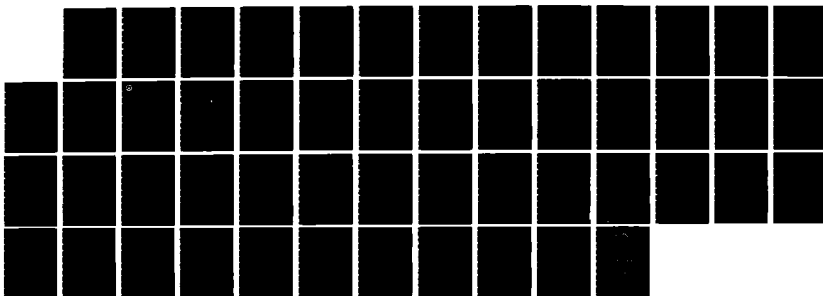


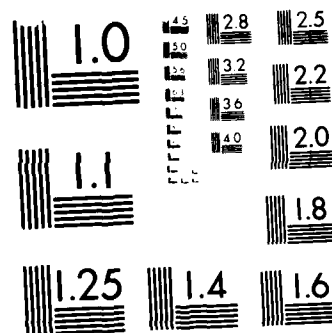
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SOLDIER SUPPORT CENTER

ENEMY PRISONER OF WAR (EPW)/
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Combat Developments Directorate
October 1985

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REPORT DOCUMENTATION PAGE

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			Civilian Internees NATO EPW/CI Rates		
			EPW Capture Rates Prisoners of War		
19 ABSTRACT (Continue on reverse if necessary and identify by block number)					
a. Purpose. This paper documents work by the US Army Soldier Support Center (SSC) which was performed to review and redefine Enemy Prisoner of War (EPW) and Civilian Internee (CI) rates considering NATO forces in a defensive posture.					
b. Methodology:					
(1) EPW. Analogous historical sample selected.					
(2) CI. Factor given in FM 101-10-1 applied to target population.					
c. Results:					
(1) A Composite Rate for EPWs (includes rear battle captures).					
(2) An Audit Trail of historical rates given in FM 101-10-1.					
(3) Estimated number of CIs.					
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Enemy Prisoner of War (EPW)/ Civilian Internee (CI) Rate Study

1. Purpose. The purpose of this paper is to document work by the US Army Soldier Support Center (SSC) which was performed in response to the following taskings:

a. Establish EPW/CI rates for NATO forces in a defensive posture. (Reference VCSA message, 031430Z Aug 85, subject: Force Structure Alignment, Tab A.)

b. Establish EPW factors for the rear battle. (Reference DCSPER letter, 7 Mar 85, subject: EPW Capture Rates, Tab B.)

2. Background.

a. FM 101-10-1, "Staff Officers Field Manual Organization, Technical, and Logistical Data", July 1976, provides tables and guidelines for predicting the number of EPWs and CIs in a future conflict. However, there are deficiencies in the FM.

(1) The derivation and source of the numbers in the tables are vague. Additionally, throughout the several revisions of the FM since 1943, explanatory information has been omitted and questionable changes have been introduced.

(2) The FM does not address the case where US forces (i.e., capturing forces) are numerically inferior to enemy forces.

b. Concepts Analysis Agency's (CAA) force roundout model, Force Analysis Simulation of Theater Administrative and Logistics Support (FASTALS), estimates EPW/CI workloads using factors different from those which can be derived from the FM. As one of the Top 10 Drivers of Force Structure, the number of prisoners estimated by FASTALS for a 180 day period, European Theater, has been questioned. As a result, the tasking in paragraph 1a was given to the SSC.

c. Concerns surfaced during the Military Police Functional Area Assessment (MP FAA) about the impact of AirLand Battle doctrine on FASTALS calculations of EPW workload. Specifically, are rear battle captures being counted in the workload total? (Reference paragraph 1b above.) However, as explained in the first MP FAA issue status report provided by the SSC (reference EXSUM, Issue #17-03, Action #2, dated 18 April 1985), it is impractical to consider rear battle captures independently. Total captures will be estimated instead.

3. Methodology.

a. SSC's approach to the determination of an EPW rate for NATO forces in a defensive posture IAW paragraph 1a was to select an analogous historical sample. Although other approaches were initially considered, the lack of information from existing automated wartime models and war games resulted in the use of history for the proposed rate. This approach provided excellent results because a very closely matched sample was identified.

b. The sample selected was the experience of German forces on the Eastern Front in World War II during the period October 1942 through May 1944. Detailed research and consultation with subject matter experts support this sample as the best available and a close match to the specified NATO scenario. (A list of the primary consultants who assisted and the research material used is given in Tab H.) The use of this sample is also strongly supported by the fact that the Soviets are using Eastern Front, World War II data in their war models and derivations of planning factors. (See Footnote 1).

c. The EPW rate resulting from this historical approach was compared with predictions from other sources. Additionally, other past conflicts, similar in major characteristics to the sample (i.e., capturing force numerically inferior and in a defensive posture) were used for a modified sensitivity analysis to assess the applicability of this rate as a predictor in more generalized situations.

d. Accomplishment of the VCSA tasking simultaneously satisfied the MP FAA issue for the following reasons. The Soviet's employment of "battle in depth" tactics during this sample period resulted in heavy rear area activity (See Footnote 2). Therefore, although the form of the statistical records used for rate calculations do not enable the separation of types of captures, the EPW rate provided does include those prisoners captured in the rear area.

e. Initial work by the SSC on estimating number of civilian internees was superseded by VCSA guidance, 27 September 1985. (See para 4a.)

4. Results. On 20 September 1985, the SSC provided CAA with the required EPW/CI information. A copy of the message is at Tab C. On 27 September 1985, the VCSA was briefed on these results. Tab D contains a set of the briefing slides.

a. Civilian Internees (CIs). Because of NATO objectives and doctrine which will prevent US forces from entering Eastern Europe, it was directed by the VCSA at the 27 September briefing

1 Major H. F. Stoeckli, "Soviet Operational Planning", Soviet Studies Research Centre, RMA Sandhurst, March 1970.

2 A. Sidorenko, The Offensive: A Soviet View, Moscow, 1970
Max Wehr, The Great Offensive, Viking Press, 1942.

that zero CIs will be planned for in FASTALS European/NATO scenario. (See Footnote 3).

2. b. Enemy Prisoners of War (EPWs).

(1) The German forces on the Eastern Front experienced an average EPW capture rate of .00035 prisoners per combat soldier per day during the period Oct 42 through May 44. (See Footnote 4). The detailed derivation of this rate is given in Tab E, Sample 1.

(2) Distributing the Composite Rate For FASTALS.
(Concepts Analysis Agency)

(a) The historical data produced a composite EPW rate resulting from a mix of combat intensities experienced during the twenty month sample period over a 3,000 kilometer front. For use in FASTALS, CAA requested that this factor be distributed across four levels of combat intensities; i.e., intense, moderate, reduced, and reserve, which have specialized definitions for use in the model. *(see Analysis, Simulation, Training, Administration and Logistics Support)*

(b) Breakout of the composite rate required making two assumptions. These are discussed in detail in Tab C, para 4a(3). The results are given in Tab E, Sample 1.

