

APPENDIX H

THE ROUTE CLASSIFICATION SYSTEM

This appendix implements STANAGs 2253 and 2174

The military route classification system helps in planning and executing battlefield movement. The Highway Traffic Division classifies routes based on how much control is to be exerted on the route. From most to least control, routes are classified as prohibited, reserved, dispatch, supervised, and open.

The degree of control on a route is usually set by the PM. However, if a route is reserved for a unit, then the commander of that unit decides how much and what kind of control is needed.

Route classifications are developed by military engineers. They use (STANAG 2174) a route classification formula. The formula is made up of a series of numbers and letters that express, in a standard sequence, the route width, route type, lowest military load classifications, overhead clearance, obstructions to traffic flow,

and special conditions on a given route. They base their findings on information extracted from route recon reports.

MP make hasty route recons to check route conditions and report changes affecting the route's classification. Routes are classified under favorable light and weather conditions. When movement will be under conditions other than favorable, such as blackout movement, recon instructions must include the ways by which a movement can be completed.

ROUTE CLASSIFICATION COMPONENTS

The report of a hasty route recon usually consists of a map overlay, supplemented by additional reports about various aspects of the terrain. A map overlay is a drawing of a route and its characteristics. The overlay should be prepared on transparent paper when possible.

The route recon overlay is accurate, clear, and concise. Standard topographic symbols, military symbols, and overlay symbols are used to ensure that route recon reports are universally understood. The route classification is used on the route recon overlay.

ROUTE WIDTHS

The width of a route is determined by its narrowest portion, whether that be roadway, bridge, tunnel, or other constrictions, and is expressed in meters or feet (STANAG 2253). The width of the traveled way sets the number of lanes of a given route. The number of lanes determines traffic flow. One lane can accommodate vehicular traffic in one direction only, allowing no overtaking in the same direction or passing in the oncoming direction.

**Determining Route Widths**

Examples of Vehicle Route Widths		
Flow Possibilities	Width For Wheeled Vehicles	Width For Tracked Vehicles
Isolated vehicles of appropriate width only and in one direction only.	At least 3.5m (11.5 ft)	At least 4m (13 ft)
Generally one way only; no overtaking or passing in opposite direction.	3.5m to 5.5m (11.5 ft to 18 ft)	4m to 6m (13 ft to 19.5 ft)
Single Flow	5.5m to 7.3m (18 ft to 24 ft)	6m to 8m (19.5 ft to 26 ft)
Double Flow	Over 7.3m (24 ft)	Over 8m (26 ft)

a. Width of vehicle  
 b. Width of lane  
 c. Width of traveled way  
 d. Width of hard shoulder  
 e. Width of grading

A route is **single flow** when it allows a column of vehicles to proceed and, in addition, lets individual oncoming or overtaking vehicles pass at predetermined points. The width of a single-flow route should be equal to at least 1 1/2 lanes.

A route is **double flow** when it allows two columns of vehicles to proceed abreast at the same time, whether or not they are moving in the same direction.

In a hasty route recon, instructions indicate whether the anticipated traffic is to be single or double flow and whether the route is for the use of wheeled vehicles or tracked vehicles. In the absence of instructions, routes are reconnoitered and reported based on the minimum traveled way width for double-flow, tracked vehicles.

**ROUTE TYPES**

For the purpose of classification, routes are designated by their ability to withstand the effects of weather. Route type is determined by the worst section of the route. There are three types of routes (STANAG 2174):

- **Type X** is an all-weather route that, with reasonable maintenance, is passable throughout the year to maximum capacity traffic. The roads that form this type of route normally have waterproof surfaces and are only slightly affected by precipitation or temperature changes. At no time is the route closed to traffic by weather conditions other than temporary snow or flood blockage.
- **Type Y** is a limited all-weather route that, with reasonable maintenance, can be kept open in all weather but is sometimes open to less than maximum capacity traffic. The roads that form this type of route usually do not have waterproof surfaces and are considerably affected by precipitation or temperature changes. The route may be closed for short periods of up to one

day at a time by adverse weather conditions during which heavy use of the road would probably lead to complete collapse.

- **Type Z** is a fair-weather route that quickly becomes impassable in adverse weather and cannot be kept open by maintenance short of major construction. This category of route is so seriously affected by weather that traffic may be brought to a halt for long periods.

