

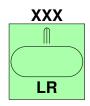
MilSymb

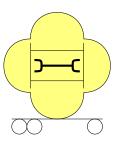
Damian Crosby March 15, 2020

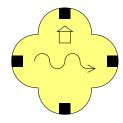


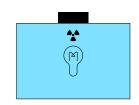
















Revision History

Revision	Date	Author(s)	Description
1.0 1.01	2018-04-29 2019-05-07	•	Creation. Added clarification on DVI output, added clarification that multiple class symbols are found in multi.
1.02	2020-03-15	Damian Crosby	Fixed scaling and placement errors in the speed leader key code, added note to define scale first in manual when using speed leader, fixed compilation issues in landgroup and landheadqurters to account for updated xparse package, fixed issue with frame status and scale keys not always being updated between commands, changed datestamps to be ISO 8601 compliant as per CTAN request.

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Attributions

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1 Introduction

1.1 Package Summary

This package allows for the drawing of symbols from the NATO Joint Military Symbology library, as detailed in the document APP6-(C). It is designed to replicate the "building block" nature of the symbols in its command syntax using pgf keys, allowing the user to generate the entire symbol, including additional text fields, in one compact command.

1.2 Package Dependencies

The MilSymb package uses the following packages as dependencies:

- tikz
- fontenc
- fix-cm
- arevmath
- marvosym
- acronym
- amssymb
- xifthen
- xparse

1.3 Using MilSymb

To use **MilSymb** in your document, just include \usepackage{milsymb} in your preamble. **MilSymb** has only been tested on \(\mathbb{M}\)_EX, other TeX flavours will probably not work. All **MilSymb** symbols must be placed inside a TikZ environment, either as part of an inline tikz command or an tikzpicture environment. As with other packages that use TikZ or other postscript based drawing programs, DVI format is not directly supported, though some DVI viewers are able to display TikZ images by embedding postscript.

1.3.1 Package Options

Currently, there are no package options specified for MilSymb.

1.3.2 Symbol Construction

NATO Joint Military Symbology uses a "building block" philosophy when constructing military symbols, so each symbol can be broken into individual components. Only a brief overview will be given here, more information can be found in APP6-(C). These components are shown in Figure 1.

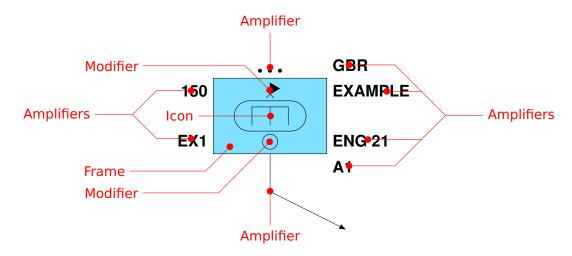


Figure 1: Annotation of symbol components.

- The **Frame** consists of a filled shape encompassing the icon and modifiers, denoting the type (land, sea surface, air, etc.) and faction (friendly, hostile, neutral, unknown) of the symbol. In some situations this is optional.
- The **Icon** denotes the entity the symbol represents (infantry, tank, mine, etc.). It is always placed in the centre of the symbol.
- The **Modifiers** are symbols that go above and below the icon (or to the left and right in the case of missile symbols, and just below the frame in the case of equipment symbols). These "modify" the entity with additional features or information (equipped with rocket launchers, extra heavy, etc.) These are usually optional.
- The **Amplifiers** are text and symbols that go outside the frame, and denote additional attributes of the symbol (country of origin, military echelon, speed and direction, etc.). These are always optional.

2 Symbol Commands

2.1 General Command Structure

The general structure of a MilSymb command is as follows. Syntax in *italics* is optional:

\command[key, key=value](location)(name){label}

- command is the name of the command. All are prefixed with Mil-, and end with Air, Missile, Land, Equipment, Installation, SeaSurface, SeaSubsurface, Mine, Space, Debris and Activity. These mostly correspond to the categories found in APP6-(C), except for Missile, Mine and Debris, which have been broken off from Air, SeaSubsurface and Space for convenience. The OwnShip command is an exception to this rule, and does not have the Milprefix.
- key and key=value are the options used to build the symbol, such as faction, icons, modifiers, and amplifiers. Keys with no value define boolean switches, such as unclear. Keys with values can have one parameter, such as faction, or two parameters, such as speed leader. In the latter case, the syntax is key={value1}{value2}.
- location is an optional coordinate or coordinate reference to place the symbol. This is generally needed when placing multiple symbols in one tikzpicture.
- name is an optional reference label that acts just like the name property of a node in TikZ. It exposes standard rectangle node anchors such as north and south, allowing connectors to be drawn between symbols. This is useful when drawing organisation charts and similar (see Example 28).
- label is an optional text label that is added to the right of the symbol.

2.1.1 Shared Keys

These are all the keys that are shared by multiple **MilSymb** commands. Not all keys are shared by all commands, please see Table 2 for details about which keys are used by which commands.

	Shared Key											
Command	faction	main	upper	lower	frame status	monochrome	scale	no frame	speed leader	offset, movement	feint or dummy	headquarters
MilAir												
MilMissile												
MilLand												2
MilEquipment					1							
MilInstallation												2
MilSeaSurface												
MilSeaSubSurface												
MilMine					1							
MilSpace												
MilActivity												
MilDebris												
0wnShip												

¹Not functional when the no frame option is used.

Table 2: Table of which keys are used in which commands.

- **2.1.1.1 main** This key defines the icon to use in the centre of the frame. See the individual command icon and modifier tables for the list of available values.
- **2.1.1.2 upper** This key defines the modifier to use above the icon defined by main. See the individual command icon and modifier tables for the list of available values.
- **2.1.1.3 lower** This key defines the modifier to use below the icon defined by main. See the individual command icon and modifier tables for the list of available values.
- **2.1.1.4** frame status This key modifies the border of the frame to allow for the expression of both the full set of "standard identities", and the planned status as seen in APP6-(C). The unclear value creates a black and white dotted line to display the alternate identities of each faction (assumed friend for friendly, suspect for hostile and pending for unknown, neutral should not use this value). The anticipated value create a longer dashed line to display the planned status. If the frame status key is not set, a standard solid border is used.

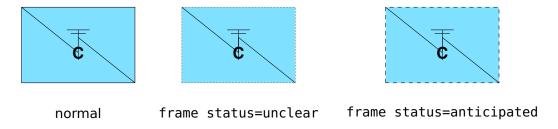


Figure 2: Example of the frame status key in use.

2.1.1.5 faction This key selects the military faction of the symbol relative to the user, which determines the colour and shape of the frame, or the colour of the icon and modifiers if no frame is specified. The values available are friendly, hostile, neutral and unknown.

²Only functional when faction=friendly.

Command	Faction Frame							
Command	Friendly	Hostile	Neutral	Unknown				
MilAir + MilMissile								
MilLand								
MilEquipment* + MilSeaSurface								
MilInstallation	_							
MilSeaSubsurface + MilMine*								
MilSpace								
MilActivity								

^{*}Can be used without a frame using the no frame option.

Table 3: Table of all the **MilSymb** command frames.

2.1.1.6 monochrome This boolean switch key allows the symbol to be generated in a monochrome format. All faction colours are instead rendered as an off-white colour as specified in APP6-(C).

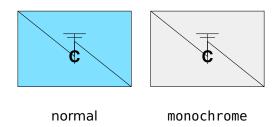


Figure 3: Example of the monochrome key in use.

2.1.1.7 scale This key allows you to scale the resulting symbol by a multiple. By default (scale=1) the boundary octagon is precisely 1cm in diameter.

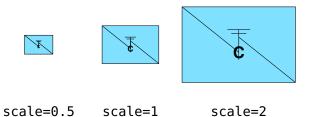


Figure 4: Example of the scale key in use.

2.1.1.8 no frame This boolean switch key allows for specific commands (namely **MilEquipment** and **MilMine**) to be used without a faction frame. Instead, the icon and modifiers are recoloured with a fluorescent version of the faction colour, as per APP6-(C).

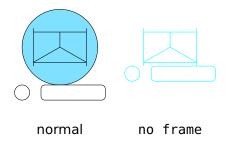


Figure 5: Example of the no frame key in use.

2.1.1.9 speed leader (Amplifier) This key draws a line from the centre of the symbol at a specified heading for a specified length. This is used to denote the speed (length) and direction (heading) of the symbol. This key takes two arguments, the first is the length and the second is the heading, as shown below:

speed leader={heading}{length}

When using this key along with the scale key, the scale key should be defined first. This is because the speed leader key immediately executes code that uses the scale key.

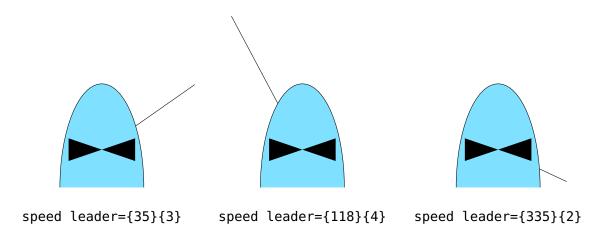


Figure 6: Example of the speed leader key in use.

2.1.1.10 offset, movement (Amplifier) This key draws a "leader line" down from the centre of the symbol, then another to a specified position *offset* from the centre of the symbol. The offset key should be used to denote precise location, and the movement key should be used to indicate direction of movement (in the case of the movement key, the line is tipped by an arrow). They should not be used simultaneously. This key takes two arguments, each enclosed in curly braces, the first is the length of the "leader line" extending below the symbol, then the second is a pair of TikZ coordinates (with no brackets) indicating the specified position *offset* from the centre of the symbol, as shown below:

offset={leader length}{offset}
movement={leader length}{offset}

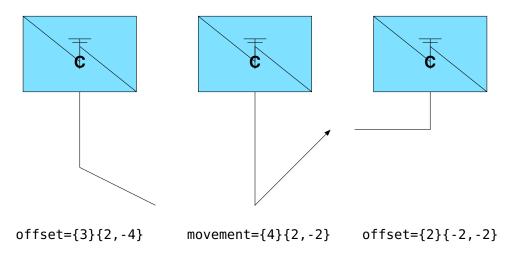


Figure 7: Example of the offset and movement key in use.

2.1.1.11 feint or dummy (Amplifier) This boolean switch key draws the *feint or dummy* amplifier on the symbol. See APP6-(C) for further information about its use.

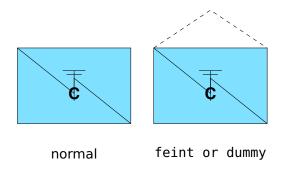
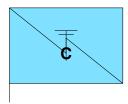


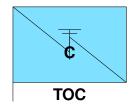
Figure 8: Example of the feint or dummy key in use.

2.1.1.12 headquarters (Amplifier) This key draws a line down from the south east corner of a friendly MilLand or MilInstallation frame, and then an optional text field below the frame. This is used to denote if the symbol is stationed at a headquarters or some other kind of military base. The key can be provided with no value, which will produce a blank headquaters amplifer, which is a line drawn downwards from the south-west of the symbol frame, or with a set of values that insert acronyms next to the line. Table 4 lists all the options available.

Value	Acronym
assault command post	ASLT
command group	CMD
forward command post	FWD
main command post	MAIN
rear command post	REAR
tactical operations centre	TOC
tactical command post	TAC

Table 4: Headquarters acronyms.





headquarters (no value)

headquarters=tactical operations centre

Figure 9: Example of the headquarters key in use.

2.1.2 Text Fields

Most MilSymb commands (apart from MilDebris and OwnShip) have a set of text amplifiers that go around the edge of the symbol. These are set by individually named keys specified in the **Text Fields** subheading of each command entry. Some symbols have multiple text fields in the same location, be default no spaces are inserted between these fields, so spaces must be entered manually as appropriate.

2.1.3 Full Frame Icons

In some commands (Milland, Millnstallation and MilActivity) some icons (as set by main) will take up the entire frame. These are referred to as "full frame" icons. Modifiers (as set by upper and lower) should not be used when a full frame icon has been selected.

