















# MilSymb

Damian Crosby

March 15, 2020















C

C

# **Revision History**

Revision	Date	Author(s)	Description
1.0 1.01	2018-04-29 2019-05-07	Damian Crosby Damian Crosby	Creation. Added clarification on DVI output, added clarification that multi- ple 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 be- ing updated between commands, changed datestamps to be ISO 8601 compliant as per CTAN request.

# Acknowledgments

The author would particularly like to thank the following members of the  $T_EX$  stack exchange community for their solutions to problems during this package's development:

- cfr
- Kpym
- Torbjørn T.
- Ulrike Fischer

## Attributions

- The combatant icon in the **MilSeaSurface** command has been adapated from a work on Wikimedia Commons by Kathovo under the CC BY-SA 3.0 licence.
- The Structure of 1<sup>st</sup> Marine Division (Figure 28) receration is based on an image created by Noclador under the CC BY-SA 3.0 licence.

## Licence

In order to comply with the attributions listed above, this package is licenced under CC BY-SA 4.0.

# Contents

1	Intr	oduction	6
	1.1	Package Summary	6
	1.2	Package Dependencies	6
	1.3	Using MilSymb	6
		1.3.1 Package Options	6
		1.3.2 Symbol Construction	6
2	Syn	nbol Commands	7
			7
		2.1.1 Shared Keys	7
		2.1.1.1 main	8
			8
		2.1.1.3 lower	8
			8 8
			9
			9
			.0
			.0
		2.1.1.10 offset, movement (Amplifier) 1	.0
			.1
			.1
			.2
			.2 .2
	2.2		.4
	2.2		.4
			.4
			.8
		2.2.1.3 lower	
		2.2.2 Amplifiers	
	2 2	2.2.2.1 Text Fields	
	2.3	Missile Command (MilMissile)22.3.1Modifiers22	
		2.3.1.1 left	
		2.3.1.2 right	
		2.3.2 Amplifiers	
		2.3.2.1 Text Fields	4
	2.4	Land Command (MilLand) 2	
		2.4.1 Icons and Modifiers 2	
		2.4.1.1 main	
			55  2
			5
			15
			6
		2.4.2.3 Status	6
			6
			8
	2 5		50
	2.5	Equipment Command (MilEquipment)	
			51
			58
			59
			59
	2.6	Installation Command (MilInstallation)	52
		2.6.1 Icons and Modifiers	
		2.6.1.1 Main	
		2.6.1.2 Upper	•4

	2.6.2 Amplifiers	
	2.6.2.1 Text Fields	
	2.7 Sea Surface Command (MilSeaSurface)	
	2.7.1 Icons and Modifiers	
	2.7.1.1 Main	
	2.7.1.2 Upper	
	2.7.1.3 Lower	
	2.7.2 Amplifiers	
	2.7.2.1 Text Fields	
	2.8 Own Ship Command ( <b>0wnShip</b> )	. 79
	2.9 Sea Subsurface Command (MilSeaSubsurface)	
	2.9.1 Icons and Modifiers	
	2.9.1.1 Main	
	2.9.1.2 Upper	
	2.9.1.3 Lower	
	2.9.2 Amplifiers	
	2.9.2.1 Text Fields	
	2.10 Sea Mine Command (MilMine)	
	2.10.1 Amplifiers	
	2.10.1.1 Text Fields	
	2.11 Space Command (MilSpace)	
	2.11.1 Icons and Modifiers	
	2.11.1.1 Main	
	2.11.1.2 Upper	
	2.11.1.3 Lower	
	2.11.2 Amplifiers	
	2.11.2.1 Text Fields	
	2.12 Space Debris Command (MilDebris)	. 93
	2.13 Activity Command (MilActivity)	
	2.13.1 Icons and Modifiers	
	2.13.1.1 Main	
	2.13.1.2 Upper	
	2.13.2 Amplifiers	
	2.13.2.1 Text Fields	. 97
2	Custom Icons and Modifiers	99
3		
	<ul><li>3.2 Drawing Bounds</li></ul>	
	3.4 Faction Variants	
	3.6.1 Text Templates	
	3.6.2 Multiple Class	
	3.6.3 Hidden Glyphs	. 103
٨	Examples	104
*	4.1 Front Cover	
	4.2 1 <sup>st</sup> Marine Division (USA)	
		. 105
5	Control Measures	108

# **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

## 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												
OwnShip												

 $^{1}$ Not functional when the no frame option is used.  $^{2}$ Only functional when faction=friendly.

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.



normal

frame status=unclear

frame status=anticipated

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.

Command	Faction Frame							
Command	Friendly	Hostile	Neutral	Unknown				
MilAir + MilMissile								
MilLand								
MilEquipment* + MilSeaSurface								
MilInstallation								
MilSeaSubsurface + MilMine*								
MilSpace								
MilActivity		$\mathbf{\mathbf{\mathbf{\mathbf{\mathbf{\mathbf{\mathbf{\mathbf{\mathbf{\mathbf{\mathbf{\mathbf{\mathbf{\mathbf{\mathbf{\mathbf{\mathbf{\mathbf{$						

\*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.



speed leader={35}{3} speed leader=

speed leader={118}{4} speed leader={335}{2}

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**, **MilInstallation** 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  $\&T_EX$  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  $\&T_EX$ , 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				444				
airborne command post		ACP	АСР	ACP	АСР			
airborne early warning		AEW	AEW	AEW	AEW			
anti submarine warfare		ASW	ASW	ASW	ASW			
anti surface warfare		ASUW	ASUW	ASUW	ASUW			
attack		A	A	Α	A			
bomber	( <b>B</b> )	В	В	В	В			
cargo	( <b>C</b> )	C	С	С	c			
civilian airship								
civilian balloon		Q	Q	Q	$\bigcirc$			
civilian fixed wing				$\sim$				

civilian rotary wing					
civilian		CIV	CIV	CIV	CIV
combat search and rescue		CSAR	CSAR	CSAR	CSAR
communications		СОМ	СОМ	СОМ	Сом
electronic support measures		ESM	ESM	ESM	ESM
fighter	( <b>F</b> )	F	F	F	F
government		GOV	GOV	GOV	GOV
jammer	( <b>- - )</b>	J	L	J	L
medic		-	+	+	•
military airship					
military balloon		•	•	•	•
military fixed wing					
military rotary wing					

