

NO-A195 383 INDEPENDENT REVIEW/REASSESSMENT OF ANOMALOUS DATA 1/2
VOLUME 4(U) LFM MANAGEMENT ASSOCIATES INC ALEXANDRIA VA
C B MACDONALD ET AL 22 JUN 87 MDA983-86-C-0396

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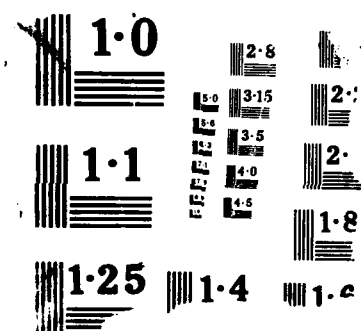
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INDEPENDENT REVIEW/REASSESSMENT

OF

ANOMALOUS DATA

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VOLUME IV

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Prepared by

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9. ABSTRACT (Continue on reverse if necessary and identify by block number) An independent review/reassessment of 61 battles in 8 campaigns of World War II and the Arab-Israeli Wars of 1967 and 1973 was conducted. This work will provide the U.S. Army's Concepts Analysis Agency (CAA) with a factual basis for determining the extent to which certain anomalies in the data contained in CAA Study Report CAA-SR-84-6, "Analysis of Factors That Have Influenced Outcomes of Battles and Wars" are attributable to actual changes in combat dynamics, or whether they are more likely due to flaws in the data base. In virtually every case, the LFW Team's findings differ substantially from those determined by the authors of CAA-SR-84-6. Keywords: land combat, Northwest Europe, Eastern Front, World War Two, casualties, military force levels).			
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INTRODUCTION AND BIBLIOGRAPHY: ARAB-ISRAELI WARS

As per contract, the LFW Team reviewed/reassessed the following battles:

Jebel Libni [Sinai], 6 Jun 1967
Kerama [Jordan Valley], 21 Mar 1968
Ismailia [Suez], 19-22 Oct 1973
Kuneitra [Golan], 6-7 Oct 1973
Ahmadiyah [Golan], 6-7 Oct 1973
Yehudia-El Al [Golan], 7/8 Oct 1973*
Mount Hermonit [Golan], 8-9 Oct 1973
Mount Hermon I [Golan], 8 Oct 1973
Mount Hermon II [Golan], 21 Oct 1973

*Use of the virgule indicates an overnight battle rather than a two-day battle.

As noted in the general instruction, LFW Management Associates, Inc. sent a member of the team to Israel to seek access to Israeli Army records but without success. Subsequent attempts to obtain information from other Israeli sources also produced no data other than references to secondary works with which the LFW Team was already familiar.

Aside from the obvious problem of inadequate basic data, the lack of Israeli cooperation also left the LFW Team without adequate information on Tales of Organization and Equipment of the Israeli Army and its opponents with which to extrapolate in order to fill the many gaps in personnel and armament strengths. The limited figures on strengths and armament found in secondary sources [Dupuy, Elusive Victory; Herzog, The Arab-Israeli Wars; Adan, On the Banks of the Suez; and Safran, From War to War are the basis for the extrapolation noted on the appropriate charts.

The secondary sources paid somewhat more attention to casualties, and those provided on the charts are in all cases from the secondary sources but rounded off, which is meant to

indicate that the LFW Team accepts them only as a general indication of the losses.

Indeed, it must be said that the LFW Team has considerably less confidence in the reliability of the statistics provided for this group of battles than for any others involved in the study/reassessment.

NOTE: The HERO study separated the second Mount Hermon action into two battles, Mount Hermon II and Mount Hermon III, apparently on the basis of the account found in Dupuy, Elusive Victory. The LFW Team found contrary accounts in four sources which would indicate that the two should be treated as one battle: Herzog, The Arab-Israeli Wars; O'Ballance, No Victor, No Vanquished; Allen, The Yom Kippur War [however briefly]; and Asher and Hammel, Duel for the Golan. Even if the account in Elusive Victory is accepted, a question still remains whether they constitute two separate battles, for the action was continuous with virtually the same forces involved on both days. Because the LFW Team was not charged with analysis of Mount Hermon III, no change was made.

Bibliography

Official Records

None.

Secondary Sources

Most useful:

Adan, Avrahan, On the Banks of the Suez: An Israeli General's Personal Account of the Yom Kippur War [San Rafael, CA: Presidio Press, 1980].

Dupuy, Trevor N., Elusive Victory: The Arab-Israeli Wars, 1947-1974 [New York: Harper and Row, 1978].

Herzog, Chaim, The Arab-Israeli Wars [New York: Random House, 1982].

Safran, Nadar, From War to War: The Arab-Israeli

Confrontation, 1948-1967, [New York: Pegasus Books, 1969].

Schiff, Ze'ev, A History of the Israeli Army: 1974 to the Present [New York: The Macmillan Co., 1985].

Of limited usefulness:

Asher, Jerry, with Hammel, Eric, Duel for the Golan, the 100-Hour Battle that Saved Israel [New York: William Morrow and Co., 1987].

Luttwak, Edward N., and Horowitz, Daniel, The Israeli Army, 1948-1973 [Cambridge, MA: Abt Books, 1983].

O'Ballance, Edgar, No Victor, No Vanquished: The Yom Kippur War [San Rafael, CA: Presidio Press, 1978].

Of peripheral usefulness:

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Allen, Peter, The Yom Kippur War [New York: Charles Scribner's Sons, 1982].

Barclay, Brig. C.N., "Lessons from the October War," ARMY Magazine, May 74.

Byford-Jones, W., The Lightning War: The Israeli-Arab Conflict, 1967 [Indianapolis, IN: The Bobbs Merrill Co., 1968].

Dupuy, T.N., "The War of Ramadan: An Arab Perspective of the October War," ARMY Magazine, Mar 75.

Hassan el Badri, et al., The Ramadan War, 1973 [Dunn Loring, VA: T.N. Dupuy Associates, Inc., 1978].

Teveth, Shabtai, The Tanks of Tammuz: An Eyewitness Account of Israel's Six Days War [New York: The Viking Press, 1968].

NOTE: The LFW Team was unable to obtain copies of two sources cited in the HERO study: LTC A. Ayalon, The Six Day War [IDF Spokesman's Office, Apr 68], and IDF Spokesman's Office, The Six Day War: Description of Combats by Commanders,

Northern Front [Aug 67]. The first source covers the period of only one of the battles assigned the LFW Team for review [Jebel Libni], and the second source none. For lack of capability in Hebrew, the LFW Team also was unable to consult Colonel Meir Pa'il, "Tzahal Attacks on Abu Ageila in Three Wars," Maarachot, Aug 70, but this source apparently covers none of the battles assigned the LFW Team for review.

US ARMY

LFW MANAGEMENT ASSOCIATES, INC. REVIEW

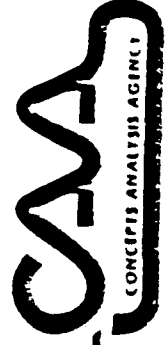
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CAA TASK 6 REQUIREMENTS

LFW'S INDEPENDENT REVIEW/REASSESSMENT OF NINE ANOMALOUS BATTLES

FROM THE ARAB-ISRAELI WARS

OF 1967 AND 1973



IV-5

US ARMY

JEBEL LIBNI, EGYPT

HERO

A/D	Dates	Campaign	Forces	Commanders	Days	Width of Front (Km)
A	6 Jun 1967	Sinai	Is Tal Div (-)(+)	BG Tal	1	2.0
D			Eg 3d Inf Div (-)	MG Nasser		

LFW

A/D	Dates	Campaign	Forces	Commanders	Days	Width of Front (Km)
A	6 Jun 1967	Sinai	Is Yoffe Div (-)(+)	BG Yoffe	1	2.0
D			Eg 3d Inf Div (-)	MG Nasser		

Most of the forces were from General Yoffe's division rather than General Tal's.



US ARMY

ISRAELI STRENGTH: JEBEL LIBNI

Low	
Yoffe Division (-)(+) estimated strength	11,000
High	
Yoffe Division (-)(+) estimated strength	15,000
Nominal	
LFW Team estimate	12,000
Replacements during battle	0
RTD	0
Attachments/detachments during battle	0
Total	12,000

BASIC SOURCES: Safran, From War to War; Dupuy, Elusive Victory; Schiff, A History of the Israeli Army; Herzog, The War of Atonement and The Arab-Israeli Wars. Nominal estimate based primarily on organizational strengths.



US ARMY

ISRAELI CASUALTIES: JEBEL LIBNI

No statistics available.



TV-8

US ARMY

EGYPTIAN STRENGTH: JEBEL LIBNI

	Low	High	Nominal
3d Inf Div (-) strength	4,000		
3d Inf Div (-) strength		7,000	
LFW Team estimate			5,900
Replacements during battle			0
RTD			0
Attachments/detachments during battle			0
Total	5,900		

BASIC SOURCES: Safran, From War to War; Dupuy, Elusive Victory; Schiff, A History of the Israeli Army; Herzog, The War of Atonement and The Arab-Israeli Wars. Nominal estimate based primarily on organizational strengths.



US ARMY

EGYPTIAN CASUALTIES: JEBEL LIBNI

No statistics available.



