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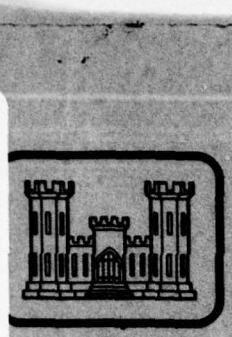
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MOBILITY PERFORMANCE OF THE M578 LIGHT RECOVERY VEHICLE AND OTHER SELECTED VEHICLES

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by

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Prepared for U. S. Army Training and Doctrine Command
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The Army Mobility Model (AMM) was used to establish for each study vehicle the on- and off-road mobility performance for dry, wet, and snow surface conditions in the HIMO West Germany and the dry, wet, and sand surface conditions for the HIMO Mid-East study areas. The mobility performance was expressed in terms of speed profiles for each surface condition of primary roads, secondary roads, and off road. The mobility rating speed was also established for each study vehicle at each surface condition for the five tactical mobility levels of the study areas.

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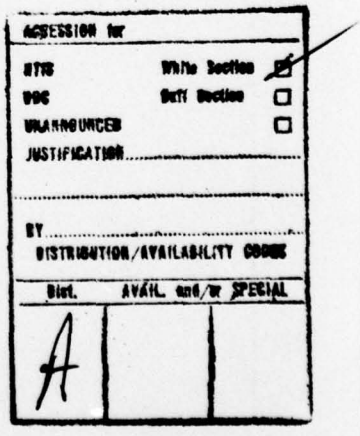
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20. ABSTRACT (Continued).

These data were then used to compare the mobility of the M578 Light Recovery Vehicle towing selected vehicles with the mobility of the M88 Medium Recovery Vehicle towing the same vehicles.

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PREFACE

Personnel of the U. S. Army Engineer Waterways Experiment Station (WES) conducted the study described herein during the period December 1978 to February 1979 for the U. S. Army Training and Doctrine Command (TRADOC) under Intra Army Order for Reimbursable Services No. CD 17-79 dated 26 December 1978.

The study was conducted under the general supervision of Messrs. J. P. Sale, Chief, Geotechnical Laboratory (GL); E. S. Rush, Chief, Mobility Systems Division (MSD); and C. J. Nuttall, Jr., Chief, Methodology and Modeling Research Group (MMRG). Mr. D. D. Randolph (MRMG) directed the overall study and prepared this report. Messrs. R. P. Smith (MMRG), R. B. Ahlvin, and B. R. Wright, Computations and Analysis Group (CAG), MSD, prepared the mobility predictions. Mr. R. G. Temple and Ms. E. P. Roberts, MRMG, prepared the vehicle characteristics data. Mr. Lynn Martin, Tank-Automotive Concepts Laboratory, Exploratory Development Division, Analysis and Evaluation Function, TARADCOM, supported WES's efforts in collecting vehicle characteristics and performance data.

COL J. L. Cannon, CE, was Director of the WES during the conduct of the study and preparation of this report. Mr. F. R. Brown was Technical Director.

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CONVERSION FACTORS, U. S. CUSTOMARY TO METRIC (SI) UNITS OF MEASUREMENT

Units of measurement used in this report can be converted as follows:

Multiply	By	To obtain
degrees (angular)	0.01745329	radians
horsepower	745.6999	watts
horsepower per ton	82.82	watts per kilonewton
inches	0.0254	metres
miles (U. S. statute)	1.609344	kilometres
miles (U. S. statute) per hour	1.609344	kilometres per hour
pounds (force) per square inch	6.894757	kilopascals
pounds (mass)	0.45359237	kilograms
tons (force)	8896.444	newtons
tons (mass)	907.185	kilograms

MOBILITY PERFORMANCE OF THE M578 LIGHT RECOVERY VEHICLE AND OTHER SELECTED VEHICLES

PART I: INTRODUCTION

Background

1. The U. S. Army Logistics Center (LOGC) is conducting a study to determine if the M578 Light Recovery Vehicle is an adequate recovery vehicle for the Infantry and Cavalry Fighting Vehicles (IFV/CFV) and the Ground Support Rocket System (GSRS). The LOGC asked the U. S. Army Engineer Waterways Experiment Station (WES) to support the LOGC study of the M578 by developing mobility performance data for selected study vehicles.

Objective

2. The objective of the WES support of the M578 study was to provide mobility performance data for the selected study vehicles in the HIMO[1] West Germany and Mid-East study areas and to compare the study vehicles at the five tactical mobility levels.

Scope

3. Principal activities necessary to achieve the WES objective were:

a. The AMC-74X of the Army Mobility Model (AMM) (paragraph 18) was used to establish for each study vehicle the on- and off-road mobility performances for dry, wet, and snow surface conditions in the HIMO West Germany and the dry, wet, and sand surface conditions in the HIMO Mid-East study areas. The mobility performance was expressed in terms of speed profiles for each surface condition of primary roads, secondary roads, and off-road; and in terms of percent NOGO for trails and off-road (Appendix B).

b. The SWIMCRIT water-crossing model[2] was used to predict water-crossing performance of the study vehicles.

c. The mobility rating speed was computed for each study vehicle at five tactical mobility levels for each of the three surface conditions and for all conditions combined (Part III). The levels of mobility and corresponding mobility rating speeds were those described in the HIMO Study[1] (paragraph 27). Three of these mobility levels (tactical high, tactical standard, and tactical support) were first defined by the WHEELS Study[3].

4. Some limitations of this mobility study were:

a. The mobility assessment for this study was limited to comparison of study vehicles based on mobility performance alone.

b. Vehicles were assumed to be in prime condition, operating at rated payload, and operated by fully competent drivers.

c. Vehicles towing other tracked vehicles were limited by a maximum speed specified as maximum for towing with recovery vehicles.

d. The off-road mobility predictions (speed profiles) are based on a single pass of a vehicle.

e. Mobility predictions, both on- and off-road, reflect only the steering required to negotiate the road or terrain.

PART II: STUDY VEHICLES, TERRAIN, AND SCENARIO CONDITIONS

Study Vehicles

5. Eight tracked vehicles and ten combinations of the M578 and M88 recovery vehicles towing tracked vehicles were selected as study vehicles. A list of the study vehicles is given in Table 1. A list of some of the important characteristics of the eight tracked vehicles is given in Table 2. The complete list of vehicle characteristics and performance data used by the AMM to make mobility predictions for the study vehicles is given in Appendix A.

Brief Description of HIMO Road, Areal Terrain, and Linear Data

Road and areal terrain data

6. The road and areal terrain data for the HIMO West Germany and Mid-East study areas were used in this study. The West Germany study area is located between Fulda and Giessen (Figure 1) and the Mid-East study area is located around Amman in Jordan (Figure 2). Each of the study areas contains about 3000 sq km and were selected by TRADOC during the HIMO study.

7. The road and areal terrain data were prepared from maps at a scale of 1:50,000. The resulting maps used to describe the areal terrain units for the HIMO study were considered to be "study-quality" maps. That is, specific values for many terrain factors involved were largely inferred from available qualitative data sources interpreted in context of local climate, cultural practices, etc., but no ground truth data were used. As a result, it cannot be guaranteed that the specific set of factor values assigned to a given point on a map will, in fact, be found at that point on the ground. However, it is considered that the area as mapped is generally representative of the levels, associations, and areal distribution of those factors that influence vehicle mobility performance throughout the area as a whole.

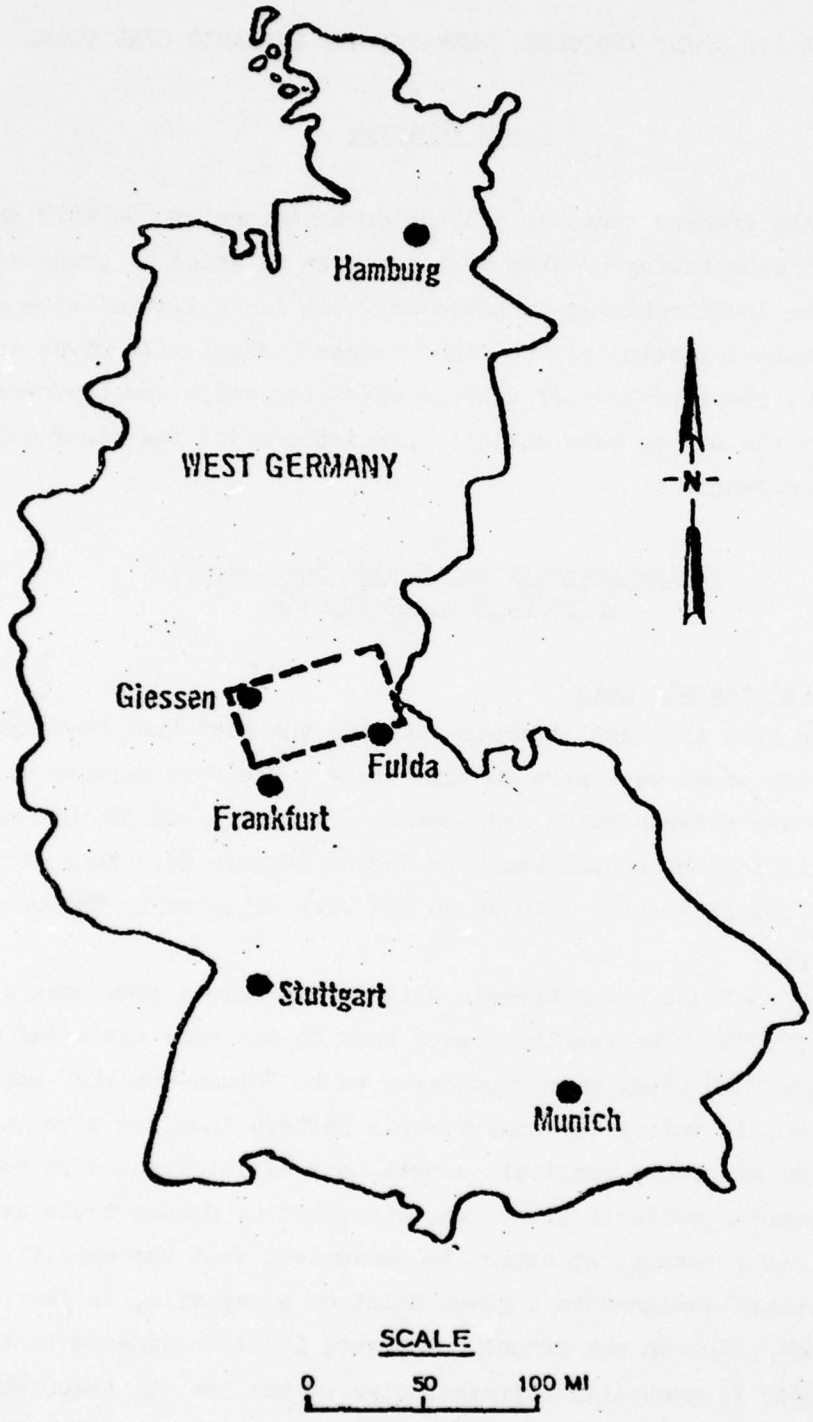


Figure 1. Location of the HIMO West Germany study area

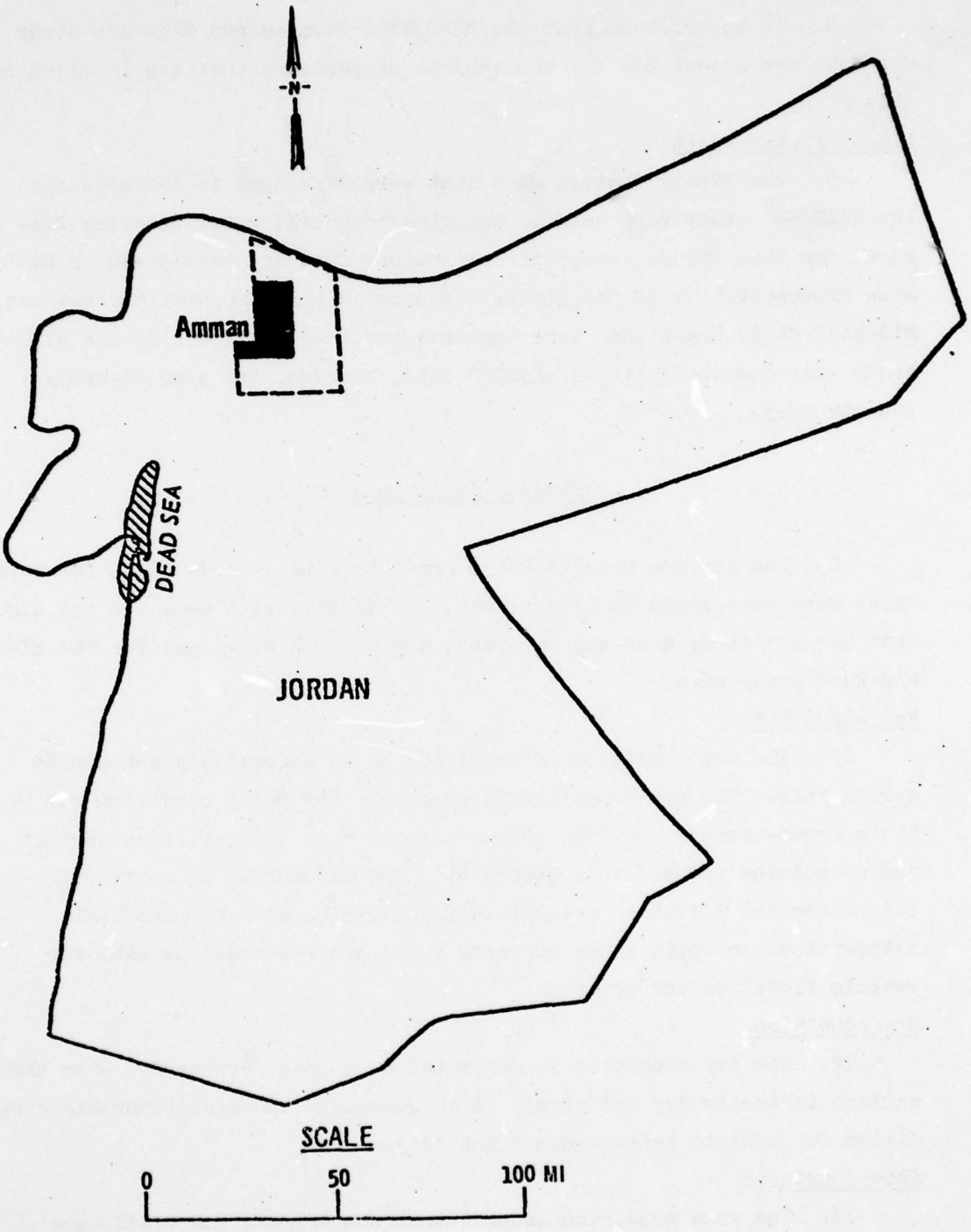


Figure 2. Location of HIMO Mid-East study area

8. It is believed that the HIMO West Germany and Mid-East study map data are acceptable for the vehicle comparisons that are involved in this study.

Linear feature data

9. The linear feature data that were developed in the area for the WACROSS[4] study were used to describe potential water-crossing features for this study. These linear feature data are considered to be more representative of the linear features in the HIMO West Germany and Mid-East study areas than were the data available at the time the HIMO study was conducted. These WACROSS data, however, are also of study quality only.

Surface Conditions

10. The surface conditions of areal terrain and road data for this study were considered to be dry, wet, and covered with snow for the HIMO West Germany study area and dry, wet, and covered with sand for the HIMO Mid-East study area.

Wet condition

11. The wet condition is described as an excessively wet period during rain. The wet condition is generally the worst condition for vehicle cross-country mobility because of the high soil-moisture content and associated reduced soil strengths. The assumption of continuing rain makes the situation still less favorable because of potential slipperiness on soils whose strength would otherwise be adequate for vehicle flotation and traction.

Dry condition

12. The dry condition is described as a long, dry period when the surface is mostly dry and firm. It is generally the most favorable condition for vehicle cross-country mobility.

Snow condition

13. The snow condition assumes that the terrain and trails are frozen and uniformly covered by 10 in. of dry snow, which is a reasonable maximum average depth for the area. Differences in snow depth

or characteristics in forested areas, or due to drifting snow, are not considered.

Sand condition

14. In the Mid-East area, predictions were made for a condition in which the actual terrain was arbitrarily converted to an all-sand terrain with sand dunes by (a) converting all actual soils to dry desert sands with appropriately reduced strengths, and (b) doubling all slopes to a maximum of 60 percent (the approximate angle of repose of sand dunes, frequently found on the lee side of desert dunes).

15. Characteristics of all roads for the sand condition were unchanged, except that the soil-surfaced trails were assumed to be trails on sand. These changes are considered reasonable in large expanses of dune terrain, but the actual configuration of the terrain and roads is, of course, entirely synthetic.

Study Scenarios

16. During the HIMO study, personnel from TRADOC schools and study agencies designated movement routes at 1:50,000 scale for portions of authorized TRADOC scenarios representing defense, attack, and delay operations within the HIMO West Germany and Mid-East study areas. They indicated appropriate main supply routes (MSR's) and secondary supply roads between each combat unit and concurrent points of supply. Figure 3 shows an example of the supply routes for part of the West Germany study area. Similar routes were designated for a number of typical runs by combat, combat support, and combat service support units. Table 3 summarizes some of the characteristics of the composite network of routes.

17. Because of the high density of secondary roads and trails in West Germany, very little off-road operation was considered to be required except under the local impact of enemy action. The MidEast study area required traversing a larger portion of trails and off-road terrain.

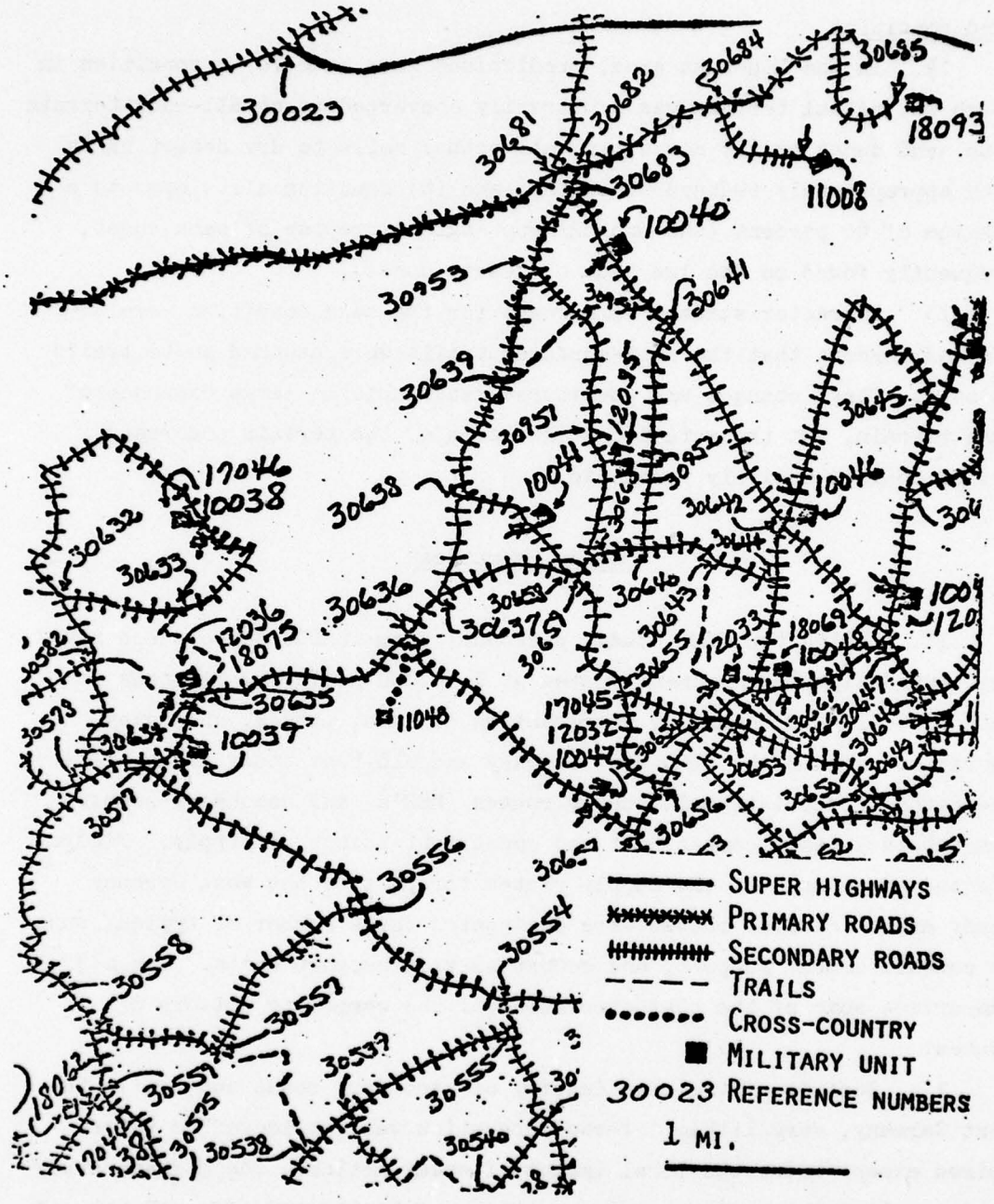


Figure 3. Partial supply route network map for West Germany study area

PART III: MOBILITY PREDICTIONS

On- and Off-Road Mobility Predictions

18. The AMM[1] was used to predict on- and off-road speed performances for each of the study vehicles for dry, wet, and snow surface conditions in the HIMO West Germany study area and the dry, wet, and sand surface conditions of the Mid-East study area. The version of the AMM (AMC-74X) used in this study was the first-generation AMC-71 with a number of significant improvements in the predictive algorithms. The inputs to this model are vehicle characteristics and a quantitative terrain description of the study area. The general content of the terrain data base is indicated, and the detailed vehicle characteristics and performance data for the study vehicles required for AMC-74X are given in Appendix A.

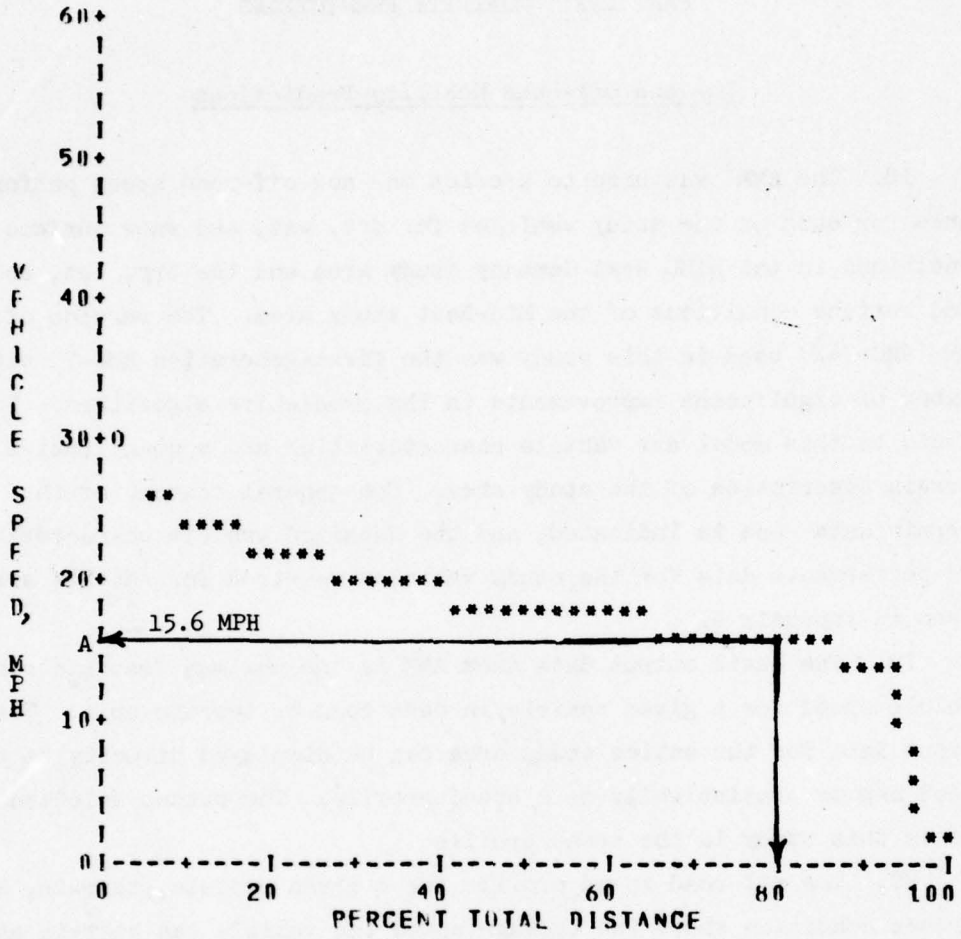
19. The basic output data from AMM is the maximum feasible single vehicle speed for a given vehicle in each road or terrain unit. The AMM output data for the entire study area can be displayed directly as a speed map or statistically as a speed profile. The output selected for use in this study is the speed profile.

20. The off-road speed profile for a given vehicle, terrain, and surface condition shows the average speed the vehicle can sustain as a function of the percentage of the total area under consideration that it avoids, under the assumption that it avoids areas posing the greatest impediment to its motion. An example of off-road speed profile is given in Figure 4. This sample speed profile shows, at point A, that the M758 Light Recovery Vehicle can average 15.6 mph while negotiating the best 80 percent of the terrain in the study area and avoiding the worst 20 percent of the terrain in the same area.

21. The on-road speed profile for a given vehicle, road (primary or secondary road or trail), and surface condition shows the average speed the vehicle can sustain as a function of the percentage of the total distance under consideration that it avoids, under the assumption

NIMO West Germany Study Area
Vehicle: M578 Light Recovery Vehicle

Condition: Dry



PERCENT TOTAL DISTANCE

ACCUMULATED SPEED	X=0	2	4	6	8
X	33.8	30.8	27.9	26.4	25.5
1X	24.9	24.5	23.8	23.2	22.7
2X	22.2	21.8	21.5	21.1	20.8
3X	20.4	20.1	19.8	19.5	19.2
4X	19.0	18.8	18.6	18.4	18.3
5X	18.1	18.0	17.8	17.7	17.5
6X	17.4	17.2	17.1	16.9	16.8
A → 7X	16.6	16.4	16.2	16.0	15.8
8X	15.6	15.4	15.2	15.0	14.8
9X	14.5	14.2	13.6	5.1	2.5
10X	1.7				

Figure 4. Off-road speed profile data

that it avoids roads or trails posing the greatest impediment to its motion. An example of an on-road speed profile is given in Figure 5.

22. The speed profiles for each study vehicle on the primary roads, secondary roads, trails, and off-road terrain during the dry, wet, and snow surface conditions in the HIMO West Germany study area are given in Appendix B, Tables B1-B18. Speed profiles for the dry, wet, and sand conditions of the HIMO Mid-East study area are given in Tables B19-B36.

23. There were no NOGOs on the primary and secondary roads. The percent of off-road terrain and trails that was NOGO and the reason for NOGO for each study vehicle during the dry, wet, and snow surface conditions in the HIMO West Germany study area are summarized in Tables B37-B39, and for the dry, wet, and sand surface condition of the HIMO Mid-East study area are given in Tables B40-B42.

Linear Feature Performance Predictions

24. The linear feature performance predictions were made using the SWIMCRIT water-crossing model,[2] the WACROSS methodology[4] a WES Engineer Assistance Model,[5] and terrain description of the linear features in the HIMO West Germany study area. Due to the short time frame of this study, linear feature performance predictions for some of the vehicles were estimated from data for vehicles having similar characteristics and performance. The characteristics of the study vehicles required for the SWIMCRIT water-crossing model and the linear feature data required for the SWIMCRIT are given in Appendix A.

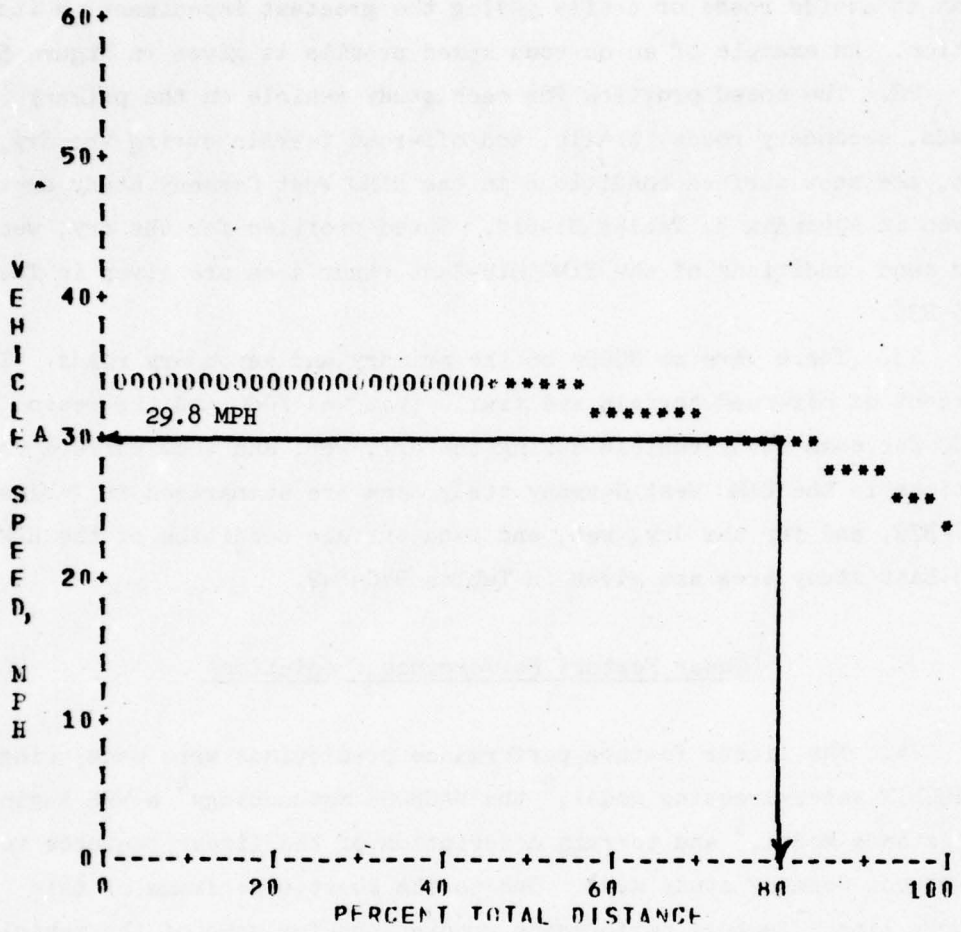
25. The WACROSS methodology was used to determine (for each vehicle, for three seasonal water stages, and for the area):

a. The mean number of stream crossings necessarily negotiated per mile during cross-country travel.

b. The mean time required to effect a single crossing.

The methodology, as applied, examined the WACROSS digitized linear feature data for the areas covered by eighteen 1- by 22-km sample strips across the area depicted on the central HIMO quad sheet (L5322). Nine samples

HIMO West Germany Study Area — Condition: Dry
Vehicle: M578 Light Recovery Vehicle



PERCENT TOTAL DISTANCE

ACCUMULATED SPEED	X=0	2	4	6	8
X	34.0	34.0	34.0	34.0	34.0
1X	34.0	34.0	34.0	34.0	34.0
2X	34.0	34.0	34.0	34.0	34.0
3X	34.0	34.0	34.0	34.0	34.0
4X	34.0	34.0	34.0	33.9	33.8
5X	33.7	33.6	33.5	33.3	33.0
6X	32.6	32.2	31.9	31.6	31.3
A → 7X	31.1	30.8	30.6	30.4	30.2
8X	29.8	29.5	29.1	28.7	28.1
9X	27.6	27.1	26.7	26.2	25.4
10X	24.7				

Figure 5. On-road (primary) speed profile data

were north-south transects; nine were east-west transects. Moving from one end of each transect to the other, the computerized process avoids crossings where possible without going outside the transect bounds and, where crossings are unavoidable, selects the optimum crossing site. A site, when it exists, where the given vehicle can successfully cross without assistance is chosen as the optimum site. Otherwise, the site chosen is one that requires a minimum of critical engineer resources (dozers, bridges, etc.) to prepare for crossing. The corresponding construction time required is computed based upon site characteristics and added to an arbitrary waiting time of one hour. The mean time required per crossing is then given by: (total construction and waiting time for all crossings)/(total number of crossings). In the tactical support role, vehicles are rarely used on single-vehicle missions. In recognition of this, the crossing time assessed to a single vehicle was taken to be 1/10 of the computed value, which is equivalent to spreading the crossing "expense" among 10 vehicles. In Appendix B, Tables B43 and B44 summarize the performance data for the study vehicles crossing linear features (water-crossing). The product of the mean time per crossing and the number of crossings per mile of off-road terrain traversed gives a water-crossing coefficient having units of hours per mile. This index provides a simple comparative measure of a vehicle's water-crossing capabilities in a given area. Consequently, a vehicle's water-crossing coefficient can be expected to change from area to area. Table B43 presents a listing of these coefficients for each vehicle for each of the three surface conditions for the HIMO West Germany study area, and Table B44 presents these coefficients for each study vehicle for the three surface conditions for the HIMO Mid-East study area.

Tactical Mobility Levels

26. The mobility performance of a vehicle is a complex function of the vehicle characteristics, the terrain in which it is operating, and the task it is required to do. Expressing mobility performance in a

minimal reduced set of comprehensible numbers to aid in making decisions is a formidable task.

27. The WHEELS study defined three levels of tactical mobility. These are listed in Table 4 along with the definitions for two further mobility levels (high-high and on-road mobility), which were added to the HIMO study for completeness. In the HIMO study, each of the resulting five levels of mobility were also quantitatively described in terms of the following statistical performance data:

a. Percentage of off-road travel expected of the vehicle.

b. The severity of expected off-road travel (in terms of performance of the off-road terrain that should be negotiable).

c. The severity of expected travel on trails (in terms of the percentage of trails that should be negotiable).

In computing on-road speeds, separate predictions were made for primary roads, for secondary roads, and for trails in accordance with constraint c above. The percentage of on-road travel was subdivided into the same categories according to the relative mileage of each found in the road network for the area developed in the HIMO scenario play. Assignment for each vehicle of proper percentages of total off-road travel, on primary roads, on secondary roads, and on trails (Table 5), along with the appropriate corresponding values for mean speeds in each travel category level, permitted calculation of an average mobility rating speed that the vehicle could be expected to maintain area-wide in the stated weather condition while performing missions requiring a stated level of mobility.

28. The mobility rating speed integrates the on- and off-road speed profiles and the linear performance values, the percentage of traverse distance operating on different types of road and off-road, and the severity of operation. The preceding was used to calculate mobility rating speeds described in Appendix C.

29. The mobility rating speeds for each of the study vehicles during the dry, wet, and snow conditions and for the "all" surface condition, for each mobility level, are given in Table 6 for the HIMO

West Germany study area and in Table 7 for the Mid-East study area. The mobility rating speed for a vehicle for the "all" condition was determined by taking the simple mean of the rating speeds for dry, wet, and snow or dry, wet, and sand conditions. This in effect gives equal weight to performance in each condition. Because the three conditions do not prevail for equal time periods during a normal year, this, in effect, assigns special emphasis to performance in bad conditions (wet and snow or wet and sand), which, subjectively, appears proper in the military context.

PART IV: MOBILITY ASSESSMENT OF STUDY VEHICLES

30. The study vehicles were compared based on their mobility rating speeds at the five tactical mobility levels and on the percent NOGO. The speed profiles and linear performance data are reflected in the mobility rating speed and help to explain why one vehicle may have a higher mobility rating speed. For these comparisons the vehicles were divided into two groups: (1) individual vehicles, and (2) M578 and M88 towing other vehicles.

Tactical Mobility Levels

31. Table 5 gives the percentages of on- and off-road traversed and percent of roads and terrain challenged for the five levels of tactical mobility. Since all the study vehicles are tracked vehicles, the tactical high and high-high mobility levels are suggested as the scenario normally associated with these vehicles. On-road, tactical support, and tactical standard values are included to permit evaluating these vehicles in areas where more roads may be available for use. Tables 6 and 7 show the mobility rating speeds used in making these comparisons.

High-high

32. The M109A1 had the highest mobility rating speed of the individual study vehicles for the dry, wet, snow, and "all" surface conditions of the HIMO West Germany study area and for the dry, sand, and "all" surface conditions of the Mid-East study area. The M88 had the highest mobility rating speed of the individual study vehicles for the wet surface condition of the Mid-East study area.

33. The M113A1 had the lowest mobility rating of the individual study vehicles for the dry, wet, snow, and "all" surface conditions of the HIMO West Germany study area, and the M578 had the lowest mobility rating speed for the dry, wet, sand, and "all" surface conditions of the HIMO Mid-East study area.

34. The M88 towed the M110E2, M107, IFV/CFV, and GSRS with higher mobility rating speeds than the M578 towed these vehicles for all surface conditions of the HIMO West Germany and Mid-East study areas.

Tactical high

35. The GSRS had the highest mobility rating speed of the individual study vehicles for dry, snow, and "all" surface conditions of the West Germany study area and the dry and sand surface conditions of the Mid-East study area. The GSRS and IFV/CFV had the highest mobility rating speed of the individual study vehicles for the wet surface condition of the HIMO West Germany study area. The IFV/CFV had the highest mobility rating speed of the individual study vehicles for the wet and "all" surface conditions of the Mid-East study area. The M578 had the lowest mobility rating speed of the individual study vehicles for all surface conditions of the HIMO Mid-East study area.

36. The M88 towed the M110E2, M107, IFV/CFV, and GSRS with higher mobility rating speeds than the M578 for all surface conditions of the HIMO West Germany and Mid-East study areas.

Tactical standard

37. The GSRS had the highest mobility rating speed of the individual study vehicles for all surface conditions of the HIMO West Germany study area and for the dry and sand surface conditions of the HIMO Mid-East study area. The IFV/CFV had the highest mobility rating speed of the individual study vehicles for the wet surface condition of the HIMO Mid-East study area.

38. The M88 had only slightly higher mobility rating speeds towing the M110E2, M107, IFV/CFV, and GSRS than the M578 towing these vehicles for all conditions of the HIMO West Germany and Mid-East study areas.

Tactical support

39. The GSRS had the highest mobility rating speed of the individual study vehicles for all surface conditions of the HIMO West Germany and Mid-East study areas. The M88 had only slightly higher mobility rating speeds when towing the M110E2, M107, IFV/CFV, than the M578 towing these vehicles for all conditions of the HIMO West Germany and Mid-East study areas.

