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Report Number 129 -

COMBAT HISTORY ANALYSIS STUDY EFFORT (CHASE)

DATA ENHANCEMENT STUDY (CDES)

Vol V: Tasks 6, 7, 8, and 9

Final Report
31 January 1986

Prepared for the
US Army Concepts Analysis Agency
Bethesda, Maryland

Contract No. MDA903-85-C-0252

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Report Number 129

COMBAT HISTORY ANALYSIS STUDY EFFORT (CHASE)

DATA ENHANCEMENT STUDY (CDES)
Vol. V: Tasks 6, 7, 8, and 9

Final Report

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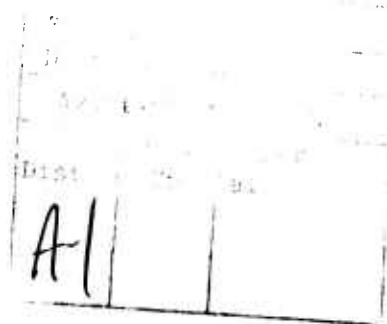
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Task 6: Clarification of the Defender Posture Description

The purpose of this task is to identify the engagements in which the defender's posture consists of two of the five basic posture levels used in the data base (i.e., fortified, prepared, hasty, delay, and withdrawal) and to indicate whether the posture levels are a combination or an average. For a definition of posture and its five basic levels, see pages 7-9 of Volume II of the original data base.

1. A combination defensive posture is one in which two fully developed posture levels occur in two or more sectors across the front of a defensive position or in two or more lines of defense through the depth of a defensive position. A combination defensive posture may also occur, frequently in engagements of prolonged duration, when two fully developed posture levels occur at different times during the course of the engagement. An "x" under column heading 1 indicates that the posture is a combination, and an "x" under the column heading Front, Width, or Time shows whether the combination posture is over the front or throughout the depth of a defensive position or over time.

2. An average defensive posture is one which has features of two types of posture but does not contain all the characteristics inherent to a single posture type. An "x" under column heading 2 indicates that the posture is an average. It has been determined that in average posture descriptors, the two levels of posture are generally uniformly mixed. Therefore, average posture descriptors are not enhanced by entries under the column headings for across the front, through depth, or over time.

Review of posture descriptors for this task has resulted in the reevaluation of postures for six engagements. They are:

White Mountain, #2, changes from PD to H/PD.

Dunbar, #27, changes from H/PD to HD.

Solferino, #168, changes from H/PD to HD.

Sadowa (Koenigraetz), #169, changes from H/PD to HD.

Custoza II, #170, changes from H/PD to HD.

Adabiya, #582, changes from H/PD to WDL.

Users of the data base should make the above changes in Table 2 of the original data base.

Explanations of the column headings for the Task 6 tables are as follow.

POST D1/POST D2 are the postures entered in Table 2 of the original data base.

Descriptor indicates either a combination or average of two posture levels, column heading 1 being the former and column heading 2 the latter as described above.

Defensive Posture Changes are the types of changes in a combination posture descriptor, either Front, Depth, or Time, as described above.

DEFENDER POSTURE CLARIFICATION

White Mountain, #2

POST D1/ POST D2	Descriptor		Defensive Posture Changes		
	1	2	Front	Depth	Time
H/PD	x		x		

Newbury II, #24

H/PD	x		x		
------	---	--	---	--	--

Worcester, #28

H/PD	x		x		
------	---	--	---	--	--

St. Antoine, #29

H/PD	x		x	x	
------	---	--	---	---	--

Vienna, #32

H/PD	x		x	x	
------	---	--	---	---	--

Enzheim, #36

H/PD	x		x		
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DEFENDER POSTURE CLARIFICATION

Aughrim, #44

POST D1/ POST D2	Descriptor		Defensive Posture Changes		
	1	2	Front	Depth	Time
H/PD	x		x	x	

Steenkerke, #45

H/PD	x		x		
------	---	--	---	--	--

Neerwinden (Landen), #46

H/PD	x		x		
------	---	--	---	--	--

Ramillies, #51

H/PD	x		x		
------	---	--	---	--	--

Fontenoy, #58

H/PD	x		x		
------	---	--	---	--	--

Bergen, #74

H/PD	x		x		
------	---	--	---	--	--

DEFENDER POSTURE CLARIFICATION

Bunker Hill, #82

POST D1/ POST D2	Descriptor		Defensive Posture Changes		
	1	2	Front	Depth	Time
H/PD	x		x		

Eutaw Springs, #95

H/PD	x			x	
------	---	--	--	---	--

Arcola, #106

H/PD		x			
------	--	---	--	--	--

Rivoli, #107

H/PD	x		x		
------	---	--	---	--	--

Pyramids, #108

H/PD	x		x		
------	---	--	---	--	--

Zurich, #111

P/FD	x		x	x	
------	---	--	---	---	--

DEFENDER POSTURE CLARIFICATION

Zurich III, #113

POST D1/ POST D2	Descriptor		Defensive Posture Changes		
	1	2	Front	Depth	Time
P/FD	x		x	x	

Bussaco, #129

H/PD		x			
------	--	---	--	--	--

Borodino, #134

H/PD	x		x		
------	---	--	---	--	--

Bautzen, #136

H/PD	x		x	x	x
------	---	--	---	---	---

Dresden, #137

H/PD	x		x	x	
------	---	--	---	---	--

La Rothiere, #140

H/PD		x			
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DEFENDER POSTURE CLARIFICATION

Waterloo, #145

POST D1/ POST D2	Descriptor		Defensive Posture Changes		
	1	2	Front	Depth	Time
H/PD	x		x		

The Alma, #165

H/PD	x		x		
------	---	--	---	--	--

Front Royal, #179

H/WDL	x				x
-------	---	--	--	--	---

Chattanooga, #201

P/FD	x			x	x
------	---	--	--	---	---

Spotsylvania, #203

H/PD	x		x		x
------	---	--	---	--	---

Peachtree Creek, #207

H/PD	x		x		
------	---	--	---	--	--

DEFENDER POSTURE CLARIFICATION

Opequon Creek (Third Winchester), #211

POST D1/ POST D2	Descriptor		Defensive Posture Changes		
	1	2	Front	Depth	Time
H/PD	x		x	x	x

Dinwiddie Court House & White Oak Road, #216

H/PD	x		x		
------	---	--	---	--	--

Spichern, #222

H/PD		x			
------	--	---	--	--	--

Majuba Hill, #232

H/PD		x			
------	--	---	--	--	--

Telissu, #243

H/PD		x			
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Liaoyang, #244

P/FD	x			x	x
------	---	--	--	---	---

DEFENDER POSTURE CLARIFICATION

The Sha-Ho, #245

POST D1/ POST D2	Descriptor		Defensive Posture Changes		
	1	2	Front	Depth	Time
H/PD	x			x	

Mukden, #247

P/FD	x		x		
------	---	--	---	--	--

Lule' Burgas, #249

H/PD	x		x		
------	---	--	---	--	--

Prelip, #250

P/FD		x			
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Monastir, #251

H/PD	x		x		
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The Nieman, #254

H/PD		x			
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DEFENDER POSTURE CLARIFICATION

Hill 52/Shachaofeng, #257

POST D1/ POST D2	Descriptor		Defensive Posture Changes		
	1	2	Front	Depth	Time
H/PD		x			

Alsace-Lorraine I, #262

Del/FD	x				x
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Alsace-Lorraine II, #263

H/FD	x				x
------	---	--	--	--	---

Le Cateau, #267

HD/WDL	x				x
--------	---	--	--	--	---

The Aisne, #277

H/PD		x			
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Ctesiphon, #303

F/PD	x		x	x	
------	---	--	---	---	--

DEFENDER POSTURE CLARIFICATION

Asiago, #313

POST D1/ POST D2	Descriptor		Defensive Posture Changes		
	1	2	Front	Depth	Time
H/PD	x			x	

Second Somme, Phase II (Somme-Montdidier), #331

F/PD		x			
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Belleau Wood, #336

H/PD		x			
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Aisne-Marne II, #359

FD/Del	x				x
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St. Mihiel, #364

FD/Del	x		x		x
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Lahayville-Bois de Lamarche, #365

FD/Del		x			
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DEFENDER POSTURE CLARIFICATION

Meuse-Argonne, Phase III, #381

POST D1/ POST D2	Descriptor		Defensive Posture Changes		
	1	2	Front	Depth	Time
PD/Del		x			

Remilly-Aillicourt, #382

PD/Del		x			
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Hill 252-Pont Maugis, #383

PD/Del		x			
--------	--	---	--	--	--

Alam Halfa, #386

P/FD	x		x	x	
------	---	--	---	---	--

Amphitheater, #394

H/PD		x			
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Port of Salerno, #395

H/PD		x			
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DEFENDER POSTURE CLARIFICATION

Sele-Calore Corridor, #396

POST D1/ POST D2	Descriptor		Defensive Posture Changes		
	1	2	Front	Depth	Time
H/PD		x			

Monte Camino II, #418

H/PD		x			
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Factory Counterattack, #430

FD/PD		x			
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Bowling Alley, #431

FD/PD	x			x	
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Moletta River II, #432

FD/PD	x			x	
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Valmontone, #455

H/PD	x		x	x	
------	---	--	---	---	--

DEFENDER POSTURE CLARIFICATION

Seille-Nied, #470

POST D1/ POST D2	Descriptor		Defensive Posture Changes		
	1	2	Front	Depth	Time
FD/Delay	x			x	x

Morhange, #472

PD/Delay	x			x	x
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Morhange-Faulquemont, #473

FD/Delay	x			x	x
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Bourgaltroff, #474

PD/Delay	x			x	x
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Sarre-St. Avoird, #475

PD/Delay	x			x	x
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Burbach-Durstel, #478

PD/Delay	x			x	x
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DEFENDER POSTURE CLARIFICATION

Durstel-Faerbersviller, #479

POST D1/ POST D2	Descriptor		Defensive Posture Changes		
	1	2	Front	Depth	Time
PD/Delay	x			x	x

St. Vith, #484

H/PD	x		x		
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Bastogne, #485

HD/Del	x			x	x
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Jitra, #487

H/PD		x			
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The Defense of Moscow, #489

P/FD	x		x	x	x
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Soviet Counteroffensive at Moscow, #490

H/PD	x		x	x	x
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DEFENDER POSTURE CLARIFICATION

The Pogoreloye Gorodishche Offensive, #491

POST D1/ POST D2	Descriptor		Defensive Posture Changes		
	1	2	Front	Depth	Time
P/FD	x			x	x

The Oboyan-Kursk Axis, Phase II, #495

P/FD	x			x	x
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The Oboyan-Kursk Axis, Phase III, #496

P/FD	x			x	x
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Kursk Counteroffensive (Southern Sector), #498

P/FD	x			x	x
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Korsun-Shechenkovskiy, #501

P/FD	x		x	x	x
------	---	--	---	---	---

Brody, Phase I, #506

P/FD	x			x	
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DEFENDER POSTURE CLARIFICATION

Shuri Envelopment, Phase II, #532

POST D1/ POST D2	Descriptor		Defensive Posture Changes		
	1	2	Front	Depth	Time
FD/Del	x		x		

Shuri Envelopment, Phase III, #533

FD/Del	x		x		
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Advance to the Yuza-Dake/Yaeju-Dake Escarpment, #546

P/FD		x			
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Initial Attack on the Yuza-Dake/Yaeju-Dake Escarpment, #547

P/FD		x			
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Capture of the Yuza-Dake/Yaeju-Dake Escarpment, #548

P/FD		x			
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Tilfit-Zababida, #552

H/PD		x			
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DEFENDER POSTURE CLARIFICATION

Nablus, #553

POST D1/ POST D2	Descriptor		Defensive Posture Changes		
	1	2	Front	Depth	Time
H/PD	x				x

Rafah, #554

P/FD		x			
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Bir Lahfan, #555

H/PD		x			
------	--	---	--	--	--

El Arish, #557

P/FD		x			
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Jebel Libni, #558

PD/Del	x		x		x
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Gaza Strip, #559

P/FD	x		x	x	
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DEFENDER POSTURE CLARIFICATION

Bir Hassna-Bir Thamada, #560

POST D1/ POST D2	Descriptor		Defensive Posture Changes		
	1	2	Front	Depth	Time
PD/Del	x		x		x

Suez Canal Assault-North, #569

P/FD	x		x		
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Suez Canal Assault-South, #570

P/FD	x		x		
------	---	--	---	--	--

Second Army Buildup, #571

H/PD		x			
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Third Army Buildup, #572

H/PD		x			
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Egyptian Offensive-North, #574

H/PD		x			
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DEFENDER POSTURE CLARIFICATION

Egyptian Offensive-South, #575

POST D1/ POST D2	Descriptor		Defensive Posture Changes		
	1	2	Front	Depth	Time
H/PD		x			

Deversoir (Chinese Farm I), #576

H/PD		x			
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Deversoir (Chinese Farm II), #577

H/PD		x			
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Deversoir West, #578

H/PD		x			
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Ismailia, #579

H/PD		x			
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Jebel Geneifa, #580

H/PD		x			
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DEFENDER POSTURE CLARIFICATION

Suez, #584

POST D1/ POST D2	Descriptor		Defensive Posture Changes		
	1	2	Front	Depth	Time
H/PD		x			

Ahmadiyeh, #586

F/PD		x			
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Rafid, #587

F/PD		x			
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Mount Hermonit, #592

F/PD		x			
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Task 7: Identification of the Quality of Strength and Loss Data

The purpose of this task is to provide values that indicate the adjudged relative levels of reliability for strength and casualty data. These values, called data reliability estimates, are intended to be compatible with use in statistical analyses.