IV-10

US ARMY

JEBEL LIBNI

HERO

A/D	Strength					Air Sorties	Battle Casualties						
	Pers (Total)	Armor			Arty Pcs		Pers %/D	Armor %/D	Arty %/D	%D A/C	%D		
		T	Lt.	MBT									
A	10,800	184	20	164	48	52	70	0.6	10	5.4	0	--	--
D	3,000	60	0	60	48	0	450	15.0	32	53.3	?	--	--

LFW

A/D	Strength					Air Sorties	Battle Casualties				
	Pers (Total)	Armor			Arty		Pers %/D	Armor %/D	Arty %/D	A/C %/D	
		T	Lt.	MBT	Pcs						
A	12,000	?	?	?	?	?	?	?	?	?	?
D	5,900	139	20	119	30	?	?	?	32	23.0	?



IV-11

US ARMY

ISRAELI STRENGTH: KERAMA

Low

Israeli Gonen Task Force estimated strength 11,500

High

Israeli Gonen Task Force estimated strength 13,000

Nominal

LFW Team estimate	12,200
Replacements during battle	0
RTD	0
Attachments/detachments during battle	0

Total 12,200

BASIC SOURCES: Herzog, The War of Atonement; Dupuy, Elusive Victory; Schiff, A History of the Israeli Army. Nominal estimate based primarily on organizational strengths.



US ARMY

ISRAELI CASUALTIES: KERAMA

"Bloody"

Low

Estimated low casualties [KIA 30 plus WIA 80] 110

High

Estimated high casualties [KIW 40 plus WIA 110] .. 150

Nominal

LFW Team estimate 125

"Non-Bloody"

No statistics are available.

BASIC SOURCES: Herzog, The War of Atonement; Dupuy, Elusive Victory; Schiff, A History of the Israeli Army.



US ARMY

JORDANIAN STRENGTH: KERAMA

Low	
Jordanian 1st Inf Div plus 500 fedayeen	13,000
High	
Jordanian 1st Inf Div plus 500 fedayeen	16,000
Nominal	
LFW Team estimate	
Replacements during battle	14,000
RTD	0
Attachments/detachments during battle	0
	0
Total	14,000

BASIC SOURCES: Herzog, The War of Atonement; Dupuy, Elusive Victory; Schiff, A History of the Israeli Army. Nominal estimate based primarily on organizational strengths.



US ARMY

JORDANIAN CASUALTIES: KERAMA*

"Bloody"	
Low	
Estimated low casualties [KIA 160 plus WIA 200]	360
High	
Estimated high casualties [KIA 240 plus WIA 100]	490
Nominal	
LFW Team estimate	390
"Non-Bloody"	
Low	
Estimated low casualties	120
High	
Estimated high casualties	160
Nominal	
LFW Team estimate	150

*Includes fedayeen

BASIC SOURCES: Herzog, The War of Atonement; Dupuy, Elusive Victory; Schiff, A History of the Israeli Army.



US ARMY

KERAMA

HERO

A/D	Strength					Air Sorties	Battle Casualties							
	Pers (Total)	Armor		Arty			Pers %/D	Armor %/D	Arty %/D	A/C %/D				
		T	Lt.	MBT	Pcs									
A	11,940	128	8	120	67	156	140	1.2	20	15.6	1	1.5	1	0.6
D	16,168	60	0	60	91	0	497	3.1	33	55.0	0	--	0	--

LFW

A/D	Strength					Air Sorties	Battle Casualties						
	Pers (Total)	Armor		Arty			Pers %/D	Armor %/D	Arty %/D	A/C %/D	%D		
		T	Lt.	MBT	Pcs								
A	12,200	?	?	?	60	?	1.0	4	?	--	1	--	
D	14,000	113	?	113	?	?	2.8	13	11.5	?	--	0	--



US ARMY

ISMAILIA, EGYPT

HERO

A/D	Dates	Campaign	Forces	Commanders	Days	Width of Front (Km)
A	19-22 Oct 1973	Suez	Is Sharon Div	MG Sharon	4	20.0
D			Eg Second Army (-)	MG Kalil		

LFW

A/D	Dates	Campaign	Forces	Commanders	Days	Width of Front (Km)
A	19-22 Oct 1973	Suez	Is Sharon Div	MG Sharon	4	20.0
D			Eg Second Army (Elements)*	?		

* 16th Inf Div (-)
21st Armd Div (-)
118th Mech Bde
150th Para Bde
182d Para Bde
Commando Bn

So few forces of the Second Army were involved that it is more appropriate to label the defenders Second Army (Elements) rather than Second Army (-).



US ARMY

ISRAELI STRENGTH: ISMAILIA

Low

Sharon Division estimated strength 12,000

High

Sharon Division estimated strength 16,000

Nominal

LFW Team estimate 15,000
 Replacements during battle 0
 RTD 0
 Attachments/detachments during battle 0

Total 15,000

BASIC SOURCES: Adan, On the Banks of the Suez; Dupuy, Elusive Victory; Herzog, The War of Atonement. Nominal estimate based primarily on Adan.



US ARMY

EGYPTIAN STRENGTH: ISMAILIA

No statistics available.



IV-19

US ARMY

EGYPTIAN CASUALTIES: ISMAILIA

No statistics available.



IV-20

US ARMY

ISMAILIA

HERO

A/D	Strength					Air Sorties	Battle Casualties					
	Pers (Total)	Armor		Arty Pcs			Pers %/D	Armor %/D	Arty %/D	A/C %/D	%D	
		T	Lt. MBT	T	Pcs							
A	17,000	232	20	212	72	600	0.9	40	4.3	?	--	
D	23,860	246	17	229	137	1,800	1.9	92	9.3	?	--	

LFW

A/D	Strength					Air Sorties	Battle Casualties				
	Pers (Total)	Armor		Arty Pcs			Pers %/D	Armor %/D	Arty %/D	%D A/C	%/D
		T	Lt. MBT	120	?						
A	15,000	120	?	?	?	?	?	?	?	?	?
D	?	?	?	?	?	?	?	?	?	?	?

IV-21



US ARMY

SYRIAN STRENGTH: KUNEITRA

	Low	High	Nominal
9th Inf Div (+) strength	10,000		
9th Inf Div (+) strength		15,000	
LFW Team estimate			13,000
Replacements during battle			0
RTD			0
Attachments/detachments during battle			0
Total	13,000		

BASIC SOURCES: Dupuy, Elusive Victory; Herzog, The Arab-Israeli Wars. Nominal estimate based primarily on organizational strengths.



US ARMY

SYRIAN CASUALTIES: KUNEITRA

No statistics available.



IV-23

US ARMY

ISRAELI STRENGTH: KUNEITRA

Low	
7th Armd Bde (-) strength	2,000
High	
7th Armd Bde (-) strength	5,000
Nominal	
LFW Team estimate	3,000
Replacements during battle	0
RTD	0
Attachments/detachments during battle	0
Total	3,000

BASIC SOURCES: Dupuy, Elusive Victory; Herzog, The Arab-Israeli Wars. Nominal estimate based primarily on organizational strengths.



US ARMY

ISRAELI CASUALTIES: KUNEITRA

No statistics available.



IV-25

US ARMY

KUNEITRA

HERO

A/D	Strength					Air Sorties	Battle Casualties						
	Pers (Total)	Armor			Arty Pcs		Pers	%D	Armor	%D	Arty		
		T	Lt. MBT										
A	17,750	75	2	73	115	49	350	1.0	40	26.7	?	?	--
D	3,630	50	4	46	12	107	200	2.8	14	14.0	?	?	--

LFW

A/D	Strength					Air Sorties	Battle Casualties					
	Pers (Total)	Armor		Arty			Pers	%D	Armor	%D	Arty	
		T	Lt. MBT	Pcs								
A	13,000	120	?	120	72	?	--	?	--	?	%D	--
D	3,000	60	?	60	44	?	--	?	--	?	%D	--



US ARMY

SYRIAN STRENGTH: AHMADIYEH

Low	
7th Inf Div (+) strength	10,000
High	
7th Inf Div (+) strength	14,000
Nominal	
LFW Team estimate	12,000
Replacements during battle	0
RTD	0
Attachments/detachments during battle	0
Total	12,000

BASIC SOURCES: Dupuy, Elusive Victory; Herzog, The Arab-Israeli Wars. Nominal estimate based primarily on organizational strengths.



US ARMY

SYRIAN CASUALTIES: AHMADIYEH

No statistics available.



IV-28

US ARMY

ISRAELI STRENGTH: AHMADIYEH

Low	
7th Armd Bde (-) strength	4,000
High	
7th Armd Bde (-) strength	7,000
Nominal	
LFW Team estimate	5,000
Replacements during battle	0
RTD	0
Detachments during battle (1 battalion)	- 900
Total	4,100

BASIC SOURCES: Dupuy, Elusive Victory; Herzog, The Arab-Israeli Wars. Nominal estimate based primarily on organizational strength.

US ARMY

ISRAELI CASUALTIES: AHMADIYEH

No statistics available.



US ARMY

AHMADIYEH

HERO

A/D	Strength					Air Sorties	Battle Casualties					
	Pers (Total)	Armor			Arty		Pers %/D	Armor %/D	Arty %/D	A/C %/D	%D	
		T	Lt.	MBT	Pcs							
A	22,750	147	4	143	131	100	700	1.5	96	32.4	?	---
D	5,745	78	7	71	16	191	250	2.2	30	19.2	?	---

LFW

A/D	Strength					Air Sorties	Battle Casualties				
	Pers (Total)	Armor		Arty Pcs			Pers %D	Armor %D	Arty %D	%D A/C	%D
		T	Lt.	MBT	Pcs						
A	12,000	500	?	500	72	?	100	20	?	?	
D	5,000	80	?	80	44	?	?	?	?	?	