(3) During the 27 September briefing, the VCSA approved SSC's derived EPW rate for use in FASTALS, and therefore for other NATO force planning.

c. EPW Comparisons.

(1) Comparisons of various EPW estimates for a 180 day NATO scenario are shown in the following table:

SOURCE	TOTAL NO. EPWS
Combined Arms Center	17,758
FM 101-10-1 (Table 5.5)	20,895
Pre-1979 FASTALS Rates	
(See para 4c(2))	24K-25K (Approximated)
SSC Rate	24,639
FASTALS 1979-1985 Rates	
(See para 4c(2))	58,873

(2) In 1979, the EPW rates used in FASTALS were changed because their origin was not known. The Delphi method was applied to determine a new set of rates which have since been used in the model. (See Tab F.)

3 Colonel Thomas A. Cardwell III, "AirLand Battle Revisited", Military Review, September 1985, p 6.

4 The use of the term "combat soldier" throughout this discussion means division equivalents combat troops.

d. "Rear Battle" captures. The approved EPW rate is given as number of prisoners per day per combat soldier to meet the requirements for use in FASTALS. However, because of the method by which that rate was derived, it does include the number of prisoners expected to be captured in the U.S. forces rear area as well as by the troops in the Main Battle area.

e. Tab G is the suggested replacement for Chapter 5, Sections 5.4 and 5.5, of FM 101-10-1.

(1) Explanatory materials omitted during periodic updates have been restored.

(2) Results of the work to satisfy the tasking from the VCSA are included as a recommended new addition to the FM. (See Tab G, Table 5.5.) This new information will provide insight into the case of the capturing force being outnumbered and in a defensive posture.

(3) Additionally, the German experience with EPWs on the Eastern Front during World War II, while on the offensive from May through September 1942, is also provided for inclusion in the FM. (See Tab G, Table 5.5.) This data will be used for the case of capturing force being outnumbered and in an offensive posture. Tab E, Sample 2, provides the detailed derivation of this rate.

f. After reviewing several other samples from World War II experiences, it was concluded that the historically derived capture rate recommended for predicting number of EPWs expected for a NATO scenario has very little generalized applicability to other situations. The complexities of the many variables which affect EPW rates require that a sample be "well-matched" to the situation for which predictions are needed or that adjustments to the historically experienced rate be made to account for as many variables which are different as possible. Tab G, paragraph 5-4b, lists a few of the variables which should be considered.

5. Utilization of historical EPW rates for predictions.

a. Use of unmodified historical EPW rate for NATO planning.

(1) Because the major drivers of the EPW rate, such as force ratios and capturing force posture, in the selected sample match the scenario for which predictions are needed, and because expert opinion is that the sample is a very good match to the NATO scenario, the historical composite factor was recommended for use in FASTALS without modification and the recommendation was subsequently accepted by the VCSA. It should be noted, however, that implicit in this recommendation is the assumption that differences between the sample and the specified scenario do not significantly impact the EPW capture rate or are beyond the scope of this study.

(2) Traditionally, the number of EPWs has been underestimated. Major Mark Beto, in his article, "Soviet Prisoners of War in AirLand Battle", cites several historical examples to support this statement (see Footnote 5). Specifically, use of the historically derived capture rate as provided by this study will not account for extreme situations which have some probability of occurrence. Examples of such extremes include mass surrender by the enemy for tactical purposes or heightened and successful psychological operations by US personnel to encourage large scale surrenders.

b. Use of unmodified historical EPW rate for Non-NATO planning. The sample which generated the study capture rate was picked as a match for a specified NATO scenario. If predictions for a different scenario are needed, the applicability of this rate, without modification, is limited. (See paragraph 4f.)

5 Major Mark Beto, "Soviet Prisoners of War in the AirLand Battle", Military Review, December 1984, p 58-72.

A

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RUCLAIA/CJR TRADOC FT MONROE VA

INFO RUEOAGE/CDRLOGCEN FT LEE VA

RUMTFHA/CDR SSC FT LEAVENWORTH KS

RUMTFHA/CDR CAC FT LEAVENWORTH KS

RUMTNFA/CDR AHS FT SAM HOUSTON TX

BT

UNCLAS

THURMAN SENDS

SUBJECT: ~~FORCE STRUCTURE~~ ALIGNMENT

1. DURING THE RECENT COMMANDERS CONFERENCE, WE DISCUSSED THE IMBALANCE BETWEEN THE FORCE STRUCTURE AND THE BUDGETED END STRENGTH. WE MUST GARNER AS MANY SPACES AS POSSIBLE FROM INITIATIVES AND ECONOMIES TO CORRECT THIS IMBALANCE.
2. ON REVIEWING CAC'S "TOP 10 DRIVER" STUDY, IT OCCURRED TO ME THAT

PAGE 02 RUEADWD5540 UNCLAS

PRIORITY

THERE MAY BE A NUMBER OF SPACES TO BE HARVESTED BY MORE CLOSELY SCRUTINIZING THE WAY WE DO BUSINESS. SPECIFICALLY, I WOULD LIKE THE FOLLOWING ACCOMPLISHED:

A. CAA:

(1) RE-RUN THE CEM AND FASTALS AND ADD "REALISM." INCLUDE SOMETHING LESS THAN 100 PERCENT OPERATIONAL READINESS RATES, AND ATTRITION.

(2) RUN AN EXCURSION COMPARING STRUCTURE CHANGES/ECONOMIES THAT RESULT FROM THE NEW DS MAINTENANCE CO. 43-209 VICE THE CURRENT COMPANY, 29-209.

(3) USING THE NEW ENGINEER WORKLOAD PAMPHLET (SRC-05115H) AND OTHER DATA ADJUSTMENTS TO THE FASTALS ENGINEER SUBROUTINE PROVIDED BY ACE, COMPARE THE EFFECTS ON THE FORCE STRUCTURE USING THE NEW WORKLOAD FACTORS WITH THE CURRENT FACTORS.

(4) ASSESS SPACE SAVINGS USING NEW MARC DATA ON RELATED ITEMS OF EQUIPMENT (PARA D(1)).

~~(5) ASSESS SPACE SAVINGS USING NEW MARC DATA, EPM/CI, AND DNBI RATES (PARA E AND F)).~~

B. ACE:

(1) PROVIDE THE POLICY BASIS FOR THE NEW AND OLD FACTORS IN

PAGE 03 RLEADWD5540 UNCLAS

THE ENGINEER WORKLOAD PAMPHLET TO DAMO-FDF NLT 20 SEPTEMBER.

(2) REVIEW OTHER FASTALS ENGINEER SUBROUTINE DATA ELEMENTS WHICH HAVE POTENTIAL MANPOWER SAVINGS. PROVIDE RESULTS OF REVIEW TO CAA NLT 9 SEPTEMBER.

C. AMC:

PRIORITY

(1) REVIEW THE CONSUMPTION FACTORS (GMPA) FOUND IN SB 710-2 FOR EQUIPMENT LISTED IN PARA 2C(2); PROVIDE RESULTS TO LOGCEN NLT 9 SEPTEMBER. PROVIDE METHOD OF ESTABLISHING CONSUMPTION FACTORS TO DAMO-FDF ALT 20 SEPTEMBER.