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

utility		U	U	U	U
vertical short takeoff and landing	( <b>V</b> ( <b>V</b> ( <b>V</b> )	v	v	v	v
very important person		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	ACP		
airborne early warning	× /	AEW	AEW	AEW	AEW		
anti submarine warfare	× <b>ASW</b> ×	ASW	ASW	ASW	ASW		
anti surface warfare	<b>ÁSÚW</b> ( ) ( )	ASUW	ASUW	ASUW	ASUW		
cargo	<pre></pre>	C	C	С	C		
combat search and rescue	<pre></pre>	CSAR	CSAR	CSAR	CSAR		
communications	COM:	СОМ	СОМ	СОМ	Сом		
electronic support measures	ESM \	ESM	ESM	ESM	ESM		
escort	<pre></pre>	E	E	E	E		
government flight	GOV )	GOV	GOV	GOV	GOV		
intensive care		IC	IC	IC	С		
jammer		R	R	R	R		
jammer		R	R	R	R		

medical evacuation	<pre></pre>	+	+	•	•
mine countermeasures	× /	мсм	МСМ	МСМ	мсм
passenger plane	F	PX	РХ	PX	PX
patrol	<pre></pre>	L	L	J	·
personnel recovery	PŘ ~ ()	PR	PR	PR	PR
photographic	PH	РН	РН	РН	PH
reconnaissance	F	P	P	Р	P
search and rescue	<b>SAR</b>	SAR	SAR	SAR	SAR
special operations forces	<b>SOF</b> 	SOF	SOF	SOF	SOF
suppression of enemy air defenses	SEAD > > > > > > > > > > > > > > > > > > >	SEAD	SEAD	SEAD	SEAD
tanker		к	К	К	К
trainer	() () () () () () () () () () () () () (	Т	Т	Т	Т
ultra light	<ul> <li>III</li> <li>IIII</li> <li>III</li> <li>IIII</li> <li>IIIII</li> <li>IIIII</li> <li>IIII</li> <li>IIIII</li> <li>IIIII</li> <li>IIIIIII</li> <li>IIIII</li> <li></li></ul>	UL	UL	UL	UL

utility	U	U	U	U
very important person	VIP	VIP	VIP	VIP

Table 6: Table for upper values in the MilAir command.

#### 2.2.1.3 lower

Value	Glyph	Examples			
boom and drogue		B/D	B/D	B/D	В/D
boom only	<pre>// / / / / / / / / / / / / / / / / / /</pre>	В	в	В	B
close range		CR	CR	CR	CR
drogue only		D	D	D	
heavy		Н	н	Н	H
light		L	L	L	
long range		LR	LR	LR	
medium range		MR	MR	MR	MR
medium	× > > > > > > > > > > > > > > > >	M	м	м	M
short range	× \ × \ × / × /	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 **MilAir** text field amplifiers.

Location	Кеу	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).	
E	additional information	For friendly units: Sensor or Weapon load, en- durance, 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		
anti ballistic		AB	АВ	АВ	AB	
ballistic	$(\mathbf{A}_{\mathbf{A}}) = (\mathbf{A}_{\mathbf{A}}) = (\mathbf{A}_{\mathbf{A}}$	B	B	в	B	
cruise	$\left\langle \begin{array}{c} \left\langle \begin{array}{c} \left\langle \begin{array}{c} \left\langle \begin{array}{c} \left\langle \\ - \right\rangle \right\rangle \\ \left\langle \begin{array}{c} \left\langle \\ - \right\rangle \\ \left\langle \\ - \right\rangle$	C	c	c	C	
space		SP	SP	SP	SP	
sub surface		SU	SU	su	SU	
surface		S	S	S	S	

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

## 2.3.1.2 right

Value	Glyph	Examples			
air			A		
launched		L	L	L	L
missile		M	M	M	M
space		SP	SP	SP	SP
sub surface		SU	SU	SU	SU
surface		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		ADM	ADM	ADM	ADM	
air and naval gunfire liaison company						
air assault with organic lift						
air defence						
air traffic services						
ammunition				Δ		
amphibious		ww		$\sim$	w	
analysis electronic warfare		EW	EW	EW	EW	
analysis						

anti tank anti armour				
armoured engineer				
armoured				
aviation composite fixed wing and rotary wing	*	*	*	*
aviation fixed wing				
aviation rotary wing				
band	BAND	BAND	BAND	BAND
broadcast transmitter antenna	Ť		Ť	
chemical biological radiological nuclear defence	•**•	~~	**	~
civil affairs	СА	CA	СА	CA
civilian military cooperation				
civilian police	¥		$\forall$	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~
combat service support	CSS	CSS	CSS	CSS

combat support	Ţ		V	
combat	СВТ	СВТ	СВТ	СВТ
combined arms	$\overline{\bigcirc}$			
corps support				
counter intelligence	CI	СІ	СІ	CI
criminal investigation division	CID	CID	CID	CID
direction finding electronic warfare	EW	EW	EW	EW
direction finding	$\square \frown$	$\bigcirc$	$\bigwedge$	
diving	Q		Q	
dog	DOG	DOG	DOG	DOG
drilling			V	
electronic ordinance disposal	EOD	EOD	EOD	EOD
electronic ranging	X	X	$\bigotimes$	X

electronic warfare		EW	EW	EW	EW
engineer					
environmental protection		Å		A	
field artillery observer					
field artillery					
finance		$\square$			
fire protection		•	•	•	•
geospatial support		GEO	GEO	GEO	GEO
government organization		GO	GO	GO	GO
headquarters					$\bigcirc$
individual	(	ę	9	9	P
infantry					
information operations		ю	10	ю	10

intercept electronic warfare		EW	EW	EW	EW
intercept			$\checkmark$		
internal security force		ISF	ISF	ISF	ISF
interrogation		IPW	IPW	IPW	IPW
jamming electronic warfare	EW	EW	EW	ËŴ	EW
jamming		*****		****	
joint fire support		JFS	JFS	JFS	JFS
judge advocate general		JAG	JAG	JAG	JAG
killing victim		R	<b>P</b>	9	P
killing victims		792	999	799	PPP PPP
labour	$(\underline{\overline{\mathbf{x}}}_{1},\overline$	£	4	Ŷ	A
laundry		٦	1	٦	1
liaison		LO	LO	LO	LO