2.1.4 Grouping

For **Milland** and **MilInstallation** symbols with the faction key set to friendly, there is the option to group several commands together to indicate several entities in one location. **MilSymb** provides two $\mbox{MT}_{E}X$ environments to achieve this, **landgroup** and **landheadquarters**. **landgroup** is designed to be used with normal **Milland** symbols, and **landheadquarters** is designed to be used with symbols that have a headquarters amplifier. Within the environments, each command should be the argument inside an \item{...} command (note that it is not the same as the \item that is used in bulleted and numbered lists in $\mbox{MT}_{E}X$, it has an argument in curly braces rather than just a command). Do not use the scale key within a **MilSymb** command when grouping them. Instead, use the scale key at the environment level. See this example:

\begin{landgroup}[scale=2]
\item{\MilLand[faction=friendly,
main=signal radio teletype centre,
echelon=section]}
\item{\MilLand[faction=friendly,
main=diving,
upper=video imagery,
echelon=brigade,
status=reduced]}
\item{\MilLand[faction=friendly,
main=sensor,
upper=large extension node,
lower=single channel]}
\end{landgroup}

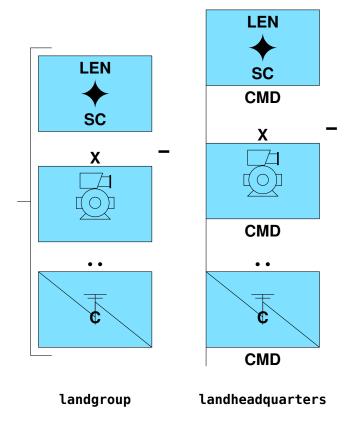


Figure 10: Example of landgroup and landheadquarters grouping.

2.2 Air Command (MilAir)

This command covers symbols for air assets and their activities. Refer to *Chapter 2, Section 2 and 3* in APP6-(C) for further information.

2.2.1 Icons and Modifiers

2.2.1.1 main

Value	Glyph	Examples					
air decoy	(443)	444		444	444		
airborne command post	(ĀĈP)	ACP	ACP	ACP	ACP		
airborne early warning	(AEW)	AEW	AEW	AEW	AEW		
anti submarine warfare	(ASW)	ASW	ASW	ASW	ASW		
anti surface warfare	(ASUW)	ASUW	ASUW	ASUW	ASUW		
attack	(A)	A	A	A	A		
bomber	(B)	В	В	В	В		
cargo	(<u>C</u>)	C	C	С	C		
civilian airship							
civilian balloon	()	Q	Q	Q	Q		
civilian fixed wing							

civilian rotary wing					
civilian	(CIV)	CIV	CIV	CIV	CIV
combat search and rescue	(CSAR)	CSAR	CSAR	CSAR	CSAR
communications	(COM)	СОМ	СОМ	СОМ	COM
electronic support measures	(ESM)	ESM	ESM	ESM	ESM
fighter	(F)	F	F	F	F
government	(GOV)	GOV	GOV	GOV	GOV
jammer	(J)	J	7	J	J
medic	(•	+	+	+
military airship					
military balloon	()	•	•	•	•
military fixed wing	()				
military rotary wing	()				

military	(MIL)	MIL	MIL	MIL	MIL
mine countermeasures	(MCM)	MCM	MCM	МСМ	MCM
passenger	(PX)	PX	PX	РХ	PX
patrol	(P)	P	P	Р	P
personnel recovery	(PR)	PR	PR	PR	PR
reconnaissance	(R)	R	R	R	R
search and rescue	(SAR)	SAR	SAR	SAR	SAR
special operations forces	(SOF)	SOF	SOF	SOF	SOF
suppression of enemy air defence	(SEAD)	SEAD	SEAD	SEAD	SEAD
tanker	(K)	K	K	К	K
trainer	(T)	T	Т	Т	T
ultra light		UL	UL	UL	UL
unmanned aerial vehicle	()				

utility	(U)	U	U	U	U
vertical short takeoff and landing	(V)	v	v	V	v
very important person	(VIP)	VIP	VIP	VIP	VIP

Table 5: Table for main values in the MilAir command.

2.2.1.2 upper

Value	Glyph	Examples				
airborne command post	()	ACP	ACP	ACP	ACP	
airborne early warning	()	AEW	AEW	AEW	AEW	
anti submarine warfare	ASW	ASW	ASW	ASW	ASW	
anti surface warfare	ASUW	ASUW	ASUW	ASUW	ASUW	
cargo	() \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	C	C	С	C	
combat search and rescue	CSAR \	CSAR	CSAR	CSAR	CSAR	
communications	()	СОМ	сом	СОМ	COM	
electronic support measures	ESM)	ESM	ESM	ESM	ESM	
escort	()) ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ;	E	E	E	E	
government flight	GOV	GOV	GOV	GOV	GOV	
intensive care	() () () () () () () () () ()	IC	ic	IC	IC	
jammer	()) () () () () () () () () (R	R	R	R	
jammer	F	R	R	R	R	

medical evacuation	F	+	•	+	•
mine countermeasures	()) () () () () () () () () (MCM	мсм	MCM	MCM
passenger plane	()) () () () () () () () () (РХ	РХ	РХ	РХ
patrol	()) () () () () () () () () (J	J	J	J
personnel recovery	PR ()	PR	PR	PR	PR
photographic	()) () () () () () () () () (РН	РН	РН	РН
reconnaissance	()) () () () () () () () () (P	P	P	P
search and rescue	SAR)	SAR	SAR	SAR	SAR
special operations forces	())	SOF	SOF	SOF	SOF
suppression of enemy air defenses	SEAD \	SEAD	SEAD	SEAD	SEAD
tanker	()) ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ;	K	K	К	K
trainer	()) () () () () () () () () (Т	Т	Т	T
ultra light	() 	UL	UL	UL	UL

utility	() () () () () () () () () ()	U	U	U	U
very important person	()	VIP	VIP	VIP	VIP

Table 6: Table for upper values in the ${\bf MilAir}$ command.

2.2.1.3 lower

Value	Glyph	Examples			
boom and drogue		B/D	B/D	B/D	B/D
boom only	F \ (В	В	В	В
close range	() CR	CR	CR	CR	CR
drogue only	()) () () () () () () () () (D	D	D	D
heavy	() ()	Н	Н	н	Н
light	F\ ()	L	L	L	Ĺ
long range	F\ () _LR'	LR	LR	LR	LR
medium range	() \ MR - /	MR	MR	MR	MR
medium	())	M	M	м	M
short range	SĀ	SR	SR	SR	SR

Table 7: Table for lower values in the MilAir command.

2.2.2 Amplifiers

2.2.2.1 Text Fields MilAir has 5 text field amplifiers, as shown in Figure 11. Table 9 gives the key and description of each field, along with the standard prefixes to use. This table is mostly identical to the one found in APP6-(C).

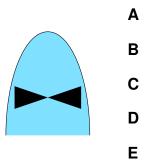


Figure 11: Location of ${\bf MilAir}$ text field amplifiers.

Location	Key	Description	Prefix*
Α	track number	System Track Number.	TN
В	call sign	Airframe Number or Mission Call Sign.	
С	position and movement	Course [degrees]/Speed [knots] or Bearing [degrees]/Distance [nautical miles] Height [feet/flight level].	C/S, B/D
D	nation	Nation's Name: A 3-letter code indicating the object's country of origin (STANAG 1059).	
Е	additional information	For friendly units: Sensor or Weapon load, endurance, etc. For other Units: Credibility of Information.	

^{*}when applicable.

Table 9: Description of MilAir text field amplifiers.

2.3 Missile Command (MilMissile)

This command is a special application of **MilAir** for missiles. *Instead of setting an icon using main, a predefined "missile" icon is used. Modifiers are then added to the left and right instead of above and below.* Refer to *Chapter 2, Section 4* in APP6-(C) for further information.

2.3.1 Modifiers

Instead of using upper and lower keys to define the modifiers, left and right keys are used to reflect the position of the modifier.

2.3.1.1 left

Value	Glyph	Examples				
air	(A)	A A	A A	A A	A	
anti ballistic	AB	AB	AB	АВ	AB	
ballistic	(B)	B	В	В	B	
cruise	(C)	C A	C A	c 🔍	C	
space	\$P	SP	SP	SP	SP	
sub surface	\$U	SU	SU	su	SU	
surface	(S)	s	S	s	S	

Table 10: Table for left values in the MilMissile command.

2.3.1.2 right

Value	Glyph	Examples				
air	/ - A / - A / - A / A / A	A	A	A	A	
launched	/	L	L	L	L	
missile	/ [M M M M M M M M M	M	M	M M	M	
space	/ SP /	SP	SP	∬ SP	SP	
sub surface	/ SU	SU	SU	SU	SU	
surface	/ Î S S S S S S S S S	∭ s	S	∫ s	s	

Table 11: Table for right values in the MilMissile command.

2.3.2 Amplifiers

2.3.2.1 Text Fields Text fields for **MilMissile** are identical to **MilAir**.

2.4 Land Command (MilLand)

This command covers symbols for land units, individuals, and organizations. Refer to Chapter 3, Section 2 in APP6-(C) for further information.

2.4.1 Icons and Modifiers

2.4.1.1 main

Value	Glyph		Examples				
above corps support	()						
administrative	(ĀŪM)	ADM	ADM	ADM	ADM		
air and naval gunfire liaison company			***************************************		***************************************		
air assault with organic lift	()						
air defence	()						
air traffic services		*		*			
ammunition	(
amphibious	ψ <u>ψ</u>	w		~~			
analysis electronic warfare	(EW)	EW	EW	EW	EW		
analysis	(- \						

anti tank anti armour	(F-1-1)				
armoured engineer					
armoured					
aviation composite fixed wing and rotary wing		*	*	*	*
aviation fixed wing	()				
aviation rotary wing					
band	(BAND)	BAND	BAND	BAND	BAND
broadcast transmitter antenna	F - \				
chemical biological radiological nuclear defence	((2))	**	~~	**	~
civil affairs	(CA)	СА	CA	CA	CA
civilian military cooperation	(<u></u>				
civilian police	()	\Box		\Box	~
combat service support	(CSS)	css	css	css	CSS

combat support		U	•	•	•
combat	(CBT)	СВТ	СВТ	СВТ	СВТ
combined arms					
corps support	F				
counter intelligence		CI	CI	CI	CI
criminal investigation division		CID	CID	CID	CID
direction finding electronic warfare	(E W)	EW	EW	EW	EW
direction finding					
diving		Q			
dog	$\langle \widehat{\mathbf{DOG}} \rangle$	DOG	DOG	DOG	DOG
drilling		•			T
electronic ordinance disposal	(EOD)	EOD	EOD	EOD	EOD
electronic ranging			8		8

electronic warfare	(EW)	EW	EW	EW	EW
engineer	· ()				
environmental protection					
field artillery observer			<u> </u>		
field artillery		•	•		
finance					
fire protection		•	•	•	•
geospatial support	$\langle \widehat{\mathbf{GEO}} \rangle$	GEO	GEO	GEO	GEO
government organization	$\langle \widehat{\overline{GO}} \rangle$	GO	GO	GO	GO
headquarters	()				
individual	(-P-)	٩	9	P	P
infantry					
information operations	$\langle \tilde{\mathbf{I}} \tilde{\mathbf{O}} \rangle$	Ю	IO	Ю	10

intercept electronic warfare	(EW)	EW	EW	EW	EW
intercept	()				
internal security force		ISF	ISF	ISF	ISF
interrogation		IPW	IPW	IPW	IPW
jamming electronic warfare	ÈW	EW	EW	ĒW	EW
jamming	()	******		****	
joint fire support	(JFS)	JFS	JFS	JFS	JFS
judge advocate general	(JĀĢ)	JAG	JAG	JAG	JAG
killing victim		4	•	9	
killing victims	(199)	799	999	799	999
labour	$\langle \overline{\Xi}_{-} \rangle$	₹	4	₹	4
laundry		٦	7	剂	***
liaison	$\langle \hat{\mathbf{LO}} \rangle$	LO	LO	LO	LO

main gun system	()				
maintenance	\(\bar{\bar{\cute{\cie\cute{\cute{\cute{\cute{\cute{\cute{\cute{\cute{\cute{\cute{\ci)— ()—t)— () (
material	(MAT)	MAT	MAT	MAT	MAT
medical treatment facility					
medical	F				
meteorological	(MET)	MET	MET	MET	MET
military intelligence	(MI)	MI	MI	МІ	MI
military police	(MP)	MP	MP	MP	MP
mine	(*)	*	*	*	*
missile	(
morale welfare and recreation	(MWE)	MWE	MWE	MWE	MWE
mortar	(- 1 -)	1	1	1	1
mortuary affairs	()			Ī	

