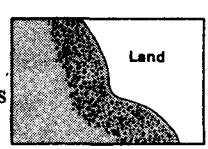
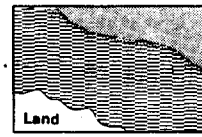
Gravel and rocks 

Chart 5.—Hydrography, dangers, obstructions.

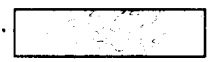
Shores (high and low water lines and areas between)—Con.

Mud.....

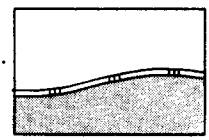


Tidal flats.....

Kelp or eel grass.....



Ice limits-shelf ice.....



Rock under water..... +

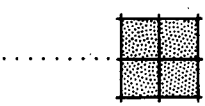
Rock awash (at any stage of the tide)..... *

Breakers along shore.....

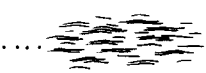
Fishing stakes.....

Fish weir.....

Salt evaporator.....



Overfalls and tide rips.....



Limiting danger line.....

Whirlpools and eddies.....

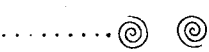


Chart 5.—Hydrography, dangers, obstructions—Continued.

Wreck (any portion of the hull or superstructure above low water) . . . . .

Sunken wreck (dangerous to surface navigation) . . . . .

Sunken wreck (not dangerous to surface navigation nor those over which the depth exceeds 10 fathoms) . . . .

Foul ground . . . . .

Number of sunken wrecks . . . . .

Current, not tidal, velocity 2 knots . . . . .

(Special usage) . . . . .

Tidal currents

- Flood, 1½ knots . . . . .

- Ebb, 1 knot . . . . .

- Flood, second hour . . . . .
- Ebb, third hour . . . . .

No bottom at 50 fathoms . . . . .

Depth curves:

- 1-fathom or 6-foot line . . . . .
- 2-fathom or 12-foot line . . . . .
- 3-fathom or 18-foot line . . . . .
- 4-fathom line . . . . .
- 5-fathom line . . . . .
- 6-fathom line . . . . .
- 10-fathom line . . . . .
- 20-fathom line . . . . .
- 30-fathom line . . . . .
- 40-fathom line . . . . .
- 50-fathom line . . . . .
- 100-fathom line . . . . .

Chart 5.—Hydrography, dangers, obstructions—Continued.

Lifesaving station (in general) ..... L.S.S.

Lifesaving station (Coast Guard) ..... C.G. 165

Lighthouse .....

Lighthouse on small-scale chart ..... •
(light sectors shown by dotted lines)

Light vessels showing number of mast lights .....

Beacons (sectors shown by dotted lines)
- Lighted .....
- Not lighted (sample of distinctive top marks)

Buoys
- Buoy of any kind (or red buoy) .....
- Black .....
- Striped horizontally (in general) .....
- Striped horizontally (red and black) .....
- Striped vertically .....
- Checkered .....
- Perch and square .....
- Perch and ball .....
- Whistling (or use first six symbols with word "whistling") .....
- Bell (or use first six symbols with word "bell") .....

Top marks used with any buoy symbols

- Lighted .....

Chart 6.—Aids to navigation.

Radio station ..... R.S.⊙

Radio direction-finder station (radio compass station) R.C.⊙

Radio tower ..... R.T.⊙

Radio beacon ..... R.Bn.⊙

Pilot station ..... ⊙PIL. STA.

Weather Bureau signal station ..... ⊙W. B. SIG. STA.

Water gage .....

Anchorage { Of any kind (or for large vessel) .....
Anchorage { For small vessels .....

Mooring .....

Range or bearing line .....

Track line .....

Drydock .....

Floating drydock .....

Patent slip .....

Leader cable .....

Dolphin .....

Anchorage prohibited ..... Anchorage prohibited

Chart 6.—Aids to navigation—Continued.

CHAPTER 4
AERONAUTICAL CHART SYMBOLS

(To be reproduced in magenta)

9. GENERAL. The conventional signs for use on aeronautical charts differ from those used on topographic maps as follows:

a. All symbols are larger and more striking to the eye.

b. Those features on the ground which are easily identified from high altitudes are emphasized on aeronautical charts. Other features are subordinated or omitted entirely.

Airports:

Unclassified .....

Military field .....

Joint military-civil .....

Commercial or municipal .....

Flight strip (landing area adjacent to highway; symbol indicates direction of runway) .....

Emergency landing field .....

Seaplane ports:

Base with complete facilities .....

Anchorage with limited facilities .....

Protected anchorage with no facilities .....

Beacons:

Rotating, with flashing code beacon .....

Rotating, with course lights and code .....

Flashing code .....

Flashing .....

Chart 7.—Aeronautical chart symbols.

Obstruction (center of symbol marks location) 205

Prominent elevation (numerals indicate height in feet) 862

Mooring mast . . . . . LF

Night lighting facilities (place under field name) . . . . . Gp Fl

Marine navigation light (with characteristic) . . .

Lines of equal magnetic declination . . . . . 22°W

Prominent transmission line . . . . . T T T T T T

Civil airways:

With flight levels indicated . . . . . RED AIRWAY NO. 1 8000 250 *Miles from Houston*

Controlled . . . . .

Uncontrolled . . . . .

Air navigation hazards (United States only):

Danger area . . . . . DANGER AREA

Caution area . . . . . CAUTION AREA

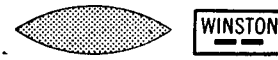
Prohibited area . . . . . AIRSPACE RESERVATION

Air defense zone or vital defense area (United States only) . . . . . EASTERN AIR

Air routes as shown on radio direction-finding charts of the United States: 74 103

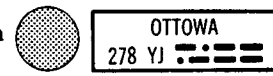
Chart 7.—Aeronautical chart symbols—Continued.

Radio:

Radio fan marker . . . . . 

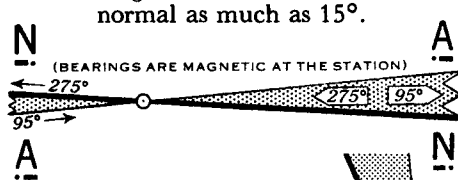
Radio marker beacon (without voice) . . .

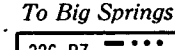
Radio marker beacon (with voice) . . . . .

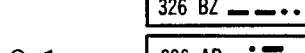
Nondirectional radio beacon (type H) . . . . . 

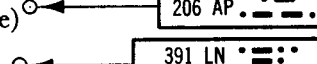
WARNING

Warning note . . . . . Magnetic variation in this area at ground elevation differs from normal as much as 15°.

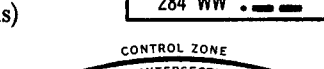
Radio range . 

Radio range note (at neat line) . . . . . 

Radio range (without voice) 

Radio range (with voice) . . 

Radio range (simultaneous)

Control zone of intersection 

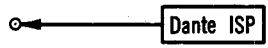
Airport control tower . . . .

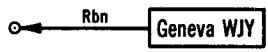
Radio direction finder station . . . . .

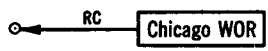
Chart 7.—Aeronautical chart symbols—Continued.

Radio—Continued.

Radio beacon . . . . .

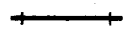
Radio communication station . 

Radio communication station (with radio beacon facility) . 

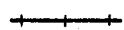
Radio communication station (with direction-finder facility) . . . . . 

Radio broadcasting station . .

Railroads (if abandoned, label):

Single track . . . . . 

Two or more tracks . . . . .

Interurban (electric) . . . . . 

Highways:

Superhighway (dual or four lanes and more) . . . . .

Main road . . . . .

Secondary road . . . . .

Trails . . . . .

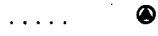
City or large town . . . . .

Town or village . . . . .

Landmark . . . . .

Mine . . . . .

Lookout tower . . . . .

Danger curve . . . . . 

Coast guard station . . . . .

Dam or dam with lock . . . . .

Race track . . . . .

Chart 7.—Aeronautical chart symbols—Continued.

CHAPTER 5

WORKS OF MAN

10. GENERAL. This chapter gives the symbols used on maps to indicate the works of man.

	Larger than 1:200,000	1:200,000 and smaller
Primary highways		
Secondary highways		
Other surfaced roads		
Dirt roads		

(Descriptions of the surface and widths shall be indicated, if known, for each road classification. See paragraph 25 and chart 19.)

Trails

Poor pack trail or footpath

National or U. S. route. 24 24 Provincial or State route. 102 102

(Date of road information shown in margin on all maps.)

Telegraph and telephone lines: On ground or poles; Underground; Submarine

Electric power transmission line

Tunnel (railroad or road)

Railroad station of any kind

Chart 8.—Roads, railroads, wire communication.

Railroads: Larger than 1:200,000

Wide gage . . . . Single track . . . . ELECTRIFIED
Double track . . . ELECTRIFIED

Normal gage . . Single track . . . . ELECTRIFIED
Double track . . . ELECTRIFIED

Narrow gage . . Single track . . . . ELECTRIFIED
Double track . . . . ELECTRIFIED

Electric passenger only . . Single track . . . .
Double track . . .

1:200,000 and smaller

Wide gage . . . . Single track . . . . ELECTRIFIED
Double track . . . ELECTRIFIED

Normal gage . . Single track . . . . ELECTRIFIED
Double track . . . ELECTRIFIED

Narrow gage . . Single track . . . . ELECTRIFIED
Double track . . . ELECTRIFIED

RR in road 1:250,000 and smaller.

Abandoned RR . . . . . .

NOTE.—Railroads under construction may be shown either broken or solid, with appropriate notation.

Railroad crossings on maps larger than 1:250,000

Grade, RR above, RR beneath . . .

General crossing symbol for maps 1:250,000 and smaller . . . . . .

Chart 8.—Roads, railroads, wire communication—Continued.

