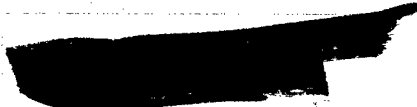


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A Study of BATTLE CASUALTIES among Equivalent OPPOSING FORCES

Korea, September 1950

by Robert J. Best

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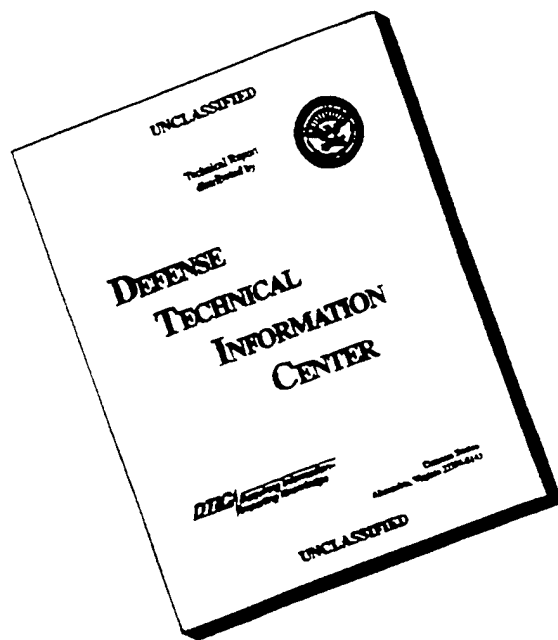
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HEADQUARTERS
UNITED STATES ARMY FORCES, FAR EAST
APO 343

AG 350.06 GC-PO

23 May 1953

SUBJECT: Evaluation of Tech Memo ORG-T-23 (FEC)

TO: The Adjutant General
Department of the Army
Washington 25, D. C.
ATTENTION: Assistant Chief of Staff, G3

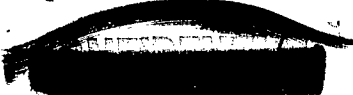
1. Reference: Letter, AG 370.2 GC-PO, Headquarters, United States Army Forces, Far East, 22 March 1953, subject: Letter of Transmittal of Technical Memorandum ORG-T-23 (FEC).

2. Two hundred fifty (250) copies of this letter are forwarded for attachment to subject technical memorandum in compliance with letter, G3 040 ORG (6 Feb 52), Department of the Army, 7 February 1952, subject: "Distribution of Publications of the Department of the Army Operations Research Office (ORG)."

3. Technical Memorandum ORG-T-23 (FEC), "A Study of Battle Casualties Among Equivalent Opposing Forces," is a study to develop as much quantitative information as possible about battle casualties during a narrowly defined phase of Korean hostilities. The document shows the possibilities of deriving considerable information on certain types of operations by reconstructing them from available records. The large number of charts and graphs permit the reader to study the casualty situation from a great many angles, and the narrative which accompanies the charts and graphs is easy to read, considering the technical aspect of the subject.

4. The study successfully accomplishes its mission and points to the fact that studies of casualty rates are needed periodically in order to confirm or modify previous findings, to detect trends, to evaluate weapons and defenses, and to furnish planners with current data.

5. Copies of this letter and the comments of subordinate commands and staff sections of Headquarters, United States Army Forces, Far East,

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23 May 1953

SUBJECT: Evaluation of Tech Memo ORO-T-23 (FEC)

have been forwarded to the Director, Operations Research Office, Far East Command for his information.

6. Specific comments on this technical memorandum are presented in Inclosure 1.

FOR THE COMMANDING GENERAL;

Robert J. Karrer

1 Incl
Specific Comments

ROBERT J KARRER
Colonel AGC
Asst Adj Gen

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SPECIFIC COMMENTS ON
TECHNICAL MEMORANDUM ORO-T-23 (FEC)

The following paragraphs cover specific comments of Headquarters, United States Army Forces, Far East on Technical Memorandum ORO-T-23 (FEC), "A Study of Battle Casualties Among Equivalent Opposing Forces."

1. Abstract. The first finding on this page gives a valuable insight into the type of enemy opposing our forces, but is worded so poorly that its impact on a reader is lost. The remaining three statements are misnamed as they state the obvious and therefore are not findings.

2. Assumptions, Pages 1, 7 and 10. These assumptions are of little value as they actually state the obvious.

3. Conclusions, pages 3 and 4. Conclusions drawn from this study appear valid, but it is believed that a study conducted on current operations would show that effectiveness of enemy artillery has improved. Whether the enemy could maintain the effectiveness it has at present in a mobile situation is questionable and could present a valuable study.

4. Page 3. The discussion concerning the types of weapons that caused the majority of casualties is of interest in that it confirms current ideas relative to the effectiveness of enemy mortars and the reliance which is placed on that type of weapon by the enemy. The statement relative to the apparently low effectiveness of small arms weapons is of considerable interest and again raises the question, for which no satisfactory answer has been advanced, as to the reason for this.

5. Pages 3, 39, 56, and 62. The references and discussion concerning the low effectiveness and unexplained losses of "burp" guns are of interest and may warrant further investigation including interrogation of prisoners of war. The findings and statements relative to this weapon may also be worth remembering in case there is another "outbreak" of news articles concerning the marvelous Soviet burp gun and its superiority to US Sub-machine guns.

6. Pages 35 to 41. The discussion relative to the distribution of casualties by type of weapon and missile, shows the preponderance due to the large and effective use of mortars by the enemy, the constancy of which was probably due to the enemy's ability to maintain resupply of ammunition and weapons by hand carry, despite the effects of air support on his supply system. The relatively low and decreasing casualty effect of enemy artillery fire is apparently indicative of his lack of skill and training in effective artillery, as well as being due to inability to replace lost and destroyed weapons and to maintain resupply of ammunition. It would be

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SPECIFIC COMMENTS (Cont'd)

enlightening to compare the effectiveness of current enemy artillery to that at the time of this study, noting the progress made by the enemy in the use of artillery.

7. Page 41. That part of this page dealing with accounting for casualties has merit for possible incorporation in command training. The statement that individuals in sustained combat are notoriously prone to confuse dates is made apparent by this study.

8. Page 155. In note below entry for 4 September, a statement appears, "Stateside" appears to be 1st Cav Div Engrs." "Stateside" applied to the 70th Tank Battalion. "Sandbag" was the correct name for 8th Engineer (C) Battalion.

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6410 Connecticut Avenue
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A STUDY OF BATTLE CASUALTIES AMONG EQUIVALENT
OPPOSING FORCES
(KOREA, SEPTEMBER 1950)

by

Robert J. Best

This study attempts to develop a maximum of quantitative information on casualties produced among opposing forces (Korean and US) during the period September 1950. Findings are:

- By accepting four times the actual number of casualties, North Korean forces (with a 2:1 manpower superiority) obtained military equality with US forces and, with this manpower, offset US fire-power and air support superiority.
- Although enemy weapons inflicted a continually high casualty rate on US forces, their offensive was unsuccessful probably because they could not continue to accept high casualty rates.
- Tactical operations are sensitive to casualty rate and to the quantity of accumulated casualties.
- Casualty rates in US divisions were affected by combat intensity, development of the situation, and possession of the initiative by friendly or enemy troops.

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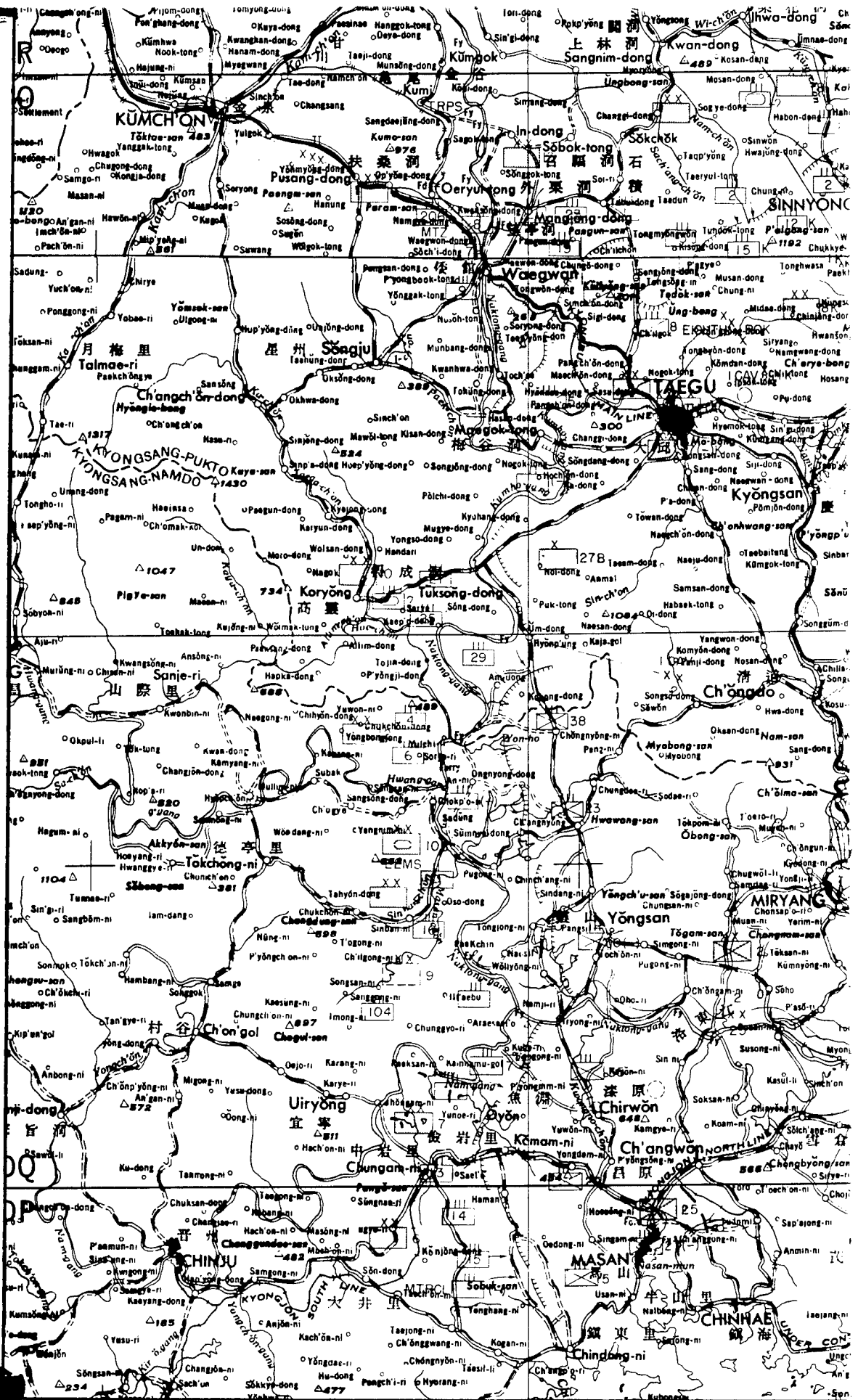
A STUDY OF BATTLE CASUALTIES
AMONG
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Korea
September 1950

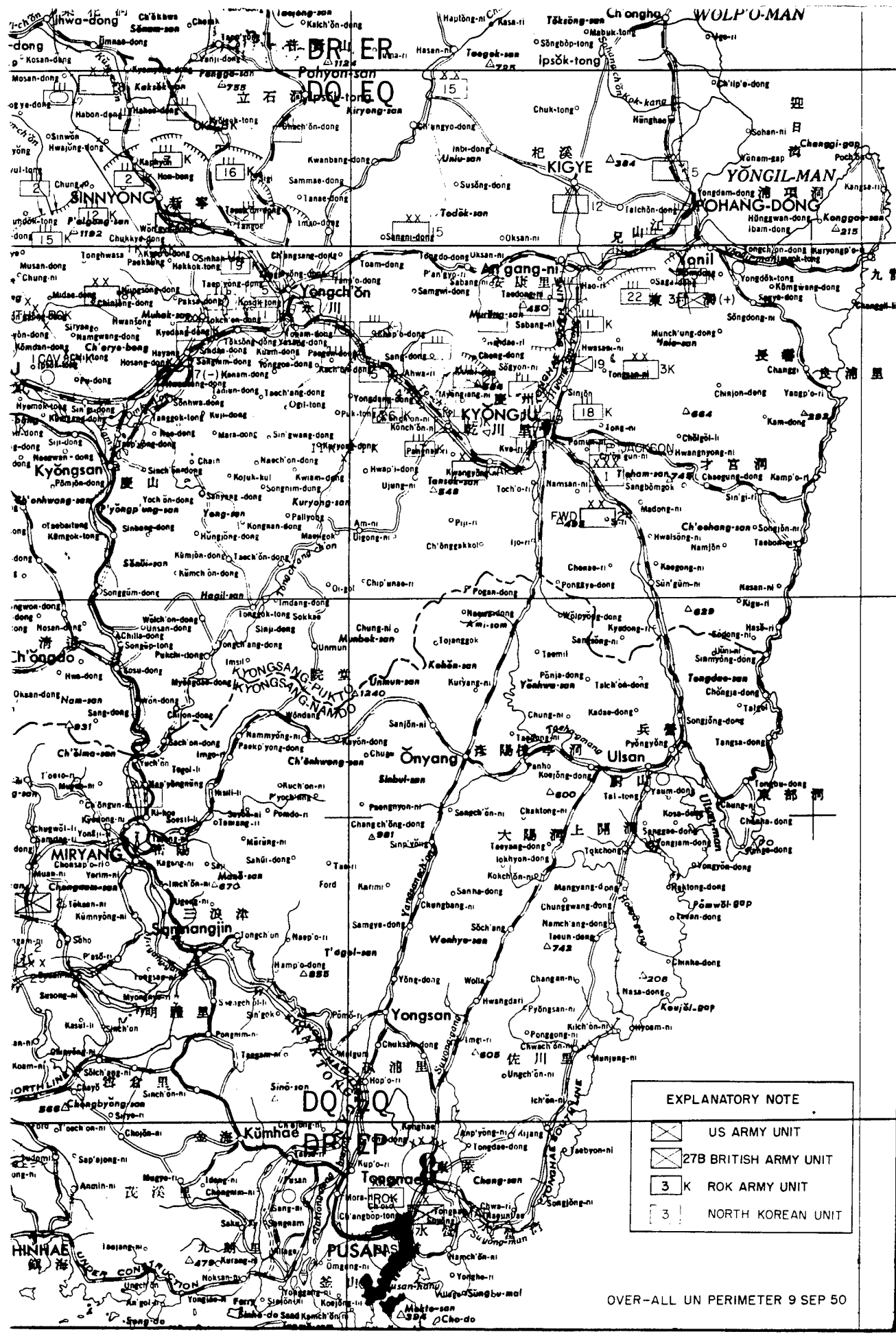


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A Study of BATTLE CASUALTIES among Equivalent OPPOSING FORCES

Korea, September 1950

by
Robert J. Best

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SUMMARY

PROBLEM

To develop as much quantitative information as possible about the battle casualties produced among opposing forces during a major period of clearly defined consecutive combat.

ASSUMPTION

The casualties on both sides are the major determinants of the tactical outcome.

METHOD

Action in the sector of the US 1st Cav Div during the period 1-23 September 1950 is studied solely by means of documentary information. The sources that describe the friendly side include the following: ordinary strength and casualty statistics; results of a special coding of individual casualty files; and, morning reports and historical narratives. Sources which describe the enemy include the following: US intelligence on the designation and status of enemy units in contact with the 1st Cav Div; enemy statistics on enemy strengths, casualties, weapons, and ammunition; statements of enemy prisoners of war; and US estimates of enemy casualties. These data are checked against one another. Where possible, the balance of friendly and enemy strengths and casualties is struck. Finally, data on the significance of friendly casualties are sought in the detailed analysis of certain actions.

RESULTS

Within the main report, the findings in a particular area are summarized at the start of each chapter.


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DISCUSSION

In planning for military operations it is important to estimate the relative military strengths of the forces which may be opposed. The action in the 1st Cav Div sector during September 1950 demonstrated that the opposing forces, though very different, were nearly equivalent.

Even though his organizational units were far below standard strength, the enemy had a 2:1 superiority in manpower. Many of the enemy troops were poorly trained and a number of them were South Korean conscripts. In weapons, the enemy was more-or-less deficient, depending on the type of weapon. The supply of ammunition was limited. There was some tank support. Vehicular transport was lacking. Means of communication were poor. The unique advantages on the enemy side were familiarity with the countryside and ability to infiltrate. Infiltration was, however, less important in September than during the previous months.

The firepower and military potential of US infantry units is well known and has not been studied in this report. Armored units supported the infantry. There was a considerable amount of close-air support and aerial observation of enemy movements and friendly artillery fire, but the prevailing bad weather often cut down the number of sorties that could be flown. At times, ammunition ran short. In terms of standard organization for defense the US line was undermanned. Almost all combat units were usually committed without adequate reserves, and such units as headquarters companies and engineers were frequently called upon to fight as infantry riflemen.

The net advantage would seem to have been on the US side. It is established that the enemy was committed to attempt to seize Taegu at any cost. US Forces were not committed to defend Taegu on these terms. Yet, if Taegu had fallen it appears certain that the entire perimeter as it then stood would have been compromised and UN Forces would have been obliged to withdraw to a defense line close to Pusan.

What stopped the enemy? First, real estate, and, second, casualties. The enemy was only very grudgingly allowed to take the hills necessary to his advance. In being pushed back, US troops were probably influenced by what they regarded as tolerable limit to casualties, for the statistics show rather definite limits at all levels. But as the enemy advanced, his own casualties, four times greater than on the defending side, gradually whittled down

his military potential. The fact that the enemy could keep up intense fighting under such circumstances was probably due in large measure to his replacement system in which large numbers of men were sent forward, often without weapons, without any formal requisitioning from the front. But finally the enemy units were so cut down that even their organizational identity was sometimes lost. For example, the 9th Regt of the 3d North Korean Div by 14 September was reduced to such a point that it was redesignated the "3d Bn" even though its strength was below that of a normal battalion.

The fact that the counteroffensive against the depleted enemy forces was still difficult illustrates the "atomistic" nature of hill warfare. One by one the hills still had to be assaulted. In such a situation it is difficult to find key actions. It seems more reasonable to regard local action, whether in a general defensive or offensive phase, as contributing its share to the over-all result. In this kind of warfare the attrition is controlling, and attrition is regular and predictable. Data on actions such as studied in this report may well be applicable to planning for mountain warfare in other regions.

Among the enemy weapons, mortars stand out in effectiveness. The enemy had artillery and artillery ammunition but does not appear to have accomplished much with his big guns. But even when mortar ammunition was running low, the enemy still obtained the outstanding proportion of hits against advancing US troops with this weapon. The surprising result is the few casualties to enemy bullets. The basic data are sufficiently incomplete to allow for a serious bias against bullet-shooting weapons, and yet there is hardly any evidence anywhere to suggest that this bias in fact exists. But the historical data confirm the effectiveness of the enemy mortars. With the infantrymen's personal weapons, a subject of lively interest, this point deserves further study. It may be noted again here that in the 13th North Korean Div the bulk of the submachine guns, with which 30 percent of the troops are normally armed, unaccountably disappeared.

CONCLUSIONS

1. By accepting double the US casualty rate, or four times the number of actual casualties with a 2:1 superiority in manpower, the North Koreans obtained approximate military equality to US Forces. This enemy manpower, much of which was low grade,

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offset the US superiority in firepower and air support.

2. The enemy offensive failed because the already depleted enemy units could not continue to accept a high casualty rate even though enemy weapons continued to inflict a rather high casualty rate upon US Forces.

3. Among US infantry companies and battalions, the success of a tactical mission appears limited by the casualties involved.

4. Tactical operations in general are very sensitive to the casualty rate and to the magnitude of accumulated casualties.

5. Among US divisions, the casualty rate reflected the overall intensity of combat, the development of the situation, and the possession of the initiative by one side or the other. The experience of any one unit was most regular and constant (and therefore independent of these factors) at the regimental level. The experience of particular units became highly divergent at the battalion and company levels but among all units statistical regularities were operative.

6. The outstanding enemy weapon was the mortar. Enemy artillery was rather ineffective even when there was an adequate supply of ammunition. In general, enemy small arms and machine guns produced less effect than one would expect in hill warfare.



INTRODUCTION

During September 1950 UN Forces defended a box-like perimeter, one side of which extended north and south along the Naktong River while the other side turned from the Naktong about 12 miles north of Taegu and ran eastward to the Japan Sea. US Forces were responsible chiefly for the frontage along the Naktong, while the ROK Army held most of the mountainous northern side of the perimeter. The frontispiece shows the region held by the 25th Inf Div, 2d Inf Div, and 1st Cav Div, from south to north in the order named and delineates the regimental zones within the divisional sectors. This study is concerned principally with the sector of the 1st Cav Div. Here for three weeks, US and enemy forces were engaged in sustained all-out combat. The terrain in which this action was fought is shown in detail in Fig. 16, included in the body of the memorandum.

In a number of respects the action in the sector of the 1st Cav Div was like an experiment in warfare. Notable features are:

Opposing forces were about evenly matched. The North Koreans had superiority in manpower; the US had superiority in firepower.

North Koreans were determined to capture Taegu; the 1st Cav Div was determined to hold it.

There was a clean-cut line-up of opposing units. On both sides by far the greater part of available strength was committed.

The opposing units had previously fought a bitter battle and knew each other's capabilities.

A lull allowed both sides to prepare for fresh combat. Then the "set piece" offensive opened the period chosen for study.

During the period studied, the net military result was roughly a dynamic stalemate. Against the stubborn US defense, the enemy slowly pushed the front line toward Taegu, and then against a stubborn enemy defense the 1st Cav Div pushed it back until, on 22 September, it was about where it had been on 2 September.

The net military result was determined by the totality of many individual engagements rather than by a few key actions. (Note: The enemy was trying to reach Taegu by fighting through the hills to two natural corridors leading to that city. The enemy did not quite succeed.)

All the fighting which is studied in this report is hill fighting, and a notion of the number of hills disputed may be derived from Fig. 16 in which many of the important peaks are indicated. In this terrain a decisive advance could not be made by the concentration of forces for a single decisive thrust. Rather, progress might be made only by taking the heights that dominate the valleys. In an area studded with hills, this means taking all the hills within a circumscribed area if that area is to be held. Therefore, the attacking forces had to deploy to assault every hill; and when each hill was taken, there was always the next hill.

Momentum would be lost, and the side giving ground would have an opportunity to prepare for the next defense or to counter-attack. Some hills changed hands many times, and it happened at least twice that the opposing forces were simultaneously attacking each other on adjacent hills like fighters slugging it out. The fact that the unit of combat — the assault of a hill — was the same for both sides and that, in the end, each side took each hill the same number of times makes this battle unusually appropriate for a quantitative study. If there is a mechanism of constant factors and limiting factors that tend to determine combat, it had full play here.

As measures of this experimental situation, the important variables describing the friendly side are not represented by comprehensive data, and complete coverage for the enemy is not to be expected. But a feature of unusual interest about the situation outlined is the availability of certain enemy documents containing tables of statistics which may, for certain periods and certain units, be compared with US statistics for both sides.

This study is based entirely upon documentary information. Opportunity was not found to interview personnel of the 1st Cav Div in the field. The lack of personal contact may have affected the results in that additional important data may possibly have been missed and in that any faulty interpretation of the documents has gone uncorrected. There is, however, the compensating advantage that the results are entirely uninfluenced by the subjective impressions and biases of the troops represented.

A secondary object of this study is to evaluate the reliability and usefulness of the various sources of data which are used. The

test is consistency and the criterion is the consensus. So that the sources may be fairly represented, the basic data are usually quoted unchanged in tables separate from those in which the derived results are given. Also, throughout the explanatory text, the sources of the facts discussed are cited and there are many cross-references.

In the analysis of military operations it is perhaps usual to begin with the study of interesting small actions. Important historical facts can be established only by such a method. However, attempts to reach generalities in this way are apt to lead to confusion, for any action is complex and the data that can be obtained by casual analysis are likely to be at variance with one another. Undue importance may be attached to the particular actions considered. With regard to casualties, for example, erroneous statements have been current at one time or another as to the number of friendly units overrun and decimated, and as to the ratio of enemy casualties and manpower to friendly casualties and manpower. Then, too, fundamental regularities of a quantitative nature cannot be discerned in a few incidents.

The following analysis is straightforward and proceeds from an approach just the opposite to that previously described. At the outset, only a few variables such as strengths and total casualties are considered, but large units, such as entire divisions of all combat troops in Korea, are completely covered. The analysis here is purely empirical, and any quantitative relationships that appear are noted. Other variables, such as the causes of casualties, are next considered. Coverage is more limited and may be spotty, but the sample in question is related to the comprehensive data already established. Finally, a complete analysis is made of a few actions that have been selected because of the wealth of associated data.

The complete findings are derived and presented in six chapters. Since they are rather lengthy, their contents have, in each case, been summarized at the beginning in the section titled Synopsis. Conclusions of a specific factual nature appear throughout the presentation. Under "Conclusions" a few general statements are made.

As a basis for this study it is assumed that the casualties among the opposing forces are the major determinants of the tactical outcome. The assumption will be reappraised in the light of the results.

DISTRIBUTION OF BATTLE CASUALTIES AMONG
DIFFERENT FRIENDLY UNITS AND AT
VARIOUS LEVELS

SYNOPSIS

Casualties among all US Army combat troops in Korea suddenly increased from a low rate around the end of August to a high rate at the beginning of September; the bulk of these casualties were inflicted on three US Divisions, the 25th Inf, 2d Inf, and 1st Cav. These divisions occupied contiguous sectors from south to north in the order given. Since casualties suddenly increased in all three divisions, it is evident that at the beginning of September the enemy subjected the entire western side of the box-like perimeter to heavy pressure.

In all three divisions the casualty rate fell from maximum values of the order of 1.5 percent of divisional strength per day early in September, to values of the order of 0.5 percent per day during the period 7-11 September. They increased again to values of the order of 1.0 percent per day in the period 15-19 September before dropping off to very low subsequent values. The phases of this progression correspond, respectively, to the enemy offensive, to a period of equilibrium between the opposing forces, to the UN offensive, and finally to the UN breakout.

The casualty rate for the 1st Cav Div and its variation throughout the period studied are close to the average rate for all three divisions. In numbers of casualties per troops exposed, the experience of the 1st Cav Div therefore typifies all US-held sectors of the perimeter.

Within the 1st Cav Div the incidence of casualties is examined at progressively lower levels of organization in an attempt to discover with what size of units regularities are observed. At the regimental level, there is a striking regularity. All three regiments of the 1st Cav Div at any time during the period studied experienced either a casualty rate of about 2.0 percent of regimental strength per day or one of about 0.2 percent per day.

The low rates were due more to lulls in the fighting at certain localities than to the withdrawal of regimental elements into reserve. At the battalion level no regularity is observed. And, finally, at the company level, there was very wide variation.

By the end of the period studied the cumulative casualties in each of the three cavalry regiments were remarkably close together. There were, however, "hard luck" battalions and "hard luck" companies. In this category, the 2d Bn, 5th Cav Regt, and 2d Bn, 8th Cav Regt, were well ahead of the other battalions in number of casualties sustained. Within these two battalions, the many casualties were rather equitably distributed among the component rifle companies. The one case of a company which stood alone among the companies of its regiment in heavy casualties is that of Co F, 7th Cav Regt, which sustained 124 in the period 1-22 September. The next highest total was 73, in Co A.

At the company level, the organizational affiliation and the time sequence of casualties are not very significant. Therefore, these two dimensions of classification have been abandoned and the experience of all companies of a given type has been lumped for a generalized expression of casualty experience.

Figure 7 (p. 25) shows the probability of casualties greater than any selected number occurring on any day in a given type of company at the front (the status of reserve near the front line is included as a statistical unknown not predictable in advance).

As would be expected, casualties are much higher in rifle companies than in heavy weapons companies, and these in turn are higher than in the battalion headquarters and headquarters companies. The salient feature here being that even for rifle companies, catastrophic casualties hardly ever occur in the type of warfare represented. Casualties amounting to more than 25 percent of the personnel of a rifle company occur on less than one-half of one percent of days at the front.

It has already been noted that by 23 September cumulative casualties among the three rifle companies of the 2d Bn of the 5th Cav Regt were roughly equal. On each day, however, casualties were not equal. It might seem likely that casualties might occur in a pattern; that one company, the lead company, would sustain a greater number than the other two. To test this point, daily casualties have been rated as high, medium, or low, and the frequency of all possible combinations of these ranges among the

three rifle companies of a battalion have been computed for all battalions and all days.

As a basis for comparison, a parallel scale of expected frequencies has been calculated for the assumption that the number of casualties in each company is entirely independent of the number in the other companies of its battalion. Comparison of the two scales leads to the conclusion that casualties occurred more at random than in any significant pattern. In particular, there is no evidence at all that one company would be hit harder than the other two. Rather, the data point to the sharing of heavy casualties to some extent.

The concentration of enemy effort may be inferred from the number of companies that sustained high casualty rates on each day. This data shows that among the 45 companies comprising the battalions of the 1st Cav Div only one or two usually had daily casualty rates greater than 10 percent, and only five in all had rates greater than four percent.

DATA

For the period 29 August - 23 September 1950, Table 1 (p. 15) gives a daily listing of cumulative battle casualties in each of three US divisions, the total for these three divisions, and the grand total for all US Army combat troops in Korea. (Note that: The several types of casualties which are included in the general class of "battle casualties" are considered in the following section.)

In Fig. 1 (see p. 22), the total casualties for the entire Army and of the three divisions taken together are plotted against the corresponding dates. It is evident that these three divisions — the 1st Cav, 2d Inf, and 25th Inf — sustained the bulk of the casualties suffered by the entire Army. The 24th Inf Div has been omitted from the divisional totals because as a unit it was out of action reorganizing during much of the period covered.

Curves have been drawn through the points of Fig. 1 in order to smooth out small day-to-day fluctuations and more clearly show general trends. It is evident from the sudden increase of casualties at the beginning of September that an intense phase of action began at this time and continued throughout the period covered.

Daily average divisional casualty rates have been computed as a measure with which to follow variation in the intensity of action

throughout the period shown in Fig. 1. The rate has been obtained by determining the slope of the curve at any day and dividing this figure by the total strengths of the units in question. The results, expressed as percentage casualties per day, are given in Table 2 (see p.16). It is seen that the average divisional casualty rate progressively decreased until a minimum value of 0.53 percent per day was reached on 11 September, a value less than half the rate at the start of the month. The casualty rate then increased to an intermediate value of 0.75 percent. These trends correspond to the progressive abatement of attacks by the North Koreans and then to a fresh wave of North Korean attacks which was interrupted by the UN general offensive on 16 September.

In Fig. 2 (p.22), cumulative casualties have been plotted separately for each of the three divisions. Table 3 (p.16) lists the slopes of the curves, the corresponding strengths, and the resultant daily casualty rate for each division. The casualty rates are plotted against the corresponding date in Fig. 3 (p.23) together with the daily average divisional rates already given in Table 2. Curves have been drawn through the plotted points. Though their exact configuration is not significant, they emphasize meaningful trends.

It is noteworthy that the casualty rate for each division followed a similar course. At the beginning of September when the enemy made all-out attacks all along the perimeter, each US division sustained about the same peak casualty rate. In all three cases the rate then declined, though to different values. Then when all US divisions were attacking in the UN offensive, the casualty rates increased to intermediate values which were not very different.

The 1st Cav, 2d Inf, and 25th Inf divisions were responsible for separate adjacent sectors of the perimeter, and each division was heavily engaged throughout the period covered. The data of Table 1 and the curves of Figs. 2 and 3 are sufficient evidence on this point. It is to be noted that the over-all casualty rate for the 1st Cav Div was intermediate between those of the 2d and 25th Inf Divisions and that the daily rate for the 1st Cav Div remained most nearly constant throughout the period studied. Therefore, the 1st Cav Div has been selected as the typical US division for the more detailed study of casualties.

(Note: The divisions lay north to south in the order given. The ROKA sector, to the north and east of the 1st Cav Div, completed the perimeter. Other units attached to these US divisions, such as the Marines, British Brigade, and elements of the 24th Inf Div, are not considered.)