On-road

40. The GSRS had the highest mobility rating speed of the individual study vehicles for all surface conditions of the HIMO West Germany and Mid-East study areas. The M88 had slightly higher mobility rating speeds when towing the M110E2, M107, IFV/CFV than the M578 for some of the HIMO West Germany and Mid-East study areas.

Percent NOGO

41. A NOGO situation is predicted when a vehicle configuration is immobilized under its own power and requires engineering effort, such as winching and towing, to continue. The use of engineering effort to retrieve a vehicle always requires time even when a winch or tow vehicle is available.

42. Only the trails and off-road terrain contained NOGO situations. Tables B37-B42 give the percent NOGO on trails and off-road for the study vehicles in the HIMO West Germany and Mid-East study areas.

HIMO West Germany study area

43. Trails. None of the individual study vehicles were immobilized on trails. Only the M578 towing the M110E2 and M107 in the snow surface condition resulted in NOGO situations (Table B39).

44. Off-road. All the study vehicles had some NOGO situations during the dry, wet, and snow condition (Tables B37-B39). The M113A1 had the largest percent NOGO of the individual study vehicles. The M578 towing the M110E2 and M109A1 had the largest percent NOGO of the towed combinations. Obstacle influence and traction caused most of the NOGO's.

HIMO Mid-East study area

45. Trails. None of the individual study vehicles were immobilized on trails (Tables B40-B42). The M578 towing the M107, M109A1, M110E2, and GSRS had 0.1 percent NOGO on trails during the wet condition (Table B41). Both the M578 and M88 had considerable percent NOGO trails for the sand condition (Table B42). The M578 had a much larger percent NOGO than the M88 when towing the same vehicle.

46. Off-road. All the study vehicles except the M109A1 during the dry and sand surface conditions had some NOGO situations (Tables B40-B42). The M578 had the largest percent NOGO of the individual study vehicles. The M109A1 had the lowest percent NOGO of the study vehicles. The percent NOGO for the M578 towing the M110E2, M107, IFV/CFV, and GSRS was always larger than for the M88 towing the same vehicles.

Summary Assessment

Tactical mobility levels

47. The GSRS and IFV/CFV had the highest mobility rating speeds for all of the surface conditions of the HIMO West Germany and Mid-East study areas at all tactical mobility levels. The mobility rating speed of the M578 towing the IFV/CFV, GSRS, M107, and M110E2 for most conditions of both study areas was generaly only slightly less than that of the M88 towing these vehicles.

Percent NOGO

48. The percent NOGO in off-road terrain in the dry, wet, and sand conditions of the Mid-East study area was generally much greater for the M578 than for the M88 towing the IFV/CFV, GSRS, M107, and M110E2. The percent NOGO in the off-road terrain in the dry, wet, and snow condition of the West Germany study area was only slightly greater for the M578 towing the IFV/CFV, GSRS, M107, and M110E2 than for the M88 towing these vehicles. Obstacle influence and traction were the principal reason for NOGO in both the study areas.

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7. Murphy, N. R., Jr., and Ahlvin, R. B., "The AMC-74 Vehicle Dynamics Module," Technical Report M-76-1, Jan 1976, U. S. Army Engineer Waterways Experiment Station, CE, Vicksburg, Miss.

Table 1

Study Vehicles

M578 Light Recovery Vehicle
M113A1 Armored Personnel Carrier (APC)
M109A1, 155mm, Self-Propelled Howitzer
M107, 175mm, Self-Propelled Howitzer
M110E2, 8 in., Self-Propelled Howitzer
M88, Medium Recovery Vehicle
IFV/CFV Infantry or Cavalry Fighting Vehicle
GSRS, Ground Support Rocket System
M578 Towing M113A1
M578 Towing M107
M578 Towing M109A1
M578 Towing M110E2
M578 Towing IFV/CFV
M578 Towing GSRS
M88 Towing M107
M88 Towing M110E2
M88 Towing IFV/CFV
M88 Towing GSRS

Table 2

Important Characteristics of Study Vehicles

Vehicles	Gross Vehicle Weight, lb	Track Length in.	Engine	Power to Weight Ratio hp/ton	Transmission	Approach Angle deg	Departure Angle deg	VCI_1 Fine Grained Soils	VCI_1 Coarse Grained Soils*	Maximum Speed mph	Speeds for Obstacle Heights at 2.5 g, mph			Six-Watt Speeds for Indicated rms elev, mph		
											4	6	10	1	2	3
M578 Light Recovery Vehicle	54,000	151	Detroit Diesel 8V71T	15.7	XTG-411-2A	75	36	20.4	0	34	100	17	12.6	30	16	13.8
M113A1 Armored Personnel Carrier (APC)	23,400	109	GM Diesel 6V53	17.5	TX100-1	70	40	16.0	0	42	100	100	13.0	23	13	10.4
M109A1, 155 mm, Self-Propelled Howitzer	53,060	159	Detroit Diesel 8V71T	15.7	XTG-411-2A	75	80.5	24.8	0	35	100	100	13.0	30	16	13.8
M107, 175 mm, Self-Propelled Howitzer	62,100	151	Detroit Diesel 8V71T	13.0	XTG-411-2A	90	43.5	22.5	0	34	100	100	13.0	30	16	13.8
M110E2, 8 in., Self-Propelled Howitzer	62,100	151	Detroit Diesel 8V71T	13.7	XTG-411-2	90	44.5	22.5	0	34	100	100	13.0	30	16	13.8
M88 Medium Recovery Vehicle	112,000	183	Continental AVSI-1790-6A	17.5	XT1410-2	63	41.0	19.8	0	30	100	100	12.5	100	16	11.0
IFV/CFV Infantry/Cavalry Fighting Vehicle	47,000	157	Cummings VTA-903-T	21.28	HMPT-500	90	50.0	13.1	0	41	100	100	100.0	27	16	12.4
GSRS Ground Support Rocket System	52,000	173.5	Cummings VTA-903	17.3	HMPT-500	72	54.0	14.8	0	40	56	56	56.0	28.4	17	14.0

* VCI_1 assumed 0 for tracked vehicles.

Table 3

Characteristics of Composite Route Networks

Study Area Features	Mid-East	West Germany
Total distance, miles	533	1678
Number of links*	854	2184
Average link length, miles	0.62	0.77
Composition of network, percent		
Superhighways	0	3.1
Primary roads	7.3	21.1
Secondary roads	29.7	61.4
Tertiary roads and trails	44.9	14.3
Off-road traverse	18.1	0.1
	100.0	100.0

* A link is the route joining two route intersections or route end points.

Table 4

Preliminary Quantification of WHEELS Study Definitions of Tactical Mobility[3]

Mobility Level	Operating Distance		Severity of Operation	
	Off-Road Percent	On-Road* Percent	Off-Road* Percent of Terrain Challenged	On-Road Percent of Trails Included
High-high mobility**				
All off-road operation	100	0	100	-
Tactical high mobility				
The highest level of mobility designating the requirement for extensive cross-country maneuverability characteristic of operations in the ground-gaining and fire-support environment	50	50	90	100
Tactical standard mobility				
The second highest level of mobility designating the requirement for occasional cross-country movement	15	85	80	100
Tactical support mobility				
A level of mobility designating the requirement for infrequent off-road operations over selected terrain with the preponderance of movement on primary and secondary roads	5	95	50	50
On-road mobility**				
All on superhighways, primary and secondary roads, and the best tertiary roads and trails	0	100	-	10

* In terms of percentage of best off-road terrain to be challenged (off-road speed profile).

** NOT a WHEELS Study definition.

Table 5
Network Composition and Severity at Tactical Mobility Levels
for HIMO West Germany and Mid-East Study Areas

Mobility Levels	Composition of Network in Percent				Severity of Operation in Terms of Percent of Terrain and Roads Challenged			
	Primary Roads (P_P)	Secondary Roads (P_S)	Trails (P_T)	Off-Road (P_C)	Primary Roads (V_{PP})	Secondary Roads (V_{SP})	Trails (V_{TP})	Off-Road (V_C)
HIMO West Germany Study Area								
High-High	0	0	0	100	-	-	-	V_{100}
Tactical High	10	30	10	50	V_{100}	V_{100}	V_{100}	V_{90}
Tactical Standard	20	50	15	15	V_{100}	V_{100}	V_{100}	V_{80}
Tactical Support	30	55	10	5	V_{100}	V_{100}	V_{50}	V_{50}
On-Road	35	60	5	0	V_{100}	V_{100}	V_{10}	-
HIMO Mid-East Study Area								
High-High	0	0	0	100	-	-	-	V_{100}
Tactical High	5	20	25	50	V_{100}	V_{100}	V_{100}	V_{90}
Tactical Standard	15	35	35	15	V_{100}	V_{100}	V_{100}	V_{80}
Tactical Support	20	40	35	5	V_{100}	V_{100}	V_{80}	V_{50}
On-Road	30	40	30	0	V_{100}	V_{100}	V_{50}	-

Table 6

Summary of Study Vehicles Mobility Rating Speeds for the Tactical Mobility Levels in HIMO West Germany

Vehicles	On-Road				Tactical Support				Tactical Standard				Tactical High				High-High			
	Dry	Wet	Snow	All	Dry	Wet	Snow	All	Dry	Wet	Snow	All	Dry	Wet	Snow	All	Dry	Wet	Snow	All
Individual Vehicle Performance																				
M578 Light Recovery Vehicle	22.8	21.7	21.0	21.8	21.0	19.7	19.4	20.0	17.4	16.0	16.1	16.5	12.4	10.8	11.3	11.5	1.6	1.5	1.6	1.6
M113A1 Armored Personnel Carrier (APC)	25.8	24.5	22.6	24.2	22.9	21.5	20.3	21.5	17.8	16.5	16.1	16.8	11.7	10.4	10.6	10.9	1.2	1.1	1.1	1.1
M109A1, 155 mm, Self-Propelled Howitzer	22.5	21.5	20.5	21.5	20.9	19.6	19.3	19.9	17.3	15.9	16.1	16.4	12.2	10.6	11.2	11.3	5.2	3.5	2.4	3.4
M107, 175 mm, Self-Propelled Howitzer	22.3	21.3	20.5	21.3	20.7	19.4	19.1	19.7	17.1	15.6	15.8	16.1	11.9	10.3	10.9	11.0	2.7	2.2	2.1	2.3
M110E2, 8 in., Self-Propelled Howitzer	22.3	21.3	20.5	21.3	20.7	19.4	19.1	19.7	17.0	15.6	15.8	16.1	11.8	10.2	10.9	10.9	3.4	2.8	2.3	2.8
M88 Medium Recovery Vehicle	22.4	21.5	20.5	21.4	21.2	20.1	19.5	20.2	17.7	16.6	16.5	16.9	12.9	11.6	12.0	12.1	2.4	2.3	2.3	2.3
IFV/CFV Infantry/Cavalry Fighting Vehicle	27.0	25.7	23.3	25.2	24.8	23.5	21.8	23.3	20.3	19.1	18.2	19.2	14.4	13.1	13.1	13.5	2.8	1.5	1.4	1.7
GSRS Ground Support Rocket System	27.4	26.0	23.5	25.5	25.4	23.8	22.1	23.7	21.0	19.3	18.6	19.6	15.2	13.1	13.5	13.9	2.4	1.5	1.3	1.6
M578/M88 Towing Performance*																				
M578 Towing M113A1	9.8	9.8	9.8	9.8	9.6	9.5	9.6	9.6	9.0	8.8	9.0	8.9	7.7	7.2	7.5	7.5	1.2	1.2	1.2	1.2
M578 Towing M107	9.4	9.4	7.8	8.8	9.2	9.0	7.7	8.6	8.5	8.0	6.9	7.7	7.0	6.1	5.3	6.1	1.4	1.2	0.9	1.1
M578 Towing M109A1	9.5	9.5	9.6	9.5	9.3	9.1	9.4	9.3	8.6	8.2	8.6	8.5	7.1	6.4	6.8	6.8	1.3	1.2	1.2	1.2
M578 Towing M110E2	9.4	9.4	7.8	8.8	9.2	9.0	7.7	8.6	8.5	8.0	6.9	7.7	7.0	6.1	4.5	5.7	1.3	1.1	0.8	1.0
M578 Towing IFV/CFV	9.6	9.6	9.7	9.6	9.4	9.3	9.4	9.4	8.7	8.4	8.7	8.6	7.2	6.6	7.0	6.9	1.4	1.2	1.3	1.3
M578 Towing GSRS	9.5	9.5	9.6	9.5	9.3	9.2	9.4	9.3	8.6	8.3	8.6	8.5	7.2	6.5	6.8	6.8	1.3	1.2	1.2	1.2
M88 Towing M107	9.9	9.9	9.9	9.9	9.7	9.7	9.7	9.7	9.2	9.1	9.1	9.1	7.9	7.5	7.7	7.7	1.7	1.6	1.7	1.7
M88 Towing M110E2	9.9	9.9	9.9	9.9	9.7	9.7	9.7	9.7	9.2	9.1	9.1	9.1	7.9	7.5	7.7	7.7	1.6	1.7	1.7	1.7
M88 Towing IFV/CFV	9.9	9.9	9.9	9.9	9.8	9.7	9.7	9.7	9.3	9.1	9.2	9.2	7.9	7.6	7.8	7.8	1.9	1.7	1.7	1.8
M88 Towing GSRS	9.9	9.9	9.9	9.9	9.8	9.7	9.7	9.7	9.2	9.1	9.2	9.2	7.9	7.6	7.8	7.8	1.5	1.5	1.4	1.5

* Maximum speed of 10 mph allowed when towing tracked vehicles.

Table 7

Summary of Study Vehicle Mobility Rating Speeds for the Tactical Mobility Levels in HIMO Mid-East

Vehicles	On-Road				Tactical Support				Tactical Standard				Tactical High				High-High			
	Dry	Wet	Sand	All	Dry	Wet	Sand	All	Dry	Wet	Sand	All	Dry	Wet	Sand	All	Dry	Wet	Sand	All
Individual Vehicle Performance																				
M578 Light Recovery Vehicle	26.9	25.1	20.3	23.8	22.7	20.9	17.4	20.1	18.1	16.4	13.3	15.7	8.8	7.9	6.9	7.8	0.9	0.9	0.9	0.9
M113A1 Armored Personnel Carrier (APC)	27.4	26.1	24.3	25.9	23.1	21.7	20.1	21.6	17.7	16.5	14.6	16.2	11.9	10.6	9.7	10.7	1.0	0.9	1.0	1.0
M109A1, 155 mm, Self-Propelled Howitzer	26.3	24.5	20.3	23.4	22.6	20.9	17.8	20.2	18.3	16.5	13.4	15.8	12.9	11.0	9.2	10.8	7.4	5.3	5.8	6.1
M107, 175 mm, Self-Propelled Howitzer	26.2	24.5	19.9	23.2	22.3	20.6	17.3	19.8	17.7	16.0	12.9	15.3	12.0	10.3	8.6	10.1	3.7	3.4	3.2	3.4
M110E2, 8 in., Self-Propelled Howitzer	26.2	24.5	19.9	23.2	22.3	20.6	17.3	19.8	17.7	16.1	12.9	15.3	12.0	10.4	8.7	10.2	5.0	4.5	4.1	4.5
M88 Medium Recovery Vehicle	25.2	24.0	21.2	23.3	22.9	21.4	18.8	20.9	18.2	17.1	14.7	16.5	13.6	12.4	10.6	12.1	6.2	5.8	5.3	5.7
IFV/CFV Infantry/Cavalry Fighting Vehicle	29.5	28.0	26.3	27.8	25.3	24.0	22.4	23.8	20.1	19.0	17.4	18.8	14.3	13.2	12.3	13.2	4.0	1.3	3.8	2.3
GSRS Ground Support Rocket System	30.2	28.5	26.9	28.5	26.0	24.2	23.0	24.3	20.7	18.9	17.9	19.1	14.6	12.5	12.4	13.1	4.0	1.2	3.8	2.2
M578/M88 Towing Performance*																				
M578 Towing M113A1	10.0	10.0	9.6	9.9	9.8	9.8	9.1	9.6	9.3	9.0	7.3	8.4	5.4	4.9	2.3	3.6	0.8	0.8	0.6	0.7
M578 Towing M107	10.0	9.9	8.8	9.5	9.8	9.4	8.0	9.0	8.9	7.6	1.5	3.3	4.7	2.3	0.7	1.5	0.8	0.6	0.4	0.6
M578 Towing M109A1	10.0	10.0	9.0	9.6	9.8	9.5	8.3	9.2	9.0	8.1	1.7	3.7	4.7	2.7	0.8	1.6	0.8	0.7	0.4	0.6
M578 Towing M110E2	10.0	9.9	8.8	9.5	9.8	9.4	8.0	9.0	8.9	7.6	1.5	3.3	4.7	2.3	0.7	1.5	0.8	0.6	0.4	0.6
M578 Towing IFV/CFV	10.0	10.0	9.1	9.7	9.8	9.6	8.4	9.2	9.1	8.5	1.8	3.8	5.0	2.7	0.9	1.8	0.8	0.7	0.4	0.6
M578 Towing GSRS	10.0	10.0	9.0	9.6	9.8	9.6	8.3	9.2	9.0	8.2	1.6	3.5	4.7	2.7	0.7	1.5	0.8	0.7	0.4	0.6
M88 Towing M107	10.0	10.0	10.0	10.0	9.8	9.8	9.5	9.7	9.3	9.1	2.5	4.9	8.0	7.7	1.6	3.4	1.3	1.3	0.6	0.9
M88 Towing M110E2	10.0	10.0	10.0	10.0	9.8	9.8	9.5	9.7	9.3	9.1	2.5	4.9	8.0	7.7	1.6	3.4	1.3	1.2	0.6	0.9
M88 Towing IFV/CFV	10.0	10.0	10.0	10.0	9.9	9.8	9.6	9.8	9.4	9.3	5.5	7.9	8.1	8.0	5.2	6.8	1.4	1.3	1.0	1.2
M88 Towing GSRS	10.0	10.0	10.0	10.0	9.9	9.8	9.5	9.7	9.4	9.3	2.7	5.1	8.1	8.0	1.9	3.9	1.4	1.3	0.7	1.0

* Maximum speed of 10 mph allowed when towing tracked vehicles.

APPENDIX A: DATA USED TO CHARACTERIZE THE STUDY VEHICLES AND A BRIEF DESCRIPTION OF FACTORS USED IN DESCRIBING HIMO WEST GERMANY AND MID-EAST STUDY AREAS

Vehicle Characteristics and Performance Data

1. Extensive data are required to characterize a vehicle to predict its performance with the AMM and SWIMCRIT/WACROSS water-crossing models. These data for the individual study vehicles are given in Tables A1-A5. The data in Tables A1-A5 are also sufficient to describe the study vehicles when towed.

2. Tractive force-speed relations determined from test data conducted at Aberdeen Proving Ground (APG) were used for all of the vehicles except the IFV/CFV and GSRS. The tractive force-speed relations for the IFV/CFV were obtained from General Electric and for the GSRS were obtained from TARADCOM.

3. Ride dynamics data for the M109A1, M110E2, M107, and M113A1, were obtained from WES test data[6]. The M578 has a suspension and, therefore, was assigned the same ride data. Ride dynamics data for the IFV/CFV were obtained by WES using suspension data and the AMM Dynamic Submodel[7]. Ride dynamics data for the GSRS were obtained by TARADCOM using suspension data and the AMM for use in another study. The M88 has a similar suspension to that of the M60A1 and, therefore, was assigned measured ride dynamics data for the M60A1.

Terrain Data

4. A detailed description of the procedures used to describe the HIMO West Germany and Mid-East study areas for use with the AMM is given in the HIMO study. The terrain and road factors required for the (AMC-74X) SWIMCRIT/WACROSS water-crossing prediction models are given in Table A6 to show the content of the data required for these models.

Table A1

Vehicle Characteristics Used in Army Mobility Model (AMM)

No.	Identification	Dimensions	M578 Light Recovery Vehicle	M113 Armored Personnel Carrier (APC)	M109A1, 155mm Self-propelled Howitzer	M107, 175mm Self-propelled Howitzer	M110E2, 8 in. Self-propelled Howitzer	M88 Medium Recovery Vehicle	IFV/CFV Infantry or Cavalry Fighting Vehicle	GSRS Ground Support Rocket System
1	Vehicle type (NVEH = 0) for tracked and 1 for wheeled	--	0	0	0	0	0	0	0	0
2	Gross vehicle weight	lbs	54,000	23,400	53,060	62,100	62,100	112,000	47,000	52,000
3	Track type (NFL = 0) for flexibile and 1 for girderized	--	0	0	0	0	0	0	0	0
4	Grouser height for tracks	in.	1.0	1.0	1.0	1.0	1.0	2.0	1.0	0.6
5	Tire ply rating	NA	NA	NA	NA	NA	NA	NA	NA	NA
6	Gross rated horsepower	bhp	425	205	417	404	426	980	500	450
7	Number of tracks or tires	--	2	2	2	2	2	2	2	2
8	Number of axles	--	NA	NA	NA	NA	NA	NA	NA	NA
9	Vehicle width	in.	124	105.8	129	124	124	135	126	126.5
10	Vehicle length	in.	234	192	240.5	250	264.5	325.5	245	251.6
11	Track width or nominal tire width	in.	18	15.0	15.0	18.0	18.0	28.0	21.0	21.0
12	Wheel rim diameter on road wheel radius	in.	16	12.0	12.0	16.0	16.0	13.0	12.0	12.0
13	Recommended tire pressure (cross-country)	psi	NA	NA	NA	NA	NA	NA	NA	NA
14	Area of one-track shoe (tracked) or number of wheels (wheeled) (duals as one)	sq in. or #	108	90	90	108	108.0	199	126	126
15	Number of bogies (tracked) or chain indicator wheeled (0 = no chains; 1 = chains)	--	10	10	14	10	10	12	12	12
16	Vehicle ground clearance at the center of greatest wheel span	in.	NA	NA	NA	NA	NA	NA	NA	NA
17	Minimum vehicle ground clearance	in.	17.5	16.0	17.7	14.8	18.4	17.0	17.5	17.2
18	Rear end clearance (vertical clearance of vehicle's trailing edge)	in.	19.2	24.5	31.0	60.0	60.0	42.0	41.3	32.2
19	Vehicle departure angle	deg	36.0	40.0	80.5	43.5	44.5	41.0	50.0	54.0
20	Vehicle approach angle	deg	75.0	70.0	75.0	90.0	90.0	63.0	90.0	72.0
21	Length of track on ground or wheel diameter	in.	151.0	109.0	159.0	151.0	151.0	183.0	157.0	173.5
22	Height of vehicle pushbar, bumper or leading edge	in.	45.0	30.0	45.0	43.0	39.0	40.0	42.0	41.5
23	Distance between first and last wheel center lines	in.	148	105.0	156.0	148.0	148.0	180.0	154.0	170.5
24	Horizontal distance from the center of gravity to the front wheel center lines	in.	78.3	52.0	94.0	68.5	92.1	92.1	80.8	105.0
25	Vertical distance from the center of gravity to the road wheel center lines	in.	22.8	24.0	31.9	30.3	28.7	30.1	32.4	35.3
26	Maximum span between adjacent wheel center lines	in.	NA	NA	NA	NA	NA	NA	NA	NA
27	Vertical distance from the ground to the center of the rear wheel (idler or sprocket)	in.	18.5	20.0	21.5	18.5	18.5	33.0	27.5	27.8
28	Track thickness plus the radius of the rear idler or sprocket	in.	18.5	12.3	12.3	18.5	18.5	15.0	13.0	13.3
29	Road wheel radius plus track thickness	in.	18.5	14.5	14.5	18.5	18.5	15.5	14.5	14.5
30	Loaded rolling radius of tire (cross-country tire pressure) or sprocket pitch radius (sprocket pitch dia/2)	in.	10.6	9.8	9.8	10.6	10.6	12.5	10.5	10.8
31	Height of rigid point used to determine approach angle	in.	36.6	28.2	45.0	43.0	39.0	40.0	42.0	41.5
32	Maximum braking force the vehicle develops	lbs	32,400	14,040	31,836	37,260	37,260	67,200	28,200	31,200
33	Loaded wheel deflection (at sand tire pressure)	%	NA	NA	NA	NA	NA	NA	NA	NA
34	Distance vehicle spans before significant motion begins	in.	74.0	52.5	78.0	74.0	74.0	90.0	77.0	85.2
35	Maximum force the pushbar can withstand	kips	108	55	106	124.2	124.2	224	94	104
36	Maximum axle load/gross vehicle weight	--	NA	NA	NA	NA	NA	NA	NA	NA
37	Vehicle rated horsepower per ton	hp/ton	15.7	17.5	15.7	13.0	13.7	17.5	21.28	17.3
38	Transmission type (0 = automatic, 1 = manual	--	0	0	0	0	0	0	0	0
39	Final drive gear ratio	--	5.35	3.93	4.36	5.35	5.35	4.63	4.96	4.95
40	Final drive gear efficiency	--	0.90	0.95	0.90	0.95	0.90	0.90	0.90	0.95
41	Number of gear ratios	--	4	3	4	4	4	3	3	3
42	Transmission efficiency	--	0.90	0.95	0.95	0.95	0.90	0.90	0.90	0.95
43	Gear ratios for study vehicles (descending order)	--	← Table A2 →							
44	Tractive force (lbs) - vehicle speed (mph) relations	--	← Table A3 →							
45	Vehicle speed at 2.5 g acceleration (mph) - obstacle height (in.) relations	--	← Table A4 →							
46	Ride dynamic vehicle speed (mph) - surface roughness relations (rms, elev, in.)	--	← Table A5 →							

Table A2

Gear Ratios for Study Vehicles

Vehicles	Gear Ratios for Vehicles			
M578 Light Recovery Vehicle	4.69	3.18	1.59	0.79
M113 Armored Personnel Carrier (APC)	3.81	1.94	1.00	
M109A1, 155 mm, Self-Propelled Howitzer	4.69	3.18	1.58	0.79
M107, 175 mm, Self-Propelled Howitzer	4.69	3.18	1.59	0.79
M110E2, 8 in., Self-Propelled Howitzer	4.69	3.18	1.59	0.79
M88 Medium Recovery Vehicle	112.30	24.50	6.80	
IFV/CFV Infantry or Cavalry Fighting Vehicle	3.00	2.00	1.00	
GSRS Ground Support Rocket System	3.00	2.00	1.00	

Table A3

Tractive Force - Vehicle Speed Relations

M578 Light Recovery Vehicle		M113 Armored Personnel Carrier (APC)		M109A1, 155 mm, Self-Propelled Howitzer		M107, 175 mm, Self-Propelled Howitzer		M110E2, 8 in., Self-Propelled Howitzer		M88 Medium Recovery Vehicle		IFV/CFV Infantry or Cavalry Fighting Vehicle		GSRS Ground Support Rocket System	
Vehicle Speed mph	Tractive Force lb	Vehicle Speed mph	Tractive Force lb	Vehicle Speed mph	Tractive Force lb	Vehicle Speed mph	Tractive Force lb	Vehicle Speed mph	Tractive Force lb	Vehicle Speed mph	Tractive Force lb	Vehicle Speed mph	Tractive Force lb	Vehicle Speed mph	Tractive Force lb
0	46,448	0	17,950	0	41,104	0	46,440	0	46,440	0	75,000	0	51,000	0	47,634
0.7	46,347	1.0	16,330	0.8	41,015	0.8	46,340	0.8	46,340	2.0	75,000	0.8	51,000	1.6	47,634
1.1	41,847	1.5	15,850	1.3	37,033	1.3	41,840	1.3	41,840	3.0	60,750	1.0	49,000	3.1	34,534
2.0	31,846	1.9	15,800	2.2	28,182	2.2	31,840	2.2	31,840	4.0	53,225	1.5	44,500	4.7	26,194
2.8	23,484	1.9	14,250	3.2	20,782	3.2	23,480	3.2	23,480	5.0	43,450	2.0	40,500	6.3	20,242
3.3	23,403	2.0	12,750	3.7	20,711	3.7	23,400	3.7	23,400	6.0	36,040	3.0	32,500	6.6	16,726
3.8	22,523	2.5	11,250	4.3	19,932	4.3	22,520	4.3	22,520	7.0	29,860	4.0	26,500	9.4	13,490
4.9	16,967	3.2	9,750	5.5	15,015	5.5	16,965	5.5	16,965	8.0	26,200	5.0	21,500	12.6	11,308
5.0	16,173	3.9	8,770	5.6	14,312	5.6	16,170	5.6	16,170	9.0	23,300	6.0	18,500	15.7	9,641
5.7	15,092	4.8	8,030	6.4	13,356	6.4	15,090	6.4	15,090	10.0	21,420	7.0	14,250	18.9	8,235
6.6	13,031	5.8	7,380	7.4	11,532	7.4	13,030	7.4	13,030	11.0	19,375	8.0	13,250	22.0	7,005
7.3	11,653	5.9	6,990	8.2	10,312	8.2	11,650	8.2	11,650	12.0	18,325	10.0	11,600	25.2	6,025
7.4	9,756	7.5	6,975	8.3	8,634	8.3	9,755	8.3	9,755	13.0	17,310	15.0	8,750	26.8	5,531
9.1	7,661	8.0	6,650	10.3	6,780	10.3	7,660	10.3	7,660	14.0	15,890	18.0	7,400	28.3	5,487
10.6	7,591	9.5	6,050	12.0	6,718	12.0	7,590	12.0	7,590	15.0	14,050	20.0	6,600	31.5	5,084
12.7	7,111	10.8	5,300	14.1	6,293	14.1	7,110	14.1	7,110	16.0	12,475	25.0	5,300	34.6	4,596
14.1	5,825	10.9	4,100	16.0	5,155	16.0	5,825	16.0	5,825	17.0	11,430	30.0	4,500	37.8	4,018
14.2	5,031	12.0	3,700	16.1	4,452	16.1	5,030	16.1	5,030	18.0	11,200	35.0	3,900	39.4	3,712
17.9	3,799	13.1	3,500	20.2	3,363	20.2	3,800	20.2	3,800	19.0	10,530	40.0	3,000	41.0	3,500
21.2	3,791	15.0	3,450	24.0	3,355	24.0	3,792	24.0	3,790	20.0	9,840	40.0	0	41.0	0
25.0	3,550	17.1	3,300	28.2	3,142	28.2	3,550	28.2	3,550	21.0	9,050				
28.3	2,661	19.2	3,000	32.0	2,576	32.0	2,910	32.0	2,910	22.0	8,890				
34.0	2,240	21.3	2,500	32.0	0	32.0	0	32.0	0	23.0	8,700				
34.0	0	21.4	1,850							24.0	8,550				
		25.3	1,815							25.0	8,425				
		29.0	1,785							26.0	8,350				
		33.0	1,710							27.0	8,290				
		37.1	1,550							30.0	0				
		42.0	1,300												
		42.0	0												

Table A4

Vehicle Speed at 2.5-g Acceleration - Obstacle Height Relations

M578 Light Recovery Vehicle		M113 Armored Personnel Carrier (APC)		M109A1, 155 mm, Self-Propelled Howitzer		M107, 175 mm, Self-Propelled Howitzer		M110E2, 8 in., Self-Propelled Howitzer		M88 Medium Recovery Vehicle		IFV/CFV Infantry or Cavalry Fighting Vehicle		GSRS Ground Support Rocket System	
Obstacle Height in.	Vehicle Speed mph	Obstacle Height in.	Vehicle Speed mph	Obstacle Height in.	Vehicle Speed mph	Obstacle Height in.	Vehicle Speed mph	Obstacle Height in.	Vehicle Speed mph	Obstacle Height in.	Vehicle Speed mph	Obstacle Height in.	Vehicle Speed mph	Obstacle Height in.	Vehicle Speed mph
0	100.0	0	100.0	0	100.0	0	100.0	0	100.0	0	100.0	0	100.0	0	56.0
4.10	100.0	8.0	100.0	8.0	100.0	8.0	100.0	8.0	100.0	8.0	100.0	12.0	100.0	12.4	45.0
4.20	30.0	9.0	26.0	9.0	26.0	9.0	26.0	9.0	26.0	9.0	21.0	13.0	29.0	12.5	45.0
4.33	27.5	10.0	13.0	10.0	13.0	10.0	13.0	10.0	13.0	10.0	12.5	14.0	18.0	13.0	28.0
4.58	24.5	11.0	8.0	11.0	8.0	11.0	8.0	11.0	8.0	11.0	9.5	15.0	12.0	13.7	20.0
4.90	21.5	12.0	5.8	12.0	5.8	12.0	5.8	12.0	5.8	12.0	8.0	16.0	8.5	15.0	12.5
5.30	19.5	13.0	4.5	13.0	4.5	13.0	4.5	13.0	4.5	13.0	7.5	18.0	3.5	16.0	8.5
5.70	18.0	14.0	3.7	14.0	3.7	14.0	3.7	14.0	3.7	14.0	7.0	20.0	2.0	18.0	3.8
6.00	17.0	15.0	3.0	15.0	3.0	15.0	3.0	15.0	3.0	15.0	6.5	60.0	2.0	20.0	2.0
7.00	15.5	16.0	2.4	16.0	2.4	16.0	2.4	16.0	2.4	16.0	6.0			60.0	2.0
8.20	14.0	60.0	2.0	60.0	2.0	60.0	2.0	60.0	2.0	60.0	2.0				
9.40	13.0														
10.20	12.5														
12.00	11.0														
60.00	0														

Table A5

Ride Dynamic Vehicle Speed* - Surface Roughness Relations

M578 Light Recovery Vehicle		M113 Armored Personnel Carrier (APC)		M109A1, 155 mm, Self-Propelled Howitzer		M107, 175 mm, Self-Propelled Howitzer		M110E2, 8 in., Self-Propelled Howitzer		M88 Medium Recovery Vehicle		IFV/CFV Infantry or Cavalry Fighting Vehicle		GSRS Ground Support Rocket System	
Elevation		Elevation		Elevation		Elevation		Elevation		Elevation		Elevation		Elevation	
rms in.	Speed mph	rms in.	Speed mph	rms in.	Speed mph	rms in.	Speed mph	rms in.	Speed mph	rms in.	Speed mph	rms in.	Speed mph	rms in.	Speed mph
0	100.0	0	100.0	0	80.0	0	80.0	0	80.0	0	100.0	0	100.0	0	56.0
4.10	100.0	0.40	100.0	0.33	60.0	0.33	60.0	0.33	60.0	1.00	100.0	0.20	100.0	0.60	55.0
4.20	30.0	0.60	35.5	0.50	51.0	0.50	51.0	0.50	51.0	1.20	36.0	0.60	100.0	0.66	45.0
4.33	27.5	0.80	27.0	0.72	40.0	0.72	40.0	0.72	40.0	1.40	26.0	0.70	39.0	0.80	36.0
4.58	24.5	1.00	23.0	0.90	33.0	0.90	33.0	0.90	33.0	1.60	21.0	0.80	34.0	0.94	30.0
4.90	21.5	1.20	20.0	1.00	30.0	1.00	30.0	1.00	30.0	1.80	18.0	1.00	27.0	1.00	28.4
5.30	19.5	1.40	17.5	1.15	26.0	1.15	26.0	1.15	26.0	2.00	16.0	1.20	23.0	1.25	24.0
5.70	18.0	1.60	15.5	1.30	21.0	1.30	21.0	1.30	21.0	2.20	14.0	1.40	20.5	1.50	20.8
6.00	17.0	1.80	14.0	1.41	20.0	1.41	20.0	1.41	20.0	2.40	13.0	1.60	18.5	1.75	18.8
7.00	15.5	2.00	13.0	1.50	19.0	1.50	19.0	1.50	19.0	2.60	12.5	1.80	17.0	2.00	17.0
8.20	14.0	2.20	12.0	1.60	18.0	1.60	18.0	1.60	18.0	2.80	12.0	2.00	16.0	2.50	15.0
9.40	13.0	2.40	11.8	1.75	17.0	1.75	17.0	1.75	17.0	3.00	11.0	2.20	15.1	3.00	14.0
10.20	12.5	2.60	11.2	1.80	16.5	1.80	16.5	1.80	16.5	3.50	10.0	2.40	14.2	4.00	10.8
12.00	11.0	2.80	10.9	2.00	16.0	2.00	16.0	2.00	16.0	4.00	9.0	2.60	13.7	5.00	8.8
60.00	0	3.00	10.4	2.25	15.0	2.25	15.0	2.25	15.0	4.50	8.0	2.80	13.0		
		3.50	9.5	2.50	14.8	2.50	14.8	2.50	14.8	5.00	7.0	3.00	12.4		
		4.00	8.9	2.75	14.0	2.75	14.0	2.75	14.0			3.50	11.1		
		4.50	8.2	3.00	13.8	3.00	13.8	3.00	13.8			4.00	10.0		
		5.00	8.0	8.00	13.5	8.00	13.5	8.00	13.5			4.50	9.5		
												5.00	9.0		

* Based on 6-watts absorbed power.

Table A6

Terrain Data Required for AMC-74X and SWIMCRIT Water-crossing Prediction Models

Terrain or Road Factor	Range
Off-Road	
Surface material	
Type, USCS or other	NA
Mass strength, CI or RCI	0 - >280
Slope, percent	0 - >70
Obstacle	
Approach angle, deg	90 - 270
Vertical magnitude, cm	0 - >85
Length, m	0 - >150
Width, cm	0 - >1200
Spacing, m	0 - >60
Spacing, type	NA
Surface roughness, rms elevations	0 - 10
Stem diameter, cm (8 pairs)	0 - >25
Stem spacing, m (8 pairs)	0 - >100
Visibility distance, m	0 - >50
Water depth, m	0 - >5
Water velocity, mps	0 - >3.5
Water width, m	0 - >70
Linear feature top width, m	0 - >70
Left approach angle, deg	90 - 270
Right approach angle, deg	90 - 270
Differential bank height or differential vertical magnitude, m	0 - >4
Low bank height or least vertical magnitude, m	0 - >6
On-Road	
Road type	NA
Surface material	NA
Type, USCS or other	
Surface strength	
Trails, CI or RCI	0 - >280
Other, traction coefficients	0.01 - >0.80
Slope, percent	0 - >70
Surface roughness, rms elevation	0 - >7.6
Curvature, deg	0 - 90
Roadside visibility distance (trails only), m	0 - >50

APPENDIX B: DETAILED MOBILITY PERFORMANCE DATA

1. Appendix B contains the speed profiles, the percent NOGO and reason for NOGO on trails and off-road, and the performance data crossing linear features (water crossings) for the study vehicles.