main gun system				
maintenance	<b>)</b> —(	×	<b>)—(</b>	F
material	МАТ	MAT	МАТ	MAT
medical treatment facility				
medical				
meteorological	MET	МЕТ	MET	MET
military intelligence	МІ	MI	МІ	MI
military police	МР	мр	МР	МР
mine	*	*	*	*
missile	$\square$		$\square$	
morale welfare and recreation	MWE	MWE	MWE	MWE
mortar	Ĵ	1	Ĵ	
mortuary affairs	Ī		Ĩ	

motorized					
naval		¢	t	¢	t
observer		$\bigtriangleup$		$\bigtriangleup$	
ordnance		X	X	X	8
organisation or group		999	<b>PPP</b>	<b>£££</b>	<b>PPP</b>
personnel services	( <b>PS</b> )	PS	PS	PS	PS
petroleum oil and lubricants		Υ	Y	Y	Y
pipeline		-12:		- <b>Č</b> -	
postal					
psychological operations broadcast		*		*	
psychological operations		4			
public affairs		РА	РА	ΡΑ	PA
quartermaster	0 0 0 0 0 0	н-О	HO	н-О	HO

radar	Ľ	t	Ľ	(r)
radio relay	ſ	2	J	
radio teletype centre	Ţ	T	Ē	Ē
radio	ð	5	ð	
reconnaissance				
religious support	REL	REL	REL	REL
replacement holding unit	RHU	RHU	RHU	RHU
sea air land	SEAL	SEAL	SEAL	SEAL
search electronic warfare	EW	EW	EW	EW
search				
security	SEC	SEC	SEC	SEC
self propelled field artillery				
sensor	+	•	+	•

shore patrol security police	SP	SP	SP	SP
signal radio relay	Æ	3	Z	<
signal radio teletype centre	Te	Te Contraction	T C	
signal radio	-F	8	- Sec.	(F)
signal tactical satellite				
signal				
sniper	7		-1-	
special forces	SF	SF	SF	SF
special operations forces	SOF	SOF	SOF	SOF
spy	SPY	SPY	SPY	SPY
supply				
surveillance				

survey		×			×
sustainment		SUST	SUST	SUST	SUST
tactical mortar				1	
tactical satellite		M		<b>I</b>	
topographic		Å		Å	
transportation					*
unmanned systems		~			
victim of an attempted crime		~~ <b>0</b>		`.º.	· · P
video imagery					
water purification		-T PURE	T PURE	T	PURE
water	( + ) + )	_T_	T	_T_	-

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

## 2.4.1.2 upper

Value	Glyph	Examples			
Mil medical role 1		1		1	
Mil medical role 2	<b>2</b> <b>2</b> <b>2</b> <b>2</b> <b>2</b> <b>2</b> <b>2</b> <b>2</b>	2	2	2	2
Mil medical role 3	· · · · · · · · · · · · · · · · · · ·	3	3	3	3
Mil medical role 4	<b>4</b> <b>4</b> <b>4</b> <b>4</b> <b>4</b> <b>4</b> <b>4</b> <b>4</b>	4		4	4
air assault					
area	<pre></pre>	AREA	AREA	AREA	AREA
assassination	AS	AS	AS	AS	AS
attack		A	A	A	A
biological		В	В	В	В
border		BOR	BOR	BOR	BOR
bridging		X		X	
chemical	( )	C	c	C	C

close protection	<pre></pre>	CLP	CLP	CLP	CLP
coerced or impressed recruit	( ) ) ) ) ) ) ) ) ) ) ) ) ) )	C	c	C	c
combat	<b>CBT</b>	CBT	СВТ	CBT	СВТ
command and control	F /	C2	C2	C2	<b>C2</b>
communications contingency package		ССР	ССР	ССР	ССР
construction	CONST \ ( ) /	CONST	CONST	CONST	CONST
cross cultural communication	<pre></pre>	ccc	ccc	ccc	222
crowd and riot control	( ) ( )	CRC	CRC	CRC	CRC
decontamination		D		D	
detention		DET	DET	DET	DET
direct communications		0++0	0++0	0↔0	0++0
displaced persons refugees and evacuees	<pre>&gt; DPRE_\ &gt; DPRE_\ &gt;  &gt;</pre>	DPRE	DPRE	DPRE	DPRE
diving		Ŵ		Ŵ	
division	<pre></pre>	XX	XX	XX	XX
--------------------------------	---	------	------	------	------
dog		DOG	DOG	DOG	DOG
drilling		T			
electro optical	EO	EO	EO	EO	EO
enhanced	ENH- ( ) )	ENH	ENH	ENH	ENH
execution	<b>EX</b> () () () () () () () () () () () () ()	EX	EX	EX	EX
explosive ordnance disposal	<b>EOD</b>	EOD	EOD	EOD	EOD
fire direction centre	FDC )	FDC	FDC	FDC	FDC
force		F	F	F	F
foreign fighters	F	FF	FF	FF	FF
forward	<pre></pre>	FWD	FWD	FWD	FWD
gang member or gang	<pre>/ GANG: / ) / / / /</pre>	GANG	GANG	GANG	GANG
government organisation	<pre></pre>	GO	GO	GO	GO

ground station module	<pre></pre>	GSM	GSM	GSM	GSM
hijacking		H	Н	Н	Н
kidnapping	<pre>/ K ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~</pre>	К	к	К	К
landing support	<pre>/ LS `` / `` / / / `` /</pre>	LS	LS	LS	LS
large extension node	<pre>/ LEN_\ / / / / / / / / / / / / / / / / / /</pre>	LEN	LEN	LEN	LEN
leader or leadership	<pre></pre>	LDR	LDR	LDR	LDR
maintenance		ж	×	7	H
meteorological	/ MET_ \ ( ) /	MET	МЕТ	MET	MET
mine countermeasure		МСМ	мсм	МСМ	МСМ
missile		M		M	
mobile advisor and support		○→○		○→○	
mobile subscriber equipment	× MSE_	MSE	MSE	MSE	MSE
mobility support	( ) ) ) ) ) ) ) ) ) ) ) ) ) ) ) ) ) ) )	MS	MS	MS	MS