Table 4 (p.17) gives the cumulative battle casualties from

31 August 1950 for each of the three regiments of the 1st Cav Div, the total of these three regiments, and the grand total for the entire 1st Cav Div. It is evident that casualties among the regiments amounted to almost 90 percent of the casualties sustained by the entire division. It is interesting that by 23 September cumulative casualties from 31 August were almost the same for all three regiments. No entire regiment was in reserve at any time during this period.

The data of Table 4 are plotted in Fig. 4 (p. 23). The regularity of the increases in cumulative casualties has suggested the use of straight lines rather than curves in order to emphasize trends. It is striking that the maximum and minimum rates of increase appear to be about the same in all three regiments and that regiments usually experienced either the maximum or minimum rate rather than an intermediate value.

The minimum rates do not represent the removal of whole regiments from the line, though several battalions did on occasion go into reserve. Rather, they represent periods of low activity. For example, from 5 through 11 September, casualties in the 5th Cav Regt were low because the enemy attacks were concentrated against the 7th Cav Regt. In the 7th Cav Regt during the period 13 through 17 September, the 1st and 2d Battalions were for about two days in reserve, but the 3d Bn remained in action.

For the calculation of exact casualty rates, the slopes of the longer straight lines of Figure 4 have been measured and the results divided by the corresponding average regimental strengths. The basic data and the calculated rates are listed in Table 5 (p. 17). It is seen that a regiment usually had either a casualty rate of roughly 2 percent per day or a rate of roughly 0.2 percent per day.

For the finer breakdown of casualties, Table 4 (p. 17) lists the daily cumulative casualties for each of the battalions of the three cavalry regiments. In Fig. 5 (p. 24) these data for each of the three battalions of the 5th Cav Regt are plotted. It is evident from Table 6 and Fig. 5 that there was little regularity in the increase of battalion casualties. Comparison of the linear plot for the entire 5th Cav Regt in Fig. 4, with the individual curves for its component battalions in Fig. 5, shows that the battalions did not contribute at all equally to maintain the regularities observed at the regimental level.

Since, at the battalion level, little regularity is observed in the day-to-day increases of casualties, the technique of smoothing

cumulative casualties as a means of obtaining a significant casualty rate has been abandoned. Instead, the actual casualty rate for each battalion on each day has been computed. The daily battalion casualties and daily battalion strengths, which yield these quotients, are listed in Table 7 (p. 19). For a generalized treatment in terms of probability, the time sequence of the casualty rates has been ignored. Rather, the rate values have been arranged according to magnitude, and the frequency of occurrence of each magnitude has been computed. The dotted curve in Fig. 6 (p. 24) denotes the probability that on any day at the front a battalion will sustain casualties amounting to more than any particular percentage of its strength on that day. Thus, there is a 10 percent probability that the casualty rate will be more than 6.1 percent and a 1 percent probability that it will be more than 20 percent. It must be remembered that battalions or elements of battalions which were in regimental or divisional reserve are still counted as at the front.

Table 8 (p. 20) gives a breakdown of casualties at the company level. Daily casualties, strengths, and casualty rates are shown for each of the nine rifle companies of the 5th Cav Regt. These and similar data for the rifle companies of the 7th and 8th Cav Regiments do not show any obvious patterns. A given company might sustain high or low casualties and, in general, there is no regularity in the day-to-day succession of casualties.

To show the differences among companies, the daily casualty rates for each of the rifle companies of the 5th Cav Regt have been arranged in sequence according to magnitude and plotted for the construction of distribution curves. Figure 7 (p. 25) shows these curves for each of the nine rifle companies of the 5th Cav Regt. Similar dispersion of the curves has been found among the rifle companies of the 7th and 8th Cav Regiments.

Since the casualty rate for a particular company may be high or low and does not appear to be predictable from the company's previous casualty rates, the companies of all three regiments have been statistically combined for the expression of casualty rate on a probability basis. Thus, the 594 daily casualty rates of the 27 rifle companies of the 1st Cav Div during the period 1 through 22 September 1950 have been arranged according to magnitude and plotted against cumulative frequency of occurrence in Fig. 6. The actual points and a smooth curve drawn through them are shown in Fig. 6. Similar curves have been constructed for the nine heavy-weapons companies and nine battalion headquarters- and headquarters- companies. The curves for the

three types of component companies may be compared in Fig. 6 with the curve for the battalion as a whole. It is permissible that the battalion curve crosses the curve for rifle companies, since casualties among the three types of component companies do not necessarily occur in fixed ratios.

Within a particular battalion, however, some relationship might be expected in the occurrence of casualties among the three rifle companies. To test this point, the actual frequency of occurrence of various possible combinations of casualty rates among the three rifle companies on a given day has been computed, and the results have been compared with the expected frequency of these combinations on the assumption that there is no relationship at all between the companies. Daily company casualty rates have been classed in three ranges: H, above 10 percent; M, 4 to 10 percent; and, L, below 4 percent. For the 198 battalion-days of the 1st Cav Div, in the period 1 through 22 September, the frequency of each possible combination has been computed as a percentage, with the results shown in Table 9 (p. 21). For example, the combination LLM (casualty rate in two companies below 4 percent; in the third, between 4 and 10 percent) occurred on 13.1 percent of the battalion-days.

For any one company, the probability that the casualty rate will occur in any one of the three ranges on any day is given in Fig. 6. Thus, the probability of H is 5.2 percent; of M is 11.4 percent; and of L is 83.4 percent. On the assumption that the ranges of the casualty rates of the three companies will occur together in random combinations, these probabilities have been used for the computation of the expected frequency of each combination. These results and their deviation also appear in Table 9. Thus, the combination LLM (or MLL or LML) would be expected on 23.8 percent of the battalion-days.

Comparison of the two frequency columns in Table 9 does not indicate any very significant differences. As might be expected, the combination LLL occurred more often than would be predicted by random coincidence. Battalions did not often go into reserve, but when they did all three rifle companies probably went into reserve at the same time. In general, the results indicate that the casualty experience of any one rifle company tended to be independent of that of the other rifle companies in the same battalion.

Among infantry battalions, the number of companies that became involved in combat on any day may be inferred from the casualty rates. Table 10 (p. 21) gives a daily listing of the number of companies that sustained casualties, respectively, at

a rate greater than 10 percent, between 4 and 10 percent, greater than 4 percent, or less than 4 percent. It is seen that of the 45 companies (27 rifle companies) on hand, 5 usually sustained more than 4 percent casualties and only 1 or 2 more than 10 percent casualties. According to the arbitrary criterion of a daily casualty rate less than 4 percent, the remaining 40 companies went relatively unscathed.

TABLE 1
CUMULATIVE BATTLE CASUALTIES
ALL US ARMY COMBAT TROOPS AND THREE US DIVISIONS^a

Date	Division			Total of Three Divisions	All US Army Combat Troops
	1st Cav	2d Inf	25th Inf		
29 Aug	---	---	---	---	---
30	46	11	24	81	103
31	69	159	52	280	317
1 Sep	113	715	260	1,088	1,178
2	194	983	461	1,638	1,933
3	385	1,228	573	2,186	2,582
4	595	1,358	671	2,624	3,106
5	741	1,584	739	3,064	3,628
6	853	1,825	802	3,480	4,086
7	951	1,923	861	3,735	4,358
8	1,044	2,054	903	4,001	4,672
9	1,086	2,144	944	4,174	4,918
10	1,186	2,198	967	4,351	5,168
11	1,339	2,258	994	4,591	5,464
12	1,466	2,321	1,028	4,815	5,736
13	1,574	2,361	1,050	4,985	5,940
14	1,671	2,432	1,125	5,228	6,210
15	1,818	2,554	1,181	5,553	6,570
16	1,931	2,817	1,231	5,979	7,048
17	2,070	2,937	1,293	6,300	7,480
18	2,198	3,054	1,408	6,600	7,932
19	2,397	3,171	1,511	7,079	8,591
20	2,511	3,241	1,610	7,362	8,957
21	2,560	3,371	1,643	7,574	9,248
22	2,596	3,555	1,793	7,944	9,693
23	2,611	3,600	1,816	8,027	9,880

^aData supplied by Strength Accounting Branch, Adjutant General's Section, GHQ, FEC.
Tabulation by machine run on 11 Dec 1950.

TABLE 2

DAILY AVERAGE DIVISIONAL CASUALTY RATES

Date	Total Casualties Three Divisions/Day ^a	Total Strength of Three Divisions ^b	Average Daily Divisional Casualty Rate, %
1 Sep	588	47,695	1.23
3	488	47,498	1.03
5	360	46,407	0.77
7	290	45,898	0.63
9	248	45,562	0.54
11	242	45,339	0.53
13	244	44,870	0.54
15	290	44,229	0.66
17	324	43,740	0.74
19	320	43,098	0.74
21	320	42,743	0.75
23	168	42,502	0.40
Average for Entire Period	337	45,100	0.75

^aFrom slope of curve, Fig. 1.

^bFrom Personnel Daily Summaries, G-1, GHQ, PEC. ROKA augmentation excluded. In period 1-16 Sept ROK troops added to companies of the 1st Cav Div averaged 12 percent of US strength. Interments in Taegu Military Cemetery, 14 percent.

TABLE 3

DAILY CASUALTY RATES BY DIVISIONS

Date	1st Cavalry Division			2d Infantry Division			25th Infantry Division		
	Total Casualties Per Day ^a	Strength of Division ^b	Daily Casualty Rate, %	Total Casualties Per Day ^a	Strength of Division ^b	Daily Casualty Rate, %	Total Casualties Per Day ^a	Strength of Division ^b	Daily Casualty Rate, %
1 Sep.	60	15,141	0.40	349	17,498	2.00	55	15,056	0.37
3	201	15,139	1.33	188	17,154	1.10	226	15,205	1.49
5	124	14,823	0.84	208	16,353	1.27	63	15,231	0.41
7	86	14,908	0.58	124	15,670	0.79	48	15,320	0.31
9	94	14,654	0.64	69	15,496	0.45	34	15,412	0.22
11	112	14,486	0.77	55	15,316	0.36	30	15,537	0.19
13	121	14,007	0.86	63	15,360	0.41	37	15,503	0.24
15	120	13,904	0.86	178	15,191	1.17	56	15,334	0.37
17	132	13,804	0.96	128	14,755	0.87	86	15,181	0.57
19	148	13,636	1.09	113	14,488	0.78	99	14,974	0.66
21	46	13,557	0.34	108	14,330	0.75	81	14,856	0.55
23	9	13,784	0.07	100	14,091	0.71	53	14,627	0.36
Average for Entire Period	110	14,400	0.76	150	15,400	0.97	77	15,500	0.49

^aFrom slope of curve, Fig. 2.

^bFrom Personnel Daily Summaries, G-1, GHQ, FEC. ROKA augmentation excluded.



TABLE 4
CUMULATIVE BATTLE CASUALTIES
IN REGIMENTS OF THE 1ST CAVALRY DIVISION^a

Date	Cavalry Regiment			Total of Three Regiments	Entire 1st Cavalry Division
	5th	7th	8th ^b		
31 Aug	---	---	---	---	---
1 Sep	6	27	11	44	47
2	8	58	60	126	132
3	11	138	145	294	323
4	83	183	197	463	538
5	126	224	243	593	690
6	137	269	295	701	806
7	140	336	318	794	906
8	147	372	368	887	1,001
9	149	382	375	906	1,049
10	162	423	405	990	1,158
11	188	478	493	1,159	1,330
12	231	528	528	1,287	1,468
13	301	542	548	1,391	1,584
14	377	546	561	1,484	1,692
15	467	551	606	1,624	1,848
16	538	554	644	1,736	1,972
17	586	623	663	1,872	2,126
18	661	662	673	1,996	2,259
19	733	733	730	2,196	2,470
20	751	757	801	2,309	2,589
21	760	761	824	2,345	2,636
22	778	769	830	2,377	2,673
23	786	770	830	2,386	2,689

^aData supplied by Strength Accounting Branch, Adjutant General Section, GHQ, FEC. Tabulation by machine run on 29 Jan 1951.

^bExcluding 8th Cavalry Battalion of Engineers.

TABLE 5
CASUALTY RATES FOR INDIVIDUAL REGIMENTS
OF 1ST CAVALRY DIVISION OVER DIFFERENT PERIODS OF TIME

Cavalry Regiment	Period	Casualties per Day ^a	Strength(Date) ^b	Casualty Rate, %/Day
5th	31 Aug - 3 Sep	3.7	2,862 (2 Sep)	0.13
5th	3-5 Sep	85.0	2,907 (4 Sep)	2.9
5th	5-10 Sep	6.6	2,805 (8 Sep)	0.24
5th	11-19 Sep	69.0	2,491 (15 Sep)	2.8
7th	3-8 Sep	49.0	3,024 (5 Sep)	1.6
7th	9-12 Sep	48.0	2,778 (11 Sep)	1.7
7th	13-16 Sep	3.9	2,687 (14 Sep)	0.15
7th	16-19 Sep	62.0	2,710 (18 Sep)	2.3
7th	20-23 Sep	6.6	2,708 (21 Sep)	0.24
8th	1-7 Sep	54.0	2,895 (4 Sep)	1.9
8th	9-12 Sep	66.0	2,897 (10 Sep)	2.3
8th	13-20 Sep	64.0	2,567 (19 Sep)	2.5

^aFrom slope of corresponding straight line in Fig. 4.

^bBy addition of strengths in Morning Reports of component companies.



TABLE 6
CUMULATIVE BATTLE CASUALTIES FROM 31 AUG 1950
IN THE SEPARATE BATTALIONS OF THE 1ST CAVALRY DIVISION^a

Date	5th Cavalry Regiment			7th Cavalry Regiment			8th Cavalry Regiment		
	1st Bn	2d Bn	3d Bn	1st Bn	2d Bn	3d Bn	1st Bn	2d Bn	3d Bn
31 Aug	---	---	---	---	---	---	---	---	---
1 Sep	2	1	2	7	13	1	2	8	1
2	2	1	2	23	25	1	5	49	2
3	2	3	2	30	59	11	10	117	7
4	2	70	2	36	66	14	12	146	23
5	2	104	2	51	77	18	15	178	30
6	2	113	2	53	114	20	22	196	43
7	3	115	2	88	127	21	25	205	50
8	4	121	2	116	128	21	30	211	85
9	4	122	2	123	128	22	32	214	86
10	5	132	2	156	129	25	36	225	99
11	5	147	12	199	131	29	41	277	124
12	8	168	20	200	133	71	51	285	130
13	29	198	34	201	135	81	67	293	130
14	34	235	57	202	135	83	68	302	132
15	34	297	74	203	135	87	70	326	142
16	83	313	77	205	135	88	72	347	153
17	95	331	91	205	195	89	74	354	159
18	141	345	102	209	225	89	74	357	166
19	151	395	108	233	267	90	113	361	175
20	153	410	109	239	282	90	146	386	178
21	154	415	111	240	284	91	162	390	178
22	155	427	112	242	287	93	167	390	178
23	159	429	114	242	287	93			

^aBattalion includes three rifle companies, heavy-weapons company, and headquarters-headquarters company.

TABLE 7
ACTUAL DAILY CASUALTY RATES FOR EACH BATTALION OF THE 1ST CAV DIV

Sep	5th Cav Regt			7th Cav Regt			8th Cav Regt							
	1st Bn	2d Bn	3d Bn	1st Bn	2d Bn	3d Bn	1st Bn	2d Bn	3d Bn					
	Cas/Str Rate,%	Cas/Str Rate,%	Cas/Str Rate,%	Cas/Str Rate,%	Cas/Str Rate,%	Cas/Str Rate,%	Cas/Str Rate,%	Cas/Str Rate,%	Cas/Str Rate,%					
1	2/646	0.3	2/709	0.3	13/730	1.8	1/712	0.1	2/684	0.3	8/677	1.2	1/729	0.1
2	0/726	0.0	0/710	0.0	12/714	1.7	0/678	0.0	3/678	0.4	41/681	6.0	1/741	0.1
3	0/754	0.0	0/710	0.0	34/703	4.8	10/693	1.4	5/685	0.6	68/685	10.0	5/733	0.7
4	0/764	0.0	0/708	0.0	7/786	0.9	3/754	0.4	2/744	0.3	29/732	4.0	16/756	2.1
5	0/761	0.0	0/705	0.0	11/772	1.4	4/693	0.6	3/804	0.4	32/695	4.6	7/758	0.9
6	0/762	0.0	0/704	0.0	37/788	4.7	2/674	0.3	7/799	0.9	18/655	2.8	13/801	1.6
7	1/764	0.1	0/701	0.0	13/768	1.7	1/677	0.1	3/800	0.4	9/647	1.4	7/794	0.9
8	1/759	0.1	0/701	0.0	1/760	0.1	0/678	0.0	5/800	0.6	6/619	1.0	35/778	4.5
9	0/753	0.0	0/700	0.0	0/758	0.0	1/654	0.1	2/794	0.3	3/651	0.5	1/775	0.1
10	1/749	0.1	0/698	0.0	1/738	0.1	3/681	0.4	4/795	0.5	11/674	1.6	13/730	1.8
11	0/748	0.0	10/696	1.4	2/717	0.3	4/674	0.6	5/796	0.6	52/631	8.2	25/730	3.4
12	3/744	0.4	8/663	1.2	2/768	0.3	42/733	5.8	16/795	2.0	8/598	1.3	6/728	0.8
13	21/721	2.9	14/605	2.3	2/748	0.3	10/712	1.4	10/732	1.4	8/590	1.4	0/609	0.0
14	5/719	0.7	23/588	3.9	0/735	0.0	2/693	0.3	1/734	0.1	9/575	1.6	2/567	0.4
15	0/699	0.0	17/548	3.1	0/726	0.0	4/725	0.6	2/729	0.3	24/518	4.2	10/555	1.8
16	49/654	7.5	3/536	0.6	0/719	0.0	1/632	0.1	2/709	0.3	7/520	1.3	6/551	1.1
17	12/639	1.9	14/513	2.7	60/708	8.5	1/655	0.2	0/701	0.0	3/551	0.5	7/589	1.2
18	46/607	6.6	11/497	2.2	30/707	4.2	0/657	0.0	39/693	5.6	4/566	0.7	9/586	1.5
19	10/585	1.7	6/492	1.2	42/723	5.8	1/676	0.1	33/681	4.8	25/568	4.4	3/549	0.5
20	2/516	0.3	1/499	0.2	15/584	2.6	0/636	0.0	16/658	2.4	4/579	0.7	0/565	0.0
21	1/583	0.2	2/499	0.4	2/673	0.3	1/634	0.1	5/638	0.8	0/593	0.0	0/565	0.0
22	1/575	0.2	1/493	0.2	3/705	0.4	2/632	0.3						

TABLE 8
ACTUAL DAILY CASUALTY RATES FOR EACH RIFLE COMPANY OF THE 5TH CAV REGT

Sep	1st Bn				2d Bn				3d Bn			
	Co A Cas/Str Rate,%	Co B Cas/Str Rate,%	Co C Cas/Str Rate,%	Co E Cas/Str Rate,%	Co F Cas/Str Rate,%	Co G Cas/Str Rate,%	Co I Cas/Str Rate,%	Co K Cas/Str Rate,%	Co L Cas/Str Rate,%			
1	1/132 0.8	0/152 0.0	1/139 0.7	0/137 0.0	1/147 0.7	0/150 0.0	0/165 0.0	2/163 1.2	0/160 0.0			
2	0/169 0.0	0/157 0.0	0/169 0.0	0/133 0.0	0/165 0.0	0/165 0.0	0/165 0.0	0/163 0.0	0/160 0.0			
3	0/176 0.0	0/171 0.0	0/167 0.0	0/133 0.0	0/179 0.0	0/164 0.0	0/165 0.0	0/163 0.0	0/160 0.0			
4	0/178 0.0	0/174 0.0	1/170 0.6	0/173 0.0	14/176 8.0	48/163 29.5	0/164 0.0	0/163 0.0	0/160 0.0			
5	0/177 0.0	2/176 1.1	0/169 0.0	1/175 0.6	21/155 13.5	9/128 7.0	0/163 0.0	0/162 0.0	0/159 0.0			
6	0/177 0.0	0/177 0.0	0/169 0.0	1/175 0.6	5/152 3.3	1/115 0.9	0/162 0.0	0/162 0.0	0/159 0.0			
7	1/180 0.6	0/176 0.0	0/169 0.0	1/174 0.6	1/152 0.7	0/115 0.0	0/162 0.0	0/161 0.0	0/156 0.0			
8	1/180 0.6	0/176 0.0	0/164 0.0	2/174 1.2	1/125 0.8	1/118 0.8	0/162 0.0	0/161 0.0	0/156 0.0			
9	0/178 0.0	0/175 0.0	0/162 0.0	0/174 0.0	0/123 0.0	0/139 0.0	0/162 0.0	0/161 0.0	0/156 0.0			
10	1/178 0.6	0/171 0.0	1/163 0.6	9/173 5.2	0/125 0.0	0/132 0.0	0/160 0.0	0/161 0.0	0/156 0.0			
11	0/178 0.0	0/170 0.0	0/163 0.0	12/173 6.9	2/123 1.6	0/128 0.0	0/159 0.0	0/160 0.0	0/155 0.0			
12	0/176 0.0	0/170 0.0	0/163 0.0	12/173 6.9	4/108 3.7	4/117 3.4	1/158 0.6	2/143 1.4	2/151 1.3			
13	0/178 0.0	14/155 9.0	3/161 1.8	12/157 7.6	3/106 2.8	11/123 8.9	2/156 1.3	1/123 0.8	7/126 5.6			
14	1/177 0.6	0/155 0.0	1/160 0.6	10/144 6.9	12/94 12.8	5/112 4.5	15/147 10.2	5/124 4.0	1/116 0.9			
15	0/177 0.0	0/144 0.0	0/153 0.0	20/141 14.2	15/91 16.5	9/93 9.7	2/133 1.5	9/117 7.7	3/102 2.9			
16	13/165 7.9	32/113 28.3	2/152 1.3	1/96 1.0	0/47 0.0	7/72 9.7	1/130 0.8	2/115 1.7	0/101 0.0			
17	9/156 5.8	3/110 2.7	0/151 0.0	3/86 3.5	1/44 2.3	12/91 13.2	3/115 2.6	11/113 9.7	0/100 0.0			
18	14/146 9.6	12/104 11.5	15/137 10.9	4/91 4.4	1/95 1.1	9/95 9.5	5/113 4.4	3/95 3.2	2/100 2.0			
19	1/145 0.7	0/85 0.0	6/135 4.4	9/89 10.1	18/98 18.4	19/87 21.8	2/105 1.9	3/96 3.1	1/101 1.0			
20	0/145 0.0	1/95 1.1	1/121 0.8	4/89 4.5	7/98 7.1	3/87 3.4	0/100 0.0	0/100 0.0	1/101 1.0			
21	1/143 0.7	0/95 0.0	0/128 0.0	1/88 1.1	1/86 1.5	1/129 0.8	1/109 0.9	0/100 0.0	0/100 0.0			
22	0/134 0.0	1/95 1.1	0/127 0.0	3/93 3.2	4/86 4.7	4/88 4.6	0/113 0.0	0/93 0.0	0/100 0.0			

TABLE 9

**ACTUAL AND CALCULATED FREQUENCY OF COMBINATIONS OF RIFLE
COMPANY CASUALTY RATES IN INFANTRY BATTALIONS**
(All Battalions of 1st Cavalry Division, 1-22 Sep 1950)

Coincidence of Rifle Co. Rates in Battalion ^a	Calculation, Random Combination of Co. Rates		Actual ^b Frequency, %
	Probability of Occurring Together	Frequency, %	
LLL	100 (.834 × .834 × .834)	= 57.9	69.7
LLM	300 (.834 × .834 × .114)	= 23.8	13.1
LLH	300 (.834 × .834 × .052)	= 10.8	3.5
LMM	300 (.834 × .114 × .114)	= 3.3	4.0
LMH	600 (.834 × .114 × .052)	= 3.0	4.5
LHH	300 (.834 × .052 × .052)	= 0.6	1.0
MMH	300 (.114 × .114 × .052)	= 0.2	1.0
MMM	100 (.114 × .114 × .114)	= 0.1	1.5
MHH	300 (.114 × .052 × .052)	= 0.1	1.0
HHH	100 (.052 × .052 × .052)	= 0.0	0.5
		99.8	100.2

^aEach letter represents one rifle company. The order does not matter.
Daily Co. Casualty Rate, % Probability from Fig. 6, %

L	below 4	83.4
M	4-10	11.4
H	above 10	5.2

^bPercentage of 198 combinations (battalion-days)

TABLE 10

**NUMBER OF COMPANIES ENGAGED ON ANY DAY
ACCORDING TO COMPANY CASUALTY RATES**
(All 45 Companies Comprising Battalions of 1st Cavalry Division)

Date	Number of Companies with Casualty Rate			
	Above 10%	4-10%	Above 4%	Below 4%
1 Sep	0	0	0	45
2	1	3	4	41
3	2	3	5	40
4	1	6	7	38
5	2	3	5	40
6	1	4	5	40
7	1	1	2	43
8	0	4	4	41
9	0	0	0	45
10	0	5	5	40
11	2	9	11	34
12	1	3	4	41
13	0	6	6	39
14	2	5	7	38
15	3	5	8	37
16	1	7	8	37
17	3	2	5	40
18	2	6	8	37
19	6	4	10	35
20	2	4	6	39
21	1	0	1	44
22	0	2	2	43

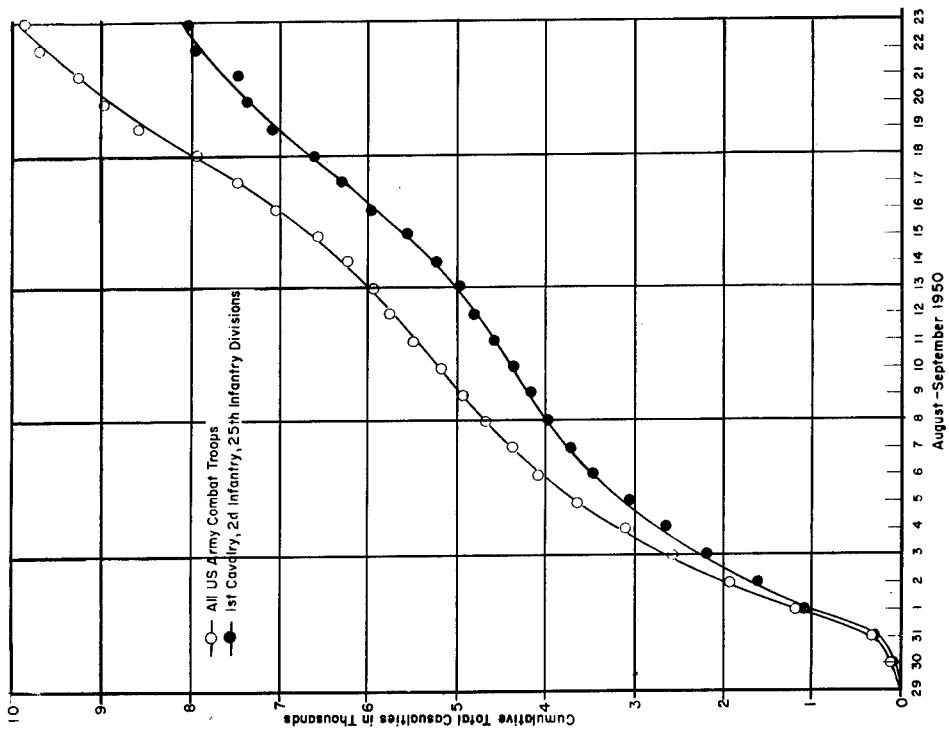


Fig. 1—Cumulative battle casualties among all US Army combat troops and in three divisions.

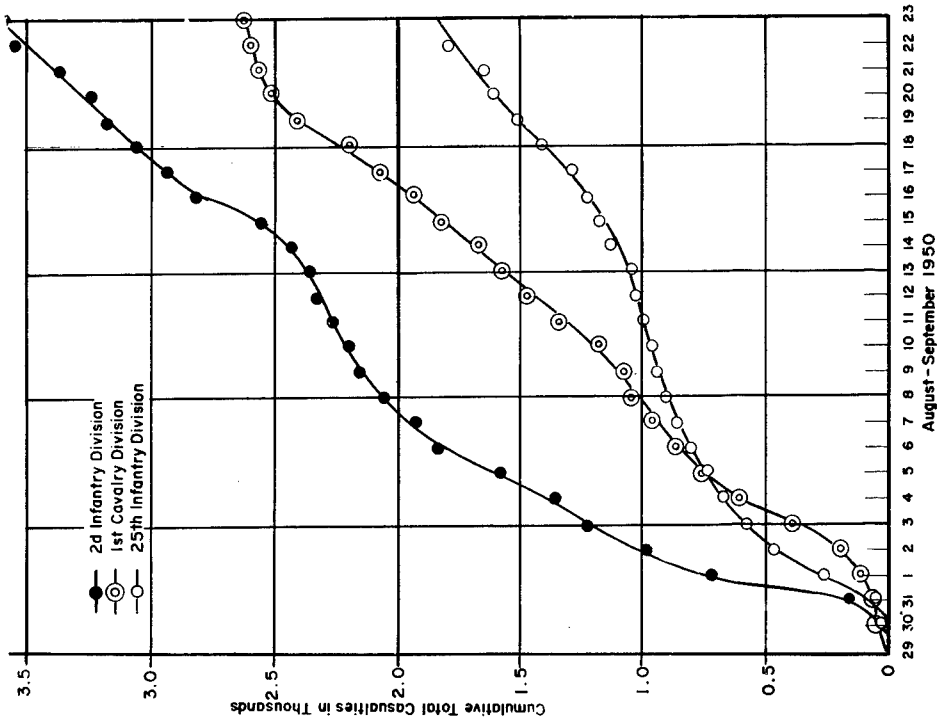


Fig. 2—Cumulative battle casualties—1st Cav, 2d Inf, and 25th Inf Div.

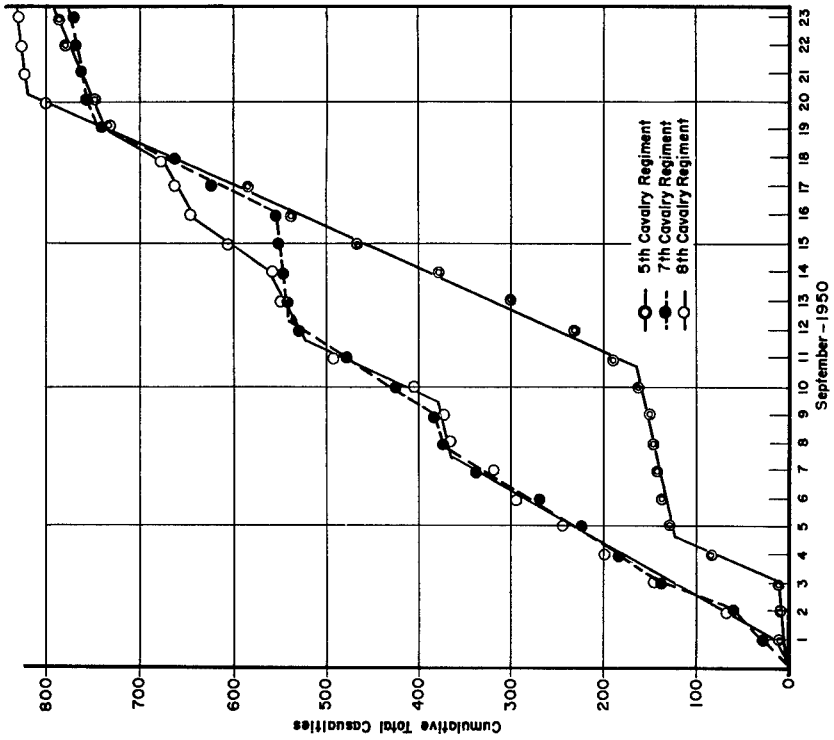


Fig. 4—Cumulative battle casualties in the separate regiments of the 1st Cav Div.