2. The speed profile data (paragraphs 20-22, main text) for the study vehicles over primary roads, secondary roads, trails, and off-road terrain for the dry, wet, and snow surface conditions for the West Germany study area are given in Tables B1-B18 and for the Mid-East study area are given in Tables B19-B36.

Table	Study Area	Speed Profile for Study Vehicle
B1	West Germany	M578 Light Recovery Vehicle
B2	West Germany	M113A1 Armored Personnel Carrier (APC)
B3	West Germany	M109A1, 155mm, Self-Propelled Howitzer
B4	West Germany	M107, 175mm, Self-Propelled Howitzer
B5	West Germany	M110E2, 8 in., Self-Propelled Howitzer
B6	West Germany	M88, Medium Recovery Vehicle
B7	West Germany	IFV/CFV Infantry or Cavalry Fighting Vehicle
B8	West Germany	GSRS, Ground Support Rocket System
B9	West Germany	M578 Towing M113A1
B10	West Germany	M578 Towing M107
B11	West Germany	M578 Towing M109A1
B12	West Germany	M578 Towing M110E1
B13	West Germany	M578 Towing IFV/CFV
B14	West Germany	M578 Towing GSRS
B15	West Germany	M88 Towing M107
B16	West Germany	M88 Towing M110E2
B17	West Germany	M88 Towing IFV/CFV
B18	West Germany	M88 Towing GSRS
B19	Mid-East	M578 Light Recovery Vehicle
B20	Mid-East	M113 Armored Personnel Carrier (APC)
B21	Mid-East	M109A1, 155mm, Self-Propelled Howitzer
B22	Mid-East	M107, 175mm, Self-Propelled Howitzer
B23	Mid-East	M110E2, 8 in, Self-Propelled Howitzer
B24	Mid-East	M88 Medium Recovery Vehicle
B25	Mid-East	IFV/CFV Infantry or Cavalry Fighting Vehicle
B26	Mid-East	GSRS, Ground Support Rocket System
B27	Mid-East	M578 Towing M113A1
B28	Mid-East	M578 Towing M107
B29	Mid-East	M578 Towing M109A1
B30	Mid-East	M578 Towing M110E2

Table	Study Area	Speed Profile for Study Vehicle
B31	Mid-East	M78 Towing IFV/CFV
B32	Mid-East	M578 Towing GSRS
B33	Mid-East	M88 Towing M107
B34	Mid-East	M88 Towing M110E2
B35	Mid-East	M88 Towing IFV/CFV
B36	Mid-East	M88 Towing GSRS

3. The percent NOGO on trails and off-road (paragraph 23, main text) for the dry, wet, and snow conditions of the HIMO West Germany Study is given in Tables B37-B39. The percent NOGO on trails and off-road for the dry, wet, and sand conditions of the HIMO Mid-East study area is given in Tables B40-B42.

4. The performance data for the study vehicles crossing linear features (water crossings), (paragraphs 24 and 25, main text), for the HIMO West Germany and Mid-East study area are given in Tables B43 and B44.

Table B1

Speed Profile for M578, Light Recovery Vehicle

for HIMO West Germany Study Area

Dry Condition

Primary Roads

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	34.0	34.0	34.0	34.0	34.0
1X	34.0	34.0	34.0	34.0	34.0
2X	34.0	34.0	34.0	34.0	34.0
3X	34.0	34.0	34.0	34.0	34.0
4X	34.0	34.0	34.0	33.9	33.8
5X	33.7	33.6	33.5	33.3	33.0
6X	32.6	32.2	31.9	31.6	31.3
7X	31.1	30.8	30.6	30.4	30.2
8X	29.8	29.5	29.1	28.7	28.1
9X	27.6	27.1	26.7	26.2	25.4
10X	24.7				

Secondary Roads

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	34.0	34.0	34.0	34.0	34.0
1X	34.0	34.0	34.0	34.0	34.0
2X	33.9	33.9	33.8	33.7	33.5
3X	33.3	33.1	32.9	32.8	32.5
4X	32.0	31.6	31.2	30.8	30.4
5X	30.1	29.7	29.4	29.1	28.9
6X	28.6	28.4	28.2	28.0	27.7
7X	27.5	27.3	27.0	26.7	26.4
8X	26.0	25.7	25.3	24.9	24.5
9X	24.1	23.7	23.3	22.8	22.1
10X	21.5				

Trails

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	33.8	33.4	31.9	31.1	30.7
1X	29.6	28.4	27.4	26.6	26.0
2X	25.5	25.1	24.6	24.2	23.9
3X	23.6	23.2	22.8	22.3	21.8
4X	21.5	21.1	20.8	20.5	20.3
5X	20.1	19.9	19.6	19.5	19.3
6X	19.1	19.0	18.8	18.6	18.4
7X	18.3	18.1	18.0	17.8	17.7
8X	17.6	17.5	17.4	17.3	17.2
9X	17.0	16.8	16.5	16.0	15.3
10X	14.7				

Off Road

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	33.8	30.6	27.9	26.4	25.5
1X	24.9	24.5	23.8	23.2	22.7
2X	22.2	21.8	21.5	21.1	20.8
3X	20.4	20.1	19.8	19.5	19.2
4X	19.0	18.8	18.6	18.4	18.3
5X	18.1	18.0	17.8	17.7	17.5
6X	17.4	17.2	17.1	16.9	16.8
7X	16.6	16.4	16.2	16.0	15.8
8X	15.6	15.4	15.2	15.0	14.8
9X	14.5	14.2	13.6	5.1	2.5
10X	1.7				

Wet Condition

Primary Roads

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	34.0	34.0	34.0	34.0	34.0
1X	34.0	34.0	34.0	34.0	34.0
2X	34.0	34.0	34.0	34.0	34.0
3X	34.0	34.0	34.0	34.0	34.0
4X	34.0	34.0	33.9	33.8	33.7
5X	33.6	33.5	33.3	32.9	32.6
6X	32.3	31.9	31.6	31.3	31.1
7X	30.8	30.6	30.4	30.1	29.8
8X	29.4	28.9	28.4	27.9	27.3
9X	26.7	26.1	25.6	25.0	24.2
10X	23.4				

Secondary Roads

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	34.0	34.0	34.0	34.0	34.0
1X	34.0	34.0	34.0	34.0	34.0
2X	33.9	33.9	33.8	33.6	33.4
3X	33.2	33.0	32.8	32.7	32.2
4X	31.8	31.4	31.0	30.6	30.2
5X	29.8	29.5	29.2	28.9	28.7
6X	28.4	28.2	28.0	27.7	27.5
7X	27.3	27.0	26.7	26.3	26.0
8X	25.6	25.2	24.8	24.4	23.9
9X	23.4	23.0	22.6	22.1	21.4
10X	20.7				

Trails

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	30.6	28.9	27.2	25.9	25.2
1X	24.5	23.9	23.4	23.1	22.7
2X	22.4	22.2	22.0	21.7	21.5
3X	21.3	21.0	20.7	20.3	20.0
4X	19.8	19.6	19.3	19.1	18.9
5X	18.7	18.5	18.4	18.2	18.0
6X	17.8	17.7	17.5	17.4	17.3
7X	17.2	17.1	17.0	16.9	16.8
8X	16.7	16.6	16.5	16.3	16.2
9X	16.0	15.9	15.6	15.2	14.5
10X	14.0				

Off Road

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	30.0	22.4	21.2	20.3	19.5
1X	19.0	18.6	18.2	17.9	17.6
2X	17.3	17.0	16.8	16.6	16.4
3X	16.2	16.0	15.7	15.6	15.4
4X	15.2	15.0	14.8	14.7	14.5
5X	14.4	14.3	14.2	14.1	14.0
6X	13.9	13.8	13.7	13.6	13.5
7X	13.4	13.3	13.1	13.0	12.9
8X	12.7	12.6	12.5	12.3	12.1
9X	11.9	11.6	11.1	4.5	2.4
10X	1.6				

Snow Condition

Primary Roads

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	34.0	34.0	34.0	34.0	34.0
1X	34.0	34.0	34.0	34.0	34.0
2X	34.0	34.0	34.0	34.0	34.0
3X	34.0	34.0	34.0	34.0	34.0
4X	34.0	34.0	34.0	34.0	34.0
5X	34.0	33.9	33.8	33.6	33.4
6X	33.2	33.0	32.9	32.7	32.6
7X	32.4	32.3	32.0	31.7	31.3
8X	30.7	30.1	29.5	28.9	28.2
9X	27.4	26.7	26.1	25.5	24.6
10X	23.7				

Secondary Roads

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	34.0	34.0	34.0	34.0	34.0
1X	34.0	34.0	34.0	34.0	34.0
2X	34.0	34.0	34.0	34.0	34.0
3X	34.0	34.0	33.9	33.8	33.6
4X	33.5	33.4	33.1	32.9	32.6
5X	32.2	31.8	31.5	31.1	30.8
6X	30.5	30.2	29.9	29.6	29.2
7X	28.8	28.2	27.8	27.2	26.7
8X	26.2	25.6	24.9	24.3	23.6
9X	22.9	22.2	21.6	20.9	20.0
10X	19.2				

Trails

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	34.0	33.9	33.3	32.2	31.6
1X	31.2	30.4	29.7	28.9	28.1
2X	27.3	26.7	26.1	25.5	25.0
3X	24.6	24.3	23.8	23.3	22.8
4X	22.3	21.9	21.5	21.2	20.9
5X	20.7	20.4	20.2	20.0	19.8
6X	19.6	19.5	19.3	19.1	18.9
7X	18.7	18.5	18.4	18.2	18.1
8X	17.9	17.8	17.7	17.6	17.5
9X	17.3	17.1	16.8	16.2	15.5
10X	14.9				

Off Road

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	33.9	31.6	29.6	28.0	26.9
1X	25.8	24.8	24.0	23.3	22.7
2X	22.0	21.4	20.9	20.5	20.1
3X	19.7	19.4	19.1	18.8	18.6
4X	18.3	18.1	17.8	17.6	17.4
5X	17.2	17.0	16.8	16.6	16.4
6X	16.3	16.1	16.0	15.9	15.7
7X	15.6	15.4	15.2	15.1	14.9
8X	14.7	14.5	14.3	14.1	13.8
9X	13.6	13.2	12.7	4.7	2.4
10X	1.7				

Table B2

Speed Profile for M113A1, Armored Personnel Carrier (APC)

for HIMO West Germany Study Area

Primary Roads

Dry Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	42.0	42.0	42.0	42.0	42.0
1X	42.0	42.0	42.0	42.0	42.0
2X	42.0	42.0	42.0	42.0	42.0
3X	42.0	42.0	42.0	42.0	42.0
4X	42.0	42.0	42.0	42.0	42.0
5X	41.9	41.9	41.7	41.4	40.9
6X	40.6	40.2	39.9	39.6	39.3
7X	39.0	38.8	38.4	38.0	37.5
8X	36.8	36.8	35.3	34.5	33.6
9X	32.7	31.9	31.1	30.4	29.3
10X	28.2				

Wet Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	42.0	42.0	42.0	42.0	42.0
1X	42.0	42.0	42.0	42.0	42.0
2X	42.0	42.0	42.0	42.0	42.0
3X	42.0	42.0	42.0	42.0	42.0
4X	42.0	42.0	42.0	42.0	42.0
5X	41.9	41.7	41.5	41.0	40.6
6X	40.3	39.9	39.6	39.3	39.0
7X	38.8	38.4	37.9	37.4	36.7
8X	35.9	35.0	34.2	33.3	32.3
9X	31.3	30.4	29.6	28.7	27.6
10X	26.5				

Snow Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	42.0	42.0	42.0	42.0	42.0
1X	42.0	42.0	42.0	42.0	42.0
2X	42.0	42.0	42.0	42.0	42.0
3X	42.0	42.0	42.0	42.0	42.0
4X	42.0	42.0	42.0	42.0	42.0
5X	42.0	42.0	41.9	41.8	41.7
6X	41.6	41.5	41.4	41.4	41.2
7X	41.0	40.5	39.8	39.2	38.3
8X	37.3	36.2	35.2	34.1	33.0
9X	31.8	30.8	29.9	29.0	27.8
10X	26.6				

Secondary Roads

Dry Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	42.0	42.0	42.0	42.0	42.0
1X	42.0	42.0	42.0	41.9	41.7
2X	41.0	40.4	40.0	39.6	39.3
3X	39.0	38.8	38.6	38.3	38.0
4X	37.7	37.4	37.1	36.8	36.5
5X	36.3	36.0	35.7	35.4	35.1
6X	34.9	34.6	34.4	34.2	33.9
7X	33.5	33.1	32.7	32.3	31.8
8X	31.4	30.9	30.3	29.7	29.1
9X	28.4	27.7	27.1	26.4	25.4
10X	24.6				

Wet Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	42.0	42.0	42.0	42.0	42.0
1X	42.0	42.0	42.0	41.8	41.6
2X	41.0	40.4	39.9	39.6	39.2
3X	39.0	38.7	38.5	38.3	38.0
4X	37.6	37.3	37.0	36.7	36.4
5X	36.1	35.8	35.5	35.2	35.0
6X	34.7	34.5	34.2	33.9	33.6
7X	33.2	32.7	32.3	31.8	31.3
8X	30.9	30.3	29.6	29.0	28.2
9X	27.5	26.8	26.1	25.4	24.4
10X	23.5				

Snow Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	39.3	39.3	39.3	39.3	39.3
1X	39.3	39.3	39.3	39.3	39.3
2X	39.2	38.9	38.6	38.3	38.1
3X	37.9	37.8	37.6	37.5	37.4
4X	37.3	37.2	37.1	36.9	36.6
5X	36.3	36.1	35.8	35.6	35.3
6X	35.1	34.8	34.5	34.1	33.6
7X	33.0	32.5	31.8	31.1	30.3
8X	29.6	28.8	27.9	27.0	26.1
9X	25.2	24.3	23.6	22.7	21.6
10X	20.6				

Trails

Dry Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	27.0	27.0	26.7	26.0	25.4
1X	24.9	24.6	24.3	24.0	23.8
2X	23.7	23.5	23.3	22.8	22.3
3X	21.9	21.6	21.3	21.0	20.6
4X	20.1	19.6	19.2	18.8	18.4
5X	18.1	17.9	17.6	17.4	17.2
6X	17.0	16.8	16.7	16.5	16.4
7X	16.3	16.1	15.9	15.7	15.5
8X	15.4	15.2	15.1	15.0	14.8
9X	14.7	14.6	14.4	14.0	13.5
10X	13.1				

Wet Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	27.0	26.5	25.5	24.9	24.5
1X	24.2	24.0	23.7	23.5	23.3
2X	23.0	22.8	22.5	22.1	21.7
3X	21.3	21.0	20.8	20.5	20.0
4X	19.6	19.2	18.8	18.4	18.1
5X	17.8	17.6	17.3	17.1	16.9
6X	16.8	16.6	16.5	16.3	16.2
7X	16.1	15.9	15.7	15.6	15.4
8X	15.2	15.1	14.9	14.8	14.7
9X	14.6	14.5	14.3	13.9	13.4
10X	13.0				

Snow Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	27.0	27.0	27.0	26.4	25.7
1X	25.1	24.7	24.5	24.3	24.1
2X	23.9	23.7	23.6	23.1	22.5
3X	22.1	21.8	21.5	21.2	20.7
4X	20.2	19.7	19.3	18.9	18.5
5X	18.2	17.9	17.7	17.5	17.3
6X	17.1	16.9	16.7	16.6	16.5
7X	16.3	16.2	16.0	15.8	15.6
8X	15.4	15.3	15.1	15.0	14.9
9X	14.7	14.6	14.4	14.1	13.6
10X	13.1				

Off Road

Dry Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	41.8	36.4	33.8	32.7	31.7
1X	31.1	30.6	30.1	29.4	28.7
2X	28.1	27.6	27.2	26.8	26.4
3X	26.0	25.6	25.2	24.8	24.4
4X	23.9	23.5	23.1	22.8	22.4
5X	22.1	21.8	21.6	21.3	21.1
6X	20.8	20.6	20.3	20.0	19.7
7X	19.4	19.1	18.8	18.5	18.1
8X	17.8	17.4	17.0	16.6	16.1
9X	15.4	14.5	5.2	2.5	1.7
10X	1.3				

Wet Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	30.2	28.4	27.2	26.2	25.3
1X	24.7	24.3	23.8	23.4	22.9
2X	22.5	22.0	21.6	21.1	20.7
3X	20.4	20.0	19.7	19.4	19.1
4X	18.8	18.6	18.4	18.2	18.0
5X	17.8	17.6	17.4	17.2	17.1
6X	16.9	16.7	16.6	16.4	16.2
7X	16.0	15.8	15.6	15.3	15.1
8X	14.8	14.6	14.3	14.0	13.6
9X	13.1	12.3	4.5	2.3	1.6
10X	1.2				

Snow Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	41.8	34.6	32.0	30.5	29.5
1X	28.8	28.2	27.7	27.2	26.8
2X	26.4	26.0	25.6	25.1	24.7
3X	24.2	23.7	23.2	22.8	22.4
4X	22.0	21.6	21.2	20.8	20.4
5X	20.1	19.8	19.5	19.2	18.9
6X	18.7	18.4	18.2	18.0	17.7
7X	17.4	17.2	16.9	16.6	16.3
8X	16.0	15.6	15.3	14.9	14.5
9X	13.9	13.1	4.5	2.4	1.6
10X	1.2				

Table B3

Speed Profile for M109A1, 155mm, Self-Propelled Howitzer

for HIMO West Germany Study Area

Primary Roads

Dry Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	32.0	32.0	32.0	32.0	32.0
1X	32.0	32.0	32.0	32.0	32.0
2X	32.0	32.0	32.0	32.0	32.0
3X	32.0	32.0	32.0	32.0	32.0
4X	32.0	32.0	32.0	32.0	32.0
5X	31.9	31.9	31.8	31.6	31.4
6X	31.1	30.8	30.5	30.3	30.1
7X	29.8	29.6	29.5	29.3	29.1
8X	28.8	28.5	28.2	27.8	27.3
9X	26.8	26.4	26.0	25.5	24.8
10X	24.1				

Wet Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	32.0	32.0	32.0	32.0	32.0
1X	32.0	32.0	32.0	32.0	32.0
2X	32.0	32.0	32.0	32.0	32.0
3X	32.0	32.0	32.0	32.0	32.0
4X	32.0	32.0	32.0	32.0	31.9
5X	31.9	31.8	31.6	31.4	31.1
6X	30.8	30.6	30.3	30.1	29.8
7X	29.6	29.5	29.3	29.1	28.8
8X	28.4	28.0	27.6	27.1	26.5
9X	26.0	25.4	25.0	24.4	23.7
10X	22.9				

Snow Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	32.0	32.0	32.0	32.0	32.0
1X	32.0	32.0	32.0	32.0	32.0
2X	32.0	32.0	32.0	32.0	32.0
3X	32.0	32.0	32.0	32.0	32.0
4X	32.0	32.0	32.0	32.0	32.0
5X	32.0	32.0	31.9	31.8	31.6
6X	31.3	31.1	30.9	30.8	30.6
7X	30.4	30.3	30.1	29.9	29.5
8X	29.1	28.6	28.1	27.5	26.9
9X	26.2	25.6	25.1	24.5	23.7
10X	22.9				

Secondary Roads

Dry Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	32.0	32.0	32.0	32.0	32.0
1X	32.0	32.0	32.0	32.0	32.0
2X	32.0	32.0	32.0	32.0	31.9
3X	31.8	31.5	31.2	30.9	30.6
4X	30.2	29.9	29.6	29.3	29.0
5X	28.8	28.6	28.4	28.2	28.0
6X	27.8	27.6	27.4	27.2	27.0
7X	26.8	26.6	26.3	26.0	25.7
8X	25.4	25.1	24.8	24.4	24.0
9X	23.6	23.3	22.9	22.5	21.8
10X	21.3				

Wet Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	32.0	32.0	32.0	32.0	32.0
1X	32.0	32.0	32.0	32.0	32.0
2X	32.0	32.0	32.0	31.9	31.9
3X	31.7	31.3	31.0	30.7	30.4
4X	30.1	29.8	29.5	29.2	28.9
5X	28.7	28.4	28.2	28.0	27.8
6X	27.6	27.4	27.2	27.0	26.8
7X	26.6	26.3	26.0	25.7	25.4
8X	25.0	24.7	24.3	24.0	23.5
9X	23.1	22.7	22.3	21.8	21.1
10X	20.5				

Snow Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	32.0	32.0	32.0	32.0	32.0
1X	32.0	32.0	32.0	32.0	32.0
2X	32.0	32.0	32.0	32.0	32.0
3X	32.0	32.0	32.0	32.0	31.9
4X	31.9	31.8	31.5	31.2	30.9
5X	30.6	30.3	30.1	29.8	29.5
6X	29.3	29.1	28.9	28.6	28.3
7X	27.9	27.4	26.9	26.5	26.0
8X	25.6	25.0	24.4	23.8	23.1
9X	22.4	21.8	21.2	20.6	19.7
10X	18.9				

Trails

Dry Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	31.8	31.6	30.8	30.5	30.4
1X	29.3	28.2	27.4	26.7	26.2
2X	25.8	25.4	24.9	24.5	24.1
3X	23.8	23.4	23.0	22.5	22.0
4X	21.6	21.3	21.0	20.7	20.4
5X	20.2	20.0	19.8	19.7	19.5
6X	19.3	19.2	19.0	18.8	18.6
7X	18.4	18.3	18.1	18.0	17.9
8X	17.7	17.6	17.5	17.4	17.3
9X	17.2	17.0	16.7	16.1	15.4
10X	14.8				

Wet Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	31.1	26.2	26.2	25.4	24.8
1X	24.4	23.9	23.5	23.0	22.6
2X	22.2	21.9	21.5	21.2	20.9
3X	20.6	20.3	20.0	19.7	19.5
4X	19.3	19.1	18.9	18.8	18.6
5X	18.4	18.3	18.2	18.0	17.8
6X	17.6	17.5	17.4	17.2	17.1
7X	17.0	16.9	16.8	16.6	16.5
8X	16.4	16.3	16.2	16.0	15.9
9X	15.8	15.6	15.3	14.9	14.3
10X	13.8				

Snow Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	32.0	31.9	31.6	31.0	30.8
1X	30.6	29.7	29.9	28.2	27.5
2X	27.0	26.6	26.0	25.4	24.9
3X	24.5	24.2	23.8	23.3	22.7
4X	22.3	21.8	21.5	21.2	20.9
5X	20.6	20.4	20.2	20.0	19.8
6X	19.7	19.5	19.4	19.1	18.9
7X	18.8	18.6	18.4	18.3	18.1
8X	18.0	17.9	17.8	17.6	17.5
9X	17.4	17.2	16.9	16.3	15.6
10X	15.0				

Off Road

Dry Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	31.8	30.3	27.9	26.5	25.8
1X	25.3	25.0	24.7	24.5	24.3
2X	24.0	23.8	23.5	23.2	22.9
3X	22.6	22.3	22.0	21.7	21.3
4X	21.0	20.7	20.4	20.1	19.8
5X	19.6	19.4	19.2	19.0	18.7
6X	18.5	18.3	18.0	17.7	17.5
7X	17.2	16.8	16.5	16.2	15.8
8X	15.4	15.1	14.7	14.4	14.0
9X	13.5	13.0	12.4	11.6	10.8
10X	6.5				

Wet Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	30.1	22.4	21.3	20.5	19.9
1X	19.4	19.0	18.6	18.2	17.8
2X	17.5	17.3	17.1	16.8	16.6
3X	16.3	16.1	15.9	15.7	15.5
4X	15.3	15.1	14.9	14.8	14.6
5X	14.5	14.4	14.3	14.1	14.0
6X	13.9	13.8	13.6	13.5	13.3
7X	13.2	13.0	12.7	12.5	12.3
8X	12.1	11.9	11.6	11.4	11.1
9X	10.8	10.5	10.1	9.5	8.9
10X	4.1				

Snow Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	31.9	31.5	29.7	28.8	26.9
1X	26.2	25.6	25.2	24.8	24.4
2X	24.1	23.7	23.4	23.0	22.6
3X	22.2	21.7	21.3	21.0	20.6
4X	20.3	20.0	19.6	19.2	18.9
5X	18.6	18.3	18.0	17.8	17.5
6X	17.3	17.1	16.8	16.6	16.4
7X	16.1	15.7	15.4	15.1	14.8
8X	14.4	14.1	13.7	13.4	13.0
9X	12.5	12.0	11.5	10.5	5.5
10X	2.7				

Table B4

Speed Profile for M107, 175mm, Self-Propelled Howitzer

for HIMO West Germany Study Area

Primary Roads

Dry Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	32.0	32.0	32.0	32.0	32.0
1X	32.0	32.0	32.0	32.0	32.0
2X	32.0	32.0	32.0	32.0	32.0
3X	32.0	32.0	32.0	32.0	32.0
4X	32.0	32.0	32.0	32.0	31.9
5X	31.9	31.9	31.8	31.6	31.3
6X	31.0	30.7	30.5	30.2	30.0
7X	29.8	29.6	29.4	29.2	29.1
8X	28.8	28.5	28.2	27.8	27.3
9X	26.8	26.4	25.9	25.5	24.8
10X	24.1				

Wet Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	32.0	32.0	32.0	32.0	32.0
1X	32.0	32.0	32.0	32.0	32.0
2X	32.0	32.0	32.0	32.0	32.0
3X	32.0	32.0	32.0	32.0	32.0
4X	32.0	32.0	32.0	32.0	31.9
5X	31.9	31.8	31.6	31.3	31.0
6X	30.8	30.5	30.2	30.0	29.8
7X	29.6	29.4	29.2	29.0	28.7
8X	28.4	28.0	27.5	27.1	26.5
9X	25.9	25.4	24.9	24.4	23.7
10X	22.9				

Snow Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	32.0	32.0	32.0	32.0	32.0
1X	32.0	32.0	32.0	32.0	32.0
2X	32.0	32.0	32.0	32.0	32.0
3X	32.0	32.0	32.0	32.0	32.0
4X	32.0	32.0	32.0	32.0	32.0
5X	32.0	32.0	31.9	31.8	31.5
6X	31.3	31.0	30.8	30.7	30.5
7X	30.3	30.2	30.0	29.8	29.4
8X	29.0	28.5	28.0	27.4	26.8
9X	26.1	25.6	25.0	24.4	23.6
10X	22.8				

Secondary Roads

Dry Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	32.0	32.0	32.0	32.0	32.0
1X	32.0	32.0	32.0	32.0	32.0
2X	32.0	32.0	32.0	31.9	31.9
3X	31.8	31.4	31.1	30.8	30.4
4X	30.1	29.8	29.5	29.2	28.9
5X	28.7	28.5	28.2	28.0	27.8
6X	27.6	27.4	27.2	27.0	26.8
7X	26.5	26.2	25.9	25.7	25.4
8X	25.0	24.7	24.4	24.1	23.7
9X	23.3	23.0	22.6	22.2	21.6
10X	21.0				

Wet Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	32.0	32.0	32.0	32.0	32.0
1X	32.0	32.0	32.0	32.0	32.0
2X	32.0	32.0	32.0	31.9	31.8
3X	31.6	31.3	30.9	30.6	30.3
4X	30.0	29.7	29.3	29.1	28.8
5X	28.6	28.3	28.1	27.9	27.7
6X	27.5	27.3	27.1	26.8	26.5
7X	26.2	25.9	25.6	25.3	25.0
8X	24.7	24.3	24.0	23.6	23.2
9X	22.8	22.4	22.0	21.5	20.9
10X	20.3				

Snow Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	32.0	32.0	32.0	32.0	32.0
1X	32.0	32.0	32.0	32.0	32.0
2X	32.0	32.0	32.0	32.0	32.0
3X	32.0	32.0	32.0	32.0	31.9
4X	31.8	31.6	31.4	31.1	30.8
5X	30.4	30.1	29.9	29.6	29.4
6X	29.1	28.9	28.7	28.4	28.1
7X	27.7	27.2	26.8	26.3	25.9
8X	25.4	24.9	24.2	23.7	23.0
9X	22.3	21.7	21.1	20.5	19.6
10X	18.9				

Trails

Dry Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	31.8	31.6	30.8	30.5	30.2
1X	29.8	28.8	27.2	26.6	26.0
2X	25.6	25.2	24.7	24.3	23.9
3X	23.6	23.3	22.9	22.4	21.9
4X	21.5	21.2	20.9	20.6	20.4
5X	20.1	19.9	19.8	19.6	19.4
6X	19.2	19.1	18.9	18.7	18.6
7X	18.4	18.2	18.1	17.9	17.8
8X	17.7	17.6	17.5	17.4	17.2
9X	17.1	16.9	16.6	16.1	15.4
10X	14.8				

Wet Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	31.1	28.1	26.1	25.2	24.7
1X	24.3	23.7	23.3	22.8	22.4
2X	22.1	21.7	21.3	21.0	20.7
3X	20.4	20.1	19.8	19.6	19.3
4X	19.1	19.0	18.8	18.6	18.5
5X	18.3	18.1	18.0	17.8	17.7
6X	17.5	17.4	17.2	17.1	17.0
7X	16.9	16.8	16.7	16.5	16.4
8X	16.3	16.2	16.0	15.9	15.8
9X	15.6	15.5	15.2	14.8	14.2
10X	13.7				

Snow Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	32.0	31.9	31.6	31.0	30.0
1X	30.5	29.5	28.7	28.0	27.3
2X	26.8	26.4	25.8	25.2	24.8
3X	24.4	24.1	23.6	23.1	22.6
4X	22.1	21.7	21.4	21.1	20.8
5X	20.6	20.3	20.1	20.0	19.8
6X	19.6	19.5	19.3	19.1	18.9
7X	18.7	18.5	18.4	18.2	18.1
8X	18.0	17.8	17.7	17.6	17.5
9X	17.4	17.2	16.9	16.3	15.6
10X	14.9				

Off Road

Dry Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	31.8	29.4	27.2	26.0	25.4
1X	25.8	24.7	24.5	24.3	24.0
2X	23.8	23.5	23.2	22.9	22.6
3X	22.2	21.9	21.6	21.3	21.0
4X	20.6	20.3	20.1	19.8	19.6
5X	19.3	19.1	18.9	18.7	18.5
6X	18.2	18.0	17.8	17.5	17.2
7X	16.9	16.6	16.3	15.9	15.6
8X	15.2	14.9	14.5	14.1	13.8
9X	13.3	12.7	12.0	11.2	7.8
10X	3.1				

Wet Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	30.0	22.3	21.1	20.3	19.7
1X	19.1	18.6	18.2	17.8	17.5
2X	17.2	17.0	16.8	16.6	16.3
3X	16.1	15.9	15.7	15.5	15.3
4X	15.1	14.9	14.7	14.6	14.5
5X	14.4	14.2	14.1	14.0	13.9
6X	13.8	13.7	13.5	13.4	13.2
7X	13.1	12.9	12.6	12.4	12.2
8X	12.0	11.7	11.5	11.2	11.0
9X	10.7	10.3	9.8	9.2	4.9
10X	2.5				

Snow Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	31.9	31.5	29.2	27.6	26.5
1X	25.9	25.4	24.9	24.5	24.2
2X	23.8	23.5	23.2	22.8	22.4
3X	21.9	21.5	21.1	20.8	20.4
4X	20.1	19.8	19.4	19.1	18.8
5X	18.5	18.2	17.9	17.6	17.4
6X	17.2	16.9	16.7	16.5	16.2
7X	15.9	15.6	15.3	15.0	14.6
8X	14.3	13.9	13.6	13.3	12.9
9X	12.4	11.9	11.2	10.2	4.8
10X	2.3				

Table B5

Speed Profile for M110E2, 8 in., Self-Propelled Howitzer

for HIMO West Germany Study Area

Primary Roads

Dry Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	32.0	32.0	32.0	32.0	32.0
1X	32.0	32.0	32.0	32.0	32.0
2X	32.0	32.0	32.0	32.0	32.0
3X	32.0	32.0	32.0	32.0	32.0
4X	32.0	32.0	32.0	32.0	31.9
5X	31.9	31.9	31.8	31.6	31.3
6X	31.0	30.7	30.5	30.2	30.0
7X	29.8	29.6	29.4	29.2	29.1
8X	28.8	28.5	28.2	27.8	27.3
9X	26.8	26.4	25.9	25.5	24.8
10X	24.1				

Wet Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	32.0	32.0	32.0	32.0	32.0
1X	32.0	32.0	32.0	32.0	32.0
2X	32.0	32.0	32.0	32.0	32.0
3X	32.0	32.0	32.0	32.0	32.0
4X	32.0	32.0	32.0	32.0	31.9
5X	31.9	31.8	31.6	31.3	31.0
6X	30.8	30.5	30.2	30.0	29.8
7X	29.6	29.4	29.2	29.0	28.7
8X	28.4	28.0	27.5	27.1	26.5
9X	25.9	25.4	24.9	24.4	23.7
10X	22.9				

Snow Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	32.0	32.0	32.0	32.0	32.0
1X	32.0	32.0	32.0	32.0	32.0
2X	32.0	32.0	32.0	32.0	32.0
3X	32.0	32.0	32.0	32.0	32.0
4X	32.0	32.0	32.0	32.0	32.0
5X	32.0	32.0	31.9	31.8	31.5
6X	31.3	31.0	30.8	30.7	30.5
7X	30.3	30.2	30.0	29.8	29.4
8X	29.0	28.5	28.0	27.4	26.8
9X	26.1	25.6	25.0	24.4	23.6
10X	22.8				

Secondary Roads

Dry Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	32.0	32.0	32.0	32.0	32.0
1X	32.0	32.0	32.0	32.0	32.0
2X	32.0	32.0	32.0	31.9	31.9
3X	31.8	31.4	31.1	30.8	30.4
4X	30.1	29.8	29.5	29.2	28.9
5X	28.7	28.5	28.2	28.0	27.8
6X	27.6	27.4	27.2	27.0	26.8
7X	26.5	26.2	25.9	25.7	25.4
8X	25.0	24.7	24.4	24.1	23.7
9X	23.3	23.0	22.6	22.2	21.6
10X	21.0				

Wet Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	32.0	32.0	32.0	32.0	32.0
1X	32.0	32.0	32.0	32.0	32.0
2X	32.0	32.0	32.0	31.9	31.8
3X	31.6	31.3	30.9	30.6	30.3
4X	30.0	29.7	29.3	29.1	28.8
5X	28.6	28.3	28.1	27.9	27.7
6X	27.5	27.3	27.1	26.8	26.5
7X	26.2	25.9	25.6	25.3	25.0
8X	24.7	24.3	24.0	23.6	23.2
9X	22.8	22.4	22.0	21.5	20.9
10X	20.3				

Snow Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	32.0	32.0	32.0	32.0	32.0
1X	32.0	32.0	32.0	32.0	32.0
2X	32.0	32.0	32.0	32.0	32.0
3X	32.0	32.0	32.0	32.0	31.9
4X	31.8	31.6	31.4	31.1	30.8
5X	30.4	30.1	29.9	29.6	29.4
6X	29.1	28.9	28.7	28.4	28.1
7X	27.7	27.2	26.8	26.3	25.9
8X	25.4	24.9	24.2	23.7	23.0
9X	22.3	21.7	21.1	20.5	19.6
10X	18.9				

Trails

Dry Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	31.8	31.6	30.8	30.5	30.2
1X	29.8	28.8	27.2	26.6	26.0
2X	25.6	25.2	24.7	24.3	23.9
3X	23.6	23.3	22.9	22.4	21.9
4X	21.5	21.2	20.9	20.6	20.4
5X	20.1	19.9	19.8	19.6	19.4
6X	19.2	19.1	18.9	18.7	18.6
7X	18.4	18.2	18.1	17.9	17.8
8X	17.7	17.6	17.5	17.4	17.2
9X	17.1	16.9	16.6	16.1	15.4
10X	14.8				

Wet Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	31.1	28.1	26.1	25.2	24.7
1X	24.3	23.7	23.3	22.8	22.4
2X	22.1	21.7	21.3	21.0	20.7
3X	20.4	20.1	19.8	19.6	19.3
4X	19.1	19.0	18.8	18.6	18.5
5X	18.3	18.1	18.0	17.8	17.7
6X	17.5	17.4	17.2	17.1	17.0
7X	16.9	16.8	16.7	16.5	16.4
8X	16.3	16.2	16.0	15.9	15.8
9X	15.6	15.5	15.2	14.8	14.2
10X	13.7				

Snow Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	32.0	31.9	31.6	31.0	30.8
1X	30.5	29.5	28.7	28.0	27.3
2X	26.8	26.4	25.8	25.2	24.8
3X	24.4	24.1	23.6	23.1	22.6
4X	22.1	21.7	21.4	21.1	20.8
5X	20.6	20.3	20.1	20.0	19.8
6X	19.6	19.5	19.3	19.1	18.9
7X	18.7	18.5	18.4	18.2	18.1
8X	18.0	17.8	17.7	17.6	17.5
9X	17.4	17.2	16.9	16.3	15.6
10X	14.9				

Off Road

Dry Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	31.8	29.4	27.2	26.0	25.4
1X	25.0	24.7	24.5	24.3	24.0
2X	23.8	23.5	23.2	22.9	22.6
3X	22.2	21.9	21.6	21.3	21.0
4X	20.6	20.3	20.1	19.8	19.6
5X	19.3	19.1	18.9	18.7	18.5
6X	18.2	18.0	17.7	17.5	17.2
7X	16.9	16.6	16.3	15.9	15.6
8X	15.2	14.8	14.5	14.1	13.7
9X	13.2	12.7	12.1	11.2	10.4
10X	4.8				

Wet Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	30.8	22.3	21.1	20.3	19.7
1X	19.1	18.6	18.2	17.8	17.5
2X	17.2	17.0	16.8	16.6	16.3
3X	16.1	15.9	15.7	15.5	15.3
4X	15.1	14.9	14.7	14.6	14.5
5X	14.4	14.2	14.1	14.0	13.9
6X	13.8	13.7	13.5	13.4	13.2
7X	13.0	12.8	12.6	12.4	12.2
8X	11.9	11.7	11.5	11.2	10.9
9X	10.6	10.3	9.9	9.3	8.7
10X	3.3				

Snow Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	31.9	31.5	29.2	27.6	26.5
1X	25.9	25.4	24.9	24.5	24.2
2X	23.8	23.5	23.2	22.8	22.4
3X	21.9	21.5	21.1	20.8	20.4
4X	20.1	19.8	19.4	19.1	18.7
5X	18.5	18.2	17.9	17.6	17.4
6X	17.2	16.9	16.7	16.5	16.2
7X	15.9	15.6	15.3	14.9	14.6
8X	14.3	13.9	13.6	13.2	12.8
9X	12.4	11.8	11.1	10.3	5.2
10X	2.6				