movement control centre	<pre>/MCC: //////////////////////////////////</pre>	MCC	MCC	MCC	MCC
multinational specialized unit	<pre>/ MSU/ // / / / / /</pre>	MSU	MSU	MSU	MSU
multinational	<pre>// MN_/ // // // // // // // // // // // // //</pre>	MN	MN	MN	MN
multiple rocket launcher					
murder victims	<pre>/ MU ~ \ / / / /</pre>	MU	MU	MU	MU
naval		ţ	*	Ŷ	t
node centre	<pre>/ NC / / / / / / / / / / / / / / / / / /</pre>	NC	NC	NC	NC
non-governmental organization member or non-governmental organization	<pre></pre>	NGO	NGO	NGO	NGO
nuclear		N	N	N	N
operations	( ( ) )	OPS	OPS	OPS	OPS
piracy	( + / + /	PI	PI	PI	PI
radar	←	Ľ	e	Ľ	٣
radiological	FAD: / / / /	RAD	RAD	RAD	RAD

				I	
rape	<b>RÀ</b> ∧ ( )	RA	RA	RA	RA
religious or religious organisation	F REL () + )	REL	REL	REL	REL
runway	¢ 415			4	4
search and rescue	<b>SAR</b> ( ) ) )	SAR	SAR	SAR	SAR
security	<b>SEC</b>	SEC	SEC	SEC	SEC
sensor control module	<b>SCM</b>	SCM	SCM	SCM	SCM
sensor		•		•	
signals intelligence		Ţ	Ť	Ţ	T
single rocket launcher					
single shelter switch	<b>SSS</b>	SSS	SSS	SSS	SSS
smoke	( ) ( ) ( )	S	s	S	S
sniper	() () \	T	T	T	Т
sound ranging	<pre></pre>	SDR	SDR	SDR	SDR

special weapons and tactics	<pre>&gt; SWAT_\ ( )</pre>	SWAT	SWAT	SWAT	Swat
survey		*		*	
tactical exploitation	( ) ) ) ) ) ) ) ) ) ) ) ) ) ) ) ) ) ) )	TE	TE	TE	ТЕ
target acquisition		ТА	ТА	ТА	TA
targeted individual or organisation		TGT	TGT	TGT	TGT
terrorist or terrorist organisation	- TER ) ) )	TER	TER	TER	TER
topographic		7		4	
utility		U	u	U	U
video imagery					
willing recruit	<pre>/ W &gt; / +</pre>	W	w	W	W

Table 13: Table for upper values in the Milland command.

### 2.4.1.3 lower

Value	Glyph	Examples			
airborne		$\sim$		$\sim$	
arctic					
battle damage repair		BDR	BDR	BDR	BDR
bicycle equipped		0	$\bigcirc$	0	•
clearing		CLR	CLR	CLR	CLR
close range	<pre>// / / / / / / / / / / / / / / / / / /</pre>	CR	CR	CR	CR
control		<b></b>	*	<b>.</b>	•
decontamination	<pre>// ***********************************</pre>	D	D	D	D
demolition		DEM	DEM	DEM	DEM
dental	<pre>// ***********************************</pre>	D	D	D	D
digital		DIG	DIG	DIG	DIG
enhanced location reporting system		*	*	*	

equipment	( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( )	E	E	E	E
heavy	<pre>////////////////////////////////////</pre>	н	н	н	н
intensive care	( , , , , , , , , , , , , , , , , , , ,	IC	IC	IC	
intermodal		$\Leftrightarrow$		÷	
laboratory		LAB	LAB	LAB	LAB
launcher					
light		L	L	L	
long range	<pre></pre>	LR	LR	LR	LR
medium range	<pre></pre>	MR	MR	MR	MR
mountain					
multi channel		мс	мс	МС	мс
optical		OPT	ОРТ	OPT	ОРТ
pack animal					

patient evacuation coordination	() () () () () () () () () () () () () (	PEC	РЕС	PEC	PEC
preventative maintenance	× × × × × × × ×	РМ	РМ	РМ	РМ
psychological	<pre></pre>	Р	P	Р	P
radio relay line of sight	×>	0	•	•	Θ
railroad	, <u>, , , , , , , , , , , , , , , , , , </u>	<u></u>		<u>w</u> w	
recovery maintenance		ж	H	<u>ж</u>	н
recovery unmanned systems					
rescue coordination centre		RCC	RCC	RCC	RCC
riverine					
short range	· · · · · · · · · · · · · · · · · · ·	SR	SR	SR	SR
single channel	· · · · · · · · · · · · · · · · · · ·	SC	SC	sc	sc
ski	<pre>&gt;</pre>	X	x	X	×
strategic	× 1 ( ) × 1 ( ) × 1 ( ) × 1	STR	STR	STR	STR

support	( ) \$ <b>\$</b> \$ <b>\$</b>	SPT	SPT	SPT	SPT
tactical		TAC	ТАС	ТАС	ТАС
towed		00	<b>000</b>	oo	
troop	· · · · · · · · · · · · · · · · · · ·	т	Т	т	T
vertical of short takeoff and landing		VSTOL	VSTOL	VSTOL	VSTOL
veterinary	() () () () () () () () () () () () () (	v	v	v	v
wheeled		000	000	000	000

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	Х
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	Кеу	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.
Μ	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 infor- mation 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.
К	combat effectiveness	Effectiveness of unit or equipment displayed.
		1. Fully operational.
		2. Substantially operational.
		3. Marginally operational.
		4. Not operational.
Р	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 au- tomated systems, two digits may be added before the time zone suffix and after the minutes to designate sec- onds.
X	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		ALL	ALL	ALL	ALL
	1		NATO Supp	oly Classes	1	
1	I		I		I	
2	II		II		II	
3	111		Υ	Y	Y	T
4	IV		IV	IV	IV	IV
5	V				Ω	