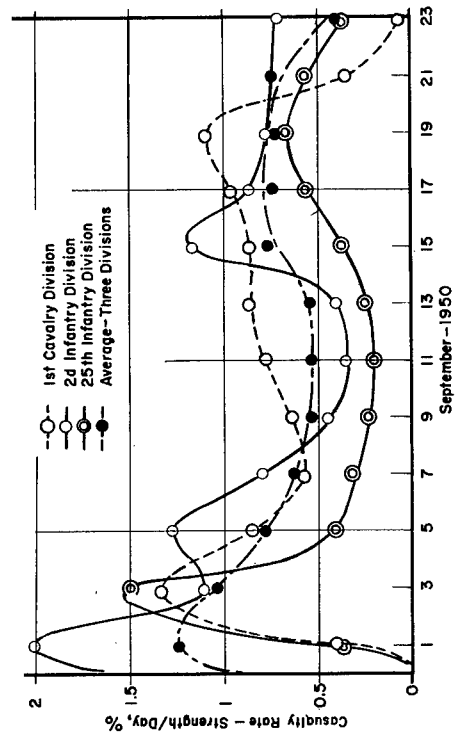


Fig. 3—Variation of divisional casualty rates with time.

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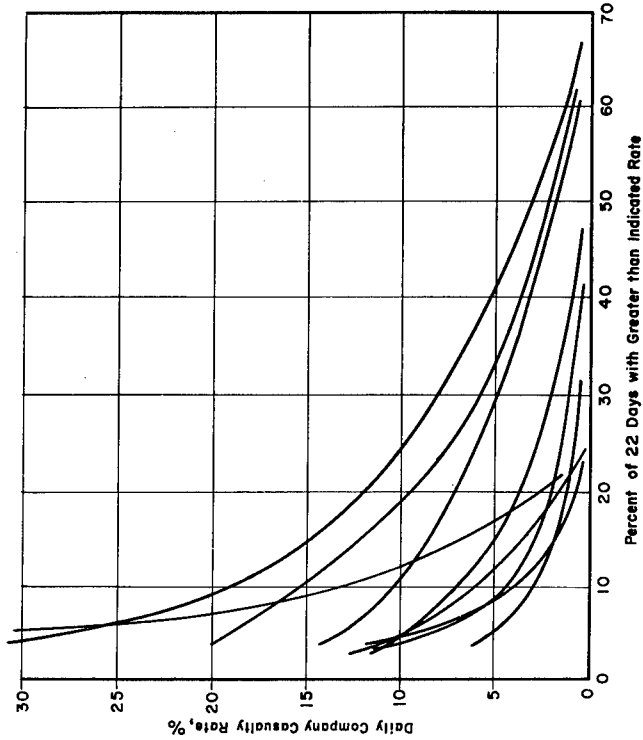


Fig. 6—Frequency of daily casualty rates in each of the nine rifle companies of the 5th Cav Regt.

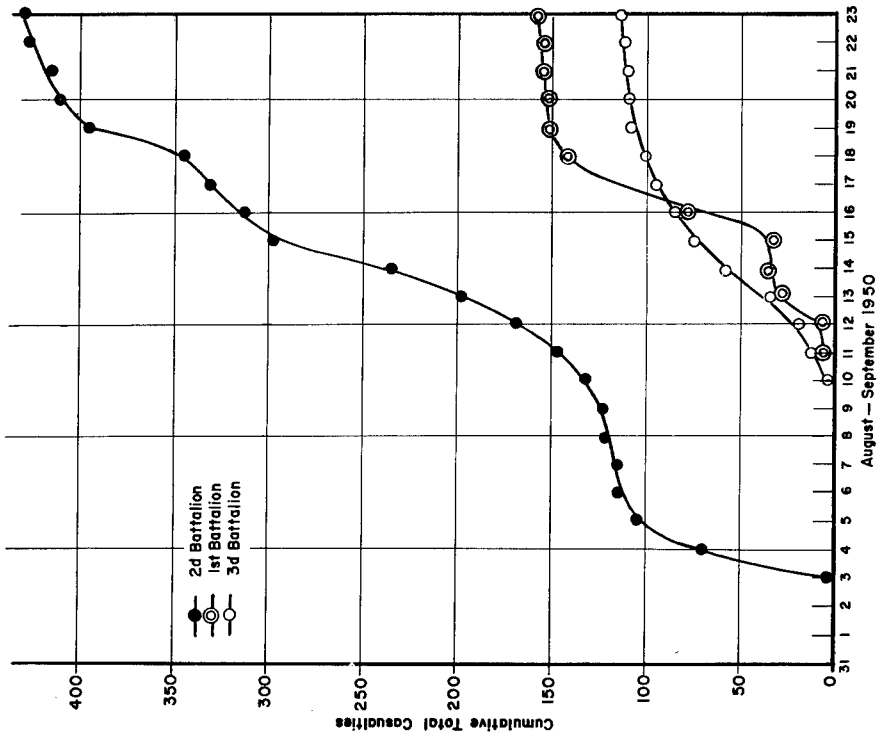


Fig. 5—Cumulative battle casualties in the separate battalions of the 5th Cav Regt.

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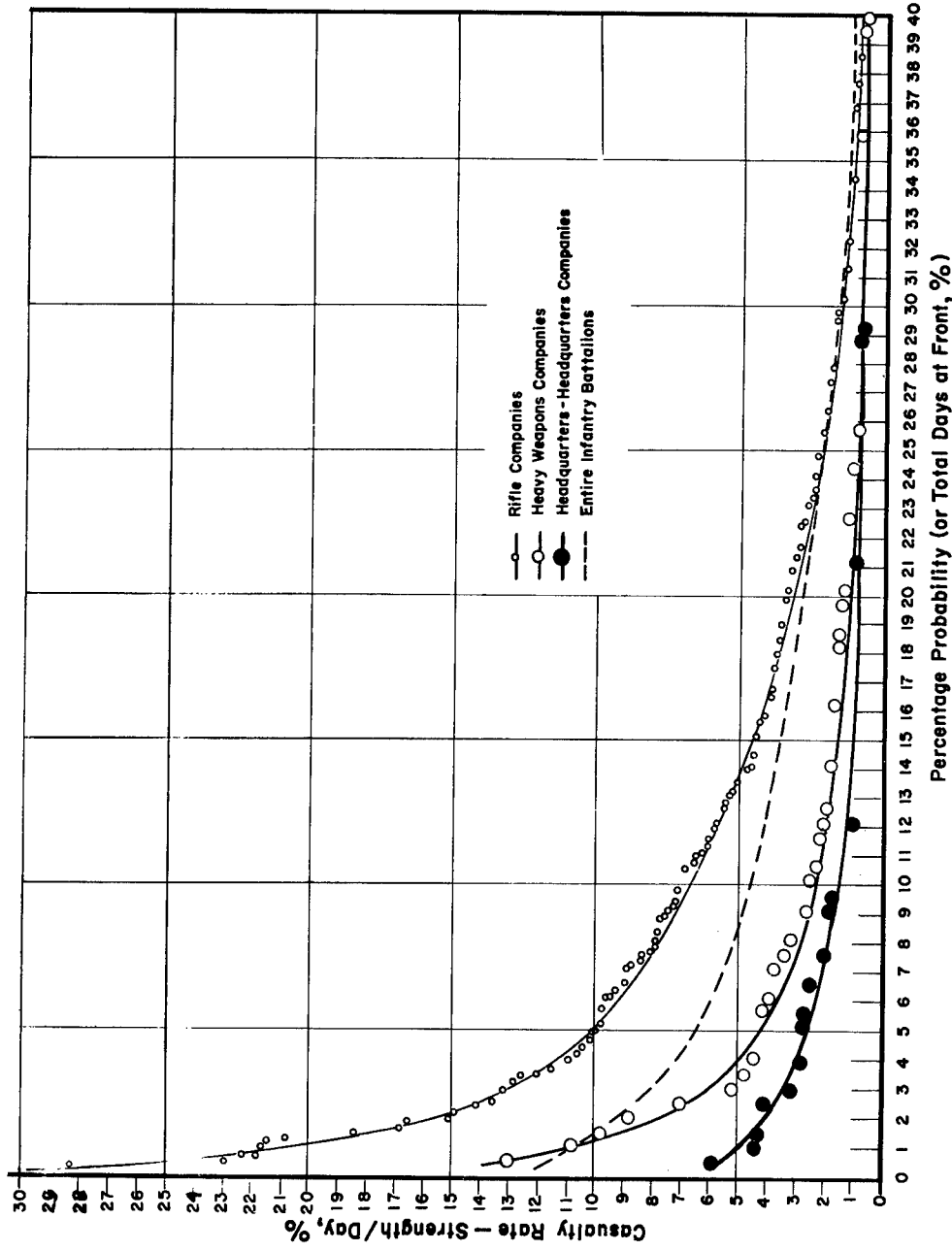


Fig. 7—Probability of daily casualty rate of greater than any value. (Separate curves for entire infantry battalions and for their three kinds of component companies)

DISTRIBUTION OF BATTLE CASUALTIES BY TYPE AND SEVERITY

SYNOPSIS

Battle casualties include the killed, wounded, injured, and the missing. These several classes may be taken to represent different aspects of combat. The number of men injured perhaps reflects the amount of activity on the friendly side; the number of killed, plus the number of wounded, is the measure of the effect of enemy fire and the ratio of the killed to this total gives its lethality. The number of men missing is an indication of the character of the fighting. In Fig. 8 the cumulative values of these several quantities for all US Army Divisions in Korea are plotted throughout the period studied. Similar plottings are made for all three regiments of the 1st Cav Div.

It is apparent that a roughly constant proportionality is maintained among the four quantities. Some of the variations are, however, interesting. It is evident that the curves for the injured-in-action (SIA+LIA) are closer to straight lines than any of the others. Merely by being at the front a man stands a chance of being injured at any time. However, during the intense combat at the beginning of September, troops were injured at about double the rate as during the lull before the UN offensive. Then the rate climbed back to near its previous maximum level.

Since missile casualties constitute the bulk of total battle casualties, the graphic curves for the killed plus the wounded have the same shape and significance as the curves of total battle casualties discussed in the preceding section. It is possible at this point to follow the variation in the contribution of fatalities to this total. The data indicates no trend. Throughout the period studied, about the same proportion of men who were hit, died; that is, about 20 percent.

In proportion to missile casualties, the number of men missing-in-action per day gradually dropped off throughout the period studied but did not fall to a low value until the UN offensive had

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made considerable gains. In general, there was a continuing loss of small numbers of men in the category of MIA. This fact is consistent with the type of warfare. Entire friendly units were not captured, but in the continued and often unsuccessful assault of enemy-held hills a few men, perhaps wounded, were likely to be left in enemy hands.

DATA

For all US Army infantry divisions in Korea, Table 11 (p.30) gives a daily breakdown of battle casualties according to the standard categories of casualty type and severity. Miscellaneous non-divisional combat troops have been excluded since their casualty experience may be different from that of infantry. As shown in Fig. 1, three infantry divisions accounted for about 80 percent of all casualties among US Army combat troops in Korea.

Table 12 (p. 31) gives a daily breakdown of battle casualties by type and severity for the three regiments of the 1st Cav Div, and Table 13 (p. 31) gives a similar listing for only the 5th Cav Regt.

In Figs. 8 and 9 (p. 34), the data of Tables 11 and 12, respectively, have been plotted on a cumulative basis and smooth curves have been drawn. The numbers of SWA and LWA (seriously-wounded-in-action and slightly-wounded-in-action) have been combined, since the distinction is purely arbitrary and since even LWA usually corresponds to a rather severe wound. Similarly, the data for SIA (seriously-injured-in-action and slightly-injured-in action) have been lumped.

To be classed as a casualty in any category, a man must be lost to his unit (company) for at least one day. Trivial wounds or injuries treated by first aid are therefore not represented. To be classed as a battle casualty, the cause of injury must be attributable directly or indirectly to enemy action. For this purpose, wounds need no explanation. Examples of battle injury which might be cited are: (1) concussion from the impact of a shell fragment with the helmet; (2) bruises from rocks dislodged by enemy fire; (3) broken arm diving for cover under enemy fire; and (4) trauma from the overturning of a jeep by a mine. As a general distinction, a wound involves penetration of the skin, an injury does not.

Prisoners of war are not considered because none were reported by the enemy through the International Red Cross during

the period covered. Presumably, many of the MIA were prisoners of war.

The four curves of Figs. 8 and 9 may be taken to represent different things. The curve "KIA+DOW+SWA+LWA" simply represents the over-all effect of enemy fire, while the curve "KIA+DOW" represents lethal enemy fire. Its ratio to the curve "KIA+DOW+SWA+LWA" is a measure of the lethality of enemy weapons. The curve "SIA+LIA" is an indication of the intensity of activity of friendly troops in contact with the enemy. The curve "MIA" reflects an independent aspect of the tactical situation.

As might be expected, the "SIA+LIA" curve is the most nearly linear at both the Army (Fig. 8) and divisional (Fig. 9) levels. From a fairly high rate near the start of September, injuries progressively slacked off until they increased again with the UN offensive on 16 September. The three other curves show the same general shape.

To show the relationship of the curves more precisely, their slopes have been measured throughout the month and compared as ratios. The results appear in Table 14 (p. 32). For example, on 1 September all the infantry divisions sustained casualties from enemy missiles at a rate of 620 per day (Column 1), and of these 171 (Column 2), or 28 percent (Column 3), died. Similarly, 24 men per day suffered battle injuries (Column 4), and this rate was 4 percent (Column 5) that of the missile casualties. Also, on 1 September, 98 men per day were missing (Column 6), and this figure is 16 percent (Column 7) of the missile-casualty rate. In addition to the daily ratios, average ratios for the entire period covered are also given. For example, 21.7 percent of all missile casualties were fatalities.

Column 3 (Part A) of Table 14 shows a nearly constant proportion of fatalities among the missile casualties, except for the higher values at the beginning and end of the period covered when the measured slopes are less accurate. No general trend is discernible, such as might follow from the gradual elimination of enemy artillery and mortars and the growing predominance of the more lethal — in terms of US troops hit — small arms. Similar data for a single division (Part B of Table 14) shows much day-to-day fluctuation but fails to demonstrate an over-all trend. The difference between the over all values, 21.7 percent for all divisions versus 18.4 percent for the cavalry regiments, is almost small enough to be considered insignificant.

Column 5 (Part A) of Table 14 shows a surprisingly small

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variation in the ratio of injury casualties to missile casualties. There is, however, a trend, with the maximum ratio around 8 September. Since battle injuries are less dependent upon enemy firepower than missile casualties, this relationship suggests that the enemy firepower remained potent throughout the period covered but that it reached a minimum of effectiveness around 8 September. It is particularly interesting that the ratio has similar values for the period after 16 September, when US troops were advancing, as for the previous period on the defensive. Similar data for one division (Part B of Table 14) show greater variability but fail to establish any major trend.

During all of July the category "MIA" accounted for 43.9 percent of battle casualties among all US combat troops. The general withdrawal ended around the middle of August. For the period through 29 August, the figure is 8.9 percent. For the period 30 August through 23 September, the MIA accounted for 8.3 percent of all battle casualties. Table 11 shows that, at the army level during the period studied, a large total of MIA was sustained on only one day, 1 September, and a moderately large total on one other day, 31 August. During September there was a fairly steady loss of missing men with a definite limit. Table 12 shows much the same pattern at the divisional level. On several days during September the 1st Cav Div sustained moderate losses of missing men. The rest of the time there was a fairly steady and much smaller loss. Table 13 gives the data at the regimental level. It is seen that during September the 5th Cav Regt. sustained moderately high losses of MIA on only one day. Similar tabulations show that the 8th Cav Regt also sustained a moderately high number of MIA on only one day during September, and the 7th Cav Regt experienced steady attrition in MIA but no extraordinary losses at all.

A still finer breakdown of the occurrence of MIA has been made. For all of the companies comprising the infantry battalions of the 1st Cav Div and for the period 1 through 23 Sept 1950, Table 15 (p. 33) gives the number of company-days with various numbers of MIA. It is evident that except for the extraordinary occurrence of 20 MIA in one company on one day, it rarely happened that a company sustained more than two MIA on any day. This fact is a measure of the cohesion of the defense. (Note that on 3 September when an estimated two enemy regiments attacked the 2d Bn, 8th Cav Regt, Co F was forced to withdraw about 3,000 yd as shown in Appendix C.)

Column 7 (Part A) of Table 14 shows at the army level a significant trend in the ratio of MIA to all missile casualties. From a high value at the start of the month, the ratio dropped off to a low value on 11 September. With fresh North Korean attacks and the general UN offensive it then increased to an intermediate value. Finally, as friendly troops advanced, the ratio dropped to a minimum. Column 7 (Part B) of Table 14 shows a similar variation at the divisional level. Among the regiments of the 1st Cav Div, the ratio increased from the beginning of September to a maximum value on 5 September, then decreased to a minimum on 11 September. As with the Army as a whole, the ratio then increased, only to fall off again.

TABLE 11
DAILY BATTLE CASUALTIES IN EACH OF THE SEVERAL CATEGORIES
ALL INFANTRY DIVISIONS IN KOREA
(Nondivisional combat troops excluded)

Date	KIA ^a , DOW ^b	SWA ^c	LWA ^d	SIA ^e	LIA ^f	MIA ^g	Total
29 Aug	4	2	20	1	3	0	30
30	9	16	54	0	6	1	86
31	26	15	66	0	10	87	204
1 Sep	159	62	333	1	17	245	817
2	152	70	403	3	25	16	669
3	137	50	286	5	25	63	566
4	81	42	273	5	39	43	483
5	85	28	301	5	28	44	491
6	87	21	266	0	23	37	434
7	39	16	160	0	24	22	261
8	56	10	185	0	21	19	291
9	37	10	131	0	16	9	203
10	29	2	152	0	19	14	216
11	43	13	188	0	18	7	269
12	41	15	173	1	11	5	246
13	34	12	112	1	14	3	176
14	45	19	143	3	12	26	248
15	44	18	232	1	10	28	333
16	85	26	287	0	20	13	431
17	43	19	231	1	26	10	330
18	47	13	262	2	28	19	371
19	100	44	412	0	24	6	586
20	82	18	210	1	15	7	333
21	50	13	165	1	21	8	258
22	89	26	291	0	22	6	434
23	51	11	95	0	7	3	167

^aKIA: Killed-in-action

^bDOW: Died-of-wounds

^cSWA: Seriously wounded-in-action

^dLWA: Slightly wounded-in-action

^eSIA: Seriously injured-in-action

^fLIA: Slightly injured-in-action

^gMIA: Missing-in-action

Note: Data from Strength Accounting Branch, Adjutant General Section, GHQ, FEC.
Status of casualties is as of 8 Dec 1950.



TABLE 12

DAILY CASUALTIES IN EACH OF THE SEVERAL CATEGORIES
ALL THREE REGIMENTS OF THE 1ST CAVALRY DIVISION

Date	KIA, DOW ^a	SWA	LWA	SIA	LIA	MIA	Total
31 Aug	2	1	15	0	1	1	20
1 Sep	11	10	17	0	1	2	41
2	16	13	45	0	3	1	78
3	30	26	64	4	9	35	168
4	8	20	110	4	22	0	164
5	31	7	53	1	13	20	125
6	11	7	61	0	14	11	104
7	11	9	54	0	9	8	91
8	14	2	62	0	11	2	91
9	1	0	12	0	3	1	17
10	4	2	58	0	11	1	76
11	18	9	107	0	13	5	152
12	16	6	88	0	7	2	119
13	17	7	64	0	7	1	96
14	16	8	51	2	4	4	85
15	19	7	83	0	4	20	133
16	9	5	73	0	10	8	115
17	10	6	92	0	15	2	135
18	16	3	82	0	10	11	122
19	23	8	146	0	12	0	189
20	37	1	61	0	6	3	108
21	19	1	15	0	2	1	38
22	24	0	5	0	1	1	31
23	4	0	3	0	0	1	8

^aFor description of symbols see Table 11.

TABLE 13

DAILY CASUALTIES IN EACH OF SEVERAL CATEGORIES
5TH CAVALRY REGIMENT

Date	KIA, DOW ^a	SWA	LWA	SIA	LIA	MIA	Total
31 Aug	0	0	0	0	0	1	1
1 Sep	1	0	2	0	0	0	3
2	0	0	0	0	0	0	0
3	0	1	2	0	0	0	3
4	3	6	54	0	6	0	69
5	18	4	8	1	2	5	38
6	0	1	5	0	4	1	11
7	0	0	2	0	1	0	3
8	1	0	4	0	2	0	7
9	0	0	2	0	0	0	2
10	1	0	9	0	1	0	11
11	2	5	11	0	3	1	22
12	3	2	31	0	3	2	41
13	5	5	49	0	4	1	64
14	13	7	40	2	4	3	69
15	8	4	52	0	3	19	86
16	2	4	51	0	6	7	70
17	4	3	36	0	3	1	47
18	9	3	53	0	4	4	73
19	10	1	49	0	5	0	65
20	4	0	8	0	2	1	15
21	5	0	3	0	0	0	8
22	15	0	2	0	0	0	17
23	4	0	2	0	0	1	7

^aFor description of symbols see Table 11.



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TABLE 14
DAILY RATIOS OF FATALITIES, INJURIES, AND MISSING-IN-ACTION
TO TOTAL CASUALTIES FROM MISSILES

Part A

All Infantry Divisions in Korea (nondivisional combat troops excluded)

Date, Sep	Col 1 ^a	Col 2 ^a	Col 3	Col 4 ^a	Col 5	Col 6 ^a	Col 7
	KIA,DOW, SWA,LWA Per Day	KIA, DOW Per Day	100 × Col 2	SIA, LIA	100 × Col 4	MIA Per Day	100 × Col 6
			Col 1	Per Day	Col 1		Col 1
1	620	171	28	24	4	98.0	160
3	462	94	20	34	7	46.0	10
5	345	76	22	29	8	36.0	10
7	237	49	21	23	10	22.0	9
9	199	40	20	19	10	13.0	7
11	197	36	18	15	8	5.5	3
13	229	45	20	14	6	17.0	7
15	279	53	19	18	6	20.0	7
17	374	67	18	26	7	13.0	7
19	410	81	20	25	6	8.0	2
21	299	69	23	19	6	6.0	2
23	191	49	26	10	5	b	---
Over-all Ratio	---	---	21.7	---	6.7	---	9.7

Part B

All Three Regiments of the 1st Cavalry Division

Date, Sep	Col 1 ^c	Col 2 ^c	Col 3	Col 4 ^c	Col 5	Col 6 ^c	Col 7
	KIA,DOW, SWA,LWA Per Day	KIA, DOW Per Day	100 × Col 2	SIA, LIA	100 × Col 3	MIA Per Day	100 × Col 4
			Col 1	Per Day	Col 1		Col 1
1	49	14.0	29	d	---	3.4	7
3	132	21.0	16	18.0	14	18.0	14
5	69	14.0	21	15.0	22	14.0	20
7	84	10.0	12	9.2	11	4.1	5
9	61	4.3	7	8.5	14	1.8	3
11	109	15.0	14	8.9	8	2.2	2
13	86	18.0	21	6.4	7	3.9	5
15	94	14.0	15	7.0	7	12.0	13
17	102	13.0	13	12.0	12	6.5	6
19	144	30.0	21	8.5	6	2.3	2
21	26	24.0	9	2.3	9	1.3	5
23	d	d	---	d	---	d	---
Over-all Ratio	---	---	18.4	---	10.3	---	7.3

^aSlope of corresponding curve in Fig. 8.
^bValue too small for accurate measurement.

^cSlope of corresponding curve in Fig. 9.
^dValue too small for accurate measurement.

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TABLE 15
FREQUENCY OF OCCURENCE OF DAILY NUMBERS OF MIA AMONG
COMPANIES COMPRISING THE INF BNS OF 1ST CAV DIV
1-23 SEP 1950

Number of Company-Days with Indicated Number of MIA											
<u>0</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9-19</u>	<u>20</u>	<u>>20</u>
76	26	5	2	1	1	1	1	1	0	1	0

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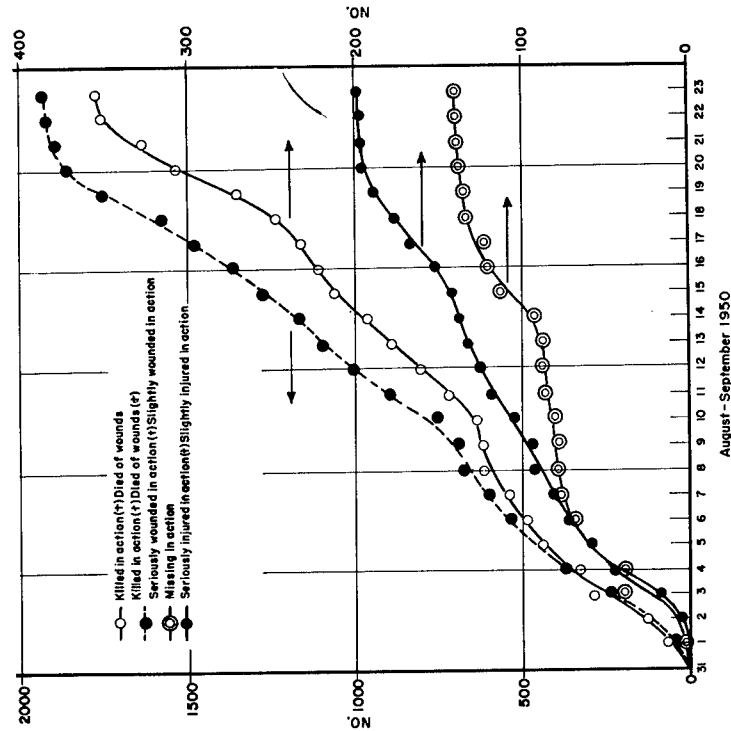


Fig. 9—Cumulative daily casualties in several categories—
All three regiments of the 1st Cav Div.

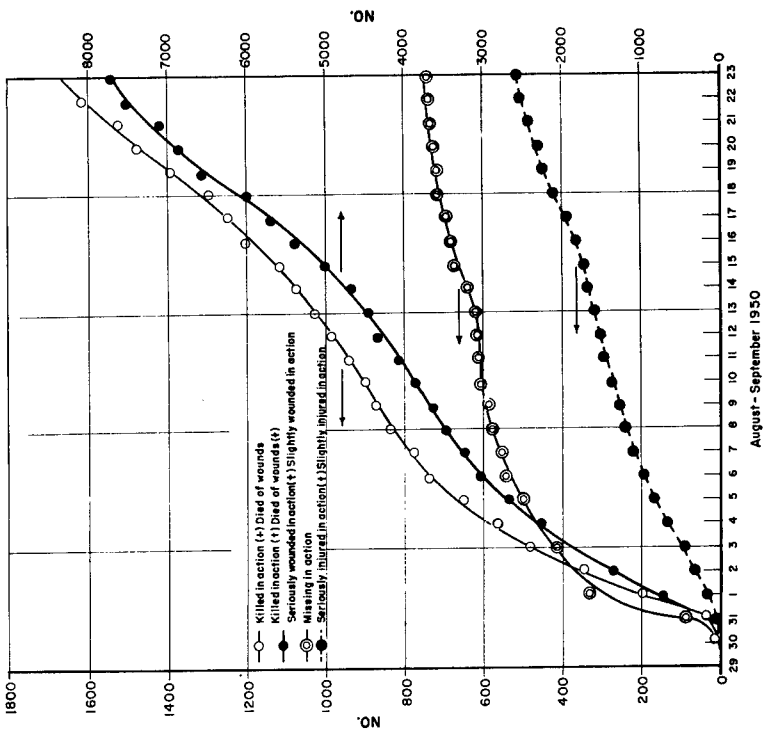


Fig. 8—Cumulative daily casualties in several categories—
all US Army divisions in Korea.

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DISTRIBUTION OF BATTLE CASUALTIES BY TYPE
OF MISSILE, WEAPON RESPONSIBLE,
AND TIME OF DAY

SYNOPSIS

Data as to the cause and hour of battle casualties was obtained by recoding information contained in the individual casualty files. This method of data collection and analysis has been fully described in a previous report (ORO-T-22 FEC). The files of all missile casualties in the 7th Cav Regt during the period 1-23 September were consulted. The 7th Cav Regt held the center of the 1st Cav Div's sector and its casualty experience was typical of the other regiments.

As to cause, the most complete information is obtained by classifying the responsible missile as fragment, bullet, or unknown. Less complete information is obtained from the additional classification by type of weapon responsible: artillery, mortar, grenade, etc., in the class of fragmenting missiles; and rifle, machine gun, etc., in the class of bullets.

In Fig. 10, the cumulative numbers of casualties from fragmenting missiles, from bullets, and from unknown missiles are graphically plotted against the date. It is at once apparent that a rough proportionality was maintained among these three quantities throughout the period studied. The statistical breakdown indicates that if there is any trend it is the lessening of importance of bullets. Since it is known that the character of the fighting was the same throughout the period studied, this result suggests that the enemy weapons system remained constant in its proportions if not in its size.

In the case of casualties from fragmenting missiles, the statistical sample is large enough for a breakdown by type of weapon responsible. These results are given in Table 19. The striking result is that the mortars were the greatest single cause, that grenades were of second importance, and that artillery fire was a very poor third. Also, the proportion of mortar and grenade

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casualties remained constant with time, while artillery casualties diminished from a small fraction to a negligible fraction.

Data are also presented on the relative severity of the casualties inflicted by the several types of missile and weapons. These results are of theoretical interest and will not be summarized herein.

The hour of the day at which a casualty occurred was ascertained in about two-thirds of the total number of cases examined. The most significant breakdown of this information is on a monthly basis. In the period 1-6 September, which included the enemy offensive, casualties occurred with maximum frequency during the late morning hours. In the period of tactical equilibrium, 7-12 September, casualties occurred with roughly constant frequency throughout the daylight hours. In the period 13-23 September, characterized by the UN offensive, casualties occurred with maximum frequency during the afternoon. Throughout the period studied, the minimum frequency occurred at about midnight. A time distribution plot for the entire period studied appears in Fig. 11. Too, additional breakdowns by hour of the day are given for the several types of missiles and the various weapons. No significant differences are noted among any of these with respect to the distribution of casualties among the hours of the day.

The limitations and weaknesses of the data obtained from the casualty reports are considered. An evaluation of some Morning Reports is included.

DATA

Figure 4 shows that in number of casualties and in their rate of increase, the 7th Cav Regt was typical of the three cavalry regiments. The 7th Cav Regt has therefore been chosen for a detailed analysis of the causes of battle casualties and the hours at which they occurred.

The method has been described in detail in a previous memorandum.* A list of the names of all individuals of the 7th Cav Regt who became casualties on each day during the period 1-23 September 1950 was furnished by the Strength Accounting Branch, Adjutant General Section, GHQ, FEC. This list served as an index

*ORO-T-22(FEC), *Analysis of Personnel Casualties in the 25th Infantry Division, 26-31 July 1950.* (SECRET)

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to the individual casualty files of the Casualty Branch, Adjutant General Section, GHQ, FEC. For the present analysis, only casualties attributable to missiles were considered. This includes the files of men already coded as KIA, DOW, SWA, or LWA; the categories SIA, LIA, and MIA being excluded. From data in each individual's file a new card was prepared on which was entered the cause, time, and circumstances of the casualty. It resulted that the available information about each case was quite limited. Therefore, the formal breakdown was limited to missile type, responsible weapon, and hour.

The category of missile type comprises fragments, bullets, and unknown types of missile. The weapons responsible for casualties from fragments comprise mortars, grenades, artillery, certain other weapons, and weapons of unknown type; those responsible for bullet casualties comprise rifles (and carbines), small arms, machine guns, and weapons of unknown type. The category "small arms" includes rifles, but the distinction made in the original casualty reports has been retained in order to show the extent of casualties specifically attributed to rifles. Table 16 (p. 42) gives examples of how entries in the casualty reports were actually coded according to this breakdown. (Uncoded basic data for three rifle companies is presented in Table 25.) Additional samples of uncoded basic data appear in Tables 45 and 48.

In the course of this coding certain errors in the original coding for the machine records were obvious. These rather few corrections in date of casualty or severity of casualty were made. The total of 655 missile casualties in the 7th Cav Regt in the period 1-23 September differs from the total of 770 total casualties in Table 4 because of the elimination of the SIA, LIA, and MIA, and because of these corrections.

Table 17 (p. 42) is a daily compilation of the coding of a total of 655 cases for type of missile and type of weapon responsible. In Fig. 10 the data on total missile casualties and on type of missile responsible are plotted on a cumulative basis. It is evident that throughout combat of varying intensity, a rough proportionality was maintained between fragment and bullet casualties and total missile casualties. For a numerical comparison, the over-all period covered has been divided into three portions during which roughly equal total numbers of casualties were sustained.