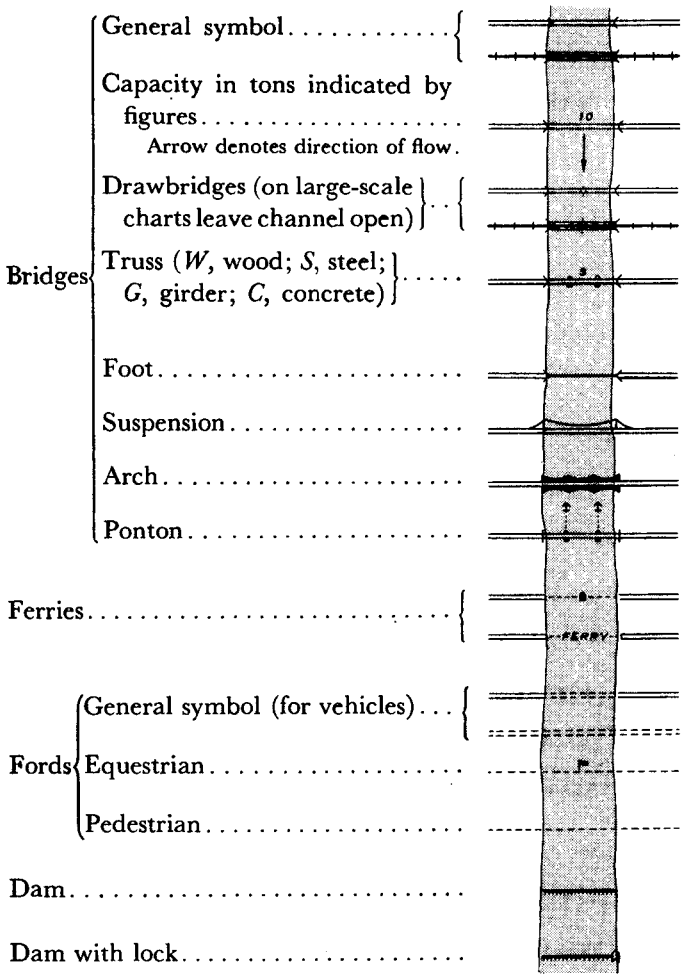
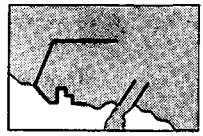
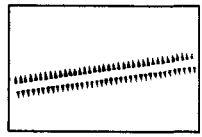


Chart 9.—River works.

Breakwater, dock and jetties.....



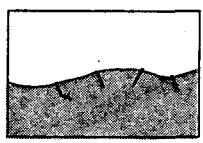
Earth wall, or levee.....



Levee (optional for War Department)..

Revetment (optional for War Department).....

Dikes.....

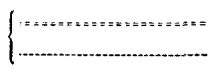


River gage.....

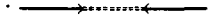
Canal, ditch, or open aqueduct.....

Canal, abandoned.....

Buried aqueduct or water pipe.....



Aqueduct or canal in tunnel.....

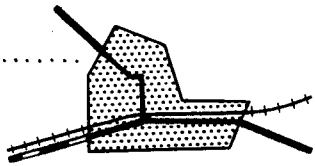


Canal lock (point upstream).....

Canal lock (large scale).....

Chart 9.—River works—Continued.

1:200,000 and smaller

City, first importance . . . . . 
(actual shape)

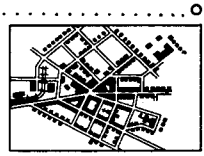
City, second importance . . . . .
(actual shape)

City, third importance . . . . . ◉

Town, large . . . . . ◎

Town, small . . . . . ○

Village . . . . . ○

Sample combination showing city, town, or village, scales larger than 1:200,000. 

NOTE.—Large urban areas may be shown in gray tint with important buildings and street system in black.

Buildings in general . . . . .

Hospital . . . . . ■ or ✙

Schoolhouse or university . . . . . ■ or ■ SCH

Windmill . . . . . ⊼

Ruins . . . . .

Church or place of worship . . . . . ⛪

Fort . . . . . ⌘

Cliff dwellings . . . . .

Chart 10.—Buildings, urban areas.

Cemetery (cross symbol to be used in U. S. only) ..... CEM or †

Mine or quarry of any kind (or open cut) .....

Prospect x

Shaft .....

Mine tunnel { Opening ..... Showing direction .....

Oil or gas wells .....

Tanks .....

NOTE.—Scales larger than 1:50,000, show individual wells and tanks. Scales 1:50,000 and larger than 1:200,000, show well and tank farms with three or four symbols. Scales 1:200,000 and smaller, omit wells and tanks. No pipe lines are shown on maps of any scale.

Coke ovens .....

Fences { Fence of any kind (or board fence) ..... Stone ..... Worm ..... Wire ..... Barbed Smooth Hedge .....

Chart 11.—Miscellaneous.

Map boundaries

Foreign:

International . . . . .

Intercolonial . . . . .

State or province. . . . .

County or district . . . . .

Note.—Use of red screen is optional.

Domestic:

National or state . . . . .

County line. . . . .

Civil township, district or precinct . . . .

Reservation line. . . . .

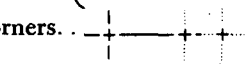
(for Military, add tint)

Land-grant line . . . . .

Metropolitan area. . . . .

Cemetery, small park, etc . . . . .

U. S. township, section, and quarter-section lines (any one for township line alone, any two for township and section lines) . . . . .

Located U. S. township and section corners. . 

Boundary monument . . . . .

Triangulation point or primary traverse station. . . . . △

Permanent bench mark (and elevation) . . . . . BM × 1232

Precise bench mark. . . . . PBM × 1232

Intermediate bench mark (and elevation). . . . . × 1232

U. S. mineral monument . . . . . ⛰

Observation spot (astronomical position). . . . . ⊕

Any located station or object (with explanatory note). . . . ⊙

Chart 12.—Boundaries, marks, and monuments.

CHAPTER 6
GENERAL MAPPING ABBREVIATIONS
SECTION 1
TOPOGRAPHIC ABBREVIATIONS

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11. GENERAL. The abbreviations listed below are prescribed for use on all United States maps. Besides those listed in this section, those abbreviations listed in section II and also in chapter 10 are used when appropriate:

A	arch or arroyo
abut	abutment
b	brick
bot	bottom
Br	branch
br	bridge
C	cape
cem	cemetery
con	concrete
cov	covered
Cr	creek
cul	culvert
DS	drug store
E	east
Est	estuary
f	fordable
Ft	fort
gir	girder
i	iron

I	island
Jc	junction
kp	king-post
L	lake
Lat	latitude
Ldg	landing
LSS	lifesaving station
LH	lighthouse
Long	longitude
Mt	mountain
Mts	mountains
N	north
nf	not fordable
p	pier
pk	plank
PO	post office
Pt	point
qp	queen-post
R	river
RH	roundhouse
RR	railroad
2d	second
S	south
s	steel
Sch	schoolhouse
Sta	station
St	stone
str	stream
TG	tollgate
3d	third
Tres	trestle
tr	truss
WT	water tank
WW	waterworks
W	west
w	wood

SECTION II

ABBREVIATIONS USED WITH HYDROGRAPHIC SYMBOLS

12. GENERAL. The following abbreviations, for use with hydrographic symbols, are authorized for all United States nautical maps and charts. These abbreviations are approved by the Federal Board of Surveys and Maps and are used by the United States Coast and Geodetic Survey and Hydrographic Office.

13. RELATING TO LIGHTS.

AERO	aeronautical
Alt	alternating
Bu	blue
D	destroyed
ev	every
Exper	experimental
F	fixed
F Gp FL	fixed and group flashing
F FL	fixed and flashing
FL	flashing
G	green
Gp	group
Gp FL	group flashing
Gp Occ	group occulting
Hor	horizontal
I Qk	interrupted quick
Irreg	irregular
Lt	light
Lt Ho	lighthouse
m	nautical mile

min . . . . . minutes
OBSC . . . . . obscured
Occ . . . . . occulting
Priv maintd . . . . . private light (maintained by private interests; to be used with caution)
Qk FL . . . . . quick flashing
R . . . . . red; range
REF . . . . . reflector
Rev . . . . . revolving
sec . . . . . seconds
SEC . . . . . sector
S-L . . . . . short-long
Temp . . . . . temporary
(U) . . . . . unwatched
VB . . . . . vertical beam
Vert . . . . . vertical
vis . . . . . visible
W . . . . . white

14. RELATING TO FOG SIGNALS.

DFS . . . . . distance finding station
FB . . . . . fog bell
FD . . . . . fog diaphone
FG . . . . . fog gong; fog gun
FH . . . . . fog reed; fog horn
FN . . . . . fog nautophone
FS . . . . . fog siren; fog signal station
FT . . . . . fog trumpet
FW . . . . . fog whistle
SB . . . . . submarine fog bell (mechanical)
SFO . . . . . submarine fog oscillator

15. RELATING TO DANGERS.

Bk . . . . . bank
cov . . . . . covers

D..... doubtful
ED..... existence doubtful
Obstr..... obstruction
PA..... position approximate
PD..... position doubtful
Pos..... position
rep..... reported
Shl..... shoal
uncov..... uncovers
Wk..... wreck
Wks..... wreckage

16. RELATING TO TIDES AND CURRENTS.

HW..... high water
HHW..... higher high water
LW..... low water
LLW..... lower low water
MHW..... mean high water
MHHW..... mean higher high water
MLW..... mean low water
MLLW..... mean lower low water
MSL..... mean sea level
MTL..... mean tide level

17. RELATING TO QUALITY OF BOTTOM.

a. Material.