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.* 



altitude={high}{}

altitude={medium}{low}

altitude={low}{}

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	Exan	nples	
air defence gun				
air defence missile launcher				
antennae				
anti tank gun			山	
anti tank missile launcher			<b>A</b>	
anti tank rocket launcher				
antipersonnel land mine			۲	
antitank land mine				
armoured fighting vehicle command and control		k@21		(Rest)
armoured fighting vehicle		KI	K	K

armoured medical personnel carrier					
armoured personnel carrier					
armoured protected recovery vehicle		X	×	H	H
armoured protected vehicle			$\diamond$		$\bigcirc$
automatic rifle					
bomb	(BOMB)	BOMB	ВОМВ	BOMB	BOMB
booby trap				4	
bridge mounted on utility vehicle				X	
bridge					
bus		B	B	B	B
chemical biological radiological nuclear equipment		R	~~	**	~
computer system					
direct fire gun					

drill mounted on vehicle					
drill				V	
earthmover				Ĥ	
fixed bridge		H		¥	
flame thrower					
folding girder bridge		Æ		¥	F
generator set		G	G	G	G
grenade launcher					
heavy grenade launcher				<⇔ <b>III</b>	
heavy machine gun					
heavy tank					
hollow deck bridge		Ħ		¥	<b>F</b>
howitzer	$\langle \widehat{(\mathbf{x})} \rangle$				

improvised explosive device	IED	IED	IED	IED
land mine		$\bigcirc$	$\bigcirc$	
laser	€H-₩	←H-H	<b>(</b> +=-₩	<b>€</b> ₩
light grenade launcher				
light machine gun				
light tank				
machine gun				
medical evacuation armoured protected vehicle				
medical evacuation		•	-	
medical vehicle			$\blacksquare$	
medium grenade launcher				
medium machine gun				
medium tank				

mine clearing equipment				
mine clearing vehicle			K	
mine laying equipment	*	1*	₩	*
mine laying vehicle				
missile launcher			$\square$	
mobile emergency physician			¥	
mortar			$\bigwedge_{O}$	
multifunctional earthmover	MF	MF	MF	MF
multiple rocket launcher				
non lethal grenade launcher	•	•	Image: A state of the state of	
non lethal weapon				
petroleum oil and lubricants vehicle	Y	Y	Y	Y
psychological operations equipment				

radar		(tr	t	(tr	r
recoilless gun					
rifle					
semi automatic rifle				< <del>  </del>	
semi trailer truck		<b>F</b>			
sensor emplaced				*	<b>(</b>
sensor	$\langle \left\langle \left\langle \right\rangle \rangle \rangle$		•	+	
single rocket launcher					
single shot rifle				$\left\langle +\right\rangle$	
surface to surface missile launcher					
tank recovery vehicle			Ĭ	X	T
tank					
taser		Z	Z	Z	Z

train locomotive				
utility vehicle				
water cannon	W	W	W	W
water vehicle	H		H	R

Table 18: Table for main values in the **MilEquipment** command.

# 2.5.1.2 Mobility

Value	Glyph	Exan	nples	
amphibious				
barge				
over snow				
pack animal				
railroad	$\overset{\textup{w}}{\langle}$			
sled				
towed			0.000	
tracked				
wheeled and tracked				
wheeled cross country	000		000	
wheeled limited mobility				



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	Кеу	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 be- ing displayed.

J	evaluation rating	Degree of confidence that may be placed on the infor- mation 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.
SE	signature equipment	Identifies a detectable electronic signature "!" for hos- tile equipment.
P	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 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	Altitude as displayed on the global positioning system
Y	location	(GPS). 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 communi- cations 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		Δ		Ω		
black list location	( <b>BLK</b> )	BLK	BLK	BLK	BLK	
broadcast transmitter antenna		Ť		Ť		
chemical biological radiological nuclear		*	×	**	~	
civilian telecommunications		Ă	A	Ă	<b>A</b>	
electric power		<b>@</b>	<b>P</b>	M	<b>P</b>	
food distribution						
grey list location		GRAY	GRAY	GRAY	GRAY	
mass grave site						
medical treatment facility						

medical					
mine		$\times$		~	×
naval		ţ	Ţ	ţ	t
nuclear		*		*	
printed media	(- <b>9</b> -) (- <b>9</b> -)	8	8	8	8
safe house		SAFE	SAFE	SAFE	SAFE
transportation		$\bigotimes$		$\bigotimes$	*
transportation		$\bigotimes$		$\bigotimes$	*
water treatment		PURE	TPURE	T PURE	PURE
water		_ <u>_</u>			
white list location		WHT	WHT	WHT	WHT

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

# 2.6.1.2 Upper

Value	Glyph		Exam	oles	
biological	( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( )	В	В	В	B
chemical	( ) ) ) ) ) ) ) ) ) ) ) ) ) ) ) ) ) ) )	C	C	C	C
coal		со	co	СО	<b>~</b>
geothermal		GT	GT	GT	GT
hydroelectric	<pre></pre>	НУ	НҮ	НҮ	Н
natural gas	<pre>/ NG &gt; / / / / / / / /</pre>	NG	NG	NG	NG
nuclear energy		*	*	*	*
nuclear		N	N	N	N
petroleum	$\begin{pmatrix} \widehat{\mathbf{Y}} \\ $	Ŷ	Y	Υ	Y
radio	( ) )	R	R	R	R
railroad	() () \	σσ		σσ	
telephone		Т	T	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	Кеу	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 re- quired 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 in- formation 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.					
К	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 or- der. The date-time group is composed of a group of six numeric digits with a time zone suffix and the stan- dardized three-letter abbreviation for the month fol- lowed 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 min- utes 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 kilome- tres per hour.					
AI	installation composition	Indicates the component type of the installation:					
		Development.					
		• Research.					
		Production.					
		Service.					
		Storage.					
		• Utility.					
		<ul><li>Production.</li><li>Service.</li><li>Storage.</li></ul>					

Table 23: Description of MilInstallation text field amplifiers.