Table B6

Speed Profile for M88, Medium Recovery Vehicle

for HIMO West Germany Study Area

Dry Condition

Primary Roads					
PERCENT TOTAL DISTANCE					
	X=0	2	4	6	8
X	29.4	29.4	29.4	29.4	29.4
1X	29.4	29.4	29.4	29.4	29.4
2X	29.4	29.4	29.4	29.4	29.4
3X	29.4	29.4	29.4	29.4	29.4
4X	29.4	29.4	29.4	29.4	29.4
5X	29.4	29.3	29.3	29.3	29.3
6X	29.2	29.1	28.9	28.8	28.7
7X	28.6	28.6	28.5	28.4	28.3
8X	28.0	27.8	27.5	27.1	26.7
9X	26.2	25.8	25.4	25.0	24.3
10X	23.7				

Secondary Roads					
PERCENT TOTAL DISTANCE					
	X=0	2	4	6	8
X	29.0	29.0	29.0	29.0	29.0
1X	29.0	29.0	29.0	29.0	29.0
2X	29.0	29.0	29.0	29.0	29.0
3X	29.0	29.0	29.0	28.9	28.9
4X	28.9	28.8	28.6	28.5	28.3
5X	28.1	28.0	27.8	27.6	27.5
6X	27.3	27.2	27.0	26.8	26.7
7X	26.5	26.4	26.2	26.0	25.8
8X	25.5	25.3	25.0	24.7	24.3
9X	23.9	23.5	23.1	22.7	22.0
10X	21.4				

Trails					
PERCENT TOTAL DISTANCE					
	X=0	2	4	6	8
X	29.1	29.1	29.0	29.0	28.9
1X	28.6	28.2	27.8	27.6	27.4
2X	27.2	26.9	26.7	26.4	26.1
3X	25.9	25.6	25.3	24.7	24.1
4X	23.6	23.0	22.6	22.2	21.8
5X	21.5	21.2	21.0	20.8	20.5
6X	20.3	20.2	20.0	19.9	19.6
7X	19.4	19.1	18.8	18.6	18.3
8X	18.1	17.8	17.6	17.4	17.3
9X	17.1	16.9	16.6	16.1	15.4
10X	14.8				

Off Road					
PERCENT TOTAL DISTANCE					
	X=0	2	4	6	8
X	29.0	28.7	28.6	27.6	27.0
1X	26.5	26.1	25.7	25.4	25.2
2X	24.9	24.7	24.4	24.1	23.8
3X	23.5	23.2	22.9	22.7	22.4
4X	22.1	21.7	21.4	21.1	20.8
5X	20.5	20.2	19.9	19.6	19.4
6X	19.2	19.0	18.7	18.5	18.2
7X	17.9	17.5	17.2	16.9	16.6
8X	16.3	16.0	15.6	15.2	14.8
9X	14.4	14.0	13.5	12.9	5.2
10X	2.6				

Wet Condition

PERCENT TOTAL DISTANCE					
	X=0	2	4	6	8
X	29.4	29.4	29.4	29.4	29.4
1X	29.4	29.4	29.4	29.4	29.4
2X	29.4	29.4	29.4	29.4	29.4
3X	29.4	29.4	29.4	29.4	29.4
4X	29.4	29.4	29.4	29.4	29.4
5X	29.4	29.3	29.3	29.3	29.1
6X	29.0	28.9	28.8	28.7	28.6
7X	28.5	28.4	28.3	28.2	28.0
8X	27.7	27.3	26.9	26.5	26.0
9X	25.4	24.9	24.5	24.0	23.3
10X	22.5				

PERCENT TOTAL DISTANCE					
	X=0	2	4	6	8
X	29.0	29.0	29.0	29.0	29.0
1X	29.0	29.0	29.0	29.0	29.0
2X	29.0	29.0	29.0	29.0	29.0
3X	29.0	29.0	28.9	28.9	28.9
4X	28.8	28.7	28.5	28.4	28.2
5X	28.1	27.9	27.7	27.5	27.4
6X	27.2	27.0	26.9	26.7	26.5
7X	26.4	26.2	26.0	25.8	25.5
8X	25.2	24.9	24.6	24.2	23.8
9X	23.3	22.9	22.5	22.0	21.3
10X	20.7				

PERCENT TOTAL DISTANCE					
	X=0	2	4	6	8
X	27.4	27.4	27.2	27.1	26.9
1X	26.7	26.5	26.2	25.9	25.5
2X	25.1	24.8	24.5	24.2	23.9
3X	23.7	23.5	23.1	22.7	22.2
4X	21.8	21.4	21.1	20.8	20.5
5X	20.3	20.1	19.9	19.7	19.5
6X	19.3	19.2	19.0	18.9	18.7
7X	18.5	18.2	18.0	17.7	17.5
8X	17.3	17.1	17.0	16.8	16.6
9X	16.5	16.4	16.1	15.6	14.9
10X	14.4				

PERCENT TOTAL DISTANCE					
	X=0	2	4	6	8
X	27.4	24.4	23.2	22.6	22.1
1X	21.8	21.5	21.2	20.9	20.6
2X	20.3	20.0	19.7	19.5	19.2
3X	18.9	18.6	18.3	18.1	17.8
4X	17.6	17.4	17.2	17.0	16.8
5X	16.7	16.5	16.4	16.2	16.0
6X	15.9	15.7	15.5	15.3	15.1
7X	14.9	14.7	14.5	14.3	14.1
8X	13.8	13.6	13.3	13.0	12.7
9X	12.3	12.0	11.6	11.2	4.9
10X	2.5				

Snow Condition

PERCENT TOTAL DISTANCE					
	X=0	2	4	6	8
X	30.0	30.0	30.0	30.0	30.0
1X	30.0	30.0	30.0	30.0	30.0
2X	30.0	30.0	30.0	30.0	30.0
3X	30.0	30.0	30.0	30.0	30.0
4X	30.0	30.0	29.9	29.9	29.9
5X	29.9	29.9	29.8	29.8	29.8
6X	29.7	29.7	29.7	29.7	29.7
7X	29.6	29.6	29.5	29.3	29.0
8X	28.6	28.1	27.6	27.1	26.5
9X	25.8	25.3	24.8	24.2	23.4
10X	22.6				

PERCENT TOTAL DISTANCE					
	X=0	2	4	6	8
X	30.0	30.0	30.0	29.9	29.9
1X	29.9	29.9	29.9	29.9	29.9
2X	29.9	29.9	29.9	29.8	29.8
3X	29.8	29.8	29.8	29.7	29.7
4X	29.7	29.6	29.6	29.6	29.5
5X	29.4	29.3	29.1	29.0	28.8
6X	28.7	28.5	28.3	28.1	27.9
7X	27.6	27.3	26.9	26.5	26.0
8X	25.6	25.0	24.4	23.8	23.2
9X	22.5	21.9	21.3	20.6	19.7
10X	19.8				

PERCENT TOTAL DISTANCE					
	X=0	2	4	6	8
X	30.0	29.8	29.7	29.6	29.6
1X	29.5	29.3	29.2	28.8	28.5
2X	28.2	28.0	27.8	27.6	27.4
3X	27.2	26.9	26.5	25.9	25.3
4X	24.6	24.0	23.4	23.0	22.6
5X	22.2	21.9	21.6	21.3	21.1
6X	20.8	20.6	20.5	20.3	20.0
7X	19.8	19.5	19.2	18.9	18.6
8X	18.4	18.1	17.9	17.7	17.5
9X	17.3	17.2	16.9	16.3	15.6
10X	14.9				

PERCENT TOTAL DISTANCE					
	X=0	2	4	6	8
X	29.7	29.2	29.0	28.7	28.2
1X	27.6	27.2	26.9	26.5	26.2
2X	25.8	25.4	24.9	24.4	24.0
3X	23.5	23.1	22.6	22.2	21.8
4X	21.4	21.0	20.6	20.3	19.8
5X	19.4	19.1	18.7	18.4	18.1
6X	17.7	17.5	17.2	16.9	16.7
7X	16.4	16.1	15.8	15.5	15.2
8X	15.0	14.7	14.4	14.0	13.7
9X	13.3	12.8	12.4	11.9	5.0
10X	2.5				

Table B7

Speed Profile for IFV/CFV Infantry or Cavalry Fighting Vehicle

for HIMO West Germany Study Area

Primary Roads

Dry Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	40.0	40.0	40.0	40.0	40.0
1X	40.0	40.0	40.0	40.0	40.0
2X	40.0	40.0	40.0	40.0	40.0
3X	40.0	40.0	40.0	40.0	40.0
4X	40.0	40.0	40.0	40.0	40.0
5X	40.0	40.0	40.0	39.9	39.8
6X	39.7	39.7	39.6	39.6	39.5
7X	39.5	39.3	39.0	38.6	38.0
8X	37.3	36.5	35.8	35.0	34.0
9X	33.1	32.2	31.5	30.7	29.6
10X	28.4				

Wet Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	40.0	40.0	40.0	40.0	40.0
1X	40.0	40.0	40.0	40.0	40.0
2X	40.0	40.0	40.0	40.0	40.0
3X	40.0	40.0	40.0	40.0	40.0
4X	40.0	40.0	40.0	40.0	40.0
5X	40.0	40.0	39.9	39.8	39.7
6X	39.7	39.6	39.5	39.5	39.4
7X	39.3	39.0	38.5	38.0	37.2
8X	36.4	35.5	34.6	33.7	32.6
9X	31.6	30.7	29.8	29.0	27.8
10X	26.7				

Snow Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	40.0	40.0	40.0	40.0	40.0
1X	40.0	40.0	40.0	40.0	40.0
2X	40.0	40.0	40.0	40.0	40.0
3X	40.0	40.0	40.0	40.0	40.0
4X	40.0	40.0	40.0	40.0	40.0
5X	40.0	40.0	40.0	40.0	39.9
6X	39.9	39.9	39.9	39.9	39.8
7X	39.6	39.2	38.6	38.0	37.2
8X	36.2	35.3	34.3	33.3	32.2
9X	31.2	30.2	29.4	28.5	27.3
10X	26.1				

Secondary Roads

Dry Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	40.0	40.0	40.0	40.0	40.0
1X	40.0	40.0	40.0	40.0	40.0
2X	40.0	40.0	40.0	40.0	40.0
3X	40.0	40.0	40.0	39.9	39.9
4X	39.8	39.7	39.5	39.4	39.2
5X	39.0	38.8	38.6	38.4	38.2
6X	38.0	37.7	37.5	37.3	37.0
7X	36.6	36.2	35.7	35.3	34.7
8X	34.2	33.6	32.8	32.1	31.3
9X	30.4	29.7	28.9	28.1	27.0
10X	26.0				

Wet Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	40.0	40.0	40.0	40.0	40.0
1X	40.0	40.0	40.0	40.0	40.0
2X	40.0	40.0	40.0	40.0	40.0
3X	40.0	40.0	40.0	39.9	39.9
4X	39.8	39.7	39.5	39.4	39.2
5X	39.0	38.8	38.6	38.4	38.1
6X	37.9	37.7	37.4	37.1	36.7
7X	36.4	35.9	35.3	34.8	34.2
8X	33.5	32.8	32.0	31.2	30.3
9X	29.4	28.6	27.8	26.9	25.8
10X	24.8				

Snow Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	39.3	39.3	39.3	39.3	39.3
1X	39.3	39.3	39.3	39.3	39.3
2X	39.3	39.3	39.3	39.3	39.3
3X	39.3	39.3	39.3	39.3	39.3
4X	39.3	39.3	39.3	39.2	39.2
5X	39.1	39.0	38.9	38.8	38.7
6X	38.5	38.2	37.9	37.5	36.9
7X	36.3	35.5	34.6	33.7	32.8
8X	31.9	30.9	29.8	28.8	27.7
9X	26.6	25.7	24.8	23.8	22.6
10X	21.5				

Trails

Dry Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	34.0	34.0	34.0	33.6	32.3
1X	31.1	30.3	29.8	29.4	29.1
2X	28.8	28.6	28.0	27.3	26.7
3X	26.1	25.7	25.3	24.8	24.3
4X	23.7	23.2	22.7	22.3	22.0
5X	21.6	21.4	21.1	20.9	20.6
6X	20.4	20.3	20.1	19.9	19.8
7X	19.6	19.3	19.1	18.9	18.6
8X	18.4	18.2	18.1	17.9	17.8
9X	17.6	17.5	17.2	16.6	15.8
10X	15.2				

Wet Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	34.0	34.0	33.5	32.1	30.9
1X	30.0	29.5	29.0	28.6	28.1
2X	27.7	27.4	26.9	26.3	25.8
3X	25.3	25.0	24.6	24.2	23.6
4X	23.1	22.6	22.2	21.8	21.5
5X	21.2	20.9	20.7	20.5	20.3
6X	20.1	20.0	19.8	19.7	19.5
7X	19.3	19.0	18.8	18.6	18.4
8X	18.2	18.0	17.9	17.7	17.6
9X	17.4	17.3	17.0	16.4	15.7
10X	15.0				

Snow Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	34.0	34.0	34.0	34.0	32.8
1X	31.4	30.6	30.0	29.6	29.3
2X	29.0	28.8	28.3	27.5	26.9
3X	26.3	25.9	25.5	25.0	24.5
4X	23.9	23.4	22.9	22.5	22.1
5X	21.8	21.5	21.2	20.9	20.7
6X	20.5	20.3	20.2	20.0	19.9
7X	19.6	19.4	19.2	18.9	18.7
8X	18.5	18.3	18.1	18.0	17.8
9X	17.7	17.5	17.2	16.6	15.8
10X	15.2				

Off Road

Dry Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	39.8	39.3	38.5	37.9	37.1
1X	36.5	36.0	35.6	35.3	34.9
2X	34.5	34.0	33.5	33.0	32.4
3X	31.8	31.2	30.7	30.1	29.6
4X	29.1	28.6	28.1	27.6	27.1
5X	26.7	26.3	25.9	25.5	25.0
6X	24.6	24.2	23.9	23.5	23.2
7X	22.8	22.5	22.3	22.0	21.7
8X	21.3	20.9	20.4	19.9	19.2
9X	18.4	17.3	15.9	14.1	8.5
10X	3.2				

Wet Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	35.4	32.8	32.0	31.1	30.3
1X	29.5	28.7	28.1	27.5	26.9
2X	26.4	25.9	25.5	25.0	24.5
3X	24.0	23.6	23.1	22.7	22.3
4X	21.9	21.5	21.2	20.9	20.6
5X	20.3	20.0	19.8	19.6	19.4
6X	19.2	19.0	18.8	18.6	18.5
7X	18.3	18.1	17.9	17.7	17.4
8X	17.1	16.8	16.5	16.1	15.5
9X	14.9	13.8	11.9	4.0	2.2
10X	1.6				

Snow Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	39.8	37.9	36.2	35.3	34.5
1X	33.9	33.3	32.7	32.0	31.4
2X	30.9	30.4	29.9	29.5	29.0
3X	28.5	28.0	27.4	26.9	26.3
4X	25.8	25.4	24.9	24.5	24.1
5X	23.7	23.3	23.0	22.6	22.2
6X	21.8	21.5	21.1	20.7	20.4
7X	20.0	19.7	19.4	19.1	18.8
8X	18.5	18.2	17.7	17.3	16.7
9X	15.9	14.7	12.3	3.5	2.1
10X	1.5				

Table B8

Speed Profile for GSRS, Ground Support Rocket System

for HIMO West Germany Study Area

Dry Condition

Primary Roads

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
x	41.0	41.0	41.0	41.0	41.0
1x	41.0	41.0	41.0	41.0	41.0
2x	41.0	41.0	41.0	41.0	41.0
3x	41.0	41.0	41.0	41.0	41.0
4x	41.0	41.0	41.0	41.0	41.0
5x	41.0	41.0	40.9	40.9	40.8
6x	40.7	40.7	40.6	40.6	40.5
7x	40.5	40.3	39.9	39.5	38.8
8x	38.1	37.3	36.5	35.6	34.6
9x	33.6	32.7	31.9	31.1	30.0
10x	28.8				

Secondary Roads

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
x	41.0	41.0	41.0	41.0	41.0
1x	41.0	41.0	41.0	41.0	41.0
2x	41.0	41.0	41.0	41.0	41.0
3x	41.0	41.0	41.0	41.0	40.9
4x	40.8	40.7	40.6	40.5	40.3
5x	40.1	39.9	39.7	39.5	39.2
6x	39.0	38.8	38.6	38.3	38.0
7x	37.6	37.2	36.6	36.1	35.6
8x	35.0	34.3	33.5	32.7	31.9
9x	31.0	30.2	29.4	28.5	27.4
10x	26.3				

Trails

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
x	36.0	36.0	36.0	35.5	34.8
1x	32.7	31.9	31.4	31.0	30.6
2x	30.2	30.0	29.5	29.0	28.8
3x	27.5	27.1	26.7	26.2	25.6
4x	25.0	24.4	24.0	23.5	23.2
5x	22.8	22.5	22.3	22.0	21.8
6x	21.6	21.4	21.2	21.1	20.9
7x	20.7	20.4	20.2	20.0	19.8
8x	19.6	19.4	19.3	19.1	19.0
9x	18.8	18.7	18.3	17.6	16.7
10x	16.0				

Off Road

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
x	40.8	40.3	39.5	38.9	38.2
1x	37.7	37.2	36.7	36.3	35.9
2x	35.4	34.9	34.5	33.7	33.2
3x	32.6	32.0	31.4	30.8	30.3
4x	29.8	29.3	28.8	28.4	27.9
5x	27.4	27.0	26.6	26.2	25.7
6x	25.3	24.9	24.5	24.1	23.8
7x	23.4	23.1	22.7	22.5	22.1
8x	21.8	21.3	20.9	20.3	19.6
9x	18.7	17.6	15.9	14.8	5.2
10x	2.6				

Wet Condition

Primary Roads

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
x	41.0	41.0	41.0	41.0	41.0
1x	41.0	41.0	41.0	41.0	41.0
2x	41.0	41.0	41.0	41.0	41.0
3x	41.0	41.0	41.0	41.0	41.0
4x	41.0	41.0	41.0	41.0	41.0
5x	41.0	41.0	40.9	40.8	40.7
6x	40.7	40.6	40.6	40.5	40.4
7x	40.3	39.9	39.4	38.8	38.0
8x	37.1	36.1	35.2	34.2	33.1
9x	32.1	31.1	30.3	29.4	28.2
10x	27.0				

Secondary Roads

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
x	41.0	41.0	41.0	41.0	41.0
1x	41.0	41.0	41.0	41.0	41.0
2x	41.0	41.0	41.0	41.0	41.0
3x	41.0	41.0	41.0	40.9	40.9
4x	40.8	40.7	40.6	40.4	40.3
5x	40.1	39.9	39.7	39.5	39.2
6x	39.0	38.7	38.4	38.1	37.7
7x	37.3	36.8	36.2	35.6	35.0
8x	34.3	33.5	32.6	31.8	30.9
9x	29.9	29.0	28.2	27.3	26.1
10x	25.1				

Trails

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
x	36.0	35.9	35.2	33.7	32.4
1x	31.5	30.9	30.4	30.0	29.4
2x	29.0	28.7	28.1	27.5	27.0
3x	26.6	26.3	26.0	25.4	24.8
4x	24.3	23.8	23.4	23.0	22.7
5x	22.4	22.1	21.9	21.6	21.4
6x	21.2	21.1	20.9	20.8	20.6
7x	20.3	20.1	19.9	19.7	19.5
8x	19.3	19.2	19.0	18.9	18.7
9x	18.6	18.5	18.1	17.4	16.6
10x	15.8				

Off Road

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
x	36.5	33.6	32.7	31.8	31.0
1x	30.2	29.4	28.7	28.1	27.5
2x	27.0	26.5	26.0	25.5	25.0
3x	24.5	24.1	23.7	23.2	22.8
4x	22.4	22.0	21.6	21.3	21.0
5x	20.7	20.4	20.2	19.9	19.7
6x	19.5	19.3	19.1	18.9	18.7
7x	18.5	18.3	18.1	17.9	17.6
8x	17.3	17.0	16.6	16.2	15.7
9x	15.0	14.0	12.3	4.3	2.3
10x	1.6				

Snow Condition

Primary Roads

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
x	41.0	41.0	41.0	41.0	41.0
1x	41.0	41.0	41.0	41.0	41.0
2x	41.0	41.0	41.0	41.0	41.0
3x	41.0	41.0	41.0	41.0	41.0
4x	41.0	41.0	41.0	41.0	41.0
5x	41.0	41.0	41.0	41.0	41.0
6x	40.9	40.9	40.9	40.9	40.8
7x	40.6	40.1	39.5	38.9	38.0
8x	37.0	35.9	34.9	33.9	32.7
9x	31.6	30.6	29.8	28.8	27.6
10x	26.4				

Secondary Roads

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
x	39.3	39.3	39.3	39.3	39.3
1x	39.3	39.3	39.3	39.3	39.3
2x	39.3	39.3	39.3	39.3	39.3
3x	39.3	39.3	39.3	39.3	39.3
4x	39.3	39.3	39.3	39.3	39.2
5x	39.2	39.2	39.1	39.0	38.9
6x	38.7	38.4	38.1	37.7	37.1
7x	36.5	35.7	34.8	33.9	33.0
8x	32.0	31.0	29.9	28.9	27.8
9x	26.7	25.8	24.9	23.9	22.6
10x	21.6				

Trails

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
x	36.0	36.0	36.0	36.0	34.6
1x	33.1	32.2	31.6	31.2	30.8
2x	30.6	30.3	29.6	28.9	28.3
3x	27.8	27.3	26.9	26.5	25.9
4x	25.2	24.6	24.2	23.7	23.3
5x	23.0	22.7	22.4	22.2	21.9
6x	21.7	21.5	21.3	21.2	21.0
7x	20.8	20.5	20.3	20.1	19.9
8x	19.7	19.5	19.3	19.2	19.0
9x	18.9	18.7	18.3	17.6	16.8
10x	16.0				

Off Road

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
x	40.8	38.9	37.1	36.0	35.1
1x	34.4	33.8	33.1	32.4	31.8
2x	31.3	30.8	30.4	29.9	29.4
3x	28.9	28.4	27.9	27.3	26.8
4x	26.3	25.8	25.4	24.9	24.5
5x	24.1	23.8	23.4	23.0	22.6
6x	22.2	21.9	21.4	21.1	20.7
7x	20.3	20.0	19.7	19.4	19.1
8x	18.8	18.4	18.0	17.5	16.8
9x	16.1	14.6	8.3	3.1	1.9
10x	1.4				

Table B9

Speed Profile for M578 Towing M113A1

for HIMO West Germany Study Area

Dry Condition

Primary Roads

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	10.0	10.0	10.0	10.0	10.0
8X	10.0	10.0	10.0	10.0	10.0
9X	10.0	10.0	10.0	10.0	10.0
10X	10.0				

Secondary Roads

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	10.0	10.0	10.0	10.0	10.0
8X	9.9	9.9	9.9	9.9	9.9
9X	9.9	9.8	9.9	9.8	9.8
10X	9.7				

Trails

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	10.0	9.9	9.9	9.9	9.9
8X	9.9	9.9	9.9	9.8	9.8
9X	9.8	9.8	9.7	9.6	9.4
10X	9.2				

Off Road

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	9.9	9.9
4X	9.9	9.9	9.9	9.8	9.8
5X	9.8	9.8	9.7	9.7	9.7
6X	9.7	9.6	9.6	9.6	9.6
7X	9.5	9.5	9.4	9.4	9.4
8X	9.3	9.2	9.2	9.1	9.1
9X	9.0	8.8	5.6	2.6	1.7
10X	1.3				

Wet Condition

Primary Roads

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	10.0	10.0	10.0	10.0	10.0
8X	10.0	10.0	10.0	10.0	10.0
9X	10.0	10.0	10.0	10.0	10.0
10X	10.0				

Secondary Roads

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	10.0	10.0	10.0	10.0	10.0
8X	9.9	9.9	9.9	9.9	9.9
9X	9.9	9.8	9.8	9.8	9.7
10X	9.7				

Trails

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	9.9	9.9
5X	9.9	9.9	9.8	9.8	9.8
6X	9.8	9.7	9.7	9.7	9.6
7X	9.6	9.6	9.6	9.5	9.5
8X	9.5	9.5	9.5	9.5	9.4
9X	9.4	9.3	9.3	9.1	9.0
10X	8.9				

Off Road

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	9.9
1X	9.8	9.7	9.7	9.6	9.5
2X	9.4	9.4	9.3	9.3	9.3
3X	9.2	9.2	9.2	9.2	9.1
4X	9.1	9.1	9.1	9.1	9.0
5X	9.0	9.0	9.0	9.0	9.0
6X	8.9	8.9	8.9	8.9	8.8
7X	8.8	8.8	8.7	8.7	8.6
8X	8.6	8.5	8.4	8.4	8.3
9X	8.1	8.0	5.1	2.5	1.7
10X	1.3				

Snow Condition

Primary Roads

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	10.0	10.0	10.0	10.0	10.0
8X	10.0	10.0	10.0	10.0	10.0
9X	10.0	10.0	10.0	10.0	10.0
10X	10.0				

Secondary Roads

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	10.0	10.0	10.0	10.0	10.0
8X	10.0	10.0	10.0	10.0	10.0
9X	10.0	10.0	9.9	9.9	9.8
10X	9.7				

Trails

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	10.0	10.0	10.0	10.0	10.0
8X	10.0	10.0	10.0	10.0	9.9
9X	9.9	9.9	9.8	9.7	9.5
10X	9.3				

Off Road

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	9.9
6X	9.9	9.9	9.9	9.8	9.8
7X	9.7	9.7	9.7	9.6	9.6
8X	9.5	9.4	9.4	9.3	9.2
9X	9.0	8.8	5.6	2.6	1.7
10X	1.3				

Table B10

Speed Profile for M578 Towing M107

for HIMO West Germany Study Area

Dry Condition

Primary Roads

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	10.0	10.0	10.0	10.0	10.0
8X	10.0	10.0	9.9	9.9	9.9
9X	9.8	9.8	9.8	9.8	9.8
10X	9.7				

Secondary Roads

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	9.9	9.9	9.9	9.8	9.8
7X	9.8	9.7	9.7	9.7	9.7
8X	9.6	9.6	9.6	9.6	9.5
9X	9.5	9.5	9.4	9.4	9.3
10X	9.2				

Trails

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	9.9	9.9	9.9	9.8	9.8
5X	9.8	9.8	9.7	9.7	9.7
6X	9.6	9.6	9.6	9.6	9.5
7X	9.5	9.5	9.5	9.4	9.4
8X	9.4	9.4	9.3	9.3	9.3
9X	9.2	9.2	9.1	8.9	8.8
10X	8.7				

Off Road

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	9.9
1X	9.9	9.8	9.7	9.6	9.5
2X	9.4	9.4	9.3	9.3	9.3
3X	9.2	9.2	9.2	9.2	9.1
4X	9.1	9.1	9.1	9.0	9.0
5X	9.0	9.0	8.9	8.9	8.9
6X	8.9	8.8	8.8	8.8	8.7
7X	8.7	8.6	8.6	8.5	8.4
8X	8.3	8.3	8.2	8.1	8.0
9X	7.9	7.8	7.5	3.7	2.1
10X	1.5				

Wet Condition

Primary Roads

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	10.0	10.0	10.0	10.0	10.0
8X	10.0	9.9	9.9	9.9	9.9
9X	9.8	9.8	9.8	9.8	9.7
10X	9.7				

Secondary Roads

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	9.9	9.9	9.9	9.8	9.8
7X	9.8	9.7	9.7	9.7	9.7
8X	9.6	9.6	9.6	9.5	9.5
9X	9.5	9.4	9.4	9.3	9.3
10X	9.2				

Trails

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	9.8
1X	9.8	9.7	9.7	9.7	9.7
2X	9.6	9.6	9.5	9.5	9.5
3X	9.4	9.4	9.3	9.3	9.3
4X	9.3	9.2	9.2	9.2	9.1
5X	9.1	9.1	9.0	9.0	9.0
6X	9.0	8.9	8.9	8.9	8.8
7X	8.8	8.7	8.7	8.7	8.6
8X	8.6	8.6	8.5	8.5	8.4
9X	8.3	8.2	8.1	8.0	7.8
10X	7.6				

Off Road

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	9.1	9.0	8.9	8.8
1X	8.7	8.6	8.5	8.4	8.3
2X	8.3	8.2	8.2	8.1	8.1
3X	8.0	8.0	7.9	7.9	7.8
4X	7.8	7.7	7.7	7.6	7.6
5X	7.6	7.5	7.5	7.5	7.4
6X	7.4	7.4	7.3	7.3	7.3
7X	7.2	7.2	7.1	7.0	7.0
8X	6.9	6.8	6.6	6.5	6.4
9X	6.2	6.0	5.4	2.6	1.7
10X	1.3				

Snow Condition

Primary Roads

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	10.0	10.0	10.0	10.0	10.0
8X	10.0	10.0	10.0	10.0	9.9
9X	9.9	9.9	9.9	9.9	9.9
10X	9.9				

Secondary Roads

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	10.0	9.9	9.9	9.9	9.9
8X	9.8	9.8	9.8	9.8	9.7
9X	9.7	9.7	9.6	9.6	9.4
10X	6.8				

Trails

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	9.9	9.9
6X	9.9	9.9	9.8	9.8	9.8
7X	9.8	9.7	9.7	9.7	9.6
8X	9.6	9.6	9.5	9.5	9.5
9X	9.4	9.4	9.3	9.1	9.0
10X	8.8				

Off Road

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	9.9
2X	9.8	9.7	9.7	9.6	9.5
3X	9.5	9.4	9.4	9.3	9.3
4X	9.2	9.2	9.2	9.1	9.1
5X	9.1	9.0	9.0	9.0	9.0
6X	8.9	8.9	8.9	8.8	8.7
7X	8.7	8.6	8.5	8.4	8.3
8X	8.1	8.0	7.8	7.4	7.0
9X	5.6	2.6	1.7	1.3	1.0
10X	0.9				

Table B11

Speed Profile for M578 Towing M109A1

for HIMO West Germany Study Area

Primary Roads

Dry Condition

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	10.0	10.0	10.0	10.0	10.0
1x	10.0	10.0	10.0	10.0	10.0
2x	10.0	10.0	10.0	10.0	10.0
3x	10.0	10.0	10.0	10.0	10.0
4x	10.0	10.0	10.0	10.0	10.0
5x	10.0	10.0	10.0	10.0	10.0
6x	10.0	10.0	10.0	10.0	10.0
7x	10.0	10.0	10.0	10.0	10.0
8x	10.0	10.0	10.0	9.9	9.9
9x	9.9	9.9	9.9	9.9	9.9
10x	9.8				

Wet Condition

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	10.0	10.0	10.0	10.0	10.0
1x	10.0	10.0	10.0	10.0	10.0
2x	10.0	10.0	10.0	10.0	10.0
3x	10.0	10.0	10.0	10.0	10.0
4x	10.0	10.0	10.0	10.0	10.0
5x	10.0	10.0	10.0	10.0	10.0
6x	10.0	10.0	10.0	10.0	10.0
7x	10.0	10.0	10.0	10.0	10.0
8x	10.0	10.0	9.9	9.9	9.9
9x	9.9	9.9	9.9	9.8	9.8
10x	9.8				

Snow Condition

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	10.0	10.0	10.0	10.0	10.0
1x	10.0	10.0	10.0	10.0	10.0
2x	10.0	10.0	10.0	10.0	10.0
3x	10.0	10.0	10.0	10.0	10.0
4x	10.0	10.0	10.0	10.0	10.0
5x	10.0	10.0	10.0	10.0	10.0
6x	10.0	10.0	10.0	10.0	10.0
7x	10.0	10.0	10.0	10.0	10.0
8x	10.0	10.0	10.0	10.0	10.0
9x	10.0	10.0	10.0	10.0	10.0
10x	10.0				

Secondary Roads

Dry Condition

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	10.0	10.0	10.0	10.0	10.0
1x	10.0	10.0	10.0	10.0	10.0
2x	10.0	10.0	10.0	10.0	10.0
3x	10.0	10.0	10.0	10.0	10.0
4x	10.0	10.0	10.0	10.0	10.0
5x	10.0	10.0	10.0	10.0	10.0
6x	10.0	9.9	9.9	9.9	9.9
7x	9.8	9.8	9.8	9.8	9.7
8x	9.7	9.7	9.7	9.6	9.6
9x	9.6	9.5	9.5	9.5	9.4
10x	9.3				

Wet Condition

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	10.0	10.0	10.0	10.0	10.0
1x	10.0	10.0	10.0	10.0	10.0
2x	10.0	10.0	10.0	10.0	10.0
3x	10.0	10.0	10.0	10.0	10.0
4x	10.0	10.0	10.0	10.0	10.0
5x	10.0	10.0	10.0	10.0	10.0
6x	10.0	9.9	9.9	9.9	9.9
7x	9.8	9.8	9.8	9.7	9.7
8x	9.7	9.7	9.6	9.6	9.6
9x	9.6	9.5	9.5	9.4	9.4
10x	9.3				

Snow Condition

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	10.0	10.0	10.0	10.0	10.0
1x	10.0	10.0	10.0	10.0	10.0
2x	10.0	10.0	10.0	10.0	10.0
3x	10.0	10.0	10.0	10.0	10.0
4x	10.0	10.0	10.0	10.0	10.0
5x	10.0	10.0	10.0	10.0	10.0
6x	10.0	10.0	10.0	10.0	10.0
7x	10.0	10.0	10.0	10.0	9.9
8x	9.9	9.9	9.9	9.8	9.8
9x	9.8	9.8	9.7	9.7	9.6
10x	9.4				

Trails

Dry Condition

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	10.0	10.0	10.0	10.0	10.0
1x	10.0	10.0	10.0	10.0	10.0
2x	10.0	10.0	10.0	10.0	10.0
3x	10.0	10.0	10.0	10.0	10.0
4x	10.0	10.0	10.0	9.9	9.9
5x	9.9	9.9	9.8	9.8	9.8
6x	9.7	9.7	9.7	9.7	9.6
7x	9.6	9.6	9.6	9.6	9.5
8x	9.5	9.5	9.5	9.5	9.4
9x	9.4	9.3	9.2	9.1	9.0
10x	8.8				

Wet Condition

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	10.0	10.0	10.0	10.0	10.0
1x	10.0	10.0	10.0	10.0	10.0
2x	9.9	9.9	9.8	9.8	9.7
3x	9.7	9.6	9.6	9.6	9.5
4x	9.5	9.4	9.4	9.4	9.4
5x	9.3	9.3	9.3	9.2	9.2
6x	9.2	9.2	9.1	9.1	9.1
7x	9.0	9.0	9.0	8.9	8.9
8x	8.9	8.8	8.8	8.8	8.7
9x	8.7	8.6	8.4	8.3	8.2
10x	8.0				

Snow Condition

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	10.0	10.0	10.0	10.0	10.0
1x	10.0	10.0	10.0	10.0	10.0
2x	10.0	10.0	10.0	10.0	10.0
3x	10.0	10.0	10.0	10.0	10.0
4x	10.0	10.0	10.0	10.0	10.0
5x	10.0	10.0	10.0	10.0	10.0
6x	10.0	10.0	10.0	9.9	9.9
7x	9.9	9.9	9.8	9.8	9.8
8x	9.7	9.7	9.7	9.6	9.6
9x	9.6	9.5	9.3	9.2	9.0
10x	8.8				

Off Road

Dry Condition

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	10.0	10.0	10.0	10.0	10.0
1x	10.0	9.9	9.8	9.7	9.7
2x	9.6	9.5	9.5	9.4	9.4
3x	9.4	9.3	9.3	9.3	9.3
4x	9.2	9.2	9.2	9.2	9.2
5x	9.1	9.1	9.1	9.1	9.1
6x	9.0	9.0	9.0	8.9	8.9
7x	8.9	8.8	8.8	8.7	8.6
9x	8.6	8.5	8.4	8.3	8.3
9x	8.1	8.0	7.5	3.1	1.9
10x	1.4				

Wet Condition

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	10.0	9.4	9.1	9.0	8.9
1x	8.9	8.8	8.7	8.7	8.6
2x	8.6	8.5	8.5	8.4	8.4
3x	8.4	8.3	8.3	8.2	8.2
4x	8.1	8.1	8.1	8.0	8.0
5x	8.0	7.9	7.9	7.9	7.8
6x	7.8	7.8	7.7	7.7	7.7
7x	7.6	7.6	7.5	7.4	7.4
8x	7.3	7.2	7.1	7.0	6.8
9x	6.7	6.5	5.8	2.7	1.7
10x	1.3				

Snow Condition

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	10.0	10.0	10.0	10.0	10.0
1x	10.0	10.0	10.0	10.0	10.0
2x	9.9	9.9	9.8	9.8	9.7
3x	9.7	9.6	9.6	9.5	9.5
4x	9.4	9.4	9.4	9.3	9.3
5x	9.3	9.2	9.2	9.2	9.2
6x	9.1	9.1	9.1	9.0	9.0
7x	8.9	8.9	8.8	8.7	8.6
8x	8.5	8.3	8.2	8.0	7.8
9x	7.5	7.1	5.1	2.5	1.7
10x	1.3				

Table B12

Speed Profile for M578 Towing M110E1

for HIMO West Germany Study Area

Primary Roads

Dry Condition

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	10.0	10.0	10.0	10.0	10.0
1x	10.0	10.0	10.0	10.0	10.0
2x	10.0	10.0	10.0	10.0	10.0
3x	10.0	10.0	10.0	10.0	10.0
4x	10.0	10.0	10.0	10.0	10.0
5x	10.0	10.0	10.0	10.0	10.0
6x	10.0	10.0	10.0	10.0	10.0
7x	10.0	10.0	10.0	10.0	10.0
8x	10.0	10.0	9.9	9.9	9.9
9x	9.8	9.8	9.8	9.8	9.8
10x	9.7				

Wet Condition

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	10.0	10.0	10.0	10.0	10.0
1x	10.0	10.0	10.0	10.0	10.0
2x	10.0	10.0	10.0	10.0	10.0
3x	10.0	10.0	10.0	10.0	10.0
4x	10.0	10.0	10.0	10.0	10.0
5x	10.0	10.0	10.0	10.0	10.0
6x	10.0	10.0	10.0	10.0	10.0
7x	10.0	10.0	10.0	10.0	10.0
8x	10.0	9.9	9.9	9.9	9.9
9x	9.8	9.8	9.8	9.8	9.7
10x	9.7				