Bld(s)..... boulder(s)
Ck..... chalk
Cl..... clay
Cn..... cinders
Co..... coral
Co Hd..... coral head
Di..... diatom
G..... gravel
Gl..... globigerina
Grs..... grass

La . . . . . lava
M . . . . . mud
Ml . . . . . marl
Oys . . . . . oysters
Oz . . . . . ooze
P . . . . . pebbles
Pm . . . . . pumice
Rk . . . . . rock
S . . . . . sand
Sh . . . . . shells
Sp . . . . . specks
Spg . . . . . sponge
St . . . . . stones
Vol Ash . . . . . volcanic ash

b. Quality.

brk . . . . . broken
crs . . . . . coarse
dk . . . . . dark
fly . . . . . flinty
fne . . . . . fine
glac . . . . . glacial
gty . . . . . gritty
hrd . . . . . hard
lrg . . . . . large
lt . . . . . light
rky . . . . . rocky
sft . . . . . soft
sml . . . . . small
spk . . . . . speckled
stf . . . . . stiff
stk . . . . . sticky

c. Color.

bk . . . . . black
br . . . . . brown
bu . . . . . blue
gn . . . . . green

gy..... gray
rd..... red
wh..... white
yl..... yellow

18. RELATING TO BUOYS AND BEACONS.

B..... black
Bn..... beacon
Br..... brown
C..... can
Chec..... checkered
G..... green
HB..... horizontal bands
HS..... horizontal stripes
N..... nun
R..... red
REF..... reflector
VS..... vertical stripes
W..... white
Y..... yellow

19. RELATING TO STATIONS.

FP..... flagpole
FS..... flagstaff
F TR..... flag tower
LOOK TR..... lookout tower
LSS..... lifesaving station
NRC..... naval radio direction-finder (radio compass station)
NRS..... naval radio station
PIL STA..... pilot station
R Bn..... radio beacon
RS..... radio station
R Tr..... radio tower
SIG STA..... signal station
S PIPE..... standpipe

STA . . . . . station
WB SIG STA . . . . . Weather Bureau signal station

20. GENERAL ADJECTIVES.

aband . . . . . abandoned
abt . . . . . about
anc . . . . . ancient
approx . . . . . approximate
bet . . . . . between
Cl . . . . . clearance
Concr . . . . . concrete
Conspic . . . . . conspicuous
cor . . . . . corner
discontd . . . . . discontinued
dist . . . . . distant
elec . . . . . electric
estab . . . . . established
exper . . . . . experimental
extr . . . . . extreme
fl . . . . . flood
gt . . . . . great
lrg . . . . . large
maintd . . . . . maintained
mid . . . . . middle
mod . . . . . moderate
No . . . . . number
priv . . . . . private, privately
prom . . . . . prominent
sml . . . . . small
std . . . . . standard
subm . . . . . submerged

PART II

MILITARY MAPPING SYMBOLS

CHAPTER 7

MILITARY UNITS

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21. IDENTIFICATION. **a.** The symbols in chart 13 are used to indicate military units or their activities on maps, sketches, and overlays. Where the use of the identifying symbol of a military unit is impracticable, abbreviations are employed.

b. These symbols are used either within a rectangle to indicate a military unit, a triangle to indicate an observation post, or a circle to indicate a supply point.

22. SIZE. The symbols in chart 14 are used to indicate the size of a military organization. They are used mainly with boundary symbols, or with rectangles, triangles, or circles in conjunction with the symbols in chart 13. See charts 17 and 26–40.

Antiaircraft Artillery . . . . .

Armored Command . . . . .

Army Air Forces . . . . .

Artillery, except Antiaircraft Artillery . . . . .

Chart 13 —Military units—identification.

Cavalry (horse) .....

Mechanized .....

Chemical Warfare Service .....

Engineers .....

Special (amphibian) .....

Infantry .....

Medical Corps .....

Military Police .....

Ordnance Department .....

Quartermaster Corps .....

Signal Corps .....

Tank destroyer .....

Transportation Corps .....

Veterinary Corps .....

NOTES.—1. Coast Artillery Corps uses the artillery symbol, with appropriate abbreviations. See chart 31.

2. Airborne units are designated by combining a gull wing symbol with the arm or service symbol. Examples:

Airborne Artillery .....

Airborne Infantry .....

3. For units attached to Air Forces, the arm or service symbol is placed over the Air Forces symbol. Examples:

Aviation signal unit .....

Aviation ordnance unit .....

Chart 13.—Military units—identification—Continued.

The following symbols are placed either in boundary lines (see chart 17) or above the rectangle, triangle, or circle inclosing the identifying arm or service symbol.

Squad	•
Section	••
Platoon	•••
Company, troop, battery, or Air Forces flight	I
Battalion, cavalry squadron, or Air Forces squadron	II
Regiment or group; combat team (with abbreviation CT following identifying numeral)	III
Brigade, combat command of armored division, or Air Forces wing	×
Division, or command of an Air Force	××
Corps or Air Force	×××
Army	××××
Service command, department, or section of communications zone	ooo
Communications zone	oooo
General Headquarters	GHQ

Chart 14.—Military units—size.

CHAPTER 8

MILITARY ACTIVITIES

23. GENERAL. **a.** This chapter contains symbols used for military purposes on maps, charts, and overlays. These symbols are authorized for all military use, but they are used mainly on large-scale maps. No departures from these symbols should be made unless none of these signs applies or when the scale of a map prevents their use.

b. Special signs and symbols of a technical nature, such as signal wiring diagrams, construction blueprints, engineer construction symbols, or coast artillery fire-control maps, may be found in Field and Technical Manuals of the arm or service concerned.

24. COLOR. When colors are used, military symbols representing objects in territory occupied or controlled by our forces are shown in blue, and those in territory occupied or controlled by the enemy are shown in red. The only exceptions are the following:

a. Symbols for areas to be covered by friendly fire or gas, although generally located in enemy territory, are executed in blue.

b. Symbols for gassed areas, wherever located, are always executed in red.

Military airdrome, general.....

Commercial or municipal airfield.....

Army Air Forces air base or service center.....

Chart 15.—Air activities.

Night fighter airdrome.....

Air field:

Landing
Satellite
Auxiliary
Advanced } ..... + *or*

Dummy.....

Dispersal point for airplane.....

Revetment, splinterproof, for airplane.....

Airship.....

Airship hangar.....

Airship mooring mast.....

Autogiro or helicopter.....

Radar station.....
(Type No. —)

Barrage balloon ascension point.....

Chart 15.—Air activities—Continued.

Balloon barrage area (with number and height).

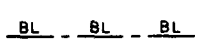
Antiaircraft defended area.....

Searchlight belts.....

Combined antiaircraft and searchlight area.....

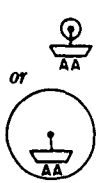
Restricted flying area.....

Prohibited flying area.....

Bomb line..... 

Free bombing area.....

Antiaircraft ship (top of mast placed at exact location).....

Antiaircraft ship, defended area (circle shows radius of effective action)..... 

Convoy (arrow indicates direction; point of arrow is at position of convoy).....

Chart 15.—Air activities—Continued.

Submarine (arrow indicates direction; top of tower is at position).....

Rendezvous point.....

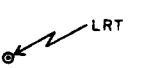
Rally point.....

Example, for separate units: 91st Fighter Squadron.....

Targets:

Primary.....

Alternate.....

Last Resort..... 

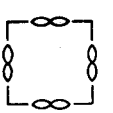
Aircraft patrol area..... 

Chart 15.—Air activities—Continued.

Antiaircraft unit symbol

Balloon

Barrage balloon ascension point

Searchlight

Radio detector (radar)
(Type No.—)

Searchlight with radio detector

Searchlight at principal control point

Searchlight at subcontrol point

Spread-beam searchlight

Self-propelled antiaircraft artillery

50-caliber antiaircraft machine gun

4.7-inch antiaircraft gun

3-inch antiaircraft gun

90-mm antiaircraft gun (etc., caliber on right)

Chart 16.—Antiaircraft artillery activities.

Squad . . . . . —•—

Section . . . . . —••—

Platoon . . . . . —•••—

Company or similar unit . . . . . —I—

Battalion or similar unit . . . . . —II—

Regiment or similar unit . . . . . —III—

Brigade . . . . . —X—

Division . . . . . —XX—

Corps . . . . . —XXX—

Army . . . . . —XXXX—

Service command, department, or section of communications zone . . . . . —OOO—

Communications zone . . . . . —OOOO—

Rear boundary of theater of operations . . . . . —GHQ—

Front line . . . . . ////////////

Fighter aviation (limit of radius of action) . —Fi—

Observation aviation (limit of zone of reconnaissance) . . . . . —Obsn—

Limit of wheeled traffic by *day* . . . . . —DY—

Limit of wheeled traffic by *night* . . . . . —NT—

Line beyond which *lights* on vehicles are prohibited . . . . . —LT—

Outpost line . . . . . —OPL—

Main line of resistance . . . . . —MLR—

Regimental reserve line . . . . . —RRL—

Limiting point . . . . . —⊗—

Line of communication . . . . . —LC—

Line of departure . . . . . —LD—

Straggler line . . . . . —P—

Prisoner of War inclosure, IV Corps . . . . . PW

Chart 17.—Boundaries and delimited areas.

Defense areas (consist of boundaries broken by unit symbol):

Squad . . . . .

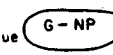
Section . . . . .

Platoon . . . . .

Demolitions . . . . .

Gas (see also chart 18):

Area to be avoided . . . . .

Area to be gassed, nonpersistent . . . . . 

Area blanketed by smoke (time effective).

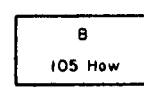
Target areas (indicate caliber; draw symbol to scale):

Primary, 60-mm mortar (50 yards square) . . . . .

Primary, 81-mm mortar (100 yards square) . . . .

Secondary, 60-mm mortar (50 yards in diameter).

Secondary, 81-mm. mortar (100 yards in diameter) . . . . .

Normal, Battery B, 105-mm howitzer (100 by 200 yards) . . . . . 