# 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	
amphibious assault ship		LHA	LHA	LHA	LHA	
amphibious assault		LA	LA	LA	LA	
amphibious assualt ship helicopter		LPH	LPH	LPH	LPH	
amphibious command ship		LCC	LCC	LCC	LCC	
amphibious transport		LPD	LPD	LPD	LPD	
amphibious warfare ship				€		
auxiliary flag ship		AGF	AGF	AGF	AGF	
auxiliary ship		AA	AA	AA	AA	
barge		YB	YB7	YB	YB	
battleship		BB	BB	BB	ВВ	

cargo					
carrier			V	•	
civilian boat				~	
civilian jetski				4	
civilian rigid hull inflatable boat		(RB/			RB
civilian speedboat		SP/	SP/		SP
civilian unmanned surface water vehicle					
civilian		CIV	CIV	CIV	CIV
combat support ship		AOE	AOE	AOE	AOE
combatant		×	×	$\times$	×
container ship			<b>C</b>	<b>_C</b> _	C
convoy					
corvette	( <b>FS</b> )	FS	FS	FS	FS

cruiser guided missile	CG	CG	CG	CG
destroyer	DD	DD	DD	DD
dredge				
drifter		CEF7		
ferry	F	F	<b>√F</b> ∕	F
fishing vessel		CL		(L
frigate	FF	FF	FF	FF
harbour tug	T	УТ	YT	YT
hazardous material transport ship		HZ	THZ	THZ
heavy lift	H	H	<b>H</b>	H
hospital ship	AH	АН	АН	AH
hovercraft			-J-	
intelligence collector	AGI	AGI	AGI	AGI

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

mine countermeasures		МСМ	мсм	МСМ	мсм
mine warfare vessel		*	*	*	*
minehunter		МН	МН	МН	МН
minelayer		ML	ML	ML	ML
minesweeper drone		MSD	MSD	MSD	MSD
minesweeper		MS	MS	MS	MS
multi purpose amphibious assualt ship		LHD	LHD	LHD	LHD
naval cargo ship		AK	АК	АК	AK
navy task element		ÍTE	TE	ÍTEÌ	TE
navy task force		(TF)	TF	ÍTFÌ	TF
navy task group		ÍTG	ÍTG	ÍTGÌ	TG
navy task organisation unit	$\langle \widehat{(\mathbf{x})} \rangle$				
navy task unit			TU	ÍTUÌ	TU
non combatant					
-----------------------------	-----	-----	-----	-----	
non self propelled barge	YB	УВ	YB	УВ	
ocean going tug	AT	AT	АТ	AT	
ocean research ship	AGO	AGO	AGO	AGO	
oiler	AOR	AOR	AOR	AOR	
passenger ship					
patrol craft	PC	PC	PC	PC	
patrol ship	PG	PG	PG	PG	
patrol		•	•	•	
repair ship	AR	AR	AR	AR	
roll on roll off	E	E	E	E	
sailing boat					
sea surface decoy	•••	•••	444	•••	

self propelled barge	YS	YS	YS	YS
service craft	YY	YY	YY	YY
ship				
stores ship	AF	AF	AF	AF
submarine tender	AS	AS	AS	AS
surface combatant	*	+	*	*
survey ship	AGS	AGS	AGS	AGS
tanker			<b>~0</b> ~	
tow	TW	TW	TW	
trawler		Citiz Citiz		
tug				

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

## 2.7.1.2 Upper

Value	Glyph	Examples				
anti air warfare		AAW	AAW	AAW	AAW	
anti submarine warfare	, <b>ÁSW</b> ( )	ASW	ASW	ASW	ASW	
ballistic missile	/ B \ ( )	В	В	В	В	
drone equipped				~		
electronic warfare	<pre>/* ÉW``</pre>	EW	EW	EW	EW	
escort	<pre>/ E ``</pre>	E	E	E	E	
guided missile	( ( ) ) ) ) ) ) ) ) ) ) ) ) ) ) ) ) ) )	G	G	G	G	
helicopter equipped	<pre>/************************************</pre>	Н	Н	Н	Н	
intelligence surveillance reconnaissance	· · · <b>ISR</b> · · · · · · · · · · · · · · · · · · ·	ISR	ISR	ISR	ISR	
medical	/ MÈ `\ () ` /	ME	МЕ	ME	ME	
mine counter measures		MCM	мсм	МСМ	мсм	
mine warfare	/ MW \ (	MW	MW	MW	MW	

missile defence	/ MD \ ( ) \ \ \ \	MD	MD	MD	MD
other guided missile	( ) ( )	M	M	М	M
remote multi mission vehicle		RMV	RMV	RMV	RMV
special operations force	<pre>SOF </pre>	SOF	SOF	SOF	SOF
surface warfare	SUW SUW	SUW	Suw	SUW	Suw
torpedo	( ) ( ) ) ) ) ) )	Т	Т	T	T

Table 25: Table for upper values in the MilSeaSurface command.

### 2.7.1.3 Lower

Value	Glyph	Examples				
air cushioned alternate	( ) ( ) ( ) ( ) ( ) ( )	AC	AC	AC	AC	
air cushioned	<pre>// / / / / / / / / / / / / / / / / / /</pre>	L	·	J		
autonomous control		AUT	AUT	AUT	AUT	
dock	<pre>/</pre>	D	D	D	D	
expendable	EXP-	EXP	ЕХР	ЕХР	EXP	
fast	<pre>/ ````````````````````````````````````</pre>	F	F	F	F	
heavy	<pre></pre>	н	н	н	н	
hydrofoil	<t< td=""><td>к</td><td>к</td><td>к</td><td>к</td></t<>	к	к	к	к	
light		L	L	L		
logistics		LOG	LOG	LOG	LOG	
medium	( ) ( ) ( ) ( )	M	м	м	M	
nuclear powered	( ) ( ) \ \ \ \	N	N	N	N	

remotely piloted	/ / / / / / / / / / / / / / / / / / /	RP	RP	RP	RP
tank	, , , , , , , , , , , , , , , , , , ,	т	т	т	Ţ
vehicle	( ( ) ( ) ( ) ( ) ( )	v	v	v	v

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	Кеу	Description	Prefix*
Α	track number	System Track Number.	TN
В	name	Ships Name, Hull Number or Task Organiza- tion Designator (military only), Mission / In- ternational 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, en- durance, 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 fol- lowed by two digits. The first pair of digits represents the day; the second pair, the hour; the third pair, the minutes. The last two dig- its of the year are after the month. For au- tomated systems, two digits may be added before the time zone suffix and after the min- utes 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		*	*	XIII	<b>X</b>	
bottomed submarine						
civilian autonomous underwatervehicle						
civilian diver		r@p	<b>I</b>	Q	Q	
civilian seabed installation		Ľ		Ŀ	Ŀ	
civilian submersible		5	5	5	<b>(5)</b>	
civilian		CIV	CIV	CIV	CIV	
improvised explosive device		IED	IED	IED	IED	
military diver				•		
military seabed installation						

military	( <b>MIL</b> )	MIL	MIL	MIL	MIL
moored sea mine decoy		*	*	蕃	*
non submarine		NON SUB	NON SUB	NON SUB	NON SUB
other submersible			-		•
sea mine decoy		***	**	**	***
snorkelling submarine					
submarine					•
surfaced submarine					
torpedo					-
underwater decoy			•••		•••
underwater weapon	(WPN)	WPN	WPN	WPN	WPN
unexploded ordnance		UX0		UXC	