motorized	()				
naval	(1 -)	\$	4	\$	‡
observer	()				
ordnance		8	8	8	8
organisation or group		999	999	799	999
personnel services	(PS)	PS	PS	PS	PS
petroleum oil and lubricants		Y	Y		Y
pipeline		-Œ-			
postal	()				
psychological operations broadcast	()))))))))))))))))))	*			
psychological operations					
public affairs	(PA)	PA	PA	РА	PA
quartermaster	(H)	н-О	HO	н	HO

radar		K		(V	(r)
radio relay		T	7	T	7
radio teletype centre		Ţ	Ţ	Ţ,	t c
radio	(7	7	7	
reconnaissance	(F)				
religious support	(REL)	REL	REL	REL	REL
replacement holding unit	(RHU)	RHU	RHU	RHU	RHU
sea air land	(SEAL)	SEAL	SEAL	SEAL	SEAL
search electronic warfare	$\langle \mathbf{E} \mathbf{W} \rangle$	EW	EW	EW	EW
search	(
security	(SEC)	SEC	SEC	SEC	SEC
self propelled field artillery					
sensor	(·)	+	+	+	•

shore patrol security police	(SP)	SP	SP	SP	SP
signal radio relay		7	4	\$	4
signal radio teletype centre		T.	T.	T T	Te .
signal radio	(-)	\$	\$	The state of the s	**
signal tactical satellite					
signal	()				6
sniper	()	7		7	
special forces		SF	SF	SF	SF
special operations forces	SOF	SOF	SOF	SOF	SOF
spy	(SPY)	SPY	SPY	SPY	SPY
supply	()				
surveillance	()				

survey		>	>		
sustainment		SUST	SUST	SUST	SUST
tactical mortar			1		1
tactical satellite		I			
topographic	()	<u>\</u>	4	\triangle	A
transportation		lacksquare			*
unmanned systems	()	~			
victim of an attempted crime	(= 0 - 1)	``	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	· · · · · ·	· · · · · ·
video imagery	()				
water purification	PURE	PURE	T	PURE	T
water	()				

Table 12: Table for main values in the MilLand command.

2.4.1.2 upper

Value	Glyph	Examples			
Mil medical role 1	()	1	1	1	1
Mil medical role 2	() 	2	2	2	2
Mil medical role 3	() ()	3	3	3	3
Mil medical role 4	() ()	4	4	4	4
air assault	()) () () () () () () () () (
area	ÁREA (AREA	AREA	AREA	AREA
assassination	()) () () () () () () () () (AS	AS	AS	AS
attack	())	A	A	A	A
biological	()	В	В	В	В
border	FBOR \	BOR	BOR	BOR	BOR
bridging	() ()	×		\square	
chemical	()	С	c	C	C

close protection	()	CLP	CLP	CLP	CLP
coerced or impressed recruit	()	С	c	С	C
combat	ÇĞBT_\	СВТ	СВТ	СВТ	СВТ
command and control	()	C2	C2	C2	C2
communications contingency package	()	CCP	CCP	ССР	ССР
construction	CONST	CONST	CONST	CONST	CONST
cross cultural communication	()	ccc	ccc	ccc	ccc
crowd and riot control	()	CRC	CRC	CRC	CRC
decontamination	()	D	D	D	D
detention	/ DET \	DET	DET	DET	DET
direct communications	,0 40 0,	000		0 0	0++0
displaced persons refugees and evacuees	/ DPRE \ (DPRE	DPRE	DPRE	DPRE
diving	()	Q	<u> </u>	Q	©

division	(XX	XX	xx	xx
dog	()	DOG	DOG	DOG	DOG
drilling	()	•	•		•
electro optical	()	EO	EO	ЕО	EO
enhanced	()	ENH	ENH	ENH	ENH
execution	()	EX	EX	EX	EX
explosive ordnance disposal	()	EOD	EOD	EOD	EOD
fire direction centre	FDC \	FDC	FDC	FDC	FDC
force	()	F	F	F	F
foreign fighters	()	FF	FF	FF	FF
forward	FWD \	FWD	FWD	FWD	FWD
gang member or gang	ÇĞANĞ \	GANG	GANG	GANG	GANG
government organisation	()	GO	GO	GO	GO

ground station module	GSM)	GSM	GSM	GSM	GSM
hijacking	()	Н	Н	Н	Н
kidnapping	()	К	K	К	K
landing support	()	LS	LS	LS	LS
large extension node	()	LEN	LEN	LEN	LEN
leader or leadership	()	LDR	LDR	LDR	LDR
maintenance	()	H	1	>-c	H
meteorological	MET \	MET	MET	MET	MET
mine countermeasure	/MCM \	мсм	MCM	мсм	MCM
missile	() () () () () () () () () ()			m	
mobile advisor and support	, ())	00		○→○	
mobile subscriber equipment	MSE	MSE	MSE	MSE	MSE
mobility support	()	MS	MS	MS	MS

movement control centre	/ MCC	MCC	MCC	MCC	MCC
multinational specialized unit	/MSU	MSU	MSU	MSU	MSU
multinational	()	MN	MN	MN	MN
multiple rocket launcher	()				
murder victims	()	MU	MU	MU	MU
naval	()	\$	\$	\$	t
node centre	()	NC	NC	NC	NC
non-governmental organization member or non-governmental organization	()	NGO	NGO	NGO	NGO
nuclear	()) () () () () () () () () (N	N	N	N
operations	OPS \	OPS	OPS	OPS	OPS
piracy	() ()	Pi	PI	PI	PI
radar	() ()	٣	e	e e	(e)
radiological	() () () () () () () () () ()	RAD	RAD	RAD	RAD

	1				
rape	()	RA	RA	RA	RA
religious or religious organisation	()	REL	REL	REL	REL
runway	(<i></i>		<i>—</i>	4
search and rescue	SAR \	SAR	SAR	SAR	SAR
security	SEC \	SEC	SEC	SEC	SEC
sensor control module	SCM)	SCM	SCM	SCM	SCM
sensor	()	•	•	•	
signals intelligence	F-T-\ ()	Ψ	+	7	7
single rocket launcher	()				
single shelter switch	(SSS)	SSS	SSS	SSS	SSS
smoke	() ()	S	s	S	S
sniper	F-1-1	T	T	T	T
sound ranging	/ SDR \ () \ \ /	SDR	SDR	SDR	SDR

special weapons and tactics	∠ ŚWÀT `\ (SWAT	SWAT	SWAT	SWAT
survey	()	*		*	
tactical exploitation	()	TE	TE	TE	TE
target acquisition	()	TA	TA	ТА	TA
targeted individual or organisation	()	TGT	тдт	тдт	TGT
terrorist or terrorist organisation	()	TER	TER	TER	TER
topographic	()	<u> </u>	<u>\</u>	٨	4
utility	()	U	U	U	U
video imagery	()	<u>□</u> 21		□ 21	
willing recruit	F-W-1	W	w	W	w

Table 13: Table for upper values in the ${\bf Milland}$ command.

2.4.1.3 lower

Value	Glyph	Examples					
airborne	() () () () () () () () () ()			\sim			
arctic	(\)						
battle damage repair	BDR	BDR	BDR	BDR	BDR		
bicycle equipped	(F)	0	0	0			
clearing	() CLR	CLR	CLR	CLR	CLR		
close range	() () () () () () () () () ()	CR	CR	CR	CR		
control	()	+	+	+	+		
decontamination	()) () () () () () () () () (D	D	D	D		
demolition	DEM.	DEM	DEM	DEM	DEM		
dental	() ()	D	D	D	D		
digital	/\ () DIG /	DIG	DIG	DIG	DIG		
enhanced location reporting system	() () () () () () () () () ()		1		•		

equipment	() ()	Е	E	E	E
heavy	F\ ()	н	H	Н	H
intensive care	() ()	IC	IC	IC	IC
intermodal	()) · · · · · · · · · · · · · · · · ·	⇔		\Leftrightarrow	
laboratory	() LAB	LAB	LAB	LAB	LAB
launcher	()) \ \(\)				
light	()	L	L	L	L
long range	() ()	LR	LR	LR	LR
medium range	() NB /	MR	MR	MR	MR
mountain	() () () () () () () () () ()				
multi channel	() MC /	МС	MC	МС	MC
optical	() () () () () () () () () ()	OPT	OPT	ОРТ	OPT
pack animal	F)				

patient evacuation coordination	PEC /	PEC	PEC	PEC	PEC
preventative maintenance	F — —)	PM	PM	РМ	PM
psychological	(P	P	P	ď
radio relay line of sight	()) () () () () () () () () (0	8	8	8
railroad	()) () () () () () () () () (<u> </u>	w w	ω ω	8 8
recovery maintenance	()	ж	1	>-c	7
recovery unmanned systems	()				
rescue coordination centre	RCC	RCC	RCC	RCC	RCC
riverine	()				
short range	() () () () () () () () () ()	SR	SR	SR	SR
single channel	()) () () () () () () () () (sc	sc	sc	sc
ski	(-7)	X	X	X	×
strategic	STR	STR	STR	STR	STR



Table 14: Table for lower values in the MilLand command.

2.4.2 Amplifiers

2.4.2.1 Echelon This amplifier denotes the "level of command" of the symbol (in the case of infantry this usually denotes the size of the unit). Table 15 lists all the options available.

Value	Symbol
team	Ø
squad	•
section	• •
platoon	• • •
company	
battalion	
regiment	
brigade	X
division	XX
corps	XXX
army	XXXX
army group	XXXXX
theatre	XXXXXX
command	+ +

Table 15: Echelon levels and corresponding symbols.

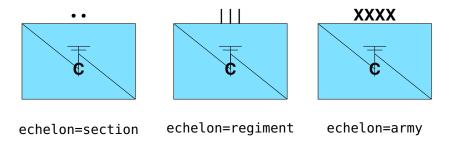


Figure 12: Example of the echelon key in use.

2.4.2.2 Task Force This amplifier denotes a temporary unit for a specific task or objective. If the echelon key is set, it will automatically size to enclose the echelon amplifier.

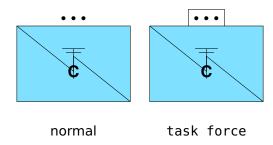


Figure 13: Example of the task force key in use.

2.4.2.3 Status This amplifier denotes the condition of the of the symbol. There are 3 options, reinforced indicates part of another unit is augmenting the capability of this unit, reduced means part of the unit has been detached to augment another unit, and reinforced and reduced means both situations have occurred. If this key is specified, the text field adjacent to it will be shifted right in order to accommodate the amplifier.

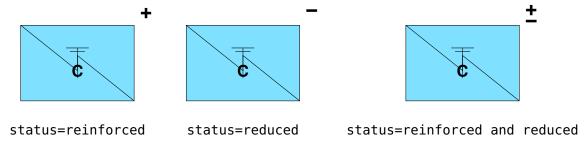


Figure 14: Example of the status key in use.

2.4.2.4 Text Fields Milland has 14 text field amplifiers, as shown in Figure 18. Some of these amplifiers are placed adjacent to each other, spaces are not automatically inserted between them. Table 16 gives the key and description of each field, along with the standard prefixes to use. This table is mostly identical to the one found in APP6-(C).

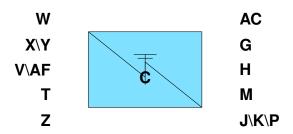


Figure 15: Location of Milland text field amplifiers.