These sub-periods are: 1-6 September; 7-12 September; and 13-23 September. As shown elsewhere in this study, the first period was characterized by the heaviest enemy attacks, the second was

nearer to equilibrium, and the third period includes the UN offensive. The results are given in Table 18 (p. 43). The salient feature of the table is the near constancy of the contributions of the different types of missile throughout these three phases. If there is any significant trend, the contribution of fragments increased and that of bullets decreased, as is shown by listing of the bullet-to-fragment ratio. The result is surprising and will be considered in the following section in connection with enemy weapons and ammunition. It is interesting that the over-all bullet-to-fragment ratio, 0.34, is lower than in World War II.

It seems likely that there is a bias in favor of fragments. The term "shrapnel" may often have been used for lack of a better name. Frequently, the use of the term "shrapnel" was supported by additional information mentioning mortar or shell fire, but sometimes this term was contradicted by a medical report giving "small arms," for example, as the cause. In such cases, the medical report rather than the field report was accepted for coding.

Scanning of Table 17 shows that the enemy weapons most consistently responsible for casualties from fragments were mortars and grenades. For a numerical comparison, the over-all period of 1-23 September has again been divided into intervals delimited by the same dates as previously, and the contribution of each weapon to the total fragment casualties has been calculated. The results appear in Table 19 (p. 43). Superficially, the constancy of the contributions of mortars and grenades appears remarkable. But the figures for artillery show that its initial contribution was slight and subsequently became still smaller. It would appear, therefore, that the 6.1 percent of fragment casualties from unknown weapons were largely due to mortars or to mortars and grenades. The one interesting result would then be the near constancy of the grenade-to-mortar ratio (about 0.48).

Table 20 (p. 43) gives the breakdown of casualties by severity and by type of missile and weapon responsible. The salient feature—and greatest weakness—of the entire scheme of coding is the lack of information about the killed-in-action. It is clear that information was most frequently obtained for the LWA. If a given weapon or type of missile, such as bullets, had a relatively high lethality, the results would be biased against it. The only possible check afforded by the data is the ratio DOW+SWA-to-LWA for each weapon or type of missile. These values are given in Table 21 (p. 44).

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If this ratio is a valid criterion of relative wounding power, there is evidently nothing in the results to indicate a greater effectiveness of bullet hits over fragment hits. In fact, the opposite seems true.

Table 21 affords an interesting comparison between rifles and small arms. The class "small arms" should include rifles, carbines, and the notoriously non-lethal "burp guns." Nevertheless, the data of the table, no matter how slight, indicates less effectiveness of rifles in comparison with the whole class of small arms. Another interesting comparison is between fragments from unknown weapons and mortar and grenade fragments. The intermediate value of the "unknowns" is additional reason for regarding this category as probably constituted of a majority of mortar hits and a minority of grenade hits.

In the casualty reports, times were generally reported to the nearest half-hour. In Table 22 (p.44) the day has been divided into six four-hour periods for the purpose of sorting missile casualties by hour. The table is based on the entire period, 1-23 September, and gives the breakdowns by type of missile and responsible weapon. It is evident that, for the period as a whole, total missile casualties increased from a minimum frequency at around 0000 hours to a maximum sometime during the afternoon and then decreased back to the minimum.

Analysis of the diurnal variation in the frequency of casualties is more significant for shorter periods of action. Table 23 (p.45) gives these data for the same periods used in previous tables; namely, 1-6, 7-12, and 13-23 September. It is evident that from 1-6 September, when the initiative was largely with the enemy, casualties occurred early in the day, and the maximum frequency occurred before noon. In the succeeding equilibrium period, 7-12 September, casualties were low during the hours of actual darkness and occurred at roughly the same frequency throughout the daylight hours. In the period 13-23 September, characterized by the UN offensive, casualties occurred chiefly in the late morning and afternoon hours, when friendly troops usually attacked.

It is interesting to speculate whether, apart from the fact of tactical initiative on one side or the other, differences might be found in the ability of the several enemy weapons to obtain casualties at various hours of the day. The data of Table 24 (p.45), in which the data of Table 22 has been recalculated on a percentage basis, bears on this point. It is evident that the patterns of distribution for the various types of missiles and weapons are quite similar. The distributions for the unknown types of missile and

unknown fragments are quite in line with the known causes and indicate no bias for lack of information here. Casualties for which the time is unknown have indeed been excluded, but, as shown in Table 22, these amount to only about one-third of total missile casualties.

For all missile casualties and for the separate categories of fragments and bullets, diurnal distribution curves have been constructed from the actual times (to the nearest half-hour) rather than on the basis of four-hour periods. These curves are shown in Fig. 11 (p. 54). If the probability of a casualty from a given cause were constant throughout the 24-hour period, the curve would be the indicated straight line. It is seen that for both bullets and fragments the greatest rates of increase (highest probability) occurred at 0800-0900 hours and at 1400-1500 hours. During the intervening hours casualty production was at an intermediate level. The minimum (but not zero) probability for an entire twenty-four hours was around midnight.

The daily Morning Report submitted by each company serves as a first source of information for the coding of casualties by the machine records unit (Strength Accounting Branch, Adjutant General Section, GHQ, FEC). This is by no means the only source of data. Clearing station Admission and Disposition forms, hospital reports, follow-up inquiries, etc., are also used. The Morning Report is of especial interest because it is a daily accounting of all personnel by each company itself and apparently the only systematic daily reporting, uniform throughout the Army, of the daily location and action of each company.

In order to reconstruct the daily experience of rifle companies and obtain a definite accounting of days of no action or days out of the line as well as of those notable for combat, all the Morning Reports of the 1st Cav Div for September 1950 were reviewed. In the space for descriptive remarks, these reports were, in general, so sketchily filled as to be hardly serviceable for historical purposes. Evidences that this bookkeeping suffered because of the demanding tactical situation were the brief, vague, standardized statements and the fact that a backlog of many days' reports was often filled in at once. Among the rifle companies, the reports of the 1st Bn, 7th Cav Regt, are a notable exception. The fact that this battalion went into division reserve for several days may be relevant. Though the point was not checked vigorously, it appeared that most companies of the 1st Cav Div did not go into reserve at any time during the period studied.

To test the accuracy and serviceability of even the 1st Bn's reports,

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the descriptive remarks have been extracted and used to construct a daily log of action. The result appears as Table 25 (p. 46). The tactical aspects of the experience of this battalion are considered in the section on Comparison of Friendly and Enemy Strengths, Casualties, and Casualty Rates.

Beneath the daily quotation of the remarks of the Morning Report in Table 25 are listed the data from the recoding of the casualty files. These data correspond to the statistics of Table 17. For each casualty, the available information is quoted from the casualty report as to hour and cause of casualty, followed by an entry for the severity of the casualty as coded by the machine records unit. The casualties with known hours are listed first, and these are arranged in chronological order. A few corrections have been made, however, during the recoding, as already noted.

In general, there is only a fair correlation between the statements of the Morning Reports and the final accounting of the casualties. In the case of Co C, the data are concordant. For example, on 2 September when the company was in defensive positions sustaining heavy mortar and artillery fire, the casualty reports mention the same causes. Then on 4 and 5 September, when the company attacked enemy positions, casualties are ascribed to grenades and machine-gun fire. Later, on 9 and 10 September when the company was again in defensive positions experiencing enemy fire, the causes of casualties are quite properly ascribed to mortar fire, shrapnel and small arms. In the case of Co A there is a major disagreement for 6 September, when the Morning Report claims 24 casualties, the coded statistics but one. It seems that this is simply an error in the dates, since 20 casualties are coded for 7 September, a day on which only light activity, patrol and scouting, is reported. Individuals in sustained combat are notoriously prone to confuse dates. In this case, the Morning Report, perhaps made out several days in arrears, would appear to be wrong. The statements of the Co A Morning Reports for 9 through 11 September give no information to explain the 19 missile casualties coded for 11 September, but the subsequent report made out when the company was in reserve, mentions 30 missile casualties not previously reported.

Aside from the dating, the over-all numbers of casualties recorded by the Morning Reports are low but in reasonable agreement with the established statistics. The data for this comparison is given in Table 26 (p. 53).

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**TABLE 16
EXAMPLES OF CODING OF CASUALTY REPORTS**

Entry in Casualty Report	Coded as	
	Type of Missile	Weapon Responsible
(file missing)	unknown	unknown
gunshot wound	unknown	unknown
shrapnel	fragment	unknown
shell fragment	fragment	unknown
artillery fire	fragment	artillery
mortar	fragment	mortar
land mine	fragment	other
Cal .30 bullet	bullet	unknown
automatic weapons	bullet	machine gun
sniper fire	bullet	rifle
carbine	bullet	rifle
small arms fire	bullet	small arms

TABLE 17

**BREAKDOWN OF DAILY MISSILE CASUALTIES IN THE 7TH CAV REGT,
SEPTEMBER 1950, BY TYPE OF MISSILE RESPONSIBLE AND TYPE OF
WEAPON RESPONSIBLE**

(Data coded from files of Casualty Branch, Adjutant General's Section, GHQ, FEC)

Sep	Total Missile Casualties	Number of Daily Casualties from ^a											
		Type of Missile			Weapons Producing Fragmenting Missiles					Weapons Producing Bullets			
		Unknown	Fragment	Bullet	Unknown	Mortar	Grenade	Artillery	Other	Unknown	Rifle ^b	Small Arms ^b	Machine Gun
1	23	14	9	0	5	4	0	0	0	0	0	0	0
2	32	18	12	2	7	3	0	2	0	0	1	1	0
3	67	26	25	16	15	6	2	2	0	0	3	9	4
4	39	7	20	12	12	2	6	0	0	0	2	7	3
5	34	11	18	5	7	6	4	1	0	0	2	2	1
6	33	11	10-½	11-½	9	1	0	0	½ ^c	0	3-½	4	4
7	55	11	29	15	17	4	8	0	0	1	2	9	3
8	31	14	13	4	12	1	0	0	0	0	1	3	0
9	7	3	3	1	3	0	0	0	0	0	1	0	0
10	36	3	29	4	17	10	2	0	0	0	1	3	0
11	51	10	32	9	21	8	2	1	0	0	4	5	0
12	48	6	34	8	18	11	3	2	0	0	4	4	0
13	12	7	4	1	3	1	0	0	0	0	0	0	1
14	3	0	3	0	3	0	0	0	0	0	0	0	0
15	6	2	4	0	3	1	0	0	0	0	0	0	0
16	2	1	1	0	1	0	0	0	0	0	0	0	0
17	57	4	48	5	33	14	1	0	0	0	3	2	0
18	26	7	13	6	4	4	4	1	0	0	2	4	0
19	64	16	31-½	16-½	17-½	6	8	0	0	0	7	9-½	0
20	21	17	4	0	0	1	0	0	3 ^d	0	0	0	0
21	2	1	1	0	1	0	0	0	0	0	0	0	0
22	5	5	0	0	0	0	0	0	0	0	0	0	0
23	1	0	0	1	0	0	0	0	0	0	1	0	0
1-23	655	194	344	117	208-½	83	40	9	3-½	1	37-½	62-½	16

^aThe half-credits represent two men who sustained wounds from two causes.

^bThough "small arms" includes rifles, the distinction of the original casualty reports has been retained.

^cTank-artillery casualty.

^dAll land-mine casualties.

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TABLE 18
CONTRIBUTION OF FRAGMENTS AND BULLETS TO TOTAL CASUALTIES FROM MISSILES
7TH CAVALRY REGIMENT

Period, Sep	Total Missile Casualties	Fragment Casualties	Fragments, % of Total	Bullet Casualties	Bullets, % of Total	Ratio, Bullets/Fragments
1 - 6	228	94.5	41	46.5	20	0.49
7 - 12	228	140.0	61	41.0	18	0.29
13 - 23	199	109.5	55	29.5	15	0.27
1 - 23	655	344.0	53	117.0	18	0.34

TABLE 19
CONTRIBUTION OF DIFFERENT WEAPONS TO TOTAL CASUALTIES FROM FRAGMENTS
7TH CAVALRY REGIMENT

Period, Sep	Total Fragment Casualties	Mortar Casualties	Mortar, % of Total	Grenade Casualties	Grenade, % of Total	Artillery Casualties	Artillery, % of Total
1 - 6	94.5	22	23	12	13	5	5
7 - 12	140.0	34	24	15	11	3	2
13 - 23	109.5	27	25	13	12	1	1
1 - 23	344.0	83	24	40	12	9	3

TABLE 20
BREAKDOWN OF MISSILE CASUALTIES IN THE 7TH CAV REGT IN PERIOD 1-23 SEP 1950 BY CASUALTY SEVERITY AND TYPE OF MISSILE AND WEAPON RESPONSIBLE
 (Data coded from files of Casualty Branch, Adjutant General's Section, GHQ, FEC)

Casualty Severity	Total Missile Casualties	Number of Casualties ^a in Each Category from											
		Type of Missile			Weapons Producing Fragmenting Missiles					Weapons Producing Bullets			
		Unknown	Fragment	Bullet	Unknown	Mortar	Grenade	Artillery	Other	Unknown	Rifle ^b	Small Arms ^b	Machine Gun
KIA	109	103	4	2	1	1	0	2	0	2	0	0	2
DOW	12	4	8	0	6	2	0	0	0	0	0	0	0
SWA	76	22	45	9	25	14	4	2	0	0	2	7	0
LWA	458	65	287	106	176 ½	66	36	5	3 ½ ^c	1	35 ½	55 ½	14
Totals	655	194	344	117	208 ½	83	40	9	3 ½	3	37 ½	62 ½	16

^aThe half-credits represent two men who sustained wounds from two causes.
^bThough "Small Arms" includes rifles, the distinction of the original casualty reports has been retained.
^cOne-half tank-artillery casualty and three land-mine casualties.

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TABLE 21
RELATIVE SEVERITY OF CASUALTIES
FROM SEVERAL TYPES OF WEAPONS
7TH CAVALRY REGIMENT
1-23 SEP 1950

Type of Weapon	DOW, SWA	LWA	DOW, SWA
			LWA
Fragments, All Weapons	53	287	0.18
Fragment, Unknown Weapon	31	176.5	0.18
Mortar	16	66	0.24
Grenade	4	36	0.11
Others	2	9.5	---
Bullets, All Weapons	9	106	0.08
Rifle	2	35.5	0.06
Small Arms	7	55.5	0.13
Others	0	16	---

TABLE 22

BREAKDOWN OF MISSILE CASUALTIES IN THE 7TH CAV REGT IN
PERIOD 1-23 SEPT 1950 BY INTERVALS OF THE DAY AND TYPE OF
MISSILE AND WEAPON RESPONSIBLE

(Data coded from files of Casualty Branch, Adjutant General's Section, GHO, FEC)

Interval of Day, Hrs.	Total Missile Casualties	Number of Casualties in each Period from ^a											
		Type of Missile			Weapons Producing Fragmenting Missiles					Weapons Producing Bullets			
		Unknown	Fragment	Bullet	Unknown	Mortar	Grenade	Artillery	Other	Unknown	Rifle	Small Arms	Machine Gun
0000-0330	19	0	13	6	8	1	2	2	0	0	2	4	0
0400-0730	57	9	30½	17½	19	2	9	0	½	1	2½	13	1
0800-1130	90	6	61	23	38	18	4	1	0	0	7	10	6
1200-1530	118	13	83	22	59	20	4	0	0	0	9	11	2
1600-1930	87	10	62	15	41	14	6	1	0	0	1	11	3
2000-2330	40	1	31½	7½	18½	7	2	1	3	0	3	4½	0
Totals	411	39	281	91	183½	62	27	5	3½	1	24½	53½	12
Unknown Time	244	155	63	26	25	21	13	4	0	0	13	9	4
Grand Totals	655	194	344	117	208½	83	40	9	3½	1	37½	62½	16

^aHeadings and entries explained by footnotes to Table 20.

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TABLE 23
DISTRIBUTION OF TOTAL MISSILE CASUALTIES AMONG HOURS OF THE DAY
7TH CAVALRY REGIMENT

Interval of Day, hrs	1-6 September		7-12 September		13-23 September	
	Missile Casualties	% of Total	Missile Casualties	% of Total	Missile Casualties	% of Total
0000-0330	12	10	7	4	0	0
0400-0730	13	11	39	23	5	4
0800-1130	31	26	38	22	21	17
1200-1530	25	21	43	25	50	41
1600-1930	23	19	28	17	36	30
2000-2330	16	13	14	8	10	8
Total, Time Known	120	100	169	100	122	100
Time Unknown	108		59		77	
Grand Total	228		228		199	

TABLE 24
PERCENTAGE DISTRIBUTION AMONG HOURS OF THE DAY
OF CASUALTIES FROM SEVERAL TYPES OF MISSILES AND WEAPONS^a

Percentage Distribution of Total Hits in Each Interval

Interval of Day, hrs	Type of Missile			Fragments			Rifle and Small Arms
	Unknown	Fragment	Bullet	Unknown	Mortar	Grenade	
0000-0330	0	5	7	4	2	7	7
0400-0730	23	11	19	10	3	33	18
0800-1130	15	22	25	21	29	15	19
1200-1530	33	30	24	32	32	15	23
1600-1930	26	22	16	22	23	22	14
2000-2330	3	11	8	10	11	7	9
Total Hits = 100%	39	281	91	183.5	62	27	88

^aData taken from Table 22.

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TABLE 25

DAILY ACTION OF RIFLE COMPANIES AS NOTED IN EACH COMPANY'S MORNING REPORTS
WITH DAILY LISTING OF EACH COMPANY'S CASUALTIES FROM CODING OF INDIVIDUALS' CASUALTY FILES
1ST BATTALION, 7TH CAVALRY REGIMENT

Date	Rifle Companies			Co C	Heavy Weapons Company Co D	Hqs and Hqs Co
	Co A	Co B	Co C			
31 Aug	MR: Moved up at 1430 on one patrol, met with heavy arty and mortar fire, 10 EM LMA. Tot.Cas.: not obtained	MR: Moved one patrol from defensive position at 1930 and met heavy enemy fire, 2 EM KIA, 13 EM LMA. Tot.Cas.: not obtained	MR: Still in defensive position. Encountered heavy mortar and artillery fire. Two EM KIA, 5 EM SWA. Tot.Cas.: 2 KIA, 6 SWA, 1000, shrapnel SWA 1800, mortar shell frags, Hill 518 SWA mortar frags. . . . SWA by arty fire. . . . KIA rifle fire. . . . LMA Hill 518 SWA SWA SWA KIA	MR: Still in defensive position. Encountered heavy mortar and artillery fire. Two EM KIA, 5 EM SWA. Tot.Cas.: 2 KIA, 6 SWA, 1000, shrapnel SWA 1800, mortar shell frags, Hill 518 SWA mortar frags. . . . SWA by arty fire. . . . KIA rifle fire. . . . LMA Hill 518 SWA SWA SWA KIA	Co D: none	Hqs and Hqs Co: none
1 Sept	MR: One patrol encountered enemy, and 2 EM KIA. Tot.Cas.: 2 KIA, 1 LIA in front-line position near Hill 518 KIA in front-line position near Hill 518 KIA shrapnel. . . . LMA	MR: Company held organized defensive position. Received mortar fire, 2 EM KIA. Tot.Cas.: 2 KIA, 1 SWA, 1445, mortar shell frags. . . . SWA on front-line duty Hill 518. KIA near Hill 518. LMA	MR: Still in defensive position. Under heavy mortar and artillery fire. One OFP, 5 EM SWA. Tot.Cas.: 5 LMA 1145, shell frag. . . . LMA shrapnel LMA	MR: In defensive position. Encountered heavy mortar and artillery fire. Two EM KIA, 5 EM SWA. Tot.Cas.: 2 KIA, 6 SWA, 1000, shrapnel SWA 1800, mortar shell frags, Hill 518 SWA mortar frags. . . . SWA by arty fire. . . . KIA rifle fire. . . . LMA Hill 518 SWA SWA SWA KIA	Co D: none	Hqs and Hqs Co: none
2 Sept	MR: Company still in defensive positions. Enemy fire very heavy. No casualties. Tot.Cas.: none	MR: Held organized defensive positions. Received scattered enemy mortar and small arms fire. Three EM LMA. Tot.Cas.: 1 DOW	MR: [No information]	MR: [No information]	Co D: none	Hqs and Hqs Co: none
3 Sept	MR: Company attacked Hill 190 at 1630 hrs, was taken at 2030 hrs. Organized defensive positions. Three EM SWA. Tot.Cas.: 1 LMA	MR: Held organized defensive positions. Received scattered enemy mortar and small arms fire. Three EM LMA. Tot.Cas.: 1 DOW	MR: [No information]	MR: [No information]	Co D: none	Hqs and Hqs Co: none

Notes: MR -- Quotation of remarks from Morning Report.
Tot.Cas. -- Statistics as summed in Table 27 followed by listing of available information on each casualty: hour, reported cause, coded severity (as totalled in Table 20).

TABLE 25 (Continued)

Date	Rifle Companies			Heavy Weapons Company	Hqs and Hqs Co
	Co A	Co B	Co C		
4 Sept	<p>MR: "Still in defensive positions." [According to report of Company C, elements of Company A attacked.] Tot.Cas.: 1 SWA, 15 LMA 0200, shrapnel LMA 1000, gunshot(Hill 518) . LMA 1130, machine gun LMA 1500, shrapnel SWA 1600, shell fragments . . LMA 1700, grenade LMA 1800, hand grenade . . . LMA 1900, shrapnel LMA 1930, shrapnel LMA 1940, shrapnel LMA 2000, small arms LMA 2100, mortar shell LMA _____, shrapnel LMA _____, grenade frags . . LMA _____, rifle fire LMA _____, small arms LMA</p>	<p>MR: [No information.] Tot.Cas.: 1 LIA</p>	<p>MR: "First and 3d Platoons attacked Hill 490 together with elements of company A, 7th Cav Regt, but failed to take the hill; several attacks at the hill proved of no good, twice were at the top, but drove back off [by] enemy small arms fire. Failed to take casualties, but mortar fire [friendly or enemy?] took casualties... Rest of Company remained in defensive positions." Tot.Cas.: 1 SWA, 3 LMA, 1 SIA 0730, hand grenade . . LMA 1830, small arms fire. LMA 1930, machine gun _____, fire LMA 2000, shrapnel SWA</p>	<p>Co D Tot.Cas.: none</p>	<p>Hqs and Hqs Co Tot.Cas.: none</p>
5 Sept	<p>MR: "Company engaged in small arms fire with enemy, also getting heavy artillery and mortar fire. Four EM SWA." Tot.Cas.: 7 LMA 0115, small arms fire . . LMA 0930, shrapnel LMA 1800, mortar shrapnel . . LMA _____, mortar LMA _____, hand grenade . . LMA _____, _____ LMA _____, _____ LMA</p>	<p>MR: "Received scattered artillery and mortar fire. No casualties." Tot.Cas.: 1 LMA 0900, hand grenade . . . LMA</p>	<p>MR: "Company went into defensive position on Hill 470. The 1st and 3d Platoons jumped off on the attack of Hill 490 at 1300 hrs. Attack lasted until dusk, at which time both platoons took up defensive positions for the night. One OFF and 1 EM KIA, 7 EM SWA. Tot.Cas.: 1 KIA, 5 LMA, 1 LIA 0830, mortar shell _____, frags DOW 0930, grenade frag. . . LMA 1800, shrapnel LMA 1900, machine gun . . . LMA _____, mortar fire . . LMA _____, rifle fire . . . LMA</p>	<p>Tot.Cas.: none</p>	<p>Tot.Cas.: none</p>

TABLE 25 (Continued)

Date	Rifle Companies			Heavy Weapons Company	Hqs and Hqs Co
	Co A	Co B	Co C		
6 Sept	<p>MR: "Still in defensive positions exchanging small arms and mortar fire. Twenty-four EM WIA." <u>Tot.Cas.:</u> 1 LWA Rifle fire LWA [Note: See casualty list for 7 September.]</p>	<p>MR: "In defensive positions. Exchanging small arms and mortar fire. One EM WIA." <u>Tot.Cas.:</u> none</p>	<p>MR: "Still in defensive positions. Received small arms fire and shelling from the enemy. One KIA, 8 EM WIA." <u>Tot.Cas.:</u> 1 LWA</p>	<p>Co D <u>Tot.Cas.:</u> none</p>	<p>Hqs and Hqs Co <u>Tot.Cas.:</u> none</p>
7 Sept	<p>MR: "Still in defensive positions carrying on patrol and scouting. Getting fired on by small arms and mortar." <u>Tot.Cas.:</u> 1 KIA, 3 SWA, 16 LWA 0330, shrapnel LWA 0330, shrapnel LWA 0400, GSW and shrapnel LWA 0400, shrapnel LWA 0400, grenade LWA 0400, shell fragment LWA 0400, shrapnel LWA 0430, grenade LWA 0430, shrapnel LWA 0430, shrapnel LWA 0430, shrapnel LWA 0430, gunshot wound SWA 0500, small arms fire LWA 0600, grenade frags SWA 1500, small arms LWA shrapnel SWA shrapnel LWA small arms fire KIA</p>	<p>MR: "In defensive positions carrying on patrol and scouting. Encountered enemy small arms fire." <u>Tot.Cas.:</u> 2 LIA</p>	<p>MR: "In defensive positions. Carrying on patrols and scouting. Getting fired on by the enemy with small arms." <u>Tot.Cas.:</u> 1 KIA, 2 LWA, 1 LIA 0400, .25 cal gunfire LWA 0530, small arms LWA KIA</p>	<p>Co D <u>Tot.Cas.:</u> none</p>	<p>Hqs and Hqs Co <u>Tot.Cas.:</u> none</p>
				<p>Heavy Weapons Company <u>Tot.Cas.:</u> none</p>	<p>Hqs and Hqs Co <u>Tot.Cas.:</u> none</p>

TABLE 25 (Continued)

Date	Rifle Companies			Co C	Heavy Weapons Company	Hqs and Hqs Co
	Co A	Co B	Co D			
16 Sept	MR: "Still in defensive position. Two EM LMA not reported before." Tot.Cas.: 1 LMA 1700, shrapnel LMA	MR: "Still in defensive position." Tot.Cas.: none	MR: "Still dug in. Little enemy activity." Tot.Cas.: 1 LMA LMA		Tot.Cas.: none	Tot.Cas.: none
17 Sept	MR: "Still in defensive position." Tot.Cas.: none	MR: "Exchanging small arms fire." Tot.Cas.: none	MR: "Dug in. One EM KIA not reported before." Tot.Cas.: 1 LMA 1800, small arms . . . LMA		Tot.Cas.: none	Tot.Cas.: none
18 Sept	MR: "Company attached to 1st Bn, 8th Cav Regt in defensive position." Tot.Cas.: 1 LMA 2300, Grenade LMA	MR: "Defensive position on Hills 180, 180A, and 180B. Received enemy artillery fire." Tot.Cas.: 1 KIA, 1 LMA, 1 LIA 1000, mortar LMA KIA	MR: "In defensive position." Tot.Cas.: 1 LMA Small arms LMA		Tot.Cas.: none	Tot.Cas.: none
19 Sept	MR: "Moved from Tomayong-dong. Set up defensive position." Tot.Cas.: 1 SWA, 1 LMA 1800, gunshot wound. . . LMA Grenade blast. . . SWA	MR: "Moved to north of Waeg-wan and attacked the enemy. Received small arms and artillery fire." Tot.Cas.: 2 SWA, 7 LMA, 0930, shell frags. . . SWA 1650, mortar LMA 1700, shrapnel LMA 1800, shrapnel LMA 1800, small arms . . . LMA 1850, mortar LMA shrapnel LMA	MR: "Attached and took high ground near Saro-dong." Tot.Cas.: 2 KIA, 1 SWA, 8 LIA, 1 LIA 1400, shrapnel LMA 1400, shrapnel LMA 1630, shell fragment . LMA 1800, shrapnel LMA 1850, shrapnel LMA 1850, shrapnel LMA shrapnel LMA shrapnel LMA KIA KIA SWA		Tot.Cas.: none	Tot.Cas.: none
20 Sept	MR: [No information.] Tot.Cas.: 1 KIA Gunshot wound . . . KIA	MR: "Attacked enemy, making gains all day long." Tot.Cas.: none	MR: "Company attacked road to Tabu-dong and took 14 prisoners." Tot.Cas.: 1 LMA, 1 LIA 2350, land mine . . . LMA		Tot.Cas.: 2 LMA 2115, land mine LMA 2115, land mine LMA	Tot.Cas.: none

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TABLE 25 (Continued)

Date	Rifle Companies			Heavy Weapons Company	Hqs and Hqs Co
	Co A	Co B	Co C		
21 Sept	MR: "Company in position." Tot.Cas.: none	MR: "Moved up 5,000 yards, getting very little enemy fire." Tot.Cas.: none	MR: "Company gained objective with 8th Cav Regt and took 35 prisoners." Tot.Cas.: none	Co D Tot.Cas.: none	Tot.Cas.: 1 IWA _____, Shrapnel IWA
22 Sept	MR: "Moved to Division Reserve." Tot.Cas.: 1 MIA	MR: "Moved to Division Reserve at 1200 hours." Tot.Cas.: none	MR: "Moved to Division Reserve." Tot.Cas.: none	Tot.Cas.: 1 KIA (DOW) _____, DOW	Tot.Cas.: none
23 Sept	Tot.Cas.: none	Tot.Cas.: none	Tot.Cas.: none	Tot.Cas.: none	Tot.Cas.: none

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TABLE 26
COMPARISON OF NUMBERS OF MISSILE CASUALTIES
GIVEN IN COMPANY MORNING REPORTS
WITH FINAL ESTABLISHED STATISTICS

Company ^a	As Remarked in Morning Report			Statistics Coded from Casualty Files		
	KIA	WIA ^b	Total	KIA	WIA	Total
Co A	3	64	67	9	70	79
Co B	6	29	35	11	37	48
Co C	6	26	32	7	45	52

^aRifle companies, 1st Bn, 7th Cav Regt; 1-23 Sep 1950

^bWIA, wounded-in-action, equals SWA + LWA.

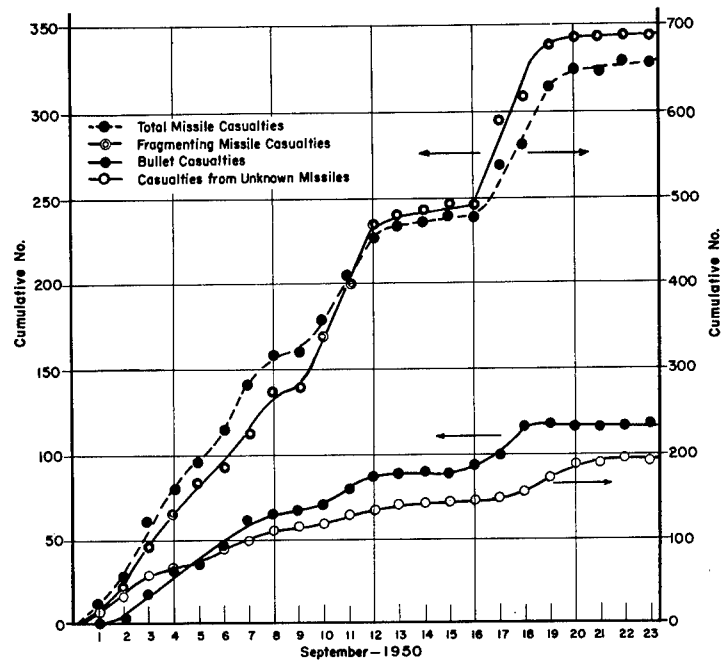


Fig. 10—Cumulative casualties by type of missile responsible—7th Cav Regt.