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

## 2.9.1.2 Upper

Value	Glyph	Examples				
anti submarine warfare	<b>ÁSW</b>	ASW	ASW	ASW	ASW	
attack		A	A	A	A	
auxiliary		AUX	AUX	AUX	AUX	
ballistic missile		В	В	В	В	
certain submarine	<pre></pre>	СТ	СТ	СТ	СТ	
command and control	<pre>/ C2 / / / / / / / / / / / / / / / / / /</pre>	C2	C2	C2	C2	
guided missile		G	G	G	G	
intelligence surveillance reconnaissance	<pre></pre>	ISR	ISR	ISR	ISR	
mine countermeasures	× /	мсм	мсм	МСМ	МСМ	
mine warfare		MW	MW	MW	MW	
other guided missile	F - M - V V /	M	М	М	M	
possible submarine high 3	- <b>P3</b>	P3	P3	P3	P3	
possible submarine high 4	- <b>P4</b>	P4	P4	P4	P4	

possible submarine low 1	PI ~	P1	P1	P1	P1
possible submarine low 2	F P2	P2	P2	P2	P2
probable submarine	PB	РВ	РВ	РВ	РВ
special operations force	<pre>     SOF     </pre>	SOF	SOF	SOF	SOF
surface warfare	<pre>     SUW:      A     SUW:      A     Sum:      A     Sum:      A     Sum:      Su</pre>	SUW	SUW	SUW	SUW

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

### 2.9.1.3 Lower

Value	Glyph	Examples				
air independent propulsion	<pre>// / / / / / / / / / / / / / / / / / /</pre>	AI	AI	AI	AI	
autonomous control		AUT	AUT	AUT	AUT	
diesel propulsion	<pre></pre>	D	D	D	D	
diesel type 1		D1	D1	D1	DI	
diesel type 2	<pre></pre>	D2	D2	D2	D2	
diesel type 3	<pre></pre>	D3	D3	D3	D3	
expendable	<pre></pre>	ЕХР	ЕХР	EXP	EXP	
nuclear propulsion	<pre></pre>	N	N	N	N	
nuclear type 1	<pre></pre>	N1	N1	N1	NI	
nuclear type 2	<pre></pre>	N2	N2	N2	N2	
nuclear type 3	<pre></pre>	N3	N3	N3	N3	
nuclear type 4		N4	N4	N4	N4	
nuclear type 5	×	N5	N5	N5	N5	

nuclear type 6	× >	N6	N6	N6	N6
nuclear type 7	× > > > > > > > > > > > > > > > >	N7	N7	N7	N7
remotely piloted	× > > > > > > > > > > > > > > >	RP	RP	RP	RP

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	Кеу	Description	Prefix*
Α	track number	System Track Number.	TN
В	name	Ships Name, Hull Number or Task Organiza- tion Designator (military only), Mission / In- ternational 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, en- durance, etc. For other Units: Credibility of Information. For submarine contacts: Classi- fication:	
		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 fol- lowed by two digits. The first pair of digits represents the day; the second pair, the hour; the third pair, the minutes. The last two dig- its of the year are after the month. For au- tomated systems, two digits may be added before the time zone suffix and after the min- utes 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			- Evamplas			
Value	Normal	neutralised	Examples				
free					۲		
bottomed							
moored			Ť		¥	<b>Y</b>	
floating							
in other position					۲		
rising			Ť	V	¥	Ý	

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		-+-	-+-				
civilian astronomical satellite			- <del>P</del>	다운드			
civilian bio satellite							
civilian capsule				$\bigtriangleup$			
civilian communications satellite			- HA				
civilian earth observation satellite					<b>P</b>		
civilian miniaturised satellite	$ \begin{array}{c} \begin{array}{c} \begin{array}{c} \end{array} \\ \begin{array}{c} \end{array} \\ \end{array} \\ \end{array} \\ \begin{array}{c} \end{array} \\ \end{array} \\ \end{array} \\ \begin{array}{c} \end{array} \\ \end{array} \\ \end{array} \\ \end{array} \\ \begin{array}{c} \end{array} \\ \end{array} $			>===<			
civilian navigational satellite		X	×				
civilian orbiter shuttle		Δ	A	Δ			
civilian satellite							
civilian space station		¢	¢	Ð			

civilian tether satellite				-	
civilian weather satellite		WX	WX		
military astronomical satellite		-+-	-+-	-+-	-+-
military bio satellite					
military capsule					
military communications satellite					
military earth observation satellite					
military miniaturised satellite	$ \begin{array}{c} & - & - \\ & - & - \\ & \\ & \\ & \\ & - & \\ & \\$			>===<	
military navigational satellite		×	*	<u>×</u>	
military orbiter shuttle					
military satellite					
military space station		•	•	ф	•
military tether satellite					

military weather satellite	wx	WX	<u>wx</u>	WX
planet lander	PL	PL	PL	PL
reconnaissance satellite				
reentry vehicle	RV	RV	RV	RV
satellite	SAT	SAT	SAT	SAT
space vehicle	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	GO
geosynchronous orbit	<b>GSO</b>	GSO	GSO	GSO	GSO
high earth orbit	F HEO 	HEO	HEO	HEO	HEO
low earth orbit	£ ÉÉO_\ ( ) ( )	LEO	LEO	LEO	LEO
medium earth orbit	×	MEO	MEO	MEO	MEO
molinya orbit		МО	МО	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		
optical	÷ ` ` ` ` ` ` ` ` ` ` ` ` ` ` ` `	ο	0	o		
radar	<pre></pre>	R	R	R	R	
signals intelligence	SI - /	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	Кеу	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 Tra- jectory, 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	$\bigcirc$					
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		Ŷ	(P)	<b>(P</b> )	(P)	
attempted criminal activity		~ • • • • • • • • • • • • • • • • • • •	€ <sup>1</sup> -9	·		
automobile						
demonstration		MASS	• MASS •	MASS	MASS	
drive by shooting	$\left( \begin{array}{c} & & \\ & & \\ & \\ & \\ & \\ & \\ & \\ & \\ & $			0 € 0		
drug related activities		DRUG	DRUG	DRUG	DRUG	
explosion	M	My	Mr. Wa	Mary	My wy	
extortion 1	( <b>\$</b> )	\$	\$	\$	s	
extortion 2	( <b>£</b> )	£	3	£	3	
extortion 3	( <b>€</b> )	€	e	€	e	