**MILITARY LOAD CLASSIFICATIONS**

The military classifies and assigns a load-carrying capacity, shown in whole numbers, to vehicles, bridges, roads, and routes. Vehicles are classified by weight, type, and effect on routes. Bridges, roads, and routes are classified by physical characteristics, type and flow of traffic, effects of weather, and other special conditions.

Usually, the lowest bridge classification number (regardless of vehicle type or conditions of traffic flow) sets the load classification of a route. If no bridge is located on the route, the worst section of road governs the route's classification. Vehicles having higher load classifications than a particular route are sometimes able to use that route if a recon overlay or a special recon shows that a change in traffic control, such as making a bridge a single-flow crossing, would permit use of the route by heavier traffic.

Whenever possible, the basic military road network is composed of average routes and includes a number of heavy traffic routes and a few very heavy traffic routes. The class of a military road maneuver network is fixed by the minimum route classification of the network. Individual routes are grouped and identified in broad categories:

- Average traffic routes - Class 50
- Heavy traffic routes - Class 80
- Very heavy traffic routes - Class 120

**Sample Route Classification Formulas**

**20ft/Z/40/∞**

Describes a fair-weather route (Z) with a minimum traveled way of 20 feet and a military load classification of 40. Overhead clearance is unlimited ∞ and there are no obstructions to traffic flow. This route, based on its minimum width of traveled way, accommodates both wheeled and tracked single-flow traffic without obstruction.

**20ft/Z/40/∞ (OB)**

Describes a route with characteristics similar to those of the previous example, but there is an obstruction in this example. This obstruction could consist of overhead clearances of less than 4.3 meters (14 feet), grades of 7 percent or greater, curves with a radius of 25 meters (82.5 feet) and less, fords, or ferries. Twenty feet of traveled way limits this route to single-flow traffic without a width obstruction. If the route is to be used for double-flow traffic, however, 20 feet of traveled way constitutes an obstruction (OB).

**7m/Y/50/4.6m (OB)**

Describes a limited all-weather route (Y) with a minimum traveled way of 7 meters, a military load classification of 50, an overhead clearance of 4.6 meters, and an obstruction. The route width is not suitable for double-flow wheeled or tracked traffic. This width constriction would be indicated as (OB) in the route classification formula if the route were to be used for double-flow traffic.

**10.5m/X/120/∞ (OB)(W)**

Describes an all-weather route (X) with a minimum traveled way width of 10.5 meters, which is suitable for double-flow traffic of both wheeled and tracked vehicles, a military load classification of 120, an unlimited overhead clearance, an obstruction indicated in the formula as (OB), and regular, recurrent flooding indicated in the formula as (W).

**OVERHEAD CLEARANCE**

Overhead clearance is the vertical distance between the road surface and any obstruction over it that denies use of the route/road to all vehicles or loads that exceed this height. If clearance is unlimited, symbolize it by using ∞ in the route classification formula.

**ROUTE OBSTRUCTIONS**

Route obstructions are factors that restrict the type, amount, or speed of traffic flow. Route obstructions are indicated in the route classification formula by the abbreviation (OB). If an obstruction is shown in the route classification formula, the route recon overlay will show the exact nature of the obstruction. Recon overlay symbols are used to describe the nature of each obstruction on the route recon overlay. Certain obstructions must be reported:

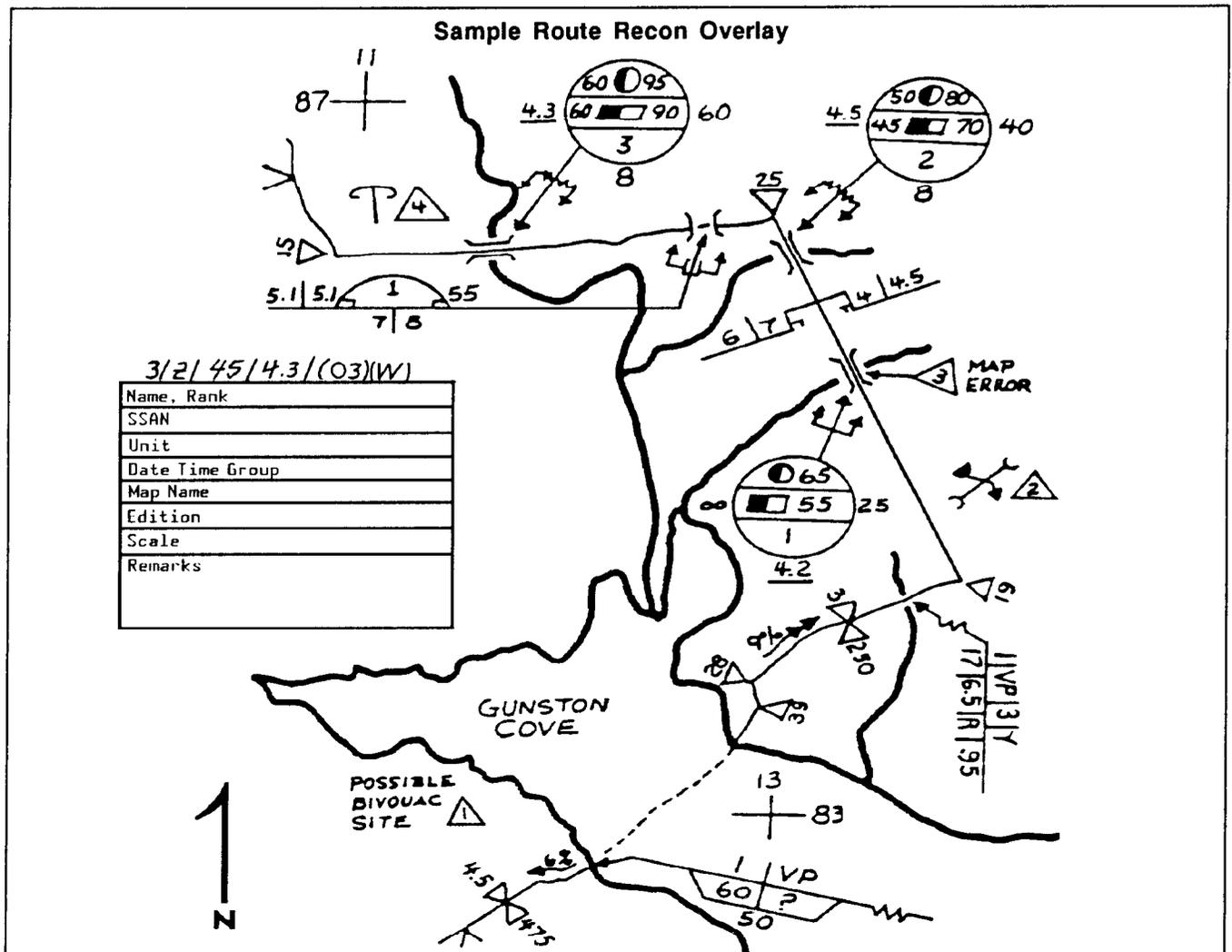
- Overhead obstructions, like bridges, tunnels, underpasses, overhead wires, and overhanging buildings, with overhead clearance of less than 4.3-meters (14-feet).

- Reduction in traveled way widths that are below standard minimums prescribed for the type of traffic flow, such as bridges, tunnels, craters, lanes through mined areas, and projecting buildings or rubble.
- Gradients (slopes) of 7 percent or greater.
- Curves with a radius of 25 meters (82.5 feet) and less (STANAG 2253).
- Ferries. • Fords.

**SPECIAL CONDITIONS**

Some "obstructions" are temporary or special conditions. Snow is not usually classified as an obstruction to traffic as vehicular movement depends on the depth of the snow and/or the presence of snow removal equipment. But, where snow blockage is regular, recurrent, and serious, the route classification formula is followed by (T).

Flooding is not usually a factor in classifying routes unless flooding is regular, recurrent, and serious. Then the route classification formula is followed by (W).

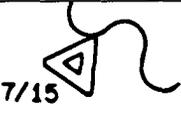
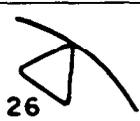
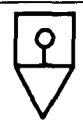
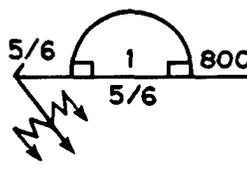
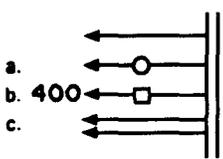
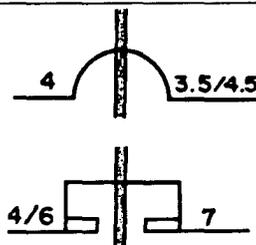