US ARMY

YEHUDIA-EL AL, SYRIA

HERO

A/D	Dates	Campaign	Forces	Commanders	Days	Width of Front (Km)
A	7/8 Oct 1973	Golan	Syr 5th Inf Div (+)	BG Aslan	1	4.0
D			Is 240th Armcd Div	MG Laner		

LFW

A/D	Dates	Campaign	Forces	Commanders	Days	Width of Front (Km)
A	7/8 Oct 1973	Golan	Syr 5th Inf Div (+)	BG Aslan	1	4.0
D			Is 188th Armcd Bde (-) Is 240th Armcd Div	MG Laner		

The 188th Armcd Bde (-) was present during the battle.



US ARMY

SYRIAN STRENGTH: YEHUDIA-EL AL

Low	
5th Inf Div (+) strength	18,000
High	
5th Inf Div (+) strength	22,000
Nominal	
LFW Team estimate	
Replacements during battle	20,000
RTD	0
Attachments/detachments during battle.....	0
	0
Total	20,000

BASIC SOURCES: Dupuy, Elusive Victory; Herzog, The Arab-Israeli Wars. Nominal estimate based primarily on organizational strength.



US ARMY

SYRIAN CASUALTIES: YEHUDIA-EL AL

No statistics available.



IV-34

US ARMY

ISRAELI STRENGTH: YEHUDIA-EL AL

	Low	High	Nominal
188th Armd Bde (-) strength	500		
188th Armd Bde (-) strength		2,000	
LFW Team estimate			1,000
Replacements during battle			0
RTD			0
Attachments during battle [elements 240th Armd Div]			10,000
Total			11,000

BASIC SOURCES: Dupuy, Elusive Victory; Herzog, The Arab-Israeli Wars.



US ARMY

ISRAELI CASUALTIES: YEHUDIA-EL AL

No statistics available.



IV-36

US ARMY

YEHUDIA-EL AL

HERO

A/D	Strength					Air Sorties	Battle Casualties						
	Pers (Total)	Armor		Arty			Pers %D	Armor %D	Arty %D	A/C %D	%D		
		T	Lt. MBT	Pcs									
A	21,984	189	7	182	129	70	500	2.3	46	24.3	?	--	--
D	6,300	106	10	96	36	132	150	2.4	10	9.4	?	--	--

LFW

A/D	Strength					Air Sorties	Battle Casualties				
	Pers (Total)	Armor		Arty Pcs			Pers %/D	Armor %/D	Arty %/D	%D A/C	%D
		T	Lt. MBT	Pcs							
A	20,000	?	?	300	144	?	?	250	83.3	?	?
D	1,000	?	?	90	?	?	?	?	?	?	?



US ARMY

SYRIAN STRENGTH: MOUNT HERMONIT

	Low	High	Nominal
7th Inf Div (+) strength	10,000		
7th Inf Div (+) strength		16,000	
LFW Team estimate			14,000
Replacements during battle			0
RTD			0
Attachments/detachments during battle			0
Total	14,000		

BASIC SOURCES: Dupuy, Elusive Victory; Herzog, The Arab-Israeli Wars. Nominal estimate based primarily on organization strengths.



US ARMY

SYRIAN CASUALTIES: MOUNT HERMONIT

No statistics available.



US ARMY

ISRAELI STRENGTH: MOUNT HERMONIT

Low

7th Armd Bde (-) strength 2,000

High

7th Armd Bde (-) strength 6,000

Nominal

LFW Team estimate 3,900
 Replacements during battle 0
 RTD 0
 Attachments during battle [remnants 188th Armd Bde] 100

Total 4,000

BASIC SOURCES: Dupuy, Elusive Victory; Herzog, The Arab-Israeli Wars. Nominal estimate based primarily on organization strengths.



US ARMY

ISRAELI CASUALTIES: MOUNT HERMONIT

No statistics available.



IV-41

US ARMY

MOUNT HERMONIT

HERO

A/D	Strength				Air Sorties	Battle Casualties						
	Pers (Total)	Armor		Arty Pcs		Pers % / D	Arty					
		T	Lt.	MBT			% / D	% / D	% / D			
A	31,650	182	6	176	53	1,200	1.9	100	27.5	?	?	--
D	5,395	38	3	35	149	400	3.7	24	31.6	?	?	--

LFW

A/D	Strength					Air Sorties	Battle Casualties					
	Pers (Total)	Armor		Arty Pcs			Pers %/D	Arty				
		T	Lt.	MBT	%/D			Armor %/D	Arty %/D	A/C %/D		
A	14,000	?	?	?	?	?	--	200	?	--	?	--
D	3,900	?	?	?	?	?	--	60	?	--	?	--



US ARMY

MOUNT HERMON I

The LFW Team found no statistics on this battle other than that the attackers [Syrians] lost 22 killed and 50 wounded [Asher and Hammel, Duel for the Golan, and O'Ballance, No Victor, No Vanquished]. The defenders [Israelis] lost 14 men, presumably killed, and 20 captured [O'Ballance, No Victor, No Vanquished].



US ARMY

MOUNT HERMON II, SYRIA

HERO

A/D	Dates	Campaign	Forces	Commanders	Days	Width of Front (Km)
A	21 Oct 1973	Golan	Is Golan Bde	Col Drori	1	1.0
D			Syr Para Bde			

LFW

A/D	Dates	Campaign	Forces	Commanders	Days	Width of Front (Km)
A	21 Oct 1973	Golan	Is Golan Bde	Col Drori	1	1.0
D			Syr Spec Forces Bn	?		

O'Ballance, No Victor, No Vanquished, says the defenders were the Syrian Special Forces Battalion, not the Syrian Parachute Brigade.



ISRAELI STRENGTH: MOUNT HERMON II

Low

Golani Bde [with paratrooper reinforcements] strength 4,000

High

Golani Bde [with paratrooper reinforcements] strength 6,000

Nominal

LFW Team estimate	5,000
Replacements during battle	0
RTD	0
Attachments/detachments during battle	0.
Total	5,000

BASIC SOURCES: Dupuy, Elusive Victory; Herzog, The Arab-Israeli Wars.

US ARMY

ISRAELI CASUALTIES: MOUNT HERMON II

No statistics available.



IV-46

US ARMY

SYRIAN STRENGTH: MOUNT HERMON II

Low	
Special Forces battalion strength	300
High	
Special Forces battalion strength	700
Nominal	
LFW Team estimate	500
Replacements during battle	0
RTD	0
Attachments/detachments during battle	0
Total	500

BASIC SOURCES: Dupuy, Elusive Victory; Herzog, The Arab-Israeli Wars.



US ARMY

SYRIAN CASUALTIES: MOUNT HERMON II

No statistics available.



IV-48

US ARMY

MOUNT HERMON II

HERO

A/D	Strength					Air		Battle Casualties					
	Pers (Total)	Armor			Arty		Sorties	Casualties					
		T	Lt.	MBT	Pcs	Pers %/D		Armor %/D	Arty %/D	A/C %/D	A/D %/D		
A	5,700	0	0	0	12	30	150	2.6	0	?	?	?	?
D	4,750	0	0	0	27	30	200	4.2	0	?	?	?	?

LFW

A/D	Strength					Air Sorties	Battle Casualties						
	Pers (Total)	Armor			Arty Pcs		Pers %/D	Arty					
		T	Lt.	MBT				Armor %/D	Arty %/D	Arty %/D	A/C %/D		
A	5,000	5	0	5	?	?	?	?	?	?	?	?	?
D	500	0	0	0	?	?	?	0	?	?	?	?	?



INTRODUCTION AND BIBLIOGRAPHY: NORTHWEST EUROPE

As per contract, the LFW Team reviewed/reassessed the following battles:

Operation GOODWOOD [Normandy], 18-20 Jul 1944
Chartres [LeMans to Metz], 16 Aug 1944
Moselle-Metz [LeMans to Metz], 6-11 Sep 1944
Morhange [Saar/Lorraine], 13-15 Nov 1944
Durstel-Farebersviller [Saar/Lorraine], 28-29 Nov 1944
Singling-Bining [Saar/Lorraine], 6 Dec 1944
Sauer River [Ardennes], 16-17 Dec 1944

For U.S. divisions and corps in these battles, adequate data on casualties and armament were available in the official division and corps records, but except in the case of the XII Corps and the 12th Infantry, 4th Infantry Division, the LFW Team had to depend for personnel strengths in large measure on extrapolation based on Tables of Organization and Equipment as modified by accounts in Cole, The Lorraine Campaign, as to the general condition of the units. At Chartres, for example, the action was the first serious encounter for CCB, 7th Armored Division, after brief commitment in a pursuit action, so that a strength of 3,500 based on normal organization strength appears reasonable; and Cole reports that at both Morhange and Singling-Bining all units of the 4th Armored Division were seriously understrength.

For statistics on British units in Operation GOODWOOD, the LFW Team relied primarily on the Second Army's Report on Operation GOODWOOD and on the official British history, Ellis, The Battle of Normandy. Personnel strengths are primarily estimates based on an appendix in the official history providing organization, strengths, and armament of British units. For Canadian strengths and casualties, the basic source was the official history, Stacey, The Victory Campaign.

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Official Records

XII Corps: After-Action Report, Artillery After-Action Report, Periodic Reports, and G-1 and G-3 Journals and files.

XX Corps: After-Action Report, Artillery After-Action Report, Periodic Reports, and G-1 and G-3 Journals and files.

4th Armored Division: After-Action Report, Division Artillery After-Action Report, Periodic Reports, and G-1 and G-3 Journals and files; After-Action Reports, Periodic Reports, and S-1 and S-3 Journals and files, Combat Commands A, B, and R.