extortion 4	(¥))	¥	¥	¥	¥
fire		FIRE	FIRE	FIRE	FIRE
graffiti		Ş	\$	\$\$	
improvised explosive device explosion	MEDA	N. A.	THE W	MEDA	Market and a second sec
individual		9	<b>P</b>	4	P
killing		4	•	4	
patrolling	F → V (→ ) (→ )	۴	• P •	← Þ	
pleasure craft		4			
poisoning		X		X	
psychological operations					
radio and television psychological operations				A	

riot	RIOT	RIOT	RIOT	RIOT
searching	$\sim$		$\sim$	

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	EX
hijack	( ) ) ) ) ) ) ) ) ) ) ) ) ) ) )	Н	H	Н	H
house to house	<pre>/ ☐ `` / ( ) / ) ` &gt; / ( )</pre>	Û			
kidnapping	<pre>/ K &gt; / ( ) / / / / / /</pre>	К	K K	К	K
murder	← MÙ ~ ( ( ) \ ) - ~ - ~ (	MU	MU	MU	MU
piracy	( ) ) ) ) ) ) ) ) ) ) ) ) ) ) ) ) ) ) )	PI	PI	PI	PI
rape	( ) ( ) ) ) ) ) )	RA	RA	RA	RA
written	()	W	Ŵ	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	Кеу	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 infor- mation 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 au- tomated systems, two digits may be added before the time zone suffix and after the minutes to designate sec- onds.		
Y	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

```
MilSymb
  -text
     -normal
     -squashed
     —small
    └_smallsquashed
   -air
      -main...
      _upper...
     └─lower...
  -lạnd
     —main...
     _upper...
     └_lower...
  -equipment
     —main...
    └_mobility...
  -installation
      -main...
     Lupper...
  -seasurface
     —main...
     _upper...
     └lower...
  -seasubsurface
     —main...
     _upper...
     -lower...
    └─mine...
   _space
     —main...
     _upper...
    Lower...
   -activity
     —main...
    Lupper...
  —mųlti
     —main...
     _upper...
     -lower...
    Lupperlower...
   -supply...
   -custom...
```

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 modifer 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	$\cdots$
multi/main/antenna	Ť
multi/main/ammunition	
multi/main/armoured	
multi/main/aviation fixed wing	
multi/main/aviation rotary wing	
multi/main/bridge	
multi/main/chemical biological radiological nuclear	•%•
multi/main/drill	

multi/main/decoy	•••
multi/main/diver	Ŵ
multi/main/engineer	
multi/main/field artillery	•
multi/main/individual	Ŷ
multi/main/killing victim	4
multi/main/maintenance	)—(
multi/main/major end	•••
multi/main/medic	+
multi/main/medical	
<pre>multi/main/medical treatment facility</pre>	+++-
multi/main/missile	$\square$
multi/main/naval	Ť
multi/main/person	£
multi/main/petroleum oil and lubricants	Y
multi/main/psychological operations	⊂‡
multi/main/psychological operations filled	•
multi/main/radar	Ľ
multi/main/repair parts	a
multi/main/sailing boat	
multi/main/sensor	+
multi/main/signal	
multi/main/transportation	$\otimes$
multi/main/victim of an attempted crime	`~ <del>?</del> ~、

multi/main/water	
multi/main/water purification	
multi/upper/naval	Ť
multi/upper/medic	+
multi/upper/runway	4
multi/lower/pack animal	
multi/upperlower/maintenance	ж
multi/upperlower/railroad	<del>w w</del>

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	0
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 (\$(current page text area.north east)-(1.5, 1.5)\$); \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) \MilLand[faction=unknown, echelon=battalion, main=armoured, upper=missile, lower=long range, scale=2](\$(NE)!0.33!(NW)\$) \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)\$) \Millnstallation[faction=friendly, main=electric power, upper=nuclear energy, scale=2](\$(SE)!0.66!(SW)\$) (Millstattation[action=friendty, main=steetrit power, upper=nectar energy, scate=21(\$(scate), scate=21(\$(NE)!0.2!(SE)\$) (MillseaSubsurface[faction=neutral, echelon=platoon, main=supply, supply={2}{4}, scale=2](\$(NE)!0.4!(SE)\$) (Millativity[faction=hostile, main=attempted criminal activity, upper=rape, scale=2](\$(NE)!0.6!(SE)\$) (Millativity[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 1<sup>st</sup> Marine Division (USA)



Figure 28: Recreation of Structure of 1<sup>st</sup> 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
\node(H) at (7,0) {\includegraphics[width=1.5cm] {manual_examples/772px-1st_Marine_Division_insignia}};
\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)(C11){1\textsuperscript{st} Marine Rgt. \\ CAMP PENDLETON}
\MilLand[scale=0.75, faction=friendly, echelon=regiment, main=marine](7, -2)(C21){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)(Cl2){~\\ 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)(Cl3){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)(C43){1\textsuperscript{st} Btn. \\ 1\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}
//illand[scale=0.75, faction=friendly, echelon=battalion, main=reconnaissance tank, lower=wheeled[0, -6](C05){3\textsuperscript{rd} Light Armoured \\ Reconnaissance Btn.}
\Milland[scale=0.75, faction=friendly, echelon=battalion, main=reconnaissance 10:3\textsuperscript{rd} Btn. \\ 1\textsuperscript{rd} Btn. \\ 1\textsuperscript{r
 \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){l\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) |- ($(H.south)!0.5!(Cll.north)$) -| ($(C02.west)+(-0.25, 0)$) -| (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);
```

# 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.