## ROUTE RECON SYMBOLS

EXPLANATION	SYMBOL	REMARKS
1. <b>ABBREVIATED BRIDGE SYMBOL</b>		Use this symbol only when map scale does not permit use of the full NATO bridge symbol. If this symbol is used, DA Form 1249 must be submitted. Draw arrow to map location of bridge. Show bridge serial number in lower portion of symbol and military load classification for single-flow traffic in upper portion. If there are separate load classifications for tracked or wheeled vehicles, show the lesser classification. Underline classification number if width of overhead clearance is below minimum standard.
2. <b>AXIAL ROUTE</b>		Use a solid line and identify the route by an odd number.
3. <b>BYPASS DIFFICULT</b>		Use when the obstacle can be crossed in the immediate vicinity, but some work to improve the bypass is necessary.
4. <b>BYPASS EASY</b>		Use when the obstacle can be crossed in the immediate vicinity by a US 2 1/2-ton truck (or NATO equivalent) without work to improve the bypass.
5. <b>BYPASS IMPOSSIBLE</b>		Use when the obstacle can be crossed only by repairing or constructing a feature, or by detouring around the obstacle.
6. <b>CIVIL OR MILITARY ROUTE DESIGNATION</b>		Write the designation in parentheses along the route.
7. <b>CONCEALMENT</b>		Show roads lined with trees by a single line of circles for deciduous trees and a single line of inverted Vs for evergreen trees. Show woods bordering a road by several rows of circles for deciduous trees and several rows of inverted Vs for evergreen trees.
8. <b>CRITICAL POINTS</b>		Number, in order, and describe critical points on DA Form 1711-R. Use critical points to show features not adequately covered by other symbols on the overlay.
9. <b>DAMAGE OR DESTRUCTION</b>		
10. <b>FERRY</b> <i>Ferry Type</i> P – pedestrian V – vehicular		Draw arrow to the map location of the ferry. The data above the symbol shows, in order, the left approach, ferry serial number, ferry type, and right approach. The data inside the symbol shows, from left to right, the military load classification and the dead weight capacity in tons. The number below the symbol shows the turnaround time in minutes. A question mark indicates unknown information. Show difficult approaches by zigzag lines and easy approaches by a straight line
11. <b>FORD</b> <i>Ford Type</i> P – pedestrian V – vehicular		Draw arrow to the ford location. The data above the line shows, in order, the left bank approach, the ford serial number, ford type, stream velocity (in meters per second) seasonal limitations, and right bank approach. Difficult approaches are represented by zigzag lines corresponding in position to shore where approach is located. Straight lines identify an easy approach. The left and right banks are determined by looking downstream. The data below the line shows, in order, length, width, bottom type, and depth. All measurements are in meters. <i>Seasonal Limiting Factors:</i> X – none, Y – significant. ? – Unknown information. <i>Bottom Type:</i> M –mud, C –clay, S –sand, G –gravel, R –rock, P –artificial paving.

This chart provides a summary of standard route recon and related symbols. In addition, remarks are provided to explain the purpose and use of each symbol in greater detail.

EXPLANATION	SYMBOL	REMARKS
<p>12. FULL NATO BRIDGE SYMBOL</p>		<p>Indicate wheeled vehicles in the upper third of the symbol with the two-way wheeled classification at the left and the one-way wheeled classification at the right. Show tracked vehicles in the center third of the symbol with the two-way tracked classification at the left and the one-way tracked classification at the right. Place the bridge serial number in the lower third of the symbol. Draw the arrow to the location of the bridge and show bypass conditions on the arrow shaft. Place traveled way width below the symbol, overhead clearance to the left of the symbol, and overall length to the right of the symbol.</p>
<p>13. GRADES</p>		<p>Show the actual percent of grade to the right of the symbol. Any grade of 7 percent or more is an obstruction. Include in the route classification formula. Arrows point uphill; the length of the arrow represents the length of the grade if the map scale permits.</p>
<p>14. LATERAL ROUTE</p>		<p>Use a broken line and identify the route by an even number.</p>
<p>15. LIMITS OF SECTOR</p>		<p>Show the beginning and ending of a reconnoitered section of a route or road with this symbol.</p>
<p>16. MAIN SUPPLY ROUTE</p>		<p>Route is labeled "MSR" and is assigned a code name.</p>
<p>17. OBSTACLES</p> <p>a. Proposed block</p> <p>b. Prepared but passable</p> <p>c. Completed block</p>		<p>Place the center of the symbol over the location of the blocked part of the route. Use parallel broken lines for a proposed block, parallel lines for a prepared but passable block, and crossed lines for a completed block.</p>
<p>18. CLEARANCE</p>		<p>Overhead clearance unlimited.</p>
<p>19. PARKING AREA</p>		
<p>20. RAILROAD GRADE CROSSING</p>		<p>Use this symbol to show a level crossing where passing trains would interrupt traffic flow. If there is a power line present, show its height, in meters, from the ground. Underline the overhead clearance if it is less than 4.3 meters.</p>
<p>21. RAILWAY BRIDGE SYMBOL</p>		<p>Place RL above the symbol to indicate a railway bridge. At the left of the symbol show the overhead clearance. Show the overall length of the bridge at the right of the symbol. Indicate the traveled way width below the symbol and underline it if it is below standard for the classification. Inside the symbol, show the bridge classification in the upper half. If the class is different for single- and double-flow traffic, show single flow on the left and double flow on the right. Place the railway bridge serial number in the lower half of the symbol. Draw an arrow to the map location of the bridge. On the arrow shaft, indicate the ease of adapting the bridge for road vehicle use. A zigzag line means it would be difficult to adapt, and a straight line means it would be easy to adapt. Place the bypass symbol on the arrow shaft to indicate bypass conditions.</p>