Location	Key	Description
AC	country indicator	A three-letter code that indicates the country of origin of
		the unit (STANAG 1059). In stability activities, this field can be used for factions or groups.
G	staff comments	Free text. Can be used by staff for information required
Н	additional information	by commander. Free Text.
М	higher formation	Number or title of higher echelon command of unit being displayed.
J	evaluation rating	Degree of confidence that may be placed on the information represented by the symbol. It is shown as one letter and one number made up of Reliability of Source and Credibility of Information. (STANAG 2511). Reliability of Source:
		A. Completely reliable.
		B. Usually reliable.
		C. Fairly reliable.
		D. Not usually reliable.
		E. Unreliable.
		F. Reliability cannot be judged.
		Credibility of Information:
		1. Confirmed by other sources.
		2. Probably true.
		3. Possibly true.
		4. Doubtful.
		5. Improbable.
		6. Truth cannot be judged.
K	combat effectiveness	Effectiveness of unit or equipment displayed.
		1. Fully operational.
		2. Substantially operational.
		3. Marginally operational.
		4. Not operational.
P	identification	Identification modes and codes.
W	date-time group	An alphanumeric designator for displaying a date-time group (DDHHMMSSZMONYY) or "O/O" for on order. The date-time group is composed of a group of six numeric digits with a time zone suffix and the standardized three-letter abbreviation for the month followed by two digits. The first pair of digits represents the day; the second pair, the hour; the third pair, the minutes. The last two digits of the year are after the month. For automated systems, two digits may be added before the time zone suffix and after the minutes to designate seconds.
Х	altitude value	Altitude as displayed on the global positioning system (GPS).
Y	location	Latitude and longitude; grid coordinates.

AF	common identifier	Example: Paladin for the M109A6 howitzer or Leopard for the KPz-70 tank. (Use NATO code name for hostile common identifiers.)
Z	speed	Displays speed in nautical miles per hour or kilometres per hour.

Table 16: Description of MilLand text field amplifiers.

2.4.3 Supply Icons

An additional set of fullframe **MilLand** icons are used to denote classes of supply. **MilSymb** uses an additional supply key to construct these icons, which takes up to two values each enclosed in curly braces. *If only one value is used, then there must be a set of empty curly braces* ({}) after the first value. Each value is a supply class number, as listed in Table 17. The US uses different symbols and designations for their supply classes, their supply class numbers are prefixed with US (including the space). When one value is set, the symbol from the table will be used, and when two values are set, the roman numeral for the supply class is used, with an ampersand (&) inserted between the numerals. *This key should be used in place of the main key*.

Value	Roman Numeral	Glyph		Exam	ples	
all*	N/A	(ĀLĪ)	ALL	ALL	ALL	ALL
	I		NATO Supp	ly Classes		
1	I	(I)	1		1	
2	II		II		II	II
3	III	()	7	Ÿ	7	Y
4	IV	(IV)	IV	IV	IV	IV
5	V	(

	US Supply Classes						
US 1	ı	(
US 2	II	<u>H</u> _O	н	HO	H	HO	
US 3	III	(<u></u>	7	Ÿ	7	Y	
US 4	IV	()					
US 5	V	()					
US 6	VI	(- Q - \)	9	Q X	×-0	<u>\$</u>	
US 7	VII	(1) (1)					
US 8	VIII	()					
US 9	IX		*	*	*	*	
US 10	х	(CA)	CA	CA	CA	CA	

Table 17: Table of Supply Icons.

^{*}can only be used as a single value.

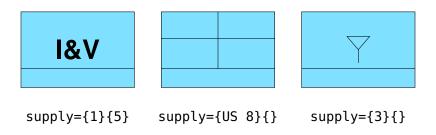


Figure 16: Example of Supply symbols.

2.4.4 Altitude Modifier

Milland defines a special lower modifier for altitude, which takes up to two values each enclosed in curly braces. *If only one value is used, then there must be a set of empty curly braces* ({}) after the first value. Each value is an altitude designation, high (HA), medium (MA) and low (LA), which inserts the acronym. Having two values will insert a slash (/) between them and removes the "A" suffix from the first acronym. This key should be used in place of the lower key.

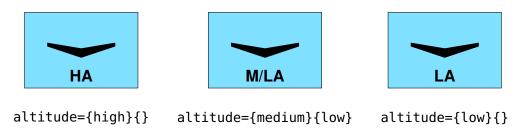


Figure 17: Example of the altitude key in use.

2.5 Equipment Command (MilEquipment)

This command covers symbols for land equipment. The are no upper and lower keys, instead a mobility key sets a modifier to be displayed below the frame (or when the no frame key is set, adjacent to the bottom of the icon). This command also accepts the no frame key. See Chapter 3, Section 3 in APP6-(C).

2.5.1 Icons and Modifiers

2.5.1.1 Main

Value	Glyph	Examples			
air defence gun	(i)				
air defence missile launcher					
antennae					
anti tank gun					
anti tank missile launcher					
anti tank rocket launcher					
antipersonnel land mine					
antitank land mine					
armoured fighting vehicle command and control	((()		 @	k@2	
armoured fighting vehicle			(K)		K

armoured medical personnel carrier					
armoured personnel carrier					
armoured protected recovery vehicle	()	>- C)—C	>	>-(
armoured protected vehicle					
automatic rifle					
bomb	(BOMB)	ВОМВ	ВОМВ	ВОМВ	ВОМВ
booby trap					
bridge mounted on utility vehicle					
bridge					
bus	(B)	В	B	B	B
chemical biological radiological nuclear equipment			~~	~	~
computer system	(\(\left(\) \)				
direct fire gun					

drill mounted on vehicle	((()))				
drill		V		V	T T
earthmover					
fixed bridge				\mathbb{H}	
flame thrower					
folding girder bridge				X	#
generator set	$\langle \mathbf{G} \rangle$	G	G	G	G
grenade launcher		(•		
heavy grenade launcher					
heavy machine gun					
heavy tank	<((i))				
hollow deck bridge	(\)			*	**
howitzer					

improvised explosive device	(IED)	IED	IED	IED	IED
land mine					
laser	()	W-#-		₩-₩ -	+
light grenade launcher		(<u></u>		
light machine gun	$\langle \widehat{\pm} \rangle$		<u></u>		<u></u>
light tank	(
machine gun					
medical evacuation armoured protected vehicle					
medical evacuation	((<u>+</u>)		•		
medical vehicle	(
medium grenade launcher			<u></u>		\$
medium machine gun					
medium tank	(((i)))				

mine clearing equipment	()				
mine clearing vehicle					
mine laying equipment	$\langle \hat{\mathbf{x}} \rangle$	*	*	*	*
mine laying vehicle	(I	*	*	*	*
missile launcher	((()))				
mobile emergency physician	()				
mortar					
multifunctional earthmover	(MF)	MF	MF	MF	MF
multiple rocket launcher					
non lethal grenade launcher		•		The state of the	
non lethal weapon					
petroleum oil and lubricants vehicle		Y	Y	P	Y
psychological operations equipment	()			4	

radar		(r)	(e)	C	r
recoilless gun	()				
rifle					
semi automatic rifle					4
semi trailer truck				T	
sensor emplaced	$\langle \widehat{\clubsuit} \rangle$	***	*	*	*
sensor		•	•	+	•
single rocket launcher					
single shot rifle			4		4
surface to surface missile launcher					
tank recovery vehicle		>)—C	—	
tank	(
taser	$\langle \hat{\mathbf{z}} \rangle$	Ž	Ž	7	Ž

train locomotive	(())				
utility vehicle	(())				
water cannon	$\langle \widetilde{\psi} \rangle$	W	W	W	W
water vehicle	(H	

Table 18: Table for main values in the ${\bf MilEquipment}$ command.

2.5.1.2 Mobility

Value	Glyph		Exan	nples	
amphibious	() WW				\$
barge	()				
over snow	()				
pack animal	()				
railroad		w w	w w	<u> </u>	888
sled	()				
towed	() ()				
tracked	()				
wheeled and tracked	()				
wheeled cross country	000	000		000	
wheeled limited mobility	0 0				

wheeled semi trailer

Table 19: Table for mobility values in the **MilEquipment** command.

2.5.2 Amplifiers

2.5.2.1 Text Fields MilEquipment has 16 text field amplifiers, as shown in Figure 18. Some of these amplifiers are placed adjacent to each other, spaces are not automatically inserted between them. Table 20 gives the key and description of each field, along with the standard prefixes to use. This table is mostly identical to the one found in APP6-(C).

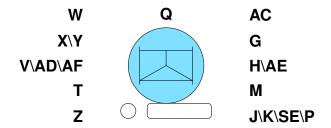


Figure 18: Location of MilEquipment text field amplifiers.

Location	Key	Description
Q	quantity	Identifies the number of items present.
AC	country indicator	A three-letter code that indicates the country of origin of the unit (STANAG 1059). In stability activities, this field can be used for factions or groups.
G	staff comments	Free text. Can be used by staff for information required by commander.
Н	additional information	Free Text.
М	higher formation	Number or title of higher echelon command of unit being displayed.

J	evaluation rating	Degree of confidence that may be placed on the information represented by the symbol. It is shown as one letter and one number made up of Reliability of Source and Credibility of Information. (STANAG 2511). Reliability of Source:
		A. Completely reliable.
		B. Usually reliable.
		C. Fairly reliable.
		D. Not usually reliable.
		E. Unreliable.
		F. Reliability cannot be judged.
		Credibility of Information:
		Confirmed by other sources.
		2. Probably true.
		3. Possibly true.
		4. Doubtful.
		5. Improbable.
		6. Truth cannot be judged.
K	combat effectiveness	Effectiveness of unit or equipment displayed.
		1. Fully operational.
		2. Substantially operational.
		3. Marginally operational.
		4. Not operational.
SE	signature equipment	Identifies a detectable electronic signature "!" for hostile equipment.
Р	identification	Identification modes and codes.
Т	unique designation	An alphanumeric designator that uniquely identifies a particular model of equipment (number).
V	type of equipment	Identifies unique designation (such as AH-64 for attack
W	date-time group	helicopter). An alphanumeric designator for displaying a date-time
	asso simo group	group (DDHHMMSSZMONYY) or "O/O" for on order. The date-time group is composed of a group of six numeric digits with a time zone suffix and the standardized three-letter abbreviation for the month followed by two digits. The first pair of digits represents the day; the second pair, the hour; the third pair, the minutes. The last two digits of the year are after the month. For automated systems, two digits may be added before the time zone suffix and after the minutes to designate seconds.
Х	altitude value	Altitude as displayed on the global positioning system (GPS).
Y	location	Latitude and longitude; grid coordinates.
AF	common identifier	Example: Paladin for the M109A6 howitzer or Leopard for the KPz-70 tank. (Use NATO code name for hostile
		common identifiers.)

Z	speed	Displays speed in nautical miles per hour or kilometres
		per hour.
AD	platform type	Electronic intelligence notation (ELNOT) or communications intelligence notation (CENOT).
AE	equipment teardown time	Equipment teardown time in minutes.

Table 20: Description of **MilLand** text field amplifiers.

2.6 Installation Command (MilInstallation)

This command covers symbols for land installations, sites that incorporate permanent, semi-permanent, and temporary structures. *The lower key is not used as there are no lower modifiers.* See *Chapter 3, Section 4* in APP6-(C).

2.6.1 Icons and Modifiers

2.6.1.1 Main

Value	Glyph	Examples				
ammunition cache	(
black list location	(BLK)	BLK	BLK	BLK	BLK	
broadcast transmitter antenna	F-V-1	T		Ţ		
chemical biological radiological nuclear		**	~	~	~	
civilian telecommunications		A	A	A	A	
electric power	(9	9	(1)	9	
food distribution	())					
grey list location	(GRAY)	GRAY	GRAY	GRAY	GRAY	
mass grave site						
medical treatment facility						

medical	F				
mine		×	×	×	×
naval	(1)	‡	\$	ů	‡
nuclear	()) () () () () () () () () (*	*	4	*
printed media	(-8 -)	8	8	8	8
safe house	(SAFE)	SAFE	SAFE	SAFE	SAFE
transportation	())	\otimes	*		*
transportation	(D)	\otimes	*		
water treatment	PURE	PURE	PURE	T	Pure
water	(- T -)		1		
white list location	(WHT)	WHT	WHT	WHT	WHT

Table 21: Table for main values in the MilInstallation command.