4th Infantry Division: After-Action Report, Division Artillery After-Action Report; After-Action Report, Periodic Reports, S-1 and S-3 Journals and files, 12th Infantry; After-Action Reports of attached units: 70th Tank Battalion and 802d and 803d Tank Destroyer Battalions.

5th Infantry Division: After-Action Report.

6th Armored Division: After-Action Report.

7th Armored Division: After-Action Report and Periodic Reports; After-Action Report, CCB.

26th Infantry Division: After-Action Report.

35th Infantry Division: After-Action Report.

80th Infantry Division: After-Action Report.

90th Infantry Division: After-Action Report.

British Sources

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German Sources

OKW, KTB [War Diary of the Supreme Command of the Armed Forces], vol. 7, as cited in Salerno sources.

Appendices of the period [Jul-Nov 1944] in OKW, KTB and the official German history [Dieter Ose, Entscheidung in Westen, cited in full below] assemble important documents and statistics. The loss of most primary sources during the operations in 1944 and at the end of the war makes this period especially difficult for research, leaving a high number of

gaps to be filled by extrapolation based on Tables of Organization and Equipment.

Manuscripts: No. T-121-123, "The History of OB WEST [Commander-in-Chief, West]" in 3 parts and 37 volumes, especially Part I, B, II, 31.32; No. B-308, a multi-volume study in command of OB WEST; and the following manuscripts listed by units:

First Army: No. B-363 [Albert Emmerich], First Army, 15 Sep-7 Nov 1944; No. A-908 [Emmerich], First Army Roster and Command Organization; No. B-821 [Kurt Hold], First Army Organization and Replacements [See also MS No. B-732]; No. B-722-730 [Northern France Campaign]; No. A-900 [Curt Souchay], Rear Areas, Seventh and First Armies; Nos. B-003 and B-091 [Otto Kohl] and B-214 [Willie Mantey], Rear Areas; No. B-732 [Hold], First Army Organization and Replacements 11 Aug-15 Sep 1944 [a most useful source]; B-821 on the same subject; B-222 [Otto von Knobelsdorff], Estimate of Situation.

LXXIV Corps: No. C-016 [Erich Straube], West Wall at Huertgen; No. B-118 [Karl Puechler], Operations.

LXXXVI Corps: No. A-922 [Panzer Group Eberbach at Falaise, Jul-Aug 1944]; No. B-840 [Panzer Gruppe West-Eberbach-Normandy, 3 Jul-9 Aug 1944].

XIII SS Panzer Corps: No. C-023 [Max Simon, on Panzer Lehr Division Counterattack 16 Nov-27 Dec 1944]; Nos. B-407 and B-487 [Simon]; and C-039 [Simon], Supplement to MS No. B-780.

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Most useful:

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MacDonald, Charles B., A Time for Trumpets: The Untold Story of the Battle of the Bulge, [New York: William Morrow and Co., 1985].

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US ARMY

LPW MANAGEMENT ASSOCIATES, INC. REVIEW

of

CAA TASK 7 REQUIREMENTS

LPW'S INDEPENDENT REVIEW/REASSESSMENT OF SEVEN ANOMALOUS BATTLES

FROM THE NORTHWEST EUROPE CAMPAIGN



IV-54

OPERATION "GOODWOOD": FRANCE

HERO

A/D	Dates	Campaign	Forces	Commanders	Days	Width of Front (Km)
A	18-20 Jul 44	Normandy	Br 2nd Army (-)	LtGen. Dempsey	3	21.0
D			Ger LXXVI Corp (+)	Gen Eberbach		

LFW

A/D	Dates	Campaign	Forces	Commanders	Days	Width of Front (Km)
A	18-20 Jul 44	Normandy	Br 2nd Army (-)	LtGen Dempsey	3	21.0
D			Panzer Group West (-)	Gen Eberbach		

Since three German corps were involved, it is more accurate to label the defending German forces Panzer Group West (-), rather than the LXXVI Corps (+).



US ARMY

BRITISH-CANADIAN STRENGTH: "GOODWOOD"

Low

Second Army (-) estimated strength 121,100

High

Second Army (-) estimated strength 134,000

LFW Team's estimate	127,600
Replacements received during battle	0
RTD	0
Attachments/detachments during battle	0

Total	127,600
-------	---------

BASIC SOURCE: Second Army, Report on Operation GOODWOOD; Ellis, The Battle of Normandy. Primarily extrapolations of organizational strengths.



US ARMY

BRITISH-CANADIAN CASUALTIES: "GOODWOOD"

"Bloody"	
Low	
Estimated casualties	5,300
High	
Estimated casualties	5,600
Nominal	
Estimated casualties	5,537
"Non-Bloody"	
Low	
Estimated casualties	100
High	
Estimated casualties	200
Nominal	
Estimated casualties	144

BASIC SOURCES: Second Army, Report on Operation GOODWOOD; Ellis, The Battle of Normandy; Stacey, The Victory Campaign. Nominal "Non-Bloody" losses derived from extrapolation of data from Mellor, Casualties and Medical Statistics.



US ARMY

GERMAN STRENGTH: "GOODWOOD"

Low

Panzer Group West (-) estimated strength 77,500

High

Panzer Group West (-) estimated strength 85,600

Nominal

LFW Team's estimate 81,600

Replacements received during battle 0

RTD 0

Attachments during battle [12th SS Panzer Division] 10,000

Total 91,600

BASIC SOURCE: OKW War Diary, vol. VII, and appendices; Ose, Entscheidung im Westen [German official history].



US ARMY

GERMAN CASUALTIES: "GOODWOOD"

"Bloody"	
Low	
Estimated casualties	6,750
High	
Estimated casualties	8,250
Nominal	
Estimated casualties	7,500
"Non-Bloody"	
Low	
Estimated casualties [POWs]	3,075
High	
Estimated casualties [POWs]	3,397
Nominal	
Estimated casualties [POWs]	3,237

BASIC SOURCES: The nominal estimate of "Non-Bloody" casualties is based primarily on Ellis, The Battle of Normandy, and Stacey, The Victory Campaign. For "Bloody" losses, OKW War Diary, vol. VII, and appendices; Ose, Entscheidung im Westen [German official history].



US ARMY

OPERATION "GOODWOOD" FRANCE

HERO

A/D	Strength				Air Sorties	Battle Casualties				
	Pers (Total)	T	Armor		Arty Pcs	Pers	%/D	Armor	%/D	Arty
			Lt.	MBT						
A	76,213	877	132	745	720	4,011	1.8	493	18.7	?
D	57,500	528	0	528	292	5,000	2.9	200	12.6	?
										A/C ?
										%/D --

LFW

A/D	Strength				Air Sorties	Battle Casualties				
	Pers (Total)	T	Armor		Arty Pcs	Pers	%/D	Armor	%/D	Arty
			Lt.	MBT						
A	127,600	1100	?	?	880	5,537	1.4	469	14.2	?
D	81,600	350	?	350	704	7,500	3.0	200	19.0	?
										A/C ?
										%/D --



US ARMY

CHARTRES: FRANCE

HERO

A/D	Dates	Campaign	Forces	Commanders	Days	Width of Front (Km)
A	16 Aug 1944	LeMans to Metz	US 7th Armored Div	MG Silvester	1	25.0
D			Ger 1st Army (-)	Gen Chevallerie		

LFW

A/D	Dates	Campaign	Forces	Commanders	Days	Width of Front (Km)
A	16 Aug 1944	LeMans to Metz	CCB, US 7th Armored Div	BG John B. Thompson	1	25.0
D			Ger First Army (-)	Gen Knobelsdorff		

The German commander was Knobelsdorff rather than Chevallerie, and only CCB of the 7th Armored Division was involved, not the entire division.



IV-61

US ARMY

U.S. STRENGTH: CHARTRES

Low

CCB, 7th Armored Division estimated strength 3,000

High

CCB, 7th Armored Division estimated strength 4,000

Nominal

LFW Team's estimate	3,500
Replacements received during battle	0
RTD	0
Attachments during battle [12th SS Panzer Division]	0

Total	3,500
-------	-------

BASIC SOURCE: CCB, 7th Armored Division, and 7th Armored Division after-action reports. Primarily an extrapolation of organizational strength.



US ARMY

U.S. CASUALTIES: CHARTRES

"Bloody"	
Low	
Estimated casualties	100
High	
Estimated casualties	120
Nominal	
Estimated casualties	110
"Non-Bloody"	
Low	
Estimated casualties	5
High	
Estimated casualties	10
Nominal	
Estimated casualties	8

BASIC SOURCES: CCB, 7th Armored Division, and 7th Armored Division after-action reports. Nominal estimate of "Non-Bloody" losses derived from extrapolation of data from Lada, Medical Statistics World War II.



US ARMY

GERMAN STRENGTH: CHARTRES

Low

First Army (-) estimated strength 3,600

High

First Army (-) estimated strength 4,700

Nominal

LFW Team's estimate 4,200
 Replacements received during battle 0
 RTD 0
 Attachments/Detachments during battle 0

Total 4,200

BASIC SOURCES: OKW War Diary, vol. VII, and appendices; Ose, Entscheidung im Westen [German official history].



US ARMY

GERMAN CASUALTIES: CHARTRES

"Bloody"		
Low		
Estimated casualties		250
High		
Estimated casualties		350
Nominal		
Estimated casualties		300
"Non-Bloody"		
Low		
Estimated casualties [POWs]		1,350
High		
Estimated casualties [POWs]		1,650
Nominal		
Estimated casualties [POWs]		1,500

BASIC SOURCES: "Non-Bloody" losses from CCB, 7th Armored Division, and 7th Armored Division after-action reports. For "Bloody" losses, OKW War Diary, vol. VII, and appendices; Ose, Entscheidung im Westen [German official history].