(2) REVIEW ACCURACY OF AMMH DATA ASSOCIATED WITH ALL GENERATORS, HMMWV, M60, M1, BRADLEY FIGHTING VEHICLE, M113, 2 1/2T, 5T TRUCKS, AND 3/4T AND 1 1/2T CARGO TRAILERS. PROVIDE RESULTS OF REVIEW TO LOGCEN NLT 9 SEPTEMBER.

D. TRADOC:

(1) LOGCEN: VALIDATE THE AMMH DATA PROVIDED BY AMC. REVIEW MARC MASTER FILE AND CHALLENGE UNREALISTIC DATA, E.G., 592 MANHOURS MAINTENANCE FOR 3K GENERATOR PER YEAR. PROVIDE RESULTS TO CAA NLT 20 SEPTEMBER. PROVIDE CAA NEW ALLOCATION RULES FOR DS MAINTENANCE CO, 43-209, NLT 9 SEPTEMBER.

✓ (2) ~~LOGCEN: REVIEW AND REDEFINE OPW/CI RATES CONSIDERING NATO~~

PAGE 04 RUEADWD5540 UNCLAS

~~FORCES IN A DEFENSIVE POSTURE; PROVIDE TO CAA NLT 20 SEPTEMBER.~~

(3) ~~DAG~~: IN COMBINATION WITH PROPONENT SCHOOLS, REVIEW MISSION PROFILES INVOLVING CONSUMPTION FACTORS ADDRESSED IN PARA 2C(1). FOR EXAMPLE, HOW MANY MILES PER DAY ON AVERAGE DO WE EXPECT TO OPERATE A TANK? PROVIDE RESULTS OF REVIEW TO CAA NLT 20 SEPTEMBER.

E. DCSPER: REVIEW AND REDEFINE WIA RATES, E.G., RATE CURRENTLY USED IN FASTALS VERSUS WWII HISTORICAL RATE. PROVIDE TO CAA NLT 20 SEPTEMBER.

F. TSG: REVIEW AND REDEFINE DNBI RATES; PROVIDE TO CAA NLT

20 SEPTEMBER.

3. ADDRESSEES REQUIRED TO SUBMIT DATA TO CAA WILL COORDINATE DIRECTLY AND EARLY WITH CAA ON DATA FORMATS.

4. I REITERATE, THE PURPOSE OF THIS EFFORT IS TO SEEK EFFICIENCIES AND CONSERVE STRUCTURE SPACES. WHILE WE MUST BE PRUDENT, WE SIMPLY CANNOT AFFORD THE LUXURY OF SAFESIDING AND ROUNDING UP EVERYTHING. I WOULD LIKE ALL OF THE ABOVE TASKS, TO INCLUDE ASSESSMENT OF SPACE SAVINGS, COMPLETED NLT 30 SEPTEMBER FOR INCLUSION IN TAA-92.

BT

#5540

NNNN

PRIORITY

B



DEPARTMENT OF THE ARMY
OFFICE OF THE DEPUTY CHIEF OF STAFF FOR PERSONNEL
WASHINGTON, D.C. 20310

REPLY TO
ATTENTION OF

7 MAR 1985

DAPE-MPM-CS

SUBJECT: Enemy Prisoner of War (EPW) Capture Rates

Commander, US Army Combined Arms Center, ATTN: ATZL-CS,
Fort Leavenworth, Kansas 66027-5000
✓Commander, US Army Soldier Support Center, ATTN: ATZI-DCD,
Fort Benjamin Harrison, Indiana 46216-5000

1. Reference:

a. DCSOPS letter, DAMO-FDY, subject: Military Police Functional Area Assessment (FAA) Issues, dated 6 December 1984.

b. FM 101-10-1, Staff Officers' Field Manual Organizational, Technical and Logistic Data, dated July 1976.

2. Reference a relayed the following VCSA issue and action which requires resolution:

Issue 19-03: Current AMOPS Enemy Prisoner of War (EPW) planning factors may not reflect airland battle doctrine.

Action 2: Establish EPW factors for the rear battle.

3. The proponent for FM 101-10-1 is the Combined Arms Center. The proponent for Chapter 5 (Personnel and Administration), Section II (Prisoner of War) of FM 101-10-1 is the Soldier Support Center.

4. Request that Soldier Support Center (SSC) resolve the issue and action listed above. Request that the Combined Arms Center assist SSC with research and modeling and then publish the data in the next appropriate change to or rewrite of FM 101-10-1.

5. Request that both addressees provide this headquarters with points of contact for this issue and action NLT 1 April 1985. Request SSC provide this headquarters with an interim executive summary (encl 1) outlining approach to resolving issue/action NLT 1 April 1985, an updated executive summary NLT the first day of each calendar quarter stating progress, and a final executive summary upon publication of the data.

7 MAR 1965

DAPE-MPM-CS

Subject: Enemy Prisoner of War (EPW) Capture Rates

6. POC this headquarters is MAJ Snyder, DAPE-MPM-CS, AV 225-1459/4615.

FOR THE DEPUTY CHIEF OF STAFF FOR PERSONNEL:



LAWRENCE D. BROOKS
Colonel, GS
Chief, Force Management
Division

1 Encl

Format for FAA EXSUM (1)

CLASSIFICATION (2)

Date

(3) Subject (all in capital letters). Brief summary of information no more than 15 single-spaced lines using approved abbreviations and acronyms. Use telegraphic style but insure meaning is clear.

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EXAMPLE

4 December 1983

(U) FAA ISSUE #00-0 ACTION #1. The TOE change to add 15 personnel was published in CTU 83-10.

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CDRUSAISC FT HUACHUCA AZ

DA WASH DC //DAPE-HRE//

UNCLAS

SUBJ: ENEMY PRISONER OF WAR AND CIVILIAN INTERNEE {EPW/CI} FACTORS
 FOR FASTALS

A. HQDA, DACS-ZB MESSAGE, 031430Z AUG 85, SUBJ: FORCE STRUCTURE
 ALIGNMENT

6 1. IN REFERENCED MESSAGE, THE SOLDIER SUPPORT CENTER {SSC} WAS
 5
 4 TASKED TO REVIEW AND REDEFINE EPW/CI RATES CONSIDERING NATO FORCES
 3
 2 IN A DEFENSIVE POSTURE.
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THOMAS R. TARBUTTON, LTC, DEPDIR, CD