The data reliability estimates shown on the Task 7 tables represent the maximum ranges of possible values for strength or casualty data expressed in whole numbers as percentages of the strength or casualty data entered in the "Strength" or "Casualties" columns of the Task 2 tables in Volume III of this study. For example, the data reliability estimate +25/-15 means that the range of possible values for a data entry could possibly be as high as 25% greater than, or as low as 15% less than, the reported strength or casualty value. In a case where the reported strength or casualty value is 100 and the data reliability estimate is +25/-15 (i.e., 25% greater than and 15% less than 100), the range of possible values is from 125 to 85. Or, if the reported strength or casualty value is 50 and the data reliability estimate +25/-15 (i.e., 25% greater than and 15% less than 50), the range is from 63 to 43.

In general, data reliability estimates are calculated in two ways. The first is used most often in cases when only one strength or casualty data value is available for use in the data base. In these cases, the data reliability estimate is formulated strictly on the analyst's judgment. In making an estimate, the analyst considers such factors as the methodology used for the derivation of data, the quality of the source of the data, or possible bias on the part of the author of a data source.

If more than one value is available, then the most reliable values with the greatest differences from the data base number are used to calculate the data reliability estimates. The differences between the data base number and the values of greatest departure from it, computed as percentages of the data base value, are the data reliability estimates. For example, Confederate (defender) casualties at the Battle of Brandy Station (#198) are given as 500 in the data base (Dupuy and Dupuy, Encyclopedia, p. 885). B&L, III:263, gives 485 as the Confederate casualties and Freeman, III:13, reports 523. The differences between these values and the data base value are 15 and 23. The numbers 15 and 23 are computed as percentages of 500 to give data reliability estimates of -3.0 and +4.6. The equations used are:

15/500 as $X/100$, so $X = 3.0$, where
 $X = \text{"Minimum" data reliability estimate.}$

23/500 as $Y/100$, so $Y = 4.6$, where
 $Y = \text{"Maximum" data reliability estimate.}$

The data reliability estimate for defender casualties at Brandy Station is +5/-3 (4.6 being rounded off to the nearest whole number), i.e., no more than 523 (or 525) and no less than 485 with 500 as the value entered in the data base.

The defender strength in the same battle is reported in the data base as 10,000 (Dupuy and Dupuy, Encyclopedia, p. 885). B&L, III:261, reports 10,292 for defender strength. The number 292 is computed as a percentage of 10,000 to give a data reliability estimate of +2.92.

292/10,000 as $Z/100$, so $Z = 2.92$, where
 $Z = \text{"Maximum" data reliability estimate.}$

In this example, the data base value is considered the minimum possible value, so the data reliability estimate for defender strength at Brandy Station is shown as +3 (2.92 being rounded off to the nearest whole number), i.e., no more than 10,292 (or 10,300) and no less than 10,000, the value entered in the data base.

Date reliability estimates are entered for strength and casualty data under column headings Strength and Casualties on the Task 7 tables. The letters A and D in the left-hand column of the tables refer to attacker and defender.