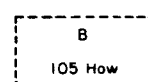
Emergency, Battery B, 105-mm howitzer (100 by 200 yards) . . . . . 

Chart 17.—Boundaries and delimited areas—Continued.

Arsenal (chemical warfare) . . . . .

Building, gasproof . . . . .

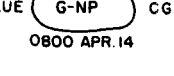
Demolitions, vesicant contaminated (show agent, time, and date) . . . . .

Dugout, gasproof . . . . .

Gas:

Area to be avoided (show agent, time, and date) . . . . .

Area to be blanketed by smoke (show time effective and date) . . . . .

Area to be gassed, nonpersistent (show agent, time, and date) . . . . 

Area to be gassed, persistent (show agent, time, and date) . . . . .

Mines:

Chemical land mine . . . . .

Chemical land-mine barrier (mines emplaced but unfired) . . . . .

Road-block obstacle, contaminated (show agent, time, and date) . . . . .

Chart 18.—Chemical warfare activities.

25. ROAD AND BRIDGE CLASSIFICATION.

On topographic maps, road classification is as shown in chart 8. Military traffic control symbols are shown in chart 24. For military field sketches and topographic reconnaissance, the classification system described in this paragraph is used. The characteristics of roads and bridges are indicated by the following symbols and abbreviations:

a. General road types.

Physical characteristics	Type of surface		
	All weather		Earth
	Paved: such as concrete, bituminous, brick, or other pavement	Improved:[1] such as gravel, crushed rock, stabilized soil, select granular material, or other wearing material	Unimproved: dusty when dry; muddy when wet
Good road (gentle grades, gradual curves, smooth surface, good foundation).	A	C	E
Poor road (steep grades, sharp curves, rough surface, or poor foundation).	B	D	F (probably impassible in wet weather).

[1] Includes roads of these materials which have had a treatment to lay dust or which are covered by a bituminous surface treatment or seal coat.

b. General characteristics of roads and bridges.

(1) *Traffic lanes.*

1, 2, 3, etc. Placed after road type symbol to indicate roadways suitable for continuous traffic in one, two, three, etc., lanes respectively.

1+ One-lane roadway having occasional passing locations, and suitable for very light two-way traffic.

1½ One-lane roadway having frequent passing location, and suitable for light two-way traffic.

2 Two-lane roadway having occasional one-lane defiles, and suitable for moderate two-way traffic.

(2) *Information.*

W Followed by numeral indicates clearance width in feet provided at most critical location. Symbol is preceded by numeral to indicate more than one such lane (for example, 2 W 9 indicates two separate lanes, each of which provides a clearance width of 9 feet).

Cl Followed by numeral indicates clearance height in feet between surface of roadway and overhead obstruction.

T Preceded by numeral indicates tonnage limitation. (Bridges.)

Mi Preceded by numeral indicates distance in miles.

I Followed by numeral indicates average interval of time (time-distance) in minutes required by motor vehicles during daylight to travel section of road shown.

c. Engineer characteristics of roads and bridges.

(1) *Roads.*

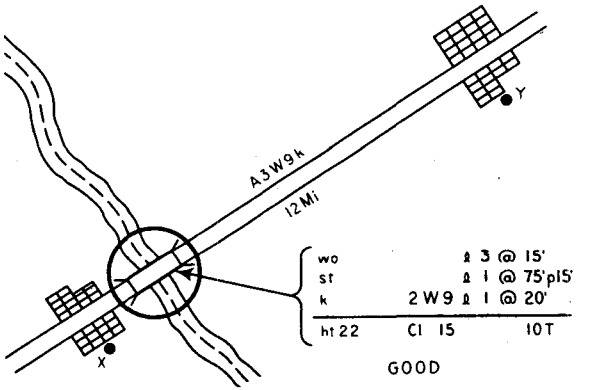
Concrete	k
Bituminous pavement, heavy duty	bt
Brick or block pavement	br
Bituminous surface treatment (except on concrete, brick, or block pavement), bituminous stabilized sand or gravel, or other bituminous type not suitable for heavy duty	bs
Crushed rock or macadam	m
Gravel	g
Stabilized soil, sand-clay, shell, cinders, disintegrated granite, or other select material	sm
Earth	ea

(2) *Bridges.*

Concrete, slab or beam	k
Concrete arch	ka
Steel beam	sb
Steel truss	st
Steel girder	sg
Stone arch	sa
Wood trestle	wo
Wood truss	wot
Length	l
Height above stream bed	ht
Panel length (trusses)	p
Condition (state as "excellent," "good," "fair," or "poor.")	

d. Example (see chart 19). Sketch between villages X and Y with good, all-weather, three 9-foot lanes, concrete road, 12 miles long, and a multiple bridge 140 feet long consisting of 45 feet of wood truss, and 20 feet of concrete beam and 75 feet of steel truss with 15-foot panels; 18-foot roadway width, 22 feet above stream bed, 15-foot clearance, capable of carrying 10 tons, and in good condition.

Road and bridge classification:



Special engineer landing craft:

Command and navigation, or patrol, boat....

Landing craft, mechanized (LCM).....

Salvage boat.....

Landing craft, vehicle-personnel (LCVP)....

Chart 19.—Engineer symbols.

Trench for one squad.....

Isolated dugout.....

Dugout in trench system.....

Gasproof dugout..... G-PF

Chart 20.—Field and permanent fortifications.

Surface shelter (personnel capacity indicated) ..... Occupied 10 Unoccupied 8

Underground shelter (personnel capacity indicated) ..... Occupied 10 Unoccupied 6

Surface shelter in trench system .....

Underground shelter in trench system .....

Gasproof surface shelter ..... G-Pf

Fort, general .....

Pillboxes:

- Concrete .....
- Steel turret .....
- Machine guns, direction of fire unknown .....
- Antitank guns, direction of fire unknown .....
- Direction of fire known, caliber unknown .....
- Machine guns, direction of fire known .....
- Antitank guns, direction of fire known ..... 37 AT

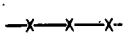
Fortified area, general .....

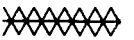
***Chart 20.—Field and permanent fortifications*—Continued.**

Demolitions . . . . .

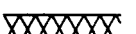
Entanglements:

Barbed wire, general . . . . .

Four-strand fence (protective wire) . . . . . 

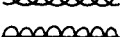
Double-apron fence . . . . . 

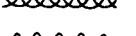
Low-wire fence . . . . .

High-wire fence . . . . . 

Combination band . . . . .

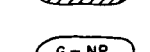
Loose wire rolls . . . . .

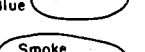
Dannert wire or concertina . . . . . 

Concealed wire . . . . . 

Gas (*see also* chart 18):

Area to be avoided . . . . .

Area to be gassed, nonpersistent (indicate date and hour—*see* chart 18). 

Area blanketed by smoke (time effective). 

Mines and mine fields:

Land mines:

Single string of antitank mines . . . . .

Activated antitank mine . . . . .

Double antitank mine . . . . .

Double activated antitank mine . . . . .

Pressure type antipersonnel mine . . . . .

Trip-wire type antipersonnel mine

Chart 21.—Obstacles.

Mines and mine fields—Continued.

Land mines—Continued.

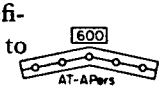
Booby trap.....

Mine detector.....

Mine fields.—The color green should be used to designate mine field areas, demolitions, road blocks, and other engineer obstacle activities. The color green is to be used for no *other* military activity. When the color green is not available, the symbol will be executed in black.

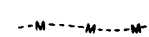
To be reproduced in *green*
(in black if green is not available).

Mine belt; numerals in rectangle indicate number of mines in belt. *D* in rectangle represents dummy mine field. Mines in definite pattern; boundaries drawn to scale to indicate actual extent of belt.....



Boundary of mine field unfenced.....

Boundary of mine field indefinite, unfenced



Boundary of mine field, fenced with barbed wire. Numerals indicate number of strands in fence.....

Example of symbols in mine field. Scattered mines between boundaries and between belts are indicated schematically by small circular marks.....

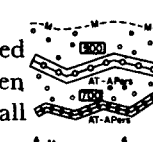
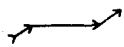


Chart 21.—Obstacles—Continued.

Marine mines, controlled.....

(This symbol indicates one 19-mine group, and a separate symbol is used for each group. As it appears here, the upper edge of this page is assumed to be seaward; and on charts the symbols should be correspondingly placed. The length of a mine group being 1,800 feet, the symbol is drawn to scale. Its position represents the contemplated disposition of the mine group.)

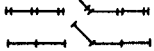
Leader gear..... 

(An energized cable to aid vessels through free passages in marine mine fields. Symbol is used on chart to show exact location.)

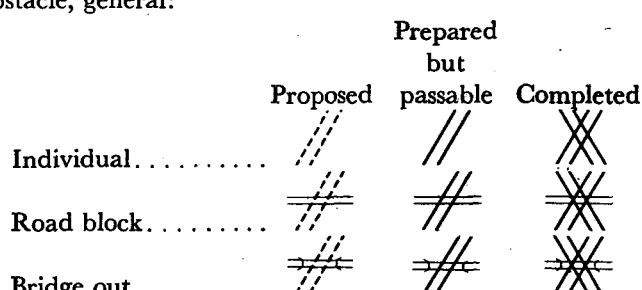
Chemical land mine.....

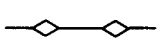
Marine nets:

Torpedo net (with gate).....

Antisubmarine net (with gate)..... 

Obstacle, general:



Tank barrier..... 

Tank trap.....

Chart 21.—Obstacles—Continued.

Filter center . . . . .

Information center . . . . .

Message Center . . . . . Msg Cen or

Point on axis of signal communication (probable future location of command post) . . . . .

Examples:

Artillery . . . . .

Cavalry . . . . .

Infantry . . . . .

Radar station . . . . .

(Type No. ___)

Radio intercept station . . . . .