US ARMY

CHARTRES: FRANCE

HERO

A/D	Strength					Air Sorties	Battle Casualties				
	Pers (Total)	Armor		Arty			Pers %/D	Armor %/D	Arty %/D	A/C %/D	
		T	Lt.	MBT	Pcs						
A	15,646	317	78	239	146	113	0.7	?	?	0	
D	8,325	15	0	15	76	579	7.0	?	?	0	

LFW

A/D	Strength					Air Sorties	Battle Casualties					
	Pers (Total)	Armor		Arty Pcs			Pers %/D	Armor %/D	Arty %/D	A/C %/D	% %/D	
		T	Lt.	MBT								
A	3,500	71	17	54	24	?	110	3.1	?	?	?	
D	4,200	16	16	0	18	2	?	300	7.1	?	?	?



US ARMY

MOSELLE-METZ : FRANCE

HERO

A/D	Dates	Campaign	Forces	Commanders	Days	Width of Front (Km)
A	6-11 Sep 44	LeMans to Metz	US XX Corps	MG Walker	6	65.0
D			Ger 1st Army (-)	Gen Knobelsdorff		

LFW

A/D	Dates	Campaign	Forces	Commanders	Days	Width of Front (Km)
A	6-11 Sep 44	LeMans to Metz	US XX Corps	MG Walker	6	65.0
D			Ger 1st Army (-)	Gen Knobelsdorff		

The only change is in the spelling of Knobelsdorff.



US ARMY

U.S. STRENGTH: MOSELLE-METZ

Low

XX Corps estimated strength 62,000

High

XX Corps estimated strength 68,400

Nominal

LFW Team's estimate 65,200
 Replacements received during battle 0
 RTD 0
 Attachments/Detachments during battle 0

Total 65,200

BASIC SOURCES: XX Corps G-1 Periodic Reports and after-action report; Cole, The Lorraine Campaign. Primarily an extrapolation of organizational strengths [three divisions, a cavalry group, 29 GS FA battalions; an engineer combat group].



US ARMY

ated casualties

U.S. CASUALTIES: MOSELLE-METZ

"Bloody"	
Low	
Estimated casualties	2,100
High	
Estimated casualties	2,500
Nominal	
Estimated casualties	2,378
"Non-Bloody"	
Low	
Estimated casualties	600
High	
Estimated casualties	1,000
Nominal	
Estimated casualties	782

BASIC SOURCES: XX Corps G-1 Periodic Reports and after-action report; Cole, The Lorraine Campaign. Nominal estimate of "Non-Bloody" losses derived from extrapolation of data from Lada, Medical Statistics World War II.



IV-69

US ARMY

GERMAN STRENGTH: MOSELLE-METZ

Low

First Army (-) estimated strength 28,900

High

First Army (-) estimated strength 35,300

Nominal

LFW Team's estimate	32,100
Replacements received during battle	0
RTD	0
Attachments/Detachments during battle	<u>0</u>
Total	32,100

BASIC SOURCES: OKW War Diary, vol. VII, and appendices; Ose, Entscheidung im Westen [German official history]. The estimate of German strength by the XX Corps G-2 was 38,500.



US ARMY

GERMAN CASUALTIES: MOSELLE-METZ

"Bloody"	
Low	
Estimated casualties	1,700
High	
Estimated casualties	2,100
Nominal	
Estimated casualties	1,900
"Non-Bloody"	
Low	
Estimated casualties	1,200
High	
Estimated casualties	1,400
Nominal	
Estimated casualties	1,300

BASIC SOURCES: German "Non-Bloody" losses from XX Corps after-action report. For "Bloody" losses, OKW War Diary, vol. VII, and Ose, Entscheidung im Westen [German official history].



US ARMY

MOSELLE-METZ: FRANCE

HERO

A/D	Strength					Air Sorties	Battle Casualties					
	Pers (Total)	Armor			Arty		Pers %/D	Armor %/D	%/D Arty	%/D A/C	%/D	
		T	Lt.	MBT	Pcs							
A	59,631	585	154	431	520	338	1647	0.5	19	0.5	?	--
D	41,500	160	0	160	248	0	1700	0.7	30	3.1	?	--

LFW

A/D	Strength					Air Sorties	Battle Casualties						
	Pers (Total)	Armor		Arty			Pers %/D	Armor %/D	Arty %/D	%D A/C	%/D		
		T	Lt.	MBT	Pcs								
A	65,200	409	139	270	492	?	2378	0.6	?	--	?	--	
D	32,100	90	39	51	110	25	1900	9.8	66	12.2	3	4.5	3.0



US ARMY

MORHANGE: FRANCE

HERO

A/D	Dates	Campaign	Forces	Commanders	Days	Width of Front (Km)
A	13-15 Nov 44	Saar (Lorraine)	US CCB 4th Armd Div (+)	BG Dager	3	10.3
D			Ger 11th Pz Div (-) (+)	LG Wietersheim		

LFW

A/D	Dates	Campaign	Forces	Commanders	Days	Width of Front (Km)
A	13-15 Nov 44	Saar (Lorraine)	CCB, US 4th Armd Div) US 35th Inf Div	BG Dager MG Baade	3	10.3
D			Ger 11th Pz Div (-) (+)	MG von Wietersheim		

Since the 35th Infantry Division was also involved and not under the command of CCB, 4th Armored Division, that division and its commander are also listed. Wietersheim was at the time a major-general.



IV-73

US ARMY

U.S. STRENGTH: MORHANGE

Low

35th Inf Div and CCB, 4th Armd Div estimated strength 20,600

High

35th Inf Div and CCB, 4th Armd Div estimated strength 22,800

Nominal

LFW Team's estimate	21,740
Replacements received during battle	0
RTD	0
Attachments/Detachments during battle	0
Total	21,740

BASIC SOURCES: 4th Armored Division and 35th Infantry Division
G-1 Reports and after-action reports; CCB, 4th Armored Division
after-action report; Cole, The Lorraine Campaign.



US ARMY

U.S. CASUALTIES: MORHANGE

"Bloody"	
Low	
Estimated casualties	450
High	
Estimated casualties	500
Nominal	
Estimated casualties	481
"Non-Bloody"	
Low	
Estimated casualties	120
High	
Estimated casualties	140
Nominal	
Estimated casualties	130

BASIC SOURCES: 4th Armored Division and 35th Infantry Division G-1 Periodic Reports and after-action reports; CCB, 4th Armored Division, after-action report; Cole, The Lorraine Campaign. Nominal estimate of "Non-Bloody" losses derived from extrapolation of data from Lada, Medical Statistics World War II.



US ARMY

GERMAN STRENGTH: MORHANGE

Low

11th Panzer Division (-) (+) estimated strength 10,400

High

11th Panzer Division (-) (+) estimated strength 12,600

Nominal

LFW Team's estimate	11,500
Replacements received during battle	0
RTD	0
Attachments/Detachments during battle	0

Total 11,500

BASIC SOURCES: OKW War Diary, vol. VII, and appendices; Ose, Entscheidung im Westen [German official history].



GERMAN CASUALTIES: MORHANGE

"Bloody"	
Low	
Estimated casualties	450
High	
Estimated casualties	550
Nominal	
Estimated casualties	500
"Non-Bloody"	
Low	
Estimated casualties	1,050
High	
Estimated casualties	1,250
Nominal	
Estimated casualties	1,150

BASIC SOURCES: "Non-Bloody" losses from 4th Armored Division and 35th Infantry Division after-action reports and Cole, The Lorraine Campaign. For "Bloody" losses, OKW War Diary, vol. VII, and appendices; Ose, Entscheidung im Westen [German official history].



US ARMY

MORHANGE: FRANCE

HERO

A/D	Strength					Air Sorties	Battle Casualties				
	Pers (Total)	Armor		Arty			Pers %/D	Armor %/D	Arty %/D	A/C %/D	%D
		T	Lt.	MBT	Pcs						
A	25,881	202	49	153	142	0	1006	1.3	0	0	--
D	7,555	16	0	16	106	0	197	0.9	?	0	--

LFW

A/D	Strength					Air Sorties	Battle Casualties					
	Pers (Total)	Armor		Arty			Pers %/D	Armor %/D	Arty %/D	A/C %/D	% %/D	
		T	Lt.	MBT	Pcs							
A	21,740	200	71	129	120	?	481	.73	0	0	?	---
D	11,500	60	0	60	86	?	500	14.3	3	1.6	75	29.0



IV-78

US ARMY

U.S. STRENGTH: DURSTEL-FAREBERSVILLER

Low	
XII Corps estimated strength	75,000
High	
XII Corps estimated strength	83,000
Nominal	
LFW Team's estimate	79,098
Replacements received during battle	0
RTD	0
Attachments/Detachments during battle	0
Total	79,098

BASIC SOURCES: Nominal estimate is specific figure from XII Corps
G-1 Periodic Reports.



US ARMY

U.S. CASUALTIES: DURSTEL-FAREBERSVILLER

"Bloody"	
Low	
Estimated casualties	280
High	
Estimated casualties	320
Nominal	
Estimated casualties	301
"Non-Bloody"	
Low	
Estimated casualties	245
High	
Estimated casualties	316
Nominal	
Estimated casualties	261

BASIC SOURCES: XII Corps G-1 Reports and after-action report; Cole, The Lorraine Campaign. Estimated high "Non-Bloody" casualties based on extrapolation from Lada, Medical Statistics World War II.