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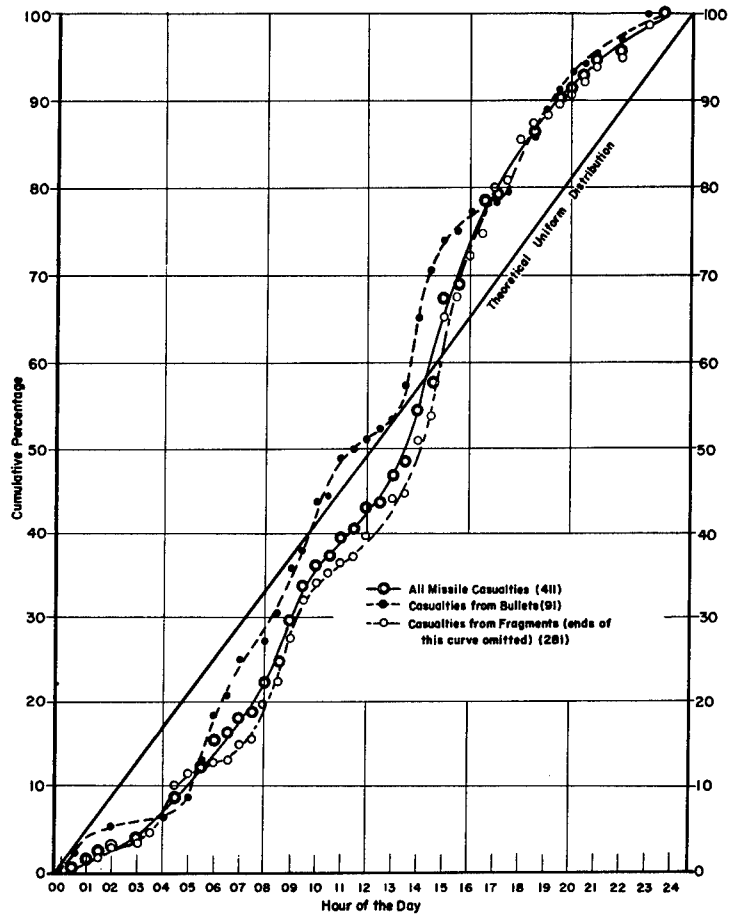


Fig. 11—Distribution among hours of the day of casualties from several causes—7th Cav Regt, 1-23 Sep 1950.

ENEMY UNITS, STRENGTHS, CASUALTIES, WEAPONS, AND AMMUNITION

SYNOPSIS

The line-up of friendly versus enemy units has been established from intelligence reported during September 1950 and checked by subsequent reports on the interrogation of prisoners of war. Table 27 gives a schematic presentation of the North Korean divisions, and their regiments, in contact with each regiment of the 1st Cav Div. In general, one enemy division with three regiments faced one US regiment with its three battalions. In the analyses summarized herein, most important is the opposition of the 13th North Korean Div and the 7th Cav Regt during the period 1-11 September.

An intelligence study quoted in Appendix B gives a full discussion of the combat efficiency of the 3d North Korean Div as of 31 August, just before the enemy offensive. Even then, combat efficiency of the 3d Div was estimated to be only 50 percent. The status of the other enemy divisions in this sector was probably very much like that of the 3d Div.

Estimates of the strength of the several North Korean Divisions are available from G-2 reports. For one division, the 13th, detailed enemy statistics are available for the regiments and other units of the division on two dates, 31 August and 11 September. By comparison, the G-2 estimate is shown to be accurate as of the end of August but considerably higher on 11 September. Statements by enemy prisoners of war are correlated with the enemy statistics. The significant facts are that enemy units were depleted to nearly half normal strength and that many of the troops were untrained conscripts from South Korea.

For one important case, enemy casualties may be estimated from enemy statistics. In addition to the strength figures for 31 August and 11 September, the number of replacements received by each regiment of the 13th North Korean Div in the intervening period are listed in another enemy document. Taken together,

these statistics yield the number of casualties sustained by each regiment in the period 1-11 September. The casualties are also expressed herein as average rates for the period in question. These rates for the 13th Div as a whole during the period of its offensive, were somewhat greater than 3.2 percent per day. For its 19th Regt, which bore the brunt of the fighting, the rate was somewhat greater than 6.7 percent per day.

Enemy statistics are also available for the weapons possessed by the 13th North Korean Div on 31 August and 11 September. The first important fact is that in proportion to the T/E for full-strength units, the enemy was very short of weapons. In proportion to the reduced number of personnel, however, the enemy was not at all lacking in certain weapons.

Accordingly, the actual number of weapons possessed by each enemy regiment has been recalculated in proportion to its actual strength. The regiments in combat had about the normal number of rifles for a given number of men and about three-quarters of the normal number of pistols. Almost all the submachine guns, however, had disappeared. It appears that every enemy soldier in combat had a personal weapon. In machine guns only about half the normal number for a given number of men were available, but in mortars and in artillery 90 percent of the normal proportion were on hand. These statistics actually apply to 11 September. But from concordant statistics supplied by prisoners, a second significant fact is indicated: during 1-11 September, few enemy weapons were knocked out by UN artillery and air attack.

Interpretation of enemy documents and the statements of enemy prisoners of war indicate that up to about 11 September there was an adequate supply of all types of ammunition in the 13th North Korean Div but that after this date mortar, and especially artillery ammunition, ran short. However, there remained a sufficient supply of small arms ammunition.

DATA

Enemy Units in Contact with 1st Cav Div

The sector held by the 1st Cav Div in September was the rounded corner of the box-like perimeter where the defense line turned eastward from the Naktong River. An approximate line separating friendly and enemy forces at the beginning of September is shown in Figure 16 in the next section. To the south along the river, the left flank of the 1st Cav Div was held by the 27th British

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Brigade, which, in turn, had a common boundary with the 2d Inf Div. From south to northeast, adjoining regimental sectors were held, respectively, by the 5th, 7th, and 8th Cav Regts. On the right flank of the 8th Cav Regt was the ROK Army.

Table 27 (p.66) is a schematic listing of North Korean regiments reported to be in contact with each of the cavalry regiments on each day. The British Brigade has been omitted because, except for some infiltration and subsequent mopping up, its area remained quiet throughout the period covered. At no time during the period was an entire cavalry regiment in reserve. As a result, there is a fairly clean-cut line-up of opposing forces. The 5th Cav Regt, with its left flank on the Naktong, was occupied almost entirely with the 3d North Korean Div and the 7th Cav Regt was engaged principally with the 13th North Korean Div. This parallelism is lost with the 8th Cav Regt, for the 1st North Korean Div directed strong attacks at the Cav-ROKA boundary and was engaged with both the 8th Cav Regt and the ROKA.

The data of Table 27 came from the Daily Intelligence Summaries and represents reports from the field as of any date given rather than retrospective evaluation. Nevertheless, the later formal reports on the interrogation of prisoners of war agree with the current intelligence in all those cases where the report mentions the friendly unit which captured an individual from an identified enemy unit. It is probable that the daily intelligence reports are based on the same positive information — capture of enemy personnel and documents — that is transmitted subsequently as formal reports through regular channels.

Appendix A consists of extracts of miscellaneous information from the interrogation reports. Items ATIS-1264, 1157, and 1048 agree with the pattern displayed in Table 27.

Little data are presented for the period after the beginning of the UN offensive on 16 September. For one thing, the friendly line-up in the 1st Cav Div's sector was augmented at about this time by the 5th Regt Combat Team (non-divisional infantry). Then, too, the nice balance of opposing forces was soon destroyed.

An over-all evaluation of the 3d North Korean Div as of 31 August, just prior to the offensive against the 1st Cav Div, has been made by G-2, GHQ, FEC. This study is quoted almost in full in Appendix B. Unfortunately, similarly detailed information is not available for the 13th North Korean Div. However, reports of the interrogation of personnel of the 13th Div captured in September (see Appendix A) indicate that prior to the enemy's offensive the status of the 13th Div must have been very similar to that of the 3d Div.

Strength of Enemy Units

A current estimate of the strength of enemy units is maintained by G-2. As described in the G-2 study quoted in Appendix B, this number is adjusted to conform to fresh intelligence. Otherwise, it is corrected according to standard formulas believed to represent the enemy's casualty rate and ability to make replacements. Table 28 (p. 67) gives a series of G-2 strength estimates for the North Korean divisions in contact with the 1st Cav Div.

For one North Korean division, the 13th, detailed data on actual strengths are available from documents found on the person of a senior staff officer who surrendered on 21 September. (The interrogation of this officer is reported in ATIS-1293, Appendix A.) In the translated versions these documents are entitled "Tables of Organization" but they are evidently actual strength data for the indicated dates. Table 29 (p. 67) lists the strengths of the component regiments and other units of the 13th Div as of 31 August, just prior to the enemy offensive. In addition, data are given on numbers of troops "in action."

It is seen that the bulk of the personnel of the infantry regiments are in the "in action" status but that Division Headquarters and all the special units are not so designated. If the "in action" figures are what they seem, then these are very interesting data. For one thing, they would show that here on the enemy side, as in the entire 1st Cav Div, all component regiments were on the line with none in reserve. Also of some interest is the number of unassigned troops. To judge by these statistics, the Major from the Headquarters of the 19th Regt grossly overestimated the strength of his own regiment and of the 13th Div as a whole (ATIS-895, Appendix A).

Table 30 (p. 68) gives the analogous accounting of the strength of the 13th Div as of 11 September. If non-assigned personnel are subtracted from the respective totals in Tables 29 and 30, it is seen that despite combat the strength of the 13th Div increased from 4,612 on 31 August to 5,093 on 11 September. The increase from the non-assigned personnel on these respective dates from 314 to 1,029 is a clear indication of the rate at which replacements were supplied. Of incidental interest is the divisional T/O figure of 11,792 in Table 30. The accepted strength figure used by G-2 was 10,900 men (see Table 29). The extent to which the divisional strength was short of the T/O figure on 11 September has been calculated by the enemy. When this computation is made for 31 August, it is seen that the 13th Div began its offensive against the

1st Cav Div at only 42 percent of its standard strength.

The number and disposition of replacements is also explicitly given by enemy statistics found in the possession of the same senior officer. These data appear in Table 31 (p. 69). It is noteworthy that replacements consisted of South Korean conscripts as well as of troops from North Korea. In this respect, the 13th Div was the same as the 3d (Appendix B), as might be expected. It appears that the replacements that arrived on 31 August were not counted in the strength report of 31 August (Table 29) since this report lists only 314 unassigned personnel in the division as a whole on this date, whereas there were 731 unassigned fresh replacements (Table 31) on 31 August. If this is so, it is interesting to note that the regiment which was most nearly up to strength, the 19th, received the most replacements, while the 23d and 21st Regts received replacements roughly in proportion to their strengths. On 1 September the 19th Regt then had an augmented strength of 1,516, or about half of T/O strength; the 23d Regt, 977; and the 21st Regt, only 583. If the interpretation is correct that the 19th and 23d Regts were being filled out to bear the brunt of the assault, one would expect to find them predominating in the reports of the combat on the succeeding days. Reference to Table 27 shows that this is indeed the case. By 11 September the 19th Regt is reported in contact on six days, the 23d Regt on three days, and the 21st Regt not at all.

The strength and replacement data of Tables 29 and 31 permit the estimation of the maximum strength of the 13th Div on 2 September for comparison with the current G-2 estimate (Table 30). If it is assumed that the enemy suffered no casualties on 31 August or on 1 and 2 September, then the addition of the number of replacements on 31 August and 2 September to the strength on 31 August gives the figure 7,511. This fictitious strength, the maximum possible, shows that the G-2 estimate of 6,840 was very accurate. By 11 September, however, enemy casualties were evidently much greater than estimated, and now the G-2 estimate is considerably too high.

This point is further borne out by the testimony of the North Korean senior colonel on whom the statistics analyzed herein were found. In his interrogation (ATIS-1293, Appendix A) he stated that by 20 September the strength of the 13th Div had fallen to 3,500 troops, but the G-2 estimate as of 182400 September was maintained at 9,834 men. The colonel's statement as to the extent of the depletion of the 13th Div after 11 September is supported by the testimony of two other prisoners. Whereas the

11 September statistics give the 19th Regt a strength of 1,024, a sergeant captured around 14 September reports the 11-14 September strength of the 19th Regt as about 700 (ATIS-1193, Appendix A). And, whereas the 11 September statistics give the 23d Regt a strength of 751, a private captured on 23 September reports the last known strength of the 23d Regt as approximately 300 men (ATIS-1465, Appendix A).

Statements of prisoners from the 3d North Korean Div also show that by mid-September the current G-2 estimate was much too high. A private captured 18 September estimated the strength of the 3d Div as of 15 September to be 2,000 men (ATIS-1264, Appendix A), whereas the current G-2 estimate for the 3d Div as of 132400 September, was 7,333 men (Table 28). Other prisoners from the 3d Div reporting on their own units indicate that by mid-September the 3d North Korean Div was depleted to much the same extent as the 13th. Thus, a sergeant captured on 23 September estimated the 10 September strength of the 9th Regt as 600 (ATIS-1467, Appendix A), and a private captured on 14 September estimated the 14 September strength of the 9th Regt as 500 men (ATIS-1191, Appendix A).

Enemy Casualties

From the enemy statistics on strengths and replacements, it is possible to compute a close approximation of the actual casualties sustained by the 13th North Korean Div in the first part of September. This computation is outlined in Table 32 (p. 70) for the division as a whole and for its component regiments. The chief uncertainty is the lack of information on replacements during 9-11 September. A South Korean conscriptee who was taken prisoner stated that he was one of approximately 2,000 conscriptees from the Wonju area who arrived at a mountain about 18 km north of Taegu on or about 10 September for the 13th Div (ATIS-1216, Appendix A).

The last group of South Korean replacements for the NKPA arrived on 31 August, according to Table 31, the NKPA listing of replacements. In this table the last entry is for 8 September. The Wonju replacements could have joined the division after 8 September and could have been reckoned in the strength figures of 11 September, though this appears unlikely. A second uncertainty has already been discussed and dismissed. This is whether the replacements of 31 August should be added to the strength figures of 31 August. The final bit of information that argues that the net casualty figures of Table 32 are on the low side is the personnel

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balance of the 21st Regt. This unit had a few more troops on 11 September than accountable by the available replacement data.

Casualty rates for each regiment and for the division as a whole have been computed from the net casualties and from the strengths on 31 August and 11 September. As previously deduced from Table 27, the highest rate would be expected for the 19th Regt, a lower rate for the 23d Regt, and a zero rate for the 21st Regt. This is indeed the result.

The casualties which have been considered are, of course, gross casualties. Non-battle casualties are necessarily included. But the North Korean rates are so high that the contribution of non-battle causes is minimized.

Since the depletion of the strengths of the 8th and 9th Regts of the 3d North Korean Div appear to be similar to the losses of the 13th Div, it is likely that the casualty rates for the 3d Div are of the same order of magnitude as found for the 13th.

Enemy Weapons

Table 33 (p. 71) is an undated enemy document which lists losses of personnel and equipment. It was found on the body of an enemy officer who was killed when Co B, 7th Cav Regt, knocked out a machine gun nest on 3 September. It undoubtedly refers to the 13th North Korean Div and probably to either the 19th or 23d Regt. From the composition of the "Original" listings of personnel and weapons (which may be compared with the standard regimental strength and T/E in Table 35) it appears certain that this unit was an infantry battalion and that the "Original" listings are the standard battalion T/E.

It also seems likely that the document was prepared around 31 August during the preparations for the offensive. If these deductions are correct, it is evident that this battalion went into combat with a greatly reduced number of weapons. This is shown in Table 33 by the column of ratios, as percents, of "Present" to "Original" numbers. But the battalion was not short of weapons. It had only 21 percent of its full strength of troops and 21 percent of its full quota of rifles, or still one for every man who ordinarily would have one. And in proportion to its reduced strength the battalion was rather richer than normal in other weapons.

If the common denominator of friendly and enemy military potential is manpower, it is clear that emphasis should be placed not on the number of enemy weapons lost but on the remaining number in proportion to the troops who can use them. This comparison may be made from enemy source material. Table 34 (p. 72)

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appears to be an authoritative census of the weapons possessed on 11 September by the 13th North Korean Div and its component units. Enemy data on the strengths of these units on this same date have already been presented in Table 30. The quantity of each weapon in the standard divisional and regimental T/Es, according to the consensus of best estimates published by G-2 in September 1950, is given in Table 35 (p. 73). For each weapon, the regimental and divisional entries in Table 34 are divided by these T/Es and the resulting ratios reported as percentages. For example, the 19th Regt possessed 544 rifles, or 34.3 percent of the standard number of rifles for a North Korean division. But instead of the standard strength of 10,970, the 19th Regt had a total of only 1,024 men, or 36.4 percent of full strength. Therefore, in proportion to its reduced strength, the 19th Regt had 34.3/36.4, or 94 percent, of the normal number of rifles per man. The numbers of weapons in terms of a T/E reduced in proportion to present strength are listed under "Percent of Proportionate T/E."

There are some striking results in Table 35. From the numbers in the T/E columns it is seen that the sum of rifles (and carbines), pistols, and submachine guns is almost as great as the total strength. Almost everybody originally had a personal weapon, and over one-quarter of these personal weapons were submachine guns. Rifles disappeared, but at a lower rate than men who disappeared (unarmed replacements were instructed to pick up weapons from casualties), pistols disappeared at a rather greater rate than personnel, but submachine guns vanished out of all proportion to casualties. The famous "burp gun" may possibly not have been highly rated by enemy troops.

Table 30 shows that on 11 September the 13th Div had a total of 6,122 men, of whom 1,029 were unassigned replacements. For the 5,093 men assigned to units, there was a total of 4,013 personal weapons — rifles, carbines, pistols, submachine guns. When this calculation is made for the 19th and 23d Regts together, the result is 1,686 personal weapons for 1,775 men. It appears likely that every front line soldier in combat at this time was armed.

In light and heavy machine guns the 19th and 23d Regts had only about half the normal number per man. In mortars in general, however, these two regiments had about 90 percent of the normal number per man. In 76-mm and 122-mm artillery, the 13th Div at this time had about 90 percent of the proper number for its strength.

An additional indication of the extent of loss of heavy weapons

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is afforded by the testimony of the colonel from the 13th Div (ATIS-1293, Appendix A). He stated that of 16 self-propelled guns originally possessed by the SPC Bn of the 13th Div only two were left on 20 September. Table 34 shows that the number had been reduced to two by 11 September.

Another check on the depletion of heavy weapons may be made by comparing the list of those the 13th Div had on 11 September (Table 34) with the numbers it possessed on 31 August as stated by a prisoner, a major on the staff of the 19th Regt, captured on 1 September (ATIS-894, Appendix A). According to his testimony, the 19th Regt on 31 August possessed four 82-mm mortars, six 120-mm mortars, twelve 45-mm antitank guns and four 76-mm howitzers. Precisely these numbers of these weapons and no additional heavy ordnance are listed in Table 34 as still in the possession of the regiment on 11 September. Although the 19th Regt was heavily engaged, evidently none of these weapons was knocked out. The prisoner's statements also check the armament of the divisional artillery. He credits it with ten 76-mm guns and ten 122-mm howitzers on 31 August. Table 34 gives the divisional artillery eight 76-mm guns and nine 122-mm howitzers. The prisoner's statements about the 23d and 21st Regts are not detailed and are less reliable.

Within the 3d Div a listing of the weapons possessed by the 9th Regt on 19 September is available from the statements of a sergeant of the 9th Regt (ATIS-1508, Appendix A). His listing may be compared with that of the armament of the 19th Regt of the 13th Div on 11 September given in Table 34. At these different dates both regiments had about the same numbers of submachine guns and 76-mm artillery pieces and the same total of mortars, but the 9th Regt had more 45-mm antitank guns and far more light and heavy machine guns. Counterbalancing the impression that in weapons the 3d Div was better off than the 13th are several other prisoner of war reports on the 3d Div.

A private captured on 7 September stated that the 8th Regt lost most of its artillery and heavy mortars when it retreated from Waegwan on 3 September; only two 82-mm mortars were seen in the 8th Regt after 3 September (ATIS-1048, Appendix A).

A private of the 9th Regt captured on 14 September seems to have said that only 30 percent of the men were armed, and these with M-1891/30 and US Army carbines and rifles; the remaining unarmed troops were instructed to pick up weapons and ammunition from casualties (ATIS-1191, Appendix A). Confirming this testimony is the statement by a sergeant of the 9th Regt captured

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on 23 September that morale was low because of lack of weapons (ATIS-1467, Appendix A).

Enemy Ammunition

According to enemy notes of a meeting on 30 August at which the offensive against the 1st Cav Div was planned (Appendix D) each private was to be issued 226 rounds, and the artillery ammunition was to be allocated in assigned ratios. The opening artillery barrage scheduled for 1800 hours, 2 September, was to last 15 minutes. A major of the 19th Regt, 13th Div, who surrendered on 1 September stated that in preparation for the offensive each man had been issued 300 rounds and each regimental artillery piece 120 rounds. The standard unit of fire for each artillery piece was 60 rounds, and up to this time his regiment had never been short of ammunition (ATIS-895, Appendix A). A private of the 8th Regt, 3d Div, captured on 5 September, said that on or about 2 September he visited an ammunition dump which consisted mostly of 82-mm and 120-mm mortar shells (ATIS-971, Appendix A).

Another private of the 8th Regt, 3d Div, captured on 7 September, stated that up until 7 September each rifle company received about 6,000 rounds of small arms ammunition daily and that this supply was sufficient (ATIS-1048, Appendix A). By 14 September, however, troops of the 9th Regt, 3d Div, were very short of both personal weapons and ammunition, and those lacking were told to pick up both from casualties. The statement was made by a private captured on 14 September (ATIS-1191, Appendix A).

The senior colonel from the 13 Div, captured on 21 September and already referred to previously, stated that as of this date the 13th Div had only about 200-250 rounds of artillery shell but possessed a sizeable amount of small arms ammunition and a fair amount of antitank ammunition; there was definitely a shortage of artillery ammunition (ATIS-1293, Appendix A). His statements are borne out by an enemy document of one of the regiments of the 13th Div. This is the ammunition report of the 21st Regt for 20 September. It is presented as Table 36 (p. 74).

The number of the corresponding weapons which the 21st Regt possessed on 11 September has been transcribed from Table 34. In the case of the machine guns the rather large number of rounds remaining by 20 September is in inverse relation to the number of weapons to use them. Since the 21st Regt was not heavily engaged, one may suppose that these rounds were not desperately needed by the regiments in action. In the case of the mortars,

however, there were practically no weapons on 11 September and very little ammunition by 20 September. Several possibilities can be imagined to account for this situation.

Table 37 (p. 74) is an enemy document which appears to be an accounting of ammunition of all types in the 13th Div at some time before 21 September. Throughout, the entries appear to be on a per weapon basis. The figures of the "Present," "Bn Supply," and "Regt Supply" columns have been totalled. It is seen that in many cases this sum coincides with the entry in the first column, which is headed "T/Rds"; in the other cases the values are comparable. Either the bookkeeping may be faulty, and "T/Rds" represents total current rounds available per weapon or else "T/Rds" is the standard unit of fire. As noted before, at the start of the offensive the infantryman was issued 226 or 300 rounds of small arms ammunition.

Compare this with the 100 rounds per rifle in Table 37. Also, the standard unit of fire was said to be 60 rounds, increased to 120 rounds at the start of the offensive. Compare this with the 80 rounds per 122-mm howitzer and 140 rounds per 76-mm gun in Table 37. No matter which interpretation is accepted, the data of Table 37 support a very significant point: at the time represented, the 13th Div was not very short in any type of ammunition. Since some of the other documents found on the person of the colonel were compiled on 11 September, it may be that Table 37 also represents that date.

A consistent interpretation of the various data for the 13th Div is as follows: through 11 September there was an adequate supply of all types of ammunition; from 11-20 September mortar and especially artillery ammunition ran short but there was still sufficient small arms ammunition.

TABLE 27

UNITS IN CONTACT IN 1ST CAV DIV SECTOR

(As shown in situation maps, Daily Intelligence Summaries, G-2, GHQ, FEC)

Date ^a Sep	North Korean Regiments in Contact, US Regimental Sectors, South to Northeast		
	5th Cav Regt	7th Cav Regt	8th Cav Regt
1			
2			
3		19 23	1
4			
5	9	7 19 23	
6	9	19	
7		8 19 23	1
8			1
9		19	3
10		19	3
11		9	1 3
12		1 ^c	3
13	9		
14	9	8	
15		8 19	
16	9	8	1
17			
18	9 8 ^b		3
19			
20			
21			
22			
23			

3d Div, NKPA: 9 8 7 (in this order, west to east,
 13th Div, NKPA: 19 21 23 ATIS-1048, Appendix A)
 1st Div, NKPA: 1 other regts.

^aDuring the period covered, the 21st Regt, 13th Div, NKPA, is shown in reserve on the maps.
^bAdded after ATIS 1264 (See Appendix A)
^cOn 12 Sep the 7th Cav Regt was redeployed to the east of the 8th Cav Regt.

TABLE 28
G-2 ESTIMATES OF NORTH KOREAN DIVISION STRENGTHS

Summary Number ^a	Date for Estimate	G-2 Estimates, Adjusted Present Strengths			Enemy Documents, ^b 13th Div
		3d Div	1st Div	13th Div	
2920	31 Aug	4,300 ^c	---	---	4,926
2916	2 Sep	5,000	---	6,840	< 7,511 ^d
2920	051600 Sep	4,307	---	6,144	---
2921	7 Sep	5,417	7,839	8,851	---
2922	8 Sep	5,110	7,659	8,539	---
2923	9 Sep	8,192	9,567	10,400	---
2924	092400 Sep	7,253	9,001	9,670	---
---	11 Sep	---	---	---	6,122
2928	132400 Sep	7,333	8,637	9,551	---
2933	182400 Sep	7,630	9,426	9,834	---

^aDaily Intelligence Summary, G-2, GHQ, FEC.

^bTables 29, 30, 31.

^cSee Appendix B.

^dFor this calculation it is assumed there were no casualties on 31 Aug and 1 and 2 Sep.

TABLE 29
ENEMY DOCUMENT:
"TABLE OF ORGANIZATION" OF 13TH NORTH KOREAN DIV
AS OF 31 AUG 1950 AND ACTUAL STRENGTH
OF ITS COMPONENT REGIMENTS ON THIS DATE^a

Unit	Pvts	NCOs	Officers	Total
Div Hq	267	63	93	423
19th Regt	806 (694) ^b	161	90 (66) ^b	1,057 (878) ^b
21st Regt	382 (230)	51	53 (25)	486 (305)
23d Regt	535 (521)	163	71 (71)	769 (751)
13th Arty Regt	492	204	89	785
Tng Bn	135	23	12	170
Signal Bn	150	46	24	220
Eng Bn	132	35	21	188
AT Bn	110	74	22	206
SPG Bn	18	29	14	61
Medics	46	47	20	113
Recon Co	63	16	2	81
Trans Co	30	16	7	53
Unassigned	314	---	---	314
Total	3,480	928	518	4,926
Total (In Action)	(1,445)	(327)	(162)	(1,934)

^aDocument one loose sheet, handwritten, carried on person of Sr Col Lee Hak Ku, C/S 13th Div, NKPA, who surrendered to US Forces at 1153.3-1454.3 on 21 Sep 1950. For the report of the interrogation of this officer see ATIS-1293, Table 28.

^bAll parentheses quoted from original document. These figures for troops in action presumably also represent the date 31 August. Note that columns are totalled as indicated with totals of entries in parentheses given in parentheses.


TABLE 30

ENEMY DOCUMENT:
"TABLE OF ORGANIZATION" OF 13TH NORTH KOREAN DIV
AS OF 11 SEP 1950 SHOWING ACTUAL STRENGTHS
OF OFFICERS AND MEN ON THIS DATE^a

Unit	Pvts	NCOs	Officers	Total
Hqs	267	63	93	423
19th Regt	846	148	30	1,024
21st Regt	439	131	53	623
23d Regt	521	159	71	751
13th Arty Regt	739	205	71	1,015
Tng Bn	113	21	11	145
Signal Bn	146	48	23	217
Eng Bn	266	33	19	318
AT Bn	174	74	20	268
SPG Bn	23	27	16	66
Medics	51	42	20	113
Recon Co	59	11	2	72
Trans Co	29	22	7	58
Unassigned	<u>1,021</u>	<u>8</u>	<u>---</u>	<u>1,029</u>
T/O	7,777	2,954	1,061	11,792
Present ^b	<u>4,694</u>	<u>992</u>	<u>436</u>	<u>6,122</u>
Short	3,083	1,962	625	5,670

^aDocument (dtd 11 Sep 1950) one loose sheet, handwritten, carried on person of Sr Col Lee Hak Ku, C/S 13th Div, NKPA, who surrendered to US Forces at 1153.3-1454.3 on 21 Sep 1950. Note the differences between this table and the similar listing for 31 Aug (Table 29).

^bThe horizontal line marked "Present" rather than the line marked "T/O" gives the totals of the columns above.


TABLE 31
ENEMY DOCUMENT:
RECEIVING AND ASSIGNING OF REPLACEMENTS
IN THE 13TH NORTH KOREAN DIVISION^a
 (Document Undated)

DATE: PLACE: FROM: TOTAL: ^b	23 Aug ANGAE	-- SANGJU	31 Aug UISONG	2 Sep KUNWI	6 Sep KUNWI	8 Sep SANGJU
	NK	SK	SK	NK	NK	NK
	961	319	2,271	314	219	163
Hq	20	100	27	--	--	--
19th Regt	309	--	459	200	--	--
21st Regt	245	--	97	--	--	--
23d Regt	245	--	208	114	--	--
13th Arty	--	--	301	--	--	--
Tng Bn	--	128	250	--	--	--
Signal Bn	--	--	--	--	50	--
Eng Bn	140	50	--	--	--	--
AT Bn	--	31	190	--	--	--
Medics	--	10	8	--	--	--
Total ^c						
Assigned	959	319	1,540	314	50	0
Unassigned ^d	2	0	731	0	169	163

^aDocument one loose sheet, handwritten, carried on person of Sr Col Lee Hak Ku, C/S 13th Div, NKPA, who surrendered to US Forces at 1153.3-1454.3 on 21 Sep 1950.

^bTotal Replacements Received: 4,247.

^cThese entries have been added by present author by subtraction of unit totals from number of replacements received by the division.

^dThe total number of unassigned replacements derived from the enemy's figures is 1,065. This value does not quite agree with the stated total of 979.



TABLE 32
MINIMUM CASUALTIES IN THE 13TH NORTH KOREAN DIVISION
 31 Aug-11 Sep 1950

Date	Source, Table	Regiments of 13th NK Division			Entire 13th NK Division ^c
		19th	23d	21st	
Strength on:					
31 Aug	29	1,057	769	486	4,926
Replacements:					
31 Aug	31	459	208	97	2,271
2 Sep	31	200	114	--	314
6 Sep	31	--	--	--	219
8 Sep	31	--	--	--	163
9-11 Sep	31	?	?	?	?
Total		1,716	1,091	583	7,893
Strength on:					
11 Sep	28	1,024	751	623	6,122
Casualties:					
1-10 Sep ^a		> 692	> 340	> -40	> 1,771
Average Strength:					
1-11 Sep		1,040	760	554	5,524
Casualty Rate, ^b %/Day, in Period					
1-10 Sep		> 6.7	> 4.5	> 0	> 3.2

^aIt is assumed that casualties occurring on 11 September would not affect the strength figures compiled on 11 September.

^bCasualty Rate = $\frac{\text{Total Casualties}}{\text{Average Strength} \times \text{Number of Days}}$

^cFor strengths of other component units see Table 29.





TABLE 33
 ENEMY DOCUMENT:
 NUMBER AND TYPES OF CASUALTIES AND NUMBER
 OF VARIOUS WEAPONS LOST IN AN UNKNOWN UNIT OF THE
 13TH NORTH KOREAN DIVISION BY EARLY SEPTEMBER^a

Strengths and Casualties	Pvts	NCOs	Officers	Total	$100 \times \frac{\text{"Present"}}{\text{"Original"}} = \%^b$
Original	416	153	37	606	
KIA	66	31	15	112	
WIA	193	63	12	268	
MIA	81	22	--	103	
Present	90	30	6	126	21

Weapons	Original	Present	$100 \times \frac{\text{"Present"}}{\text{"Original"}} = \%^b$
Rifle	345	72	21
LMG	36	8	25
PPSH (SMG) ^c	91	23	25
HMG	18	5	28
Carbine	61	18	30
AT Rifle	9	1	11
Mortar (82-mm?) ^c	9	3	33
45-mm Gun	2	1	50
Pistol	39	15	38
Signal Gun	14	1	7
Sniper's Rifle	11	0	0

^aDocument taken from enemy dead at 1141.3-1459.8 by Co G, 7th Cav Regt on 3 Sep 1950. There is some discrepancy between the total casualties and the difference between the "Original" and "Present" figures.

^bThis column has been added by present author.

^cItems in parentheses added by present author.