Nieuport, #1

Strength		Casualties
A:	-5	-25
D:	+33/-3	+20

White Mountain, #2

Strength		Casualties
A:	-50	+10/-10
D:	+29	+20

Wimpfen, #3

Strength		Casualties
A:	-10	-90
D:	-25	+3

Dessau Bridge, #4

Strength		Casualties
A:	+29	+33
D:	+25	+20

Lutter, #5

Strength		Casualties
A:	+6	+25
D:	-25	+43/-14

Breitenfeld I, #6

Strength		Casualties
A:	+6	-12
D:	-5	-18

DATA RELIABILITY ESTIMATES

The Lech, #7

	Strength	Casualties
A:	+36/-24	+100
D:	-35	+33

Alte Veste, #8

	Strength	Casualties
A:	+9	-50
D:	-25	-50

Luetzen, #9

	Strength	Casualties
A:	+5/-5	+100
D:	+15	+100

Noerdlingen I, #10

	Strength	Casualties
A:	+10/-10	+75
D:	-6	+10/-10

Wittstock, #11

	Strength	Casualties
A:	-26	-53
D:	-30	-72

Breitenfeld II, #12

	Strength	Casualties
A:	-20	-20
D:	-13	-33

DATA RELIABILITY ESTIMATES

Rocroi, #13

	Strength	Casualties
A:	-13	-100
D:	-4	-16

Tuttlingen, #14

	Strength	Casualties
A:	-9	-50
D:	+33	+57

Freiburg, #15

	Strength	Casualties
A:	+5	-25
D:	+31/-6	+125

Jankau, #16

	Strength	Casualties
A:	+7	-6
D:	+7	+100

Mergentheim, #17

	Strength	Casualties
A:	+30	-57
D:	-27	+57/-57

Allerheim (Noerdlingen II), #18

	Strength	Casualties
A:	+56/-6	-33
D:	+25/-6	-17

DATA RELIABILITY ESTIMATES

Lens, #19

	Strength	Casualties
A:	+14	-63
D:	+10/-10	+20/-20

Edgehill, #20

	Strength	Casualties
A:	+37-6	+60
D:	+2/-13	-60

Marston Moor, #21

	Strength	Casualties
A:	-26	+10/-10
D:	+3	-6

Tippermuir, #22

	Strength	Casualties
A:	+97-36	-33
D:	+23	+200

Kilsyth, #23

	Strength	Casualties
A:	-8	+200
D:	-10	-2

Newbury II, #24

	Strength	Casualties
A:	-14	+50
D:	-10	+50

DATA RELIABILITY ESTIMATES

Naseby, #25

	Strength	Casualties
A:	+13	+17
D:	+3	+10/-10

Preston, #26

	Strength	Casualties
A:	-6	+100
D:	+14/-20	+60

Dunbar, #27

	Strength	Casualties
A:	-5	+200/-33
D:	+18/-9	-8

Worcester, #28

	Strength	Casualties
A:	+7	-300
D:	-10	-10

St. Antoine, #29

	Strength	Casualties
A:	-10	-50
D:	+10/-10	+5/-5

The Dunes, #30

	Strength	Casualties
A:	-13	-50
D:	+17	-29

DATA RELIABILITY ESTIMATES

The Raab, #31

	Strength	Casualties
A:	-17	+20
D:	-17	+10

Vienna, #32

	Strength	Casualties
A:	+5/-5	-60
D:	+29	+25/-50

Chocim II, #33

	Strength	Casualties
A:	-20	+100
D:	-63	+25/-25

Sinsheim, #34

	Strength	Casualties
A:	-11	-27
D:	+20	+4/-20

Senef, #35

	Strength	Casualties
A:	-10	-30
D:	-7	+43

Enzheim, #36

	Strength	Casualties
A:	+5/-5	-29
D:	+20	+60

DATA RELIABILITY ESTIMATES

Turckheim, #37

	Strength	Casualties
A:	-9	+9
D:	+67	-6

Fehrbellin, #38

	Strength	Casualties
A:	-7	+10/-10
D:	+72	-20

Sedgemoor #38

	Strength	Casualties
A:	-8	-13
D:	-17	+33

Killiecrankie, #40

	Strength	Casualties
A:	+114	-33
D:	+17	+84

Walcourt, #41

	Strength	Casualties
A:	-8	-70
D:	-14	+131/-28

Fleurus, #42

	Strength	Casualties
A:	-20	+20/-10
D:	-21	-37

DATA RELIABILITY ESTIMATES

The Boyne, #43

Strength		Casualties
A:	+3	+100
D:	+2	+7

Aughrim, #44

Strength		Casualties
A:	-5	+11/-19
D:	-44	+36

Steenkerke, #45

Strength		Casualties
A:	+11	+7
D:	+5	-1

Neerwinden (Landen), #46

Strength		Casualties
A:	-5	-11
D:	-5	+29/-25

Marsaglia, #47

Strength		Casualties
A:	-5	-33
D:	-6	-50

Zenta, #48

Strength		Casualties
A:	-10	-5
D:	-20	-33

DATA RELIABILITY ESTIMATES

Poltava, #49

Strength		Casualties
A:	+21/-7	+25
D:	+33/-33	+280

Blenheim, #50

Strength		Casualties
A:	+12/-4	+1/-15
D:	+13/-7	-12

Ramillies, #51

Strength		Casualties
A:	-3	+38
D:	+3	-32

Oudenarde, #52

Strength		Casualties
A:	+13	+50/-24
D:	-6	+33/-7

Malplaquet, #53

Strength		Casualties
A:	-17	+4/-15
D:	+19	+17

Peterwardein, #54

Strength		Casualties
A:	-5	-33
D:	+67	+233

DATA RELIABILITY ESTIMATES

Mollwitz, #55

Strength		Casualties
A:	-13	-1
D:	-2	-5

Chotusitz, #56

Strength		Casualties
A:	-3	-1
D:	+14	+4

Dettingen, #57

Strength		Casualties
A:	+6	-4
D:	+123	+20

Fontenoy, #58

Strength		Casualties
A:	+6	-42
D:	+16	+14

Hohenfriedberg, #59

Strength		Casualties
A:	+40	+1
D:	+14	+15

Sohr, #60

Strength		Casualties
A:	-3	+3
D:	-7	+1

DATA RELIABILITY ESTIMATES

Kesselsdorf, #61

Strength		Casualties
A:	+13	+2
D:	+12	+58

Prestonpens, #62

Strength		Casualties
A:	+4	+5
D:	+5	+6

Culloden, #63

Strength		Casualties
A:	+11/-7	-19
D:	+11	-3

Lobositz, #64

Strength		Casualties
A:	+3	+17
D:	-4	+4

Prague, #65

Strength		Casualties
A:	-2	+1
D:	-2	+2

Plassey, #66

Strength		Casualties
A:	+6	+20
D:	+1/-3	+14

DATA RELIABILITY ESTIMATES

Kolin, #67

Strength		Casualties
A:	+3	+2
D:	+23	+56

Hastenbeck, #68

Strength		Casualties
A:	-5/-5	-7
D:	-5/-5	-6

Rosbach, #69

Strength		Casualties
A:	-2	-17
D:	-9	+9

Leuthen, #70

Strength		Casualties
A:	+6	-47
D:	+23	+23

Crefeld, #71

Strength		Casualties
A:	+3	-14
D:	+6	+39

Zorndorf, #72

Strength		Casualties
A:	-8	-2
D:	+20	+14

DATA RELIABILITY ESTIMATES

Hochkirch, #73

Strength		Casualties
A:	-19	+2
D:	+35	+13

Bergen, #74

Strength		Casualties
A:	+13	-40
D:	+20	-20

Minden, #75

Strength		Casualties
A:	-16	+5
D:	-13	+1/-1

Kunersdorf, #76

Strength		Casualties
A:	-6	+8
D:	+18	+5

Plains of Abraham (Quebec), #77

Strength		Casualties
A:	+11/-11	-20
D:	+1	-3

Maxen, #78

Strength		Casualties
A:	+11	-70
D:	-11	+30

DATA RELIABILITY ESTIMATES

Warburg, #79

Strength		Casualties
A:	+26	-5
D:	+26	+35

Liegnitz, #80

Strength		Casualties
A:	-20	+42
D:	-7	-6

Torgau, #81

Strength		Casualties
A:	+14	+19
D:	+25	-2

Bunker Hill, #82

Strength		Casualties
A:	-9	+9
D:	-6	-8

Quebec, #83

Strength		Casualties
A:	-27	+13/-2
D:	+10/-10	+5/-5

White Plains, #84

Strength		Casualties
A:	-10	-23
D:	+12	+67

DATA RELIABILITY ESTIMATES

Trenton, #85

Strength		Casualties
A:	+5/-5	-50
D:	-21	-6

Princeton, #86

Strength		Casualties
A:	-6	+9
D:	-42	+27

Freeman's Farm, #87

Strength		Casualties
A:	-14	+8
D:	+20/-20	+5/-5

Germantown, #88

Strength		Casualties
A:	-2	-2
D:	-11	-3

Bemis Heights, #89

Strength		Casualties
A:	-20	+10/-10
D:	+10/-10	+15

Monmouth Court House, #90

Strength		Casualties
A:	+10/-10	+5/-5
D:	+27	+5/-5

DATA RELIABILITY ESTIMATES

Camden, #91

Strength		Casualties
A:	+7	+5/-5
D:	+31	+42

Cowpens, #92

Strength		Casualties
A:	-10	-13
D:	-32	+5/-5

Guilford Court House, #93

Strength		Casualties
A:	-16	+22
D:	-3	+20

Hobkirk's Hill, #94

Strength		Casualties
A:	+5/-5	+5/-5
D:	-10	+5/-5

Eutaw Springs, #95

Strength		Casualties
A:	+11	-6
D:	-10	+25/-24

Valmy, #96

Strength		Casualties
A:	+3	-49
D:	+16	-25

DATA RELIABILITY ESTIMATES

Jemappes, #97

	Strength	Casualties
A:	+13	-33
D:	+8	-40

Neerwinden, #98

	Strength	Casualties
A:	-9	-10
D:	-7	+13

Hondschoote, #99

	Strength	Casualties
A:	-29	-33
D:	+23	-30

Wattignies, #100

	Strength	Casualties
A:	+16	+78
D:	+13	+67

Fleurus, #101

	Strength	Casualties
A:	+13	+20/-43
D:	+11	-75

Lodi, #102

	Strength	Casualties
A:	+18	+122
D:	+5/-5	+10

DATA RELIABILITY ESTIMATES

Castiglione, #103

Strength		Casualties
A:	+16	-26
D:	-5	+5/-5

Neresheim #104

Strength		Casualties
A:	+20	-47
D:	+11	-20

Wuerzburg, #105

Strength		Casualties
A:	+5/-5	+5/-5
D:	+5/-5	+5/-5

Arcola, #106

Strength		Casualties
A:	+4	+3
D:	-13	-11

Rivoli, #107

Strength		Casualties
A:	-19	-26
D:	-2	-56

Pyramids, #108

Strength		Casualties
A:	-20	-53
D:	+186	-60

DATA RELIABILITY ESTIMATES

Stockach I, #109

	Strength	Casualties
A:	+5/-8	+11/-19
D:	+45/-8	-33

Mount Tabor, #110

	Strength	Casualties
A:	-26	+10/-10
D:	-11	+66

Zurich I, #111

	Strength	Casualties
A:	+38	+1/-6
D:	+80	+8

Novi, #112

	Strength	Casualties
A:	+30	-3
D:	+3	-39

Zurich III, #113

	Strength	Casualties
A:	-4	+5/-5
D:	+30	+5/-5

Moeskirch, #114

	Strength	Casualties
A:	-13	-25
D:	+50/-20	-20

DATA RELIABILITY ESTIMATES

Marengo, #115

	Strength	Casualties
A:	-13	+27
D:	+10/-3	+14/-20

Hohenlinden, #116

	Strength	Casualties
A:	+10	-23
D:	+10	+100

Austerlitz, #117

	Strength	Casualties
A:	+4/-3	-7
D:	+2/-11	+29/-3

Jena, #118

	Strength	Casualties
A:	+4/-44	+50
D:	+2/-9	-17

Auerstadt, #119

	Strength	Casualties
A:	-22	-35
D:	+1/-4	+100

Eylau, #120

	Strength	Casualties
A:	-23	+35/-19
D:	+4/-19	-52

DATA RELIABILITY ESTIMATES

Friedland, #121

	Strength	Casualties
A:	+9	+51
D:	+2/-23	-60

Vimeiro, #122

	Strength	Casualties
A:	+7/-1	+39
D:	-18	-4

Corunna, #123

	Strength	Casualties
A:	+2/-26	+88/-44
D:	+14	-20

Eckmuehl, #124

	Strength	Casualties
A:	-53	+42/-50
D:	+21/-9	-50

Aspern-Essling, #125

	Strength	Casualties
A:	-24	+2
D:	+27	+111/-5

The Raab, #126

	Strength	Casualties
A:	-31	-25
D:	-32	+61/-19

DATA RELIABILITY ESTIMATES

Wagram, #127

	Strength	Casualties
A:	+35	+9/-12
D:	+5/-8	-43

Talavera, #128

	Strength	Casualties
A:	+22/-35	+20
D:	-34	+21/-19

Bussaco, #129

	Strength	Casualties
A:	+1/-12	+2/-1
D:	-38	-8

Fuentes de Onoro, #130

	Strength	Casualties
A:	-38	+11/-19
D:	+2/-20	-17

Albuera, #131

	Strength	Casualties
A:	+5/-22	+5/-5
D:	+60	-20

Salamanca, #132

	Strength	Casualties
A:	+6/-13	-13
D:	+19	+31/-8

DATA RELIABILITY ESTIMATES

Vittoria, #133

Strength		Casualties
A:	+14/-11	+17/-3
D:	-26	+14/-27

Borodino, #134

Strength		Casualties
A:	+11/-5	+14
D:	+2/-25	+30

Luetzen, #135

Strength		Casualties
A:	-26	-44
D:	+20/-3	-41

Bautzen, #136

Strength		Casualties
A:	+1/-16	-20
D:	+3/-1	-45

Dresden, #137

Strength		Casualties
A:	+18	-5
D:	-20	+5/-5