US ARMY

GERMAN STRENGTH: DURSTEL-PAREBERSVILLER

Low

XIII SS Panzer Corps (-) (+) estimated strength 26,800

High

XIII SS Panzer Corps (-) (+) estimated strength 31,900

Nominal

LFW Team's estimate	29,000
Replacements received during battle	0
RTD	0
Attachments/Detachments during battle	0

Total 29,000

BASIC SOURCES: OKW War Diary, vol. VII, and appendices; Ose, Entscheidung im Westen [German official history].



US ARMY

GERMAN CASUALTIES: DURSTEL-FAREBERSVILLER

"Bloody"	
Low	
Estimated casualties	270
High	
Estimated casualties	330
Nominal	
Estimated casualties	300
"Non-Bloody"	
Low	
Estimated casualties [POWs]	340
High	
Estimated casualties [POWs]	410
Nominal	
Estimated casualties [POWs]	377

BASIC SOURCES: "Non-Bloody" losses [POWs] are from XII Corps after-action report. For "Bloody" losses, OKW War Diary, vol. VII, and appendices; Ose, Entscheidung im Westen [German official history].



US ARMY

DURSTEL-FAREBERSVILLER: FRANCE

HERO

A/D	Strength					Air Sorties	Battle Casualties						
	Pers (Total)	Armor		Arty			Pers %/D	Armor %/D	Arty %/D	A/C %/D	%/D		
		T	Lt. MBT	Pcs									
A	90,078	624	176	448	543	0	482	0.3	20	1.6	?	--	--
D	30,712	75	0	75	456	0	811	1.3	?	?	?	--	--

LFW

A/D	Strength					Air Sorties	Battle Casualties					
	Pers (Total)	Armor		Arty Pcs			Pers %/D	Armor %/D	Arty %/D	A/C %/D	%D	
		T	Lt. MBT	Pcs								
A	79,098	558	126	432	528	301	0.15	?	--	?	--	
D	29,000	90	12	78	153	300	.05	?	--	?	--	



IV-83

US ARMY

SINGLING-BINING : FRANCE

HERO

A/D	Dates	Campaign	Forces	Commanders	Days	Width of Front (Km)
A	6 Dec 44	Saar (Lorraine)	US 4th Armd Div (-) (+)	MG Gaffey	1	3.6
D			Ger 25th Pz Div (-) (+)	Col Burmeister		

LFW

A/D	Dates	Campaign	Forces	Commanders	Days	Width of Front (Km)
A	6 Dec 44	Saar (Lorraine)	US 4th Armd Div (-) (+)	MG Gaffey	1	3.6
D			Ger 11th Pz Div (-)	MG von Wietersheim		

The German force was not the 25th Panzer Grenadier Division but the 11th Panzer Division, commanded by MG von Wietersheim.



US ARMY

U.S. STRENGTH: SINGLING-BINING

Low

4th Arm'd Div (-) estimated strength..... 8,000

High

4th Arm Div (-) estimated strength 8,800

Nominal

LFW Team's estimate 8,400
 Replacements received during battle 0
 RTD 0
 Attachments/Detachments during battle 0

Total 8,400

BASIC SOURCES: 4th Armored Division G-1 Periodic Report and after-action report; [Harrison] "Singling - 4th Armored Division;" Cole, The Lorraine Campaign.



US ARMY

U.S. CASUALTIES: SINGLING-BINING

"Bloody"		
Low		
Estimated casualties		104
High		
Estimated casualties		114
Nominal		
Estimated casualties		109
"Non-Bloody"		
Low		
Estimated casualties		17
High		
Estimated casualties		58
Nominal		
Estimated casualties		55

BASIC SOURCES: 4th Armored Division G-1 Periodic Reports.
 Estimated low "Non-Bloody" casualties derived from extrapolation
 of data from Lada, Medical Statistics World War II.



US ARMY

GERMAN STRENGTH: SINGLING-BINING

Low	
11th Panzer Div (-) estimated strength	3,250
High	
11th Panzer Div (-) estimated strength	4,000
Nominal	
LFW Team's estimate	3,600
Replacements received during battle	0
RTD	0
Attachments/Detachments during battle	0
Total	3,600

BASIC SOURCES: OKW War Diary, vol. VII, and appendices;
Ose, Entscheidung im Westen [German official history].



US ARMY

GERMAN CASUALTIES: SINGLING-BINING

"Bloody"		
	Low	
Estimated casualties		65
	High	
Estimated casualties		75
	Nominal	
Estimated casualties		70
"Non-Bloody"		
	Low	
Estimated casualties		150
	High	
Estimated casualties		175
	Nominal	
Estimated casualties		156

BASIC SOURCES: Nominal estimates for both "Bloody" and "Non-Bloody" casualties from 4th Armored Division G-1 Periodic Report and after-action report. No statistics available from German sources.



US ARMY

SINGLING-BINING: FRANCE

HERO

	Strength					Air Sorties		Battle Casualties				
	A/D	Pers (Total)	Armor			Arty		Pers %/D	Armor %/D	Arty %/D	A/C	%/D
			T	Lt.	MBT	Pcs						
A	15,224	211	59	152	104	0	0	1.0	13	6.2	0	--
D	5,044	18	0	18	99	0	0	2.4	3	16.7	0	--

LFW

A/D	Strength					Air Sorties	Battle Casualties				
	Pers (Total)	Armor			Arty Pcs		Pers %/D	Armor %/D	Arty %/D	A/C %/D	
		T	Lt.	MBT	Pcs						
A	8,400	156	51	105	84	0	1.2	5	3.2	?	0
D	3,600	29	11	18	80	0	1.9	3	10.3	?	0

CAS
(CONCEPT) ANALYSIS AGENCY

IV-89

US ARMY

U.S. STRENGTH: SAUER RIVER, LUXEMBOURG

Low	
12th Inf Regt (+) estimated strength	4,000
High	
12th Inf Regt (+) estimated strength	4,500
Nominal	
LFW Team's estimate	4,238
Replacements received during battle	0
RTD	0
Attachments during battle	3,400*
Total	7,638

*2d Bn, 8th Inf; 4th Engr Combat Bn; 3 bns 155 FA; 2 batteries 105 FA; 1 company, 19th Tank Bn.

BASIC SOURCES: 4th Infantry Division G-1 Periodic Reports and after-action report; 12th Infantry after-action report. Figure on 12th Infantry is specific, on attachments estimates based on organizational strength.



US ARMY

U.S. CASUALTIES: SAUER RIVER, LUXEMBOURG

"Bloody"	
Estimated casualties	45
Low	
High	
Estimated casualties	60
Nominal	
Estimated casualties	51
"Non-Bloody"	
Estimated casualties	25
Low	
High	
Estimated casualties	48
Nominal	
Estimated casualties	30

BASIC SOURCES: 4th Infantry Division G-1 Periodic Reports;
12th Infantry after-action report. Nominal estimate of
"Non-Bloody" casualties derived from extrapolation of data
from Lada, Medical Statistics World War II.



US ARMY

GERMAN STRENGTH: SAUER RIVER, LUXEMBOURG

Low

212th VG Division estimated strength 11,400

High

212th VG Division estimated strength 12,530

Nominal

LFW Team's estimate	11,934
Replacements received during battle	0
RTD	0
Attachments/detachments during battle	0
Total	11,934

BASIC SOURCE: Captured Field Order, 212th VG Division, in
12th Infantry S-2/S-3 Journal file.

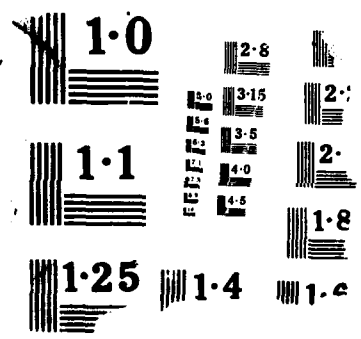


INDEPENDENT REVIEW/REASSESSMENT OF ANOMALOUS DATA
VOLUME 4(U) LFM MANAGEMENT ASSOCIATES INC ALEXANDRIA VA
C B MACDONALD ET AL 22 JUN 87 MDA903-86-C-0396

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US ARMY

GERMAN CASUALTIES: SAUER RIVER, LUXEMBOURG

"Bloody"	
Low	
Estimated casualties	740
High	
Estimated casualties	890
Nominal	
Estimated casualties	815
"Non-Bloody"	
Low	
Estimated casualties [POWs]	90
High	
Estimated casualties [POWs]	120
Nominal	
Estimated casualties [POWs]	110

BASIC SOURCES: Nominal estimates of both "Non-Bloody" and "Bloody" losses are from 12th Infantry and 4th Infantry Division after-action reports and G-2 Periodic Reports.



US ARMY

SAUER RIVER: FRANCE

HERO

A/D	Strength					Air Sorties	Battle Casualties					
	Pers (Total)	Armor			Arty Pcs		Pers %/D	Armor %/D	Arty %/D	A/C %/D	%/D	
		T	Lt.	MBT								
A	10,000	4	0	4	68	268	1.3	2	25.0	?	0	--
D	8,634	40	20	20	60	134	0.8	3	3.8	?	0	--

LFW

A/D	Strength					Air Sorties	Battle Casualties					
	Pers (Total)	Armor		Arty			Pers %/D	%/D	Armor %/D	%/D	Arty %/D	A/C %/D
		T	Lt. MBT	Pcs	Pcs							
A	11,934	0*	0	0	72	815	3.4	0	--	0	--	
D	4,238	118	90	28	65***	51	.6	1	.4	0	--	

*Although the German division had 4 assault guns, they were not brought into action during the two-day battle.