Snow Condition

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	10.0	10.0	10.0	10.0	10.0
1x	10.0	10.0	10.0	10.0	10.0
2x	10.0	10.0	10.0	10.0	10.0
3x	10.0	10.0	10.0	10.0	10.0
4x	10.0	10.0	10.0	10.0	10.0
5x	10.0	10.0	10.0	10.0	10.0
6x	10.0	10.0	10.0	10.0	10.0
7x	10.0	10.0	10.0	10.0	9.9
8x	10.0	10.0	10.0	10.0	9.9
9x	9.9	9.9	9.9	9.9	9.9
10x	9.9				

Secondary Roads

Dry Condition

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	10.0	10.0	10.0	10.0	10.0
1x	10.0	10.0	10.0	10.0	10.0
2x	10.0	10.0	10.0	10.0	10.0
3x	10.0	10.0	10.0	10.0	10.0
4x	10.0	10.0	10.0	10.0	10.0
5x	10.0	10.0	10.0	10.0	10.0
6x	9.9	9.9	9.9	9.8	9.8
7x	9.8	9.7	9.7	9.7	9.7
8x	9.6	9.6	9.6	9.6	9.5
9x	9.5	9.5	9.4	9.4	9.3
10x	9.2				

Wet Condition

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	10.0	10.0	10.0	10.0	10.0
1x	10.0	10.0	10.0	10.0	10.0
2x	10.0	10.0	10.0	10.0	10.0
3x	10.0	10.0	10.0	10.0	10.0
4x	10.0	10.0	10.0	10.0	10.0
5x	10.0	10.0	10.0	10.0	10.0
6x	9.9	9.9	9.9	9.8	9.8
7x	9.8	9.7	9.7	9.7	9.7
8x	9.6	9.6	9.6	9.5	9.5
9x	9.5	9.4	9.4	9.3	9.3
10x	9.2				

Snow Condition

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	10.0	10.0	10.0	10.0	10.0
1x	10.0	10.0	10.0	10.0	10.0
2x	10.0	10.0	10.0	10.0	10.0
3x	10.0	10.0	10.0	10.0	10.0
4x	10.0	10.0	10.0	10.0	10.0
5x	10.0	10.0	10.0	10.0	10.0
6x	10.0	10.0	10.0	10.0	10.0
7x	10.0	9.9	9.9	9.9	9.9
8x	9.8	9.8	9.8	9.8	9.7
9x	9.7	9.7	9.6	9.6	9.4
10x	6.8				

Trails

Dry Condition

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	10.0	10.0	10.0	10.0	10.0
1x	10.0	10.0	10.0	10.0	10.0
2x	10.0	10.0	10.0	10.0	10.0
3x	10.0	10.0	10.0	10.0	10.0
4x	9.9	9.9	9.9	9.8	9.8
5x	9.8	9.8	9.7	9.7	9.7
6x	9.6	9.6	9.6	9.6	9.5
7x	9.5	9.5	9.5	9.4	9.4
8x	9.4	9.4	9.3	9.3	9.3
9x	9.2	9.2	9.1	8.9	8.8
10x	8.7				

Wet Condition

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	10.0	10.0	10.0	10.0	9.8
1x	9.8	9.7	9.7	9.7	9.7
2x	9.6	9.6	9.5	9.5	9.5
3x	9.4	9.4	9.3	9.3	9.3
4x	9.3	9.2	9.2	9.2	9.1
5x	9.1	9.1	9.0	9.0	9.0
6x	9.0	8.9	8.9	8.9	8.8
7x	8.8	8.7	8.7	8.7	8.6
8x	8.6	8.6	8.5	8.5	8.4
9x	8.3	8.2	8.1	8.0	7.8
10x	7.6				

Snow Condition

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	10.0	10.0	10.0	10.0	10.0
1x	10.0	10.0	10.0	10.0	10.0
2x	10.0	10.0	10.0	10.0	10.0
3x	10.0	10.0	10.0	10.0	10.0
4x	10.0	10.0	10.0	10.0	10.0
5x	10.0	10.0	10.0	9.9	9.9
6x	9.9	9.9	9.8	9.8	9.8
7x	9.8	9.7	9.7	9.7	9.6
8x	9.6	9.6	9.5	9.5	9.5
9x	9.4	9.3	9.1	9.0	8.8
10x	6.1				

Off Road

Dry Condition

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	10.0	10.0	10.0	10.0	9.9
1x	9.9	9.8	9.7	9.6	9.5
2x	9.4	9.4	9.3	9.3	9.3
3x	9.2	9.2	9.2	9.2	9.1
4x	9.1	9.1	9.1	9.0	9.0
5x	9.0	9.0	8.9	8.9	8.9
6x	8.9	8.8	8.8	8.8	8.7
7x	8.7	8.6	8.6	8.5	8.4
8x	8.3	8.3	8.2	8.1	8.0
9x	7.9	7.7	7.2	3.0	1.9
10x	1.4				

Wet Condition

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	10.0	9.1	9.0	8.9	8.8
1x	8.7	8.6	8.5	8.4	8.3
2x	8.3	8.2	8.2	8.1	8.1
3x	8.0	8.0	7.9	7.9	7.8
4x	7.8	7.7	7.7	7.6	7.6
5x	7.6	7.5	7.5	7.5	7.4
6x	7.4	7.4	7.3	7.3	7.3
7x	7.2	7.2	7.1	7.0	6.9
8x	6.8	6.7	6.6	6.5	6.3
9x	6.2	5.9	3.9	2.2	1.5
10x	1.2				

Snow Condition

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	10.0	10.0	10.0	10.0	10.0
1x	10.0	10.0	10.0	10.0	9.9
2x	9.8	9.7	9.7	9.6	9.5
3x	9.5	9.4	9.4	9.3	9.3
4x	9.2	9.2	9.2	9.1	9.1
5x	9.1	9.0	9.0	9.0	9.0
6x	8.9	8.9	8.9	8.8	8.7
7x	8.7	8.6	8.5	8.4	8.3
8x	8.1	7.9	7.7	7.3	6.8
9x	4.0	2.2	1.5	1.2	1.0
10x	0.8				

Table B13

Speed Profile for M578 Towing IFV/CFV

for HIMO West Germany Study Area

Primary Roads

Dry Condition

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	10.0	10.0	10.0	10.0	10.0
1x	10.0	10.0	10.0	10.0	10.0
2x	10.0	10.0	10.0	10.0	10.0
3x	10.0	10.0	10.0	10.0	10.0
4x	10.0	10.0	10.0	10.0	10.0
5x	10.0	10.0	10.0	10.0	10.0
6x	10.0	10.0	10.0	10.0	10.0
7x	10.0	10.0	10.0	10.0	10.0
8x	10.0	10.0	10.0	10.0	9.9
9x	9.9	9.9	9.9	9.9	9.9
10x	9.9				

Wet Condition

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	10.0	10.0	10.0	10.0	10.0
1x	10.0	10.0	10.0	10.0	10.0
2x	10.0	10.0	10.0	10.0	10.0
3x	10.0	10.0	10.0	10.0	10.0
4x	10.0	10.0	10.0	10.0	10.0
5x	10.0	10.0	10.0	10.0	10.0
6x	10.0	10.0	10.0	10.0	10.0
7x	10.0	10.0	10.0	10.0	10.0
8x	10.0	10.0	10.0	10.0	9.9
9x	9.9	9.9	9.9	9.9	9.9
10x	9.9				

Snow Condition

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	10.0	10.0	10.0	10.0	10.0
1x	10.0	10.0	10.0	10.0	10.0
2x	10.0	10.0	10.0	10.0	10.0
3x	10.0	10.0	10.0	10.0	10.0
4x	10.0	10.0	10.0	10.0	10.0
5x	10.0	10.0	10.0	10.0	10.0
6x	10.0	10.0	10.0	10.0	10.0
7x	10.0	10.0	10.0	10.0	10.0
8x	10.0	10.0	10.0	10.0	10.0
9x	10.0	10.0	10.0	10.0	10.0
10x	10.0				

Secondary Roads

Dry Condition

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	10.0	10.0	10.0	10.0	10.0
1x	10.0	10.0	10.0	10.0	10.0
2x	10.0	10.0	10.0	10.0	10.0
3x	10.0	10.0	10.0	10.0	10.0
4x	10.0	10.0	10.0	10.0	10.0
5x	10.0	10.0	10.0	10.0	10.0
6x	10.0	10.0	10.0	9.9	9.9
7x	9.9	9.9	9.8	9.8	9.8
8x	9.8	9.7	9.7	9.7	9.7
9x	9.6	9.6	9.6	9.5	9.5
10x	9.4				

Wet Condition

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	10.0	10.0	10.0	10.0	10.0
1x	10.0	10.0	10.0	10.0	10.0
2x	10.0	10.0	10.0	10.0	10.0
3x	10.0	10.0	10.0	10.0	10.0
4x	10.0	10.0	10.0	10.0	10.0
5x	10.0	10.0	10.0	10.0	10.0
6x	10.0	10.0	10.0	9.9	9.9
7x	9.9	9.9	9.8	9.8	9.8
8x	9.7	9.7	9.7	9.7	9.7
9x	9.6	9.6	9.6	9.5	9.5
10x	9.4				

Snow Condition

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	10.0	10.0	10.0	10.0	10.0
1x	10.0	10.0	10.0	10.0	10.0
2x	10.0	10.0	10.0	10.0	10.0
3x	10.0	10.0	10.0	10.0	10.0
4x	10.0	10.0	10.0	10.0	10.0
5x	10.0	10.0	10.0	10.0	10.0
6x	10.0	10.0	10.0	10.0	10.0
7x	10.0	10.0	10.0	10.0	9.9
8x	9.9	9.9	9.9	9.9	9.8
9x	9.6	9.6	9.8	9.7	9.6
10x	9.5				

Trails

Dry Condition

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	10.0	10.0	10.0	10.0	10.0
1x	10.0	10.0	10.0	10.0	10.0
2x	10.0	10.0	10.0	10.0	10.0
3x	10.0	10.0	10.0	10.0	10.0
4x	10.0	10.0	10.0	10.0	9.9
5x	9.9	9.9	9.9	9.8	9.8
6x	9.8	9.8	9.8	9.7	9.7
7x	9.7	9.7	9.6	9.6	9.6
8x	9.6	9.6	9.5	9.5	9.5
9x	9.5	9.4	9.3	9.2	9.0
10x	8.9				

Wet Condition

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	10.0	10.0	10.0	10.0	10.0
1x	10.0	10.0	10.0	10.0	10.0
2x	10.0	9.9	9.9	9.8	9.8
3x	9.8	9.7	9.7	9.7	9.6
4x	9.6	9.5	9.5	9.5	9.4
5x	9.4	9.4	9.4	9.3	9.3
6x	9.3	9.3	9.2	9.2	9.2
7x	9.2	9.1	9.1	9.1	9.0
8x	9.0	9.0	9.0	8.9	8.9
9x	8.8	8.8	8.7	8.6	8.5
10x	8.3				

Snow Condition

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	10.0	10.0	10.0	10.0	10.0
1x	10.0	10.0	10.0	10.0	10.0
2x	10.0	10.0	10.0	10.0	10.0
3x	10.0	10.0	10.0	10.0	10.0
4x	10.0	10.0	10.0	10.0	10.0
5x	10.0	10.0	10.0	10.0	10.0
6x	10.0	10.0	10.0	10.0	9.9
7x	9.9	9.9	9.9	9.8	9.8
8x	9.8	9.8	9.7	9.7	9.7
9x	9.6	9.6	9.5	9.3	9.1
10x	9.0				

Off Road

Dry Condition

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	10.0	10.0	10.0	10.0	10.0
1x	10.0	10.0	9.9	9.8	9.8
2x	9.7	9.6	9.6	9.5	9.5
3x	9.5	9.4	9.4	9.4	9.3
4x	9.3	9.3	9.3	9.3	9.2
5x	9.2	9.2	9.2	9.2	9.2
6x	9.1	9.1	9.1	9.1	9.0
7x	9.0	8.9	8.9	8.8	8.8
8x	8.7	8.6	8.6	8.5	8.4
9x	8.3	8.2	7.9	3.6	2.1
10x	1.5				

Wet Condition

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	10.0	9.7	9.4	9.2	9.1
1x	9.0	9.0	9.0	8.9	8.9
2x	8.8	8.8	8.8	8.7	8.7
3x	8.7	8.6	8.6	8.5	8.5
4x	8.5	8.5	8.4	8.4	8.4
5x	8.4	8.3	8.3	8.3	8.2
6x	8.2	8.2	8.1	8.1	8.0
7x	8.0	8.0	7.9	7.8	7.8
8x	7.7	7.6	7.5	7.4	7.2
9x	7.1	7.0	6.1	2.7	1.8
10x	1.3				

Snow Condition

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	10.0	10.0	10.0	10.0	10.0
1x	10.0	10.0	10.0	10.0	10.0
2x	10.0	10.0	10.0	9.9	9.9
3x	9.9	9.8	9.8	9.8	9.7
4x	9.7	9.7	9.6	9.6	9.5
5x	9.5	9.5	9.4	9.4	9.4
6x	9.3	9.3	9.3	9.2	9.2
7x	9.1	9.1	9.0	8.9	8.8
8x	8.7	8.6	8.5	8.3	8.1
9x	8.0	7.8	7.1	3.1	1.9
10x	1.4				

Table B14

Speed Profile for M578 Towing GSRS

for HIMO West Germany Study Area

Dry Condition

Primary Roads

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	10.0	10.0	10.0	10.0	10.0
8X	10.0	10.0	10.0	9.9	9.9
9X	9.9	9.9	9.9	9.9	9.8
10X	9.8				

Secondary Roads

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	9.9	9.9	9.9	9.9
7X	9.8	9.8	9.8	9.8	9.7
8X	9.7	9.7	9.7	9.6	9.6
9X	9.6	9.6	9.5	9.5	9.4
10X	9.3				

Trails

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	9.9	9.9
5X	9.9	9.9	9.8	9.8	9.8
6X	9.8	9.7	9.7	9.7	9.7
7X	9.6	9.6	9.6	9.6	9.5
8X	9.5	9.5	9.5	9.5	9.4
9X	9.4	9.3	9.3	9.1	9.0
10X	8.8				

Off Road

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	9.9	9.8	9.8	9.7
2X	9.6	9.6	9.5	9.4	9.4
3X	9.4	9.3	9.3	9.3	9.3
4X	9.2	9.2	9.2	9.2	9.2
5X	9.2	9.1	9.1	9.1	9.1
6X	9.0	9.0	9.0	9.0	8.9
7X	8.9	8.8	8.8	8.7	8.6
8X	8.6	8.5	8.4	8.4	8.3
9X	8.2	8.1	7.6	3.2	2.0
10X	1.4				

Wet Condition

Primary Roads

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	10.0	10.0	10.0	10.0	10.0
8X	10.0	10.0	9.9	9.9	9.9
9X	9.9	9.9	9.9	9.8	9.8
10X	9.8				

Secondary Roads

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	9.9	9.9	9.9	9.9
7X	9.8	9.8	9.8	9.7	9.7
8X	9.7	9.7	9.7	9.6	9.6
9X	9.6	9.5	9.5	9.5	9.4
10X	9.3				

Trails

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	9.9	9.9	9.9	9.8	9.8
3X	9.7	9.7	9.6	9.6	9.6
4X	9.5	9.5	9.4	9.4	9.4
5X	9.4	9.3	9.3	9.3	9.3
6X	9.2	9.2	9.2	9.2	9.1
7X	9.1	9.1	9.0	9.0	9.0
8X	8.9	8.9	8.9	8.8	8.8
9X	8.7	8.7	8.6	8.4	8.3
10X	8.2				

Off Road

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	9.6	9.2	9.1	9.0
1X	9.0	8.9	8.8	8.8	8.7
2X	8.7	8.7	8.6	8.6	8.5
3X	8.5	8.5	8.4	8.4	8.3
4X	8.3	8.3	8.2	8.2	8.2
5X	8.1	8.1	8.1	8.0	8.0
6X	8.0	7.9	7.9	7.9	7.8
7X	7.8	7.7	7.7	7.6	7.5
8X	7.4	7.3	7.2	7.1	6.9
9X	6.8	6.6	5.5	2.6	1.7
10X	1.3				

Snow Condition

Primary Roads

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	10.0	10.0	10.0	10.0	10.0
8X	10.0	10.0	10.0	10.0	10.0
9X	10.0	10.0	10.0	10.0	10.0
10X	10.0				

Secondary Roads

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	10.0	10.0	10.0	10.0	9.9
8X	9.9	9.9	9.9	9.8	9.8
9X	9.8	9.8	9.7	9.7	9.6
10X	9.4				

Trails

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	9.9
7X	9.9	9.9	9.8	9.8	9.8
8X	9.8	9.7	9.7	9.7	9.6
9X	9.6	9.5	9.4	9.2	9.1
10X	8.8				

Off Road

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	9.9	9.9	9.8	9.8	9.7
3X	9.7	9.6	9.6	9.5	9.5
4X	9.5	9.4	9.4	9.4	9.3
5X	9.3	9.3	9.2	9.2	9.2
6X	9.2	9.1	9.1	9.1	9.0
7X	9.0	8.9	8.8	8.7	8.6
8X	8.5	8.4	8.2	8.0	7.8
9X	7.6	7.2	4.8	2.4	1.6
10X	1.3				

Table B15

Speed Profile for M88 Towing M107

for HIMO West Germany Study Area

Primary Roads

PERCENT TOTAL DISTANCE

x=0	2	4	6	8
x 10.0	10.0	10.0	10.0	10.0
1x 10.0	10.0	10.0	10.0	10.0
2x 10.0	10.0	10.0	10.0	10.0
3x 10.0	10.0	10.0	10.0	10.0
4x 10.0	10.0	10.0	10.0	10.0
5x 10.0	10.0	10.0	10.0	10.0
6x 10.0	10.0	10.0	10.0	10.0
7x 10.0	10.0	10.0	10.0	10.0
8x 10.0	10.0	10.0	10.0	10.0
9x 10.0	10.0	10.0	10.0	10.0
10x 10.0				

PERCENT TOTAL DISTANCE

x=0	2	4	6	8
x 10.0	10.0	10.0	10.0	10.0
1x 10.0	10.0	10.0	10.0	10.0
2x 10.0	10.0	10.0	10.0	10.0
3x 10.0	10.0	10.0	10.0	10.0
4x 10.0	10.0	10.0	10.0	10.0
5x 10.0	10.0	10.0	10.0	10.0
6x 10.0	10.0	10.0	10.0	10.0
7x 10.0	10.0	10.0	10.0	10.0
8x 10.0	10.0	10.0	10.0	10.0
9x 10.0	10.0	10.0	10.0	10.0
10x 10.0				

PERCENT TOTAL DISTANCE

x=0	2	4	6	8
x 10.0	10.0	10.0	10.0	10.0
1x 10.0	10.0	10.0	10.0	10.0
2x 10.0	10.0	10.0	10.0	10.0
3x 10.0	10.0	10.0	10.0	10.0
4x 10.0	10.0	10.0	10.0	10.0
5x 10.0	10.0	10.0	10.0	10.0
6x 10.0	10.0	10.0	10.0	10.0
7x 10.0	10.0	10.0	10.0	10.0
8x 10.0	10.0	10.0	10.0	10.0
9x 10.0	10.0	10.0	10.0	10.0
10x 10.0				

Secondary Roads

Dry Condition

PERCENT TOTAL DISTANCE

x=0	2	4	6	8
x 10.0	10.0	10.0	10.0	10.0
1x 10.0	10.0	10.0	10.0	10.0
2x 10.0	10.0	10.0	10.0	10.0
3x 10.0	10.0	10.0	10.0	10.0
4x 10.0	10.0	10.0	10.0	10.0
5x 10.0	10.0	10.0	10.0	10.0
6x 10.0	10.0	10.0	10.0	10.0
7x 10.0	10.0	10.0	10.0	10.0
8x 10.0	10.0	10.0	10.0	10.0
9x 10.0	10.0	10.0	10.0	9.9
10x 9.9				

Wet Condition

PERCENT TOTAL DISTANCE

x=0	2	4	6	8
x 10.0	10.0	10.0	10.0	10.0
1x 10.0	10.0	10.0	10.0	10.0
2x 10.0	10.0	10.0	10.0	10.0
3x 10.0	10.0	10.0	10.0	10.0
4x 10.0	10.0	10.0	10.0	10.0
5x 10.0	10.0	10.0	10.0	10.0
6x 10.0	10.0	10.0	10.0	10.0
7x 10.0	10.0	10.0	10.0	10.0
8x 10.0	10.0	10.0	10.0	10.0
9x 10.0	10.0	10.0	9.9	9.9
10x 9.9				

Snow Condition

PERCENT TOTAL DISTANCE

x=0	2	4	6	8
x 10.0	10.0	10.0	10.0	10.0
1x 10.0	10.0	10.0	10.0	10.0
2x 10.0	10.0	10.0	10.0	10.0
3x 10.0	10.0	10.0	10.0	10.0
4x 10.0	10.0	10.0	10.0	10.0
5x 10.0	10.0	10.0	10.0	10.0
6x 10.0	10.0	10.0	10.0	10.0
7x 10.0	10.0	10.0	10.0	10.0
8x 10.0	10.0	10.0	10.0	10.0
9x 10.0	10.0	10.0	9.9	9.9
10x 9.8				

Trails

Dry Condition

PERCENT TOTAL DISTANCE

x=0	2	4	6	8
x 10.0	10.0	10.0	10.0	10.0
1x 10.0	10.0	10.0	10.0	10.0
2x 10.0	10.0	10.0	10.0	10.0
3x 10.0	10.0	10.0	10.0	10.0
4x 10.0	10.0	10.0	10.0	10.0
5x 10.0	10.0	10.0	10.0	10.0
6x 10.0	10.0	10.0	10.0	10.0
7x 10.0	10.0	10.0	10.0	10.0
8x 10.0	10.0	10.0	10.0	10.0
9x 10.0	9.9	9.9	9.8	9.6
10x 9.4				

Wet Condition

PERCENT TOTAL DISTANCE

x=0	2	4	6	8
x 10.0	10.0	10.0	10.0	10.0
1x 10.0	10.0	10.0	10.0	10.0
2x 10.0	10.0	10.0	10.0	10.0
3x 10.0	10.0	10.0	10.0	10.0
4x 10.0	10.0	10.0	10.0	10.0
5x 10.0	10.0	10.0	10.0	10.0
6x 10.0	10.0	10.0	10.0	10.0
7x 9.9	9.9	9.9	9.9	9.9
8x 9.9	9.9	9.9	9.8	9.9
9x 9.8	9.7	9.7	9.5	9.4
10x 9.2				

Snow Condition

PERCENT TOTAL DISTANCE

x=0	2	4	6	8
x 10.0	10.0	10.0	10.0	10.0
1x 10.0	10.0	10.0	10.0	10.0
2x 10.0	10.0	10.0	10.0	10.0
3x 10.0	10.0	10.0	10.0	10.0
4x 10.0	10.0	10.0	10.0	10.0
5x 10.0	10.0	10.0	10.0	10.0
6x 10.0	10.0	10.0	10.0	10.0
7x 10.0	10.0	10.0	10.0	10.0
8x 10.0	10.0	10.0	10.0	10.0
9x 10.0	9.9	9.9	9.8	9.6
10x 9.4				

Off Road

PERCENT TOTAL DISTANCE

x=0	2	4	6	8
x 10.0	10.0	10.0	10.0	10.0
1x 10.0	10.0	10.0	10.0	10.0
2x 10.0	10.0	10.0	10.0	10.0
3x 10.0	10.0	10.0	10.0	10.0
4x 10.0	10.0	10.0	10.0	10.0
5x 10.0	10.0	10.0	10.0	10.0
6x 10.0	9.9	9.9	9.9	9.8
7x 9.8	9.7	9.7	9.6	9.5
8x 9.5	9.4	9.3	9.2	9.1
9x 8.9	8.8	8.6	8.5	7.8
10x 1.8				

PERCENT TOTAL DISTANCE

x=0	2	4	6	8
x 10.0	10.0	10.0	10.0	10.0
1x 10.0	10.0	10.0	10.0	10.0
2x 9.9	9.9	9.9	9.8	9.8
3x 9.8	9.8	9.7	9.7	9.7
4x 9.7	9.6	9.6	9.6	9.6
5x 9.5	9.5	9.5	9.4	9.4
6x 9.4	9.3	9.1	9.2	9.2
7x 9.1	9.1	9.0	8.9	8.9
8x 8.8	8.7	8.6	8.4	8.3
9x 8.2	8.0	7.8	4.8	2.4
10x 1.7				

PERCENT TOTAL DISTANCE

x=0	2	4	6	8
x 10.0	10.0	10.0	10.0	10.0
1x 10.0	10.0	10.0	10.0	10.0
2x 10.0	10.0	10.0	10.0	10.0
3x 10.0	10.0	10.0	10.0	10.0
4x 10.0	10.0	10.0	10.0	10.0
5x 10.0	10.0	10.0	9.9	9.9
6x 9.9	9.9	9.9	9.8	9.7
7x 9.7	9.6	9.5	9.5	9.4
8x 9.3	9.2	9.1	9.0	8.8
9x 8.6	8.5	8.3	6.4	2.8
10x 1.4				

Table B16

Speed Profile for M88 Towing M110E2

for HIMO West Germany Study Area

Dry Condition

Primary Roads

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	10.0	10.0	10.0	10.0	10.0
8X	10.0	10.0	10.0	10.0	10.0
9X	10.0	10.0	10.0	10.0	10.0
10X	10.0				

Secondary Roads

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	10.0	10.0	10.0	10.0	10.0
8X	10.0	10.0	10.0	10.0	10.0
9X	10.0	10.0	10.0	10.0	9.9
10X	9.9				

Trails

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	10.0	10.0	10.0	10.0	10.0
8X	10.0	10.0	10.0	10.0	10.0
9X	10.0	9.9	9.9	9.8	9.6
10X	9.4				

Off Road

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	9.9	9.9	9.9	9.8
7X	9.8	9.7	9.6	9.6	9.5
8X	9.5	9.4	9.3	9.2	9.1
9X	8.9	8.7	8.6	5.1	2.5
10X	1.7				

Wet Condition

Primary Roads

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	10.0	10.0	10.0	10.0	10.0
8X	10.0	10.0	10.0	10.0	10.0
9X	10.0	10.0	10.0	10.0	10.0
10X	10.0				

Secondary Roads

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	10.0	10.0	10.0	10.0	10.0
8X	10.0	10.0	10.0	10.0	10.0
9X	10.0	10.0	10.0	9.9	9.9
10X	9.9				

Trails

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	9.9	9.9	9.9	9.9	9.9
8X	9.9	9.9	9.8	9.8	9.8
9X	9.8	9.7	9.7	9.5	9.4
10X	9.2				

Off Road

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	9.9	9.9	9.9	9.8	9.8
3X	9.8	9.8	9.7	9.7	9.7
4X	9.7	9.6	9.6	9.6	9.6
5X	9.5	9.5	9.5	9.4	9.4
6X	9.4	9.3	9.3	9.2	9.2
7X	9.1	9.1	9.0	8.9	8.9
8X	8.8	8.7	8.6	8.5	8.3
9X	8.2	8.0	7.8	5.6	2.6
10X	1.8				

Snow Condition

Primary Roads

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	10.0	10.0	10.0	10.0	10.0
8X	10.0	10.0	10.0	10.0	10.0
9X	10.0	10.0	10.0	10.0	10.0
10X	10.0				

Secondary Roads

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	10.0	10.0	10.0	10.0	10.0
8X	10.0	10.0	10.0	10.0	10.0
9X	10.0	10.0	10.0	9.9	9.9
10X	9.8				

Trails

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	10.0	10.0	10.0	10.0	10.0
8X	10.0	10.0	10.0	10.0	10.0
9X	10.0	9.9	9.9	9.8	9.6
10X	9.4				

Off Road

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	9.9	9.9
6X	9.9	9.9	9.8	9.8	9.7
7X	9.7	9.6	9.5	9.5	9.4
8X	9.3	9.2	9.1	9.0	8.8
9X	8.6	8.5	8.3	5.8	2.7
10X	1.8				

Table B17

Speed Profile for M88 Towing IFV/CFV

for HIMO West Germany Study Area

Dry Condition

Primary Roads

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	10.0	10.0	10.0	10.0	10.0
1x	10.0	10.0	10.0	10.0	10.0
2x	10.0	10.0	10.0	10.0	10.0
3x	10.0	10.0	10.0	10.0	10.0
4x	10.0	10.0	10.0	10.0	10.0
5x	10.0	10.0	10.0	10.0	10.0
6x	10.0	10.0	10.0	10.0	10.0
7x	10.0	10.0	10.0	10.0	10.0
8x	10.0	10.0	10.0	10.0	10.0
9x	10.0	10.0	10.0	10.0	10.0
10x	10.0				

Secondary Roads

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	10.0	10.0	10.0	10.0	10.0
1x	10.0	10.0	10.0	10.0	10.0
2x	10.0	10.0	10.0	10.0	10.0
3x	10.0	10.0	10.0	10.0	10.0
4x	10.0	10.0	10.0	10.0	10.0
5x	10.0	10.0	10.0	10.0	10.0
6x	10.0	10.0	10.0	10.0	10.0
7x	10.0	10.0	10.0	10.0	10.0
8x	10.0	10.0	10.0	10.0	10.0
9x	10.0	10.0	10.0	10.0	10.0
10x	9.9				

Trails

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	10.0	10.0	10.0	10.0	10.0
1x	10.0	10.0	10.0	10.0	10.0
2x	10.0	10.0	10.0	10.0	10.0
3x	10.0	10.0	10.0	10.0	10.0
4x	10.0	10.0	10.0	10.0	10.0
5x	10.0	10.0	10.0	10.0	10.0
6x	10.0	10.0	10.0	10.0	10.0
7x	10.0	10.0	10.0	10.0	10.0
8x	10.0	10.0	10.0	10.0	10.0
9x	10.0	9.9	9.9	9.8	9.6
10x	9.4				

Off Road

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	10.0	10.0	10.0	10.0	10.0
1x	10.0	10.0	10.0	10.0	10.0
2x	10.0	10.0	10.0	10.0	10.0
3x	10.0	10.0	10.0	10.0	10.0
4x	10.0	10.0	10.0	10.0	10.0
5x	10.0	10.0	10.0	10.0	10.0
6x	10.0	10.0	9.9	9.9	9.9
7x	9.8	9.8	9.7	9.7	9.6
8x	9.6	9.5	9.4	9.3	9.2
9x	9.0	8.9	8.7	8.8	3.4
10x	2.8				

Wet Condition

Primary Roads

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	10.0	10.0	10.0	10.0	10.0
1x	10.0	10.0	10.0	10.0	10.0
2x	10.0	10.0	10.0	10.0	10.0
3x	10.0	10.0	10.0	10.0	10.0
4x	10.0	10.0	10.0	10.0	10.0
5x	10.0	10.0	10.0	10.0	10.0
6x	10.0	10.0	10.0	10.0	10.0
7x	10.0	10.0	10.0	10.0	10.0
8x	10.0	10.0	10.0	10.0	10.0
9x	10.0	10.0	10.0	10.0	10.0
10x	10.0				

Secondary Roads

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	10.0	10.0	10.0	10.0	10.0
1x	10.0	10.0	10.0	10.0	10.0
2x	10.0	10.0	10.0	10.0	10.0
3x	10.0	10.0	10.0	10.0	10.0
4x	10.0	10.0	10.0	10.0	10.0
5x	10.0	10.0	10.0	10.0	10.0
6x	10.0	10.0	10.0	10.0	10.0
7x	10.0	10.0	10.0	10.0	10.0
8x	10.0	10.0	10.0	10.0	10.0
9x	10.0	10.0	10.0	10.0	9.9
10x	9.9				

Trails

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	10.0	10.0	10.0	10.0	10.0
1x	10.0	10.0	10.0	10.0	10.0
2x	10.0	10.0	10.0	10.0	10.0
3x	10.0	10.0	10.0	10.0	10.0
4x	10.0	10.0	10.0	10.0	10.0
5x	10.0	10.0	10.0	10.0	10.0
6x	10.0	10.0	10.0	10.0	10.0
7x	10.0	10.0	10.0	10.0	10.0
8x	10.0	10.0	10.0	9.9	9.9
9x	9.9	9.9	9.8	9.7	9.5
10x	9.5				

Off Road

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	10.0	10.0	10.0	10.0	10.0
1x	10.0	10.0	10.0	10.0	10.0
2x	10.0	10.0	10.0	10.0	10.0
3x	10.0	10.0	9.9	9.9	9.9
4x	9.9	9.9	9.9	9.9	9.8
5x	9.8	9.8	9.8	9.7	9.7
6x	9.7	9.6	9.6	9.5	9.5
7x	9.4	9.4	9.3	9.2	9.2
8x	9.1	9.0	8.9	8.8	8.6
9x	8.5	8.3	8.1	6.4	2.9
10x	1.8				

Snow Condition

Primary Roads

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	10.0	10.0	10.0	10.0	10.0
1x	10.0	10.0	10.0	10.0	10.0
2x	10.0	10.0	10.0	10.0	10.0
3x	10.0	10.0	10.0	10.0	10.0
4x	10.0	10.0	10.0	10.0	10.0
5x	10.0	10.0	10.0	10.0	10.0
6x	10.0	10.0	10.0	10.0	10.0
7x	10.0	10.0	10.0	10.0	10.0
8x	10.0	10.0	10.0	10.0	10.0
9x	10.0	10.0	10.0	10.0	10.0
10x	10.0				

Secondary Roads

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	10.0	10.0	10.0	10.0	10.0
1x	10.0	10.0	10.0	10.0	10.0
2x	10.0	10.0	10.0	10.0	10.0
3x	10.0	10.0	10.0	10.0	10.0
4x	10.0	10.0	10.0	10.0	10.0
5x	10.0	10.0	10.0	10.0	10.0
6x	10.0	10.0	10.0	10.0	10.0
7x	10.0	10.0	10.0	10.0	10.0
8x	10.0	10.0	10.0	10.0	10.0
9x	10.0	10.0	10.0	10.0	9.9
10x	9.8				

Trails

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	10.0	10.0	10.0	10.0	10.0
1x	10.0	10.0	10.0	10.0	10.0
2x	10.0	10.0	10.0	10.0	10.0
3x	10.0	10.0	10.0	10.0	10.0
4x	10.0	10.0	10.0	10.0	10.0
5x	10.0	10.0	10.0	10.0	10.0
6x	10.0	10.0	10.0	10.0	10.0
7x	10.0	10.0	10.0	10.0	10.0
8x	10.0	10.0	10.0	10.0	10.0
9x	10.0	9.9	9.9	9.8	9.6
10x	9.4				

Off Road

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	10.0	10.0	10.0	10.0	10.0
1x	10.0	10.0	10.0	10.0	10.0
2x	10.0	10.0	10.0	10.0	10.0
3x	10.0	10.0	10.0	10.0	10.0
4x	10.0	10.0	10.0	10.0	10.0
5x	10.0	10.0	10.0	10.0	10.0
6x	10.0	9.9	9.9	9.9	9.8
7x	9.8	9.7	9.7	9.6	9.5
8x	9.4	9.4	9.3	9.1	9.0
9x	8.8	8.6	8.4	5.7	2.7
10x	1.8				

Table B18

Speed Profile for M88 Towing GSRS

for HIMO West Germany Study Area

Dry Condition

Primary Roads

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	10.0	10.0	10.0	10.0	10.0
8X	10.0	10.0	10.0	10.0	10.0
9X	10.0	10.0	10.0	10.0	10.0
10X	10.0				

Secondary Roads

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	10.0	10.0	10.0	10.0	10.0
8X	10.0	10.0	10.0	10.0	10.0
9X	10.0	10.0	10.0	10.0	9.9
10X	9.9				

Trails

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	10.0	10.0	10.0	10.0	10.0
8X	10.0	10.0	10.0	10.0	10.0
9X	10.0	9.9	9.9	9.8	9.6
10X	9.4				

Off Road

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	9.9	9.9	9.9
7X	9.8	9.8	9.7	9.7	9.6
8X	9.5	9.5	9.4	9.3	9.2
9X	9.0	8.8	8.6	4.3	2.3
10X	1.6				

Wet Condition

Primary Roads

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	10.0	10.0	10.0	10.0	10.0
8X	10.0	10.0	10.0	10.0	10.0
9X	10.0	10.0	10.0	10.0	10.0
10X	10.0				

Secondary Roads

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	10.0	10.0	10.0	10.0	10.0
8X	10.0	10.0	10.0	10.0	10.0
9X	10.0	10.0	10.0	10.0	9.9
10X	9.9				

Trails

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	10.0	10.0	10.0	10.0	10.0
8X	10.0	9.9	9.9	9.9	9.9
9X	9.9	9.8	9.8	9.6	9.5
10X	9.3				

Off Road

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	9.9
3X	9.9	9.9	9.9	9.9	9.9
4X	9.8	9.8	9.8	9.8	9.8
5X	9.7	9.7	9.7	9.7	9.6
6X	9.6	9.5	9.5	9.4	9.4
7X	9.3	9.3	9.2	9.2	9.1
9X	9.0	8.9	8.8	8.7	8.5
9X	8.4	8.2	8.0	4.1	2.3
10X	1.6				

Snow Condition

Primary Roads

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	10.0	10.0	10.0	10.0	10.0
8X	10.0	10.0	10.0	10.0	10.0
9X	10.0	10.0	10.0	10.0	10.0
10X	10.0				

Secondary Roads

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	10.0	10.0	10.0	10.0	10.0
8X	10.0	10.0	10.0	10.0	10.0
9X	10.0	10.0	10.0	10.0	9.9
10X	9.8				

Trails

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	10.0	10.0	10.0	10.0	10.0
8X	10.0	10.0	10.0	10.0	10.0
9X	10.0	9.9	9.9	9.8	9.6
10X	9.4				

Off Road

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	9.9	9.9	9.9	9.9	9.8
7X	9.7	9.7	9.6	9.6	9.5
8X	9.4	9.3	9.2	9.1	8.9
9X	8.7	8.6	8.3	3.9	2.2
10X	1.5				