Leipzig, #138

Strength		Casualties
A:	-17	+23/-18
D:	-13	+22

DATA RELIABILITY ESTIMATES

Hanau, #139

Strength		Casualties
A:	-22	+50
D:	+9	-66

La Rothiere, #140

Strength		Casualties
A:	+12	-22
D:	+3	+83

Laon, #141

Strength		Casualties
A:	+9/-37	+100
D:	+18	+100/-13

Arcis-sur-Aube, #142

Strength		Casualties
A:	+25	+5/-5
D:	+7/-18	-20

Ligny, #143

Strength		Casualties
A:	-3	+14/-4
D:	+12	+4/-11

Quatre Bras, #144

Strength		Casualties
A:	-10	-9
D:	+7	+16

DATA RELIABILITY ESTIMATES

Waterloo, #145

	Strength	Casualties
A:	+9	+32
D:	-9	-7

The Thames, #146

	Strength	Casualties
A:	-6	+5/-5
D:	-26	+5/-5

Chippewa, #147

	Strength	Casualties
A:	-14	-31
D:	+32	-2

Lundy's Lane, #148

	Strength	Casualties
A:	+29	+5/-5
D:	-7	+5/-5

New Orleans, #149

	Strength	Casualties
A:	+21	-22
D:	+9	+5/-5

Boyaca, #150

	Strength	Casualties
A:	-33	+10
D:	-10	-11

DATA RELIABILITY ESTIMATES

Carabobo, #151

Strength		Casualties
A:	+2	+10
D:	-23	+20

Bombona, #152

Strength		Casualties
A:	+11	-14
D:	-9	+10

Pichincha, #153

Strength		Casualties
A:	-20	+1
D:	-16	+0/-0

Junin, #154

Strength		Casualties
A:	-55	+3
D:	-35	-46

Ayacucho, #155

Strength		Casualties
A:	+7	+124
D:	-16	-2

San Jacinto, #156

Strength		Casualties
A:	-19	+3
D:	-25	-70

DATA RELIABILITY ESTIMATES

Palo Alto, #157

	Strength	Casualties
A:	+2	+13
D:	+10	-25

Resca de la Palma, #158

	Strength	Casualties
A:	+35	+1
D:	-11	+34

Buena Vista, #159

	Strength	Casualties
A:	+57	+85/-25
D:	+5/-5	+0/-0

Cerro Gordo, #160

	Strength	Casualties
A:	+6	-7
D:	+8	-1

Contreras, #161

	Strength	Casualties
A:	-11	-3
D:	+25	-1

Churubusco, #162

	Strength	Casualties
A:	+6/-11	+2
D:	+71	+130

DATA RELIABILITY ESTIMATES

Molino del Rey, #163

	Strength	Casualties
A:	+11/-3	+1/-1
D:	-17	-37

Chapultepec, #164

	Strength	Casualties
A:	+4/-3	-1
D:	-7	-6

The Alma, #165

	Strength	Casualties
A:	-9	+5
D:	+5	+10

Inkerman, #166

	Strength	Casualties
A:	-4	-21
D:	+4	+7

Magenta, #167

	Strength	Casualties
A:	+3	+2
D:	-14	-1

Solferino, #168

	Strength	Casualties
A:	-17	+3
D:	-8	+1

DATA RELIABILITY ESTIMATES

Sadowa (Koeniggraetz), #169

	Strength	Casualties
A:	+2	+9/-2
D:	-5	+2/-10

Custoza II, #170

	Strength	Casualties
A:	-11	+1
D:	-1	-17

First Bull Run (First Manassas), #171

	Strength	Casualties
A:	+2/-19	+15/-9
D:	-32	-12

Wilson's Creek, #172

	Strength	Casualties
A:	-20	+10/-10
D:	+14	+8

Belmont, #173

	Strength	Casualties
A:	-5	-18
D:	+20/-20	+40

Mill Springs, #174

	Strength	Casualties
A:	+25	+10/-10
D:	-38	-6

DATA RELIABILITY ESTIMATES

Fort Donelson, #175

	Strength	Casualties
A:	-29	+10/-10
D:	+10/-10	+11

Pea Ridge, #176

	Strength	Casualties
A:	-14	-38
D:	+14	-6

Kernstown, #177

	Strength	Casualties
A:	+40/-11	-3
D:	+29	+10/-10

Shiloh, #178

	Strength	Casualties
A:	-10	+10/-10
D:	-6	+10/-10

Front Royal, #179

	Strength	Casualties
A:	+6	+43
D:	-6	+5/-5

First Winchester, #180

	Strength	Casualties
A:	+6	+10
D:	+21	-29

DATA RELIABILITY ESTIMATES

Cross Keys, #181

	Strength	Casualties
A:	+14	+5/-5
D:	+10	+5/-5

Port Republic, #182

	Strength	Casualties
A:	-13	-10
D:	+67/-17	+10/-10

Seven Pines (Fair Oaks), #183

	Strength	Casualties
A:	-7	+5/-5
D:	+8	+5/-5

Mechanicsville, #184

	Strength	Casualties
A:	-39	+35
D:	-36	-31

Gaines's Mill, #185

	Strength	Casualties
A:	+10/-10	+10/-10
D:	+10/-10	+10/-10

Glendale-Frayser's Farm, #186

	Strength	Casualties
A:	+10/-10	+10/-10
D:	+10/-10	+10/-10

DATA RELIABILITY ESTIMATES

Malvern Hill, #187

Strength		Casualties
A:	-10	+10/-10
D:	-10	+10/-10

Cedar Mountain, #188

Strength		Casualties
A:	+25	+1
D:	+19	+2

Second Bull Run (Second Manassas), #189

Strength		Casualties
A:	+10/-10	-11
D:	+10/-10	-3

South Mountain, #190

Strength		Casualties
A:	+10/-10	+10/-10
D:	+10/-10	+10/-10

Antietam (Sharpsburg), #191

Strength		Casualties
A:	-16	+10/-10
D:	+13/-13	-18

Corinth, #192

Strength		Casualties
A:	-9	+10/-10
D:	+9/-5	+10/-10

DATA RELIABILITY ESTIMATES

Perryville, #193

Strength		Casualties
A:	-27	+10/-10
D:	-6	+10/-10

Fredericksburg, #194

Strength		Casualties
A:	+10	+10/-10
D:	-19	+15

Murfreesboro (Stones River), #195

Strength		Casualties
A:	+9	-13
D:	+5	+3

Chancellorsville, #196

Strength		Casualties
A:	+18/-14	-3
D:	-6	-3

Champion's Hill, #197

Strength		Casualties
A:	+19/-32	+10/-10
D:	-10	+20/-10

Brandy Station, #198

Strength		Casualties
A:	-8	+4/-4
D:	+3	+5/-3

DATA RELIABILITY ESTIMATES

Gettysburg, #199

Strength		Casualties
A:	+3/-7	-27
D:	+12	+5/-5

Chickamauga, #200

Strength		Casualties
A:	+8	-4
D:	-2	+10/-10

Chattanooga, #201

Strength		Casualties
A:	-8	+10/-10
D:	+15	+10/-10

The Wilderness, #202

Strength		Casualties
A:	+10/-10	+10/-10
D:	+10/-10	+55

Spotsylvania, #203

Strength		Casualties
A:	+10/-20	-40
D:	+15/-15	+50

New Market, #204

Strength		Casualties
A:	+25/-10	+10/-10
D:	+10/-10	+10/-10

DATA RELIABILITY ESTIMATES

Cold Harbor, #205

Strength		Casualties
A:	-10	-36
D:	-10	+33/-33

Kenesaw Mountain, #206

Strength		Casualties
A:	-13	+22
D:	-2	+81

Peachtree Creek, #207

Strength		Casualties
A:	+10/-10	-11
D:	+10/-10	+10/-10

Atlanta, #208

Strength		Casualties
A:	+10/-10	+6
D:	+10/-10	-2

Petersburg, #209

Strength		Casualties
A:	+10/-10	+40
D:	+10/-10	+20/-20

Globe Tavern, #210

Strength		Casualties
A:	+10/-10	+10/-10
D:	+10/-10	+20/-20

DATA RELIABILITY ESTIMATES

Opequon Creek (Third Winchester), #211

	Strength	Casualties
A:	+10/-10	+10/-10
D:	-29	+17

Cedar Creek, #212

	Strength	Casualties
A:	+10/-10	+10/-10
D:	+10/-10	+10/-10

Franklin, #213

	Strength	Casualties
A:	+12	+10/-10
D:	+15	+10/-10

Nashville, #214

	Strength	Casualties
A:	+10/-10	+10/-10
D:	+10/-10	+11

Bentonville, #215

	Strength	Casualties
A:	-20	+26/-19
D:	-20	+10/-10

Dinwiddie Court House & White Oak Road, #216

	Strength	Casualties
A:	+10/-10	+10/-10
D:	+10/-10	+30/-20

DATA RELIABILITY ESTIMATES

Five Forks, #217

	Strength	Casualties
A:	+10	+58
D:	-10	+10/-10

Selma, #218

	Strength	Casualties
A:	-33	-25
D:	-29	+25/-25

Sayler's Creek, #219

	Strength	Casualties
A:	+33	+10/-10
D:	-25	-14

Weissenburg, #220

	Strength	Casualties
A:	+37	-38
D:	+17	+10/-5

Froeschwiller (Woerth), #221

	Strength	Casualties
A:	+52	+5/-5
D:	+32	-16

Spichern, #222

	Strength	Casualties
A:	+33	+5/-5
D:	+25	+32

DATA RELIABILITY ESTIMATES

Mars la Tour, #223

Strength		Casualties
A:	+44	+5/-5
D:	+17	+21

Gravelotte-St. Privat, #224

Strength		Casualties
A:	+50/-50	+5/-5
D:	+10/-50	+5/-5

Sedan, #225

Strength		Casualties
A:	-17	+5/-5
D:	-15	+5/-5

Coulmiers, #226

Strength		Casualties
A:	+17	-33
D:	+18/-5	-30

Orleans, #227

Strength		Casualties
A:	+15/-15	+5/-5
D:	+38/-45	+5/-5

Le Mans, #228

Strength		Casualties
A:	+24	-15
D:	+36	+10/-4

DATA RELIABILITY ESTIMATES

Belfort, #229

	Strength	Casualties
A:	+23	-50
D:	+33	+10/-18

Isandhlwana, #230

	Strength	Casualties
A:	-50	+25/-25
D:	+15	+15

Ulundi, #231

	Strength	Casualties
A:	-25	+25/-25
D:	-6	-21

Majuba Hill, #232

	Strength	Casualties
A:	-50	+1/-1
D:	+85	-4

Tel el-Kebir, #233

	Strength	Casualties
A:	+5	+5/-5
D:	+50	+50

Omdurman, #234

	Strength	Casualties
A:	-27	-19
D:	+5/-5	+5

DATA RELIABILITY ESTIMATES

Adowa, #235

Strength		Casualties
A:	-25	+25/-25
D:	-5	-7

Modder River, #236

Strength		Casualties
A:	+25	+3
D:	+100	-47

Magersfontein, #237

Strength		Casualties
A:	-13	+14
D:	-11	+36

Colenso, #238

Strength		Casualties
A:	+34	+1
D:	+9/-27	-40

Spion Kop, #239

Strength		Casualties
A:	-25	-32
D:	-25	+34

Paardeberg, #240

Strength		Casualties
A:	+33	+8
D:	+25	+43

DATA RELIABILITY ESTIMATES

San Juan and El Caney, #241

Strength		Casualties
A:	+10/-10	+10/-10
D:	+7	+10/-10

The Yalu, #242

Strength		Casualties
A:	-29	-21
D:	-44	+81/-12

Telissu, #243

Strength		Casualties
A:	+11	-17
D:	-22	+32/-8

Liaoyang, #244

Strength		Casualties
A:	+63	+37
D:	-12	+52

The Sha-Ho, #245

Strength		Casualties
A:	+19	+30/-7
D:	+38	+18/-7

Sandepu, #246

Strength		Casualties
A:	+47	+15/-23
D:	+15/-15	+11

DATA RELIABILITY ESTIMATES

Mukden, #247

Strength		Casualties
A:	+59	+15
D:	+20	+30

Kumanovo, #248

Strength		Casualties
A:	-10	-40
D:	-36	+50

Lule' Burgas, #249

Strength		Casualties
A:	-33	+9
D:	+15/-15	+15/-15

Prelip, #250

Strength		Casualties
A:	-20	-33
D:	+25	+10/-10

Monastir, #251

Strength		Casualties
A:	-17	+10/-10
D:	-33	-15

Adrianople, #252

Strength		Casualties
A:	-25	+2
D:	-20	+15/-15

DATA RELIABILITY ESTIMATES

Warsaw, #253

Strength		Casualties
A:	+25	+20/-20
D:	-25	-20

The Nieman, #254

Strength		Casualties
A:	+20/-20	+20/-20
D:	+20/-20	+20

Guadalajara-Brihuega, #255

Strength		Casualties
A:	+10/-10	+10/-10
D:	+10/-10	+10/-10

Changkufeng/Shachaofeng, #256

Strength		Casualties
A:	+15/-15	+15/-15
D:	+20/-20	+20/-20

Hill 52/Shachaofeng, #257

Strength		Casualties
A:	+25/-25	+13/-13
D:	+15/-15	+50/-50

Changkufeng/Hill 52, #258

Strength		Casualties
A:	+20/-20	+25/-25
D:	+15/-15	-25

DATA RELIABILITY ESTIMATES

Nomonhan: Opening Engagement, #259

	Strength	Casualties
A:	+15/-15	+15/-15
D:	+20/-20	+60/-40

Nomonhan: Soviet Counteroffensive, #260

	Strength	Casualties
A:	+20/-20	-10
D:	+15/-15	+2/-6

Suomussalmi, #261

	Strength	Casualties
A:	+10	+10/-10
D:	+10/-10	+33

Alsace-Lorraine I, #262