Radio station (transmitting and receiving) . . . .

Radio direction—finder station (radio compass) . . . . .

Radio direction—finder station, mobile . . . . .

Radio direction—finder station, portable . . . . .

Switching central (located at command post) . . . . .

Switching central . . . . .

Commercial switching central . . . . .

Teletypewriter central . . . . .

Test station or cable terminal . . . . .

Visual signal . . . . .

NOTE.—For special symbols used in signal communication for wiring diagrams, line route maps, traffic diagrams, and signal operation maps, see FM 24–5 and TM 11–462.

Chart 22.—Signal facilities.

Military post or station; command post or headquarters.....

(Lower end of staff terminates at a military post or station or at an easily recognizable terrain feature near a command post or unit headquarters.)

Troop unit.....

(On large-scale maps where troop units can be shown to scale, this symbol may be modified as follows so as to show area occupied by units in column or line and direction in which they are facing):

Line Column

Arsenal.....

Arsenal (chemical warfare).....

General hospital.....

Laboratory, experimental center, or proving ground..

Point, any located (suitable description).....

Posts:

Observation, general.....

Fixed underwater, listening.....

Visual signal.....

Reception center.....

Replacement training center.....

Training center.....

Weather station.....

Chart 23.—Special buildings, posts,and centers.

Debarkation or embarkation point .....

Supply points:

Occupied .....

Proposed .....

Examples:

Railhead .....

Class I supplies .....

Ammunition (Class V supplies) .....

Artillery ammunition .....

Small-arms ammunition .....

Class III supplies .....

Water .....

Engineer (arm or service symbol in circle) ....

Procurement district, headquarters .....

Railroad center .....

Supply:

Ammunition, all classes .....

Ammunition, artillery .....

Ammunition, small arms .....

Class I .....

Gasoline and oil .....

Water .....

Remount Service .....

Chart 24.—Supply, transportation, traffic.

Petroleum supply:

- Gas wells
- Oil wells
- Oil-well derrick
- Petroleum tank
- Bulk storage petroleum products
- Surface cable
- Submarine cable
- Submarine pipeline
- Gas pipeline
- Oil pipeline
- Petroleum products pipeline, general

Trains (supply, motor)

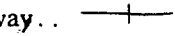
- Animal-drawn — Anl
- Pack — Pk
- Railway — Ry

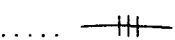
Traffic and traffic control:

- Railroad grade crossing
- Railroad above road
- Railroad beneath road

Chart 24.—Supply, transportation, traffic—Continued.

Traffic and traffic control—Continued.

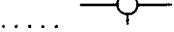
Boundary between two sections of roadway . . 

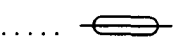
Impassable roadway . . . . . 

Bridge . . . . .

Tunnel . . . . .

Rotary traffic . . . . .

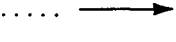
Turn-around location . . . . . 

Parallel line to one-lane road indicates length of roadway where passing is possible . . . . . 

One-way traffic . . . . .

Two-way traffic . . . . .

Alternating one-way traffic . . . . .

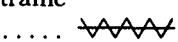
Dispatch route (operated by schedule system) . 

Reserved route (can be used by specific traffic only) . . . . .

National and state route markers, respectively .

Military route marker . . . . .

Traffic post (or unit); traffic headquarters . . .

Marked road intersection (atlas-grid system) . . . 

Line beyond which any lights (including black-out lights) are prohibited . . . . .

Chart 24.—Supply, transportation, traffic—Continued.

Automatic rifle . . . . .

Automatic rifle (position prepared but not occupied) . . . . .

Machine guns (arrow points in principal direction of fire):

Caliber .30, water-cooled, heavy . . . . .

Caliber .30, air-cooled, light . . . . .

Caliber .50 . . . . .

Antiaircraft . . . . .

Sector of fire of single machine gun (arrows indicate sector of fire; heavy solid portion on solid arrow shows danger space when fire is placed on final protective line) . . . . .

Sector of fire of machine-gun section (two guns) . . . . .

Rifle, firing antitank grenade . . . . .

Rocket launcher, antitank . . . . .

Antitank gun, 75-mm (caliber specified on right).

75-mm antitank gun in position with principal direction of fire . . . . .

37-mm antitank gun in position with principal direction of fire . . . . .

37-mm antitank gun emplacement, showing principal direction of fire . . . . .

Chart 25.—Weapons.

Gun . . . . . .

Gun battery . . . . . .

Howitzer or mortar . . . . . .

Howitzer or mortar battery . . . . . or

4.2-inch chemical mortar . . . . . 4.2 Cml

Open when emplacement is unoccupied, thus . . .

or

4.2 Cml

Tanks:

Light L

Medium . . . . . M

Heavy . . . . . Hv

Self-propelled guns:

Howitzer (tank-chassis mounted; indicate caliber) . . 105

Mortar (indicate caliber) 81

Gun (indicate caliber) . . . . . 37 AT

Ammunition carrier . . . . . .

Chart 25.—Weapons—Continued.

CHAPTER 9

ILLUSTRATIONS OF MILITARY SYMBOLS

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26. UNIT DESIGNATIONS.—This chapter contains examples to illustrate the method of combining basic symbols and abbreviations in order to show the desired information. The following are general rules governing the application of these symbols to rectangles, triangles, or circles representing, respectively, troop units, observation posts, and supply points:

a. The basic symbol is placed in the center. (See chart 13.)

b. The symbol for the size of the unit is placed above.

c. Army and air force are shown by a number spelled out.

d. Corps and air force command are shown by Roman numerals.

e. When the symbol represents either an army or a corps in its entirety, the numeral designation is placed *inside* the box. When the symbol pertains to a unit within an army or corps, the army or corps numeral is placed on the right, *outside* the box.

f. Numbers designating battalions in a regiment are shown on the left, in Arabic numerals.

g. Numbers designating separate battalions are shown on the right, in Arabic numerals.

h. Numbers designating divisions, brigades, groups, regiments, separate companies, or similar separate units are placed on the right, in Arabic numerals.

i. Letters designating companies, troops, or batteries are in capitals and are shown on the left.

j. Companies, troops, batteries, or platoons (not separate), and other elements of a unit which are designated by name instead of by letter (for example, "Antitank Company" or "Headquarters and Service Troop"), are designated by the use of the proper abbreviation on the left.

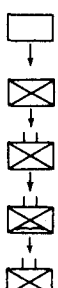
k. Abbreviations for explanatory purposes are shown on the right (see ch. 10).

l. Abbreviations are used instead of symbols to show information that cannot be indicated by a single symbol.

m. Calibers are shown by numbers placed under the symbol and the unit of measure is omitted.

27. APPLICATION OF SPECIAL SYMBOLS.

The following examples illustrate the method of combining basic symbols and abbreviations in order to show the desired information. These are only a few of the possible combinations. The following diagram illustrates how these symbols are built up:



This is a troop unit.

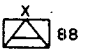
This makes it infantry.

This makes it a battalion of infantry.

This makes it a battalion of airborne infantry.

This makes it a parachute battalion of airborne infantry.

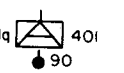
This tells what battalion of parachute infantry it is.

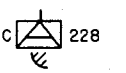
88th Antiaircraft Artillery Brigade . . . . . 

3d Antiaircraft Artillery Group . . . . .

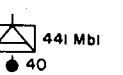
302d Antiaircraft Balloon Battalion (low altitude) .

101st Antiaircraft Balloon Battery (separate) (very low altitude) . . . . .

Headquarters Battery, 401st Antiaircraft Gun Battalion . . . . . 

Battery C, 228th Antiaircraft Searchlight Battalion . . . . . 

2d Platoon, Battery C, 119th Airborne Antiaircraft Battalion . . . . .

Battery D, 441st Antiaircraft Artillery Automatic Weapons Battalion (mobile) . . . . . 

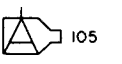
Battery A, 105th Antiaircraft Artillery Automatic Weapons Battalion (self-propelled) . . . 

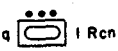
Chart 26.—Examples—Antiaircraft Artillery.

I Armored Corps . . . . .

1st Armored Division . . . . .

Combat Command A, 1st Armored Division . . . . .

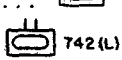
1st Armored Division Trains . . . . .

Transportation Platoon, Headquarters Company, 1st Armored Reconnaissance Battalion . . . . . 

Assault Gun Platoon, Headquarters Company, 1st Battalion, 1st Armored Regiment . . . . .

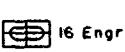
Company A, 1st Armored Regiment . . . . .

1st Tank Group . . . . .

742d Tank Battalion (light) . . . . . 

6th Armored Artillery Group . . . . .

16th Armored Engineer Battalion . . . . .

Medical Detachment, 16th Armored Engineer Battalion . . . . . 

6th Armored Infantry Regiment . . . . .

Assault Gun Platoon, Headquarters Company, 1st Battalion, 6th Armored Infantry Regiment . . . . .

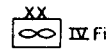
Treatment Platoon, Company A, 47th Armored Medical Battalion . . . . .

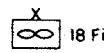
Company A, Supply Battalion, 1st Armored Division . . . . .

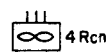
Operations Platoon, 47th Armored Signal Company . . . . .

Chart 27.—Examples—armored.

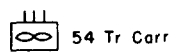
First Air Force . . . . .

IV Fighter Command . . . . . 

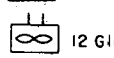
18th Fighter Wing . . . . . 

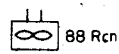
4th Reconnaissance Group . . . . . 

5th Bombardment Squadron (heavy) . . . . .

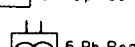
54th Troop Carrier Group . . . . . 

66th Service Squadron . . . . .

12th Glider Squadron . . . . . 

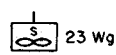
88th Reconnaissance Squadron . . . . . 