Table B19

Speed Profile for M578 Light Recovery Vehicle

for HIMO Mid-East Study Area

Primary Roads

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	34.0	34.0	34.0	34.0	34.0
1x	34.0	34.0	34.0	34.0	34.0
2x	34.0	34.0	34.0	34.0	34.0
3x	34.0	34.0	34.0	34.0	34.0
4x	34.0	34.0	34.0	34.0	34.0
5x	33.9	33.9	33.9	33.8	33.8
6x	33.7	33.6	33.5	33.5	33.4
7x	33.3	33.3	33.2	33.2	33.1
8x	33.0	33.0	32.9	32.8	32.7
9x	32.3	31.6	30.2	29.0	27.9
10x	27.0				

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	34.0	34.0	34.0	34.0	34.0
1x	34.0	34.0	34.0	34.0	34.0
2x	34.0	34.0	34.0	34.0	34.0
3x	34.0	34.0	34.0	34.0	34.0
4x	34.0	34.0	34.0	34.0	34.0
5x	33.9	33.9	33.8	33.8	33.7
6x	33.6	33.5	33.4	33.4	33.3
7x	33.3	33.2	33.1	33.1	33.0
8x	32.9	32.8	32.8	32.6	32.4
9x	31.9	31.0	29.5	28.2	27.0
10x	25.9				

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	34.0	34.0	34.0	34.0	34.0
1x	34.0	34.0	34.0	34.0	34.0
2x	34.0	34.0	34.0	34.0	34.0
3x	34.0	34.0	34.0	34.0	34.0
4x	34.0	34.0	34.0	34.0	34.0
5x	33.9	33.9	33.8	33.8	33.7
6x	33.6	33.5	33.4	33.4	33.3
7x	33.3	33.2	33.1	33.1	33.0
8x	32.9	32.8	32.8	32.6	32.4
9x	31.9	31.0	29.5	28.2	27.0
10x	25.9				

Secondary Roads

Dry Condition

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	34.0	34.0	34.0	34.0	34.0
1x	34.0	34.0	34.0	34.0	34.0
2x	34.0	34.0	34.0	34.0	34.0
3x	34.0	34.0	34.0	34.0	34.0
4x	34.0	34.0	34.0	34.0	34.0
5x	33.9	33.9	33.9	33.9	33.8
6x	33.8	33.7	33.5	33.3	33.0
7x	32.7	32.5	32.2	31.9	31.5
8x	31.0	30.1	29.3	28.6	27.9
9x	27.3	26.7	26.2	25.7	25.3
10x	24.7				

Wet Condition

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	34.0	34.0	34.0	34.0	34.0
1x	34.0	34.0	34.0	34.0	34.0
2x	34.0	34.0	34.0	34.0	34.0
3x	34.0	34.0	34.0	34.0	34.0
4x	34.0	34.0	34.0	34.0	34.0
5x	33.9	33.9	33.8	33.7	33.6
6x	33.5	33.3	33.1	32.8	32.5
7x	32.3	32.1	31.7	31.3	30.9
8x	30.3	29.3	28.4	27.6	26.9
9x	26.3	25.7	25.1	24.6	24.2
10x	23.5				

Sand Condition

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	34.0	34.0	34.0	34.0	34.0
1x	34.0	34.0	34.0	34.0	34.0
2x	34.0	34.0	34.0	34.0	34.0
3x	34.0	34.0	34.0	34.0	34.0
4x	34.0	34.0	34.0	34.0	34.0
5x	33.9	33.9	33.8	33.7	33.6
6x	33.5	33.3	33.1	32.8	32.5
7x	32.3	32.1	31.7	31.3	30.9
8x	30.3	29.3	28.4	27.6	26.9
9x	26.3	25.7	25.1	24.6	24.2
10x	23.5				

Trails

Dry Condition

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	33.8	33.5	32.1	31.4	31.0
1x	30.6	30.0	29.6	29.2	28.4
2x	27.8	27.2	26.5	25.9	25.4
3x	24.9	24.6	24.2	24.0	23.7
4x	23.3	23.0	22.5	22.1	21.8
5x	21.5	21.2	20.9	20.7	20.5
6x	20.3	20.1	20.0	19.8	19.7
7x	19.5	19.3	19.2	19.0	18.8
8x	18.7	18.5	18.4	18.2	18.1
9x	17.9	17.7	17.5	17.3	17.0
10x	16.4				

Wet Condition

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	28.8	28.8	28.7	28.7	27.6
1x	26.6	25.7	25.0	24.5	24.1
2x	23.8	23.4	23.1	22.9	22.6
3x	22.2	21.9	21.6	21.4	21.1
4x	20.8	20.6	20.3	20.1	19.8
5x	19.7	19.5	19.3	19.2	19.0
6x	18.8	18.7	18.5	18.4	18.2
7x	18.1	18.0	17.8	17.7	17.6
8x	17.5	17.4	17.3	17.1	17.0
9x	16.9	16.7	16.5	16.3	16.1
10x	15.5				

Sand Condition

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	14.7	14.7	14.6	14.5	14.5
1x	14.5	14.5	14.4	14.4	14.4
2x	14.4	14.3	14.2	14.1	14.0
3x	13.9	13.8	13.7	13.6	13.6
4x	13.5	13.4	13.3	13.2	13.1
5x	13.1	13.0	12.9	12.9	12.8
6x	12.7	12.7	12.6	12.6	12.5
7x	12.4	12.4	12.3	12.3	12.2
8x	12.1	12.0	11.9	11.8	11.7
9x	11.5	11.3	11.0	10.8	10.5
10x	10.3				

Off Road

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	33.8	33.8	33.8	33.8	33.6
1x	33.4	32.9	32.1	31.5	30.8
2x	29.9	28.7	27.4	26.4	25.5
3x	24.8	24.0	23.4	22.8	22.3
4x	21.9	21.5	21.1	20.7	20.4
5x	20.1	19.8	19.5	19.2	19.0
6x	18.7	18.4	18.1	17.8	17.6
7x	17.3	17.0	16.8	16.5	16.3
8x	16.0	15.8	15.5	15.3	15.0
9x	7.0	2.8	1.8	1.3	1.1
10x	0.9				

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	26.9	24.1	22.6	21.5	20.6
1x	19.8	19.0	18.4	17.9	17.6
2x	17.3	17.1	16.9	16.7	16.6
3x	16.4	16.3	16.2	16.1	16.0
4x	15.9	15.7	15.6	15.5	15.4
5x	15.2	15.1	14.9	14.8	14.6
6x	14.4	14.3	14.1	14.0	13.9
7x	13.7	13.6	13.4	13.3	13.1
8x	13.0	12.8	12.7	12.6	12.4
9x	6.3	2.7	1.7	1.3	1.0
10x	0.9				

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	14.7	14.7	14.7	14.7	14.5
1x	14.2	14.0	13.8	13.6	13.5
2x	13.4	13.3	13.1	13.0	12.8
3x	12.7	12.6	12.5	12.3	12.2
4x	12.1	12.0	11.9	11.8	11.7
5x	11.6	11.5	11.4	11.3	11.2
6x	11.1	11.0	10.8	10.7	10.6
7x	10.5	10.3	10.1	10.0	9.8
8x	9.7	9.5	9.3	9.1	8.9
9x	5.3	2.5	1.6	1.2	1.0
10x	0.9				

Table B20

Speed Profile for M113 Armored Personnel Carrier (APC)

for HIMO Mid-East Study Area

Primary Roads

Dry Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	42.0	42.0	42.0	42.0	42.0
1X	42.0	42.0	42.0	42.0	42.0
2X	42.0	42.0	42.0	42.0	42.0
3X	42.0	42.0	42.0	42.0	42.0
4X	42.0	42.0	42.0	42.0	42.0
5X	42.0	42.0	42.0	42.0	42.0
6X	42.0	42.0	42.0	42.0	41.9
7X	41.9	41.9	41.8	41.8	41.7
8X	41.7	41.5	41.3	41.0	40.6
9X	39.8	38.5	36.4	34.5	32.9
10X	31.4				

Wet Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	42.0	42.0	42.0	42.0	42.0
1X	42.0	42.0	42.0	42.0	42.0
2X	42.0	42.0	42.0	42.0	42.0
3X	42.0	42.0	42.0	42.0	42.0
4X	42.0	42.0	42.0	42.0	42.0
5X	42.0	42.0	42.0	42.0	42.0
6X	42.0	42.0	42.0	42.0	41.9
7X	41.9	41.9	41.8	41.6	41.4
8X	41.2	40.9	40.6	40.2	39.7
9X	38.7	37.3	35.0	33.0	31.3
10X	29.8				

Sand Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	42.0	42.0	42.0	42.0	42.0
1X	42.0	42.0	42.0	42.0	42.0
2X	42.0	42.0	42.0	42.0	42.0
3X	42.0	42.0	42.0	42.0	42.0
4X	42.0	42.0	42.0	42.0	42.0
5X	42.0	42.0	42.0	42.0	42.0
6X	42.0	42.0	42.0	42.0	41.9
7X	41.9	41.9	41.8	41.6	41.4
8X	41.2	40.9	40.6	40.2	39.7
9X	38.7	37.3	35.0	33.0	31.3
10X	29.8				

Secondary Roads

Dry Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	42.0	42.0	42.0	42.0	42.0
1X	42.0	42.0	42.0	42.0	42.0
2X	42.0	42.0	42.0	41.5	41.0
3X	40.6	40.2	39.9	39.6	39.4
4X	39.2	39.0	38.8	38.6	38.5
5X	38.4	38.3	38.1	38.0	37.8
6X	37.7	37.5	37.4	37.3	37.1
7X	36.9	36.7	36.3	35.8	35.3
8X	34.6	33.3	32.3	31.3	30.4
9X	29.7	28.9	28.3	27.7	27.1
10X	26.4				

Wet Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	42.0	42.0	42.0	42.0	42.0
1X	42.0	42.0	42.0	42.0	42.0
2X	42.0	41.9	41.8	41.3	40.8
3X	40.4	40.1	39.8	39.5	39.3
4X	39.1	38.9	38.7	38.6	38.4
5X	38.3	38.2	38.1	37.9	37.8
6X	37.6	37.5	37.2	37.0	36.8
7X	36.5	36.1	35.7	35.1	34.5
8X	33.6	32.3	31.2	30.2	29.2
9X	28.4	27.7	27.0	26.4	25.8
10X	25.0				

Sand Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	42.0	42.0	42.0	42.0	42.0
1X	42.0	42.0	42.0	42.0	42.0
2X	42.0	41.9	41.8	41.3	40.8
3X	40.4	40.1	39.8	39.5	39.3
4X	39.1	38.9	38.7	38.6	38.4
5X	38.3	38.2	38.1	37.9	37.8
6X	37.6	37.5	37.2	37.0	36.8
7X	36.5	36.1	35.7	35.1	34.5
8X	33.6	32.3	31.2	30.2	29.2
9X	28.4	27.7	27.0	26.4	25.8
10X	25.0				

Trails

Dry Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	27.0	27.0	27.0	26.5	26.0
1X	25.5	25.0	24.7	24.5	24.3
2X	24.2	24.1	23.9	23.5	23.0
3X	22.5	22.1	21.8	21.5	21.2
4X	21.0	20.8	20.6	20.4	20.0
5X	19.7	19.3	19.0	18.7	18.4
6X	18.1	17.9	17.7	17.5	17.3
7X	17.2	17.0	16.9	16.8	16.6
8X	16.5	16.4	16.2	16.0	15.9
9X	15.7	15.6	15.4	15.3	15.1
10X	14.6				

Wet Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	27.0	27.0	25.7	25.2	24.8
1X	24.4	24.2	24.0	23.8	23.6
2X	23.4	23.3	23.0	22.5	22.1
3X	21.7	21.4	21.1	20.9	20.7
4X	20.5	20.3	20.1	19.8	19.5
5X	19.2	18.9	18.6	18.3	18.0
6X	17.8	17.6	17.4	17.2	17.1
7X	16.9	16.8	16.6	16.5	16.4
8X	16.3	16.2	16.0	15.8	15.7
9X	15.5	15.4	15.2	15.1	15.0
10X	14.5				

Sand Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	21.0	21.0	20.9	20.9	20.5
1X	19.8	19.3	19.0	18.7	18.5
2X	18.3	18.1	17.9	17.7	17.6
3X	17.4	17.2	17.0	16.8	16.7
4X	16.5	16.3	16.1	15.9	15.8
5X	15.7	15.5	15.4	15.2	15.1
6X	15.0	14.9	14.8	14.7	14.5
7X	14.4	14.3	14.1	14.0	13.9
8X	13.8	13.7	13.6	13.5	13.2
9X	12.9	12.6	12.2	11.9	11.6
10X	11.2				

Off Road

Dry Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	41.4	31.8	31.5	30.1	29.3
1X	28.8	28.5	28.3	28.0	27.8
2X	27.4	26.9	26.3	25.5	24.8
3X	24.1	23.6	23.1	22.7	22.2
4X	21.8	21.4	21.0	20.6	20.2
5X	19.8	19.4	19.0	18.6	18.3
6X	17.9	17.6	17.3	17.0	16.7
7X	16.4	16.1	15.8	15.4	15.0
8X	14.6	14.0	13.4	12.9	12.3
9X	11.5	4.2	2.2	1.6	1.2
10X	1.0				

Wet Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	31.2	28.8	27.1	25.3	24.2
1X	23.2	22.3	21.5	20.9	20.3
2X	19.8	19.3	18.9	18.6	18.3
3X	18.0	17.7	17.5	17.4	17.2
4X	17.0	16.9	16.7	16.5	16.2
5X	16.0	15.9	15.7	15.5	15.4
6X	15.2	15.0	14.8	14.7	14.5
7X	14.3	14.1	13.9	13.6	13.3
8X	13.0	12.5	12.1	11.6	11.2
9X	10.4	3.4	2.0	1.4	1.1
10X	0.9				

Sand Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	21.0	21.0	21.0	21.0	20.9
1X	20.8	20.3	19.8	19.4	19.1
2X	18.8	18.5	18.2	18.0	17.7
3X	17.3	17.0	16.7	16.4	16.1
4X	15.9	15.7	15.5	15.3	15.1
5X	14.9	14.7	14.6	14.4	14.2
6X	14.0	13.8	13.6	13.4	13.0
7X	12.7	12.2	11.8	11.4	11.0
8X	10.7	10.3	10.0	9.7	9.4
9X	8.9	3.8	2.1	1.5	1.2
10X	1.0				

Table B21

Speed Profile for M109A1, 155mm, Self-Propelled Howitzer

for HIMO Mid-East Study Area

Primary Roads

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	32.0	32.0	32.0	32.0	32.0
1x	32.0	32.0	32.0	32.0	32.0
2x	32.0	32.0	32.0	32.0	32.0
3x	32.0	32.0	32.0	32.0	32.0
4x	32.0	32.0	32.0	32.0	32.0
5x	32.0	32.0	32.0	32.0	32.0
6x	32.0	31.9	31.9	31.9	31.9
7x	31.8	31.8	31.8	31.8	31.7
8x	31.6	31.4	31.3	31.1	31.0
9x	30.7	30.1	28.9	27.8	26.8
10x	26.0				

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	32.0	32.0	32.0	32.0	32.0
1x	32.0	32.0	32.0	32.0	32.0
2x	32.0	32.0	32.0	32.0	32.0
3x	32.0	32.0	32.0	32.0	32.0
4x	32.0	32.0	32.0	32.0	32.0
5x	32.0	32.0	32.0	32.0	31.9
6x	31.9	31.9	31.9	31.8	31.8
7x	31.8	31.8	31.8	31.7	31.5
8x	31.4	31.3	31.1	31.0	30.8
9x	30.4	29.6	28.3	27.1	26.0
10x	25.0				

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	32.0	32.0	32.0	32.0	32.0
1x	32.0	32.0	32.0	32.0	32.0
2x	32.0	32.0	32.0	32.0	32.0
3x	32.0	32.0	32.0	32.0	32.0
4x	32.0	32.0	32.0	32.0	32.0
5x	32.0	32.0	32.0	32.0	31.9
6x	31.9	31.9	31.9	31.8	31.8
7x	31.8	31.8	31.8	31.7	31.5
8x	31.4	31.3	31.1	31.0	30.8
9x	30.4	29.6	28.3	27.1	26.0
10x	25.0				

Secondary Roads

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	32.0	32.0	32.0	32.0	32.0
1x	32.0	32.0	32.0	32.0	32.0
2x	32.0	32.0	32.0	32.0	32.0
3x	32.0	32.0	32.0	32.0	32.0
4x	32.0	32.0	32.0	32.0	32.0
5x	32.0	32.0	32.0	32.0	32.0
6x	32.0	31.9	31.9	31.7	31.4
7x	31.2	31.0	30.8	30.6	30.3
8x	29.8	29.0	28.3	27.6	27.0
9x	26.5	25.9	25.5	25.0	24.6
10x	24.1				

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	32.0	32.0	32.0	32.0	32.0
1x	32.0	32.0	32.0	32.0	32.0
2x	32.0	32.0	32.0	32.0	32.0
3x	32.0	32.0	32.0	32.0	32.0
4x	32.0	32.0	32.0	32.0	32.0
5x	32.0	32.0	32.0	31.9	31.9
6x	31.8	31.7	31.6	31.4	31.1
7x	30.9	30.7	30.5	30.1	29.8
8x	29.2	28.3	27.5	26.8	26.2
9x	25.5	25.0	24.5	24.0	23.6
10x	23.0				

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	32.0	32.0	32.0	32.0	32.0
1x	32.0	32.0	32.0	32.0	32.0
2x	32.0	32.0	32.0	32.0	32.0
3x	32.0	32.0	32.0	32.0	32.0
4x	32.0	32.0	32.0	32.0	32.0
5x	32.0	32.0	32.0	31.9	31.9
6x	31.8	31.7	31.6	31.4	31.1
7x	30.9	30.7	30.5	30.1	29.8
8x	29.2	28.3	27.5	26.8	26.2
9x	25.5	25.0	24.5	24.0	23.6
10x	23.0				

Trails

Dry Condition

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	31.9	31.8	31.1	30.7	30.6
1x	30.3	29.4	28.7	28.2	27.7
2x	27.2	26.7	26.1	25.5	25.0
3x	24.6	24.3	24.0	23.7	23.4
4x	23.0	22.7	22.3	21.9	21.6
5x	21.3	21.0	20.8	20.6	20.4
6x	20.2	20.0	19.9	19.7	19.6
7x	19.4	19.3	19.1	19.0	18.8
8x	18.6	18.5	18.3	18.2	18.1
9x	17.9	17.8	17.6	17.4	17.1
10x	16.5				

Wet Condition

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	29.5	29.5	29.3	28.3	27.1
1x	26.3	25.6	25.2	24.8	24.5
2x	23.9	23.4	23.0	22.7	22.3
3x	22.0	21.7	21.5	21.3	21.0
4x	20.7	20.4	20.2	20.0	19.8
5x	19.6	19.4	19.2	19.1	19.0
6x	18.8	18.7	18.6	18.5	18.3
7x	18.2	18.0	17.9	17.8	17.6
8x	17.5	17.4	17.2	17.1	16.9
9x	16.8	16.6	16.5	16.3	16.0
10x	15.5				

Sand Condition

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	15.2	15.2	15.2	15.2	15.1
1x	15.1	15.1	15.1	15.0	14.9
2x	14.8	14.7	14.6	14.5	14.4
3x	14.4	14.3	14.2	14.1	14.0
4x	14.0	13.9	13.8	13.7	13.6
5x	13.6	13.5	13.4	13.4	13.3
6x	13.3	13.2	13.1	13.1	13.0
7x	13.0	12.9	12.8	12.8	12.7
8x	12.6	12.5	12.4	12.3	12.0
9x	11.8	11.5	11.3	11.0	10.8
10x	10.5				

Off Road

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	31.9	31.9	31.8	31.8	31.8
1x	31.7	31.4	31.0	30.7	30.0
2x	29.3	28.2	27.0	26.0	25.2
3x	24.5	23.9	23.3	22.8	22.3
4x	21.9	21.4	21.1	20.8	20.5
5x	20.2	19.9	19.5	19.3	19.0
6x	18.7	18.4	18.1	17.7	17.4
7x	17.1	16.8	16.4	15.9	15.4
8x	14.8	14.2	13.6	13.0	12.4
9x	11.9	11.4	10.6	9.9	9.2
10x	8.7				

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	24.4	22.7	21.6	20.9	20.4
1x	19.7	18.9	18.4	18.0	17.7
2x	17.4	17.2	17.0	16.9	16.8
3x	16.6	16.5	16.4	16.3	16.2
4x	16.0	15.9	15.7	15.5	15.4
5x	15.2	15.0	14.8	14.6	14.4
6x	14.2	14.0	13.8	13.6	13.4
7x	13.2	13.1	12.9	12.6	12.3
8x	11.9	11.5	11.1	10.7	10.4
9x	10.0	9.6	9.1	8.6	8.1
10x	6.2				

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	15.2	15.0	14.7	14.7	14.5
1x	14.3	14.2	14.0	13.9	13.8
2x	13.7	13.6	13.5	13.4	13.3
3x	13.2	13.1	13.0	12.9	12.8
4x	12.6	12.5	12.4	12.2	12.1
5x	11.9	11.7	11.5	11.4	11.2
6x	11.1	10.8	10.6	10.5	10.2
7x	10.0	9.7	9.5	9.3	9.1
8x	8.8	8.7	8.4	8.2	8.0
9x	7.8	7.6	7.3	7.0	6.7
10x	6.5				

Table B22

Speed Profile for M107, 175mm, Self-Propelled Howitzer

for HIMO Mid-East Study Area

Primary Roads

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	32.0	32.0	32.0	32.0	32.0
1x	32.0	32.0	32.0	32.0	32.0
2x	32.0	32.0	32.0	32.0	32.0
3x	32.0	32.0	32.0	32.0	32.0
4x	32.0	32.0	32.0	32.0	32.0
5x	32.0	32.0	32.0	32.0	32.0
6x	31.9	31.9	31.9	31.8	31.8
7x	31.8	31.8	31.7	31.7	31.6
8x	31.5	31.3	31.2	31.0	30.9
9x	30.6	30.4	28.8	27.7	26.8
10x	25.9				

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	32.0	32.0	32.0	32.0	32.0
1x	32.0	32.0	32.0	32.0	32.0
2x	32.0	32.0	32.0	32.0	32.0
3x	32.0	32.0	32.0	32.0	32.0
4x	32.0	32.0	32.0	32.0	32.0
5x	32.0	32.0	32.0	32.0	31.9
6x	31.9	31.8	31.8	31.8	31.8
7x	31.7	31.7	31.7	31.6	31.5
8x	31.3	31.2	31.0	30.9	30.7
9x	30.3	29.5	28.2	27.0	25.9
10x	24.9				

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	32.0	32.0	32.0	32.0	32.0
1x	32.0	32.0	32.0	32.0	32.0
2x	32.0	32.0	32.0	32.0	32.0
3x	32.0	32.0	32.0	32.0	32.0
4x	32.0	32.0	32.0	32.0	32.0
5x	32.0	32.0	32.0	32.0	31.9
6x	31.9	31.8	31.8	31.8	31.8
7x	31.7	31.7	31.7	31.6	31.5
8x	31.3	31.2	31.0	30.9	30.7
9x	30.3	29.5	28.2	27.0	25.9
10x	24.9				

Secondary Roads

Dry Condition

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	32.0	32.0	32.0	32.0	32.0
1x	32.0	32.0	32.0	32.0	32.0
2x	32.0	32.0	32.0	32.0	32.0
3x	32.0	32.0	32.0	32.0	32.0
4x	32.0	32.0	32.0	32.0	32.0
5x	32.0	32.0	32.0	32.0	32.0
6x	32.0	31.9	31.9	31.6	31.4
7x	31.2	31.0	30.7	30.5	30.2
8x	29.8	29.0	28.2	27.6	27.0
9x	26.4	25.9	25.4	25.0	24.6
10x	24.0				

Wet Condition

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	32.0	32.0	32.0	32.0	32.0
1x	32.0	32.0	32.0	32.0	32.0
2x	32.0	32.0	32.0	32.0	32.0
3x	32.0	32.0	32.0	32.0	32.0
4x	32.0	32.0	32.0	32.0	32.0
5x	32.0	32.0	32.0	31.9	31.9
6x	31.8	31.7	31.6	31.3	31.1
7x	30.9	30.7	30.4	30.1	29.7
8x	29.2	28.3	27.5	26.8	26.1
9x	25.5	25.0	24.5	24.0	23.6
10x	23.0				

Sand Condition

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	32.0	32.0	32.0	32.0	32.0
1x	32.0	32.0	32.0	32.0	32.0
2x	32.0	32.0	32.0	32.0	32.0
3x	32.0	32.0	32.0	32.0	32.0
4x	32.0	32.0	32.0	32.0	32.0
5x	32.0	32.0	32.0	31.9	31.9
6x	31.8	31.7	31.6	31.3	31.1
7x	30.9	30.7	30.4	30.1	29.7
8x	29.2	28.3	27.5	26.8	26.1
9x	25.5	25.0	24.5	24.0	23.6
10x	23.0				

Trails

Dry Condition

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	31.9	31.7	30.8	30.5	30.4
1x	30.2	29.3	28.5	28.0	27.4
2x	27.0	26.5	25.9	25.3	24.8
3x	24.5	24.1	23.9	23.6	23.2
4x	22.9	22.6	22.2	21.8	21.5
5x	21.2	20.9	20.7	20.5	20.3
6x	20.1	19.9	19.8	19.7	19.5
7x	19.4	19.2	19.1	18.9	18.7
8x	18.6	18.4	18.3	18.2	18.0
9x	17.9	17.7	17.5	17.3	17.0
10x	16.4				

Wet Condition

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	29.2	29.2	29.2	28.2	27.0
1x	26.2	25.5	25.1	24.8	24.3
2x	23.8	23.3	23.0	22.6	22.2
3x	21.9	21.6	21.4	21.1	20.9
4x	20.6	20.3	20.1	19.9	19.7
5x	19.5	19.3	19.2	19.0	18.9
6x	18.7	18.6	18.5	18.4	18.2
7x	18.1	17.9	17.8	17.7	17.5
8x	17.4	17.3	17.1	17.0	16.8
9x	16.7	16.5	16.3	16.1	15.9
10x	15.4				

Sand Condition

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	14.5	14.5	14.5	14.5	14.5
1x	14.5	14.4	14.4	14.4	14.3
2x	14.2	14.2	14.1	14.0	14.0
3x	13.9	13.9	13.8	13.7	13.6
4x	13.6	13.5	13.4	13.4	13.3
5x	13.2	13.2	13.1	13.1	13.0
6x	12.9	12.9	12.8	12.8	12.7
7x	12.7	12.6	12.6	12.5	12.4
8x	12.3	12.2	12.1	12.0	11.8
9x	11.5	11.3	11.0	10.7	10.5
10x	10.2				

Off Road

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	31.9	31.9	31.8	31.8	31.8
1x	31.7	31.4	30.9	30.5	29.8
2x	29.1	28.0	26.9	25.9	25.1
3x	24.4	23.7	23.1	22.6	22.1
4x	21.7	21.3	21.0	20.6	20.3
5x	20.1	19.7	19.4	19.1	18.8
6x	18.6	18.3	18.0	17.6	17.3
7x	17.0	16.6	16.3	15.8	15.3
8x	14.7	14.0	13.4	12.8	12.2
9x	11.6	11.0	10.2	9.5	8.9
10x	4.2				

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	24.4	22.7	21.6	20.8	20.3
1x	19.6	18.8	18.3	17.9	17.6
2x	17.4	17.2	17.0	16.8	16.7
3x	16.6	16.4	16.3	16.2	16.1
4x	15.9	15.8	15.6	15.4	15.3
5x	15.1	14.9	14.7	14.5	14.3
6x	14.1	13.9	13.7	13.5	13.3
7x	13.1	12.9	12.7	12.5	12.2
8x	11.8	11.4	11.0	10.6	10.2
9x	9.8	9.4	8.8	8.3	7.9
10x	3.9				

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	14.5	14.3	14.2	14.1	14.0
1x	13.9	13.8	13.7	13.5	13.4
2x	13.3	13.3	13.2	13.1	13.0
3x	12.9	12.8	12.7	12.6	12.5
4x	12.4	12.2	12.1	11.9	11.8
5x	11.6	11.4	11.2	11.1	10.9
6x	10.8	10.6	10.4	10.2	10.0
7x	9.7	9.5	9.2	9.0	8.8
8x	8.6	8.4	8.2	8.0	7.8
9x	7.6	7.3	7.0	6.7	6.5
10x	4.6				

Table B23

Speed Profile for M110E2, 8 in., Self-Propelled Howitzer

for HIMO Mid-East Study Area

Primary Roads

Dry Condition

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	32.0	32.0	32.0	32.0	32.0
1x	32.0	32.0	32.0	32.0	32.0
2x	32.0	32.0	32.0	32.0	32.0
3x	32.0	32.0	32.0	32.0	32.0
4x	32.0	32.0	32.0	32.0	32.0
5x	32.0	32.0	32.0	32.0	32.0
6x	31.9	31.9	31.9	31.8	31.8
7x	31.8	31.8	31.7	31.7	31.6
8x	31.5	31.3	31.2	31.0	30.9
9x	30.6	30.0	28.8	27.7	26.8
10x	25.9				

Wet Condition

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	32.0	32.0	32.0	32.0	32.0
1x	32.0	32.0	32.0	32.0	32.0
2x	32.0	32.0	32.0	32.0	32.0
3x	32.0	32.0	32.0	32.0	32.0
4x	32.0	32.0	32.0	32.0	32.0
5x	32.0	32.0	32.0	32.0	31.9
6x	31.9	31.8	31.8	31.8	31.8
7x	31.7	31.7	31.7	31.6	31.5
8x	31.3	31.2	31.0	30.9	30.7
9x	30.3	29.5	28.2	27.0	25.9
10x	24.9				

Sand Condition

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	32.0	32.0	32.0	32.0	32.0
1x	32.0	32.0	32.0	32.0	32.0
2x	32.0	32.0	32.0	32.0	32.0
3x	32.0	32.0	32.0	32.0	32.0
4x	32.0	32.0	32.0	32.0	32.0
5x	32.0	32.0	32.0	32.0	31.9
6x	31.9	31.8	31.8	31.8	31.8
7x	31.7	31.7	31.7	31.6	31.5
8x	31.3	31.2	31.0	30.9	30.7
9x	30.3	29.5	28.2	27.0	25.9
10x	24.9				

Secondary Roads

Dry Condition

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	32.0	32.0	32.0	32.0	32.0
1x	32.0	32.0	32.0	32.0	32.0
2x	32.0	32.0	32.0	32.0	32.0
3x	32.0	32.0	32.0	32.0	32.0
4x	32.0	32.0	32.0	32.0	32.0
5x	32.0	32.0	32.0	32.0	32.0
6x	32.0	31.9	31.9	31.6	31.4
7x	31.2	31.0	30.7	30.5	30.2
8x	29.8	29.0	28.2	27.6	27.0
9x	26.4	25.9	25.4	25.0	24.6
10x	24.0				

Wet Condition

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	32.0	32.0	32.0	32.0	32.0
1x	32.0	32.0	32.0	32.0	32.0
2x	32.0	32.0	32.0	32.0	32.0
3x	32.0	32.0	32.0	32.0	32.0
4x	32.0	32.0	32.0	32.0	32.0
5x	32.0	32.0	32.0	31.9	31.9
6x	31.8	31.7	31.6	31.3	31.1
7x	30.9	30.7	30.4	30.1	29.7
8x	29.2	28.3	27.5	26.8	26.1
9x	25.5	25.0	24.5	24.0	23.6
10x	23.0				

Sand Condition

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	32.0	32.0	32.0	32.0	32.0
1x	32.0	32.0	32.0	32.0	32.0
2x	32.0	32.0	32.0	32.0	32.0
3x	32.0	32.0	32.0	32.0	32.0
4x	32.0	32.0	32.0	32.0	32.0
5x	32.0	32.0	32.0	31.9	31.9
6x	31.8	31.7	31.6	31.3	31.1
7x	30.9	30.7	30.4	30.1	29.7
8x	29.2	28.3	27.5	26.8	26.1
9x	25.5	25.0	24.5	24.0	23.6
10x	23.0				

Trails

Dry Condition

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	31.9	31.7	30.8	30.5	30.4
1x	30.2	29.3	28.5	28.0	27.4
2x	27.0	26.5	25.9	25.3	24.8
3x	24.5	24.1	23.9	23.6	23.2
4x	22.9	22.6	22.2	21.8	21.5
5x	21.2	20.9	20.7	20.5	20.3
6x	20.1	19.9	19.8	19.7	19.5
7x	19.4	19.2	19.1	18.9	18.7
8x	18.6	18.4	18.3	18.2	18.0
9x	17.9	17.7	17.5	17.3	17.0
10x	16.4				

Wet Condition

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	29.2	29.2	29.2	28.2	27.0
1x	26.2	25.5	25.1	24.8	24.3
2x	23.8	23.3	23.0	22.6	22.2
3x	21.9	21.6	21.4	21.1	20.9
4x	20.6	20.3	20.1	19.9	19.7
5x	19.5	19.3	19.2	19.0	18.9
6x	18.7	18.6	18.5	18.4	18.2
7x	18.1	17.9	17.8	17.7	17.5
8x	17.4	17.3	17.1	17.0	16.8
9x	16.7	16.5	16.3	16.1	15.9
10x	15.4				

Sand Condition

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	14.5	14.5	14.5	14.5	14.5
1x	14.5	14.4	14.4	14.4	14.3
2x	14.2	14.2	14.1	14.0	14.0
3x	13.9	13.9	13.8	13.7	13.6
4x	13.6	13.5	13.4	13.4	13.3
5x	13.2	13.2	13.1	13.1	13.0
6x	12.9	12.9	12.8	12.8	12.7
7x	12.7	12.6	12.6	12.5	12.4
8x	12.3	12.2	12.1	12.0	11.8
9x	11.5	11.3	11.0	10.7	10.5
10x	10.2				

Off Road

Dry Condition

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	31.9	31.9	31.8	31.8	31.8
1x	31.7	31.4	30.9	30.5	29.8
2x	29.1	28.0	26.9	25.9	25.1
3x	24.4	23.7	23.1	22.6	22.1
4x	21.7	21.3	21.0	20.6	20.3
5x	20.1	19.7	19.4	19.1	18.8
6x	18.6	18.3	18.0	17.6	17.3
7x	17.0	16.6	16.2	15.8	15.3
8x	14.6	14.0	13.3	12.7	12.1
9x	11.6	11.0	10.2	9.5	8.9
10x	5.9				

Wet Condition

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	24.4	22.7	21.6	20.8	20.3
1x	19.6	18.8	18.3	17.9	17.6
2x	17.4	17.2	17.0	16.8	16.7
3x	16.6	16.4	16.3	16.2	16.1
4x	15.9	15.8	15.6	15.4	15.3
5x	15.1	14.9	14.7	14.5	14.3
6x	14.1	13.9	13.7	13.5	13.3
7x	13.1	12.9	12.7	12.5	12.2
8x	11.8	11.4	11.0	10.5	10.1
9x	9.8	9.4	8.8	8.3	7.9
10x	5.4				

Sand Condition

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	14.5	14.3	14.2	14.1	14.0
1x	13.9	13.8	13.7	13.5	13.4
2x	13.3	13.3	13.2	13.1	13.0
3x	12.9	12.8	12.7	12.6	12.5
4x	12.4	12.2	12.1	11.9	11.8
5x	11.6	11.4	11.2	11.1	10.9
6x	10.8	10.6	10.4	10.2	10.0
7x	9.7	9.4	9.2	9.0	8.8
8x	8.6	8.4	8.2	8.0	7.8
9x	7.6	7.3	7.0	6.7	6.5
10x	4.7				

Table B24

Speed Profile for M88 Medium Recovery Vehicle

for HIMO Mid-East Study Area

Primary Roads

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	29.4	29.4	29.4	29.4	29.4
1x	29.4	29.4	29.4	29.4	29.4
2x	29.4	29.4	29.4	29.4	29.4
3x	29.4	29.4	29.4	29.4	29.4
4x	29.4	29.4	29.4	29.4	29.4
5x	29.3	29.3	29.3	29.3	29.3
6x	29.3	29.3	29.3	29.3	29.3
7x	29.3	29.3	29.2	29.2	29.2
8x	29.2	29.2	29.2	29.2	29.2
9x	28.9	28.4	27.4	26.4	25.6
10x	24.8				

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	29.4	29.4	29.4	29.4	29.4
1x	29.4	29.4	29.4	29.4	29.4
2x	29.4	29.4	29.4	29.4	29.4
3x	29.4	29.4	29.4	29.4	29.4
4x	29.4	29.4	29.4	29.4	29.4
5x	29.3	29.3	29.3	29.3	29.3
6x	29.3	29.3	29.3	29.3	29.3
7x	29.3	29.3	29.2	29.2	29.2
8x	29.2	29.2	29.2	29.2	29.1
9x	28.7	28.1	26.9	25.8	24.9
10x	24.0				

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	29.4	29.4	29.4	29.4	29.4
1x	29.4	29.4	29.4	29.4	29.4
2x	29.4	29.4	29.4	29.4	29.4
3x	29.4	29.4	29.4	29.4	29.4
4x	29.4	29.4	29.4	29.4	29.4
5x	29.3	29.3	29.3	29.3	29.3
6x	29.3	29.3	29.3	29.3	29.3
7x	29.3	29.3	29.2	29.2	29.2
8x	29.2	29.2	29.2	29.2	29.1
9x	28.7	28.1	26.9	25.8	24.9
10x	24.0				

Secondary Roads

Dry Condition

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	29.0	29.0	29.0	29.0	29.0
1x	29.0	29.0	29.0	29.0	29.0
2x	29.0	29.0	29.0	29.0	29.0
3x	29.0	29.0	29.0	29.0	29.0
4x	29.0	29.0	29.0	29.0	29.0
5x	29.0	29.0	29.0	29.0	29.0
6x	29.0	29.0	29.0	29.0	28.9
7x	28.9	28.9	28.8	28.7	28.5
8x	28.1	27.4	26.8	26.2	25.7
9x	25.2	24.8	24.4	24.0	23.7
10x	23.1				

Wet Condition

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	29.0	29.0	29.0	29.0	29.0
1x	29.0	29.0	29.0	29.0	29.0
2x	29.0	29.0	29.0	29.0	29.0
3x	29.0	29.0	29.0	29.0	29.0
4x	29.0	29.0	29.0	29.0	29.0
5x	29.0	29.0	29.0	29.0	29.0
6x	29.0	29.0	29.0	28.9	28.9
7x	28.9	28.8	28.7	28.4	28.2
8x	27.7	26.9	26.2	25.6	25.0
9x	24.5	24.0	23.6	23.1	22.8
10x	22.2				