SIGNATURE

Thomas R. Tarbutton

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2. THE EPW CAPTURE RATE AS DETERMINED BY THE SSC IN RESPONSE TO THIS TASKING IS .00035 EPW PER US SOLDIER PER DAY. THIS IS A COMPOSITE RATE WHICH COVERS ALL COMBAT INTENSITY CATEGORIES. THE CI RATE WAS DETERMINED TO BE .0001 CIVILIAN INTERNEE PER US SOLDIER PER DAY. 3. A. CONCEPTS ANALYSIS AGENCY (CCA) REQUESTED THAT THE COMPOSITE FACTOR BE DISTRIBUTED ACROSS FOUR LEVELS OF COMBAT INTENSITIES AS FOLLOWS: <table border="1" style="margin: 10px auto; width: 80%;"> <thead> <tr> <th colspan="3">COMPOSITE BREAKOUT</th> </tr> <tr> <th></th> <th>TABLE 1 {CURRENT FASTALS}</th> <th>TABLE 2 {PRE-1979 FASTALS}</th> </tr> </thead> <tbody> <tr> <td>INTENSE</td> <td>0.00041</td> <td>0.00078</td> </tr> <tr> <td>MODERATE</td> <td>0.00062</td> <td>0.00029</td> </tr> <tr> <td>REDUCED</td> <td>0.00029</td> <td>0.00019</td> </tr> <tr> <td>RESERVE</td> <td>0.00008</td> <td>0.00000</td> </tr> </tbody> </table> B. CONSIDERATION SHOULD BE GIVEN TO MODIFYING THESE INTENSITY LEVELS AND THEIR DEFINITIONS SO THAT THEY ARE CONSISTENT WITH CURRENT TERMINOLOGIES AND DOCTRINES. 4. METHODOLOGY. A. EPW CAPTURE RATES.												COMPOSITE BREAKOUT				TABLE 1 {CURRENT FASTALS}	TABLE 2 {PRE-1979 FASTALS}	INTENSE	0.00041	0.00078	MODERATE	0.00062	0.00029	REDUCED	0.00029	0.00019	RESERVE	0.00008	0.00000
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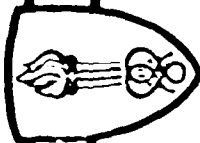
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MESSAGE HANDLING INSTRUCTIONS											
BOOK NO											
{E}BOMSSC'S APPROACH TO THE DETERMINATION OF AN EPW RATE WAS TO IDENTIFY TO HISTORICAL SAMPLE SUFFICIENTLY ANALOGOUS TO THE SCENARIO {NATO FORCES IN A DEFENSIVE POSTURE} FOR THE PURPOSE OF PREDICTION. ALTHOUGH OTHER APPROACHES WERE INITIALLY CONSIDERED, THE LACK OF INFORMATION FROM EXISTING AUTOMATED WARTIME MODELS AND WAR GAMES RESULTED IN THE USE OF HISTORY FOR DETERMINATION OF PROPOSED RATES. THIS METHODOLOGY ALSO PRODUCED AN EXPLICIT AUDIT TRAIL WHICH DID NOT EXIST TO SUPPORT CURRENT RATE FACTORS. {2} THE SAMPLE SELECTED WAS THE EXPERIENCE OF GERMAN FORCES ON THE EASTERN FRONT IN WORLD WAR II DURING THE PERIOD OCTOBER 1942 - MAY 1944. DETAILED RESEARCH AND CONSULTATION WITH SUBJECT MATTER EXPERTS SUPPORT THIS SAMPLE AS THE BEST AVAILABLE. BECAUSE THE MAJOR DRIVERS OF EPW RATES SUCH AS FORCE RATIOS AND CAPTURING FORCE POSTURE IN THE SAMPLE MATCH THE SCENARIO FOR WHICH PREDICTIONS ARE NEEDED, THIS HISTORICAL COMPOSITE FACTOR IS BEING RECOMMENDED FOR USE WITHOUT MODIFICATION FOR FASTALS. IT SHOULD BE NOTED THAT IN THIS RECOMMENDATION IS THE IMPLICIT ASSUMPTION THAT DIFFERENCES BETWEEN THE SAMPLE AND THE SPECIFIED SCENARIO DO NOT SIGNIFICANTLY IMPACT EPW CAPTURE RATES OR WERE BEYOND THE SCOPE OF THIS STUDY.											
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{FROM} THE HISTORICAL DATA COLLECTED IN THE TIME ALLOTTED FOR PROJECT COMPLETION DID NOT ENABLE THE DIRECT CALCULATION OF FOUR CAPTURE RATES BY FASTALS COMBAT INTENSITY CATEGORIES. THE HISTORICAL DATA PRODUCED A "COMPOSITE" RATE RESULTING FROM A MIX OF COMBAT INTENSITIES EXPERIENCED DURING A TWENTY MONTH PERIOD OVER A 3000 KILOMETER FRONT. THE BREAKOUT OF THIS COMPOSITE INTO FOUR RATES BY COMBAT INTENSITY REQUIRED TWO ASSUMPTIONS; AN ASSUMPTION OF PERCENTAGES OF TIME SPENT IN EACH LEVEL OF INTENSITY AND AN ASSUMPTION FOR THE CAPTURE RATE RELATIONSHIP BETWEEN INTENSITIES. ONE SET OF RATES WAS DEVELOPED BY USING THE RELATIONSHIP DEPICTED BY THE CURRENT FASTALS RATES {TABLE 1} AND A SECOND SET OF RATES WAS CALCULATED USING THE RELATIONSHIP SHOWN IN THE PRIOR RATES USED BY FASTALS {TABLE 2}. LACKING A RATIONALE FOR ANY OTHER METHODOLOGY, THESE ASSUMPTIONS WERE MADE AND THIS METHODOLOGY WAS USED AND IS CONSISTENT WITH CAA PROCEDURES AND GUIDANCE. B. CIVILIAN INTERNEES {CIS}. FOR CI RATES THE APPROPRIATE PERCENTAGE FACTOR GIVEN IN FM 101-10-1 WAS APPLIED TO THE SIZE OF THE NATIVE POPULATION IN THE AREAS WHERE US FORCES WILL BE ASSIGNED. THIS NUMBER WAS THEN CONVERTED TO THE NUMBER INTERNED PER DAY PER											
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INTERNING FROM PERSONNEL. 5. IT IS OUR UNDERSTANDING THAT THE CURRENT FASTALS CONFIGURATION DETERMINES THE MILITARY POLICE {MP} STRUCTURE BY THE USE OF EXISTENCE RULES RATHER THAN WORKLOAD FACTORS. THEREFORE, THE NEW EPW COMPOSITE FACTOR SHOULD HAVE NO IMPACT ON MP FORCE STRUCTURE AS DETERMINED BY FASTALS. 6. IN CONCLUSION, WE RECOMMEND THE FOLLOWING: A. THAT THE NEW COMPOSITE FACTOR IN PARAGRAPH 2 BE USED FOR ALL FUTURE EPW WORKLOAD PLANNING FOR THIS SCENARIO. B. THAT A FOLLOW ON EFFORT BE INITIATED UNDER THE PROVISIONS OF THE AR 5-5 STUDY PROGRAM WHICH WILL {1} EVALUATE THE IMPACT OF CURRENT TACTICS/DOCTRINE/TECHNOLOGY ON OUR HISTORICAL SAMPLE AND {2} ESTABLISH NEW INTENSITY FACTORS AND PROPORTIONATE DISTRIBUTIONS FOR FASTALS. 7. POC IS MRS. MARY LYNN COOK, AV 699-3813.											
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SOLDIER SUPPORT CENTER

EPW/CI PROJECT

TASKING . . .

"TO REVIEW AND REDEFINE ENEMY PRISONER OF WAR (EPW) AND CIVILIAN INTERNEE (CI) RATES CONSIDERING NATO FORCES IN A DEFENSIVE POSTURE."