TABLE 34

ENEMY DOCUMENT:
ACTUAL NUMBERS OF VARIOUS WEAPONS POSSESSED
BY UNITS OF THE 13TH NORTH KOREAN DIV 11 SEP 1950^a

Document states "These statistics were made as of 11 September 1950."

Weapon	Hqs	19th Regt	21st Regt	23d Regt	13th Arty Regt	Tng Bn	Sig Bn	Eng Bn	AT Gun Bn	SMG Bn	Medics	Recon Co	Trans Co	Present
Pistol	85	85	58	69	63	5	17	18	6	14	7	4	7	438
Rifle	129	544	445	677	71	90	160	68	70	23	62	--	29	2,368
Carbine	--	189	147	122	655	--	--	91	--	--	--	--	3	1,207
SMG	--	37	27	2	--	33	58	--	--	--	--	76	--	271(233?) ^b
LMG	--	13	7	15	--	4	--	--	--	8	--	--	--	41(47?)
HMG	--	12	5	6	--	2	--	--	--	2	--	--	--	25(29?)
AT Rifle	--	2	--	12	--	6	--	--	34	--	--	--	--	62(54?)
AAA MG	2	2	3	5	--	--	--	--	--	--	--	--	--	14(12?)
Very Pistol	--	10	2	6	--	2	4	4	2	1	--	--	--	29(31?)
Sniper Gun	--	5	--	10	--	--	--	--	--	--	--	--	--	15
45-mm(AT Gun) ^b	--	4	4	5	--	--	--	--	11	--	--	--	--	24
82-mm(Mortar)	--	4	2	6	--	2	--	--	--	--	--	--	--	14
120-mm(Mortar)	--	6	1	2	--	--	--	--	--	--	--	--	--	9

Weapon	19th Regt	23d Regt	13th Arty	SPG Bn	Total
76-mm Regt Arty (Piece?) ^b	4	1	--	--	5
76-mm Div Arty (Piece?)	--	--	8	--	8
76-mm SPG	--	--	--	2	2
122-mm Howitzer	--	--	9	--	9

^aDocument one loose sheet, handwritten, carried on person of Sr Col Lee Hak Ku, C/S 13th Div, NKPA, who surrendered to US Forces at 1153.3-1454.3 on 21 Sep 1950. For several of the weapons there are discrepancies between the total for all the units and the "Present" figures. Note that the 21st Regt is not represented in the accounting of the heavy weapons, presumably had none.

^bEntries in parentheses added by present author.

TABLE 35

RETENTION OF WEAPONS IN THE 19TH NORTH KOREAN DIVISION AND ITS REGIMENTS BY 11 SEP 1950
 REMAINING NUMBERS AS PERCENT OF STANDARD T/E AND AS PERCENT OF T/E SCALED DOWN
 IN PROPORTION TO PRESENT STRENGTHS
 (Numbers of weapons from Table 34, strengths from Table 30)

Weapon	Standard T/E ^a		Standard T/E, % ^b			Proportionate T/E, % ^b				
	Division	Regiment	Entire Division	Regiment		Entire Division	Regiment			
				19th	23d		21st	19th	23d	21st
Rifle (or carbine)	6,089	1,586	38.9	34.3	42.7	28.1	70	94	160	127
Submachine Gun	3,198	764	7.3 ^c	4.8	0.3	3.5	13	13	1	16
Pistol	1,298	347	33.7	24.5	19.9	16.7	60	67	74	75
Light Machine Gun	385	118	12.2 ^c	11.0	12.7	5.9	22	30	48	27
Heavy Machine Gun	162	54	17.9 ^c	22.2	11.1	9.3	32	61	42	42
Antitank Rifle, 14.5-mm	66	18	81.9 ^c	11.1	66.6	0.0	146	31	250	0
Antitank Gun, 45-mm	54	12	44.5	33.3	41.6	33.3	80	92	156	150
Mortar, 82-mm	81	27	17.3	14.8	22.2	7.4	31	41	83	33
Mortar, 120-mm	18	6	50	100	33.3	16.7	89	275	125	75
AA Machine Gun, 12.7-mm	24	6	50	33.3	83.4	50	89	92	312	23
Gun, 76-mm (all types)	30	4	50	100	25	0	89	275	94	0
Gun, Howitzer, 122-mm	18	0	50	--	--	--	89	--	--	--
Number of Men:	10,970	2,815	6,122	1,024	751	623				

^aG-2 estimates as of September 1950.

^bExample: 19th Regt had 544 rifles, or 34.3 percent of standard regimental T/E of 1,586. But strength is only 1,024, or 36.4 percent of standard regimental T/O of 2,815. Therefore, for a T/E in proportion to its present strength the 19th Regt retained 34.3/36.4 or 94 percent of its normal quota of rifles.

^cBased on total of units in Table 34 rather than "Present" figures.

TABLE 36
ENEMY DOCUMENT:
SUPPLY OF AMMUNITION IN A NORTH KOREAN REGIMENT
AT TIME OF UN BREAKOUT^a

Ammunition Report, 21st Regt, NKPA, dated 20 Sep 1950
 (Exact translation)

Ammunition	Ammunition on Hand as of 20 Sep 1950	11 Sep, Table 34 ^b	
		Weapons	Rounds/Gun
7.62-mm LMG	44,760	7	6,400
7.62-mm HMG	27,500	5	5,500
12.7-mm AA Gun	5,350	3	1,800
26-mm Signal Flare,			
white	43	2	22
blue	37	2	19
red	36	2	18
45-mm Gun	233	4	58
76-mm Regt Gun	200	0	--
82-mm Mortar	258	2	129
120-mm Mortar	8	1	8
Hand Grenades	2,200	-	--
Antitank Grenades	25	-	--

^aDocument one sheet, handwritten.

^bColumns added by present author to original document.

TABLE 37
ENEMY DOCUMENT:
TABLE OF ROUNDS FOR ENEMY WEAPONS, AMOUNTS ON HAND,
AND IN BATTALION AND REGIMENTAL SUPPLY^a

Weapon	Table of Rounds for Weapons (per Weapon?) ^b				Total Present + Supply
	T/Rds	Present	Bn Supply	Regt Supply	
Rifle	100	70	15	15	(100) ^b
LMG	800	98	490	212	(800)
HMG	2,500	1,500	500	45	(2,040)
SMG	300	210	45	2,000	(2,255)
AAMG	6,000	4,000	--	50	(4,050)
45-mm (Gun) ^b	200	50	100	68	(218)
76-mm (Gun)	140	16	56	30	(102)
50-mm	120	56	28	36	(120)
120-mm (Mortar)	80	20	30	30	(80)
AT Rifle	120	50	35	35	(120)
Hand Grenade (per man?)	2	2	--	--	(2)
AT Hand Grenade (per unit?)	500	250	125	125	(500)
122-mm (Howitzer)	80	12	32	36	(80)
82-mm (Mortar)	120	40	40	40	(120)

^aDocument one loose sheet handwritten, carried on person of SR Col Lee Hak Ku, C/S 13th Div, NKPA, who surrendered to US Forces at 1153.3-1454.3 on 21 Sep 1950. Document undated, refers to some time prior to 21 Sep.

^bEntries in parentheses added by present author.

[REDACTED]

COMPARISON OF FRIENDLY AND ENEMY STRENGTHS, CASUALTIES, AND CASUALTY RATES

SYNOPSIS

A rather clear-cut balance of opposing forces is afforded by the situation of the 7th Cav Regt versus the 13th North Korean Div during the period 1-10 September. At this time the enemy had almost exactly a 2:1 superiority in manpower. In absolute numbers there were four enemy casualties for every friendly casualty. But the enemy's casualty rate was only double the friendly rate. It should be noted that the casualty figures for both sides represent troops that ceased to be effective. Although it is not certain that each US battalion was matched against one North Korean regiment, a striking parallelism results if the casualty rates are compared in this way. For the two units in active combat on each side, the ratios of the enemy to friendly casualty rates are 2.9 and 2.5, respectively, and in the 3d unit in quasi-reserve on each side the casualty rate was close to zero.

For a comparison of friendly and enemy casualties throughout the sector of the 1st Cav Div, it is necessary to use the US estimate of enemy casualties for the entire sector. Using the enemy data for the 13th Div as a basis and assuming the same casualty rate in the other North Korean divisions opposing the 1st Cav Div, it is possible to compute a figure to check the US estimate. The result is a confirmation of the 1st Cav's estimate. Therefore, the estimated figures are used for a sector-wide analysis. The ratio of enemy missile casualties to friendly missile casualties has been computed in a number of different days. The ratios vary but no significant trend is evident, and the average ratio is about 4:1.

Four quantities which would appear to be sensitive to variation with a change in the tactical situation are: (1) enemy missile casualties; (2) friendly missile casualties; (3) enemy troops taken prisoner; and (4) friendly troops missing in action.

From a priori reasoning it might be expected that during a local



advance, for example, friendly missile casualties would be high; enemy missile casualties, low; enemy troops taken prisoner, relatively high; and friendly troops missing, low. During a retreat just the opposite might be expected. But, throughout, the resultant of all these factors might be expected to remain constant, that is, the quantity

$$\frac{(\text{Missile Casualties})_{\text{Enemy}}}{(\text{Missile Casualties})_{\text{Friendly}}} \times \frac{(\text{MIA})_{\text{Friendly}}}{(\text{PW})_{\text{Enemy}}} = K$$

Since the results are only slightly satisfactory, it appears that the basis of the computation is too narrow.

A more interesting comparison may be had among divisions. One of the reasons for being suspicious about estimates of enemy casualties made by the 2d and 25th Divs is that the figures are out of proportion to the 1st Cav's proven claims. But the other quantities, which are reliable, are also different. It is remarkable that when the four-factor quantity is computed, very comparable values are obtained for all divisions.

DATA

The enemy statistics on strengths and casualties which have been presented previously, may be compared with US statistics for the opposing Cavalry units. In the preceding section Table 27 showed that during the period 1-11 September the 13th North Korean Div and the 7th Cav Regt were almost exclusively each other's antagonist. Therefore, the statistical comparison presented in Table 38 (p.80) has been based on the period 1-10 September. The over-all data of Part A of the Table shows that in terms of absolute numbers North Korean casualties were about four times US casualties. But as the strength of the 13th North Korean Div was about double that of the 7th Cav Regt, the enemy casualty rate was only double that of the Cavalry.

It is relevant to note how the intensity of combat during the period 1-10 September compares with that during the rest of September. This is readily seen in Fig. 4, in the first section of the report, where cumulative daily casualties are plotted for each of the Cavalry regiments. Evidently the period 1-10 September for the 7th Cav Regt included none of the slack intervals characteristic of prolonged regimental commitment. The rate of increase of casualties in the 7th Cav Regt is typical of the periods of intense



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combat of all three Cavalry regiments.

Part B of Table 38 repeats the comparison of Part A for the component units of the 7th Cav Regt and the 13th North Korean Div. It has not been established that the 1st Bn (7th Cav Regt) was engaged with the 19th Regt (13th North Korean Div), or the 2d Bn (7th Cav Regt) with the 23d Regt (North Korean Div). If such is assumed to be true, however, the ratios of the enemy to friendly casualty rates are respectively 2.9 (1st Bn to 19th Regt) and 2.5 (2d Bn to 23d Regt). To complete a striking parallelism, the rates of the seemingly uninvolved 3d Bn (7th Cav Regt) and 21st Regt (13th North Korean Div) are both close to zero.

The apparent regularities among the enemy and friendly casualty data suggest similar analysis for the entire 1st Cav Div. For this, enemy data are not available. There are, however, three quantities assessed by friendly accounting that are unquestionably reliable. These are: friendly casualties from missiles, friendly MIA, and number of enemy taken prisoner. A fourth quantity is of greater importance, but the data are questionable. This quantity is the friendly estimate of enemy casualties. Table 39 (p. 81) gives a daily listing of the values of these four quantities.

In comparison with the claims of enemy casualties made by other divisions, those of the 1st Cav appear conservative. Data for this interdivisional comparison are given later. Also, the 1st Cav claims may be checked against the enemy data for the 13th North Korean Div during the period 1-10 September if it is assumed that the other divisions facing the 1st Cav, the 3d and 1st North Korean Divs, suffered the same casualty rate. This pro-rating of casualties in terms of strength is simple for the 3d Div, which was engaged almost exclusively with the 5th Cav Regt. The 1st North Korean Div was engaged with both the 8th Cav Regt and the ROKA. (One may object that during 1-10 September, the 5th Cav Regt's casualties and, therefore, the enemy's were lower than those in the 7th and 8th Cav Regts. This may well be so without materially affecting the calculation, since the 3d NK Div has a lower strength than the other NK divisions.)

For the present calculation it is arbitrarily assumed that half of its casualties were inflicted by the Cavalry. The necessary strength data are furnished by the G-2 estimates of Table 28. It is calculated that during the period in question the 3d North Korean Div had a strength 68 percent of that of the 13th Div and the 1st Div a strength of 91 percent of that of the 13th Div. The calculation is presented in Table 40 (p. 82). The result is remarkable,

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almost identical with the claims by the 1st Cav. Therefore, the estimated casualties are used for further analysis.

The cumulative daily values of the four quantities mentioned above and also of total casualties in the 1st Cav Div are plotted in Figs. 12 and 13 (p. 84). Smooth curves have been drawn through the plotted points.

In Fig. 12, enemy missile casualties appear to be roughly proportional to friendly missile casualties throughout the period covered. To the contrary, there is in Fig. 13 an inverse relationship between numbers of enemy troops taken prisoner and numbers of friendly troops missing. As pointed out previously, and as is evident, with one exception, these did not occur in a few incidents when whole groups surrendered. Rather there was a constant attrition, which suggests that some constant influences were involved. (Note: On 3 September, 20 men of Co F, 8th Cav Regt, were MIA.)

During the period covered, the general character of tactical situation underwent a continual change. This will be shown in the following section, where historical aspects are considered. For the present, it suffices to state that in the first period when the initiative was the enemy's, the North Korean Forces from a large number of attacks, and US Forces made a far smaller number of counterattacks. From 11 through 16 September, attacks and counterattacks were made in roughly equal number by both sides. From 17 September on the initiative was almost wholly that of US Forces; there were very few North Korean counterattacks.

It is reasonable to suppose that the number and nature of casualties on both sides would reflect the shift in tactical advantage. To test this point, casualty data should be expressed in terms of strengths as rates, but adequate daily strength data for the enemy are lacking. Therefore, the rates of increase of the absolute numbers of casualties in the several categories have been computed by measuring the slopes of the corresponding curves in Figs. 12 and 13. The resulting rates of increase are given in Table 41 (p. 82).

Column 6 of Table 41 gives the ratios of enemy missile casualties to friendly missile casualties. Column 7 gives the ratio of enemy prisoners to friendly MIA. It is difficult to detect a significant trend in either of these columns. In Column 8 the values of Column 6 have been divided by the corresponding values of Column 7. If the grossly exceptional values for 3 September are eliminated from consideration, it is seen that the quotients of Column 8 vary within closer relative extremes than those of either Column 6 or Column 7. The values of Column 8 are not greatly

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outraged by equating the quantity to a constant as if it represented a dynamic equilibrium:

$$\frac{(\text{Missile Casualties})_{\text{Enemy}} \times \text{MIA}_{\text{Friendly}}}{(\text{Missile Casualties})_{\text{Friendly}} \times \text{PW}_{\text{Enemy}}} = K$$

For a comparison of the casualty experience on the First Cavalry Division with the experience of other divisions defending the perimeter, data similar to that of Table 39 are given in Table 42 for the 2d Inf Div and in Table 43 for the 25th Inf Div (p. 83). Differences are immediately apparent. Whereas the 1st Cav estimated enemy casualties on the average to be five times friendly casualties, the 2d and 25th Divs made over-all estimates of about eleven enemy casualties for every friendly casualty. Furthermore, the round numbers of many of the estimates of enemy casualties made by the 2d and 25th Divs look like very rough guesses. In the other variables, which should be reliable, there are both regularities and unexpected variations.

Fig. 14 (p.85) gives cumulative daily plots of the MIA in the 2d Inf Div and of the prisoners that this division captured. The smoothness and general shapes of these curves are similar to those of the 1st Cav Div shown in Fig. 13. The curves of MIA and PW for the 25th Inf Div, shown in Fig. 15 (p. 86), are erratic and of different shape.

It is obviously unprofitable to seek constancies among the rates of change of the four variables for the 2d and 25th Inf Divs. Yet the over-all statistics may be related in the same way for all three divisions. To test this point, the September period has been divided into two parts for each of the divisions. For each interval the totals of the four variables - KIA+WIA(friendly), MIA, KIA+WIA(enemy), PW - have been derived from the statistics of Table 38, 39, or 40. These tables and the periods they represent are given in Table 44 (p.100). From them have been computed the values of the quantity:

$$\frac{(\text{KIA+WIA})_{\text{En}}}{(\text{KIA+WIA})_{\text{Fr}}} \times \frac{(\text{MIA})_{\text{Fr}}}{(\text{PW})_{\text{En}}}$$

These, too, are listed. For each of the divisions the value of the quantity is considerably lower for the latter period than for the earlier part of September. Among the divisions and for corresponding periods there is variation but it is not extreme. The values for the 1st Cav and 2d Inf Div are strikingly close. Yet the values from which they are derived are very different.



TABLE 38

COMPARISON OF STRENGTHS, CASUALTIES,
CASUALTY RATES OF OPPOSING FORCES,^a
7TH CAV REGT vs 13TH NORTH KOREAN DIVISION

Part A. Over-all Comparison

Quantity Compared	7th Cav Regt	13th Div, NKPA
Source of Data	US ^b	NK ^c
Casualties, 1-10 Sep	423 ^d	>1,771
Strength, 1 Sep, 31 Aug, resp.	2,710	4,926
Strength, 10 Sep, 11 Sep, resp.	2,888	6,112
Average Strength, 1-10 Sep	2,799	5,524
Casualty Rate, 1-10 Sep, %/day	<u>1.51</u>	<u>> 3.2</u>

^aSee Table 27. During 1-10 Sep the ROKA augmentation of cavalry units was a maximum of 15 percent, and neither the numbers of these ROKA troops nor their casualties are counted.

^bTables 4, 7 (plus strengths, HH, HM, SV, MD companies).

^cTable 32.

^dFor rate of increase, see Fig. 4.

Part B. Comparison by Component Units

Quantity Compared	7th Cav Regt ^a			13th North Korean Division ^b		
	1st Bn	2d Bn	3d Bn	19th Regt	23d Regt	21st Regt
Casualties, 1-10 Sep	156	129	25	> 692	>340	>-40
Strength, 1 Sep, 31 Aug, resp.	559	730	712	1,057	769	486
Strength, 10 Sep, 11 Sep, resp.	814	738	681	1,024	751	623
Average Strength, 1-10 Sep	686	734	696	1,040	760	554
Casualty Rate, 1-10 Sep, %/day	<u>2.3</u>	<u>1.8</u>	<u>0.4</u>	<u>>6.7</u>	<u>>4.5</u>	<u>>0.0</u>

^aBattalion casualty and strength data from Table 7.

^bTable 32.





TABLE 39
DAILY COMPARISON OF FRIENDLY AND ESTIMATED ENEMY
CASUALTIES IN 1ST CAVALRY SECTOR
 (US Data Entirely)

Date, Sep	1st Cav Div ^a				Enemy ^b		
	KIA + WIA	IIA ^c	MIA	Total	KIA + WIA ^d	PW	Total
1	44	1	2	47	60	1	61
2	81	3	1	85	370	2	372
3	141	15	35	191	715	1	716
4	170	28	17	215	515	4	519
5	120	14	18	152	425	7	432
6	93	14	9	116	345	11	356
7	84	9	7	100	720	6	726
8	82	11	2	95	300	9	309
9	39	8	1	48	195	7	202
10	89	17	3	109	266	6	272
11	152	15	5	172	356	4	360
12	128	7	3	138	395	6	401
13	102	12	2	116	909	7	916
14	94	10	4	108	470	3	473
15	133	4	19	156	760	22	782
16	104	12	8	124	620	11	631
17	136	17	1	154	--	18	--
18	113	14	7	133	695	6	701
19	197	14	0	211	710 ^d	4 ^d	714
20	110	6	3	119	2,315 ^d	26 ^d	2,341
21	44	3	0	47	--	--	--
22	35	1	1	37	--	--	--
23	13	2	1	16	--	--	--

^aData from Strength Accounting Branch, previously given as cumulative total in Table 4.

^bEstimates reported by 1st Cav Div and recorded in Eighth Army War Diary.

^cSIA + LIA.

^dNot reported in Eighth Army War Diary but given in Daily Intelligence Summary. In the 1st Cav Div War Diary these figures are reported simply as KIA.



TABLE 40
USE OF ENEMY DATA TO TEST CLAIMS
OF ENEMY CASUALTIES MADE BY
THE 1ST CAV DIV^a

Casualties	Total
Actual Casualties (NK data)	
13th NK Div	>1,771
Prorated Casualties	
3d NK Div $0.68 \times 1,771$	1,204
1st NK Div $\frac{0.91}{2} \times 1,771$	806
Total in 1st Cav Sector	>3,781
Total Casualties Claimed by 1st Cav Div	3,910

^aPeriod: 1-10 Sep 1950.

TABLE 41
COMPARATIVE RATES OF INCREASE OF FRIENDLY AND ENEMY
CASUALTIES IN SEVERAL CATEGORIES

Date, Sep	1st Cav Div/Day			Enemy/Day		Friendly Enemy Relationship		
	Col 1	Col 2	Col 3	Col 4	Col 5	Col 6	Col 7	Col 8
	Tot. Cas.	KIA + WIA ^a	MIA ^b	KIA + WIA ^c	PW ^b	Col 4/ Col 2	Col 5/ Col 3	Col 6/ Col 7
1	--	--	--	--	--	--	--	--
3	218	170	33	597	3.0	3.5	0.09	39
5	132	97	9.6	393	8.0	4.0	0.83	4.8
7	91	95	3.8	515	8.7	5.4	2.3	2.3
9	70	51	2.5	238	5.9	4.7	2.4	2.0
11	143	150	3.6	386	4.7	2.6	1.3	2.0
13	123	100	3.1	826	6.9	8.3	2.2	3.8
15	138	114	7.9	666	13.3	5.8	1.7	3.4
17	160	132	4.0	--	9.0	--	2.2	--
19	173	159	2.2	--	9.0	--	4.1	--
21	19	41	0.9	--	--	--	--	--

^aFrom slope of curve, Fig. 12.

^bFrom slopes of curves, Fig. 13.

^cActually the slope of total estimated casualties in Fig. 12, and the negligible contribution of the PWs is included.

TABLE 42

DAILY COMPARISON OF FRIENDLY AND ESTIMATED ENEMY CASUALTIES IN 2D INFANTRY SECTOR^a

Date, Sep	2d Inf Div ^b			Enemy ^c		
	KIA + WIA	MIA	Total	KIA + WIA	PW	Total
1	236	224	460	17	--	--
2	161	5	166	500	21	521
3	129	16	145	3,000	54	3,054
4	91	9	100	1,500	20	1,520
5	169	16	185	1,500	33	1,533
6	178	23	201	1,500	21	1,521
7	77	3	80	870	7	877
8	100	14	114	677	2	679
9	68	2	70	843	2	845
10	39	5	44	300	3	333
11	46	0	46	1,000	1	1,001
12	47	1	48	552	5	557
13	32	0	32	450	7	457
14	47	5	52	292	8	300
15	83	4	87	372	3	375
16	220	2	222	3,320	59	3,379
17	107	0	107	1,155	49	1,208
18	83	1	84	502	250	752
19	81	2	83	854	27	879
20	49	1	50	659	60	719

^aUS Data entirely.

^bNotice this total does not include SIA, LIA.

^cEstimates reported by 2d Division and recorded in Eighth Army War Diary.

TABLE 43

DAILY COMPARISON OF FRIENDLY AND ESTIMATED ENEMY CASUALTIES IN 25TH INFANTRY SECTOR^a

Date, Sep	25th Inf Div ^b			Enemy ^c		
	KIA + WIA	MIA	Total	KIA + WIA	PW	Total
1	167	7	174	3,000	47	3,047
2	172	9	181	1,500	21	1,521
3	77	3	80	2,000	43	2,043
4	72	1	73	--	34	--
5	52	2	54	531	29	560
6	56	1	57	831	28	859
7	43	14	57	630	33	713
8	40	1	41	150	25	175
9	36	2	38	500	24	524
10	12	3	15	153	15	168
11	22	2	24	480	18	498
12	18	0	18	430	27	457
13	13	1	14	283	8	291
14	34	15	49	300	4	304
15	50	2	52	300	3	303
16	53	1	54	360	50	410
17	51	6	57	120	9	129
18	107	6	113	--	7	--
19	98	1	99	320	4	324
20	87	3	90	420	6	426

^aUS Data entirely.

^bNotice this total does not include SIA, LIA.

^cEstimates reported by 25th Division and recorded in Eighth Army War Diary.

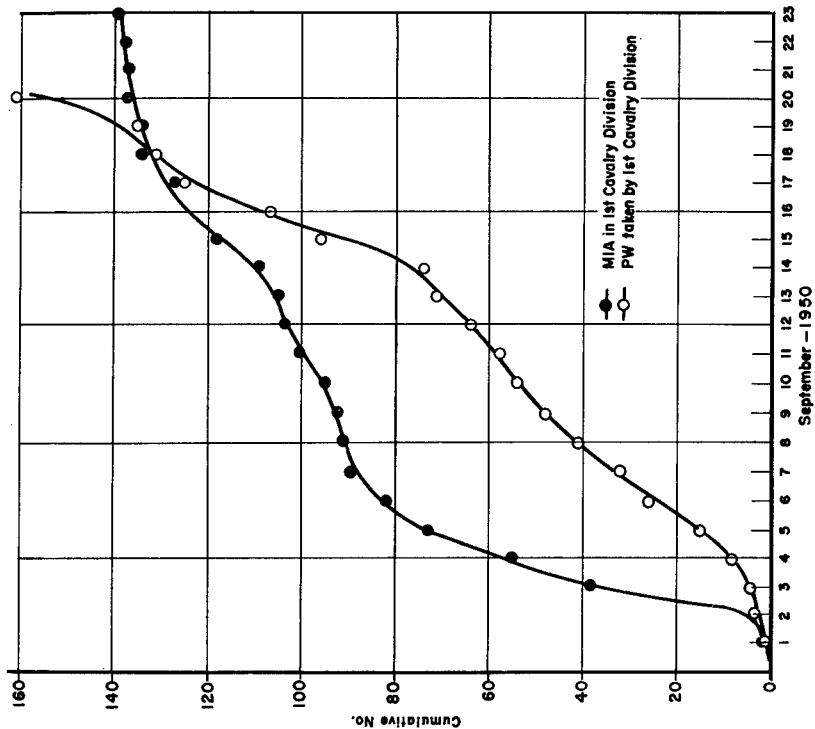


Fig. 13—Cumulative daily numbers of MIA in the 1st Cav Div and cumulative daily number of POW taken by 1st Cav Div.

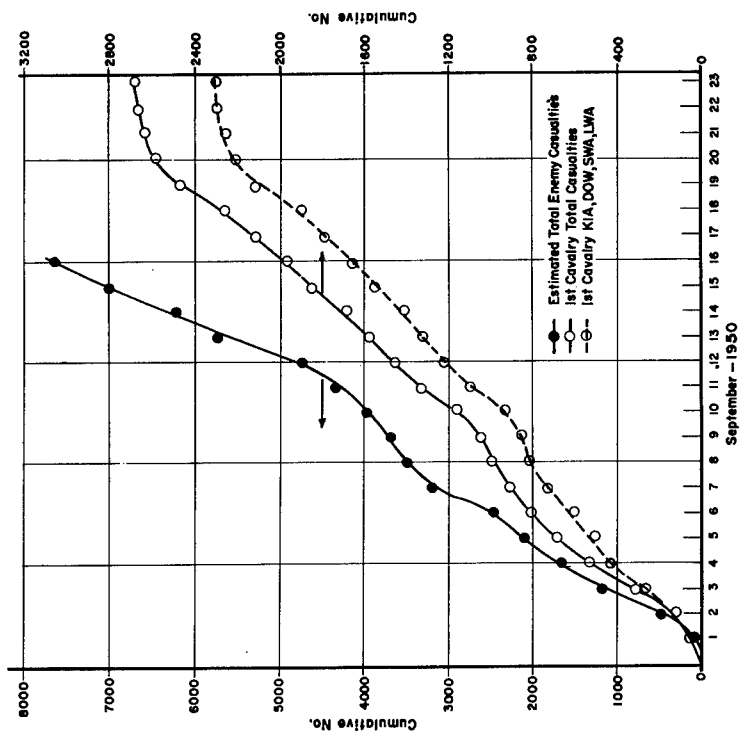


Fig. 12—Cumulative daily casualties in the 1st Cav Div and cumulative daily enemy casualties claimed by 1st Cav Div.

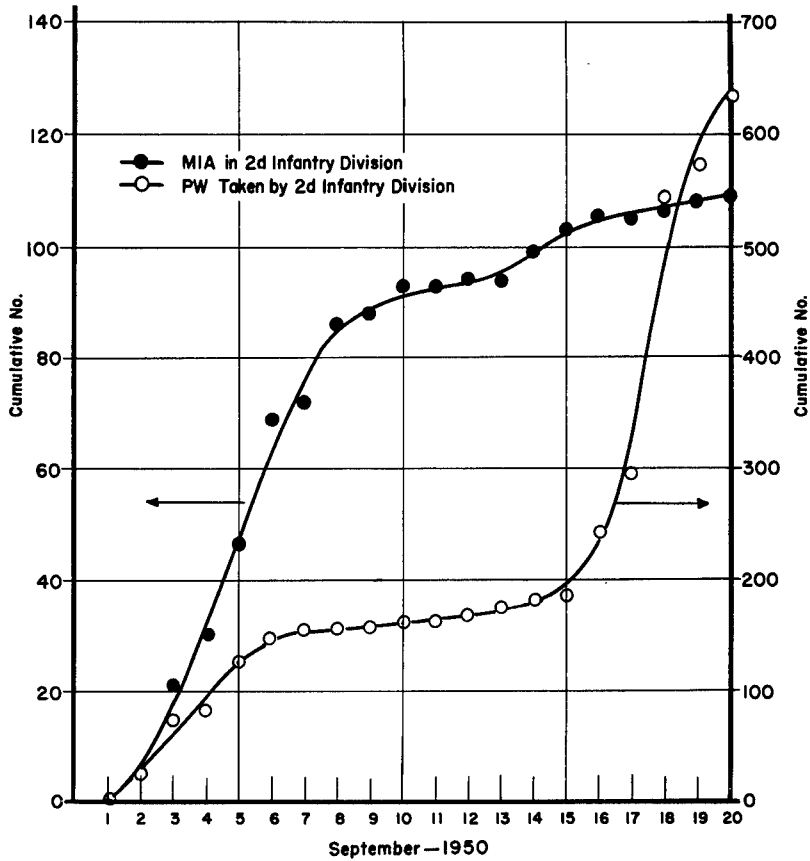


Fig. 14—Cumulative daily numbers of friendly MIA and enemy POW—
2d Inf Div and opposing North Korean Forces.