Air Support Control B, 8th Air Support Communications Squadron . . . . .

5th Photo Reconnaissance Squadron . . . . . 

16th Depot Repair Squadron, 15th Air Depot Group . . . . .

20th Air Base Security Battalion . . . . .

23d Signal Company, Wing . . . . . 

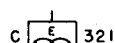
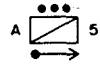
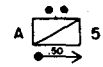
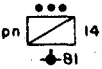
Company C, 321st Engineer Aviation Battalion . 

Chart 28.—Examples—Army Air Forces.

Machine Gun Platoon, Troop A, 5th Cavalry . . . 

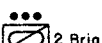
Caliber .50 Machine Gun Section, Troop A, 5th Cavalry . . . . . 

1st Platoon, Weapons Troop, 14th Cavalry . . . . .

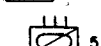
Mortar Platoon, Weapons Troop, 14th Cavalry. 

Troop E, 1st Reconnaissance Squadron, Mechanized . . . . .

2d Platoon, Troop A, 4th Cavalry, Mechanized.

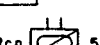
Antitank Platoon, Headquarters Troop, 2d Cavalry Brigade . . . . . 

1st Tank Platoon, Troop E, 1st Reconnaissance Squadron . . . . .

5th Cavlary Group, Mechanized . . . . . 

89th Cavalry Mechanized Reconnaissance Squadron:

Acting alone . . . . .

Acting as part of 5th Cavalry Group . . . . . 

Reconnaissance Troop (Mechanized) 9th Cavalry Division . . . . .

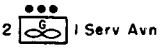
1st Cavalry Division . . . . .

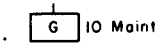
Command Post, 5th Cavalry . . . . .

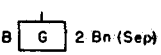
Observation Post, 9th Cavalry . . . . .

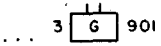
Park, Mechanized Cavalry Group . . . . .

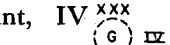
Chart 29.—Examples—Cavalry.

2d Platoon, 1st Chemical Company, Service Aviation . . . . . 

10th Chemical Company, Maintenance . . . . . 

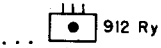
Company B, 2d Separate Chemical Battalion . . . . . 

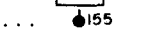
3d Battalion, 901st Chemical Regiment . . . . . 

Proposed Chemical Warfare Supply Point, IV Corps . . . . . 

Chemical Depot, First Army . . . . .

Chart 30.—Examples—Chemical Warfare Service.

Searchlight Battery, 104th Coast Artillery, Harbor Defense Type A . . . . . 

912th Coast Artillery (Railway) . . . . . 

57th Coast Artillery (155-mm gun) . . . . .

4th Battalion, 241st Coast Artillery, Harbor Defense, Type C . . . . .

Command Post, Battery E, 248th Coast Artillery, Harbor Defense, Type B . . . . .

NOTE.—For Antiaircraft Artillery Symbols see chart 26.

Chart 31.—Examples—Coast Artillery Corps.

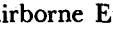
Company A, 2d Engineer Combat Battalion. . . . .

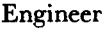
8th Engineer Squadron. . . . .

Company A, 16th Armored Engineer Battalion. . .

Motorized Company, 126th Engineer Mountain Battalion. . . . .

Company B, 905th Engineer Heavy Ponton Battalion. . . . .

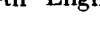
Parachute Company, 307th Airborne Engineer Battalion. . . . . 

2d Platoon, Company B, 28th Engineer Aviation Battalion. . . . . 

2d Platoon, 70th Engineer Light Ponton Company. . . . .

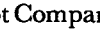
Engineer Depot Number 2, First Army. . . . .

Proposed Engineer Park, II Army Corps. . . .

2d Platoon, Company B, 84th Engineer Camouflage Battalion. . . . . 

2d Platoon, Photomapping Company, 660th Engineer Topographic Battalion. . . . .

1st Platoon, 195th Engineer Dump Truck Company. . . . .

2d Platoon, 391st Engineer Depot Company. . 

Company B, 801st Engineer Water Supply Battalion. . . . .

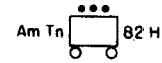
Second Boat Platoon, Company A, 531st Engineer Boat and Shore Regiment.

Pioneer Platoon, Company D, 591st Engineer Boat and Shore Regiment. .

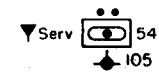
Chart 32.—Examples—Corps of Engineers.

Battery F, 2d Field Artillery Battalion . . . . .

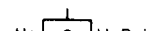
Headquarters Battery, 1st Division Artillery . . .

Ammunition Train, 82d Field Artillery Battalion (horse) . . . . . 

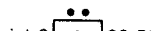
Headquarters and Headquarters Battery, 4th Field Artillery Battalion (Pack) . . . . .

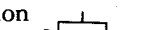
Gasoline Section, Service Battery, 54th Field Artillery (105-mm Howitzer, armored) . . . 

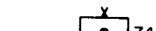
8th Field Artillery Battalion . . . . .

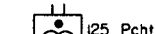
Headquarters and Headquarters Battery, 11th Field Artillery Brigade . . . . . 

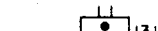
2d Section, Battery B, 71st Field Artillery Battalion, horse-drawn . . . . .

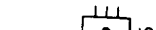
Maintenance Section, Battery C, 98th Field Artillery Battalion (75-mm Howitzer, Pack) . . . . . 

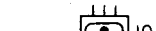
Battery B, 1st Field Artillery Observation Battalion . . . . . 

74th Field Artillery Brigade . . . . . 

125th Field Artillery Parachute Battalion . . . . . 

131st Glider Field Artillery Battalion . . . . . 

18th Field Artillery Group . . . . . 

10th Armored Field Artillery Group . . . . . 

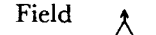
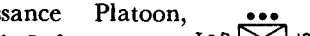
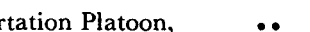
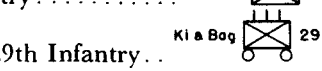
Forward Observation Post, Battery A, 1st Field Artillery Battalion . . . . . 

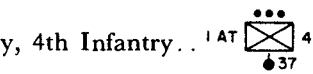
Chart 33.—Examples—Field Artillery.

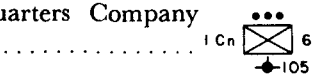
Headquarters Company, 29th Infantry . . . . .

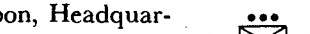
Intelligence and Reconnaissance Platoon, Headquarters Company, 19th Infantry . . . . . 

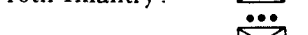
Maintenance Section, Transportation Platoon, Service Company, 5th Infantry . . . . . 

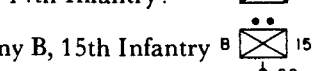
Kitchen and Baggage Train, 29th Infantry . . 

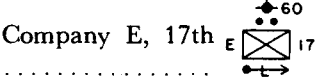
1st Platoon, Antitank Company, 4th Infantry . . 

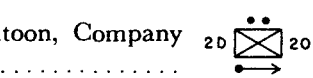
1st Cannon Platoon, Headquarters Company 6th Infantry . . . . . 

Ammunition and Pioneer Platoon, Headquarters Company, 3rd Battalion, 10th Infantry . 

Weapons Platoon, Company A, 14th Infantry . 

60-mm Mortar Section, Company B, 15th Infantry 

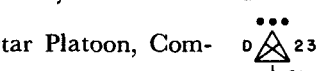
Light Machine-Gun Section, Company E, 17th Infantry . . . . . 

Machine Gun Section, 2d Platoon, Company D, 20th Infantry . . . . . 

502d Parachute Infantry . . . . .

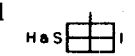
22d Motorized Infantry . . . . .

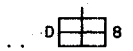
Company A, 41st Armored Infantry . . . . .

Observation Post, 81-mm Mortar Platoon, Company D, 23d Infantry . . . . . 

Proposed regimental Ammunition Supply Point, 27th Infantry . . . . .

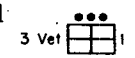
Chart 34.—Examples—Infantry.

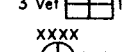
Headquarters and Service Company, 1st Medical Regiment . . . . . 

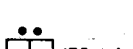
Clearing Company D, 8th Medical Battalion . . . . 

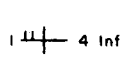
2d Platoon, Company A, 105th Medical Ambulance Battalion . . . . .

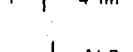
3d Platoon, Company A, 47th Medical Battalion Armored . . . . .

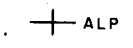
Clearing Platoon, Veterinary Troop, 1st Medical Squadron . . . . . 

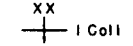
First Army Medical Depot . . . . . 

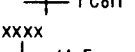
1st Battalion Section, Medical Detachment, 175th Infantry . . . . . 

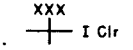
Battalion Aid Station, 1st Battalion, 4th Infantry . . . . . 

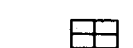
Ambulance Loading Post . . . . . 

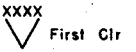
Collecting Station, 1st Division . . . . . 

11th Evacuation Hospital . . . . . 

Clearing Station, I Corps . . . . . 

Hospital Train . . . . . 

Veterinary Clearing Station, First Army . . . . . 

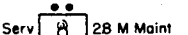
5th Platoon, 12th Veterinary Company . . . . . 

901st Veterinary Evacuation Hospital . . . . .

Chart 35.—Examples—Medical Department.

2d Ordnance Company, Heavy Maintenance (Army) . . . . .

3d Ordnance Company, Heavy Maintenance (Tank) . . . . .

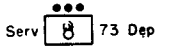
Service Section, 28th Ordnance Company (Medium Maintenance) . . . . . 

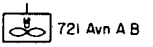
Magazine Platoon, 51st Ordnance Company (Ammunition) . . . . .

3d Platoon, 95th Ordnance Company, Railway Artillery Maintenance . . . . .