	Strength	Casualties
A:	-10	+30/-30
D:	-10	+30/-30

Alsace-Lorraine II, #263

	Strength	Casualties
A:	+7/-8	+30/-30
D:	-17	+30/-30

The Ardennes, #264

	Strength	Casualties
A:	-10	+30/-30
D:	-10	+30/-30

DATA RELIABILITY ESTIMATES

The Sambre, #265

	Strength	Casualties
A:	-10	+30/-30
D:	+8/-10	+30/-30

Mons, #266

	Strength	Casualties
A:	+23/-38	+47
D:	-29	+5/-5

Le Cateau, #267

	Strength	Casualties
A:	-60	+10/-10
D:	+33	+3

Guise, #268

	Strength	Casualties
A:	-10	+30/-30
D:	-20	+30/-30

The Heights of Nancy, #269

	Strength	Casualties
A:	+25/-25	+31
D:	-27	+10/-42

The Ourcq I, #270

	Strength	Casualties
A:	+37	-29
D:	-15	-20

DATA RELIABILITY ESTIMATES

The Ourcq II, #271

	Strength	Casualties
A:	+20/-20	+20/-20
D:	+20/-20	+20/-20

The Petit Morin, #272

	Strength	Casualties
A:	-14	-31
D:	+43	+21

The Two Morins, #273

	Strength	Casualties
A:	+11/-44	-32
D:	+15/-15	+15/-15

The Marshes of St. Gond, #274

	Strength	Casualties
A:	+14	-13
D:	-18	-35

Vitry le Francois, #275

	Strength	Casualties
A:	+27	+4
D:	-15	-11

The Gap of Revigny, #276

	Strength	Casualties
A:	+27	+17
D:	-16	-10

DATA RELIABILITY ESTIMATES

The Aisne, #277

	Strength	Casualties
A:	+20/-20	+20/-20
D:	+20/-20	+20/-20

Stalluponen, #278

	Strength	Casualties
A:	-20	+92/-14
D:	-50	-40

Gumbinnen, #279

	Strength	Casualties
A:	-20	-15
D:	-33	-27

Tannenberg, #280

	Strength	Casualties
A:	-18	+10
D:	+16	+15

Masurian Lakes, #281

	Strength	Casualties
A:	+15/-15	-50
D:	+15/-15	-20

Krasnik, #282

	Strength	Casualties
A:	-33	+10/-25
D:	-29	+10/-25

DATA RELIABILITY ESTIMATES

Komarov, #283

Strength		Casualties
A:	-33	+10/-25
D:	-27	+10/-25

Gnila Lipa, #284

Strength		Casualties
A:	-17	+10/-25
D:	-17	+10/-25

Rava Russka, #285

Strength		Casualties
A:	-25	+10/-25
D:	-25	+10/-25

Lodz, #286

Strength		Casualties
A:	+10/-10	+10/-10
D:	+15/-15	+15/-15

The Jadar, #287

Strength		Casualties
A:	-25	-31
D:	-25	-11

The Kolubra, #288

Strength		Casualties
A:	-20	+15
D:	-20	+15

DATA RELIABILITY ESTIMATES

Eastern Champagne, #289

	Strength	Casualties
A:	+10/-10	+10/-10
D:	+10/-10	+10/-10

Neuve Chapelle, #290

	Strength	Casualties
A:	+10/-10	+5/-5
D:	+15/-15	+15/-15

Ypres II, #291

	Strength	Casualties
A:	-15	+10/-10
D:	-15	+10/-10

Festubert, #292

	Strength	Casualties
A:	+10/-10	+5/-5
D:	+20/-5	+16

Loos, #293

	Strength	Casualties
A:	-15	+5-5
D:	+20	+10/-10

The Winter Battle (Masuria), #294

	Strength	Casualties
A:	-50	-70
D:	-25	-25

DATA RELIABILITY ESTIMATES

Gorlice-Tarnow (Opening Phase Only), #295

	Strength	Casualties
A:	-7	-30
D:	+37	+23

First Isonzo, #296

	Strength	Casualties
A:	+20/-20	+10/-10
D:	+20/-20	+5

Second Isonzo, #297

	Strength	Casualties
A:	+20/-20	-20
D:	+20/-20	-14

Third Isonzo, #298

	Strength	Casualties
A:	-15	+10/-10
D:	-15	+15

Fourth Isonzo, #299

	Strength	Casualties
A:	-15	+10/-10
D:	-15	+15

First Dardanelles Landing, #300

	Strength	Casualties
A:	+13	+56
D:	+10	+20

DATA RELIABILITY ESTIMATES

Suvla Bay, #301

	Strength	Casualties
A:	-10	-15
D:	-15	+25

Kut-el-Amara, #302

	Strength	Casualties
A:	+10/-10	+10/-10
D:	+15/-15	+15/-15

Ctesiphon, #303

	Strength	Casualties
A:	-18	+10/-10
D:	-12	+10/-10

First Somme, #304

	Strength	Casualties
A:	+15/-15	+19/-8
D:	-17	+8

Somme, Fourth Army Attack, #305

	Strength	Casualties
A:	-25	+5/-5
D:	-15	+10

Somme, Ovillers, #306

	Strength	Casualties
A:	-15	+5/-5
D:	-15	+5/-5

DATA RELIABILITY ESTIMATES

Somme, Bazentin Ridge, #307

	Strength	Casualties
A:	-33	+2/-2
D:	+15	+15/-15

Somme, Flers-Courcelette, #308

	Strength	Casualties
A:	-20	+20/-20
D:	-20	+20/-10

Caucasus Winter Offensive, #309

	Strength	Casualties
A:	-22	+20
D:	-20	+20

Lake Narotch, #310

	Strength	Casualties
A:	-14	-30
D:	-50	+10/-10

1916 Brusilov Offensive, #311

	Strength	Casualties
A:	+5/-15	+5/-15
D:	+5/-15	+5/-15

Fifth Isonzo, #312

	Strength	Casualties
A:	+20/-20	+31
D:	+20/-20	+10/-10

DATA RELIABILITY ESTIMATES

Asiago, #313

	Strength	Casualties
A:	+20/-20	+15/-15
D:	+20/-20	+15/-15

Trentino Counteroffensive, #314

	Strength	Casualties
A:	+20/-20	+15/-15
D:	+20/-20	+34/-15

Sixth Isonzo (Gorizia), #315

	Strength	Casualties
A:	+20/-20	+15
D:	+20/-20	+15

Arras, #316

	Strength	Casualties
A:	-15	+5/-5
D:	-10	+10/-10

Aisne II, #317

	Strength	Casualties
A:	-15	+10
D:	+25	+25

Messines, #318

	Strength	Casualties
A:	-10	+47
D:	-15	-23

DATA RELIABILITY ESTIMATES

Ypres III, #319

	Strength	Casualties
A:	-15	-23
D:	-10	-26

Cambrai I, #320

	Strength	Casualties
A:	+5	+15
D:	+10/-10	+15

Cambrai II, #321

	Strength	Casualties
A:	+10	+15
D:	-10	+15

Tenth Isonzo, #322

	Strength	Casualties
A:	+15/-15	-64
D:	+20/-10	-64

Eleventh Isonzo, #323

	Strength	Casualties
A:	+20/-20	+15/-15
D:	+20/-20	+15/-15

Caporetto (Twelfth Isonzo), #324

	Strength	Casualties
A:	+20/-20	+15/-15
D:	+20/-20	+15

DATA RELIABILITY ESTIMATES

Crossing of the Tigris, #325

	Strength	Casualties
A:	+10/-10	+10/-10
D:	+15/-15	+15/-15

Gaza I, #326

	Strength	Casualties
A:	-25	-5
D:	-25	-5

Gaza II, #327

	Strength	Casualties
A:	-25	+5
D:	-25	+10/-10

Gaza III, #328

	Strength	Casualties
A:	+22	+5/-5
D:	+15	+15

Junction Station, #329

	Strength	Casualties
A:	-25	+15/-15
D:	+15/-15	+15/-15

Second Somme, Phase I (Somme-Peronne), #330

	Strength	Casualties
A:	-25	+20
D:	-38	+20/-20

DATA RELIABILITY ESTIMATES

Second Somme, Phase II (Somme-Peronne), #331

	Strength	Casualties
A:	-14	+20
D:	-20	+20/-20

Lys, #332

	Strength	Casualties
A:	-10	+10/-20
D:	-10	+10/-20

Yvonne and Odette Positions, #333

	Strength	Casualties
A:	+15/-15	+15/-15
D:	+10/-10	+10/-10

Chemin des Dames, #334

	Strength	Casualties
A:	-10	-15
D:	+10/-10	-15

Cantigny, #335

	Strength	Casualties
A:	+10/-10	+10/-10
D:	+15/-15	-15

Belleau Wood, #336

	Strength	Casualties
A:	+10/-10	+10/-10
D:	+15/-15	+15/-15

DATA RELIABILITY ESTIMATES

Hill 142, #337

	Strength	Casualties
A:	+10/-10	+10/-10
D:	+15/-15	+15/-15

West Wood I, #338

	Strength	Casualties
A:	+10/-10	+10/-10
D:	+15/-15	+15/-15

Bouresches I, #339

	Strength	Casualties
A:	+10/-10	+10/-10
D:	+15/-15	+15/-15

Hill 192, #340

	Strength	Casualties
A:	+10/-10	+10/-10
D:	+15/-15	+15/-15

West Wood II, #341

	Strength	Casualties
A:	+10/-10	+10/-10
D:	+15/-15	+15/-15

North Wood I, The Hunting Lodge, #342

	Strength	Casualties
A:	+10/-10	+10/-10
D:	+15/-15	+15/-15

DATA RELIABILITY ESTIMATES

Bouresches II, #343

	Strength	Casualties
A:	+15/-15	+15/-15
D:	+10/-10	+10/-10

North Wood II, #344

	Strength	Casualties
A:	+10/-10	+10/-10
D:	+15/-15	+15/-15

North Wood III, #345

	Strength	Casualties
A:	+10/-10	+10/-10
D:	+15/-15	+15/-15

North Wood IV (Final Assault), #346

	Strength	Casualties
A:	+10/-10	+10/-10
D:	+15/-15	+15/-15

Vaux, #347

	Strength	Casualties
A:	+10/-10	+10/-10
D:	+15/-15	+15/-15

La Roche Wood East, #348

	Strength	Casualties
A:	+10/-10	+10/-10
D:	+15/-15	+15/-15

DATA RELIABILITY ESTIMATES

La Roche Wood West, #349

	Strength	Casualties
A:	+10/-10	+10/-10
D:	+15/-15	+15/-15

Noyon-Montdidier, #350

	Strength	Casualties
A:	+9	+10/-10
D:	+15/-15	+10/-10

Champagne-Marne, #351

	Strength	Casualties
A:	+10/-10	+10/-10
D:	-15	+10/-10

Aisne-Marne I, #352

	Strength	Casualties
A:	+15/-15	+15/-15
D:	+15/-15	+15/-15

Missy aux Bois Ravine, #353

	Strength	Casualties
A:	+10/-10	+10/-10
D:	+15/-15	+15-15

Brevil, #354

	Strength	Casualties
A:	+10/-10	+10/-10
D:	+15/-15	+15/-15

DATA RELIABILITY ESTIMATES

St. Amand, #355

	Strength	Casualties
A:	+10/-10	+10/-10
D:	+15/-15	+15/-15

Beaurepaire Form, #356

	Strength	Casualties
A:	+10/-10	+10/-10
D:	+15/-15	+15/-15

Cravancon Ferme-Chaudun, #357

	Strength	Casualties
A:	+10/-10	+10/-10
D:	+15/-15	+15/-15

Chaudun, #358

	Strength	Casualties
A:	+10/-10	+10/-10
D:	+15/-15	+15/-15

Aisne-Marne II, #359

	Strength	Casualties
A:	+15/-15	+15/-15
D:	+15/-15	+15/-15

Berzy le Sec, #360

	Strength	Casualties
A:	+10/-10	+10/-10
D:	+15/-15	+15/-15

DATA RELIABILITY ESTIMATES

Buzancy Ridge, #361

	Strength	Casualties
A:	+10/-10	+10/-10
D:	+15/-15	+15/-15

Picardy, 1918, Phase I, #362

	Strength	Casualties
A:	+15/-15	+15/-15
D:	+15/-15	+15/-15

Picardy, 1918, Phase II, #363

	Strength	Casualties
A:	+15/-15	+15/-15
D:	+15/-15	+15/-15

St. Mihiel, #364

	Strength	Casualties
A:	+25/-20	+10/-10
D:	+25	+20

Lahayville-Bois de Lamarche, #365

	Strength	Casualties
A:	+10/-10	+10/-10
D:	+15/-15	+15/-15

Meuse-Argonne, Phase I, #366

	Strength	Casualties
A:	+25/-25	+20/-20
D:	+25/-25	+20/-20

DATA RELIABILITY ESTIMATES

Blanc Mont I, #367

	Strength	Casualties
A:	+5/-5	+5/-5
D:	+15/-15	+15/-15

Meddeah Farm, #368

	Strength	Casualties
A:	+ 10/-10	+10/-10
D:	+15/-15	+15/-15

Essen Hook, #369

	Strength	Casualties
A:	+10/-10	+10/-10
D:	+15/-15	+15/-15

Blanc Mont Ridge, #370

	Strength	Casualties
A:	+10/-10	-25
D:	-15	-15

Sommepy Wood, #371

	Strength	Casualties
A:	+10/-10	+25
D:	+15	+15

Blanc Mont II, #372

	Strength	Casualties
A:	-20	-12
D:	-20	+25/-25

DATA RELIABILITY ESTIMATES

Meuse-Argonne, Phase II, #373

	Strength	Casualties
A:	+25/-25	+20/-20
D:	+25/-25	+20/-20

Exermont-Montrefagne, #374

	Strength	Casualties
A:	+10/-10	+10/-10
D:	+15/-15	+15/-15

Mayache Ravine, #375

	Strength	Casualties