SSC APPROACH

CONSIDERED

- WARGAMES AND MODELS
- ALLIED/WARSAW PACT ESTIMATES
- WORK BY COMBINED ARMS CENTER AND CONCEPTS ANALYSIS AGENCY
- FM 101-10-1 TABLE DATA
- HISTORY (NOT LIMITED TO US EXPERIENCES)

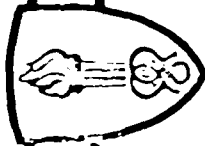
RESULTS

NO EPW/CI DATA
INSUFFICIENT TIME
CONFLICTING RESULTS
INCOMPLETE
UTILIZED

SSC METHODOLOGY

EPWS - IDENTIFY A HISTORICAL SAMPLE SUFFICIENTLY ANALOGOUS TO SPECIFIED SCENARIO FOR THE PURPOSE OF PREDICTION

CIS - APPLY FACTOR GIVEN IN FM 101-10-1 TO TARGET POPULATION



SOLDIER SUPPORT CENTER

EPW SAMPLE SELECTED

"THE BEST AVAILABLE"

GERMAN EXPERIENCE IN WWII ON THE EASTERN FRONT: OCT 42 - MAY 44

- 0 CAPTURING FORCE:
- NUMERICALLY OUTNUMBERED
 - DEFENSIVE POSTURE
- 0 WWII EASTERN FRONT
USED BY SOVIETS FOR
MODELS, WARPLANNING
- 0 SUPPORTED BY RESEARCH
AND CONSULTATION
WITH SMES

THE RESULTS

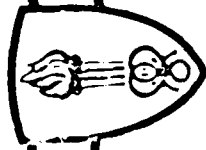
- 0 DEVELOPED COMPOSITE RATE FOR EPWS
0 ESTABLISHED AUDIT TRAIL
0 ESTIMATED NUMBER OF CIS

EPW - GERMANS EXPERIENCED
AN AVG EPW CAPTURE
RATE OF.....

** .00035 PRISONERS PER COMBAT SOLDIER PER DAY**

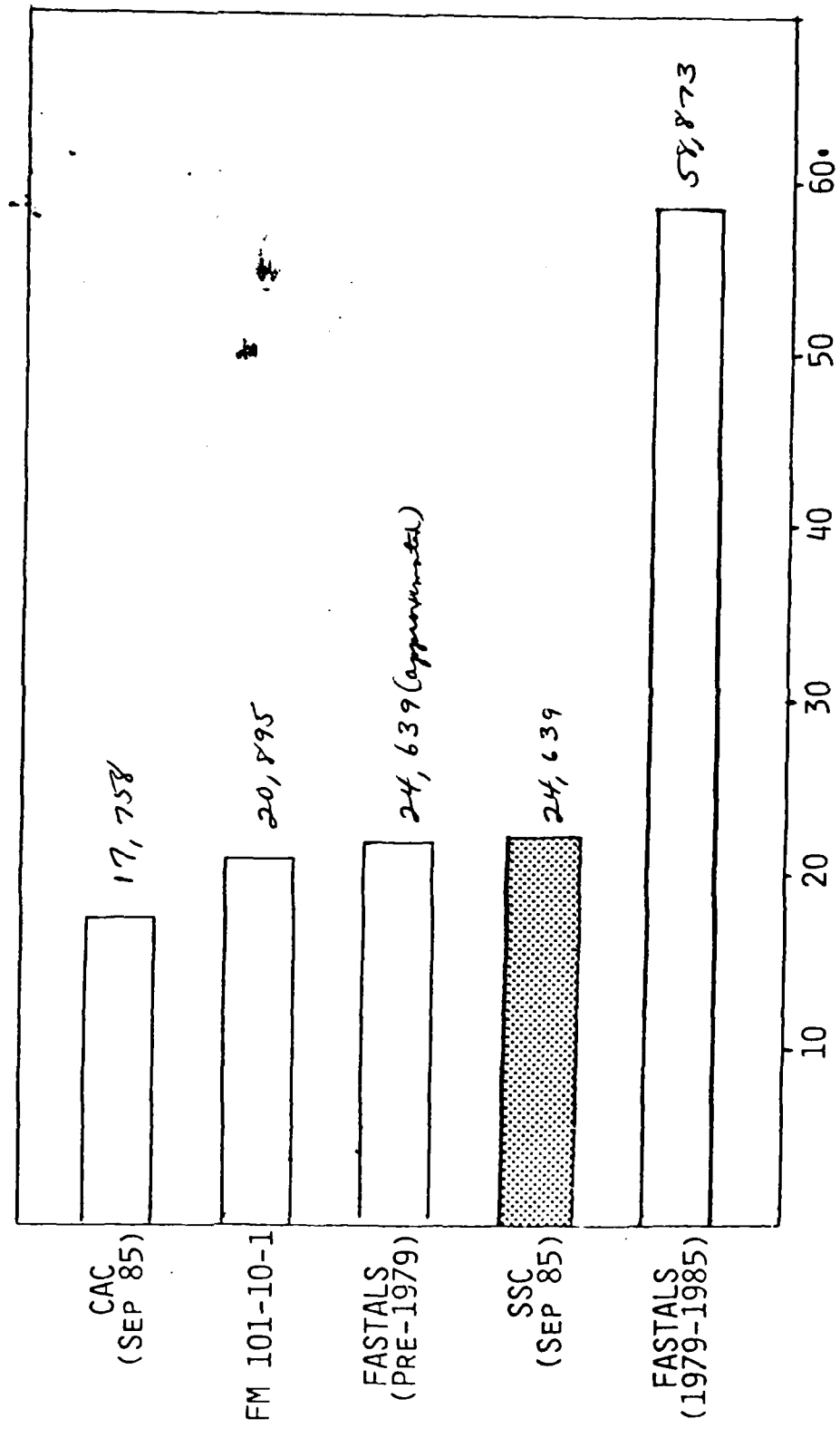
CI - IAW NATO STATUS OF
FORCES AGREEMENT:
CIS TRANSFERRED TO
HOST NATION.....

0 C.I.'s per day (changed by General Hummel
27 Apr 55)
42 CIS PER DAY

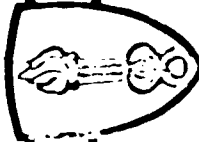


SOLDIER SUPPORT CENTER

EPW ESTIMATE COMPARISONS
(NATO SCENARIO)
(180 DAYS)



TOTAL EPWS
(IN THOUSANDS)



SOLDIER SUPPORT CENTER

RECOMMENDATIONS

- 0 THE EPW CAPTURE RATE DETERMINED BY THIS STUDY BE USED FOR THE
NATO DEFENSIVE SCENARIO
- 0 SEPARATE EPW AND CI RATES IN FASTALS
- 0 IF MORE PRECISION IS REQUIRED, INITIATE AR 5-5 STUDY TO EVALUATE
IMPACT OF CURRENT TACTICS/DOCTRINE/TECHNOLOGY ON THE HISTORICAL
SAMPLE

FINAL NOTE: EPW RATES HAVE BEEN HISTORICALLY UNDERESTIMATED AND
CONSEQUENTLY FORCES HAVE BEEN UNPREPARED TO HANDLE
THEM.

#DCD/NCR

ANAL

OPSD

RF

PRIORITY

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• U N C L A S S I F I E D •
.....