**Includes attachments/reinforcements: 1 Co., 19th Tank Bn

***Includes attachments/reinforcements: 3 bns 155 FA; 2 batteries 105 FA



US ARMY

SAUER RIVER: FRANCE

HERO

CE	Leader-ship	Training/ Experience	Morale	Logis- tics	Momen- tum	Intelli- gence	Tech- nology	Initia- tive	Victor	Distance Advance (Km/Day)	Mission Accomp.
A	C	C	C	N	N	N	C	X	X	3.2	5
D											4

LFW

CE	Leader-ship	Training/ Experience	Morale	Logis- tics	Momen- tum	Intelli- gence	Tech- nology	Initia- tive	Victor	Distance Advance (Km/Day)	Mission Accomp.
A	C	C	C	N	N	N	C	X		3.2	4
D									X		5

The mission of the attacking force was to cross the Sauer River and advance 8 kilometers to establish a blocking position on terrain favorable to the defense; the mission of the defending force was to stop the attacker. By the end of the second day, the defenders had accomplished that mission after an advance by the attackers of only 3.2 kilometers. The LFW Team thus accords victory to the defenders and a slight numerical advantage.



US ARMY

SAUER RIVER: FRANCE

HERO

Plan and Maneuver

A/D	Main Attack and Scheme of Defense	Secondary Attack	Success	Resolution
A	RivC, F, E (LF)	--	X	P, S
D	D	--		S

LFW

Plan and Maneuver

A/D	Main Attack and Scheme of Defense	Secondary Attack	Success	Resolution
A	RivC, F, E (LF)	--	X	P, S
D	D	--		S

In keeping with designation of the defender as victor, the defender is credited with success.



INTRODUCTION AND BIBLIOGRAPHY: EASTERN FRONT

As per contract, the LFW Team studied/reassessed Defense of Moscow [Typhoon], 30 Sep-3 Dec 1941, and Oboyan-Kursk, Phase III [Kursk Citadel], 11-15 Jul 1943. For reasons stated in the introduction, the following assigned battles were not analyzed in detail:

Pogoreloye Gorodische [The Rzehw Operation],
4-11 Aug 1942
Leningrad [Leningrad], 12-18 Jan 1943
Vistula River Operation, Phase I [Poland],
29-31 Jul 1944
Ciechanow, Phase I [Russian Winter Offensive, 1945],
14 Jan 1945

Review/assessment of these battles on the Eastern Front posed special problems. As noted in the introduction, since most of the bibliographical sources cited in the HERO study are in Russian and the LFW Team lacked Russian language capability, LFW Management Associates engaged two Russian experts as consultants, Colonel David M. Glantz, head of the Soviet Army Studies Office, Fort Leavenworth, Kansas, and Colonel John E. Jessup, Jr., presently retired and a research analyst with QUEST, to evaluate the cited sources and determine whether meaningful statistics for the assigned battles could be obtained from them. Working independently, Colonels Glantz and Jessup arrived at the same negative conclusion. Although Colonel Glantz believes that sources available at the Soviet Army Studies Office at Fort Leavenworth are sufficient to determine meaningful statistics, nobody at that office would be available to do the research until at least the end of the summer, 1987.

Meanwhile, the LFW Team's German language specialist, Charles V.P. von Luttichau, began to explore other sources, including German translations of Soviet sources. He came to the conclusion that he would be unable to find meaningful statistics for most of the battles, primarily because they are broken up into such small segments that statistics that may be available for longer periods cannot be broken down to fit those segments. He did find statistics for the longest battle, the Defense of Moscow, and was able to break down the statistics for one of the shorter battles, Oboyan-Kursk, Phase III. The results of the research are provided on the charts.

Separate bibliographies are provided for each battle along with the researcher's discursive comments on his findings.

Defense of Moscow, USSR

30 September - 3 December 1944

The data applying to this phase of World War II are elusive and on the Russian side, less than reliable if not downright false. Nevertheless, the following statistics may be considered to be reasonably meaningful.

As the attacker, the Germans had almost 2 million men [more so by about 100,000 if Luftwaffe strength is included]. The defender: 1.25 million.

Armor strength at the beginning of the operation: A: 1,326; D: 990. Artillery strength: A: [approximate] 4,000; D: 10,600. Air [not sorties, but operational planes]: A: 1,000; D: 930.

Battle casualties and losses total for A, 120,966; for D, at least an estimated 1 million [by 20 October, more than six weeks before the end of the operation, the Germans had already taken 673,000 prisoners; the figure of 1 million does not include KIAs and WIAs].

Armor: A: an estimated 930 [losses by attrition and action had been about 75 percent]; D: [after substantial reinforcements, most of which were also lost] about 2,000 [1,242 tanks lost or destroyed by 20 October 1941].

Artillery: A: approximately 2,400 [40 percent remained]; D: approximately 8,118 [by 20 October, 5,412 had been destroyed; add 50 percent conservatively for the last six weeks to bring the total to over 8,000].

Planes: A: approximately 400; D: an estimated 1,000 [subsequently replaced by 1,370; from other Soviet sources, possibly only half that many].

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The 12-volume History of World War II Istoriya Vtoroi Mirovoi Voiny, 1939-1945, also translated in East Germany, has the title: Geschichte des Zweiten Weltkrieges, 1939-1945. Volume 4 covers the offensive against Moscow.

Research materials, notes, and copies of documents in the researcher's possession and his unpublished manuscript, "The Road to Moscow, German-Russian Operations in 1941," helped in the gathering of information on this period.

OPERATION OBOYAN-KURSK, PHASE III, USSR

10 - 15 July 1943

This operation actually began on 10 [not 11] July 1943, and was the last German effort of Army Group South to salvage what it could from the so-called Kursk -- CITADEL -- campaign.

The German attacker, in what quickly turned into a meeting engagement, was not only XLVIII Panzer Corps under General Otto von Knobelsdorff but was assisted by elements of the neighboring corps, LII Infantry Corps, II SS Panzer Corps, as well as Fourth Panzer Army reserve, part of one infantry division. This support was marginal in numbers and effectiveness. The Luftwaffe support by some 1,200 planes [up to double that in daily sorties] had to be shared with Army Kempf and Fourth Panzer Army of General Hermann Hoth's other armored corps, the II SS Panzer Corps.

The operations lasted for about six [not five] days and the sector was about 35-40 [not 25] kilometers.

The Soviet defenders were organized under not one army but two: the Sixth Guards Army and the First Tank Army, commanded by Generals I.M. Chistyakov and M.E. Katukov, respectively. In this crucial sector shielding the town of Oboyan, the Voronesh Front reinforced the defenders by the entire artillery of Thirty-eighth and Fortieth Armies, equal to seven artillery divisions and doubled the number of corps committed to eight. Voronesh Front and its neighbor, Central Front, together could commit 2,500 planes. Of these, Voronesh Front at the beginning of CITADEL on 5 July had some 1,500 on hand, which could fly up to 3,000 sorties. They had lost a reported 585 planes by 9 July and could have put some 800-900 planes in the air. [Several hundred additional planes of 17th Air Army of the Southwest Front could be added, but they would attack only Kempf's army, not Hoth's.]

The total German [attacker] force had an estimated maximum strength of about 80,000 men. The Soviet [defender] forces of the Sixth Guards and the First Tank Armies, including reinforcements and a build-up to eight corps, had an estimated strength of at least 180,000 men equal to about one-fifth of the combined Voronesh and Steppe Fronts [Stavka reserve].

Armor Strength. The XLVIII Panzer Corps, plus, [attacker] had some 350 tanks and possibly 100 assault guns for a total of 450. The Soviet [defender] by 9 July counted

about 990 tanks and self-propelled guns, after a loss of at least 460 tanks up to 9 July.

Artillery Strength. The XLVIII Panzer Corps had about 290 guns [no mortars included] whereas the Soviets had over 1,500 guns and mortars, plus at least 48 rocket launchers. In the sources available [see bibliography] the artillery estimates, especially on the Russian side, are vague or contradictory. At the start of CITADEL, the artillery numbers could have been higher. But by 10 July they probably came close to the above estimate of 1,500.

Air Sorties. Attacker supported by a maximum of 2,400 sorties from 1,200 planes per day, if all air resources were concentrated in one corps [XLVIII Panzer] sector. For all practical and statistical purposes one-half of that total would reasonably be applicable. The Soviet air effort in terms of sorties was based on about one-half of 15 Air Divisions or 1,500 planes, which would give the sector a maximum of about 1,500 sorties per day.

Battle Casualties. On the German side, estimated at about five percent of the total force, or 4,000 men. This is an educated guess. [Based on the presumed condition of XLVIII Panzer Corps during subsequent planned and actual operations. Soviet personnel losses opposite Fourth Panzer Army and Army Kempf during CITADEL were estimated at 85,000, which included 34,000 POWs. Mellenthin claims Fourth Panzer Army alone to have taken 32,000 POWs, which would give XLVIII Panzer Corps about 16,000 POWs for the entire period 5 - 15 July 1943, and about 8,000 for the period of this study.] Reliable sources indicate that XLVIII Panzer Corps took 7,000 POWs and counted 1,500 Russians killed in action. The figure is probably on the low side.

Armor Losses. XLVIII Panzer Corps lost about 150 tanks [having launched the attack with about 450 vehicles including assault guns], and coming out of the battle with about 200 tanks and assault guns. Soviet losses, many of them caused by relentless air attacks, were believed to have been over 1,000 tanks, an estimated 750 by ground action. About one-half were total losses.