A:	+10/-10	+10/-10
D:	+15/-15	+15/-15

La Neuville le Comte Ferme, #376

	Strength	Casualties
A:	+10/-10	+10/-10
D:	+15/-15	+15/-15

Ferme des Granges-Fleville, #377

	Strength	Casualties
A:	+10/-10	+10/-10
D:	+15/-15	+15/-15

Hill 212, #378

	Strength	Casualties
A:	+10/-10	+10/-10
D:	+15/-15	+15/-15

DATA RELIABILITY ESTIMATES

Bois de Boyon-Montrefagne, #379

	Strength	Casualties
A:	+10/-10	+10/-10
D:	+15/-15	+15/-15

Hill 272, #380

	Strength	Casualties
A:	+10/-10	+10/-10
D:	+15/-15	+15/-15

Meuse-Argonne, Phase III, #381

	Strength	Casualties
A:	+25/-25	+20/-20
D:	+25/-25	+20/-20

Remilly-Aillicourt, #382

	Strength	Casualties
A:	+10/-10	+10/-10
D:	+15/-15	+15/-15

Hill 252 - Pont Maugis, #383

	Strength	Casualties
A:	+10/-10	+10/-10
D:	+15/-15	+15/-15

The Piave, #384

	Strength	Casualties
A:	-38	-24
D:	+10/-20	+22/-10

DATA RELIABILITY ESTIMATES

Megiddo, #385

	Strength	Casualties
A:	-15	-10
D:	+25/-25	+10

Alam Halfa, #386

	Strength	Casualties
A:	-20	+10/-10
D:	-20	+10/-10

El Alamein II, #387

	Strength	Casualties
A:	+5/-5	+5/-5
D:	+10/-10	+10/-10

Operation "Lightfoot," #388

	Strength	Casualties
A:	+5/-5	+5/-5
D:	+10/-10	+10/-10

Alamein Bridgehead Expansion, #389

	Strength	Casualties
A:	+5/-5	+5/-5
D:	+10/-10	+10/-10

Operation "Supercharge," #390

	Strength	Casualties
A:	+5/-5	+5/-5
D:	+10/-10	+10/-10

DATA RELIABILITY ESTIMATES

Chouigui Pass, #391

	Strength	Casualties
A:	-15	+50/-50
D:	-15	+50/-50

El Guettar, #392

	Strength	Casualties
A:	+10/-15	+11/-11
D:	+5/-5	+5/-5

Sedjenane-Bizerte, #393

	Strength	Casualties
A:	+5/-5	+5/-5
D:	+10/-15	+25/-25

Amphitheater, #394

	Strength	Casualties
A:	+10/-10	+10/-10
D:	+15/-15	+15/-15

Port of Salerno, #395

	Strength	Casualties
A:	+10/-10	+10/-10
D:	+15/-15	+15/-15

Sele-Calore Corridor, #396

	Strength	Casualties
A:	+5/-5	+5/-5
D:	+15/-15	+15/-15

DATA RELIABILITY ESTIMATES

Battipaglia I, #397

	Strength	Casualties
A:	+15/-15	+15/-15
D:	+10/-10	+10/-10

Vietri I, #398

	Strength	Casualties
A:	+15/-15	+15/-15
D:	+10/-10	+10/-10

Tobacco Factory, #399

	Strength	Casualties
A:	+15/-15	+15/-15
D:	+10/-10	+10/-10

Battipaglia II, #400

	Strength	Casualties
A:	+10/-10	+10/-10
D:	+15/-15	+15/-15

Eboli, #401

	Strength	Casualties
A:	+5/-5	+5/-5
D:	+15/-15	+15/-15

Vietri II, #402

	Strength	Casualties
A:	+15/-15	+15/-15
D:	+10/-10	+10/-10

DATA RELIABILITY ESTIMATES

Grazzanise, #403

	Strength	Casualties
A:	+10/-10	+10/-10
D:	+15/-15	+15/-15

Caiazzo, #404

	Strength	Casualties
A:	+5/-5	+5/-5
D:	+15/-15	+15/-15

Capua, #405

	Strength	Casualties
A:	+10/-10	+10/-10
D:	+15/-15	+15/-15

Castel Volturno, #406

	Strength	Casualties
A:	+10/-10	+10/-10
D:	+15/-15	+15/-15

Monte Acero, #407

	Strength	Casualties
A:	+5/-5	+5/-5
D:	+15/-15	+15/-15

Triflisco, #408

	Strength	Casualties
A:	+5/-5	+5/-5
D:	+15/-15	+15/-15

DATA RELIABILITY ESTIMATES

Dragoni, #409

	Strength	Casualties
A:	+5/-5	+5/-5
D:	+15/-15	+15/-15

Canal I, #410

	Strength	Casualties
A:	+10/-10	+10/-10
D:	+15/-15	+15/-15

Monte Grande (Volturno), #411

	Strength	Casualties
A:	+10/-10	+10/-10
D:	+15/-15	+15/-15

Canal II, #412

	Strength	Casualties
A:	+10/-10	+10/-10
D:	+15/-15	+15/-15

Francolise, #413

	Strength	Casualties
A:	+10/-10	+10/-10
D:	+15/-15	+15/-15

Santa Maria Oliveto, #414

	Strength	Casualties
A:	+5/-5	+5/-5
D:	+10/-10	+10/-10

DATA RELIABILITY ESTIMATES

Monte Camino I, #415

	Strength	Casualties
A:	+10/-10	+10/-10
D:	+15/-15	+15/-15

Monte Lungo, #416

	Strength	Casualties
A:	+5/-5	+5/-5
D:	+15/-15	+15/-15

Pozzilli, #417

	Strength	Casualties
A:	+5/-5	+5/-5
D:	+15/-15	+15/-15

Monte Camino II, #418

	Strength	Casualties
A:	+15/-15	+15/-15
D:	+10/-10	+10/-10

Monte Rotondo, #419

	Strength	Casualties
A:	+5/-5	+5/-5
D:	+15/-15	+15/-15

Calabritto, #420

	Strength	Casualties
A:	+10/-10	+10/-10
D:	+15/-15	+15/-15

DATA RELIABILITY ESTIMATES

Monte Camino III, #421

	Strength	Casualties
A:	+10/-10	+10/-10
D:	+15/-15	+15/-15

Monte Maggiore, #422

	Strength	Casualties
A:	+5/-5	+5/-5
D:	+15/-15	+15/-15

Aprila I, #423

	Strength	Casualties
A:	+10/-10	+10/-10
D:	+15/-15	+15/-15

The Factory, #424

	Strength	Casualties
A:	+15/-15	+15/-15
D:	+10/-10	+10/-10

Campoleone, #425

	Strength	Casualties
A:	+10/-10	+10/-10
D:	+15/-15	+15/-15

Campoleone Counterattack, #426

	Strength	Casualties
A:	+15/-15	+15/-15
D:	+10/-10	+10/-10

DATA RELIABILITY ESTIMATES

Carroceto, #427

	Strength	Casualties
A:	+15/-15	+15/-15
D:	+10/-10	+10/-10

Moletta River Defense, #428

	Strength	Casualties
A:	+15/-15	+15/-15
D:	+5/-5	+5/-5

Aprilia II, #429

	Strength	Casualties
A:	+15/-15	+15/-15
D:	+10/-10	+10/-10

Factory Counterattack, #430

	Strength	Casualties
A:	+5/-5	+5/-5
D:	+15/-15	+15/-15

Bowling Alley, #431

	Strength	Casualties
A:	+15/-15	+15/-15
D:	+5/-5	+5/-5

Moletta River II, #432

	Strength	Casualties
A:	+15/-15	+15/-15
D:	+10/-10	+10/-10

DATA RELIABILITY ESTIMATES

Fioccia, #433

	Strength	Casualties
A:	+15/-15	+15/-15
D:	+5/-5	+5/-5

Santa Maria Infante, #434

	Strength	Casualties
A:	+5/-5	+5/-5
D:	+15/-15	+15/-15

San Martino, #435

	Strength	Casualties
A:	+5/-5	+5/-5
D:	+15/-15	+15/-15

Castellonorato, #436

	Strength	Casualties
A:	+5/-5	+5/-5
D:	+15/-15	+15/-15

Spigno, #437

	Strength	Casualties
A:	+5/-5	+5/-5
D:	+15/-15	+15/-15

Formia, #438

	Strength	Casualties
A:	+5/-5	+5/-5
D:	+15/-15	+15/-15

DATA RELIABILITY ESTIMATES

Monte Grande (Rome), #439

	Strength	Casualties
A:	+5/-5	+5/-5
D:	+15/-15	+15/-15

Itri-Fondi, #440

	Strength	Casualties
A:	+5/-5	+5/-5
D:	+15/-15	+15/-15

Terracina, #441

	Strength	Casualties
A:	+5/-5	+5/-5
D:	+15/-15	+15/-15

Moletta Offensive, #442

	Strength	Casualties
A:	+10/-10	+10/-10
D:	+15/-15	+15/-15

Anzio-Albano Road, #443

	Strength	Casualties
A:	+10/-10	+10/-10
D:	+15/-15	+15/-15

Anzio Breakout, #444

	Strength	Casualties
A:	+5/-5	+5/-5
D:	+15/-15	+15/-15

DATA RELIABILITY ESTIMATES

Cisterna, #445

Strength		Casualties
A:	+5/-5	+5/-5
D:	+15/-15	+15/-15

Sezze, #446

Strength		Casualties
A:	+5/-5	+5/-5
D:	+15/-15	+15/-15

Velletri, #447

Strength		Casualties
A:	+5/-5	+5/-5
D:	+15/-15	+15/-15

Campoleone Station, #448

Strength		Casualties
A:	+5/-5	+5/-5
D:	+15/-15	+15/-15

Villa Crocetta, #449

Strength		Casualties
A:	+5/-5	+5/-5
D:	+15/-15	+15/-15

Ardea, #450

Strength		Casualties
A:	+10/-10	+10/-10
D:	+15/-15	+15/-15

DATA RELIABILITY ESTIMATES

Fosso di Campoleone, #451

	Strength	Casualties
A:	+5/-5	+5/-5
D:	+15/-15	+15/-15

Lanuvio, #452

	Strength	Casualties
A:	+5/-5	+5/-5
D:	+15/-15	+15/-15

Lariano, #453

	Strength	Casualties
A:	+5/-5	+5/-5
D:	+15/-15	+15/-15

Via Anziate, #454

	Strength	Casualties
A:	+5/-5	+5/-5
D:	+15/-15	+15/-15

Valmontone, #455

	Strength	Casualties
A:	+5/-5	+5/-5
D:	+15/-15	+15/-15

Tarto-Tiber, #456

	Strength	Casualties
A:	+10/-10	+10/-10
D:	+15/-15	+15/-15

DATA RELIABILITY ESTIMATES

Il Gioglio Pass, #457

	Strength	Casualties
A:	+5/-5	+5/-5
D:	+15/-15	+15/-15

St Lo, #458

	Strength	Casualties
A:	+5/-5	+5/-5
D:	-7	+15/-15

Operation "Goodwood," #459

	Strength	Casualties
A:	+10/-10	+10/-10
D:	+15/-15	+36

Operation "Cobra," #460

	Strength	Casualties
A:	+10/-10	+10/-10
D:	+20/-20	+20/-20

Mortain, #461

	Strength	Casualties
A:	+25/-25	+25/-25
D:	+10/-10	+5/-5

Chartres, #462

	Strength	Casualties
A:	+5/-5	+5/-5
D:	+15/-15	+15/-15

DATA RELIABILITY ESTIMATES

Melun, #463

	Strength	Casualties
A:	+5/-5	+5/-5
D:	+15/-15	+15/-15

Seine River, #464

	Strength	Casualties
A:	+5/-5	+5/-5
D:	+15/-15	+15/-15

Moselle-Metz, #465

	Strength	Casualties
A:	+5/-5	+5/-5
D:	+15/-15	+15/-15

Metz, #466

	Strength	Casualties
A:	+5/-5	+5/-5
D:	+15/-15	+15/-15

Arracourt, #467

	Strength	Casualties
A:	+25/-25	+10/-10
D:	+10/-10	+5/-5

Westwall, #468

	Strength	Casualties
A:	+5/-5	+5/-5
D:	+15/-15	+15/-15

DATA RELIABILITY ESTIMATES

Schmidt, #469

	Strength	Casualties
A:	+10/-10	+5/-5
D:	-25	+15/-15

Seille-Nied, #470

	Strength	Casualties
A:	+5/-5	+5/-5
D:	+15/-15	+15/-15

Foret de Chateau-Salins, #471

	Strength	Casualties
A:	+5/-5	+5/-5
D:	+15/-15	+15/-15

Morhange, #472

	Strength	Casualties
A:	+5/-5	+5/-5
D:	+15/-15	+15/-15

Morhange-Faulquemont, #473

	Strength	Casualties
A:	+5/-5	+5/-5
D:	+15/-15	+15/-15

Bourgaltroff, #474

	Strength	Casualties
A:	+5/-5	+5/-5
D:	+15/-15	+15/-15

DATA RELIABILITY ESTIMATES

Sarre-St. Avoird, #475

	Strength	Casualties
A:	+5/-5	+5/-5
D:	+15/-15	+15/-15

Baerendorf I, #476

	Strength	Casualties
A:	+5/-5	+5/-5
D:	+15/-15	+15/-15

Baerendorf II, #477

	Strength	Casualties
A:	+5/-5	+5/-5
D:	+15/-15	+15/-15

Burbach-Durstel, #478

	Strength	Casualties
A:	+5/-5	+5/-5
D:	+15/-15	+15/-15

Durstel-Faerbersviller, #479

	Strength	Casualties
A:	+5/-5	+5/-5
D:	+15/-15	+15/-15

Sarre-Union, #480

	Strength	Casualties
A:	+5/-5	+5/-5
D:	+15/-15	+15/-15

DATA RELIABILITY ESTIMATES

Sarre-Singling, #481

	Strength	Casualties
A:	+5/-5	+5/-5
D:	+15/-15	+15/-15

Singling-Bining, #482

	Strength	Casualties
A:	+5/-5	+5/-5
D:	+15/-15	+15/-15

Sauer River, #483

	Strength	Casualties
A:	+15/-15	+15/-15
D:	+5/-5	+5/-5

St. Vith, #484

	Strength	Casualties
A:	+25/-25	+25/-25
D:	+10/-10	+10/-10

Bastogne, #485

	Strength	Casualties
A:	+25/-25	+25/-25
D:	+10/-10	+10/-10