Sand Condition

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	29.0	29.0	29.0	29.0	29.0
1x	29.0	29.0	29.0	29.0	29.0
2x	29.0	29.0	29.0	29.0	29.0
3x	29.0	29.0	29.0	29.0	29.0
4x	29.0	29.0	29.0	29.0	29.0
5x	29.0	29.0	29.0	29.0	29.0
6x	29.0	29.0	29.0	28.9	28.9
7x	28.9	28.8	28.7	28.4	28.2
8x	27.7	26.9	26.2	25.6	25.0
9x	24.5	24.0	23.6	23.1	22.8
10x	22.2				

Trails

Dry Condition

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	29.1	29.1	29.1	29.1	29.0
1x	29.0	28.9	28.9	28.8	28.5
2x	28.2	28.0	27.8	27.7	27.5
3x	27.3	27.1	27.0	26.7	26.5
4x	26.2	25.7	25.2	24.7	24.2
5x	23.7	23.3	22.9	22.5	22.2
6x	21.9	21.7	21.4	21.2	21.0
7x	20.8	20.7	20.5	20.3	20.2
8x	19.9	19.7	19.4	19.2	18.9
9x	18.7	18.4	18.2	18.0	17.7
10x	17.0				

Wet Condition

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	27.4	27.4	27.4	27.4	27.3
1x	27.0	26.9	26.7	26.4	26.1
2x	25.8	25.6	25.4	25.3	25.1
3x	24.9	24.7	24.5	24.3	24.1
4x	23.8	23.4	23.0	22.6	22.2
5x	21.8	21.5	21.3	21.0	20.8
6x	20.6	20.4	20.2	20.1	19.9
7x	19.7	19.6	19.4	19.3	19.1
8x	18.9	18.7	18.4	18.2	18.0
9x	17.8	17.6	17.4	17.2	16.9
10x	16.3				

Sand Condition

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	18.3	18.3	18.2	18.2	18.1
1x	18.1	18.1	18.0	17.8	17.6
2x	17.4	17.2	17.1	17.0	16.9
3x	16.8	16.7	16.6	16.6	16.5
4x	16.4	16.3	16.2	16.1	16.0
5x	15.9	15.7	15.6	15.5	15.4
6x	15.3	15.2	15.1	15.0	14.9
7x	14.8	14.7	14.6	14.5	14.3
8x	14.2	14.1	14.0	13.8	13.7
9x	13.5	13.3	13.1	12.9	12.7
10x	12.3				

Off Road

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	29.1	29.1	29.1	29.1	29.1
1x	29.0	28.9	28.9	28.8	28.7
2x	28.3	28.0	27.4	26.8	26.1
3x	25.5	24.8	24.1	23.6	23.0
4x	22.4	21.9	21.4	21.0	20.6
5x	20.2	19.9	19.5	19.1	18.7
6x	18.4	18.1	17.7	17.4	17.1
7x	16.8	16.4	16.1	15.7	15.3
8x	15.0	14.6	14.3	13.9	13.6
9x	13.3	12.9	12.5	12.1	11.8
10x	7.1				

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	27.0	25.8	24.9	23.7	22.8
1x	22.0	21.1	20.3	19.7	19.1
2x	18.7	18.3	18.0	17.7	17.5
3x	17.3	17.1	17.0	16.9	16.7
4x	16.6	16.4	16.3	16.2	16.0
5x	15.8	15.6	15.3	15.1	14.9
6x	14.7	14.5	14.3	14.1	13.9
7x	13.6	13.4	13.2	13.0	12.7
8x	12.5	12.3	12.0	11.8	11.6
9x	11.4	11.2	10.9	10.6	10.4
10x	6.6				

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	18.3	18.3	18.3	18.2	18.1
1x	17.9	17.7	17.4	17.3	17.1
2x	16.9	16.7	16.5	16.2	16.0
3x	15.8	15.6	15.3	15.1	14.9
4x	14.7	14.5	14.3	14.1	13.9
5x	13.6	13.4	13.2	12.9	12.6
6x	12.4	12.2	11.9	11.7	11.5
7x	11.2	11.0	10.8	10.7	10.5
8x	10.4	10.2	10.1	9.9	9.8
9x	9.6	9.4	9.3	9.1	8.9
10x	6.8				

Table B25

Speed Profile for IFV/CFV Infantry or Cavalry Fighting Vehicle

for HIMO Mid-East Study Area

Primary Roads

Dry Condition

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	40.0	40.0	40.0	40.0	40.0
1x	40.0	40.0	40.0	40.0	40.0
2x	40.0	40.0	40.0	40.0	40.0
3x	40.0	40.0	40.0	40.0	40.0
4x	40.0	40.0	40.0	40.0	40.0
5x	40.0	40.0	40.0	40.0	40.0
6x	40.0	40.0	40.0	40.0	40.0
7x	40.0	40.0	40.0	40.0	40.0
8x	40.0	39.9	39.7	39.5	39.2
9x	38.4	37.3	35.3	33.5	32.0
10x	30.7				

Wet Condition

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	40.0	40.0	40.0	40.0	40.0
1x	40.0	40.0	40.0	40.0	40.0
2x	40.0	40.0	40.0	40.0	40.0
3x	40.0	40.0	40.0	40.0	40.0
4x	40.0	40.0	40.0	40.0	40.0
5x	40.0	40.0	40.0	40.0	40.0
6x	40.0	40.0	40.0	40.0	40.0
7x	40.0	40.0	39.9	39.8	39.7
8x	39.6	39.3	39.1	38.8	38.3
9x	37.4	36.1	34.0	32.1	30.5
10x	29.1				

Sand Condition

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	40.0	40.0	40.0	40.0	40.0
1x	40.0	40.0	40.0	40.0	40.0
2x	40.0	40.0	40.0	40.0	40.0
3x	40.0	40.0	40.0	40.0	40.0
4x	40.0	40.0	40.0	40.0	40.0
5x	40.0	40.0	40.0	40.0	40.0
6x	40.0	40.0	40.0	40.0	40.0
7x	40.0	40.0	39.9	39.8	39.7
8x	39.6	39.3	39.1	38.8	38.3
9x	37.4	36.1	34.0	32.1	30.5
10x	29.1				

Secondary Roads

Dry Condition

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	40.0	40.0	40.0	40.0	40.0
1x	40.0	40.0	40.0	40.0	40.0
2x	40.0	40.0	40.0	40.0	40.0
3x	40.0	40.0	40.0	40.0	40.0
4x	40.0	40.0	40.0	40.0	40.0
5x	40.0	40.0	40.0	40.0	39.9
6x	39.9	39.9	39.7	39.5	39.3
7x	39.0	38.6	38.2	37.6	37.0
8x	36.1	34.8	33.6	32.5	31.5
9x	30.7	29.9	29.2	28.5	27.9
10x	27.1				

Wet Condition

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	40.0	40.0	40.0	40.0	40.0
1x	40.0	40.0	40.0	40.0	40.0
2x	40.0	40.0	40.0	40.0	40.0
3x	40.0	40.0	40.0	40.0	40.0
4x	40.0	40.0	40.0	40.0	40.0
5x	40.0	40.0	40.0	40.0	39.9
6x	39.9	39.9	39.6	39.2	38.9
7x	38.5	38.1	37.5	36.8	36.1
8x	35.1	33.7	32.4	31.3	30.3
9x	29.4	28.5	27.8	27.1	26.5
10x	25.7				

Sand Condition

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	40.0	40.0	40.0	40.0	40.0
1x	40.0	40.0	40.0	40.0	40.0
2x	40.0	40.0	40.0	40.0	40.0
3x	40.0	40.0	40.0	40.0	40.0
4x	40.0	40.0	40.0	40.0	40.0
5x	40.0	40.0	40.0	40.0	39.9
6x	39.9	39.9	39.6	39.2	38.9
7x	38.5	38.1	37.5	36.8	36.1
8x	35.1	33.7	32.4	31.3	30.3
9x	29.4	28.5	27.8	27.1	26.5
10x	25.7				

Trails

Dry Condition

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	34.0	34.0	34.0	33.6	33.1
1x	32.0	31.0	30.4	29.9	29.6
2x	29.3	29.1	28.7	28.1	27.4
3x	26.8	26.3	25.9	25.5	25.2
4x	24.9	24.6	24.4	24.0	23.6
5x	23.2	22.8	22.5	22.2	21.9
6x	21.6	21.4	21.1	20.9	20.7
7x	20.6	20.4	20.3	20.1	20.0
8x	19.8	19.6	19.4	19.2	19.0
9x	18.8	18.6	18.4	18.3	18.1
10x	17.3				

Wet Condition

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	34.0	34.0	33.8	32.3	31.4
1x	30.4	29.8	29.4	29.0	28.8
2x	28.6	28.3	27.9	27.3	26.7
3x	26.2	25.7	25.3	25.0	24.7
4x	24.5	24.2	23.9	23.5	23.1
5x	22.7	22.3	22.0	21.7	21.4
6x	21.2	21.0	20.8	20.6	20.4
7x	20.3	20.1	20.0	19.8	19.7
8x	19.6	19.4	19.1	18.9	18.7
9x	18.6	18.4	18.2	18.1	17.8
10x	17.1				

Sand Condition

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	26.2	26.1	25.9	25.8	25.3
1x	24.8	24.2	23.5	23.1	22.8
2x	22.5	22.3	22.0	21.7	21.4
3x	21.2	21.0	20.7	20.5	20.2
4x	20.0	19.7	19.5	19.3	19.2
5x	19.0	18.9	18.7	18.5	18.4
6x	18.3	18.1	18.0	17.8	17.6
7x	17.5	17.3	17.2	17.0	16.9
8x	16.7	16.5	16.4	16.2	16.0
9x	15.8	15.5	15.3	15.0	14.7
10x	14.3				

Off Road

Dry Condition

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	39.8	39.1	38.2	36.8	36.1
1x	35.6	35.3	35.1	34.9	34.3
2x	33.7	33.1	32.1	30.9	29.8
3x	28.7	27.7	26.9	26.1	25.4
4x	24.7	24.1	23.6	23.1	22.6
5x	22.2	21.9	21.5	21.1	20.8
6x	20.5	20.2	19.9	19.5	19.2
7x	18.9	18.6	18.2	17.9	17.4
8x	17.0	16.5	16.0	15.2	14.4
9x	13.6	12.9	11.6	10.5	9.7
10x	4.3				

Wet Condition

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	38.9	36.2	33.8	30.6	28.5
1x	26.9	25.8	24.6	23.2	22.2
2x	21.4	20.8	20.3	19.8	19.4
3x	19.1	18.8	18.6	18.3	18.1
4x	17.9	17.7	17.6	17.4	17.3
5x	17.1	17.0	16.8	16.7	16.5
6x	16.4	16.2	16.0	15.8	15.6
7x	15.4	15.2	14.9	14.7	14.4
8x	14.2	13.9	13.5	13.0	12.4
9x	11.8	11.3	6.6	2.8	1.8
10x	1.3				

Sand Condition

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	28.4	27.6	26.8	26.6	26.2
1x	25.9	25.5	25.1	24.7	24.2
2x	23.6	23.0	22.6	22.1	21.6
3x	21.1	20.7	20.3	19.9	19.6
4x	19.2	18.9	18.6	18.3	18.0
5x	17.8	17.5	17.2	16.9	16.6
6x	16.3	16.0	15.7	15.4	15.1
7x	14.8	14.4	14.1	13.8	13.5
8x	13.2	12.9	12.5	12.0	11.6
9x	11.1	10.6	9.7	9.0	8.4
10x	4.1				

Table B26

Speed Profile for GSRS, Ground Support Rocket System

for HIMO Mid-East Study Area

Dry Condition

Primary Roads

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	41.0	41.0	41.0	41.0	41.0
1x	41.0	41.0	41.0	41.0	41.0
2x	41.0	41.0	41.0	41.0	41.0
3x	41.0	41.0	41.0	41.0	41.0
4x	41.0	41.0	41.0	41.0	41.0
5x	41.0	41.0	41.0	41.0	41.0
6x	41.0	41.0	41.0	41.0	41.0
7x	41.0	41.0	41.0	41.0	40.9
8x	40.9	40.8	40.6	40.4	40.0
9x	39.2	38.0	35.9	34.1	32.5
10x	31.1				

Secondary Roads

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	41.0	41.0	41.0	41.0	41.0
1x	41.0	41.0	41.0	41.0	41.0
2x	41.0	41.0	41.0	41.0	41.0
3x	41.0	41.0	41.0	41.0	41.0
4x	41.0	41.0	41.0	41.0	41.0
5x	41.0	41.0	41.0	41.0	41.0
6x	40.9	40.9	40.7	40.4	40.2
7x	39.9	39.5	39.0	38.3	37.7
8x	36.7	35.3	34.1	33.0	32.0
9x	31.1	30.3	29.5	28.8	28.2
10x	27.4				

Trails

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	36.0	36.0	36.0	35.5	35.0
1x	33.7	32.7	32.0	31.5	31.1
2x	30.8	30.6	30.1	29.4	28.7
3x	28.1	27.7	27.3	26.9	26.6
4x	26.3	26.1	25.8	25.4	25.0
5x	24.5	24.1	23.8	23.4	23.1
6x	22.9	22.6	22.4	22.2	22.0
7x	21.8	21.6	21.5	21.3	21.2
8x	21.0	20.8	20.6	20.4	20.2
9x	20.0	19.8	19.7	19.5	19.2
10x	18.4				

Off Road

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	40.8	40.8	39.9	38.6	37.9
1x	37.5	37.2	37.1	36.7	36.1
2x	35.2	34.5	33.5	32.3	31.2
3x	30.1	29.2	28.3	27.4	26.6
4x	25.9	25.3	24.7	24.2	23.7
5x	23.3	23.0	22.6	22.2	21.9
6x	21.6	21.3	20.9	20.6	20.3
7x	19.9	19.5	19.2	18.8	18.4
8x	17.8	17.3	16.7	15.9	15.0
9x	14.1	13.3	11.9	10.8	9.9
10x	4.4				

Wet Condition

Primary Roads

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	41.0	41.0	41.0	41.0	41.0
1x	41.0	41.0	41.0	41.0	41.0
2x	41.0	41.0	41.0	41.0	41.0
3x	41.0	41.0	41.0	41.0	41.0
4x	41.0	41.0	41.0	41.0	41.0
5x	41.0	41.0	41.0	41.0	41.0
6x	41.0	41.0	41.0	41.0	41.0
7x	41.0	41.0	40.9	40.8	40.6
8x	40.5	40.2	39.9	39.6	39.1
9x	38.1	36.7	34.5	32.6	30.9
10x	29.4				

Secondary Roads

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	41.0	41.0	41.0	41.0	41.0
1x	41.0	41.0	41.0	41.0	41.0
2x	41.0	41.0	41.0	41.0	41.0
3x	41.0	41.0	41.0	41.0	41.0
4x	41.0	41.0	41.0	41.0	41.0
5x	41.0	41.0	41.0	40.9	40.9
6x	40.9	40.9	40.5	40.1	39.7
7x	39.3	38.8	38.2	37.5	36.7
8x	35.7	34.2	32.9	31.7	30.7
9x	29.7	28.9	28.1	27.4	26.8
10x	25.9				

Trails

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	36.0	36.0	35.6	34.8	33.9
1x	31.9	31.2	30.8	30.5	30.2
2x	30.0	29.7	29.2	28.6	28.0
3x	27.5	27.1	26.7	26.4	26.2
4x	25.9	25.6	25.2	24.8	24.3
5x	23.9	23.6	23.2	22.9	22.7
6x	22.4	22.2	22.0	21.8	21.6
7x	21.4	21.3	21.1	21.0	20.9
8x	20.7	20.5	20.2	20.1	19.9
9x	19.7	19.5	19.4	19.2	18.9
10x	18.1				

Off Road

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	39.8	37.6	35.2	31.8	29.7
1x	27.9	26.6	25.4	24.2	23.2
2x	22.3	21.6	21.1	20.7	20.3
3x	19.9	19.6	19.3	19.0	18.7
4x	18.5	18.3	18.1	17.9	17.7
5x	17.6	17.4	17.3	17.2	17.0
6x	16.8	16.7	16.4	16.2	16.0
7x	15.8	15.6	15.3	15.1	14.8
8x	14.5	14.3	13.9	13.3	12.7
9x	12.1	11.5	6.6	2.8	1.8
10x	1.3				

Sand Condition

Primary Roads

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	41.0	41.0	41.0	41.0	41.0
1x	41.0	41.0	41.0	41.0	41.0
2x	41.0	41.0	41.0	41.0	41.0
3x	41.0	41.0	41.0	41.0	41.0
4x	41.0	41.0	41.0	41.0	41.0
5x	41.0	41.0	41.0	41.0	41.0
6x	41.0	41.0	41.0	41.0	41.0
7x	41.0	41.0	40.9	40.8	40.6
8x	40.5	40.2	39.9	39.6	39.1
9x	38.1	36.7	34.5	32.6	30.9
10x	29.4				

Secondary Roads

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	41.0	41.0	41.0	41.0	41.0
1x	41.0	41.0	41.0	41.0	41.0
2x	41.0	41.0	41.0	41.0	41.0
3x	41.0	41.0	41.0	41.0	41.0
4x	41.0	41.0	41.0	41.0	41.0
5x	41.0	41.0	41.0	40.9	40.9
6x	40.9	40.9	40.5	40.1	39.7
7x	39.3	38.8	38.2	37.5	36.7
8x	35.7	34.2	32.9	31.7	30.7
9x	29.7	28.9	28.1	27.4	26.8
10x	25.9				

Trails

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	27.8	27.7	27.3	27.2	26.6
1x	26.1	25.4	24.8	24.3	24.0
2x	23.7	23.4	23.1	22.8	22.6
3x	22.3	22.1	21.7	21.4	21.2
4x	20.9	20.7	20.5	20.3	20.2
5x	20.0	19.9	19.7	19.5	19.4
6x	19.2	19.1	18.9	18.7	18.6
7x	18.4	18.3	18.1	18.0	17.8
8x	17.6	17.5	17.3	17.1	16.9
9x	16.6	16.4	16.1	15.8	15.6
10x	15.0				

Off Road

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	29.6	28.9	28.3	28.1	27.7
1x	27.3	26.9	26.4	25.8	25.3
2x	24.7	24.2	23.7	23.3	22.7
3x	22.2	21.8	21.4	20.9	20.5
4x	20.2	19.9	19.5	19.2	18.9
5x	18.6	18.3	18.0	17.7	17.4
6x	17.1	16.7	16.4	16.0	15.7
7x	15.4	15.1	14.7	14.4	14.1
8x	13.8	13.4	13.0	12.5	12.0
9x	11.4	10.9	10.0	9.2	8.6
10x	4.1				

Table B27

Speed Profile for M578 Towing M113A1

for HIMO Mid-East Study Area

Dry Condition

Primary Roads

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	10.0	10.0	10.0	10.0	10.0
1x	10.0	10.0	10.0	10.0	10.0
2x	10.0	10.0	10.0	10.0	10.0
3x	10.0	10.0	10.0	10.0	10.0
4x	10.0	10.0	10.0	10.0	10.0
5x	10.0	10.0	10.0	10.0	10.0
6x	10.0	10.0	10.0	10.0	10.0
7x	10.0	10.0	10.0	10.0	10.0
8x	10.0	10.0	10.0	10.0	10.0
9x	10.0	10.0	10.0	10.0	10.0
10x	10.0				

Secondary Roads

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	10.0	10.0	10.0	10.0	10.0
1x	10.0	10.0	10.0	10.0	10.0
2x	10.0	10.0	10.0	10.0	10.0
3x	10.0	10.0	10.0	10.0	10.0
4x	10.0	10.0	10.0	10.0	10.0
5x	10.0	10.0	10.0	10.0	10.0
6x	10.0	10.0	10.0	10.0	10.0
7x	10.0	10.0	10.0	10.0	10.0
8x	10.0	10.0	10.0	10.0	10.0
9x	10.0	10.0	10.0	10.0	10.0
10x	10.0				

Trails

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	10.0	10.0	10.0	10.0	10.0
1x	10.0	10.0	10.0	10.0	10.0
2x	10.0	10.0	10.0	10.0	10.0
3x	10.0	10.0	10.0	10.0	10.0
4x	10.0	10.0	10.0	10.0	10.0
5x	10.0	10.0	10.0	10.0	10.0
6x	10.0	10.0	10.0	10.0	10.0
7x	10.0	10.0	10.0	10.0	10.0
8x	10.0	10.0	9.9	9.9	9.9
9x	9.8	9.8	9.7	9.7	9.6
10x	9.5				

Off Road

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	10.0	10.0	10.0	10.0	10.0
1x	10.0	10.0	10.0	10.0	10.0
2x	10.0	10.0	10.0	10.0	10.0
3x	10.0	10.0	10.0	10.0	10.0
4x	10.0	10.0	10.0	10.0	10.0
5x	10.0	10.0	10.0	10.0	9.9
6x	9.9	9.9	9.9	9.9	9.8
7x	9.8	9.7	9.7	9.6	9.6
8x	9.5	9.5	9.4	9.4	9.3
9x	4.3	2.3	1.5	1.2	1.0
10x	0.8				

Wet Condition

Primary Roads

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	10.0	10.0	10.0	10.0	10.0
1x	10.0	10.0	10.0	10.0	10.0
2x	10.0	10.0	10.0	10.0	10.0
3x	10.0	10.0	10.0	10.0	10.0
4x	10.0	10.0	10.0	10.0	10.0
5x	10.0	10.0	10.0	10.0	10.0
6x	10.0	10.0	10.0	10.0	10.0
7x	10.0	10.0	10.0	10.0	10.0
8x	10.0	10.0	10.0	10.0	10.0
9x	10.0	10.0	10.0	10.0	9.9
10x	9.9				

Secondary Roads

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	10.0	10.0	10.0	10.0	10.0
1x	10.0	10.0	10.0	10.0	10.0
2x	10.0	10.0	10.0	10.0	10.0
3x	10.0	10.0	10.0	10.0	10.0
4x	10.0	10.0	10.0	10.0	10.0
5x	10.0	10.0	10.0	10.0	10.0
6x	10.0	10.0	10.0	10.0	10.0
7x	10.0	10.0	10.0	10.0	10.0
8x	10.0	10.0	10.0	10.0	10.0
9x	10.0	10.0	10.0	10.0	10.0
10x	10.0				

Trails

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	10.0	10.0	10.0	10.0	10.0
1x	10.0	10.0	10.0	10.0	10.0
2x	10.0	10.0	10.0	10.0	10.0
3x	10.0	10.0	10.0	10.0	10.0
4x	10.0	10.0	10.0	10.0	10.0
5x	10.0	10.0	10.0	10.0	10.0
6x	10.0	10.0	10.0	10.0	10.0
7x	9.9	9.9	9.9	9.9	9.8
8x	9.8	9.8	9.7	9.7	9.6
9x	9.6	9.5	9.4	9.4	9.3
10x	9.2				

Off Road

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	10.0	10.0	10.0	10.0	10.0
1x	10.0	10.0	10.0	10.0	10.0
2x	10.0	10.0	10.0	10.0	10.0
3x	10.0	10.0	9.9	9.9	9.9
4x	9.9	9.8	9.8	9.8	9.7
5x	9.7	9.6	9.6	9.6	9.5
6x	9.5	9.4	9.4	9.3	9.2
7x	9.2	9.1	9.0	8.9	8.9
8x	8.8	8.7	8.7	8.6	8.5
9x	3.8	2.1	1.5	1.1	0.9
10x	0.8				

Sand Condition

Primary Roads

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	10.0	10.0	10.0	10.0	10.0
1x	10.0	10.0	10.0	10.0	10.0
2x	10.0	10.0	10.0	10.0	10.0
3x	10.0	10.0	10.0	10.0	10.0
4x	10.0	10.0	10.0	10.0	10.0
5x	10.0	10.0	10.0	10.0	10.0
6x	10.0	10.0	10.0	10.0	10.0
7x	10.0	10.0	10.0	10.0	10.0
8x	10.0	10.0	10.0	10.0	10.0
9x	10.0	10.0	10.0	10.0	9.9
10x	9.9				

Secondary Roads

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	10.0	10.0	10.0	10.0	10.0
1x	10.0	10.0	10.0	10.0	10.0
2x	10.0	10.0	10.0	10.0	10.0
3x	10.0	10.0	10.0	10.0	10.0
4x	10.0	10.0	10.0	10.0	10.0
5x	10.0	10.0	10.0	10.0	10.0
6x	10.0	10.0	10.0	10.0	10.0
7x	10.0	10.0	10.0	10.0	10.0
8x	10.0	10.0	10.0	10.0	10.0
9x	10.0	10.0	10.0	10.0	10.0
10x	10.0				

Trails

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	9.0	8.8	8.8	8.8	8.8
1x	8.8	8.8	8.8	8.8	8.8
2x	8.7	8.7	8.7	8.7	8.7
3x	8.7	8.7	8.7	8.6	8.6
4x	8.6	8.5	8.5	8.5	8.5
5x	8.4	8.4	8.4	8.3	8.3
6x	8.3	8.2	8.2	8.2	8.2
7x	8.1	8.1	8.0	8.0	7.9
8x	7.9	7.9	7.8	7.7	7.6
9x	7.4	7.3	7.1	6.9	6.7
10x	6.1				

Off Road

PERCENT TOTAL DISTANCE

	x=0	2	4	6	8
x	8.8	8.7	8.7	8.6	8.6
1x	8.6	8.5	8.5	8.5	8.4
2x	8.4	8.3	8.3	8.3	8.2
3x	8.2	8.1	8.1	8.0	8.0
4x	8.0	7.9	7.9	7.8	7.8
5x	7.7	7.7	7.6	7.5	7.4
6x	7.4	7.3	7.2	7.1	7.0
7x	6.9	6.7	6.6	6.4	6.3
8x	6.1	5.9	5.7	3.5	2.8
9x	1.4	1.1	0.9	0.8	0.7
10x	0.6				

Table B28

Speed Profile for M578 Towing M107

for HIMO Mid-East Study Area

Primary Roads

Dry Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	10.0	10.0	10.0	10.0	10.0
8X	10.0	10.0	10.0	10.0	10.0
9X	10.0	10.0	10.0	10.0	10.0
10X	10.0				

Wet Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	10.0	10.0	10.0	10.0	10.0
8X	10.0	10.0	10.0	10.0	10.0
9X	10.0	10.0	10.0	10.0	9.9
10X	9.9				

Sand Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	10.0	10.0	10.0	10.0	10.0
8X	10.0	10.0	10.0	10.0	10.0
9X	10.0	10.0	10.0	10.0	9.9
10X	9.9				

Secondary Roads

Dry Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	10.0	10.0	10.0	10.0	10.0
8X	10.0	10.0	10.0	10.0	10.0
9X	10.0	10.0	10.0	10.0	9.9
10X	9.9				

Wet Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	10.0	10.0	10.0	10.0	10.0
8X	10.0	10.0	10.0	10.0	10.0
9X	10.0	10.0	10.0	10.0	9.9
10X	9.9				

Sand Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	10.0	10.0	10.0	10.0	10.0
8X	10.0	10.0	10.0	10.0	10.0
9X	10.0	10.0	10.0	10.0	9.9
10X	9.9				

Trails

Dry Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	[illegible]				
3X	[illegible]				
4X	[illegible]				
5X	10.0	10.0	10.0	9.9	9.9
6X	9.9	9.9	9.9	9.9	9.9
7X	9.8	9.8	9.8	9.8	9.7
8X	9.7	9.7	9.6	9.6	9.5
9X	9.4	9.3	9.2	9.1	9.0
10X	8.8				

Wet Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	9.9
2X	9.9	9.8	9.8	9.8	9.8
3X	9.7	9.7	9.6	9.6	9.5
4X	9.5	9.5	9.4	9.4	9.4
5X	9.4	9.3	9.3	9.3	9.3
6X	9.3	9.2	9.2	9.2	9.2
7X	9.2	9.1	9.1	9.1	9.0
8X	9.0	8.9	8.9	8.8	8.7
9X	8.6	8.4	8.2	7.9	7.7
10X	6.8				

Sand Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	7.3	7.0	7.0	7.0	7.0
1X	7.0	7.0	7.0	7.0	7.0
2X	6.9	6.9	6.9	6.9	6.9
3X	6.9	6.9	6.8	6.8	6.8
4X	6.7	6.7	6.7	6.7	6.6
5X	6.6	6.6	6.5	6.5	6.5
6X	6.4	6.4	6.4	6.3	6.3
7X	6.2	6.2	6.1	6.0	6.0
8X	5.9	5.8	5.8	5.6	4.8
9X	2.1	1.5	1.1	0.9	0.8
10X	0.7				

Off Road

Dry Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	9.9	9.9
4X	9.9	9.8	9.8	9.8	9.7
5X	9.7	9.7	9.6	9.6	9.5
6X	9.5	9.4	9.4	9.3	9.2
7X	9.1	9.1	9.0	8.9	8.8
8X	8.7	8.6	8.5	8.3	8.2
9X	3.5	2.0	1.4	1.1	0.9
10X	0.8				

Wet Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	9.9	9.7
1X	9.6	9.4	9.3	9.3	9.2
2X	9.1	9.1	9.1	9.0	9.0
3X	8.9	8.9	8.8	8.8	8.8
4X	8.7	8.7	8.6	8.6	8.5
5X	8.4	8.4	8.3	8.3	8.2
6X	8.1	8.0	7.9	7.8	7.7
7X	7.5	7.4	7.3	7.2	7.0
8X	6.8	6.7	6.5	3.4	2.0
9X	1.4	1.1	0.9	0.8	0.7
10X	0.6				

Sand Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	7.0	6.9	6.9	6.8	6.8
1X	6.8	6.7	6.6	6.6	6.5
2X	6.5	6.5	6.4	6.4	6.4
3X	6.4	6.3	6.2	6.1	6.0
4X	5.9	5.9	5.8	5.7	5.6
5X	5.6	5.5	5.4	5.4	5.3
6X	5.2	5.1	5.1	5.0	4.9
7X	4.8	4.7	4.5	2.7	1.6
8X	1.2	0.9	0.8	0.7	0.6
9X	0.5	0.5	0.5	0.4	0.4
10X	0.4				

Table B29

Speed Profile for M578 Towing M109A1

for HIMO Mid-East Study Area

Primary Roads

Dry Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	10.0	10.0	10.0	10.0	10.0
8X	10.0	10.0	10.0	10.0	10.0
9X	10.0	10.0	10.0	10.0	10.0
10X	10.0				

Wet Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	10.0	10.0	10.0	10.0	10.0
8X	10.0	10.0	10.0	10.0	10.0
9X	10.0	10.0	10.0	10.0	9.9
10X	9.9				

Sand Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	10.0	10.0	10.0	10.0	10.0
8X	10.0	10.0	10.0	10.0	10.0
9X	10.0	10.0	10.0	10.0	9.9
10X	9.9				

Secondary Roads

Dry Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	10.0	10.0	10.0	10.0	10.0
8X	10.0	10.0	10.0	10.0	10.0
9X	10.0	10.0	10.0	10.0	10.0
10X	10.0				

Wet Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	10.0	10.0	10.0	10.0	10.0
8X	10.0	10.0	10.0	10.0	10.0
9X	10.0	10.0	10.0	10.0	10.0
10X	10.0				

Sand Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	10.0	10.0	10.0	10.0	10.0
8X	10.0	10.0	10.0	10.0	10.0
9X	10.0	10.0	10.0	10.0	10.0
10X	10.0				

Trails

Dry Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	9.9	9.9	9.9	9.9	9.8
8X	9.8	9.8	9.7	9.7	9.6
9X	9.5	9.4	9.4	9.3	9.2
10X	9.0				

Wet Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	9.9	9.9	9.8	9.8
4X	9.7	9.7	9.6	9.6	9.6
5X	9.5	9.5	9.5	9.5	9.4
6X	9.4	9.4	9.4	9.4	9.3
7X	9.3	9.3	9.2	9.2	9.2
8X	9.1	9.1	9.1	9.0	8.9
9X	8.8	8.7	8.5	8.4	8.2
10X	7.6				

Sand Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	7.3	7.3	7.3	7.3	7.3
1X	7.3	7.3	7.3	7.3	7.3
2X	7.3	7.3	7.3	7.3	7.3
3X	7.3	7.2	7.2	7.2	7.1
4X	7.1	7.1	7.0	7.0	7.0
5X	7.0	6.9	6.9	6.9	6.8
6X	6.8	6.8	6.8	6.7	6.7
7X	6.6	6.5	6.5	6.4	6.3
8X	6.3	6.2	6.1	6.0	5.8
9X	2.9	1.8	1.3	1.1	0.9
10X	0.8				

Off Road

Dry Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	9.9	9.9	9.9	9.9	9.8
5X	9.8	9.7	9.7	9.7	9.6
6X	9.6	9.6	9.5	9.5	9.4
7X	9.3	9.2	9.2	9.1	9.0
8X	8.9	8.8	8.8	8.6	8.5
9X	3.5	2.0	1.4	1.1	0.9
10X	0.8				

Wet Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	9.8
1X	9.7	9.5	9.4	9.4	9.3
2X	9.2	9.2	9.2	9.1	9.1
3X	9.1	9.1	9.0	9.0	9.0
4X	8.9	8.9	8.9	8.8	8.8
5X	8.7	8.7	8.6	8.6	8.5
6X	8.4	8.3	8.2	8.1	8.0
7X	7.9	7.8	7.7	7.6	7.5
8X	7.3	7.2	7.1	6.3	2.6
9X	1.7	1.2	1.0	0.8	0.7
10X	0.7				

Sand Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	7.3	7.3	7.3	7.3	7.3
1X	7.2	7.2	7.1	7.0	7.0
2X	6.9	6.9	6.8	6.8	6.8
3X	6.7	6.7	6.7	6.6	6.6
4X	6.5	6.4	6.3	6.3	6.2
5X	6.1	6.0	5.9	5.9	5.8
6X	5.7	5.6	5.6	5.5	5.4
7X	5.3	5.2	5.0	4.3	2.2
8X	1.5	1.1	0.9	0.7	0.7
9X	0.6	0.5	0.5	0.4	0.4
10X	0.4				

Table B30

Speed Profile for M578 Towing M110E2

for HIMO Mid-East Study Area

Primary Roads

Dry Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	10.0	10.0	10.0	10.0	10.0
8X	10.0	10.0	10.0	10.0	10.0
9X	10.0	10.0	10.0	10.0	10.0
10X	10.0				

Wet Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	10.0	10.0	10.0	10.0	10.0
8X	10.0	10.0	10.0	10.0	10.0
9X	10.0	10.0	10.0	10.0	9.9
10X	9.9				

Sand Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	10.0	10.0	10.0	10.0	10.0
8X	10.0	10.0	10.0	10.0	10.0
9X	10.0	10.0	10.0	10.0	9.9
10X	9.9				

Secondary Roads

Dry Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	10.0	10.0	10.0	10.0	10.0
8X	10.0	10.0	10.0	10.0	10.0
9X	10.0	10.0	10.0	10.0	9.9
10X	9.9				

Wet Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	10.0	10.0	10.0	10.0	10.0
8X	10.0	10.0	10.0	10.0	10.0
9X	10.0	10.0	10.0	10.0	9.9
10X	9.9				

Sand Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	10.0	10.0	10.0	10.0	10.0
8X	10.0	10.0	10.0	10.0	10.0
9X	10.0	10.0	10.0	10.0	9.9
10X	9.9				

Trails

Dry Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	9.9	9.9
6X	9.9	9.9	9.9	9.9	9.9
7X	9.8	9.8	9.8	9.8	9.7
8X	9.7	9.7	9.6	9.6	9.5
9X	9.4	9.3	9.2	9.1	9.0
10X	8.8				

Wet Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	9.9
2X	9.9	9.8	9.8	9.8	9.8
3X	9.7	9.7	9.6	9.6	9.5
4X	9.5	9.5	9.4	9.4	9.4
5X	9.4	9.3	9.3	9.3	9.3
6X	9.3	9.2	9.2	9.2	9.2
7X	9.2	9.1	9.1	9.1	9.0
8X	9.0	8.9	8.9	8.8	8.7
9X	8.6	8.4	8.2	7.9	7.7
10X	6.8				

Sand Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	7.3	7.0	7.0	7.0	7.0
1X	7.0	7.0	7.0	7.0	7.0
2X	6.9	6.9	6.9	6.9	6.9
3X	6.9	6.9	6.8	6.8	6.8
4X	6.7	6.7	6.7	6.7	6.6
5X	6.6	6.6	6.5	6.5	6.5
6X	6.4	6.4	6.4	6.3	6.3
7X	6.2	6.2	6.1	6.0	6.0
8X	5.9	5.8	5.8	5.6	4.8
9X	2.1	1.5	1.1	0.9	0.8
10X	0.7				

Off Road

Dry Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	9.9	9.9
4X	9.9	9.8	9.8	9.8	9.7
5X	9.7	9.7	9.6	9.6	9.5
6X	9.5	9.4	9.4	9.3	9.2
7X	9.1	9.1	9.0	8.9	8.8
8X	8.7	8.6	8.5	8.3	8.2
9X	3.5	2.0	1.4	1.1	0.9
10X	0.8				

Wet Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	9.9	9.7
1X	9.6	9.4	9.3	9.3	9.2
2X	9.1	9.1	9.1	9.0	9.0
3X	8.9	8.9	8.8	8.8	8.8
4X	8.7	8.7	8.6	8.6	8.5
5X	8.4	8.4	8.3	8.3	8.2
6X	8.1	8.0	7.9	7.8	7.7
7X	7.5	7.4	7.3	7.2	7.0
8X	6.8	6.7	6.5	3.4	2.0
9X	1.4	1.1	0.9	0.8	0.7
10X	0.6				

Sand Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	7.0	6.9	6.9	6.8	6.8
1X	6.8	6.7	6.6	6.6	6.5
2X	6.5	6.5	6.4	6.4	6.4
3X	6.4	6.3	6.2	6.1	6.0
4X	5.9	5.9	5.8	5.7	5.6
5X	5.6	5.5	5.4	5.4	5.3
6X	5.2	5.1	5.1	5.0	4.9
7X	4.8	4.7	4.5	2.7	1.6
8X	1.2	0.9	0.8	0.7	0.6
9X	0.5	0.5	0.5	0.4	0.4
10X	0.4				

Table B31

Speed Profile for M578 Towing IFV/CFV

for HIMO Mid-East Study Area

Primary Roads

Dry Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	10.0	10.0	10.0	10.0	10.0
8X	10.0	10.0	10.0	10.0	10.0
9X	10.0	10.0	10.0	10.0	10.0
10X	10.0				