CJ

TOR=260 2101

TOD=260 210158

MSG NBR=10ED-00AA94

SSC

FAC

DMEDA

DINFOS

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ISC

DCASMA 21ST

64TH

123RD

327TH

TRAMEA

DCAA

CIDC

DRMO

READI-GRP

AAFES

COMSY

MISO

COMMSPT COMSEC

SSD

FILECOPY

M&R

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ZNR UUUUU

P 171845Z SEP 85

FM HQ DA WASHDC //DAMO-FOF//

TO RUEADWD/HQ DA WASHDC //DAPE-PS/DASG-HCZ/DAEN-ZCZ-A/DAMO-CA//

DALO-PL//

RUEBHRA/DIRUSACAA BETHESDA MD //CSCA-FO//

RUKLDAR/CDR AMC ALEX VA //AMCSM-PLS//

RUCLAIA/CDR TRADOC FT MONROE VA //ATCD-F//

INFO RUEOAGE/CDRLOGCEN FT LEE VA //ATCL-FS//

RUFEEAAA/CDR SSC FT BEN HARRISON IN //ATSG-DDN//

RUWTFHA/CDR CAC FT LEAVENWORTH KS //ATZL-CAM-I//

RUWTNFA/CDR AHS FT SAM HOUSTON TX //HSOP-F//

BT

UNCLAS

SUBJECT: FORCE STRUCTURE ALIGNMENT BRIEFING

A. MSG, DACS-ZB U31430 SEP 85, SUBJECT: FORCE STRUCTURE ALIGNMENT.

1. REFERENCED MESSAGE RECOGNIZED THE IMBALANCE BETWEEN FORCE STRUCTURE AND BUDGETED END STRENGTH AND REQUESTED THAT ADDRESSEES ACCOMPLISH FURTHER REVIEW AND ANALYSIS TO DETERMINE IF ADDITIONAL SPACE SAVINGS ARE FLASIBLE.

2. THE VCSA WILL BE BRIEFED ON THE RESULTS OF THIS EFFORT AT 1000.

PAGE 02 RUEADWD6940 UNCLAS

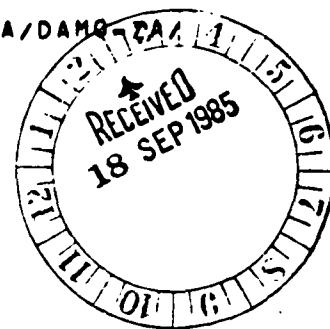
27 SEP 85 IN ROOM 3E635, THE PENTAGON. EACH AGENCY WHICH PROVIDED INPUT TO EITHER CAA OR HQDA WILL BRIEF ITS TASK AND RESULTS OF THE REVIEW, TO INCLUDE JUSTIFICATION WHERE APPLICABLE. PRESENTATIONS SHOULD NOT EXCLCD 5 MINUTES AND CONTAIN NO MORE THAN FOUR 8 1/2 BY 11 PAPER SLIDES. CAA WILL BRIEF THE RESULTS OF APPLYING THESE NEW DATA TO THE TAA-92 METHODOLOGY.

3. THE ORDER OF PRLENTATION FOLLOWS:

AGENCY	TASK PARA	LENGTH
ACE	2.B.	1000-1005
ODCSER	2.E.	1005-1010

PRIORITY

.....
• U N C L A S S I F I E D •
.....



PRIORITY

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• U N C L A S S I F I E D •
.....

TSG	2.F.	1010-1015
SSC	2.D.(2)	1015-1020
AMC	2.C.	1020-1025
LOGCEN	2.D.(1)	1025-1030
CAC	2.D.(3)	1030-1035
CAA	2.A	1035-1110
DAMO-FD		1110-1130

4. DUE TO SPACL LIMITATIONS, ATTENDANCE IS LIMITED TO TWO PER ADDRESSEE. NAMES OF ATTENDEES AND PAPER COPIES OF BRIEFING SLIDES (NUMBERED WITH ORGANIZATION INDICATED) WILL BE PROVIDED TO DAMO-

PAGE 03 RUEADWD6940 UNCLAS

FDF, NLT 250900 SEP 85.

5. DAMO-FDF POC IS LTC MATT DI FIORE, AV 224-3601.

BT

#6940

NNNN

PRIORITY

.....
• U N C L A S S I F I E D •
.....

E

TAB E

DERIVATION OF EPW RATES BASED ON HISTORICAL DATA

1. SAMPLE 1

CASE 1

- a. Geographical Location: Eastern Front, World War II.
- b. Period: 10/1/42 - 5/31/44.
- c. Posture: Defensive against superior force.
- d. Force Size: Estimate of German strength based on Division Equivalent Combat Troops.
- e. Sources:

(1) German Army Order of Battle 1939-1945, Edited by W. Victor Madej.

(2) "German and Soviet Replacement Systems in World War II", Historical Evaluation and Research Organization, July 1975.

2. DERIVATION OF EPW COMPOSITE RATE FROM SAMPLE 1

- a. The following table gives the data used to develop a composite rate for all combat intensities experienced during the twenty month sample period.

PERIOD	EPW	STRENGTH	DAYS IN PERIOD
10/1/42-2/28/43	200K	2818K	151
03/1/43-7/31/43	150K	2588K	153
8/1/43-12/31/43	123K	2529K	153
01/1/44-5/31/44	75K	2256K	151

- b. Periodic rates were obtained by dividing EPW per period by the number of German soldier days in the period, i.e. Soviets captured/(German strength)(Days in period).

- c. The composite rate is the average periodic rate:

PERIOD	RATE
1	.00047
2	.00038
3	.00032
4	.00022

AVERAGE IS .00035 EPW PER COMBAT SOLDIER PER DAY

3. COMPOSITE BREAKOUT For FASTALS

a. The FASTALS model requires four rates by combat intensity: intense, moderate, reduced and reserve. These intensities are categories of combat based on a percent of combat losses.

b. The breakout of the composite as shown in Table 1 is based on the relationships depicted by the EPW rates used by FASTALS prior to 1979. Table 2 distributes the composite rate by combat intensity using the relationships depicted by the FASTALS rates which were used from 1979 to 1985. (Reference Tab F.)

<u>COMBAT INTENSITY</u>	<u>TABLE 1</u>	<u>TABLE 2</u>
INTENSE	0.00078	0.00041
MODERATE	0.00029	0.00062
REDUCED	0.00019	0.00029
RESERVE	0.00000	0.00008

1. SAMPLE 2. CASE 2

- a. Geographical Location: Eastern Front, World War II.
- b. Period: 5/1/42 - 9/30/42.
- c. Posture: Offensive against superior force.
- d. Force Size: Estimate of German strength based on Division Equivalent Combat Troops.
- e. Sources: Same as shown in para 1e, Tab E.

2. DERIVATION OF EPW COMPOSITE RATE FROM SAMPLE 2.

a. The following table gives the data and the composite rate derived from Sample 2:

EPW	STRENGTH	DAYS IN PERIOD	COMPOSITE RATE
1500K	2668K	153	0.00367

b. A breakout of this rate by combat intensity is not given because it is not used in the FASTALS model. The purpose of calculating this rate was for use in FM 101-10-1.