Sedan-Meuse River, #486

	Strength	Casualties
A:	+25/-25	+25/-25
D:	+25/-25	+25/-25

DATA RELIABILITY ESTIMATES

Jitra, #487

	Strength	Casualties
A:	+10/-25	+25/-25
D:	+10/-25	+25/-25

Rovno, #488

	Strength	Casualties
A:	+15/-15	+20/-20
D:	+20/-20	+25/-25

The Defense of Moscow, #489

	Strength	Casualties
A:	+15/-15	+20/-20
D:	+20/-20	+25/-25

Soviet Counteroffensive at Moscow, #490

	Strength	Casualties
A:	+20/-20	+25/-25
D:	+15/-15	+20/-20

The Pogoreloye Gorodishche Offensive, #491

	Strength	Casualties
A:	+20/-20	+20/-20
D:	+15/-15	+20/-20

Leningrad (Operation "Spark"), #492

	Strength	Casualties
A:	+20/-20	+25/-25
D:	+15/-15	+20/-20

DATA RELIABILITY ESTIMATES

The Oboyan-Kursk Axis, Phase I, #493

	Strength	Casualties
A:	+15/-15	+20/-20
D:	+20/-20	+25/-25

Operation "Citadel," Southern Sector, #494

	Strength	Casualties
A:	+15/-15	+20/-20
D:	+20/-20	+25/-25

The Oboyan-Kursk Axis, Phase II, #495

	Strength	Casualties
A:	+15/-15	+20/-20
D:	+20/-20	+25/-25

The Oboyan-Kursk Axis, Phase III, #496

	Strength	Casualties
A:	+15/-15	+20/-20
D:	+20/-20	+25/-25

Prokhorovka, #497

	Strength	Casualties
A:	+20/-20	+25/-25
D:	+15/-15	+20/-20

Kursk Counteroffensive (Southern Sector), #498

	Strength	Casualties
A:	+20/-20	+25/-25
D:	+15/-15	+20/-20

DATA RELIABILITY ESTIMATES

Belgorad, #499

	Strength	Casualties
A:	+20/-20	+25/-25
D:	+15/-15	+20/-20

Melitopol, #500

	Strength	Casualties
A:	+20/-20	+25/-25
D:	+15/-15	+20/-20

Korsun-Shevchenkivskiy, #501

	Strength	Casualties
A:	+20/-20	+25/-25
D:	+15/-15	+20/-20

Nikopol Bridgehead, #502

	Strength	Casualties
A:	+20/-20	+20/-20
D:	+15/-15	-23

Sevastopol, #503

	Strength	Casualties
A:	+20/-20	+25/-25
D:	+15/-15	+20/-20

The Berezina River, Byelorussian Offensive, #504

	Strength	Casualties
A:	+20/-20	+25/-25
D:	+15/-15	+20/-20

DATA RELIABILITY ESTIMATES

The Lvov-Sandomierz Offensive, #505

	Strength	Casualties
A:	+20/-20	+20/-20
D:	+15/-15	+15/-15

Brody, Phase I, #506

	Strength	Casualties
A:	+20/-20	+20/-20
D:	+15/-15	+15/-15

Brody, Phase II, #507

	Strength	Casualties
A:	+20/-20	+20/-20
D:	+15/-15	+15/-15

Assault Crossing of the Vistula River, Phase I, #508

	Strength	Casualties
A:	+20/-20	+25/-25
D:	+15/-15	+20/-20

Vistula River Operation, Pulawy, Phase II, #509

	Strength	Casualties
A:	+20/-20	+25/-25
D:	+15/-15	+20/-20

Yassy-Kishinev, #510

	Strength	Casualties
A:	+20/-20	+25/-25
D:	+15/-15	+20/-20

DATA RELIABILITY ESTIMATES

Vistula-Oder, #511

	Strength	Casualties
A:	+20/-20	+25/-25
D:	+15/-15	+20/-20

East Prussia, #512

	Strength	Casualties
A:	+20/-20	+25/-25
D:	+15/-15	+20/-20

Ciechanow, Phase I, #513

	Strength	Casualties
A:	+20/-20	+25/-25
D:	+15/-15	+20/-20

Ciechanow, Phase II, #514

	Strength	Casualties
A:	+20/-20	+25/-25
D:	+15/-15	+20/-20

Seelow Heights, #515

	Strength	Casualties
A:	+20/-20	+20/-20
D:	+15/-15	+15/-15

Mutankiang, #516

	Strength	Casualties
A:	+20/-20	+25/-25
D:	+20/-20	+20/-20

DATA RELIABILITY ESTIMATES

Tarawa-Betio, #517

	Strength	Casualties
A:	+5/-5	+1/-1
D:	+5/-5	+5/-5

Iwo Jima, Into the Main Defenses, #518

	Strength	Casualties
A:	+10/-10	+10/-10
D:	+20/-20	+20/-20

Iwo Jima, Suribachi, #519

	Strength	Casualties
A:	+10/-10	+10/-10
D:	+20/-20	+20/-20

Iwo Jima, Final Phase, #520

	Strength	Casualties
A:	+10/-10	+10/-10
D:	+20/-20	+20/-20

Advance from the Beach, #521

	Strength	Casualties
A:	-5	+5/-5
D:	+20/-20	+20/-20

Advance through the Outposts, #522

	Strength	Casualties
A:	-5	+5/-5
D:	+20/-20	+20/-20

DATA RELIABILITY ESTIMATES

Tomb Hill-Ouki, #523

	Strength	Casualties
A:	-5	+5/-5
D:	+20/-20	+20/-20

Skyline Ridge-Rocky Crags, #524

	Strength	Casualties
A:	-5	+5/-5
D:	+20/-20	+20/-20

Kochi Ridge-Onaga I, #525

	Strength	Casualties
A:	-5	+5/-5
D:	+20/-20	+20/-20

Kochi Ridge-Onaga II, #526

	Strength	Casualties
A:	-5	+5/-5
D:	+20/-20	+20/-20

Kochi Ridge-Onaga III, #527

	Strength	Casualties
A:	-5	+5/-5
D:	+20/-20	+20/-20

Japanese Counterattack, 4-5 May, #528

	Strength	Casualties
A:	+20/-20	+20/-20
D:	-5	+5/-5

DATA RELIABILITY ESTIMATES

Kochi Ridge IV, #529

	Strength	Casualties
A:	-5	+5/-5
D:	+20/-20	+20/-20

Shuri Envelopment, Phase I, #530

	Strength	Casualties
A:	-5	+5/-5
D:	+20/-20	+20/-20

Japanese Counterattack, 24/25 May, #531

	Strength	Casualties
A:	+20/-20	+20/-20
D:	-5	+5/-5

Shuri Envelopment, Phase II, #532

	Strength	Casualties
A:	-5	+5/-5
D:	+20/-20	+20/-20

Shuri Envelopment, Phase III, #533

	Strength	Casualties
A:	-5	+5/-5
D:	+20/-20	+20/-20

Hill 95-I, #534

	Strength	Casualties
A:	-5	+5/-5
D:	+20/-20	+20/-20

DATA RELIABILITY ESTIMATES

Hill 95-II, #535

	Strength	Casualties
A:	-5	+5/-5
D:	+20/-20	+20/-20

Yaeju-Dake, #536

	Strength	Casualties
A:	-5	+5/-5
D:	+20/-20	+20/-20

Hills 153 and 115, #537

	Strength	Casualties
A:	-5	+5/-5
D:	+20/-20	+20/-20

Advance from the Beachhead, #538

	Strength	Casualties
A:	-5	+5/-5
D:	+20/-20	+20/-20

Advance to the Shuri Line Outposts, #539

	Strength	Casualties
A:	-5	+5/-5
D:	+20/-20	+20/-20

Kakazu and Tombstone Ridges, #540

	Strength	Casualties
A:	-5	+5/-5
D:	+20/-20	+20/-20

DATA RELIABILITY ESTIMATES

Nishibaru Ridge-Tanabaru Escarpment, #541

	Strength	Casualties
A:	-5	+5/-5
D:	+20/-20	+20/-20

Maeda Escarpment, #542

	Strength	Casualties
A:	-5	+5/-5
D:	+20/-20	+20/-20

Attack on the Shuri Line's Eastern Flank I, #543

	Strength	Casualties
A:	-5	+5/-5
D:	+20/-20	+20/-20

Attack on the Shuri Line's Eastern Flank II, #544

	Strength	Casualties
A:	-5	+5/-5
D:	+20/-20	+20/-20

Attack on the Shuri Line's Eastern Flank III, #545

	Strength	Casualties
A:	-5	+5/-5
D:	+20/-20	+20/-20

Advance to the Yuza-Dake/Yaeju-Dake Escarpment, #546

	Strength	Casualties
A:	-5	+5/-5
D:	+20/-20	+20/-20

DATA RELIABILITY ESTIMATES

Initial Attack on the Yuza-Dake/Yaeju-Dake Escarpment, #547

	Strength	Casualties
A:	-5	+5/-5
D:	+20/-20	+20/-20

Capture of the Yuza-Dake/Yaeju-Dake Escarpment, #548

	Strength	Casualties
A:	-5	+5/-5
D:	+20/-20	+20/-20

Jenin, #549

	Strength	Casualties
A:	+15/-15	+15/-15
D:	+15/-15	+15/-15

Jerusalem, #550

	Strength	Casualties
A:	+15/-15	+15/-15
D:	+15/-15	+15/-15

Kabatiya, #551

	Strength	Casualties
A:	+15/-15	+15/-15
D:	+15/-15	+15/-15

Tilfit-Zababida, #552

	Strength	Casualties
A:	+15/-15	+15/-15
D:	+15/-15	+15/-15

DATA RELIABILITY ESTIMATES

Nablus, #553

Strength		Casualties
A:	+15/-15	+15/-15
D:	+15/-15	+15/-15

Rafah, #554

Strength		Casualties
A:	+15/-15	+15/-15
D:	+15/-15	+15/-15

Bir Lahfan, #555

Strength		Casualties
A:	+15/-15	+15/-15
D:	+15/-15	+15/-15

Abu Ageila-Um Katef, #556

Strength		Casualties
A:	+15/-15	+15/-15
D:	+15/-15	+15/-15

El Arish, #557

Strength		Casualties
A:	+15/-15	+15/-15
D:	+15/-15	+15/-15

Jebel Libni, #558

Strength		Casualties
A:	+15/-15	+15/-15
D:	+15/-15	+15/-15

DATA RELIABILITY ESTIMATES

Gaza Strip, #559

	Strength	Casualties
A:	+15/-15	+15/-15
D:	+15/-15	+15/-15

Bir Hassna-Bir Thamada, #560

	Strength	Casualties
A:	+15/-15	+15/-15
D:	+15/-15	+15/-15

Mitla Pass, #561

	Strength	Casualties
A:	+15/-15	+15/-15
D:	+15/-15	+15/-15

Bir Hamma-Bir Gifgafa, #562

	Strength	Casualties
A:	+15/-15	+15/-15
D:	+15/-15	+15/-15

Nakhl, #563

	Strength	Casualties
A:	+15/-15	+15/-15
D:	+15/-15	+15/-15

Bir Gifgafa, #564

	Strength	Casualties
A:	+15/-15	+15/-15
D:	+15/-15	+15/-15

DATA RELIABILITY ESTIMATES

Tel Fahar-Banias, #565

	Strength	Casualties
A:	+15/-15	+15/-15
D:	+15/-15	+15/-15

Rawiyeen, #566

	Strength	Casualties
A:	+15/-15	+15/-15
D:	+15/-15	+15/-15

Zaoura-Kala, #567

	Strength	Casualties
A:	+15/-15	+15/-15
D:	+15/-15	+15/-15

Kerama, #568

	Strength	Casualties
A:	-50	-30
D:	+15/-15	+15/-15

Suez Canal Assault-North, #569

	Strength	Casualties
A:	+15/-15	+15/-15
D:	+15/-15	+15/-15

Suez Canal Assault-South, #570

	Strength	Casualties
A:	+15/-15	+15/-15
D:	+15/-15	+15/-15

DATA RELIABILITY ESTIMATES

Second Army Buildup, #571

	Strength	Casualties
A:	+15/-15	+15/-15
D:	+15/-15	+15/-15

Third Army Buildup, #572

	Strength	Casualties
A:	+15/-15	+15/-15
D:	+15/-15	+15/-15

Kantara-Firdan, #573

	Strength	Casualties
A:	+15/-15	+15/-15
D:	+15/-15	+15/-15

Egyptian Offensive-North, #574

	Strength	Casualties
A:	+15/-15	+15/-15
D:	+15/-15	+15/-15

Egyptian Offensive-South, #575

	Strength	Casualties
A:	+15/-15	+15/-15
D:	+15/-15	+15/-15

Deversoir (Chinese Farm I), #576

	Strength	Casualties
A:	+15/-15	+15/-15
D:	+15/-15	+15/-15

DATA RELIABILITY ESTIMATES

Deversoir (Chinese Farm II), #577

	Strength	Casualties
A:	+15/-15	+15/-15
D:	+15/-15	+15/-15

Deversoir West, #578

	Strength	Casualties
A:	+15/-15	+15/-15
D:	+15/-15	+15/-15

Ismailia, #579

	Strength	Casualties
A:	+15/-15	+15/-15
D:	+15/-15	+15/-15

Jebel Geneifa, #580

	Strength	Casualties
A:	+15/-15	+15/-15
D:	+15/-15	+15/-15

Shallufa I, #581

	Strength	Casualties
A:	+15/-15	+15/-15
D:	+15/-15	+15/-15

Adabiya, #582

	Strength	Casualties
A:	+15/-15	+15/-15
D:	+15/-15	+15/-15

DATA RELIABILITY ESTIMATES

Shallufa II, #583

	Strength	Casualties
A:	+15/-15	+15/-15
D:	+15/-15	+15/-15

Suez, #584

	Strength	Casualties
A:	+15/-15	+15/-15
D:	+15/-15	+15/-15

Kuneitra, #585

	Strength	Casualties
A:	+15/-15	+15/-15
D:	+15/-15	+15/-15

Ahmadiyah, #586

	Strength	Casualties