Artillery Pieces. No number of German artillery pieces has been found. A reasonable loss estimate would be ten percent or about 30 guns. The Germans claimed some 500 Russian guns and mortars captured or destroyed opposite XLVIII Panzer Corps [2,000 guns and mortars for Fourth Panzer Army for the entire offensive.]

Aircraft Losses. The Luftwaffe lost, by incomplete

count for the period [2 days missing], 57 planes or an average of 15 planes a day opposite Fourth Panzer Army, or 7-8 planes in the XLVIII Panzer Corps sector. The Germans claimed Russian losses of 560 planes, opposite Fourth Panzer Army. Adding the two missing days, assuming the same attrition rates as before, and after 12-13 July, e.g., 250, one would arrive at 810 planes, or 405 opposite XLVIII Panzer Corps.

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US ARMY

LFW MANAGEMENT ASSOCIATES, INC. REVIEW

of

CAA TASK 8 REQUIREMENTS

LFW'S INDEPENDENT REVIEW/REASSESSMENT OF SIX ANOMALOUS BATTLES

FROM THE EASTERN FRONT CAMPAIGN



IV-105

GERMAN STRENGTH: DEFENSE OF MOSCOW

Low	
Low estimated strength	1,990,000
High	
High estimated strength	2,010,000
Nominal	
Nominal estimated strength	2,000,000

BASIC SOURCES: [In order of value for this study.] von Luttichau manuscript, "The Road to Moscow;" OKW War Diary, vol. I; Boog, Der Angriff auf die Sowjetunion [German official history]; Erickson, The Road to Stalingrad; Seaton, The Russo-German War, 1941-1945; Minasyan, ed., Great Patriotic War of the Soviet Union.



GERMAN CASUALTIES: DEFENSE OF MOSCOW

"Bloody"	
Low	
Estimated casualties	120,360
High	
Estimated casualties	121,570
Nominal	
Estimated casualties	120,966

"Non-Bloody"

No statistics are available.

BASIC SOURCES: [In order of value for this study.] von Luttichau manuscript, "The Road to Moscow;" OKW War Diary, vol. I; Boog, Der Angriff auf die Sowjetunion [German official history]; Erickson, The Road to Stalingrad; Seaton, The Russo-German War, 1941-1945; Minasyan, ec., Great Patriotic War of the Soviet Union.



US ARMY

RUSSIAN STRENGTH: DEFENSE OF MOSCOW

Low	
Low estimated strength	1,125,000
High	
High estimated strength	1,375,000
Nominal	
Nominal estimated strength	1,250,000*

*Includes reinforcements during battle. No breakdown available.

BASIC SOURCES: [In order of value for this study.] von Luttichau manuscript, "The Road to Moscow;" OKW War Diary, vol. I; Boog, Der Angriff auf die Sowjetunion [German official history]; Erickson, The Road to Stalingrad; Seaton, The Russo-German War, 1941-1945; Minasyan, ed., Great Patriotic War of the Soviet Union.



US ARMY

RUSSIAN CASUALTIES: DEFENSE OF MOSCOW

"Bloody"

No statistics available.

"Non-Bloody"

Low

Estimated casualties 800,000

High

Estimated casualties 1,200,000

Nominal

Estimated casualties 1,000,000

BASIC SOURCES: [In order of value for this study.] von Luttichau manuscript, "The Road to Moscow;" OKW War Diary, vol. I; Boog, Der Angriff auf die Sowjetunion [German official history]; Erickson, The Road to Stalingrad; Seaton, The Russian-German War, 1941-1945; Minasyan, ed., Great Patriotic War of the Soviet Union.



US ARMY

DEFENSE OF MOSCOW

HERO

A/D	Strength					Air Sorties	Battle Casualties					
	Pers (Total)	Armor		Arty			Pers	Casualties				
		T	Lt.	MBT	Pcs			%/D	Armor%/D	Arty %/D	A/C %/D	
A	1,100,000	1800	?	?	5746	?	253,000	0.4	990	0.8	?	--
D	1,372,200	950	?	?	6678	?	885,000	1.0	840	1.4	3400	0.8

LFW

A/D	Strength					Air Sorties	Battle Casualties						
	Pers (Total)	Arty			Pers		%/D	Armor %/D	Arty %/D	A/C	%/D		
		T	Lt.	MBT									
												Pcs	
A	2,000,000	1326	?	?	4000	***	0.1	930	1.1	2400	0.9	500	?
D	1,250,000	990	?	?	10600	?	1.2	2000	1.0	8100	1.2	1000	?

* The Russians subsequently reinforced with around 2,000 tanks.

** No sorties available, but at the beginning, A had 1,000 aircraft, D had 930; D subsequently reinforced with 1,370.

*** By October 20, more than six weeks before the end of the operation, the Germans had already taken 673,000 POWs; the total of D personnel losses does not include KIAs and VIAs.



US ARMY

OBOYAN-KURSK, PHASE III

HERO

A/D	Dates	Campaign	Forces	Commanders	Days	Width of Front (Km)
A	11-15 Jul 43	Kursk Citadel	Gr XLVIII Pz Cps	Gen Knobelsdorff	5	25.0
D			Sov Sixth Gds Army (+)	Gen Christyakov		

LFW

A/D	Dates	Campaign	Forces	Commanders	Days	Width of Front (Km)
A	10-15 Jul 43	Kursk Citadel	Gr XLVIII Pz Cps Gr LII Cps Gr II SS Pz Cps	Gen Knobelsdorff	5	35-40
D			Sov Sixth Gds Army Sov First Tk Army	Gen Christyakov Gen Katukov		

The LFW Team determined that the width of the front was not 25 kilometers but 35-40 kilometers.



IV-111

US ARMY

GERMAN STRENGTH: OBOYAN-KURSK, PHASE III

Low	
Low estimated strength	72,000
High	
High estimated strength	88,000
Nominal	
Nominal estimated strength	80,000

BASIC SOURCES: [In order of value for this study.] Klink, Das Gesetz des Handelns, Die Operation "Zitadelle" 1943 [German official history]; Introduction by Erickson to Smith, The Soviet Army; von Mellenthin, Panzer Battles; Parotkin, ed., The Battle of Kursk; OKW War Diary, vol. IV; Minasyan, ed., Great Patriotic War of the Soviet Union.

IV-112



US ARMY

GERMAN CASUALTIES: OBOYAN-KURSK

"Bloody"	
Low	
Estimated casualties	3,200
High	
Estimated casualties	4,800
Nominal	
Estimated casualties	4,000

"Non-Bloody"

No statistics are available.

BASIC SOURCES: [In order of value for this study.] Klink, Das Gesetz des Handelns, Die Operation "Zitadelle" 1943 [German official history]; Introduction by Erickson to Smith, The Soviet Army; von Mellenthin, Panzer Battles; Parotkin, ed., The Battle of Kursk; OKW War Diary, vol. IV; Minasyan, ed., Great Patriotic War of the Soviet Union.



US ARMY

RUSSIAN STRENGTH: OBOYAN-KURSK, PHASE III

	Low	
Low estimated strength		162,000
	High	
High estimated strength		198,000
	Nominal	
Nominal estimated strength		180,000*

*Includes reinforcements. No breakdown available.

BASIC SOURCES: [In order of value for this study.] Klink, Das Gesetz des Handelns, Die Operation "Zitadelle" 1943 [German official history]; Introduction by Erickson to Smith, The Soviet Army; von Mellenthin, Panzer Battles; Parotkin, ed., The Battle of Kursk; OKW War Diary, vol. IV; Minasyan, ed., Great Patriotic War of the Soviet Union.



US ARMY

RUSSIAN CASUALTIES: OBOYAN-KURSK, PHASE III

"Bloody"	
Low	
Estimated casualties	1,200
High	
Estimated casualties	1,800
Nominal	
Estimated casualties	1,500
"Non-Bloody"	
Low	
Estimated casualties	6,400
High	
Estimated casualties	9,600
Nominal	
Estimated casualties [POWs]	8,000

BASIC SOURCES: [In order of value for this study.] Klink, Das Gesetz des Handelns, Die Operation "Zitadelle" 1943 [German official history]; Introduction by Erickson to Smith, The Soviet Army; von Mellenthin, Panzer Battles; Parotkin, ed., The Battle of Kursk; OKW War Diary, vol. IV; Minasyan, ed., Great Patriotic War of the Soviet Union.



US ARMY

OBOYAN-KURSK, PHASE III

HERO

A/D	Strength					Air Sorties	Battle Casualties				
	Pers (Total)	Armor		Arty			Pers	%D	Armor%D	Arty%D	A/C%D
		T	Lt.	MBT	Pcs						
A	56,000	205	?	?	323	?	2,900	1.0	85	?	?
D	129,000	310	?	?	1,490	?	30,200	4.7	139	?	?

LFW

A/D	Strength					Air Sorties	Battle Casualties							
	Pers (Total)				Arty Pcs		Pers	%/D	Armor %/D	Arty %/D	A/C %/D			
		T	Lt.	MBT										
A	80,000	450	100	350	290	12,000	4,000	0.8	150	5.6	30	1.7	48	0.6
D	180,000	990*	?	?	1,200	9,000	9,500**	0.9	1,000	16.8	500	6.9	405	0.8

* The Russians subsequently reinforced their tanks.

** Includes 1,500 "bloody" casualties, 8,000 "non-bloody."



IV-116

END

DATED

FILM

8-88

DTIC