F

23 January 1979

MEMORANDUM FOR RECORD

SUBJECT: Enemy Prisoner of War/Civilian Internee Capture Rates - TAA-85

1. Purpose. This memorandum addresses the variations in enemy prisoner of war (PW) and civilian internee (CI) workloads which were developed during the conduct of Total Army Analysis (TAA) 83, TAA-84 and TAA-85 at CAA.

2. Background. The attached figure depicts the buildup of PW/CI workload, in thirty day increments, over the length of the simulation. This, as well as similar displays in other documents, has resulted in numerous questions regarding the significant increase in the workload estimates between TAA-83 and TAA-84 or TAA-85. TAA-83 PW and CI handling workloads were estimated using rates that have been in a part of the FASTALS model data base since the early 1970's. In fact, no documentation as to their source or validity can be located. In reviewing the results of the support forces analysis for TAA-83, the ODCSPER Law Enforcement Division (LED) consultant to the TAA Study Team, representatives of the USA Military Police School (USAMPS), and the Military Police analyst at CAA determined that a review of the capture rates was in order, and that the overall methodology for estimating the handling of PW and CI should be reviewed in light of other planned changes in the FASTALS logic that could impact on the workload estimate.

3. Capture rates review. Table 1 shows the results of the review of the capture rates carried out by LED, USAMPS and CAA analysts prior to the beginning of TAA-84. Note that the resultant capture rates developed were specifically designed for use in the FASTALS model, that the combat intensities refer to the posture of the US Forces, and that they are expressed in terms of the size of the capturing force. These limitations may therefore preclude their direct application in other automated methodologies. As FASTALS estimates workloads on a per man basis, rather than on a per division basis, the rates in table 1 are converted to the required basis by dividing by 18000 (assumed average division population).

mel

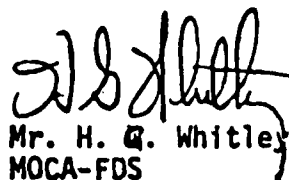
SUBJECT: Enemy Prisoner of War/Civilian Internee Capture Rates - TAA-85

The rates used in FASTALS for both TAA-84, TAA-85, and TAA-83 (and earlier studies) are given below.

FASTALS Intensity	RATES - PW & CI/Man/Day	
	TAA-84 & TAA-85	TAA-83
Intense	0.0010	0.0008
Normal (or Moderate)	0.0015	0.0003
Reduced	0.0007	0.0002
Reserve	0.0002	0.0000

4. Methodological Improvements. The main result of an extensive model improvement program at CAA was that the length of the time periods could be reduced to as low as ten days and still cover the complete 180 day period of the simulation. With this refinement, the implicit assumption that all PWs and CIs captured during a time period could be evacuated to the rear of the COMMZ before the end of the period (30 days in the original usage) was possibly invalidated. The revised PW & CI handling logic allows the accumulation of those captured in forward areas (division and brigade areas) until a predetermined number is reached, at which time the group is moved to the rear of the Corps, or rear combat zone (RCZ). At this level, a similar accumulation occurs. The size of groups being evacuated can be determined as a function of the capability of the units having the mission, and delays of from ten to twenty days can occur before persons captured in the forward areas complete their evacuation to the rear.

5. Summary. The improved PW and CI evacuation logic and revised capture rates resulted in significantly different workload requirements between TAA-83 and TAA-84, or TAA-85. In view of the fact that the rates that were replaced have no apparent basis, and that the workload estimates based on the new rates are comparable to data noted in several published documents, the new rates were used in TAA-84 and subsequent studies. The revised logic, which has the overall effect of a more gradual buildup of workload in the rear as well as additional detail on handling requirements at intermediate levels, has been reviewed and determined to be a significant improvement over the original logic in the model.