2.6.1.2 Upper

Value	Glyph	Examples			
biological	() () () () () () () () () ()	В	В	В	B
chemical	() ()	С	c	С	C
coal	() ()	со	co	СО	CO
geothermal	() ()	GT	GT	GT	GT
hydroelectric	() ()	нү	ну	НУ	н
natural gas	() () () () () () () () () ()	NG	NG	NG	NG
nuclear energy	F	*	*	*	*
nuclear	F-N-1	N	N	N	N N
petroleum	F1	Y	Y	Y	Y
radio	()	R	R	R	R
railroad	, \oldow	<u> </u>	88	<u> </u>	888
telephone	F 1	Т	T	Т	T

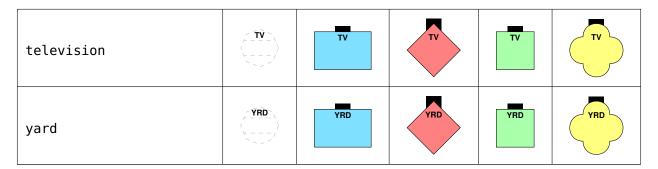


Table 22: Table for upper values in the **MilInstallation** command.

2.6.2 Amplifiers

2.6.2.1 Text Fields MilInstallation has 12 text field amplifiers, as shown in Figure 19. *Some of these amplifiers are placed adjacent to each other, spaces are not automatically inserted between them.* Table 23 gives the key and description of each field, along with the standard prefixes to use. This table is mostly identical to the one found in APP6-(C).

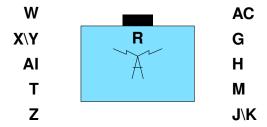


Figure 19: Location of **MilInstallation** text field amplifiers.

Location	Key	Description
AC	country indicator	A three-letter code that indicates the country of origin of the unit (STANAG 1059). In stability activities, this field can be used for factions or groups.
G	staff comments	Free text. Can be used by staff for information required by commander.
Н	additional information	Free Text.
М	higher formation	Number or title of higher echelon command of unit being displayed.

J	evaluation rating	Degree of confidence that may be placed on the information represented by the symbol. It is shown as one letter and one number made up of Reliability of Source and Credibility of Information. (STANAG 2511). Reliability of Source:				
		A. Completely reliable.				
		B. Usually reliable.				
		C. Fairly reliable.				
		D. Not usually reliable.				
		E. Unreliable.				
		F. Reliability cannot be judged.				
		Credibility of Information:				
		Confirmed by other sources.				
		2. Probably true.				
		3. Possibly true.				
		4. Doubtful.				
		5. Improbable.				
		6. Truth cannot be judged.				
K	capacity of installation	Capacity of installation displayed.				
Т	unique designation	An alphanumeric designator that uniquely identifies a particular installation (name).				
W	date-time group	An alphanumeric designator for displaying a date-time group (DDHHMMSSZMONYY) or "O/O" for on order. The date-time group is composed of a group of six numeric digits with a time zone suffix and the standardized three-letter abbreviation for the month followed by two digits. The first pair of digits represents the day; the second pair, the hour; the third pair, the minutes. The last two digits of the year are after the month. For automated systems, two digits may be added before the time zone suffix and after the minutes to designate seconds.				
X	altitude value	Height in feet of equipment or structure on the				
Y	location	ground. Latitude and longitude; grid coordinates.				
Z	speed	Displays speed in nautical miles per hour or kilometres per hour.				
Al	installation composition	Indicates the component type of the installation:				
		Development.				
		Research.				
		• Production.				
		• Service.				
		• Storage.				
		Utility.				
		- Gameyi				



2.7 Sea Surface Command (MilSeaSurface)

This command covers symbols for units, equipment, and objects of maritime surface operations. See *Chapter 4, Section 1* in APP6-(C).

2.7.1 Icons and Modifiers

2.7.1.1 Main

Value	Glyph	Examples				
ammunition ship	(AE)	AE	AE	AE	AE	
amphibious assault ship	(LHA)	LHA	LHA	LHA	LHA	
amphibious assault		LA	LA	LA	LA	
amphibious assualt ship helicopter	(LPH)	LPH	LPH	LPH	LPH	
amphibious command ship	(LCC)	LCC	LCC	LCC	LCC	
amphibious transport	(LPD)	LPD	LPD	LPD	LPD	
amphibious warfare ship		•	•	•	•	
auxiliary flag ship	(AGF)	AGF	AGF	AGF	AGF	
auxiliary ship	$\langle \mathbf{AA} \rangle$	AA	AA	AA	AA	
barge	(YB)	YB	YB7	YB	YB	
battleship	(BB)	ВВ	ВВ	ВВ	ВВ	

cargo	(\(\bar{\bar{\bar{\bar{\bar{\bar{\bar{	A	A		(A)
carrier	(\)	•	•	•	•
civilian boat	((2))	7	7	7_	
civilian jetski					
civilian rigid hull inflatable boat		(7 _{RB})	₹ <mark>/Z</mark>	₹ RB	(RB)
civilian speedboat	(\frac{7}{SP})	(ZSP)	\(\frac{\gamma}{\mathbf{SP}}\)	SP	(SP)
civilian unmanned surface water vehicle					
civilian	(CIV)	CIV	CIV	CIV	CIV
combat support ship	(AOE)	AOE	AOE	AOE	AOE
combatant		X	×	\sim	X
container ship	(C)	C	₹	C	(C)
convoy	()				
corvette	(FS)	FS	FS	FS	FS

cruiser guided missile	$\langle \widehat{\mathbf{CG}} \rangle$	CG	CG	CG	CG
destroyer		DD	DD	DD	DD
dredge					D
drifter		(DF)		(DF)	CEF CEF
ferry	(F)	F	F	F	F
fishing vessel					(L)
frigate	(FF)	FF	FF	FF	FF
harbour tug	$\langle \mathbf{\hat{YT}} \rangle$	YT	УТ	YT	YT
hazardous material transport ship		HZ	HZ	HZ	HZ
heavy lift	$\langle \widehat{\mathbf{H}} \rangle$	H	H	H	H
hospital ship	$\langle \mathbf{AH} \rangle$	AH	АН	АН	АН
hovercraft			J		
intelligence collector	(AGI)	AGI	AGI	AGI	AGI

junk					
landing craft		LC	LC	LC	LC
landing ship	(LS)	LS	LS	LS	LS
lash carrier			(L)		L
launch	(YFT)	YFT	YFT	YFT	YFT
law enforcement vessel					
littoral combatant ship	(LCS)	LCS	LCS	LCS	LCS
military jetski				4	
military rigid hull inflatable boat	(RB)	(RB)	TRBY	RB	RBY
military speedboat				(
military unmanned surface water vehicle					
military	(MIL)	MIL	MIL	MIL	MIL
mine countermeasure support ship	(MCS)	MCS	MCS	MCS	MCS

mine countermeasures	(MCM)	MCM	MCM	МСМ	MCM
mine warfare vessel	(*)	*	*	*	*
minehunter	$\langle \mathbf{MH} \rangle$	MH	MH	МН	MH
minelayer		ML	ML	ML	ML
minesweeper drone	(MSD)	MSD	MSD	MSD	MSD
minesweeper	(MS)	MS	MS	MS	MS
multi purpose amphibious assualt ship	(LHD)	LHD	LHD	LHD	LHD
naval cargo ship	$\langle \hat{\mathbf{AK}} \rangle$	AK	AK	AK	AK
navy task element		(TE)	(TE)	(TE)	(TE)
navy task force		(TF)	(TF)	TF	(TF)
navy task group		(TG)	(TG)	ÍTG	ÍTGÌ
navy task organisation unit					
navy task unit		(TU)	(TU)	ÍTUÌ	(TU)

non combatant					
non self propelled barge	(YB)	YВ	УВ	ΥВ	YВ
ocean going tug	$\langle \mathbf{AT} \rangle$	AT	AT	AT	AT
ocean research ship	(AGO)	AGO	AGO	AGO	AGO
oiler	(AOR)	AOR	AOR	AOR	AOR
passenger ship		P	P	P	P
patrol craft	(PC)	PC	PC	PC	PC
patrol ship	$\langle \mathbf{PG} \rangle$	PG	PG	PG	PG
patrol		•	•	•	•
repair ship	$\langle \mathbf{AR} \rangle$	AR	AR	AR	AR
roll on roll off	(E)	E	E	E	E
sailing boat					4
sea surface decoy	(444)	•••	111	444	•••

self propelled barge	(YS)	YS	YS	YS	YS
service craft	(YY)	YY	YY	YY	YY
ship	(())				
stores ship	(AF)	AF	AF	AF	AF
submarine tender	(AS)	AS	AS	AS	AS
surface combatant		*	*	‡	#
survey ship	(AGS)	AGS	AGS	AGS	AGS
tanker		(O)	O 7	O	0
tow	(TW)	TW	TW	TW	WITH THE PROPERTY OF THE PROPE
trawler		(TE/		TH	(TR)
tug	(T)	T	√ T ⟩	T	T

Table 24: Table for main values in the MilSeaSurface command.

2.7.1.2 Upper

Value	Glyph	Examples			
anti air warfare	/ÁAW \	AAW	AAW	AAW	AAW
anti submarine warfare	/ASW \	ASW	ASW	ASW	ASW
ballistic missile	()	В	B	В	В
drone equipped				~	
electronic warfare	/ ĒW \ ()	EW	EW	EW	EW
escort	()	E	E	E	E
guided missile	()	G	G	G	G
helicopter equipped	()	H	Н	Н	H
intelligence surveillance reconnaissance	/ ISR \ ()	ISR	ISR	ISR	ISR
medical	/ ME \	ME	ME	ME	ME
mine counter measures	/MCM \	MCM	MCM	МСМ	MCM
mine warfare	/ MW \ ()	MW	MW	MW	MW

missile defence	()	MD	MD	MD	MD
other guided missile	/ M \	M	M	M	M
remote multi mission vehicle	FMV	RMV	RMV	RMV	RMV
special operations force	SOF	SOF	SOF	SOF	SOF
surface warfare	SUW (SUW	suw	SUW	suw
torpedo	()	T	T	Т	T

Table 25: Table for upper values in the ${\bf MilSeaSurface}$ command.

2.7.1.3 Lower

Value	Glyph	Examples			
air cushioned alternate	() AG /	AC	AC	AC	AC
air cushioned	() ()	J	J	J	J
autonomous control	() AUT	AUT	AUT	AUT	AUT
dock	() ()	D	D	D	D
expendable	EXP	EXP	ЕХР	ЕХР	ЕХР
fast	() ()	F	F	F	F
heavy	H /	Н	H	Н	H
hydrofoil	() ()	K	K	К	K
light	()	L	L	L	L
logistics	() Log	Log	Log	LOG	LOG
medium	() ()	M	M	M	M
nuclear powered	() ()	N	N	N	N

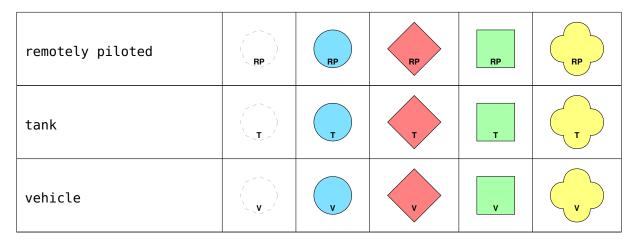


Table 26: Table for lower values in the MilSeaSurface command.

2.7.2 Amplifiers

2.7.2.1 Text Fields MilSeaSurface has 6 text field amplifiers, as shown in Figure 20. *Some of these amplifiers are placed adjacent to each other, spaces are not automatically inserted between them.* Table 28 gives the key and description of each field, along with the standard prefixes to use. This table is mostly identical to the one found in APP6-(C).

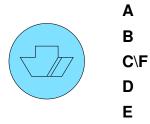


Figure 20: Location of MilSeaSurface text field amplifiers.

Location	Key	Description	Prefix*
Α	track number	System Track Number.	TN
В	name	Ships Name, Hull Number or Task Organization Designator (military only), Mission / International call sign.	
С	position and movement	Course [degrees]/Speed [knots] or Bearing [degrees]/Distance [nautical miles].	C/S, B/D
D	identification	Country of origin (STANAG 1059 - 3-letter code) or Organization (e.g. UN, NATO, EU), Any other information (e.g. IFF / AIS).	
E	additional information	For friendly units: Sensor or Weapon load, endurance, etc. For other Units: Credibility of Information.	
F	date-time group	An alphanumeric designator for displaying a date-time group (DDHHMMSSZMONYY) or "O/O" for on order. The date-time group is composed of a group of six numeric digits with a time zone suffix and the standardized three-letter abbreviation for the month followed by two digits. The first pair of digits represents the day; the second pair, the hour; the third pair, the minutes. The last two digits of the year are after the month. For automated systems, two digits may be added before the time zone suffix and after the minutes to designate seconds.	