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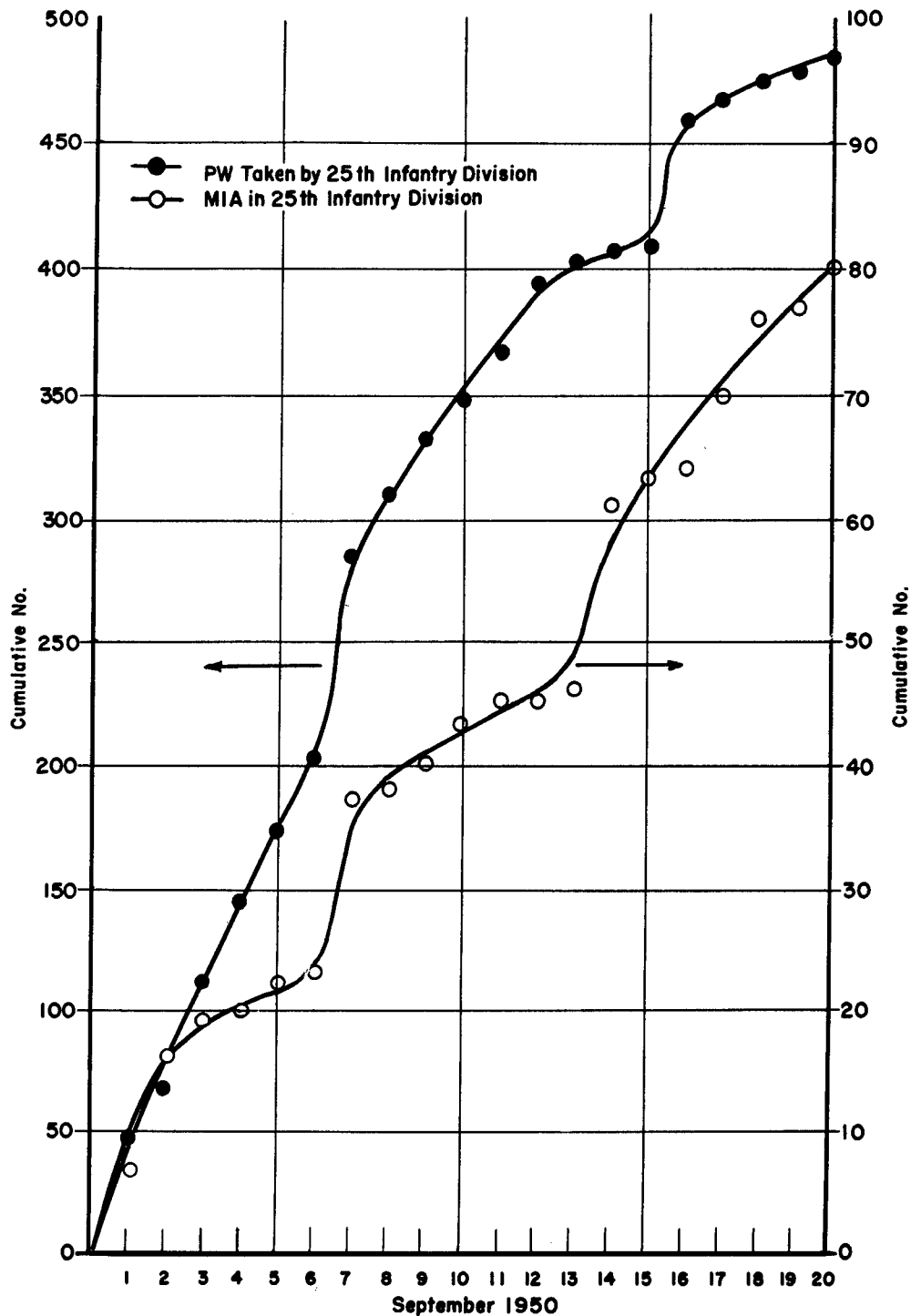
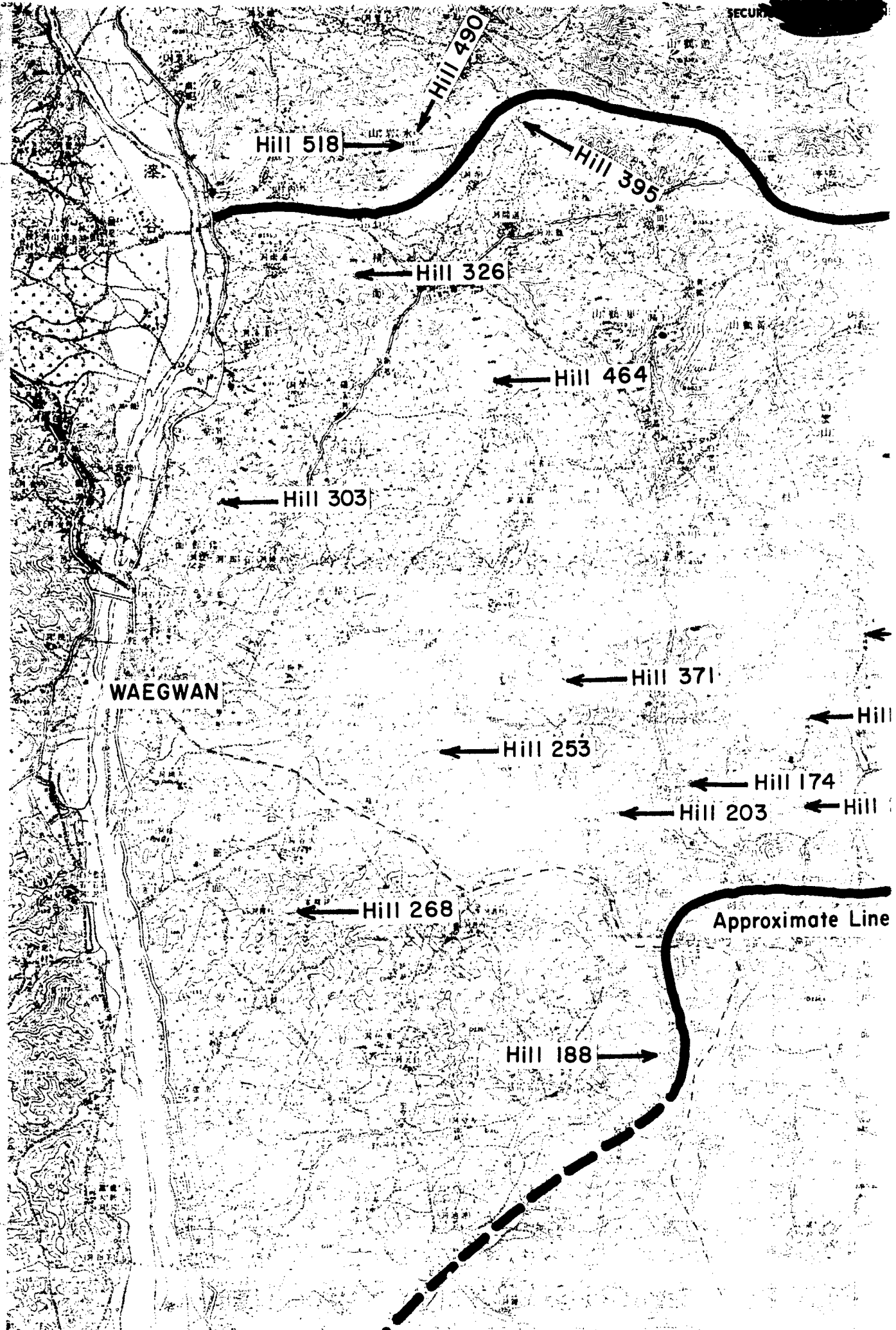


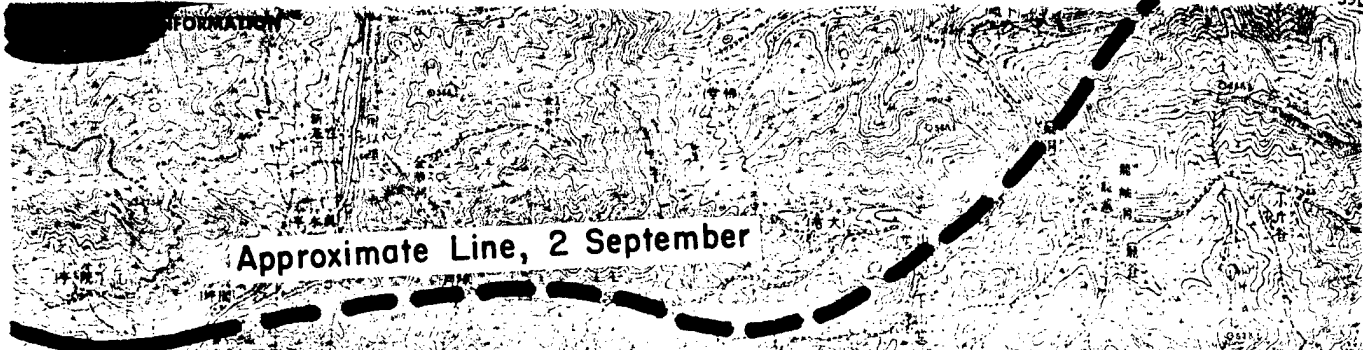
Fig. 15—Cumulative daily numbers of friendly MIA and enemy POW—25th Inf Div and opposing North Korean forces.

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①



Approximate Line, 2 September



Hill 624

Hill 570

Hill 530

Hill 373

Hill 314

Hill 660

Hill 312

Hill 401

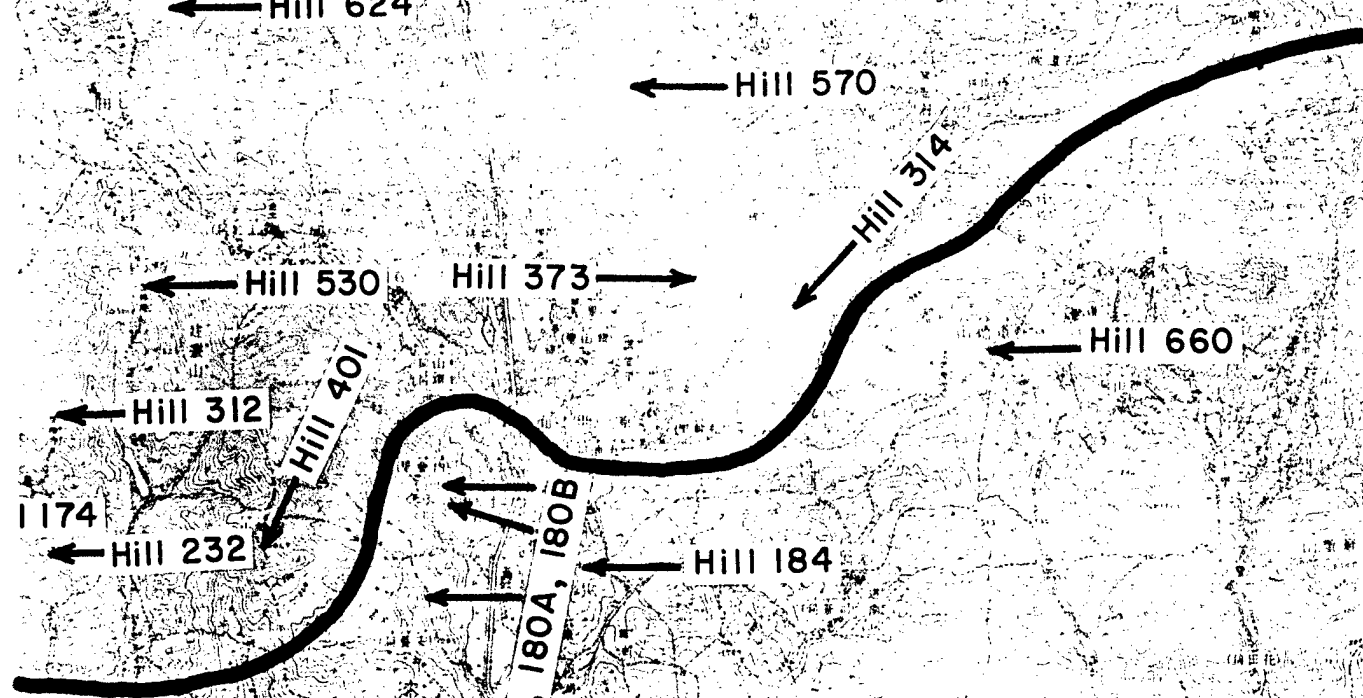
1174

Hill 232

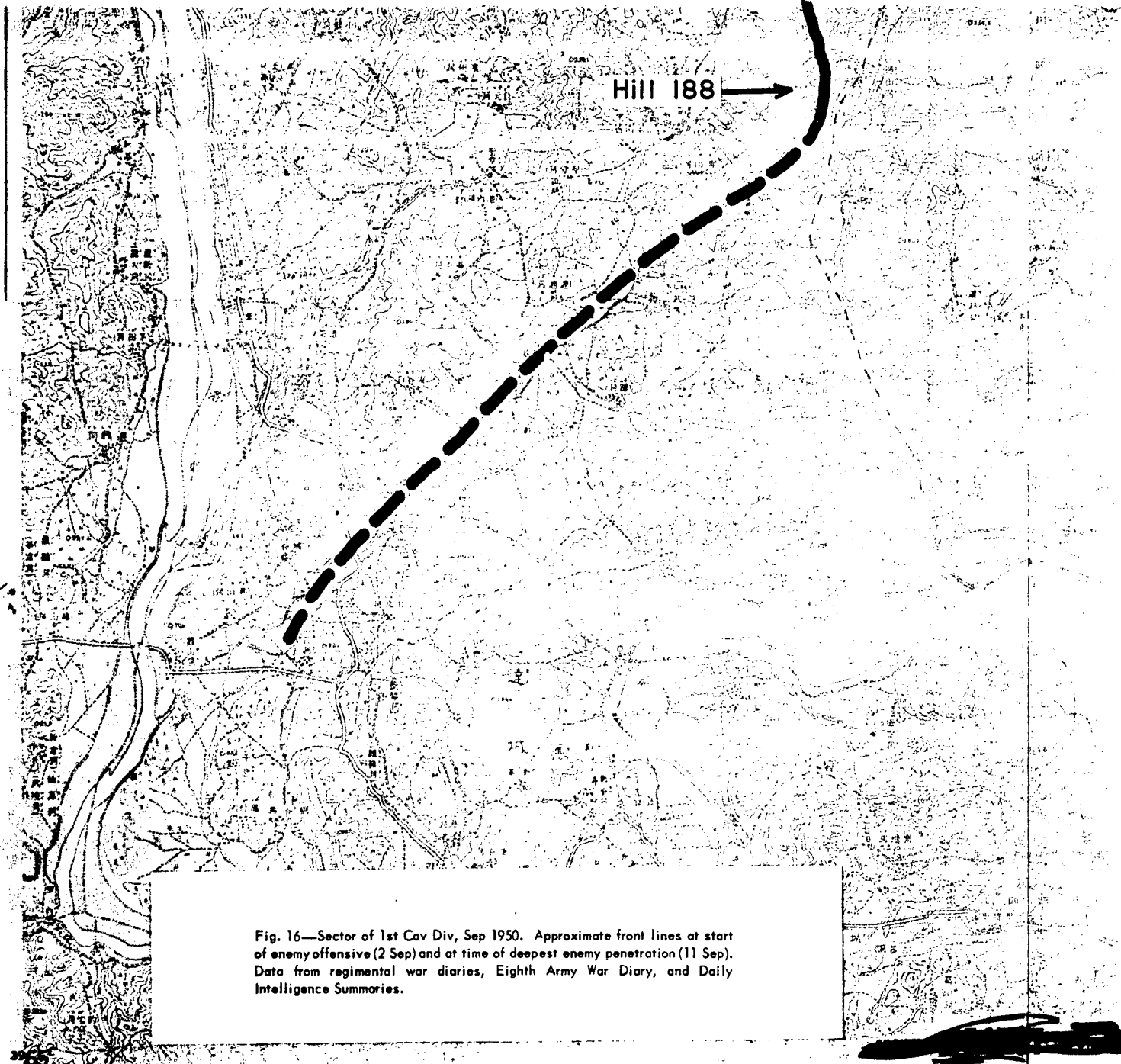
Hill 184

Hills 180, 180A, 180B

imate Line, 11 September



3



Hill 188

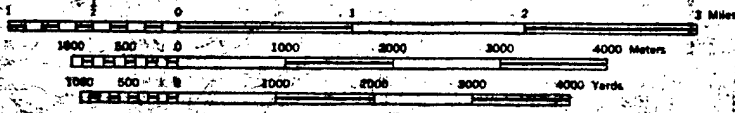
Fig. 16—Sector of 1st Cav Div, Sep 1950. Approximate front lines at start of enemy offensive (2 Sep) and at time of deepest enemy penetration (11 Sep). Data from regimental war diaries, Eighth Army War Diary, and Daily Intelligence Summaries.

Hills 18

4

TAEGU

Scale 1:50,000



5955

TACTICAL HISTORY AND DETAILED CORRELATION OF CASUALTY DATA WITH TACTICAL NARRATIVES

SYNOPSIS

Various basic documents presented are drawn upon for an account of the day-to-day progression of the fighting in the zones of the 5th and 7th Cav Regts. The hills that are mentioned in the narratives are shown in Fig. 16 (opposite page). This geographical background emphasizes the importance and the relationship of the various local actions which are discussed. Weather and the magnitude of the air-support effort are briefly considered, with tabular data.

Important local actions that are described by a variety of fairly complete data are selected for special consideration. These all involve attacks to take a hill from the enemy. In a battalion assaulting a hill there were usually on the order of 30 casualties per fighting day.

For Situations 1 and 4 (pp. 95 and 97) the individual casualties are correlated chronologically with the narrative of the action in Tables 45 and 48. The agreement is fairly good and constitutes a check on the validity of the coding of the casualty files. Fragmenting missiles, and mortar fire in particular, appear as the outstanding cause of casualties both in the coded statistics and in the narratives. In Situation 4 (p. 97), bullet casualties were sustained almost only during the final rush at the enemy held peak. At all other stages of this action, from the initial advance to the final securing of the captured hill, heavy casualties resulted from enemy mortar fire. This particular incident also allows an estimate of trivial casualties. These were twice as numerous as the reported casualties. Of the troops making the assault, 24 percent were hit by some kind of missile.

Situation 3 (p. 96) illustrates the limiting effect of friendly casualties on the tactical outcome. On six successive days US Forces assaulted a very important enemy-held hill (Hill 203), finally taking it on 18 September. Among friendly forces casualties

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were fairly constant at both the battalion and the company levels. Battalions sustained about 45 casualties per day and companies about 13. It would appear that casualties were a factor which limited the action. This interpretation is supported by the tactical narrative which frequently mentions that the assaulting battalion was pinned down by heavy enemy fire. It is also interesting to note that on days when there was close combat with the enemy, casualties were not much greater than when friendly forces were merely exposed to enemy fire from a distance.

DATA

General History of Action in 1st Cavalry Sector

The division history is the best ordinary source of action narratives. It usually includes histories of the component regiments and battalions. The 1st Cav Div history for September 1950 was not submitted until mid-March 1951. In its absence, historical data were secured from the Daily Intelligence Summaries and from Eighth Army War Diary.

In Appendix C, data from these two sources are presented in a daily breakdown by regiment. While the War Diary of the 1st Cav Div should be consulted for any historical analysis, it is of interest to compare the data of Appendix C, which are summary and current, with the detailed later reports from the units involved. It should be mentioned that there are many inaccuracies and errors, especially in map coordinates, in the data of Appendix C. But the unit reports are apt to be confused and overly detailed, as if drawn directly from message logs. Appendix C has therefore been included at this point in tabular form to give a general perspective of action in the 1st Cav Div's sector from 1 through 19 September.

Unfortunately, good tactical maps are lacking in the unit diaries. Figure 16 is a map of the 1st Cav sector, that is, the area east of the Naktong River and north of Taegu. On it, important hills mentioned in the reports cited in Appendix C, in the unit journals, and in the Morning Reports (Table 25) have been indicated. From this information an approximate front line has been drawn in for the relatively quiet period around 2 September. Another approximate front line has been drawn in the same way to show the furthest enemy advance toward Taegu, as of about 11 September. Where adequate data are not available, the lines appear as dashes.

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In mid-August, the same North Korean units that faced the 1st Cav Div in September mounted an intense and futile frontal assault around Hill 303, north of Waegwan, in an apparent attempt to penetrate along the railroad directly to Taegu. It is evident from Fig. 16 that during September the enemy moved toward the east and attempted to approach Taegu from the north through the corridor known as the "Bowling Alley."

There is no doubt about the enemy's intentions. Taegu was to be taken at all costs. This was stated by prisoners taken in September. It was also written in the notebook of a senior North Korean officer in a memorandum of a meeting on 30 August, at which the offensive was ordered. Appendix D consists of extracts from this notebook. So far as the 13th Div was concerned, the attack was to begin at 1800 hours on 2 September.


The friendly unit opposing the 13th North Korean Div was the 7th Cav Regt (see Table 27). Extracts from the war diary of the 7th Cav Regt, for the period 1-3 September, are given in Appendix E. A correlation of the narrative for 3 September with the individual casualties sustained within the 2d Bn on this date is given in Table 45 (p.101). It appears that on 1 and 2 September the enemy kept up patrol activity and intense harrassing artillery fire in preparation for the scheduled offensive. The 7th Cav Regt was not waiting quietly on the defense but on 2 September was attacking strong enemy positions on Hill 518 and its subsidiary peak, Hill 490 (see Fig. 16). This friendly attack was still in progress during the early morning hours of 3 September when the first enemy attack of the offensive materialized.

The development of the initial enemy thrust is evident from the map. From their base on Hill 518 the enemy moved across the saddle to take Hill 326 and, on the other flank, advancing up the draw behind Hill 395 took that hill. According to the original enemy plan (Appendix D) the first rush was to penetrate 6 kilometers. This would have left the enemy in possession of Hill 464. The enemy did cross the draw at Mongjong-dong on its approaches and for a short time actually held the slope of Hill 464.

On 4 and 5 September the 1st Bn was still attacking Hill 518 (or rather the adjacent Hill 490) and remained in a rather advanced position while the enemy was continuing to infiltrate to the south. The individual casualties sustained by the 1st Bn and their reported causes are listed by company in Table 25.

Extracts from the war diary of the 7th Cav Regt are not presented for 4 September and the succeeding days because the account amounts to a confused compilation of entries in the message logs.

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In general, combat was intense and of the same pattern as displayed on 3 September with both sides attacking. By taking the hill-mass on which Peak 326 is located, the enemy came into direct contact with the 5th Cav Regt. On 4 September the hill-mass surrounding Peak 326 was attacked, and on 5 September it was retaken by friendly forces.

The key to the defense of this particular area seems to have been Hill 464. By 6 September, however, it had been outflanked by enemy infiltration. Friendly units elsewhere had been drawn back or obliged to withdraw. On the night of 6 September, Co G, which was still holding Hill 464 had to fight its way back to the new US defense line. On 7 September the 7th Cav Regt, minus the 1st Bn (which went under the operational control of the 5th Cav Regt), withdrew to positions north of Taegu as division reserve.

For the period through 11 September, the war diary of the 7th Cav Regt (of which only the 1st Bn was in action) is very summary. Continual enemy "banzai" attacks are mentioned but the details are omitted. These assaults seem to represent a constant enemy intention to penetrate through the 7th Cav Regt directly toward Taegu. Figure 4 shows that the casualty rate remained high, though only one battalion was involved after 7 September. The statements of the 1st Bn Morning Reports (Table 25) are unrevealing, but the attached list of individual casualties is adequate evidence of the intensity of the action. The 5th Cav Regt, defending the southern and eastern flank, appears to have been spared these attacks. Fig. 4 shows that from 6 through 11 September casualties were light in the 5th Cav Regt.

By 11 September the enemy had achieved about his greatest advance toward Taegu. In Fig. 15 an approximate line of demarcation of friendly and enemy forces has been drawn as of this date.

In the period 12-19 September the sector that has been under discussion is included wholly in the zone of the 5th Cav Regt. No consideration is given to the period after 19 September because of the fluid situation and consequent inadequate reporting and because of the involvement of the 5th Regimental Combat Team of non-divisional infantry.

By 13 September the enemy had lost his original impetus. Casualties in the 3d and 13th North Korean Divs had been very high. In the 5th Cav sector plans were made to erase enemy penetrations to Hills 188, 203, and 174. Apparently only a small infiltrating force had penetrated to Hill 188 and the main

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enemy positions were around Hills 203 and 174, with Hill 203 the anchor. On 13 September Hill 188 was taken by the 1st Bn, 5th Cav Regt at a cost of 21 casualties.

Enemy resistance was greater on Hill 174, but it was taken on 14 September, lost to an enemy counterattack on 15 September, and then retaken on 16 September. In Table 46 (p.103) extracts from the periodic operations reports are correlated with the daily casualties among friendly troops on Hill 174. On Hill 203, however, the enemy stubbornly resisted repeated friendly assaults until 18 September when it was finally taken by the 1st Bn. Table 47 (p.105) consists of extracts from the periodic operations reports and daily listings of the casualties among the battalions attacking Hill 203.

There was no sudden breakthrough. Friendly forces had to fight their way back, hill by hill. On 15 September, friendly forces attacking Hill 312, to the east of Hill 174, were obliged to move back to Hill 232, and then enemy forces were detected south of Hill 232. Also, on 15 September, Hill 401, still further to the east, was retaken by the 5th Cav Regt. The capture of Hill 174 allowed Hill 203 to be outflanked and by-passed. On 18 September the hills beyond, 253 and 371, were being assaulted against a counterattacking enemy. Then, on 18 September, Hill 203, and presumably these as well, fell. On 19 September the line moved back further to the north and east toward the Naktong with the capture of Hill 268.

Just as the very threatening enemy penetration in the zone of the 5th Cav Regt was being eliminated, the redeployed 7th Cav Regt was erasing an equally threatening penetration further to the east. On 11 September the enemy held Hills 373 and 314 overlooking the broad corridor directly to Taegu. On 12 September the 3d Bn successfully assaulted an enemy regiment and captured Hill 314. The available information of this action, which is unusually complete and detailed, is presented earlier in the report.

Table 48 (p.108) consists of extracts from the war diary of the 7th Cav Regt and an individual listing of all casualties sustained. Table 49 (p.110) presents data on the casualty rates for this one assault. Twenty-four percent of the attacking force was hit by some kind of missile. Detailed data have not been obtained for the action of the 7th Cav Regt on the succeeding days. It would appear that, with the taking of Hill 314 and the destruction of much of the North Korean regiment which had defended it, the enemy's offensive potential was broken in this



sector. There was no major activity until the general UN offensive, which began on 16 September. Then, like the 5th Cav Regt, the 7th Cav Regt met stubborn enemy resistance as it advanced hill-by-hill. The real breakthrough at Waegwan did not come until about 22 September.

Close air support is frequently mentioned in the tactical narratives of the several cavalry regiments. A prisoner of war from the 19th North Korean Regt mentioned a withdrawal on 14 September due to US artillery and air attack alone (ATIS-1193, Appendix A). This report testifies to the efficiency of such attack, but it must be pointed out that the prisoner's regiment had been almost decimated on 12 September in the assault of the 7th Cav Regt on Hill 314.

Table 50 (p.110) lists the daily number of close-support sorties flown in the sector of the 1st Cav Div in September. It is seen that on 14 September, for example, 11 F-51s attacked targets in the Division's zone. The numbers flown on other days may give some indication of the contribution of air support to the defense of Taegu. It is seen from Table 50 that during the defensive phase as many as 56 sorties were flown on one day and during the UN offensive as many as 75 sorties.

The generally adverse weather had a direct influence on the magnitude of air support effort and probably had a great effect on the character of ground operations. No detailed chronicle of the weather is available from the 1st Cav Div itself, but occasional statements are made in the narratives such as "today's weather: rain," or "rain and more rain." For a chronologically complete, though very general, account of the weather throughout the period studied, Appendix G has been compiled from entries in the Daily Intelligence Summaries. There seems to have been rather less rain in the latter part of September than during the first two weeks. But throughout, the rain came in frequent light showers rather than in continual heavy downpours.

Correlation of Casualty Data with Action Narratives

In this section several incidents have been selected from the historical sources already presented. Where the recoding of the individual casualty files provided sufficiently complete data as to time and cause of casualty, this information is set down next to the narrative in an appropriate table. Otherwise, merely the usual statistics as to the number and severity of casualties among the units involved are given.

The four actions which follow are all successful fighting for

the retention of a particular hill or ultimately successful assaults to take a given hill from the enemy. Situation 1, the defense of Hill 326, occurred early in September during the enemy offensive, and this hill was subsequently lost. Situations 2 and 3, the assaults of Hills 174 and 203 are related to each other and to the simultaneous assault upon Hill 188, which is not treated as a separate situation due to the lack of adequate historical data.

Situation 4, the assault of Hill 314, is the most clean-cut and completely-described action both from the historical and statistical aspects. Situations 2, 3, and 4 represent the elimination of very seriously menacing forward positions from which the enemy might have jumped off to take Taegu. For the phase of the UN offensive, no situations were found where there was a coincidence of sufficiently complete casualty data and detailed tactical reporting.

The total casualties among the battalions involved in the fighting for these several hills are quite comparable on the basis of a day's action. In the one day of fighting for Hill 326, there were 31 casualties; for Hill 188, 21 casualties; and for Hill 314, 40 casualties. In the two days of fighting the first time Hill 174 was recaptured, there were 37 casualties, or 19 per day. In the five days of fighting for Hill 203, there were 236 casualties, or 47 per day. The lowest and highest values are related; the enemy apparently considered Hill 203 its key position and concentrated on its defense at the cost of a meager defense of Hill 174. Thus, a day's fighting for one of these hills involved on the order of 30 casualties. These numbers all represent men who were lost to their units. The number of trivial casualties, which were treated by first aid and therefore not ordinarily reported, is known only for the assault on Hill 314, and these men numbered twice the reported casualties.

Situation 1. Loss and Recapture of Hill During Enemy Offensive,
Action of 2d Bn, 7th Cav Regt, 3 Sep 1950

A fair proportion of the individual casualty reports for the 2d Bn, 7th Cav Regt on 3 September give information on the hour and type of missile and weapon responsible. In Table 45 (p.101) the reports are arranged in chronological order by company and set down beside extracts from the war Diary of the 7th Cav Regt that mention the action of the 2d Bn.

The notable feature of Table 45 is the fact that the 2d Bn was subjected to enemy attack and penetration, was driven back and

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then retook its original positions. Yet casualties from enemy bullets were light even if allowance is made for casualties from unknown causes. On the other hand, throughout the entire day there were casualties from enemy fragmenting missiles, and this result agrees with the reports of heavy enemy mortar, artillery, and tank artillery fire.

Misdating of the casualty reports could not account for the low number of casualties during the attack or counterattack. Neither on 2 September nor on 4 September were any casualties in the 2d Bn reported for the hours 0500-0830.

Hill 326 is located at 1141-1459 (see Fig. 16). Since it is unnumbered on the map, it has apparently been designated in round numbers as "Hill 300" in several places in the narrative. There is no Hill 300 anywhere in the vicinity.

Situation 2. Capture of Hill 174, A Secondary Enemy-held Forward Position, by the 3d Bn, 5th Cav Regt

Hill 174 is located at 1147-1452 (see Fig. 16) where it overlooks a road which leads to Taegu. The nearby Hill 203 was evidently of much greater importance to the enemy, since it overlooked the rail line as well as this road. Furthermore, loss of Hill 174 would not at once allow US Forces to outflank Hill 203. Throughout the action described in Appendix G, the enemy was successfully defending Hill 203. It is seen that US Forces captured Hill 174 on 14 September, lost it to an enemy counter-attack on 15 September, and then recaptured it on 16 September against light opposition. (See Table 46.)

The daily casualty statistics for the 3d Bn and for its component companies are listed beside each day's narrative. These data are the ordinary casualty figures coded and compiled by the Strength Accounting Branch. The heading "KIA" includes DOW, "WIA" is the sum of SWA and LWA, and "IIA" is the sum of SIA and LIA. In comparison with the casualties sustained by the units simultaneously attacking Hill 203 (Situation 3), casualties are seen to be light.

Situation 3. Repeated Assault of Hill 203 by Battalions of the 5th Cav Regt, 13-19 Sep 1950

Hill 203, at 1146-1451 (see Fig. 16), is four and one-half miles southeast of Hill 303, which figured in the action of 4 and 5 September. Hill 203 is also two-thirds of a mile from the rail line to Taegu on the northeast side of the tracks and is nine and one-half miles northwest of the center of Taegu.

In Table 47 the repeated assaults on this hill by the 5th Cav Regt are described by extracts from the operations reports of the Regiment. Beside each day's narrative are listed the casualty statistics for the battalions involved in the attacks. As with Situation 2, these are the ordinary casualty figures coded and compiled by the Strength Accounting Branch.

The striking feature of Table 47 is the fact that at the battalion level and at the company level casualties remained at roughly the same magnitude for each day on which there was an assault. Battalions sustained around 45 casualties per day of such action and individual companies about 13. Since in general the assaults were not decisively successful, these data suggest that the casualty rate is a limiting factor influencing the tactical outcome. There is frequent mention that the assaulting battalion was pinned down by heavy enemy fire, and the fire on these occasions undoubtedly caused many of the recorded casualties. In this connection, it is interesting to note that on days such as 16 and 18 September when there was close combat with the enemy, casualties were not much greater than on days when friendly troops were merely exposed to enemy fire from a distance.