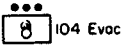
Company B, 19th Ordnance Battalion (Armored) .

Headquarters and Supply Section, 105th Ordnance Company (Medium Maintenance) . . . . .

Service Platoon, 73d Ordnance Company (Depot) . . . . . 

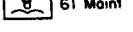
721st Ordnance Company (Aviation Air Base) 

1st Ordnance Battalion (Medium Maintenance) . . . . .

1st Platoon, 104th Ordnance Evacuation Company . . . . . 

319th Ordnance Maintenance Company, Antiaircraft . . . . .

7th Ordnance Maintenance Battalion, Motorized . . . . .

61st Ordnance Maintenance Company, Airborne . . . . . 

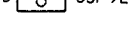
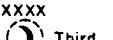
419th Ordnance Platoon, 531st Engineer Special Brigade . . . . . 

Chart 36.—Examples—Ordnance Department.

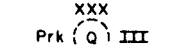
Class I Supply Point, Third Army, proposed . . . 

Class III Railhead, Third Army, proposed . . . .

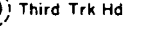
Second Army Quartermaster Depot Number 1 (Class III) . . . . .

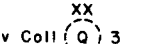
Third Army Quartermaster Depot No. 2 . . . . .

III Corps Quartermaster Park, proposed . . . . .

Truckhead, Class I Supply, Third Army, proposed . . . . . 

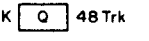
Salvage Collecting Point, 3d Division, proposed . . . . .

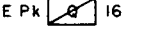
105th Quartermaster Car Company . . . . . 

2d Platoon, Company K, 48th Quartermaster Regiment (Truck) . . . . . 

Pack Troop, 16th Quartermaster Squadron . . .

681st Quartermaster Battalion (Sterilization) . .

Company A, 203d Quartermaster Battalion (Gasoline Supply) . . . . . 

Company D, 94th Quartermaster Battalion (Bakery) . . . . . 

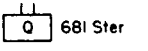
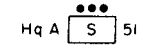
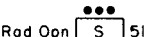
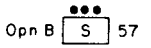
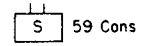
Company A, Supply Battalion, 1st Armored Division . . . . . 

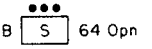
Chart 37.—Examples—Quartermaster Corps.

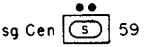
Headquarters Platoon, Company A, 51st Signal Battalion . . . . . 

Radio Operation Platoon, Headquarters and Headquarters Company, 51st Signal Battalion . . . . . 

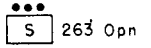
Teletypewriter Operation Platoon, Company B, 57th Signal Battalion . . . . . 

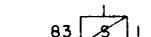
59th Signal Construction Battalion . . . . . 

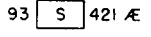
Installation and Maintenance Platoon, Company B, 64th Signal Operation Battalion . . . . . 

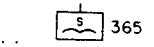
Command Post Section, Message Center Platoon, Headquarters Company, 59th Armored Signal Battalion . . . . . 

Radio Intelligence Platoon, Company A, 318th Signal Battalion (Aviation), Air Support Command . . . . .

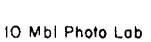
Teletypewriter Operation Platoon, 263d Signal Operation Company, Separate. 

83d Signal Troop, 1st Cavalry Division . . . . . 

93d Signal Company, 421st Engineer Special Brigade . . . . . 

365th Airborne Signal Company . . . . . 

20th Signal Fixed Radio Station Company . . . . .

10th Signal Mobile Photographic Laboratory Unit . . . . . 

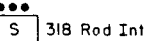
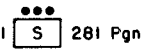
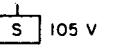
3d Intercept Platoon, 318th Signal Radio Intelligence Company . . . . . 

Chart 38.—Examples—Signal Corps.

Mobile Direction Finding Section, Position Finding Platoon, 318th Radio Intelligence Company.....

1st Combat Platoon, 281st Signal Pigeon Company..... 

105th Signal Photomail Company..... 

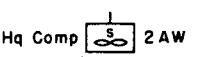
Headquarters and Headquarters Company, Composite Battalion, 2d Signal Aircraft Warning Regiment..... 

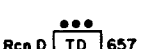
Chart 38.—Examples—Signal Corps—Continued.

Headquarters, 12th Tank Destroyer Group.....

Destroyer Platoon, Company A, 657th Tank Destroyer Battalion (Self propelled)...

827th Tank Destroyer Battalion (Towed)...

Pioneer Platoon, Company D, 657th Tank Destroyer Battalion.....

2d Reconnaissance Platoon, Company D, 657th Tank Destroyer Battalion..... 

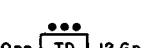
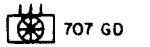
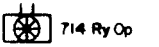
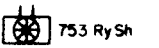
Operations Platoon, Headquarters Company, 12th Tank Destroyer Group..... 

Chart 39.—Examples—Tank Destroyer.

Headquarters, Military Railway Service

707th Railway Grand Division 

714th Railway Operating Battalion 

753d Railway Shop Battalion 

Headquarters and Headquarters Company, 12th Port

194th Port Company

Transportation Corps, Water Division

Transportation Corps, Rail Division

Transportation Corps, Highway Division

Transportation Corps, Transit Storage Division

Transportation Corps, Traffic Control Division

Consolidating Station

Holding and Reconsignment Point

Port Agency

Port of Embarkation

Chart 40.—Examples—Transportation Corps.

PART III

MILITARY ABBREVIATIONS

CHAPTER 10

LIST OF MILITARY ABBREVIATIONS

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28. GENERAL. This chapter is concerned primarily with abbreviations found only in Army field work.

29. DATES AND HOURS. a. Dates. Dates are written with the day preceding the name of the month, thus: 15 Jan 1943.

b. Time. Time is indicated according to the 24-hour clock system, in four-digit numbers, the first two digits representing the hour, the second two digits the minutes.

Examples:

0001 means 1 minute after midnight.
0630 means 6:30 in the morning.
1500 means 3:00 in the afternoon.

c. Dates with hours. Dates with hour designations are written as follows:

0630, 15 Jan 1943.

A six digit number may be used, in which case the month is assumed to be the current one. The first two digits indicate the day of the month, and the last four the hour, as explained above. For example: 150630 means 6:30 in the morning of the 15th day of the current month.

d. Greenwich time. If the time is based on Greenwich rather than on local time, the letter "Z" is placed after the hour designation. For example:

0630Z
150630Z

30. LIST OF ABBREVIATIONS AND ITS USES. a. Kinds of abbreviations. This manual contains abbreviations authorized for use in *field work*, such as field orders, field maps, and messages. For abbreviations used in administrative work, see AR 850–150. In addition to those on the following list the Army is also authorized to use common abbreviations that are generally accepted, such as ft for foot.

b. Capitalization. All abbreviations used in field work have a capitalized initial letter.

c. Punctuation. All abbreviations used are written without periods.

List

A

acting	Actg
adjutant (1st staff section, brigades and lower units)	S–1
administrative (orders or officer)	Adm (O)
advance	Adv
advance guard	Adv Gd
advance message center	Adv Msg Cen
aeronautic, aeronautical	Aero
agent	Agt
air	A
air base	AB
Airborne Command	A/B Comd
aircraft warning (company)	AW (Co)
air depot	AD
airdrome	Adrm

air field	AFld
air force	AF
air intelligence (section)	A Int (Sec)
airport	Aprt
airship	Ash
Air Support Command	ASPTC
Air Support Control	A Spt Contl or AS Contl
alternate target	Alt T
ambulance loading post	ALP
American Expeditionary Forces	AEF
ammunition (train)	Am (Tn)
ammunition supply point	ASP
amphibian truck (company)	Amph Trk (Co)
Amphibious Command	Amph Comd
animal-drawn	Anl-Dr
antiaircraft artillery	AAA
Antiaircraft Artillery Intelligence Service	AAAIS
antiaircraft balloon	AA/B
antimechanized	AMecz
antipersonnel	APers
Antisubmarine Command	Antisub Comd
appendix	App
approximate	Approx
armored car	Armd C
armored	Armd
armorer	Armr
armor-piercing	AP
Army Engineer Service	A Engr Serv
Army headquarters	AHQ
Army medical (laboratory) (service)	A Med (Lab) (Serv)
Army Postal Service	APS
Arsenal	Ars
artificer	Artif

artillery (brigade) (horse) (liaison officer).	Arty (Brig) (H) (LnO)
attack	Atk
automatic	Auto
automatic weapons	AW
aviation gasoline	Agas
aviation oil	Aoil

B

baggage	Bag
bakery	Bkry
balloon	Bln
Balloon Barrage Training Center	BBTC
barrage balloon (battalion)	Bar Bln (Bn)
base depot company	BD Co
base point	BP
basic	Bsc
Basic Field Manual	BFM
battalion (combat train)	Bn (C Tn)
battalion adjutant	Bn S–1
battalion beachhead	BBH
battalion intelligence officer	Bn S–2
battalion landing team	BLT
battalion plans and training officer	Bn S–3
battalion supply officer	Bn S–4
battery commander	BC
battle reconnaissance	B Rcn
bench mark	BM
bicycle	Bcl
bill of lading	B/L
bivouac	Biv
blacksmith	Blksm
boat	Bt
boiler and smith shop company	Blr & Sm Sh Co
bomber	Bmr
bomb line	BL

bomb service truck	BSTrk
boundary	Bd
bridge train (heavy) (light)	Br Tn (Hv) (L)
brigade	Brig
brigade adjutant	Brig S–1
brigade intelligence officer	Brig S–2
brigade plans and training officer	Brig S–3
brigade supply officer	Brig S–4
brigade headquarters	BHQ
Browning automatic rifle	BAR
bugler	Bglr
bulk storage petroleum	BSpet