^{*}when applicable.

Table 28: Description of MilSeaSurface text field amplifiers.

2.8 Own Ship Command (OwnShip)

This command places a marker indicating the position of the vessel the user is on, if they are at sea. No keys are available other than scale. See *Chapter 4, Section 1, Table 4-7* in APP6-(C).



Figure 21: **OwnShip** command symbol.

2.9 Sea Subsurface Command (MilSeaSubsurface)

This command covers symbols for units, equipment, and objects of maritime sub surface operations. See *Chapter 4, Section 2* in APP6-(C).

2.9.1 Icons and Modifiers

2.9.1.1 Main

Value	Glyph	Examples			
autonomous underwater vehicle	()				
bottomed sea mine decoy		**	**	***	***************************************
bottomed submarine	(\)				
civilian autonomous underwatervehicle					
civilian diver				Q	Q
civilian seabed installation	()				(5)
civilian submersible					
civilian		CIV	CIV	CIV	CIV
improvised explosive device	(IED)	IED	IED	IED	IED
military diver		•		•	•
military seabed installation	()			L	

military	(MIL)	MIL	MIL	MIL	MIL
moored sea mine decoy		**	*	盐	***
non submarine	(NON SUB.	NON SUB	NON SUB	NON SUB	NON SUB
other submersible					
sea mine decoy		***	***	144 444	***
snorkelling submarine					
submarine	()))))))))))))))))))				
surfaced submarine					
torpedo	()) () () () () () () () () (
underwater decoy	(111)	444	444	444	444
underwater weapon	(WPN)	WPN	WPN	WPN	WPN
unexploded ordnance		UXO /	ÚXO	UXO	UXO

Table 29: Table for main values in the MilSeaSubsurface command.

2.9.1.2 Upper

Value	Glyph		Exa	mples	
anti submarine warfare	ASW ()	ASW	ASW	ASW	ASW
attack	()	A	A	A	•
auxiliary	ÁÚX \	AUX	AUX	AUX	AUX
ballistic missile	()	В	В	В	B B
certain submarine	()) () () () () () () () () (СТ	СТ	СТ	СТ
command and control	()) () () () () () () () () (C2	C2	C2	C2
guided missile	()	G	G	G	G
intelligence surveillance reconnaissance	()	ISR	ISR	ISR	ISR
mine countermeasures	()) () () () () () () () () (мсм	мсм	мсм	MCM
mine warfare	<u>()</u>	MW	MW	MW	MW
other guided missile	() () () () () () () () () ()	M	M	M	M
possible submarine high 3	()) () () () () () () () () (P3	P3	P3	P3
possible submarine high 4	() 	P4	P4	P4	P4

possible submarine low 1	()	P1	P1	P1	P1
possible submarine low 2	()	P2	P2	P2	P2
probable submarine	()	РВ	РВ	РВ	PB
special operations force	SOF \	SOF	SOF	SOF	SOF
surface warfare	SUW:	SUW	SUW	suw	SUW

Table 30: Table for upper values in the MilSeaSubsurface command.

2.9.1.3 Lower

Value	Glyph		Exa	mples	
air independent propulsion	() \ \ \	Al	AI	Al	AI
autonomous control	F \ () ĀŪT-/	AUT	AUT	AUT	AUT
diesel propulsion	F \ (D	D	D	D
diesel type 1	F \ (D1	D1	D1	D1
diesel type 2	F \ (D2	D2	D2	D2
diesel type 3	F \ () D3 - /	D3	D3	D3	D3
expendable	F \ () \(\bar{\bar{\bar{\bar{\bar{\bar{\bar{	ЕХР	ЕХР	ЕХР	ЕХР
nuclear propulsion	F \ (N	N	N	N
nuclear type 1	F \ ()	N1	N1	N1	N1
nuclear type 2	F \ (N2	N2	N2	N2
nuclear type 3	() ()	N3	N3	N3	N3
nuclear type 4	F \ (N4	N4	N4	N4
nuclear type 5	, N5	N5	N5	N5	N5

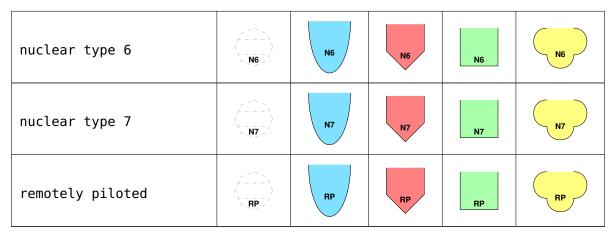


Table 31: Table for lower values in the MilSeaSubsurface command.

2.9.2 Amplifiers

2.9.2.1 Text Fields MilSeaSuburface has 6 text field amplifiers, as shown in Figure 22. *Some of these amplifiers are placed adjacent to each other, spaces are not automatically inserted between them.* Table 33 gives the key and description of each field, along with the standard prefixes to use. This table is mostly identical to the one found in APP6-(C).

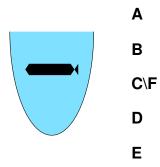


Figure 22: Location of MilSeaSubsurface text field amplifiers.

Location	Key	Description	Prefix*
Α	track number	System Track Number.	TN
В	name	Ships Name, Hull Number or Task Organization Designator (military only), Mission / International call sign.	
С	position and movement	Course [degrees]/Speed [knots] or Bearing [degrees]/Distance [nautical miles] Height [feet/metres].	C/S, B/D
D	identification	Country of origin (STANAG 1059 - 3-letter code) or Organization (e.g. UN, NATO, EU), Any other information (e.g. IFF / AIS).	
E	additional information	For friendly units: Sensor or Weapon load, endurance, etc. For other Units: Credibility of Information. For submarine contacts: Classification:	
		• NONSUB	
		POSSUB LOW 1 or 2	
		• POSSUB HIGH 3 or 4	
		• PROBSUB	
		• CERTSUB	
F	date-time group	An alphanumeric designator for displaying a date-time group (DDHHMMSSZMONYY) or "O/O" for on order. The date-time group is composed of a group of six numeric digits with a time zone suffix and the standardized three-letter abbreviation for the month followed by two digits. The first pair of digits represents the day; the second pair, the hour; the third pair, the minutes. The last two digits of the year are after the month. For automated systems, two digits may be added before the time zone suffix and after the minutes to designate seconds.	

^{*}when applicable.

Table 33: Description of MilSeaSubsurface text field amplifiers.

2.10 Sea Mine Command (MilMine)

This command is used to construct sea mine symbols. Instead of using the main key, this command uses the key mine to define the mine type, and the boolean switch neutralised to display the neutralised variant, as shown in Table 34. No modifiers are used. This command also accepts the no frame key. See *Chapter 4*, *Section 2*, *Table 4-17* in APP6-(C).

		Glyph	Examples			
Value	Normal	neutralised				
free			***************************************		*	~
bottomed						T
moored		(<u>(</u>))	***	***	Y	Y
floating						
in other position		(())	*	*	*	*
rising		(())	Y	Y	*	Y

Table 34: Table of **MilMine** icons.

2.10.1 Amplifiers

2.10.1.1 Text Fields Text fields for **MilMine** are identical to **MilSeaSubsurface**.

2.11 Space Command (MilSpace)

This command covers symbols for space assets, related activities and other relevant objects (debris) within earth orbit. See *Chapter 5*, *Section 1 and 2* in APP6-(C).

2.11.1 Icons and Modifiers

2.11.1.1 Main

Value	Glyph	Examples				
anti satellite weapon	F - F - V	-+-	-		-	
civilian astronomical satellite						
civilian bio satellite						
civilian capsule	()					
civilian communications satellite	()					
civilian earth observation satellite	(- O -)					
civilian miniaturised satellite	(> - V -) (>) ()	>====<	>====< ^	>===< ^	>= ×	
civilian navigational satellite		A	A C		X.H.	
civilian orbiter shuttle		Δ	Δ	Д	4	
civilian satellite	()				- HA-	
civilian space station	F)					

civilian tether satellite	()				
civilian weather satellite	(XX)	WX	wx	WX	wx.
military astronomical satellite	()	-+-	-+-	-+-	-+-
military bio satellite	(
military capsule					
military communications satellite	()				
military earth observation satellite	(/				
military miniaturised satellite	(>===<) (>====<)	>= \(\)	>= *	>= `	>= <u>\</u>
military navigational satellite	(-		**************************************	<u> </u>	A
military orbiter shuttle		A	A	A	A
military satellite	(=)				
military space station		Ф	ф	ф	ф
military tether satellite	())				

military weather satellite	(WX)	wx	wx	wx	WX
planet lander	(PL)	PL	PL	PL	PL
reconnaissance satellite	(<u>M</u>)	-			
reentry vehicle	(RV)	RV	RV	RV	RV
satellite	(SAT)	SAT	SAT	SAT	SAT
space vehicle	(SV)	sv	sv	sv	sv

Table 35: Table for main values in the **MilSpace** command.

2.11.1.2 Upper

Value	Glyph	Examples			
geostationary orbit	()	GO	GO	GO	GO
geosynchronous orbit	GSO \	GSO	GSO	GSO	GSO
high earth orbit	# EO	HEO	HEO	HEO	HEO
low earth orbit	()	LEO	LEO	LEO	LEO
medium earth orbit	MEO (MEO	MEO	MEO	MEO
molinya orbit	<u>/ MO </u>	МО	MO	МО	MO

Table 36: Table for upper values in the MilSpace command.

2.11.1.3 Lower

Value	Glyph	Examples				
infra red	() () () () () () () () () ()	IR	IR	IR	IR	
optical	()) () () () () () () () () (0	0	o	o	
radar	(R	R	R	R	
signals intelligence	()) () () () () () () () () (SI	SI	SI	SI	

Table 37: Table for lower values in the MilSpace command.

2.11.2 Amplifiers

2.11.2.1 Text Fields MilSpace has 5 text field amplifiers, as shown in Figure 23. Some of these amplifiers are placed adjacent to each other, spaces are not automatically inserted between them. Table 39 gives the key and description of each field, along with the standard prefixes to use. This table is mostly identical to the one found in APP6-(C).

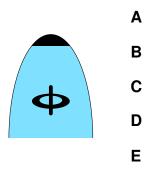


Figure 23: Location of **MilSpace** text field amplifiers.

Location	Key	Description	Prefix*
Α	track number	Space System Track Number.	SSTN
В	name	Space System Name or Mission call sign.	
С	position and movement	Georef Position [degrees]/Inclination] or Trajectory, Height [feet/orbit].	
D	nation	Nation's Name: A 3-letter code indicating the object's country of origin (STANAG 1059).	
E	additional information	For friendly units: Sensor or Weapon load, specific orbit, footprint etc. For other Units: Credibility of Information.	

^{*}when applicable.

Table 39: Description of **MilSpace** text field amplifiers.

2.12 Space Debris Command (MilDebris)

This command is used to construct symbols that represent space debris. No shared keys are used other than scale. This command uses the key size to define the debris size, and the boolean switch man made to display the variant for artificial debris, as shown in Table 40. See *Chapter 5*, *Section 3*, *Table 5-7* in APP6-(C).

	Glyph					
Value	Normal	man made				
small						
medium	0	•				
large						

Table 40: Table of **MilDebris** symbols.

2.13 Activity Command (MilActivity)

This command covers symbols that provide the capability to depict stability activities and civil support activities across the continuum of operations. *The lower key is not used as there are no lower modifiers.* See *Chapter 6* in APP6-(C).