A:	+15/-15	+15/-15
D:	+15/-15	+15/-15

Rafid, #587

	Strength	Casualties
A:	+15/-15	+15/-15
D:	+15/-15	+15/-15

Yehudiah-El Al, #588

	Strength	Casualties
A:	+15/-15	+15/-15
D:	+15/-15	+15/-15

DATA REABILITY ESTIMATES

Nafekh, #589

	Strength	Casualties
A:	+15/-15	+15/-15
D:	+15/-15	+15/-15

Tel Faris, #590

	Strength	Casualties
A:	+15/-15	+15/-15
D:	+15/-15	+15/-15

Hushniyah, #591

	Strength	Casualties
A:	+15/-15	+15/-15
D:	+15/-15	+15/-15

Mount Hermonit, #592

	Strength	Casualties
A:	+15/-15	+15/-15
D:	+15/-15	+15/-15

Mount Hermon I, #593

	Strength	Casualties
A:	+15/-15	+15/-15
D:	+15/-15	+15/-15

Tel Shams, #594

	Strength	Casualties
A:	+15/-15	+15/-15
D:	+15/-15	+15/-15

Tel Shaar, #595

	Strength	Casualties
A:	+15/-15	+15/-15
D:	+15/-15	+15/-15

Tel el Hara, #596

	Strength	Casualties
A:	+15/-15	+15/-15
D:	+15/-15	+15/-15

Kfar Shams-Tel Antar, #597

	Strength	Casualties
A:	+15/-15	+15/-15
D:	+15/-15	+15/-15

Naba, #598

	Strength	Casualties
A:	+15/-15	+15/-15
D:	+15/-15	+15/-15

Arab Counteroffensive, #599

	Strength	Casualties
A:	+15/-15	+15/-15
D:	+15/-15	+15/-15

Mount Hermon II, #600

	Strength	Casualties
A:	+15/-15	+15/-15
D:	+15/-15	+15/-15

Mount Hermon III, #601

Strength		Casualties
A:	+15/-15	+15/-15
D:	+15/-15	+15/-15

Task 8: Development of Strength and Attrition Histories for Selected Battles

The following list contains engagements for which accurate strength and attrition (S/A) histories may be available for both participants in the engagement. The estimated number of man-days required to complete a strength and attrition history for each engagement is also provided.

<u>Engagement Name and Number</u>	<u>Est'd Number of Man-days Required for S/A History</u>
Freiburg, #15	3
Preston, #26	3
Austerlitz, #117	2
Waterloo, #145	2
The Alma, #165	2
Inkerman, #166	2
First Bull Run (First Manassas), #171	2
Chancellorsville, #196	2
Trenton, #85	1
Princeton, #86	1
Gettysburg, #199	1
Bowling Alley, #431 *	1
Via Anziate, #454 *	1
Valmontone, #455 *	1
The Pogoreloye Gorodishche Offensive, #491 **	1
The Lvov-Sandomierz Offensive, #505 **	1
Seelow Heights, #515 **	1

* These engagements are documented only by HERO reports. If the primary sources for data are requested for documentation, two man-days would be required to complete strength and attrition histories for them.

** These engagements can be documented only by HERO reports. The original sources for data are in Russian.

STRENGTH AND ATTRITION HISTORY

Engagement: Westwall, #468

Attacker: US XIX Corps (elms)

Defender: Ger LXXI Corps (elms)

Strengths, Accretions, and Deletions

<u>Date & Time</u>	<u>ATTACKER</u>			<u>DEFENDER</u>		
	<u>Strength</u>	<u>Casualties</u>	<u>Reinf./ Repl.</u>	<u>Strength</u>	<u>Casualties</u>	<u>Reinf./ Repl.</u>
194410021100	25,345	205	7,128	10,844	238	5,793
194410030600	32,268	202	0	16,399	381	406
194410040500	32,066	450	0	16,424	357	7,780
194410050600	31,616	158	4,878	23,847	660	2,311
194410060710	36,336	272	0	25,498	716	0
194410070900	36,064	190	0	24,782	1,264	0
194410071830	35,874			23,518		

The date-time group used in this strength and attrition history is organized exactly like those used for Task 4, i.e., by year, month, day, and hour. On this table, an entry for strength data represents the strength of a side at the date and time shown on the same line as the entry. For example, the attacker's strength at 11:00 AM on 2 October 1944 is 25,345. Entries for casualties and reinforcements/replacements are for the periods delimited by the dates and times shown on the lines immediately preceding and following the entries. In this engagement for example, the attacker incurred 205 casualties and received 7,128 reinforcements between 11:00 AM on 2 October and 6:00 AM on 3 October.

The following sources were used for strength and casualty data and for information on the times of the periods of combat activity.

PRIMARY SOURCES:

Official records of US units. These are on deposit at the Federal Record Center, Suitland, Maryland.

Record Group [RG] 407, 99/12/1.2. G-1 Journal and File, 2d Armored Division, Oct 1944.

RG 407, 330-2.1. G-2 Periodic Reports, 30th Division, Sep-Oct 1944.

RG 407, 330-3.0. G-3 After Battle Report, 30th Division, Oct 1944.

RG 407, ARBN-743-3.2. S-3 Journal History, 743d Tank Battalion, 1-31 Oct 1944.

RG 407, TDBN-803-1.2 to 1.13. S-1 Journal File, 803d Tank Destroyer Battalion, 1 Oct-30 Nov 1944.

RG-407, TDBN 803-3.2. S-3 Journal, 803d Tank Destroyer Battalion, Oct 1944.

RG 407. Headquarters US XIX Corps, Office of the Commanding General. "Breaching the Siegfried Line," a General Staff analysis of the US XIX Corps' attack and penetration through the Siegfried Line in October 1944, dated 12 Jan 1945.

Official Records of German units. These are on microfilm at the US National Archives, Washington, D.C.

T-314, Roll 1597, Frames 0095-0096. Status Report, 12th Volks Grenadier Division, 1 Nov 1944.

T-314, Roll 1591, Frames 0533-0652. Daily War Diaries, LXXXI Army Corps, 2-7 Oct 1944.

T-314, Roll 1597, Frames 0027-0030. Weekly Divisional Evaluation Reports from LXXXI Army Corps to Seventh Army, 1 Oct 1944 and 7 Oct 1944.

T-314, Roll 1597, Frames 0581-0582. LXXXI Army Corps Strength Reports as of 1 Nov 1944.

T-314, Roll 1597, Frames 0088-0091. Status Report, 246th Volks Grenadier Division, 1 Nov 1944.

T-314, Roll 1597, Frames 0097-0098. Status Report, 341st Assault Gun Brigade, 1 Nov 1944.

Secondary Sources:

Hewitt, Robert L. Workhorse of the Western Front: The Story of the 30th Infantry Division. Washington, D.C., 1946.

MacDonald, Charles B. The Siegfried Line Campaign. US Army in World War II: The European Theater of Operations. Washington, D.C., 1963.

Task 9: Assistance in Eliminating Unwanted Redundancies

HERO has reviewed CAA's efforts to reduce the level of redundancy in the data base. Our belief is that the redundancy has not been identified sufficiently to support reduction of the number of factors based on factor analysis.

The purpose of the data in Table 6 is quite different from the purpose of the data in Tables 2 and 4. The judgments on the factors in Tables 2 and 4 indicate the degree to which a particular factor was present in a battle. The judgments on the factors in Table 6 indicate the degree to which a particular factor influenced the outcome of the battle. While the names of some of these factors are the same in the original data base report, the judgments reflected in the values assigned to the factors are different. For example, the terms SURPA and SURPAA (the former identified in the original data base as "Surprise" on Table 2, OPERATIONAL AND ENVIRONMENTAL VARIABLES, and the latter as "Surprise" on Table 6, FACTORS AFFECTING OUTCOME) have been cited by CAA as an ~~obvious~~ ^{potential} example of redundancy. Yet, the two factors mean quite different things, as follows:

SURPA is a judgment as to the presence of surprise in the battle and the degree to which that surprise was present.

SURPAA, on the other hand, is a judgment as to the effect on the outcome of the battle of the surprise that was present.

It might be possible to have surprise occurring in a battle but either not affecting the outcome of the battle, or else affecting the outcome to a substantially different degree than

was judged to be present. An attacker could achieve surprise to a high degree, but with little or no effect on the outcome of the battle. In that battle, SURPA would have a high value for the attacker, but SURPAA would have a low value for the attacker. The notation for the factors given in the original data base tends to cause some of this confusion. Of course, SURPAA is meaningless when SURPA is not present, so there is some correlation between these values and ipso facto some redundancy.

If reduction of the number of redundant factors is desired, there are several possibilities. However, it would be inappropriate, for example, to aggregate weather, season, and terrain into a single "environmental" variable. Although there is some superficial validity to this combination because these factors are related to a degree through physical processes, such an aggregation may not reduce the number of redundant items of information. However, this aggregation would have nothing to do with the adjudged effect of each separate environmental factor on battle outcome. In one battle, terrain might be highly influential; in another battle the overcast weather preventing air support might be crucial. These important judgments would not be possible with a single factor for environment. Generally, we believe that reduction in redundancy could create problems of increased complexity and difficult interpretation.

HERO does not believe that statistical methods alone should be used to identify unwanted redundancies among the data base factors. The method that should be used is a combination of statistical analysis and combat engagement analysis to determine which factors could be combined without reducing the information

available from the data base. That is, the analysis should be realistic in its treatment of the way in which combat operates.