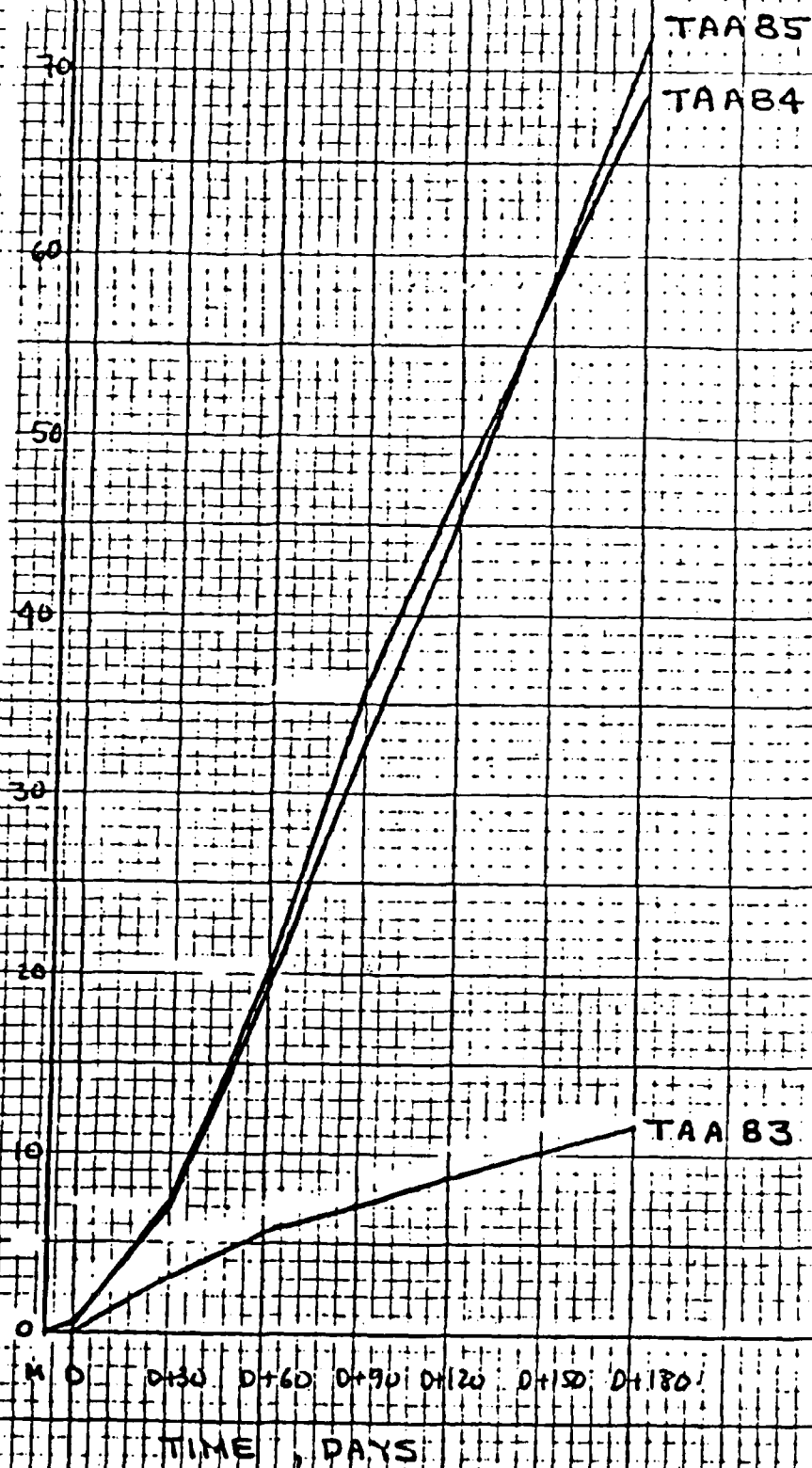

Mr. H. G. Whitley/51658
MOCA-FDS

17 Jan 79

Table 1 - FASTALS Capture Rates Composition

FASTALS Intensity	Combat Model - Blue Division Warfighting Posture	Percent of time in Posture	Capture Rate (PW & CI/Div/day)
Intense	Defense of a fortified position	20	22
	Defense of a prepared position	20	18
	Defense of a lightly prepared position	20	15
	Defense of a hasty position	20	12
	Delay	10	10
	Organized withdrawal	5	6
	Meeting engagement	5	76
		<u>100</u>	18.5 <u>Mean</u>
Normal (or Moderate)	Defense of a fortified position	20	22
	Defense of a prepared position	20	18
	Defense of a lightly prepared position	20	15
	Attack of a hastily prepared position	10	92
	Attack of a lightly prepared position	10	56
	Static	20	7
		<u>100</u>	27.2 <u>Mean</u>
Reduced	Defense of a fortified position	20	22
	Defense of a prepared position	20	18
	Defense of a hasty position	10	12
	Static	50	7
		<u>100</u>	12.7 <u>Mean</u>
Reserve	Static	50	7
	Reserve	50	1
		<u>100</u>	4 <u>Mean</u>

PRISONER OF WAR AND CIVILIAN INTERNEES (000s)



BUILD UP OF PW AND CIV INT WORKLOAD
OVER TIME FOR 3 TAA STUDIES

G

REVISION OF FM 101-10-1, CHAPTER 5, SECTIONS 5-4 and 5-5

5-4 General.

a. In order that the required resources are available and the necessary arrangements made for the reception, care, and disposition of enemy prisoners of war, it is necessary to estimate as closely as possible for a given period of time for a specified operation:

(1) The number of enemy prisoners of war that will be captured.

(2) The number of enemy civilians that will be interned.

(3) The number of enemy prisoners of war that will be retained in the theater of operations.

(4) The number of enemy prisoners of war that will be evacuated from the theater of operations.

b. Average capture and evacuation rates for non-nuclear warfare have been developed and incorporated in this section. Planners should bear in mind that prisoners are not characteristically captured at a uniform rate and that the figures cited in this section represent averages which may be greatly altered by such influencing factors as:

(1) Enemy morale.

(2) Avenues of withdrawal open to enemy troops.

(3) Ability of friendly forces to encircle or cut off enemy units.

(4) Mode of operation, i.e., attack, defense, retrograde.

(5) Operational environment.

(6) Relative strength and sophistication of enemy forces.

(7) Intensity and effectiveness of ideological indoctrination of enemy troops.

(8) Intensity and effectiveness of friendly psychological operations.

c. Available experience factors regarding the internment and security of enemy civilians show that the number interned in specific situations varies greatly. Planners using the civilian internee factors should modify them by such considerations as:

(1) Extent to which enemy civil authorities and agencies work with military forces.

(2) Intensity and effectiveness of ideological indoctrination of enemy officials and the general populace.

(3) Intensity and effectiveness of friendly psychological operations aimed at influencing the enemy civil populace.

(4) Extent to which the enemy populace supports the political and military goals of the enemy government.

5-5 EPW Capture Rates and Retention.

a. Division and Corps Estimates.

Table 5-3 EPW Capture Rates Per Month

Equal Force Estimates**

Troops	Percentage of strength
Infantry divisions-----	1.35*
Infantry divisions (mechanized)-----	1.10
Armored divisions-----	0.80*
Airborne divisions-----	0.65
Corps and field army nondivisional units:	
Armored cavalry regiments-----	0.85
Separate combat brigades:	
Infantry brigades-----	0.90
Infantry brigades (mechanized)-----	0.75
Armored brigades-----	0.55
Airborne brigades-----	0.45
Other units-----	Negligible

*These numbers appeared in FM 101-10 published in 1944 and have not changed. Therefore, it can be concluded that these numbers are derived exclusively from WWII data. Other factors were developed after 1961 and include Korean data. The mechanized division percentages are estimates derived from comparisons of other numbers.

**Equal numbers and sophistication.

Table 5-4 EPW Captures Per Month Numerically Superior Forces
(Force Ratio - 2:1)

Force and Operation	Number
Division in attack of a defensive position-----	1,500
Division in attack of a defensive position with complete surprise attained-----	2,100
Division in defense of a position against an unsuccessful enemy attack-----	9,000
Infantry division (mechanized) (or task force) in an encirclement operation-----	24,450
Armored division (or task force) in an encirclement operation-----	3,000

Table 5-5 Daily EPW Capture Rates - Numerically Inferior Forces

Posture	Number EPW Per Combat Soldier Per Day
Offensive	.00367
Defensive	.00035

For Table 5-5, planning factors are based on the experience of German Forces on the Eastern Front in World War II during the period when they faced numerically superior forces. Until the Battle of Stalingrad in late 1942, the Germans were on the offensive. Following that battle and until the end of the war, the German posture was defensive. The force ratio was not constant. It increased to approximately 1:1.8 (German Forces to Russian Forces) by the fall of 1942, and to 1:2.5-3.5 (German Forces to Russian Forces) by the summer of 1944.

Divisional German strength also varied from 15,000 to 8,000 soldiers during this period. Therefore, the factors are based on Division Equivalent Combat Troops and are expressed as the number of EPWs captured per combat soldier per day. The use of the term "combat soldier" does not limit the capture of enemy prisoners to the front. The factors also include prisoners taken in the rear battle on the many occasions when the Soviets penetrated deeply behind the German lines of defense.

As with all such factors, care should be exercised to avoid development of unreasonable projections.

b. Theater Estimates.

Table 5-6 EPW Captures Per Month

Unit	Enemy capitulation			
	Defense (US)	Offense (US)	First Month	Succeeding Month
Infantry Division	230	3,500	6,000	30,000
Infantry Division (mechanized)	175	3,550	6,000	30,000
Armored Division	117	3,600	6,000	30,000
Airborne Division	155	2,550	6,000	30,000

Table 5-7 Retention of EPW in an Active Theater

Purpose for retention in theater	Number per division
To provide a theater PW labor pool.....	4,000
To provide for PW housekeeping, administration, etc.....	2,666
Total (division slice).....	<u>6,666</u>

H

TAB H

KEY PERSONNEL CONSULTED ON EPW STUDY

Colonel David M. Glantz
Center for Land Warfare
U. S. Army War College
Carlisle Barracks, Pennsylvania

Colonel Louis D. F. Frasche
Director, Combat Studies Institute
Command and General Staff College
Fort Leavenworth, Kansas

Doctor Brooks Kleber
Ass't Chief of Military History
U. S. Army Center of Military History
Washington, D. C.

Major Scott R. McMichael
Research Fellow, Combat Studies Institute
Command and General Staff College
Fort Leavenworth, Kansas

Mister John L. Romjue
Deputy Staff Historian (Field History)
U. S. Army Training and Doctrine Command
Fort Monroe, Virginia

Doctor Earl Ziemke
History Department
University of Georgia
Athens, Georgia

BIBLIOGRAPHY

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