2.13.1 Icons and Modifiers

2.13.1.1 Main

Value	Glyph	Examples			
arrest	() \ () \	(4)	(9)	9	(9)
attempted criminal activity	(12)	`-9	₹ ¹ .	`7`.	
automobile	()				
demonstration	MASS	MASS	MASS	MASS	MASS
drive by shooting	(•	•		
drug related activities	(DRUG)	DRUG	DRUG	DRUG	DRUG
explosion	W. W.	W.	Ewis .	Z.W.Z.	My M
extortion 1	(\$)	\$	\$	\$	\$
extortion 2	(£)	£	£	£	3
extortion 3	(€)	€	€	€	€

extortion 4	(¥)	¥	¥	¥	¥
fire	(FIRE)	FIRE	FIRE	FIRE	FIRE
graffiti	(-S-)	\	*	*	*
improvised explosive device explosion	ZIED Z	ZIEDZ W	NA SIED	NA SEDA	M SEDY
individual	(-1-)	9	9	9	P
killing		9		9	
patrolling	(←\ [_] P	P P	← <u></u>	P
pleasure craft					
poisoning		Q.		2	
psychological operations					
radio and television psychological operations					

riot	(RIOT)	RIOT	RIOT	RIOT	RIOT
searching	(\land \)	\sim		\sim	

Table 41: Table for main values in the **MilActivity** command.

2.13.1.2 Upper

Value	Glyph	Examples			
assassination	()	AS	AS	AS	AS
execution	() ()	EX	EX	EX	EX
hijack	()	Н	H	Н	H
house to house	()	Û			
kidnapping	F-K-\ ()	К	₹	К	K
murder	() ()	MU	MU	MU	MU
piracy	()	Pi	PI	Pl	PI
rape	() ()	RA	RA	RA	RA
written	() ()	W	w w	W	w

Table 42: Table for upper values in the MilActivity command.

2.13.2 Amplifiers

2.13.2.1 Text Fields MilActivity has 6 text field amplifiers, as shown in Figure 24. *Some of these amplifiers are placed adjacent to each other, spaces are not automatically inserted between them.* Table 43 gives the key and description of each field, along with the standard prefixes to use. This table is mostly identical to the one found in APP6-(C).

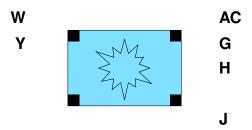


Figure 24: Location of **MilActivity** text field amplifiers.

Location	Key	Description
AC	country indicator	A three-letter code that indicates the country of origin of the unit (STANAG 1059). In stability activities, this field can be used for factions or groups.
G	staff comments	Free text. Can be used by staff for information required by commander.
Н	additional information	Free Text.
J	evaluation rating	Degree of confidence that may be placed on the information represented by the symbol. It is shown as one letter and one number made up of Reliability of Source and Credibility of Information. (STANAG 2511). Reliability of Source:
		A. Completely reliable.
		B. Usually reliable.
		C. Fairly reliable.
		D. Not usually reliable.
		E. Unreliable.
		F. Reliability cannot be judged.
		Credibility of Information:
		1. Confirmed by other sources
		2. Probably true
		3. Possibly true
		4. Doubtful
		5. Improbable
		6. Truth cannot be judged.
W	date-time group	An alphanumeric designator for displaying a date-time group (DDHHMMSSZMONYY) or "O/O" for on order. The date-time group is composed of a group of six numeric digits with a time zone suffix and the standardized three-letter abbreviation for the month followed by two digits. The first pair of digits represents the day; the second pair, the hour; the third pair, the minutes. The last two digits of the year are after the month. For automated systems, two digits may be added before the time zone suffix and after the minutes to designate seconds.
Υ	location	Latitude and longitude; grid coordinates.

Table 43: Description of **MilActivity** text field amplifiers.

3 Custom Icons and Modifiers

3.1 MilSymb TikZ Picture Directory Structure

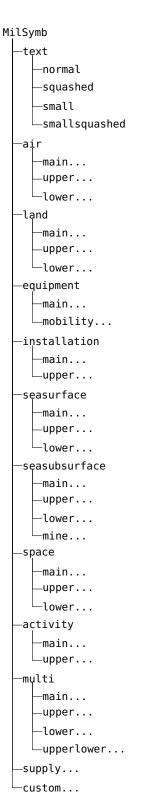


Figure 25: MilSymbTikZ Picture Directory Structure.

To add a custom icon or modifier, create a TikZ .pic in the custom directory using tikzset:

```
\makeatletter %required if using MilSymb@selectedfaction
\tikzset{
MilSymb custom/user icon/.pic={
  custom TikZ drawing commands go here...
```

```
} %comma after bracket is needed if defining multiple .pic.
}
\makeatother %required if using MilSymb@selectedfaction
\begin{tikzpicture}
  \MilLand[faction=hostile, main=user icon]
\end{tikzpicture}
```

You can also create your own sub directories, such as custom/land/main/user icon. This is recommended if you want to organise your custom shapes by symbol type and position. To use your icon or modifier in a command, simply use the path as the value for a icon or modifier key \MilLand[faction=friendly, main=path/to/user icon]. The main, upper and lower keys all accept custom values, as well as the left, right and mobility keys where applicable.

3.2 Drawing Bounds

As specified in APP6-(C), most icons and modifiers should fit within a template comprising of a regular octagon exactly **1** unit in width and **1** unit in height (with the exception of *fullframe* icons and a few others). In commands that specify upper and lower modifiers, the **main** icon should not exceed a height of **0.2** units above and below its origin (the two horizontal dotted line in Figure 26). Similarly, the modifiers should also not extend into the area **0.2** units above and below the origin of the **main** icon. The key value faction=none on any **MilSymb**command (apart from OwnShip or MilDebris, which do not have faction keys) will output this template instead of a frame.

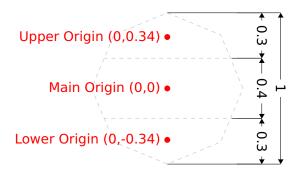


Figure 26: Dimensions of the octagon and origins of the icon and modifiers.

For the **MilMissile** command, the template is rotated 90° anticlockwise, and the left and right keys correspond to the upper and lower keys respectively. The mobility origin is located **0.1** units below the south anchor of the frame.

3.3 Border Anchors

MilSymb defines an anchored bounding box named **M** around all frames. This has anchor points identical to the rectangle node in TikZ. These can be used as coordinates for drawing icons and modifiers relative to the edge of the frame.

3.4 Faction Variants

Most *fullframe* icons have slight variations depending on the faction frame that is being used. To facilitate this, you can create a set of four TikZ .pic in faction sub directories, like so:

```
custom/user icon/friendly/.pic
custom/user icon/hostile/.pic
custom/user icon/neutral/.pic
custom/user icon/unknown/.pic
```

3.5 Clipping

For **Milland** symbols, clipping commands are available to trim any icon or modfier to the inside of the frame. Use \clip \clip faction> within the drawing commands to clip anything specified after the command to the frame.

Then, insert /\MilSymb@selectedfaction directly after the path/to/user icon (so it forms path/to/user icon/\MilSymb@selectedfaction). \MilSymb@selectedfaction will be replaced by the name of the faction, and complete the path to the icon.

3.6 Using Existing Icons and Modifiers

To insert an existing icon or modifier into your custom icon use a nested .pic as so: \pic{MilSymb category/position/name}, where command generally refers to the MilSymb command it is used in as displayed in Figure 25, and position refers to . The exceptions are supply, which contains supply icons detailed in 17, text which provides common text templates as detailed in 3.6.1, and multi which is detailed in 3.6.2. mine is also contained in a sub-directory of seasubsurface, instead of its own directory. MilDebris does not use any icons or modifiers, all drawing syntax is contained within the command.

3.6.1 Text Templates

MilSymb uses 4 standard text templates for commonly used text in icons and modifiers. Use regular TikZ text syntax for any variations. You can use them by nesting a .pic as before, but adding ={text to display} as a suffix, as in \pic{MilSymb text/type={text to display}}. Note that conventionally up to 3 characters are designed to be used with normal text, and up to 4 with "squashed" versions, in order to appear similar to APP6-(C)guidelines. Any more characters should use a smaller font.

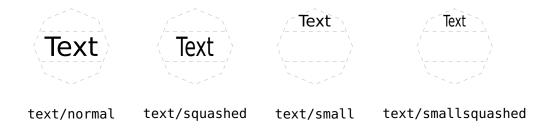


Figure 27: MilSymb text templates.

3.6.2 Multiple Class

Some **MilSymb** icons and modifiers are used in more than one command. In order to avoid code duplication, these are put in their own directory named multi with a single name, even though different aliases may be used in each command. The upperlower sub-directory is used to store modifier glyphs that are used in both the upper and lower positions.

Name	Glyph
multi/main/amphibious	~~~
multi/main/antenna	T
multi/main/ammunition	Ω
multi/main/armoured	
multi/main/aviation fixed wing	•
multi/main/aviation rotary wing	>
multi/main/bridge	\sim
multi/main/chemical biological radiological nuclear	***
multi/main/drill	•

multi/main/decoy	444
multi/main/diver	<u>©</u>
multi/main/engineer	
multi/main/field artillery	•
multi/main/individual	P
multi/main/killing victim	4
multi/main/maintenance	Э—С
multi/main/major end	•
multi/main/medic	+
multi/main/medical	+
multi/main/medical treatment facility	++-
multi/main/missile	
multi/main/naval	\$
multi/main/person	Ŷ.
multi/main/petroleum oil and lubricants	Y
multi/main/psychological operations	
multi/main/psychological operations filled	=
multi/main/radar	C.
multi/main/repair parts	¤
multi/main/sailing boat	
multi/main/sensor	+
multi/main/signal	1
multi/main/transportation	*
multi/main/victim of an attempted crime	`-9

The state of the s	
multi/main/water	4
multi/main/water purification	PURE
multi/upper/naval	\$
multi/upper/medic	+
multi/upper/runway	_
multi/lower/pack animal	\\
multi/upperlower/maintenance	+
multi/upperlower/railroad	∞ ∞

Table 44: Table of Multiple Class Icons and Modifiers

3.6.3 Hidden Glyphs

There are some .pic that are not used as an icon or modifier directly, but are used to construct other icons or modifiers because they are used multiple times.

Name	Glyph
equipment/main/weapon	
equipment/main/air defence	
equipment/main/anti tank	
equipment/main/high trajectory indirect fire weapons system	
equipment/main/side bands	
equipment/main/single band	_
equipment/main/double band	=
equipment/main/triple band	=
seasubsurface/main/half sea mine	**
seasubsurface/main/sea surface	
supply/medicalbar	

Table 45: Table of Hidden Glyphs

4 Examples

4.1 Front Cover

```
\thispagestyle{empty}
\begin{center}
\begin{tikzpicture}[remember picture]
\coordinate (NE) at (\s(current page text area.north east)-(1.5, 1.5)\s\);
\coordinate (NW) at ($(current page text area.north west) (-1.5, 1.5)$); \coordinate (SE) at ($(current page text area.south east) (1.5, -1.5)$);
\coordinate (SW) at ($(current page text area.south west)-(-1.5, -1.5)$);
\MilLand[faction=hostile, echelon=team, main=infantry, scale=2](NE)
\MilAir[faction=friendly, main=military fixed wing, upper=jammer, lower=light, scale=2](NW)
\MilSeaSurface[faction=neutral, main=hazardous material transport ship, lower=fast, scale=2](SE)
\MilActivity[faction=unknown, main=searching, upper=house to house, scale=2](SW)
\label{lower} $$ \mathbf{MilLand[faction=unknown, echelon=battalion, main=armoured, upper=missile, lower=long range, scale=2](\$(NE)!0.33!(NW)\$) $$ \mathbf{MilEquipment[faction=neutral, main=heavy machine gun, mobility=pack animal, scale=2](\$(NE)!0.66!(NW)\$) $$ $$ \mathbf{MilEquipment[faction=neutral, main=heavy machine gun, mobility=pack animal, scale=2](\$(NE)!0.66!(NW)\$) $$ $$
\MilSpace[faction=hostile, main=military earth observation satellite, upper=low earth orbit, lower=radar, scale=2]($(SE)!0.33!(SW)$)
\MilInstallation[faction=friendly, main=electric power, upper=nuclear energy, scale=2]($(SE)!0.66!(SW)$)
\Millastattation[action=friendty, main=steetrix power, apper-interestent energy, 3catc-21[4(3E).3catc-21].
MilSeaSubsurface[faction=friendty, main=snorkelling submarine, upper-auxiliary, lower=nuclear type 5, scale=2]($(NE)!0.2!(SE)$)
\Milland[faction=neutral, echelon=platoon, main=supply, supply={2}{4}, scale=2]($(NE)!0.4!(SE)$)
\MilActivity[faction=hostile, main=attempted criminal activity, upper=rape, scale=2]($(NE)!0.6!(SE)$)
\MilEquipment[faction=unknown, main=tank recovery vehicle, mobility=wheeled semi trailer, scale=2]($(NE)!0.8!(SE)$)
\MilMissile[faction=hostile, left=sub surface, right=launched, scale=2]($(NW)!0.2!(SW)$)
 \MilInstallation[faction=unknown, main=civilian telecommunications, upper=television, scale=2]($(NW)!0.4!(SW)$)
\MilSpace[faction=friendly, main=civilian space station, upper=geosynchronous orbit, scale=2]($(NW)!0.6!(SW)$)
\MilLand[faction=neutral, echelon=corps, main=armoured, upper=missile, lower=long range, scale=2]($(NW)!0.8!(SW)$)
\pgfresetboundingbox
 \path[use as bounding box] (0,0);
\end{tikzpicture}
 {\let\newpage\relax\maketitle}
 \end{center}
```