EXPLANATION	SYMBOL	REMARKS
<p>22. <b>ROUTE CLASSIFICATION FORMULA</b></p>	<p>10.5 m/X/120/00 6m/Z/30/4.1m/(OB) 9m/Y/40/5 m/(OB)(W)</p>	<p>Express the formula in order of route width, route type, military load classification, minimum overhead clearance, obstructions (if present) and special conditions. <i>Route Types:</i> X –all-weather , Y –limited all-weather route, Z –fair-weather route <i>Special Conditions:</i> (T) -Regular snow blockage, (W) -Regular flooding</p>
<p>23. <b>SERIES OF SHARP CURVES</b></p>		<p>Point vertex of triangle at the first curve in the series. Indicate the number of curves in the series (left) and the radius of the sharpest curve (right).</p>
<p>24. <b>SHARP CURVE</b></p>		<p>Point vertex of triangle to map location of curve and indicate the radius of the curve, in meters, outside the triangle. A curve of 45 meters or less must be reported on the overlay, and a curve of 25 meters or less is an obstruction.</p>
<p>25. <b>TRAFFIC CONTROL HEADQUARTERS</b></p>		
<p>26. <b>TRAFFIC CONTROL POST</b></p>		
<p>27. <b>TUNNEL</b></p>		<p>Draw arrow to map location of tunnel. Place bypass condition symbol on arrow. Show minimum and maximum overhead clearances to the left of the symbol, the tunnel serial number inside the symbol, and the total tunnel length to the right of the symbol. Below the symbol, show the traveled way width. If sidewalks are present, follow with a slash and the total traveled way, including sidewalks. Underline the traveled way if the road entering the tunnel is wider than the traveled way of the tunnel. Use a question mark to show unknown information.</p>
<p>28. <b>TURNOUT</b> The symbol may be amplified as follows: a. Wheeled vehicle b. Tracked vehicle c. A length of road exceeding 1 km.</p>		<p>Use this symbol to show the possibility of driving off the road. Draw the arrow in the direction of the turnout (right or left of road). For wheeled vehicles, draw a small circle on the shaft of the arrow. For tracked vehicles, draw a small square on the shaft of the arrow and place the length of the turnout, in meters, at the tip of the arrow. When the turnout is longer than 1 kilometer, use double arrows.</p>
<p>29. <b>UNDERPASS CONSTRUCTIONS – arched or rectangular</b></p>		<p>Draw the symbol over the road. Place the width of the traveled way, in meters, to the left of the symbol. If sidewalks are present, follow the traveled way width with a slash and the total width, including sidewalks. Underline the traveled way width if the road entering the underpass is wider than the underpass traveled way. Show the overhead clearance, in meters, to the right of the symbol. Show both minimum and maximum overhead clearances, if different.</p>
<p>30. <b>UNKNOWN or doubtful information</b></p>	<p>?</p>	
<p>31. <b>WIDTH CONSTRICTION</b></p>		<p>The number at the left shows the narrowest width of the constriction, and the one at the right is the total constricted length. Both dimensions are in meters.</p>