Wet Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	10.0	10.0	10.0	10.0	10.0
8X	10.0	10.0	10.0	10.0	10.0
9X	10.0	10.0	10.0	10.0	9.9
10X	9.9				

Sand Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	10.0	10.0	10.0	10.0	10.0
8X	10.0	10.0	10.0	10.0	10.0
9X	10.0	10.0	10.0	10.0	9.9
10X	9.9				

Secondary Roads

Dry Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	10.0	10.0	10.0	10.0	10.0
8X	10.0	10.0	10.0	10.0	10.0
9X	10.0	10.0	10.0	10.0	10.0
10X	10.0				

Wet Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	10.0	10.0	10.0	10.0	10.0
8X	10.0	10.0	10.0	10.0	10.0
9X	10.0	10.0	10.0	10.0	10.0
10X	10.0				

Sand Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	10.0	10.0	10.0	10.0	10.0
8X	10.0	10.0	10.0	10.0	10.0
9X	10.0	10.0	10.0	10.0	10.0
10X	10.0				

Trails

Dry Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	10.0	9.9	9.9	9.9	9.8
8X	9.8	9.8	9.8	9.7	9.6
9X	9.6	9.5	9.4	9.3	9.3
10X	9.1				

Wet Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	9.9	9.9	9.9	9.8
4X	9.8	9.8	9.7	9.7	9.7
5X	9.7	9.6	9.6	9.6	9.5
6X	9.5	9.5	9.5	9.4	9.4
7X	9.4	9.4	9.3	9.3	9.3
8X	9.3	9.2	9.2	9.1	9.1
9X	9.0	8.9	8.8	8.7	8.6
10X	8.4				

Sand Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	7.6	7.6	7.6	7.6	7.6
1X	7.6	7.6	7.6	7.6	7.6
2X	7.6	7.6	7.6	7.6	7.6
3X	7.5	7.5	7.4	7.4	7.3
4X	7.3	7.3	7.2	7.2	7.2
5X	7.1	7.1	7.1	7.0	7.0
6X	7.0	7.0	6.9	6.9	6.9
7X	6.8	6.8	6.7	6.6	6.6
8X	6.5	6.4	6.3	6.2	6.0
9X	5.0	3.6	2.1	1.5	1.1
10X	0.9				

Off Road

Dry Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	9.9	9.9
5X	9.9	9.8	9.8	9.8	9.7
6X	9.7	9.7	9.6	9.6	9.5
7X	9.5	9.4	9.3	9.2	9.1
8X	9.0	9.0	8.9	8.8	8.6
9X	3.9	2.1	1.5	1.2	1.0
10X	0.8				

Wet Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	9.9
1X	9.9	9.8	9.7	9.6	9.6
2X	9.5	9.4	9.4	9.3	9.3
3X	9.2	9.2	9.2	9.2	9.1
4X	9.1	9.1	9.1	9.0	9.0
5X	9.0	8.9	8.9	8.8	8.8
6X	8.7	8.6	8.5	8.4	8.3
7X	8.2	8.2	8.1	8.0	7.9
8X	7.7	7.6	7.5	6.4	2.6
9X	1.7	1.3	1.0	0.8	0.7
10X	0.7				

Sand Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	7.6	7.6	7.5	7.5	7.5
1X	7.5	7.4	7.3	7.3	7.2
2X	7.1	7.1	7.0	7.0	7.0
3X	6.9	6.9	6.9	6.8	6.8
4X	6.7	6.7	6.6	6.5	6.4
5X	6.3	6.2	6.2	6.1	6.0
6X	6.0	5.9	5.8	5.7	5.6
7X	5.4	5.3	5.1	3.6	1.9
8X	1.3	1.0	0.8	0.7	0.6
9X	0.6	0.5	0.5	0.4	0.4
10X	0.4				

Table B32

Speed Profile for M578 Towing GSRS

for HIMD Mid-East Study Area

Dry Condition

Primary Roads

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	10.0	10.0	10.0	10.0	10.0
8X	10.0	10.0	10.0	10.0	10.0
9X	10.0	10.0	10.0	10.0	10.0
10X	10.0				

Secondary Roads

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	10.0	10.0	10.0	10.0	10.0
8X	10.0	10.0	10.0	10.0	10.0
9X	10.0	10.0	10.0	10.0	10.0
10X	10.0				

Trails

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	9.9	9.9	9.9	9.9	9.8
8X	9.8	9.8	9.8	9.7	9.6
9X	9.5	9.5	9.4	9.3	9.2
10X	9.0				

Off Road

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	9.9	9.9	9.9	9.9	9.8
5X	9.8	9.8	9.7	9.7	9.7
6X	9.6	9.6	9.5	9.5	9.4
7X	9.4	9.3	9.2	9.1	9.0
8X	8.9	8.9	8.8	8.7	8.5
9X	3.5	2.8	1.4	1.1	0.9
10X	0.8				

Wet Condition

Primary Roads

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	10.0	10.0	10.0	10.0	10.0
8X	10.0	10.0	10.0	10.0	10.0
9X	10.0	10.0	10.0	10.0	9.9
10X	9.9				

Secondary Roads

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	10.0	10.0	10.0	10.0	10.0
8X	10.0	10.0	10.0	10.0	10.0
9X	10.0	10.0	10.0	10.0	10.0
10X	10.0				

Trails

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	9.9	9.9	9.8	9.8
4X	9.8	9.7	9.7	9.6	9.6
5X	9.6	9.6	9.5	9.5	9.5
6X	9.4	9.4	9.4	9.4	9.4
7X	9.3	9.3	9.3	9.3	9.2
8X	9.2	9.2	9.1	9.1	9.0
9X	8.9	8.8	8.6	8.5	8.3
10X	7.7				

Off Road

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	9.9
1X	9.8	9.7	9.6	9.5	9.4
2X	9.4	9.3	9.3	9.2	9.2
3X	9.2	9.1	9.1	9.1	9.1
4X	9.0	9.0	9.0	8.9	8.9
5X	8.9	8.8	8.7	8.7	8.6
6X	8.5	8.4	8.4	8.3	8.2
7X	8.1	8.0	7.9	7.8	7.6
8X	7.5	7.4	7.2	6.8	2.8
9X	1.7	1.3	1.0	0.9	0.7
10X	0.7				

Sand Condition

Primary Roads

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	10.0	10.0	10.0	10.0	10.0
8X	10.0	10.0	10.0	10.0	10.0
9X	10.0	10.0	10.0	10.0	9.9
10X	9.9				

Secondary Roads

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	10.0	10.0	10.0	10.0	10.0
8X	10.0	10.0	10.0	10.0	10.0
9X	10.0	10.0	10.0	10.0	10.0
10X	10.0				

Trails

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	7.4	7.4	7.4	7.4	7.4
1X	7.4	7.4	7.4	7.4	7.4
2X	7.4	7.4	7.4	7.4	7.4
3X	7.3	7.3	7.3	7.2	7.2
4X	7.1	7.1	7.1	7.1	7.0
5X	7.0	7.0	6.9	6.9	6.9
6X	6.9	6.8	6.8	6.8	6.7
7X	6.7	6.6	6.5	6.5	6.4
8X	6.3	6.3	6.2	6.1	5.3
9X	3.3	2.8	1.4	1.1	0.9
10X	0.8				

Off Road

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	7.4	7.4	7.3	7.3	7.3
1X	7.2	7.2	7.1	7.1	7.0
2X	7.0	6.9	6.9	6.8	6.8
3X	6.8	6.7	6.7	6.7	6.6
4X	6.6	6.5	6.4	6.3	6.2
5X	6.1	6.1	6.0	5.9	5.8
6X	5.8	5.7	5.6	5.5	5.4
7X	5.2	5.1	4.3	2.3	1.5
8X	1.1	0.9	0.7	0.6	0.6
9X	0.5	0.5	0.4	0.4	0.4
10X	0.4				

Table B33

Speed Profile for M88 Towing M107

for HIMO Mid-East Study Area

Primary Roads

Dry Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	10.0	10.0	10.0	10.0	10.0
8X	10.0	10.0	10.0	10.0	10.0
9X	10.0	10.0	10.0	10.0	10.0
10X	10.0				

Wet Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	10.0	10.0	10.0	10.0	10.0
8X	10.0	10.0	10.0	10.0	10.0
9X	10.0	10.0	10.0	10.0	9.9
10X	9.9				

Sand Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	10.0	10.0	10.0	10.0	10.0
8X	10.0	10.0	10.0	10.0	10.0
9X	10.0	10.0	10.0	10.0	9.9
10X	9.9				

Secondary Roads

Dry Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	10.0	10.0	10.0	10.0	10.0
8X	10.0	10.0	10.0	10.0	10.0
9X	10.0	10.0	10.0	10.0	10.0
10X	10.0				

Wet Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	10.0	10.0	10.0	10.0	10.0
8X	10.0	10.0	10.0	10.0	10.0
9X	10.0	10.0	10.0	10.0	10.0
10X	10.0				

Sand Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	10.0	10.0	10.0	10.0	10.0
8X	10.0	10.0	10.0	10.0	10.0
9X	10.0	10.0	10.0	10.0	10.0
10X	10.0				

Trails

Dry Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	10.0	10.0	10.0	10.0	10.0
8X	10.0	10.0	10.0	10.0	9.9
9X	9.9	9.9	9.8	9.8	9.7
10X	9.6				

Wet Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	10.0	10.0	10.0	10.0	10.0
8X	10.0	9.9	9.9	9.9	9.8
9X	9.8	9.7	9.7	9.6	9.6
10X	9.4				

Sand Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	9.9
2X	9.9	9.8	9.8	9.8	9.8
3X	9.7	9.7	9.6	9.6	9.5
4X	9.5	9.4	9.4	9.3	9.3
5X	9.3	9.2	9.2	9.1	9.1
6X	9.1	9.0	9.0	9.0	9.0
7X	8.9	8.9	8.8	8.8	8.7
8X	8.7	8.6	8.6	8.5	8.3
9X	8.2	7.8	2.8	1.8	1.3
10X	1.1				

Off Road

Dry Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	9.9
6X	9.9	9.8	9.8	9.7	9.7
7X	9.6	9.6	9.5	9.4	9.3
8X	9.2	9.1	9.0	8.8	8.7
9X	8.5	8.4	8.2	3.1	1.9
10X	1.4				

Wet Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	9.9	9.9	9.9
5X	9.8	9.8	9.7	9.7	9.6
6X	9.5	9.4	9.3	9.2	9.1
7X	9.0	9.0	8.9	8.8	8.7
8X	8.6	8.5	8.4	8.3	8.2
9X	8.0	7.9	5.7	2.6	1.7
10X	1.3				

Sand Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	9.9	9.7	9.6	9.6
1X	9.6	9.5	9.4	9.4	9.3
2X	9.2	9.1	9.1	9.0	9.0
3X	8.9	8.9	8.8	8.8	8.7
4X	8.7	8.6	8.5	8.5	8.4
5X	8.3	8.3	8.2	8.1	8.0
6X	7.9	7.8	7.7	7.6	7.4
7X	7.3	7.2	7.1	7.0	6.8
8X	6.7	6.6	6.5	3.7	2.0
9X	1.4	1.1	0.9	0.8	0.7
10X	0.6				

Table B34

Speed Profile for M88 Towing M110E2

for HIMO Mid-East Study Area

Dry Condition

Primary Roads

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	10.0	10.0	10.0	10.0	10.0
8X	10.0	10.0	10.0	10.0	10.0
9X	10.0	10.0	10.0	10.0	10.0
10X	10.0				

Secondary Roads

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	10.0	10.0	10.0	10.0	10.0
8X	10.0	10.0	10.0	10.0	10.0
9X	10.0	10.0	10.0	10.0	10.0
10X	10.0				

Trails

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	10.0	10.0	10.0	10.0	10.0
8X	10.0	10.0	10.0	10.0	9.9
9X	9.9	9.9	9.8	9.8	9.7
10X	9.6				

Off Road

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	9.9
6X	9.9	9.8	9.8	9.7	9.7
7X	9.6	9.6	9.5	9.4	9.3
8X	9.2	9.1	9.0	8.8	8.7
9X	8.5	8.4	8.2	3.1	1.9
10X	1.4				

Wet Condition

Primary Roads

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	10.0	10.0	10.0	10.0	10.0
8X	10.0	10.0	10.0	10.0	10.0
9X	10.0	10.0	10.0	10.0	9.9
10X	9.9				

Secondary Roads

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	10.0	10.0	10.0	10.0	10.0
8X	10.0	10.0	10.0	10.0	10.0
9X	10.0	10.0	10.0	10.0	10.0
10X	10.0				

Trails

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	10.0	10.0	10.0	10.0	10.0
8X	10.0	9.9	9.9	9.9	9.8
9X	9.8	9.7	9.7	9.6	9.6
10X	9.4				

Off Road

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	9.9	9.9	9.9
5X	9.8	9.8	9.7	9.7	9.6
6X	9.5	9.4	9.3	9.2	9.1
7X	9.0	9.0	8.9	8.8	8.7
8X	8.6	8.5	8.4	8.3	8.1
9X	8.0	7.9	5.7	2.6	1.7
10X	1.3				

Sand Condition

Primary Roads

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	10.0	10.0	10.0	10.0	10.0
8X	10.0	10.0	10.0	10.0	10.0
9X	10.0	10.0	10.0	10.0	9.9
10X	9.9				

Secondary Roads

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	10.0	10.0	10.0	10.0	10.0
8X	10.0	10.0	10.0	10.0	10.0
9X	10.0	10.0	10.0	10.0	10.0
10X	10.0				

Trails

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	9.9
2X	9.9	9.8	9.8	9.8	9.8
3X	9.7	9.7	9.6	9.6	9.5
4X	9.5	9.4	9.4	9.3	9.3
5X	9.3	9.2	9.2	9.1	9.1
6X	9.1	9.0	9.0	9.0	9.0
7X	8.9	8.9	8.8	8.8	8.7
8X	8.7	8.6	8.6	8.5	8.3
9X	8.2	7.0	2.8	1.8	1.3
10X	1.1				

Off Road

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	9.9	9.7	9.6	9.6
1X	9.6	9.5	9.4	9.4	9.3
2X	9.2	9.1	9.1	9.0	9.0
3X	8.9	8.9	8.8	8.8	8.7
4X	8.7	8.6	8.5	8.5	8.4
5X	8.3	8.3	8.2	8.1	8.0
6X	7.9	7.8	7.7	7.5	7.4
7X	7.3	7.2	7.1	7.0	6.8
8X	6.7	6.6	6.5	3.7	2.0
9X	1.4	1.1	0.9	0.8	0.7
10X	0.6				

Table B35

Speed Profile for M88 Towing IFV/CFV

for HIMO Mid-East Study Area

Primary Roads

Dry Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	10.0	10.0	10.0	10.0	10.0
8X	10.0	10.0	10.0	10.0	10.0
9X	10.0	10.0	10.0	10.0	10.0
10X	10.0				

Wet Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	10.0	10.0	10.0	10.0	10.0
8X	10.0	10.0	10.0	10.0	10.0
9X	10.0	10.0	10.0	10.0	9.9
10X	9.9				

Sand Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	10.0	10.0	10.0	10.0	10.0
8X	10.0	10.0	10.0	10.0	10.0
9X	10.0	10.0	10.0	10.0	9.9
10X	9.9				

Secondary Roads

Dry Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	10.0	10.0	10.0	10.0	10.0
8X	10.0	10.0	10.0	10.0	10.0
9X	10.0	10.0	10.0	10.0	10.0
10X	10.0				

Wet Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	10.0	10.0	10.0	10.0	10.0
8X	10.0	10.0	10.0	10.0	10.0
9X	10.0	10.0	10.0	10.0	10.0
10X	10.0				

Sand Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	10.0	10.0	10.0	10.0	10.0
8X	10.0	10.0	10.0	10.0	10.0
9X	10.0	10.0	10.0	10.0	10.0
10X	10.0				

Trails

Dry Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	10.0	10.0	10.0	10.0	10.0
8X	10.0	10.0	10.0	10.0	10.0
9X	9.9	9.9	9.9	9.8	9.8
10X	9.6				

Wet Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	10.0	10.0	10.0	10.0	10.0
8X	10.0	10.0	10.0	9.9	9.9
9X	9.9	9.8	9.8	9.7	9.7
10X	9.5				

Sand Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	9.9	9.9	9.9	9.9	9.9
3X	9.9	9.8	9.8	9.8	9.7
4X	9.7	9.6	9.6	9.6	9.5
5X	9.5	9.4	9.4	9.4	9.3
6X	9.3	9.3	9.3	9.2	9.2
7X	9.2	9.1	9.1	9.0	9.0
8X	8.9	8.9	8.8	8.8	8.6
9X	8.5	8.3	8.2	8.0	7.9
10X	3.3				

Off Road

Dry Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	9.9	9.9	9.8	9.8	9.8
7X	9.7	9.7	9.6	9.5	9.4
8X	9.3	9.2	9.1	8.9	8.8
9X	8.7	8.5	8.4	3.4	2.0
10X	1.5				

Wet Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	9.9	9.9	9.9	9.8	9.7
6X	9.7	9.6	9.5	9.4	9.3
7X	9.3	9.2	9.1	9.0	8.9
8X	8.8	8.7	8.6	8.5	8.4
9X	8.2	8.1	5.8	2.7	1.7
10X	1.3				

Sand Condition

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	9.9	9.9	9.9
1X	9.8	9.8	9.7	9.6	9.5
2X	9.5	9.4	9.4	9.3	9.3
3X	9.2	9.2	9.1	9.1	9.0
4X	9.0	8.9	8.8	8.8	8.7
5X	8.7	8.6	8.5	8.4	8.3
6X	8.2	8.1	8.0	7.9	7.8
7X	7.7	7.5	7.4	7.3	7.2
8X	7.1	7.0	6.9	6.7	6.6
9X	6.5	5.6	2.6	1.7	1.3
10X	1.0				

Table B36

Speed Profile for M88 Towing GSRS

for HIMO Mid-East Study Area

Dry Condition

Primary Roads

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	10.0	10.0	10.0	10.0	10.0
8X	10.0	10.0	10.0	10.0	10.0
9X	10.0	10.0	10.0	10.0	10.0
10X	10.0				

Secondary Roads

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	10.0	10.0	10.0	10.0	10.0
8X	10.0	10.0	10.0	10.0	10.0
9X	10.0	10.0	10.0	10.0	10.0
10X	10.0				

Trails

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	10.0	10.0	10.0	10.0	10.0
8X	10.0	10.0	10.0	10.0	10.0
9X	9.9	9.9	9.9	9.8	9.8
10X	9.6				

Off Road

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	9.9
6X	9.9	9.9	9.8	9.8	9.7
7X	9.7	9.6	9.6	9.5	9.4
8X	9.3	9.2	9.0	8.9	8.8
9X	8.6	8.5	8.3	3.4	2.0
10X	1.5				

Wet Condition

Primary Roads

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	10.0	10.0	10.0	10.0	10.0
8X	10.0	10.0	10.0	10.0	10.0
9X	10.0	10.0	10.0	10.0	9.9
10X	9.9				

Secondary Roads

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	10.0	10.0	10.0	10.0	10.0
8X	10.0	10.0	10.0	10.0	10.0
9X	10.0	10.0	10.0	10.0	10.0
10X	10.0				

Trails

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	10.0	10.0	10.0	10.0	10.0
8X	10.0	10.0	10.0	9.9	9.9
9X	9.8	9.8	9.7	9.7	9.6
10X	9.5				

Off Road

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	9.9
5X	9.9	9.9	9.8	9.8	9.7
6X	9.6	9.5	9.4	9.4	9.3
7X	9.2	9.1	9.0	9.0	8.9
8X	8.8	8.6	8.5	8.4	8.3
9X	8.2	8.0	5.8	2.6	1.7
10X	1.3				

Sand Condition

Primary Roads

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	10.0	10.0	10.0	10.0	10.0
8X	10.0	10.0	10.0	10.0	10.0
9X	10.0	10.0	10.0	10.0	9.9
10X	9.9				

Secondary Roads

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	10.0
2X	10.0	10.0	10.0	10.0	10.0
3X	10.0	10.0	10.0	10.0	10.0
4X	10.0	10.0	10.0	10.0	10.0
5X	10.0	10.0	10.0	10.0	10.0
6X	10.0	10.0	10.0	10.0	10.0
7X	10.0	10.0	10.0	10.0	10.0
8X	10.0	10.0	10.0	10.0	10.0
9X	10.0	10.0	10.0	10.0	10.0
10X	10.0				

Trails

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	10.0	10.0	10.0
1X	10.0	10.0	10.0	10.0	9.9
2X	9.9	9.9	9.9	9.9	9.9
3X	9.8	9.8	9.7	9.7	9.6
4X	9.6	9.5	9.5	9.5	9.4
5X	9.4	9.3	9.3	9.3	9.2
6X	9.2	9.2	9.2	9.1	9.1
7X	9.1	9.0	9.0	8.9	8.9
8X	8.8	8.8	8.7	8.6	8.5
9X	8.4	8.2	4.0	2.2	1.5
10X	1.2				

Off Road

PERCENT TOTAL DISTANCE

	X=0	2	4	6	8
X	10.0	10.0	9.9	9.8	9.8
1X	9.7	9.7	9.6	9.5	9.4
2X	9.4	9.3	9.2	9.2	9.2
3X	9.1	9.1	9.0	9.0	8.9
4X	8.9	8.8	8.7	8.7	8.6
5X	8.5	8.5	8.4	8.3	8.2
6X	8.1	8.0	7.9	7.7	7.6
7X	7.5	7.4	7.3	7.2	7.0
8X	6.9	6.8	6.7	6.6	2.9
9X	1.8	1.3	1.0	0.9	0.8
10X	0.7				

Table B37

Percent of Distance NOGO on Trails and Percent of Area NOGO Off-Road for Dry Condition in HIMO West Germany Study Area

Vehicles	Off-Road: Insufficient Traction	Off-Road: Obstacle Interference and Traction	Off-Road: Combination of Following: Obstacles, Vegetation, Soil, Slope	Off-Road: Total NOGO
Individual Vehicle Performance				
M578 Light Recovery Vehicle	0	4.9	0.2	5.1
M113A1 Armored Personnel Carrier (APC)	0	7.1	0	7.1
M109A1, 155 mm, Self-Propelled Howitzer	0	0.3	0.2	0.5
M107, 175 mm, Self-Propelled Howitzer	0	2.1	0.2	2.3
M110E2, 8 in., Self-Propelled Howitzer	0	1.3	0.2	1.5
M88 Medium Recovery Vehicle	0	2.2	0.6	2.8
IFV/CFV Infantry/Cavalry Fighting Vehicle	0	2.1	0.2	2.3
GSRS, Ground Support Rocket System	0	2.8	0	2.8
M578/M88 Towing Performance				
M578 Towing M113A1	0	6.3	0.2	6.5
M578 Towing M107	0	5.0	0.2	5.2
M578 Towing M109A1	0	5.6	0.2	5.8
M578 Towing M110E2	0	5.7	0.2	5.9
M578 Towing IFV/CFV	0	5.2	0.2	5.4
M578 Towing GSRS	0	5.5	0.2	5.7
M88 Towing M107	0	3.4	0.6	4.0
M88 Towing M110E2	0	3.9	0.6	4.5
M88 Towing IFV/CFV	0	2.9	0.6	3.5
M88 Towing GSRS	0	4.2	0.6	4.8

Note: No NOGO's on trails.

Table B38

Percent of Distance NOGO on Trails and Percent of Area NOGO Off-Road for Wet Condition in HIMO West Germany Study Area

Vehicles	Off-Road: Insufficient Traction	Off-Road: Obstacle Interference and Traction	Off-Road: Combination of Following: Obstacles, Vegetation, Soil, Slope	Off-Road: Total NOGO
Individual Vehicle Performance				
M578 Light Recovery Vehicle	0	5.0	0.2	5.2
M113A1 Armored Personnel Carrier (APC)	0	7.3	0	7.3
M109A1, 155 mm, Self-Propelled Howitzer	0	1.1	0.2	1.3
M107, 175 mm, Self-Propelled Howitzer	0	2.6	0.2	2.8
M110E2, 8 in., Self-Propelled Howitzer	0	1.7	0.2	1.9
M88 Medium Recovery Vehicle	0	2.2	0.6	2.8
IFV/CFV Infantry/Cavalry Fighting Vehicle	0	5.3	0.2	5.5
GSRS, Ground Support Rocket System	0	5.1	0.0	5.1
M578/M88 Towing Performance				
M578 Towing M113A1	0	6.3	0.2	6.5
M578 Towing M107	0	5.5	0.4	5.9
M578 Towing M109A1	0	5.8	0.2	6.0
M578 Towing M110E2	0	6.3	0.4	6.7
M578 Towing IFV/CFV	0	5.8	0.2	6.0
M578 Towing GSRS	0	5.9	0.2	6.1
M88 Towing M107	0	3.9	0.6	4.5
M88 Towing M110E2	0	3.5	0.6	4.1
M88 Towing IFV/CFV	0	3.3	0.6	3.9
M88 Towing GSRS	0	4.2	0.6	4.8

Note: No NOGO's on trails.

Table B39

Percent of Distance NOGO on Trails and Percent of Area NOGO Off-Road for Snow Condition in HIMO West Germany Study Area

Vehicles	Trails		Off-Road			
	Insufficient Traction	Total NOGO	Insufficient Traction	Obstacle Interference & Traction	Combination of Following: Obstacle, Vegetation, Soil & Slope	Total NOGO
Individual Vehicle Performance						
M578 Light Recovery Vehicle	0	0	0	5.0	0.2	5.2
M113A1 Armored Personnel Carrier (APC)	0	0	0	7.3	0	7.3
M109A1, 155 mm, Self-Propelled Howitzer	0	0	0	2.5	0.2	2.7
M107, 175 mm, Self-Propelled Howitzer	0	0	0	3.2	0.2	3.4
M110E2, 8 in., Self-Propelled Howitzer	0	0	0	2.6	0.2	2.8
M88 Medium Recovery Vehicle	0	0	0	2.2	0.6	2.8
IFV/CFV Infantry/ Cavalry Fighting Vehicle	0	0	0	5.7	0.2	5.9
GSRS, Ground Support Rocket System	0	0	0	6.1	0.4	6.5
M578/M88 Towing Performance						
M578 Towing M113A1	0	0	0	6.3	0.2	6.5
M578 Towing M107	0.5	0.5	2.1	5.5	2.4	10.0
M578 Towing M109A1	0	0	0	5.7	0.7	6.4
M578 Towing M110E2	0.5	0.5	2.1	6.2	2.4	10.7
M578 Towing IFV/CFV	0	0	0	5.4	0.3	5.7
M578 Towing GSRS	0	0	0	5.8	0.7	6.5
M88 Towing M107	0	0	0	3.4	0.6	4.0
M88 Towing M110E2	0	0	0	3.6	0.6	4.2
M88 Towing IFV/CFV	0	0	0	3.6	0.6	4.2
M88 Towing GSRS	0	0	0	4.4	0.6	5.0

Table B40

Percent of Distance NOGO on Trails and Percent of Area NOGO Off-Road for Dry Condition in HIMO Mid-East Study Area

Vehicles	Off-Road: Insufficient Traction	Off-Road: Obstacle Interference and Traction	Off-Road: Combination of Following: Obstacles, Vegetation, Soil, Slope	Off-Road: Total NOGO
Individual Vehicle Performance				
M578 Light Recovery Vehicle	0	10.7	0	10.7
M113A1 Armored Personnel Carrier (APC)	0	9.4	0	9.4
M109A1, 155 mm, Self-Propelled Howitzer	0	0	0	0
M107, 175 mm, Self-Propelled Howitzer	0	1.3	0	1.3
M110E2, 8 in., Self-Propelled Howitzer	0	0.5	0	0.5
M88 Medium Recovery Vehicle	0	0.5	0	0.5
IFV/CFV Infantry/Cavalry Fighting Vehicle	0	1.3	0	1.3
GSRS, Ground Support Rocket System	0	1.3	0	1.3
M578/M88 Towing Performance				
M578 Towing M113A1	0	11.1	0	11.1
M578 Towing M107	0	11.5	0	11.5
M578 Towing M109A1	0	11.5	0	11.5
M578 Towing M110E2	0	11.5	0	11.5
M578 Towing IFV/CFV	0	11.3	0	11.3
M578 Towing GSRS	0	11.5	0	11.5
M88 Towing M107	0	5.9	0	5.9
M88 Towing M110E2	0	5.9	0	5.9
M88 Towing IFV/CFV	0	5.7	0	5.7
M88 Towing GSRS	0	5.7	0	5.7

NOTE: No NOGO's on trails.

Table B41

Percent of Distance NOGO on Trails and Percent of Area NOGO Off-Road for Wet Condition in HIMO Mid-East Study Area

Vehicles	Trails		Off-Road			
	Insufficient Traction	Total NOGO	Insufficient Traction	Obstacle Interference & Traction	Combination of Following: Obstacle, Vegetation, Soil & Slope	Total NOGO
Individual Vehicle Performance						
M578 Light Recovery Vehicle	0	0	0	10.7	0	10.7
M113A1 Armored Personnel Carrier (APC)	0	0	0	9.9	0	9.9
M109A1, 155 mm, Self-Propelled Howitzer	0	0	0	0.3	0	0.3
M107, 175 mm, Self-Propelled Howitzer	0	0	0	1.3	0	1.3
M110E2, 8 in., Self-Propelled Howitzer	0	0	0	0.5	0	0.5
M88 Medium Recovery Vehicle	0	0	0	0.5	0	0.5
IFV/CFV Infantry/ Cavalry Fighting Vehicle	0	0	0	6.5	0	6.5
GSRS, Ground Support Rocket System	0	0	0	6.5	0	6.5
M578/M88 Towing Performance						
M578 Towing M113A1	0	0	0	11.3	0	11.3
M578 Towing M107	0.1	0.1	0	14.9	0.2	15.1
M578 Towing M109A1	0.1	0.1	0	14.1	0	14.1
M578 Towing M110E2	0.1	0.1	0	14.9	0.2	15.1
M578 Towing IFV/CFV	0	0	0	14.2	0	14.2
M578 Towing GSRS	0.1	0.1	0	13.9	0	13.9
M88 Towing M107	0	0	0	6.4	0	6.4
M88 Towing M110E2	0	0	0	6.4	0	6.4
M88 Towing IFV/CFV	0	0	0	6.4	0	6.4
M88 Towing GSRS	0	0	0	6.4	0	6.4

Table B42

Percent of Distance NOGO on Trails and Percent of Area NOGO Off-Road for Sand Condition in HIMO Mid-East Study Area

Vehicles	Trails		Off-Road			
	Insufficient Traction	Total NOGO	Insufficient Traction	Obstacle Interference & Traction	Combination of Following: Obstacle, Vegetation, Soil & Slope	Total NOGO
Individual Vehicle Performance						
M578 Light Recovery Vehicle	0	0	0	10.7	0	10.7
M113A1 Armored Personnel Carrier (APC)	0	0	0	9.4	0	9.4
M109A1, 155 mm, Self-Propelled Howitzer	0	0	0	0	0	0
M107, 175 mm, Self-Propelled Howitzer	0	0	0	1.3	0	1.3
M110E2, 8 in., Self-Propelled Howitzer	0	0	0	0.5	0	0.5
M88 Medium Recovery Vehicle	0	0	0	0.5	0	0.5
IFV/CFV Infantry/ Cavalry Fighting Vehicle	0	0	0	1.3	0	1.3
GSRS, Ground Support Rocket System	0	0	0	1.3	0	1.3
M578/M88 Towing Performance						
M578 Towing M113A1	0.1	0.1	0	14.9	0	14.9
M578 Towing M107	12.6	12.6	11.6	13.1	0.4	25.1
M578 Towing M109A1	10.6	10.6	10.2	12.4	0.9	23.5
M578 Towing M110E2	12.6	12.6	11.6	13.1	0.4	25.1
M578 Towing IFV/CFV	8.2	8.2	7.3	14.4	2.5	24.2
M578 Towing GSRS	10.6	10.6	9.0	15.7	0.6	25.3
M88 Towing M107	8.2	8.2	6.9	6.2	1.9	15.0
M88 Towing M110E2	8.2	8.2	6.9	6.2	1.9	15.0
M88 Towing IFV/CFV	1.8	1.8	0	5.9	2.3	8.2
M88 Towing GSRS	7.2	7.2	0.8	6.2	6.7	13.7

Table B43

Performance Data for Study Vehicles Crossing Linear Features (Water Crossing) in the HIMO West Germany Study Area

Vehicles	Hours Per Mile		
	Dry	Wet	Snow
Individual Vehicle Performance			
M578, Light Recovery Vehicle	0.0443	0.049	0.0497
M113A1, Armored Personnel Carrier (APC)	0.0592	0.0669	0.0641
M109A1, 155 mm, Self-Propelled Howitzer	0.0404	0.0432	0.0439
M107, 175 mm, Self-Propelled Howitzer	0.0437	0.0484	0.0491
M110E2, 8 in., Self-Propelled Howitzer	0.0437	0.0484	0.0491
M88, Medium Recovery Vehicle	0.0362	0.0393	0.0374
IFV/CFV Infantry/Calvary Fighting Vehicle	0.0407	0.0404	0.0413
GSRS, Ground Support Rocket System	0.0362	0.0422	0.0380
M578/M88 Towing Performance			
M578 Towing M113A1	0.0459	0.0504	0.0516
M578 Towing M107	0.0507	0.0546	0.0571
M578 Towing M109A1	0.0491	0.0532	0.0553
M578 Towing M110E2	0.0507	0.0546	0.0571
M578 Towing IFV/CFV	0.0491	0.0532	0.0553
M578 Towing GSRS	0.0491	0.0532	0.0553
M88 Towing M107	0.0403	0.0427	0.0416
M88 Towing M110E2	0.0403	0.0427	0.0416
M88 Towing IFV/CFV	0.0393	0.0419	0.0406
M88 Towing GSRS	0.0393	0.0419	0.0406

Table B44

Performance Data for Study Vehicles Crossing Linear Features (Water Crossing) in the HIMO Mid-East Study Area

Vehicles	Hours Per Mile		
	Dry	Wet	Sand
Individual Vehicle Performace			
M578 Light Recovery Vehicle	0.0328	0.047	0.0328
M113A1 Armored Personnel Carrier (APC)	0.0286	0.0296	0.0286
M109A1, 155 mm, Self-Propelled Howitzer	0.0202	0.0275	0.0202
M107, 175 mm, Self-Propelled Howitzer	0.0304	0.0376	0.0304
M110E2, 8 in., Self-Propelled Howitzer	0.0291	0.0370	0.0291
M88 Medium Recovery Vehicle	0.0211	0.0206	0.0211
IFV/CFV Infantry/Cavalry Fighting Vehicle	0.0191	0.0194	0.0191
GSRS Ground Support Rocket System	0.0211	0.0308	0.0211
M578/M88 Towing Performance			
M578 Towing M113A1	0.0334	0.0419	0.0334
M578 Towing M107	0.0353	0.0455	0.0353
M578 Towing M109A1	0.0346	0.0443	0.0346
M578 Towing M110E2	0.0353	0.0455	0.0353
M578 Towing IFV/CFV	0.0353	0.0443	0.0346
M578 Towing GSRS	0.0353	0.0443	0.0346
M88 Towing M107	0.0313	0.0306	0.0313
M88 Towing M110E2	0.0313	0.0306	0.0313
M88 Towing IFV/CFV	0.0288	0.0256	0.0288
M88 Towing GSRS	0.0288	0.0256	0.0288

APPENDIX C: COMPUTATION OF MOBILITY RATING SPEED FOR TACTICAL MOBILITY LEVELS

1. The equation for computing mobility rating speed is given as follows:

$$V_w = \frac{100}{\frac{P}{V_C} + PT_X + \frac{100 - P}{V_R}} \qquad (1)$$

where:

V_w = mobility rating speed, mph, for a vehicle performing a mission for a specific area and condition

P = the percentage of expected off-road operating distance

V_C = the speed from the off-road profile, mph, corresponding to C

C = the percentage of the off-road terrain that should be negotiable

T_X = the time spent crossing linear features for each mile of off-road terrain traversed, hr/mi

V_R = the speed from the on-road speed profile, mph, corresponding to R

R = the percentage of the road and trail network that should be negotiable

2. The speed from the on-road profile, V_R, is not directly available from this study, but can be computed using the speeds from the profiles of the primary and secondary roads and trails as follows:

$$V_R = \frac{100 - P}{\frac{P_P}{V_{PP}} + \frac{P_S}{V_{SP}} + \frac{P_T}{V_{TP}}} \qquad (2)$$

where:

P_P, P_S, P_T = percentage of the composite on-road and off-road network that are primary roads, secondary roads, and trails, respectively

V_{PP}, V_{SP}, V_{TP} = the speeds from the primary road, secondary road, and trail speed profiles, respectively, mph, that correspond to R

3. Equations 1 and 2 can be combined to yield the following:

$$V_W = \frac{100}{\frac{P}{V_C} + PT_X + \frac{P_P}{V_{PP}} + \frac{P_S}{V_{SP}} + \frac{P_T}{V_{TP}}} \qquad (3)$$

4. For this report, values for P , P_P , P_S , and P_T in the HIMO West Germany study area can be found for each tactical mobility level in Table 5, main text. Values for V_C , V_{PP} , V_{SP} , and V_{TP} are available from the speed profiles for the study vehicles given in Tables B1-B36. Values for T_X for each vehicle are available in Tables B43 and B44.

In accordance with letter from DAEN-RDC, DAEN-ASI dated 22 July 1977, Subject: Facsimile Catalog Cards for Laboratory Technical Publications, a facsimile catalog card in Library of Congress MARC format is reproduced below.

Randolph, Donald D
Mobility performance of the M578 Light Recovery Vehicle and other selected vehicles / by Donald D. Randolph. Vicksburg, Miss. : U. S. Waterways Experiment Station ; Springfield, Va. : available from National Technical Information Service, 1979.
24, [62] p. : ill. ; 27 cm. (Miscellaneous paper - U. S. Army Engineer Waterways Experiment Station ; GL-79-6)
Prepared for U. S. Army Training and Doctrine Command, Fort Monroe, Va.
References: p. 24.

1. Military vehicles. 2. Mission performance. 3. Off-road mobility. 4. On-road mobility. 5. Vehicle performance. I. United States. Army Training and Doctrine Command. II. Series: United States. Waterways Experiment Station. Vicksburg, Miss. Miscellaneous paper ; GL-79-6.
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