4.2 1st Marine Division (USA)

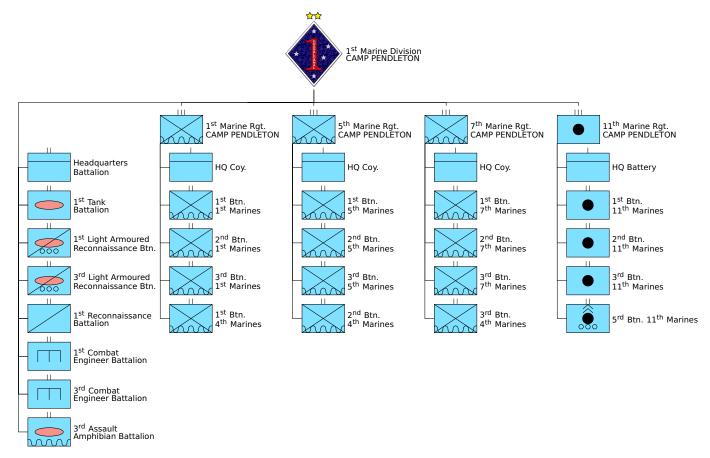


Figure 28: Recreation of Structure of 1st US Marine Division. Sourced from Wikipedia

```
\definecolor{salmon}{HTML}{F69289} %custom tank symbol colour
%custom_icons
 \makeatletter
 \tikzset{
MilSymb custom/marine/.pic={
    \pic{MilSymb land/main/infantry/\MilSymb@selectedfaction};
    \clip \clipfriendly;
     \pic[yshift=-10.75]{MilSymb land/main/amphibious/\MilSymb@selectedfaction};
MilSymb custom/tank/.pic={
    \filldraw[fill=salmon]circle(0.5 and 0.15);
MilSymb custom/reconnaissance tank/.pic={
    \pic{MilSvmb custom/tank}:
    \pic{MilSymb land/main/reconnaissance/\MilSymb@selectedfaction};
MilSymb custom/amphibious tank/.pic={
    \pic{MilSymb custom/tank};
    \clip \clipfriendly;
    \pic[yshift=-10.75]{MilSymb land/main/amphibious/\MilSymb@selectedfaction};
 ∖makeatother
\fontsize{6}{0}\selectfont
\begin{tikzpicture}
% grid of symbols
\label{local_mode_scale} $$ \operatorname{(7,0)}\simeq \operatorname{(7,0)}\operatorname{(2-100} \operatorname{(3-100} \operatorname{(3-100
\node[right of=H, node distance=1.85cm, align=left](HT){1\textsuperscript{st} Marine Division\\ CAMP PENDLETON};
\node[above of=H, star, star points=5, star point ratio=0.5, rotate=180, xshift=-3, fill=yellow, draw] {};
\node[above of=H, star,star points=5, star point ratio=0.5, rotate=180, xshift=3, fill=yellow, draw] {};
\MilLand[scale=0.75, faction=friendly, echelon=regiment, main=marine](3.5, -2)((11){1\textsuperscript(st) Marine Rgt. \\ CAMP PENDLETON}\MilLand[scale=0.75, faction=friendly, echelon=regiment, main=marine](7, -2)((21){5\textsuperscript(th) Marine Rgt. \\ CAMP PENDLETON}
\MilLand[scale=0.75, faction=friendly, echelon=regiment, main=marine](10.5, -2)(C31){7\textsuperscript{th} Marine Rgt. \\ CAMP PENDLETON}
\MilLand[scale=0.75, faction=friendly, echelon=regiment, main=field artillery](14, -2)(C41){11\textsuperscript{th} Marine Rgt. \\ CAMP PENDLETON}\MilLand[scale=0.75, faction=friendly, echelon=battalion, main=headquarters](0, -3)(C02){Headquarters \\ Battalion}
\MilLand[scale=0.75, faction=friendly, echelon=company, main=headquarters](3.75, -3)(C12){~\\ HQ Coy.}
$$ \MilLand[scale=0.75, faction=friendly, echelon=company, main=headquarters](7.25, -3)(C22){-\\ HQ Coy.} $$ \MilLand[scale=0.75, faction=friendly, echelon=company, main=headquarters](10.75, -3)(C32){-\ HQ Coy.} $$
\MilLand[scale=0.75, faction=friendly, echelon=company, main=headquarters](14.25, -3)(C42)(-\\ HQ Battery)
  \MilLand[scale=0.75, faction=friendly, echelon=battalion, main=tank](0, -4)(CO3){1\textsuperscript{st} Tank \\ Battalion}
\MilLand[scale=0.75, faction=friendly, echelon=battalion, main=marine](3.75, -4)(C13){1\textsuperscript{st} Btn. \\ 1\textsuperscript{st} Marines}
\MilLand[scale=0.75, faction=friendly, echelon=battalion, main=marine](7.25, -4)(C23){1\textsuperscript\st} Btn. \\ 5\textsuperscript\th\ Marines}
  \MilLand[scale=0.75, faction=friendly, echelon=battalion, main=marine](10.75, -4)(C33){1\textsuperscript{st} Btn. \\ 7\textsuperscript{th} Marines}
\MilLand[scale=0.75, faction=friendly, echelon=battalion, main=field artillery](14.25, -4)((43){1\textsuperscript{st} Btn. \\ 11\textsuperscript{th} Marines}\MilLand[scale=0.75, faction=friendly, echelon=battalion, main=reconnaissance tank, lower=wheeled](0, -5)(C04){1\textsuperscript{st} Light Armoured \\ Reconnaissance Btn.}
  \MilLand[scale=0.75, faction=friendly, echelon=battalion, main=marine](3.75, -5)(C14){2\textsuperscript{nd} Btn. \\ 1\textsuperscript{st} Marines}
  \MilLand[scale=0.75, faction=friendly, echelon=battalion, main=marine](7.25, -5)(C24){2\textsuperscript{nd} Btn. \\ 5\textsuperscript{th} Marines} \MilLand[scale=0.75, faction=friendly, echelon=battalion, main=marine](10.75, -5)(C34){2\textsuperscript{nd} Btn. \\ 7\textsuperscript{th} Marines}
  \MilLand[scale=0.75, faction=friendly, echelon=battalion, main=field artillery](14.25, -5)(C44){2\textsuperscript{nd} Btn. \\ 11\textsuperscript{th} Marines}
 \MilLand[scale=0.75, faction=friendly, echelon=battalion, main=marine](7.25, -6)(C25){3\textsuperscript{rd} Btn. \\ 5\textsuperscript{th} Marines} \MilLand[scale=0.75, faction=friendly, echelon=battalion, main=marine](10.75, -6)(C35){3\textsuperscript{rd} Btn. \\ 7\textsuperscript{th} Marines}
   \MilLand[scale=0.75, faction=friendly, echelon=battalion, main=field artillery](14.25, -6)(C45){3\textsuperscript{rd} Btn. \\ 11\textsuperscript{th} Marines}
 \MilLand[scale=0.75, faction=friendly, echelon=battalion, main=reconnaissance](0, -7)(C06){1\textsuperscript{st} Reconnaissance \\ Battalion}
  \MilLand[scale=0.75, faction=friendly, echelon=battalion, main=marine](3.75, -7)(C16){1\textsuperscript{st} Btn. \\ 4\textsuperscript{th} Marines}
  \MilLand[scale=0.75, faction=friendly, echelon=battalion, main=marine](7.25, -7)(C26){2\textsuperscript{nd} Btn. \\ 4\textsuperscript{th} Marines} \MilLand[scale=0.75, faction=friendly, echelon=battalion, main=marine](10.75, -7)(C36){3\textsuperscript{rd} Btn. \\ 4\textsuperscript{th} Marines}
  \MilLand[scale=0.75, faction=friendly, echelon=battalion, main=field artillery, upper=multiple rocket launcher, lower=wheeled](14.25, -7)(C46){5\textsuperscript{rd} Btn. 11\textsuperscript{th} Marines}
\MilLand[scale=0.75, faction=friendly, echelon=battalion, main=engineer](0, -8)(C07){1\textsuperscript{st} Combat \\ Engineer Battalion} \MilLand[scale=0.75, faction=friendly, echelon=battalion, main=engineer](0, -9)(C08){3\textsuperscript{rd} Combat \\ Engineer Battalion}
\MilLand[scale=0.75, faction=friendly, echelon=battalion, main=amphibious tank](0, -10)(C09){3\textsuperscript{rd} Assault \\ Amphibian Battalion}
%connecting lines
\draw [shorten >=0.25cm] (H.south) |- ($(H.south)!0.5!(C11.north)$) -| (C11.north);
\draw [shorten >=0.25cm] (H.south) |- ($(H.south)!0.5!(C11.north)$) - | (C21.north);
\draw [shorten >=0.25cm] (H.south) |- ($(H.south)!0.5!(C11.north)$) - | (C31.north);
\draw [shorten >=0.25cm] (H.south) |- ($(H.south)!0.5!(C11.north)$) - | (C41.north);
 \draw (H.south) |- ($(H.south)!0.5!(C11.north)$) -| ($(C02.west)+(-0.25, 0)$) -| (C02.west);
\draw (C11.south west) |- (C12.west);
\draw (C11.south west) |- (C13.west);
\draw (C11.south west) |- (C14.west);
\draw (C11.south west) |- (C15.west);
```

```
\draw (C11.south west) |- (C16.west);
\draw (C21.south west) |- (C22.west);
\draw (C21.south west) |- (C23.west);
\draw (C21.south west) |- (C24.west);
\draw (C21.south west) |- (C24.west);
\draw (C21.south west) |- (C25.west);
\draw (C21.south west) |- (C26.west);
\draw (C31.south west) |- (C32.west);
\draw (C31.south west) |- (C33.west);
\draw (C31.south west) |- (C34.west);
\draw (C31.south west) |- (C36.west);
\draw (C31.south west) |- (C36.west);
\draw (C31.south west) |- (C36.west);
\draw (C41.south west) |- (C42.west);
\draw (C41.south west) |- (C44.west);
\draw (C41.south west) |- (C44.west);
\draw (C41.south west) |- (C46.west);
\draw (C41.south west) |- (C46.west);
\draw (C41.south west) |- (C46.west);
\draw (C92.west) -| ($(C02.west)+(-0.25, 0)$) |- (C03.west);
\draw (C04.west) -| ($(C02.west)+(-0.25, 0)$) |- (C06.west);
\draw (C05.west) -| ($(C02.west)+(-0.25, 0)$) |- (C06.west);
\draw (C06.west) -| ($(C02.west)+(-0.25, 0)$) |- (C06.west);
\draw (C07.west) -| ($(C02.west)+(-0.25, 0)$) |- (C07.west);
\draw (C07.west) -| ($(C02.west)+(-0.25, 0)$) |- (C07.west);
\draw (C08.west) -| ($(C02.west)+(-0.25, 0)$) |- (C09.west);
\draw (C07.west) -| ($(C02.west)+(-0.25, 0)$) |- (C09.west);
\draw (C07.west) -| ($(C02.west)+(-0.25, 0)$) |- (C09.west);
\draw (C07.west) -| ($(C02.west)+(-0.25, 0)$) |- (C09.west);
\draw (C06.west) -| ($(C02.west)+(-0.25, 0)
```

5 Control Measures

Control Measures are planned to be included in the next major version of **MilSymb**. Please see the **GitHub** repository for further information.