C

camouflage	Cam
cannon (platoon)	Cn (Plat)
Carbine	Cbn
carpenter	Cptr
car repair company	Car Rep Co
cemetery	Cem
center, central	Cen
central interpretation unit	CIU
character	Char
chauffeur	Cfr
chemical agent, nonpersistent	G–NP
chemical agent, persistent	G–P
chemical mortar, 4.2-inch	4.2 Cml Mort
chief	C
chief of	Cof
Chief of Transportation	CofT
Chief Signal Officer	CSigO
civil (or civilian)	Civ
Class I supplies	Cl I Sup
clearing company	Clr Co
close-in	CL
clothing	Clo

coast defense	CD
coastal frontier	CF
collecting (company) (point) (station).	Coll (Co) (Pt) (Sta)
combat (car) (zone)	C (Car) (Z)
combat command	CC
combat crew	CCr
combat group	C GP
combat team	CT
command and navigation boat	C&N Bt
commercial	Coml
commissary	Comm
communication	Com
communications zone	Com Z
composite	Comp
computer	Cmptr
concentration	Conc
consolidating station	C Sta
construction	Cons
contact party	Con Pty
continuous wave	CW
control	Contl
convalescent (hospital)	Conv (Hosp)
copilot	CoP
counterreconnaissance	C–Rcn
crew chief	CrC
crossroads	CR
current	Cur

D

dead reckoning	D/R
delivered or delivery	Delv
demolition (squad) (officer)	Dml (Sqd) (O)
depot	Dep
deserted or desertion	Des
detail	Dtl

direction finding	D/F
director	Dir
direct support	D/S
distant	Ds
distant surveillance section	DS Sec
district engineer officer	DEO
district transportation officer	DTO
division ammunition office	DAO
division beachhead	DBH
division headquarters	DHQ
division service area	DSA
draftsman	Drftm
drawn	Dr
driver	Dvr
Duty officer	DO

E

electrical or electrician	Elec
element	Elm
eliminate	Elim
embarkation	Emb
emplacement	Empl
enemy aircraft	E/A
engine house company	Eng Hse Co
entrucking point	EP
erecting and machine shop company	Erect & Mach Sh Co
estimated time arrival	ETA
evacuation	Evac
exclusive	Excl

F

field laboratory	F Lab
field remount depot	F Rmt Dep
field train	F Tn
fighter	Fi
fighter control area	FCA

film strip	FS
filter	Fil
filter center	Fil Cen
final protective line	FPL
fire-direction center	Fdc
first lieutenant	1st Lt
fixed	Fxd
flash ranging	FR
forward interpretation unit	FIU
from	Fr
furnished	Furn

G

garage	Gar
gas, nonpersistent	G–NP
gas, persistent	G–P
gasproof	G–Pf
general dispensary	Gen Disp
general hospital	Gen Hosp
general service schools	GSS
general service	Gen Serv
general support	G/S
Geological Survey	Geol Surv
glider	Gli
grand division (railway)	Gr Div (Ry)
graves registration (battalion) (company)	Gr Reg (Bn) (Co)
ground	Grd
ground control interception	GCI
groupment	Gpmt
gun	G

H

half-track	H-Trk
harbor	Har
Harbor Boat Service	HBS

harbor craft (company)	Har Cft (Co)
harbor defense command	HDC
headquarters	Hq
headquarters and service (battery) (company) (troop)	H&S (Btry) (Co) (Tr) or Hq & Serv (Btry) (Co) (Tr)
heavy weapons company	Hv Wpn Co
highway	Hwy
highway transportation officer	HTO
holding and reconsignment point	H & RP
horizontal control operator	HCO
horse	H
horse-drawn	H-Dr
hospital	Hosp

I

Impregnating	Impreg
Include	Incld
inclusive	Incl
indicated air speed	IAS
information	Info
information center	IC
initial beachead	IBH
initial point	IP
instrument	Inst
intelligence	Int
intelligence officer	S–2 or Int O
interceptor	I
interpreter	Intpr

J

join	Jn

K

killed	Kd

L

labor	Lbr
laboratory	Lab
landing craft, mechanized	LCM
landing craft, personnel	LCP
landing craft, vehicle	LCV
landing craft, vehicle-personnel	LCVP
landing craft, tank	LCT
land mine	LM
last resort target	LRT
legislative	Leg
liaison	Ln
lieutenant colonel	Lt Col
lieutenant general	Lt Gen
light machine gun	LMG
lights	Lgts
linemen	Lmn
line of departure	LD
lines of communication	LC
long wheelbase	LWB
low altitude	LA

M

machinist	Machst
main line of resistance	MLR
main supply road	MSR
maintenance of equipment	Maint of E
maintenance of way	Maint of W
major general	Maj Gen
material	Mat
medium (tank)	M (Tk)
meterologist	Metgst
military attaché	Mil Att or MA
Military Railway Service	MRS
minimum altitude	Min Alt
mobile	Mbl
Mobilization Training Program	MTP

motorcyclist	Mtrclt
motor gasoline	Mgas
motor oil	Moil
motor-tricycle	Mtricl
move	Mv
movement	Mvmt
musician	Mus

N

navigation (officer)	Nav (O)
net control station	NCS
not yet returned	NYR
number	No

O

observation post	OP
officer in charge	O/C
one-pounder	1 Pdr
operation	Opn
operator	Opr
order, orders	O
orderly	Odly
outpost line	OPL
outpost line of resistance	OPLR

P

parachutist	Pchst
park	Prk
party	Pty
patrol boat	PAT Bt
photograph or photographic	Photo
pigeon	Pgn
pioneer and demolition section	P & D Sec
plans and training officer	S–3
platoon	Plat
point	Pt
ponton	Pon
portable	Ptbl

port agency	PA
port of debarkation	PD
port transportation officer	PTO
postal (section)	Post (Sec)
primary target	PT
principal	Princ
prisoner	Pris
proving ground	PG

Q

quartermaster supply officer	QMSO

R

radio and panel section	R & P Sec
radio detector equipment	RADAR
radio intelligence (company)	Rad Int (Co)
railhead	Rhd
railhead officer	RHO
railroad	RR
railroad transportation officer	RTO
Railway Grand Division	Ry GD
railway traffic officer	R Traf O
range officer	Rg O
ration distributing point	RDP
railway shop battalion (Diesel)	Ry Sh Bn (Dsl)
rear (echelon) (guard)	Rr (Ech) (Gd)
received	Recd
reconnaissance (long range) (medium range).	Rcn (LR) (MR)
reconstruction park	Recons Prk
recreation	Rec
reduce or reduced	Rd
refrigeration	Ref
regimental adjutant	Regtl S–1
regimental beachhead	RBH
regimental headquarters	RHQ

regimental intelligence officer	Regtl S–2
regimental orders	RO
regimental plans and training officer.	Regtl S–3
regimental reserve line	RRL
regimental supply officer	Regtl S–4 or RSO
regulating (station)	R (Sta)
reinforced	Reinf
rejoined	Rejd
release point	Rel Pt
rendezvous point	RDV Pt
repair shop company	Rep Sh Co
replacement	Repl
report, reporting	Rpt
reproduction	Repro
rescinded	Resc
Reserve	Res
retired	Ret
rifle (Company)	R (CO)
road bend	RB
road junction	RJ
road space	RS
rocket	Rkt
rocketeer	Rktr
rocket launcher	RL

S

sales Commissary (Battalion) (Company)	Sales Comm (Bn) (Co)
salvage	Salv
sanitary	Sn
schedule	Scd
scout	Sct
scout car	Sct C
searchlight	SL
second lieutenant	2d Lt

self-propelled	SP
self-propelled mount	SPM
semiautomatic rifle	SAR
semimobile	Sem
sentence	Sent
sentenced	Sentd
shipment	Shipt
shipping ticket	S/T
shop (battalion)	Sh (Bn)
short wheelbase	SWB
signal	Sig
signal operations instructions	SOI
small arms	SA
small boat (company)	S BT (Co)
sound and flash (battalion)	S&F (Bn)
sound locator	S–L
sound ranging	SR
specialist	Specl
special messenger	Sp Msgr
special troops	Sp Trs
staff	Stf
staging area (company)	St Ar (Co)
stenographer (s)	Steno
sterilization	Ster
stevedore	Stev
straggler line	Strag L
submarine	Subm
supply	Sup
supply point	SP
support	Spt
support line	SL
surgeon	Surg
surgical (hospital)	Surg (Hosp)
surrender or surrendered	Surr
survey	Surv

switchboard	Sb
switching central	Sw C

T

tactical	Tac
Tank Destroyer	TD
technical	Tech
telegram	Telg
telegraph printer	Tgp
teletypewriter	Tt
teletypewriter center	Ttc
theater headquarters	THQ
time lengths	TL
toolmaker	Tlmkr
topographic, topographical	Top or Topo
torpedo	Tor
tractor	Trac
tractor-drawn	Tr-Dr
traffic	Traf
traffic control station	TCS
train commander	Tn Co
training circular	TC
training film	TF
training unit	TU
transit storage	TS
transport, transportation	T or Trans
transportation company	T Co
trench mortar	T Mort
troop (s)	Tr (s)
troop carrier (squadron)	Tr Carr (Sq)
truck-drawn	Trk-Dr
truck head	Trk Hd

U

unit of fire	U/F
Unit Training Center	UTC

United States Army Transport	USAT

V

vertical control operator	VCO
very low altitude	VLA
visual	Vis
volunteer	Vol

W

warrant	Wrnt
warrant officer	WO
water supply	W Sup
water tank (battalion) (train)	W Tk (Bn) (Tn)
weapon carrier	Wpn Carr
weapons (troop) (platoon)	Wpn (Tr) (Plat)
welder	Wldr
winch	Wn
wrecker	Wkr

Z

zone of fire	Z/F
zone transportation officer	ZTO

APPENDIX

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Engineer, Reference Data	FM 5–35
Obstacle Technique	FM 5–30
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