Situation 4. Assault of Hill 314 by 3d Bn, 7th Cav Regt, 12 Sep 1950

The successful assault of Hill 314 by the 3d Bn, 7th Cav Regt on 12 September 1950 affords an unusually good opportunity to check the accuracy of the individual casualty reports. Occurring at about the time when the most information is available for the opposing 13th North Korean Div (11 September), it illustrates the significance of the statistical findings already discussed.

Hill 314* is at coordinates 1156.5-1455.0 (see Fig. 16), eight and one-half miles north of the center of Taegu and it leads down to the valley corridor which runs directly to that city. Hill 314 is overlooked by higher hill masses on each side, from which it is separated by deep, narrow draws. Hills 373 and 570 to the northwest were also in enemy hands. Hills 184, 180, 180A, and 180B, were held by the 1st Cav Div but constituted a not-too-formidable barrier. Hill 660, the cavalry strongpoint adjacent to Hill 314 on the east, was already outflanked.

In its organization, the assault was unusually simple. Only the three rifle companies of the 3d Bn were involved. The casualty reporting by these three companies is complete, and denotes no MIAs. Whereas the time of the casualty was reported for 63 percent of casualties in general (Table 22), it was given for 77 percent of the 39 casualties in the 3d Bn on 12 September;

*The hill mass designated by the 314-meter bench mark rises to twin 380-meter peaks and a northern steep peak over 500 meters.

and, whereas the missile type is known for 70 percent of all casualties (Table 17), it is known for 85 percent of the 3d Bn's casualties. Finally, whereas the responsible weapon can be fixed for only 38 percent of casualties in general, it is given for 51 percent of those in the 3d Bn. Note that on 12 September there were no casualties at all in the 3d Bn Hq and Hq Co and only two in Co M, the heavy weapons company, of which but one - a mortar hit - occurred during the episode in question.

In Table 48 (p.108) the account of the assault is quoted from the War Diary of the 7th Cav Regt. The battalion jumped off at 1100 hours, and the enemy was finally driven off Hill 314 by 1530 or 1600 hours. The individual casualty reports in Table 48 have been arranged in chronological order and correlated so far as possible with the narrative. Reports for which the time is unknown are grouped at the end.

In the cause of the casualties a pattern is discernible. Up to 1400 hours almost all resulted from fragments, mortar fragments in particular. From 1400 to 1500 hours there were few casualties from bullets, and these make up most of the bullet casualties for the entire day. After 1500, casualties again resulted almost entirely from artillery and, especially, mortar fragments. According to the narrative, during the jump-off and initial advance, the battalion was subjected to rifle and machine gun fire and mortar fire registered on the points it was obliged to pass. The battalion was then pinned down by intense rifle and mortar fire.

At around 1415 the final assault, which actually consisted of three rushes, resulted in the capture of the hill. It appears likely that while the battalion was advancing and was then pinned down, mortar fire inflicted almost all of the casualties and that the enemy small arms obtained hits principally during the final rushes. Too, whenever the battalion was in possession of the crest, enemy mortar fire again obtained hits. The predominance of enemy mortars in effectiveness is borne out by the statement of the medical log that about 80 percent of the casualties (including trivial) were due to mortar fire.

The total of 39 casualties seems low in comparison with the reported intensity of the engagement. There is always the question of the accuracy of the dating of the casualty reports. To afford a check, all casualties in the 3d Bn on the day preceding (11 September), and the day following (13 September), the assaults on Hill 314 have been listed at the end of Table 48. It is apparent that of the casualties attributed to 11 September only one, or at

the most two, could have occurred during the assault on 12 September. However, several casualties attributed to 13 September could possibly have occurred on 12 September. The log of the 3d Bn has not been consulted, but the Eighth Army War Diary reports heavy enemy pressure and sporadic artillery and mortar fire in the 7th Cav zone throughout 13 September. It therefore appears that correction of possible misdating could at the most add only a few casualties to the total of 39 attributed to 12 September.

A statement in the medical log permits an estimate of the number of men suffering trivial wounds and not reported as battle casualties because they did not leave their companies. The log states that 120 casualties were treated in the 30-hour period following 1100 hours, 12 September. In this period (excluding KIA) there were 45 reported battle casualties, including DOW, SIA, and LIA, and including casualties in the entire 3d Bn and among the aid men of the 3d Bn's aid station. Missile casualties comprise 44 of this number. The ratio of trivial missile casualties to those reported as battle casualties in the statistical records is then 75:44, or 1.7.

The data given above when combined with strength data permit the calculation of casualty rates. Throughout this study, the casualty rate has been defined as casualties per day. It is evident that all the casualties in the rifle companies of the 3d Bn occurred within a period of a few hours during the assault on Hill 314. In Table 49 (p.110) casualty rates computed on the usual basis are given for the separate companies and for the three companies taken together. For the three companies, a second rate is given that includes the trivial casualties as well. It is evident that 24 percent of all the men involved in the assault of Hill 314 were hit by some kind of missile.

On 15 September a private of the 19th Regt, 13th North Korean Div was captured at the coordinates 1154.6-1456.1 (ATIS-1203, Appendix A). These coordinates correspond to Hill 570, toward which the enemy fled from Hill 314 on 12 September. Another prisoner of the 19th Regt taken at about the same time reported the strength of this regiment on or about 11-14 September as 700 men (ATIS-1193, Appendix A). The enemy data of Table 30 show that as of 11 September the 19th Regt had a strength of 1,024, the 23d Regt a strength of 769. While it is conceivable that the entire 23d Regt was on Hill 314 on 12 Sept, it seems far more likely that the regiment was the 19th. Perhaps two battalions were on Hill 314 and one, the 1st Bn to which the above-mentioned prisoners belonged, was dug-in somewhat to the rear. The "in action"

figures in parentheses in Table 29 are relevant: 751 in the 23d Regt, and 878 in the 19th Regt. Table 27 indicates that the 7th Cav Regt was in contact with the 1st and 3d North Korean Divs on 12 September. There are no available data to check this information.

Whichever enemy regiment of the 13th Div is assumed to have held Hill 314, Table 34 gives the number of weapons that it had available, and Table 35 gives these numbers in proportion to the current regimental strength. Thus, the 19th Regt had almost its full complement of rifles but was almost devoid of submachine guns. In light and heavy machine guns (taken together) it had about 40 percent of the proper number for its strength, but in 82-mm and 120-mm mortars (taken together) it had 83 percent of the normal number for a unit its size.

The full regimental complement of four 76-mm guns on 11 September is equivalent to 275 percent of the normal ratio. If the 19th Regt is assumed to be the enemy whom the 3d Bn of the 7th Cav actually attacked, these relative strengths and weaknesses agree with the Cavalry's casualty experience. Fragmenting missiles caused by far the greatest number of casualties. And mortars were naturally the weapons responsible, rather than artillery, since they are capable of close-in firing upon a defiladed slope.

(Note: Subsequent study indicates that Hill Mass 314 was probably held by units of the 1st NK Div. Units of the 19th Regt, 13th NK Div, probably held the neighboring Hill 373 and may also have been present.)

TABLE 44
INTERRELATIONSHIP OF CASUALTIES IN SEVERAL CATEGORIES
EXPERIENCE OF THREE DIFFERENT DIVISIONS

Division	Period, Sep	Friendly		Enemy		$\frac{(KIA + WIA)_{En}}{(KIA + WIA)_{Fr}} \times \frac{(MIA)_{Fr}}{(PW)_{En}}$
		KIA + WIA	MIA	KIA + WIA	PW	
1st Cav	1-10	943	95	3,911	54	7.3
2d Inf	2-11	1,058	93	11,690	164	6.3
25th Inf	1-3, 5-11	677	54	9,775	333	2.3
1st Cav	11-16, 18-20	1,133	51	7,230	89	3.7
2d Inf	12-20	749	16	8,156	468	3.7
25th Inf	12-17, 19,20	404	29	2,533	111	1.6

TABLE 45 (Continued)

	Individual Casualty Reports		
	Rifle Companies	Co G	Heavy Weapons Company
7th Cav Regt War Diary	Co E	Co F	Co H
"The 2d Battalion reported negative at 2240 hours..."	<p>Non-coded Casualties 0 KIA, 1 LIA, 0 MIA</p> <p><u>Company Totals</u> 0 Unk. (4 unk.weapon, 1 mortar, 1 arty) 2 Ball. (small arms) <u>2</u></p>	<p>Non-coded Casualties 1 KIA, 1 LIA, 1 MIA</p> <p><u>Company Totals</u> 2 Unk. (4 unk.weapon, 7 Frag. (3 mortar, 3 arty) 3 Ball. (2 machine gun, 1 small arms) <u>12</u></p>	<p>Non-coded Casualties 0 KIA, 0 LIA, 0 MIA</p> <p><u>Company Totals</u> 3 Unk. (unk.weapon) 0 Ball. <u>3</u></p>
	<p><u>Company Totals</u> 4 Unk. (1 unk.weapon, 2 Frag. (1 mortar, 1 Ball (small arms)) <u>7</u></p>		
	<p><u>Totals for Three Rifle Companies</u> 5 Unknown Missile 14 Fragments (9 unknown weapon, 4 mortar, 1 artillery) 23 Bullets (5 small arms 2 machine gun) 24 Total Missile Casualties</p>		

TABLE 46

CORRELATION OF DAILY CASUALTY STATISTICS
AND TACTICAL NARRATIVE
CAPTURE, LOSS, AND RECAPTURE OF HILL 174 BY 3D BATTALION,
5TH CAVALRY REGIMENT

5th Cav Regt Operations Reports

13 September "... Plans for attacks on Hills 188, 203, and 174 were completed ... At 1530I, Company L, 3d Battalion, reinforced by one platoon of Company I jumped off in attack on Hill 174 ... At 1645 hours the 3d Battalion reported the attack on Hill 174 was progressing nicely ... At 1800I the attacks on Hills 203 and 174 were continuing against stubborn enemy resistance and heavy artillery and mortar fire ..."

	<u>KIA</u>	<u>WIA</u>	<u>IIA</u>	<u>MIA</u>	<u>Total</u>
Co I	0	1	1	0	2
Co K	0	1	0	0	1
Co L	0	7	0	0	7
Co M	1	3	0	0	4
Bn Hq Co	0	0	0	0	0
3d Bn	1	12	1	0	14

14 September "... The 3d Battalion moved out in attack on Hill 174 at 141500I after three airstrikes (one of which was scheduled for Hill 203 but was erroneously directed to Hill 174) and artillery preparation ... As of 1800I ... the 3d Battalion was consolidating positions on Hill 174."

	<u>KIA</u>	<u>WIA</u>	<u>IIA</u>	<u>MIA</u>	<u>Total</u>
Co I	1	11	3	0	15
Co K	2	1	2	0	5
Co L	0	1	0	0	1
Co M	1	1	0	0	2
Bn Hq Co	0	0	0	0	0
3d Bn	4	14	5	0	23

15 September "... The 3d Battalion at 150700I reported enemy grouping for attack on Hill 174 (1147.0-1451.7) and at 0815 hours reported the platoon of Company I on Hill 312 being attacked and falling back to Hill 232 at 0825. The platoon of Company I amounted to 20 men, the attacking force of North Koreans from 70 to 80. Company L at 0925 hours sighted what was reported to be a reinforced battalion, equipped with tanks and AT guns at 1149.6-1452.5. The artillery liaison plane, directed to that area, was unable to locate this force. Company I at 1105 hours on Hill 174 was attacked by an estimated 200 enemy from the east and 150 from the west. The 3d Battalion reported being forced off Hill 174 and planned to consolidate Companies I, K, and L on Hill 232. Enemy forces were detected advancing down a draw to south of Hill 232 at 1105 hours. Swing 6 ordered the 3d Battalion at 1210 hours to retake Hill 174 in order to support the 1st Battalion's attack on Hill 203, which would follow later ... The H-hour for the attacks on both hills was set at 1700 hours ... Air finished its attacks at 1750 hours and the artillery began its supporting and preparatory fires at that time. ... The Regiment was forced into ... defensive positions ... due to very strong enemy action."

	<u>KIA</u>	<u>WIA</u>	<u>IIA</u>	<u>MIA</u>	<u>Total</u>
Co I	0	2	0	0	2
Co K	0	8	1	0	9
Co L	1	2	0	0	3
Co M	0	2	0	0	2
Bn Hq Co	0	1	0	0	1
3d Bn	1	15	1	0	17

TABLE 46 (Continued)

5th Cav Regt Operations Reports

16 September "... At 0850I barrage was commenced by all supporting artillery and continued for 10 minutes. At 0900I the 1st and 3d Battalions crossed the line of departure in their attacks. There was no air support due to poor visibility. At 1035 ... the 3d Battalion was moving up on its objective. The 3d Battalion was at 1148.2-1450.9 and reported no enemy opposition ... At 1145I the 1st Battalion [attacking Hill 203] was pinned down by enemy fire, this fire coming from Hill 174 ... At 1332I the 3d Battalion was reported within 100 yards of Hill 174 ... At 1550 the 3d Battalion had two platoons on Hill 174 and was moving more troops up to strengthen positions. At 1650 hours the 3d Battalion commenced consolidating positions occupied and resupplying for continuation of attack at 170630 as per plan submitted to the division-courier at 161330I."

	<u>KIA</u>	<u>WIA</u>	<u>IIA</u>	<u>MIA</u>	<u>Total</u>
Co I	0	0	1	0	1
Co K	0	2	0	0	2
Co L	0	0	0	0	0
Co M	0	0	0	0	0
Bn Hq Co	0	0	0	0	0
3d Bn	0	2	1	0	3

17 September—Report missing

	<u>KIA</u>	<u>WIA</u>	<u>IIA</u>	<u>MIA</u>	<u>Total</u>
Co I	2	1	0	0	3
Co K	1	9	1	0	11
Co L	0	0	0	0	0
Co M	0	0	0	0	0
Bn Hq Co	0	0	0	0	0
3d Bn	3	10	1	0	14

18 September "... Air liaison reported large concentrations of enemy troops north of Hill 174; the 3d Battalion called for artillery ... The 3d Battalion jumped off in the attack at 1615 hours, was encountering some fire but continuing to advance ... The 3d Battalion at 1745 reported receiving considerable small arms and automatic fire from north of Hill 174 (1146.8-1452.2). All elements of the 3d Battalion were still on Hill 174 ..."

	<u>KIA</u>	<u>WIA</u>	<u>IIA</u>	<u>MIA</u>	<u>Total</u>
Co I	0	4	1	0	5
Co K	0	2	0	1	3
Co L	0	2	0	0	2
Co M	1	0	0	0	1
Bn Hq Co	0	0	0	0	0
3d Bn	1	8	1	1	11

19 September "... The 3d Battalion started attack at 0845 hours, meeting some resistance ... The 3d Battalion was advancing toward [a] hill, was now located at 1145.0-1452.3 at 1100 hours ... At 1410 hours the 3d Battalion had moved back to Hill 174 ..."

	<u>KIA</u>	<u>WIA</u>	<u>IIA</u>	<u>MIA</u>	<u>Total</u>
Co I	0	2	0	0	2
Co K	1	2	0	0	3
Co L	0	1	0	0	1
Co M	0	0	0	0	0
Bn Hq Co	0	0	0	0	0
3d Bn	1	5	0	0	6

TABLE 47

CORRELATION OF DAILY CASUALTY STATISTICS
AND TACTICAL NARRATIVE
REPEATED ASSAULT OF HILL 203 BY BATTALIONS OF 5TH CAVALRY REGIMENT

5th Cav Regt Operations Reports

13 September "... Plans for attacks on Hills 188, 203, and 174 were completed ... At 1450I Company G reinforced by one platoon of Company F were ready to attack Hill 203 and were receiving excellent artillery and mortar preparation. Fire was lifted and the attack started at 1500I ... At 1635I advance on Hill 203 was held up due to extremely heavy enemy artillery and mortar fire ... At 1800I attack on Hills 203 and 174 were continuing against stubborn enemy resistance and heavy artillery and mortar fire ..."

	<u>KIA</u>	<u>WIA</u>	<u>IIA</u>	<u>MIA</u>	<u>Total</u>
Co E	0	9	3	0	12
Co F	0	2	0	1	3
Co G	2	8	1	0	11
Co H	0	3	0	0	3
Bn Hq Co	0	0	1	0	1
2d Bn	2	22	5	1	30

14 September "At 141015I elements of Companies E, F, and G again moved out in attack of Hill 203 from southeasterly direction. At 1415I our force was pinned down by heavy enemy mortar and small arms fire. At 1425I our unit shifted their attack around to the left side of Hill 203 and were slowly advancing in a northeasterly direction ... At 1605I our troops had taken Hill 203 and continued attacking down opposite slope. At 1637I the 2d Battalion called for additional artillery prior to all-out effort to seize and secure Hill 203 before darkness. At 1735I the 2d Battalion was at coordinates 1146.0-1449.8 and under heavy enemy mortar and small arms fire. As of 1800I the 2d Battalion was still at above positions."

	<u>KIA</u>	<u>WIA</u>	<u>IIA</u>	<u>MIA</u>	<u>Total</u>
Co E	2	8	0	0	10
Co F	2	8	1	1	12
Co G	0	4	1	0	5
Co H	1	9	0	0	10
Bn Hq Co	0	0	0	0	0
2d Bn	5	29	2	1	37

15 September "The 2d Battalion, under orders to attack and seize Hill 203 (1145.8-1451.2), at 150700I was receiving fire at that time and was ordered to hold their positions. S6 went forward to get entire situation. Hill 203 was reported occupied by an estimated 250 enemy troops supported by considerable numbers of other terrain features to the northwest ... 'Swing 6' ordered the 3d Battalion at 1210 hours to retake Hill 174 in order to support the 1st Battalion's attack on Hill 203, which would follow later. The 1st Battalion reported at 1250 hours that they could not be ready for their attack on Hill 203 before 1600 hours. Company A, part of the assaulting force for Hill 203, cleaned their own area at 1515 hours and arrived at the jump-off spot at 1618 hours ... Five attacks by air were made in the course of preparation for the attack [by the 3d Battalion on Hill 174 and by the 1st Battalion on Hill 203] ... Air finished its attacks at 1750 hours and the artillery began its supporting

TABLE 47 (Continued)

5th Cav Regt Operations Reports

[15 September—Continued] “and preparatory fires at that time. Company A, 70th Tank Battalion (-) fired in general support of all battalions during the course of the day. The regiment was forced into the defensive position ... due to very strong enemy action.”

	<u>KIA</u>	<u>WIA</u>	<u>IIA</u>	<u>MIA</u>	<u>Total</u>
Co E	2	10	0	8	20
Co F	1	6	1	7	15
Co G	1	8	0	0	9
Co H	3	10	0	0	13
Bn Hq Co	0	5	0	0	5
2d Bn	7	39	1	15	62
1st Bn	0	0	0	0	0

16 September “... At 0850I barrage was commenced by all supporting artillery and continued for 10 minutes. At 0900I the 1st and 3d Battalions crossed the line of departure in their attacks. There was no air support due to poor visibility. At 1035I the 1st and 3d Battalions were moving up on their objectives ... At 1055I the 1st Battalion reported the attack on Hill 203 held up due to automatic weapons fire from the slopes of Hill 203. They called for artillery and at 1107I moved forward in the second phase of the attack ... At 1145I the 1st Battalion was again pinned down by enemy fire, this fire coming from Hill 174 ... At 1310I the 1st Battalion was driven off the slopes of Hill 203 by a strong enemy counterattack ... At 1650 hours the 1st and 3d Battalions commenced consolidating positions occupied and resupplying for continuation of attack at 170630 as per plan submitted to the division courier at 161330I.”

	<u>KIA</u>	<u>WIA</u>	<u>IIA</u>	<u>MIA</u>	<u>Total</u>
Co A	0	12	1	0	13
Co B	1	28	3	0	32
Co C	0	1	1	0	2
Co D	0	1	0	0	1
Bn Hq Co	0	1	0	0	1
1st Bn	1	43	5	0	49

17 September—Report missing

	<u>KIA</u>	<u>WIA</u>	<u>IIA</u>	<u>MIA</u>	<u>Total</u>
Co A	1	6	2	0	9
Co B	0	3	0	0	3
Co C	0	0	0	0	0
Co D	0	0	0	0	0
Bn Hq Co	0	0	0	0	0
1st Bn	1	9	2	0	12

18 September “Swing 6 at 0730 hours coordinated the 1st Battalion’s attack on Hill 203 and set H-hour at 1000 hours. When the attack was completed, a small security force was to remain there and the attack be continued to higher ground in the direction of Hill 371...The 1st Battalion at 1150 hours was reported near the top of Hill 203 moving slowly ahead ... The 1st Battalion at 1220 hours was held up just short of the top of Hill 203 by mortar fire and requested an air strike. ... At 1515 hours, the 1st Battalion had Companies B and C on Hill 203. Company A was on the right and was reorganizing. The 1st Battalion was directed to complete consolidation, leave a small security force and continue to attack toward Hill 371 ... The 1st Battalion reported beating off a

TABLE 47 (Continued)

5th Cav Regt Operations Reports

[18 September--Continued] "counterattack by a platoon of enemy on Hill 203 ... The 1st Battalion at 1655 reported the battalion advancing toward Hill 371 after leaving a security force on Hill 203. It was meeting light enemy resistance but continuing to advance."

	<u>KIA</u>	<u>WIA</u>	<u>IIA</u>	<u>MIA</u>	<u>Total</u>
Co A	2	12	0	0	14
Co B	0	11	1	0	12
Co C	0	14	1	0	15
Co D	0	4	0	0	4
Bn Hq Co	0	1	0	0	1
1st Bn	2	42	2	0	46

19 September "... At 1410 hours the 3d Battalion had moved back to Hill 174 and the 1st Battalion to Hill 203 ... Radio from the 1st Battalion at 1632 hours to be relayed to the 2d Battalion that the 1st Battalion is attacking Hill 300 from the direction of Hill 203. At 1748 hours the 1st Battalion reported gaining the top of Hill 300. The 1st Battalion was ordered to continue the attack toward Hill 371."

	<u>KIA</u>	<u>WIA</u>	<u>IIA</u>	<u>MIA</u>	<u>Total</u>
Co A	0	1	0	0	1
Co B	0	0	0	0	0
Co C	0	5	1	0	6
Co D	0	1	0	0	1
Bn Hq Co	1	1	0	0	2
1st Bn	1	8	1	0	10

TABLE 48

**CORRELATION OF INDIVIDUAL CASUALTIES AND TACTICAL NARRATIVE CAPTURE OF HILL 314
BY 3D BATTALION, 7TH CAVALRY REGIMENT**

12 Sep 1950

7th Cav Regt War Diary	Individual Casualty Reports		
	Co I	Co K	Co L
<p>"The enemy continued to make advances toward Taegu from the NW. Hill mass 314 was in this direction and was occupied in force. On three previous occasions elements of the 1st Cavalry Division had attempted to secure the 500-meter hill."</p> <p>"Recuperating from an engagement near Waegwan, the 3d Battalion received the mission of capturing the hill..."</p> <p>"... The Battalion... jumped off at 1100 hours after an air strike but with no artillery preparation due to a critical shortage of ammunition. The advance continued for 500 yards under sporadic machine gun and rifle fire and a 120mm mortar concentration on the line of departure and reserve company assembly area. At this point the entire Battalion was pinned down by intense rifle and mortar fire and simultaneously observed about 400 enemy to the left preparing for a counterattack. An air strike was requested but was delayed because of refueling, as the counterattack was beat off by infantry, artillery, and mortar fire."</p> <p>"... 1st Lt [?], reorganized his company [?], under mortar fire, after suffering 25 percent casualties without regard for his own safety. At 1400 hours [an] effective air strike was placed on top of the ridge and on the W slope. Fifteen minutes later [i.e. 1415] the order was given to assault the hill mass with Company I on the right and Company L on the left. Troopers surged upon a measured 60-degree slope for a distance of 1000 yards against well emplaced machine guns and riflemen who caused a heavy volume of fire into the assaulting troops. The top was reached, but intense mortar fire caused the troopers to withdraw. The hill was assaulted a second time, and again they were driven back by intense mortar and machine gun fire. Company L... and troopers of Company I came back fighting madly for the third time... The men reached the top after fierce hand-to-hand combat with grenades, rifle butts and bayonets. They overran the enemy positions and charged down the opposite slope in pursuit of the enemy until ordered to halt for reorganization for defense of the hill. The charge demoralized the enemy, and over half the</p>	<p>1100, shrapnel</p> <p>1200, mortar, Hill 660</p> <p>1400, shrapnel, Hill 660</p> <p>1400, rifle fire</p> <p>1470, small arms, Hill 660</p> <p>1500, shell frag, Hill 660</p> <p>1500, shrapnel</p> <p>1515, mortar</p> <p>1700, OSW</p> <p>Reports No. Time Mentioned none</p> <p>Non-coded Casualties 0 SIA, 1 LIA, 0 MIA</p>	<p>1100, shrapnel</p> <p>1200, mortar, Hill 660</p> <p>1400, shrapnel, Hill 660</p> <p>1400, rifle fire</p> <p>1500, shrapnel, Hill 660</p> <p>Reports No. Time Mentioned shell fragment</p> <p>Non-coded Casualties 0 SIA, 0 LIA, 0 MIA</p>	<p>1100, rifle fire</p> <p>1200, mortar fire, Hill 660</p> <p>1200, mortar fire, Hill 660</p> <p>1200, mortar</p> <p>1300, shrapnel</p> <p>1300, shrapnel, Hill 660</p> <p>1350, shrapnel, Hill 660</p> <p>1400, shrapnel, Hill 660</p> <p>1400, mortar</p> <p>1400, small arms</p> <p>1500, shell frag, Hill 660</p> <p>1500, rifle, Hill 660</p> <p>1500, mortar</p> <p>1600, arty shell frag Hill 660</p> <p>Reports No. Time Mentioned arty shrapnel, E, 314</p> <p>KIA</p> <p>KIA</p> <p>KIA</p> <p>KIA</p> <p>shell fragment</p> <p>mortar</p> <p>small arms</p> <p>Non-coded Casualties 0 SIA, 0 LIA, 0 MIA</p>

Hill 660, directly overlooking Hill 314, was held by the 7th Cav Regt.

TABLE 48 (Continued)

7th Cav Regt War Diary	Individual Casualty Reports		
	Co I	Co K	Co L
<p>force of 700 ran screaming to the rear abandoning their weapons as effective fire was placed on them."</p> <p>"Prisoners revealed over 700 enemy on the hill. Counted enemy dead exceeded 250 and prisoners captured at a later date stated [that] practically all of the remaining 450 were wounded or missing. Characteristics of the enemy defense were caves with machine guns covered by snipers in rock crevices and ravines. Mortar fire from 60mm, 82mm, and 120mm was intense and previously registered on the key points over which the Battalion was required to advance. Losses to the Battalion were high."</p> <p>"... Taking this objective was completed in 4 1/2 hours."</p> <p><u>Medical Log</u></p> <p>"The 3d Battalion aid station, set up...at 1100 on 12 Sept, immediately began receiving casualties from attack of 3d Battalion on Hill 514. Aid station treated a total of 120 casualties during the next 20 hours...Again most of the casualties were of a minor nature. About 80 percent of the wounded caused from mortar fragments... Many of the men did not turn in for medical attention of a minor nature until after the battle was over."</p> <p><u>Attack of 12 September as Reported in 8th Army War Diary</u></p> <p>"Enemy forces in position on Hill 514, two miles south of Namwon Dong (1156-1454), were attacked following an air and artillery preparation. The enemy stubbornly resisted the attacking force but was driven off the hill by 1600 hours. An enemy counter-attack was repulsed and enemy forces withdrew toward Hill 570, two miles north of Chang Dong (1154.5-155.0)."</p>	<p><u>Company Totals</u></p> <p>2 Unk. 4 Frag. (3 unk. weap, 1 mortar) 3 Bull. (2 small arms, 1 rifle) 9</p>	<p><u>Company Totals</u></p> <p>0 Unk. 5 Frag. (4 unk. weap, 1 mortar) 1 Bull. (rifle) 6</p>	<p><u>Company Totals</u></p> <p>4 Unk. 16 Frag. (6 unk. weap, 7 mortar, 2 arty, 1 grenade) 4 Bull. (2 small arms, 2 rifle) 24</p>
	<p>6 Unknown Missile 25 Fragments 28 Bullets 39 Total Missil. Casualties</p>	<p>Total for Three Rifle Companies</p> <p>13 unknown weapon, 9 mortar, 2 artillery, 1 grenade 0 unknown weapon, 4 small arms, 4 rifle</p>	
	<p>Casualties on Preceding Day and Following Day</p>		
<p>Co I</p> <p>0345, grenade, Hill 303 LMA SMA</p>	<p>Co K</p> <p>11 September 1500, mortar LMA</p>	<p>Co L</p> <p>none</p>	
<p>1530, shrapnel, Hill 660 mortar machine gun</p>	<p>13 September none</p>	<p>shrapnel, Hill 660</p>	<p>LMA KIA KIA KIA KIA</p>

TABLE 49
REPORTED AND TRIVIAL CASUALTIES AND CASUALTY RATES
AMONG RIFLE COMPANIES, 3D BN, 7TH CAV REGT,
IN ASSAULT OF HILL 314
 12 Sep 1950

Company	Strength	Battle Casualties			Over-all Casualty Rate, %
		Reported Missile Casualties	Casualty Rate, %	Trivial Casualties	
Co I	150	9	6.0	--	--
Co K	169	6	3.6	--	--
Co L	153	24	15.7	--	--
Three Companies	472	39	8.3	75	24

TABLE 50
DAILY NUMBER OF CLOSE-SUPPORT AIRCRAFT SORTIES
1ST CAV DIV SECTOR^a

Date, Sep ^b	Fighter-Bomber Breakdown by Type of Aircraft				
	F-80	F-51	F-82	USMC	Total
1	--	--	--	--	--
2	--	--	--	--	--
3	--	--	--	--	--
4	6	13	0	0	19
5	0	4	0	0	4
6	24	18	3	0	45
7	25	0	0	0	25
8	0	0	0	0	0
9	0	0	0	0	0
10	12	8	0	0	20
11	15	36	0	5	56
12	8 ^c	--	--	--	--
13	--	--	--	--	--
14	0	11	0	0	11
15	8	36	0	0	44
16	26	16	0	0	42
17	4	20	0	0	24
18	3	36	0	0	39
19	12	47	0	4	63
20	16	55	0	4	75
21	5	26	0	8	39
22	2	18	0	7	27

^aSource of data: Mission Summaries, Far East Air Forces.

^b0000 to 2400 hrs.

^cJapan-based only. Total sorties of Korea-based F-51s were 98.



APPENDIX A

ENEMY STRENGTHS, CASUALTIES, WEAPONS, AMMUNITION

(Extracts From ATIS Reports on the Interrogation of
Prisoners From the 3d and 13th North Korean Divi-
sions, September 1950)



PART A. PRISONERS FROM 3d DIV, NKPA (IN CONTACT WITH 5th, 7th CAV REGTS)

ATIS-1264

Prisoner: Pvt (25), 3d Div, 9th Regt, Ind Trans Co
Capture: 180700K Sep by 5th Cav Regt
Statements: 3d Div composed of 7th, 8th, and 9th Inf Regts, Medic Bn and Arty Unit. PW also heard there was Tank Regt.
As of 15 Sep, 3d Div estimated to consist of 2000 men.

ATIS-1464

Prisoner: Pvt (17), 3d Div, 9th Regt, 3d Bn, Medic Co
Capture: 22 Sep
Statements: PW claims only 5 or 6 82-mm M-1937 mortars are left in the 7th [sic] Regt.

ATIS-1467

Prisoner: Sgt (23), 3d Div, 9th Regt, 1st Bn, 1st Co, 1st Plt, 1st Sqd.
Capture: 23 Sep
Statements: Weapons and personnel as of 10 Sep 1950 (E of Naktong River):
3d Div (7th, 8th, 9th Inf Regts, Arty Regt) — Strength unknown.
9th Inf Regt (1st, 2d, 3d Bns, 120-mm Mortar Co, 45-mm AT-Gun Co, AA-Gun Co, Sign Co, Med Co, Eng Plt, Recon Plt, Hq Guard Plt) — Strength 600.
1st Bn (3 companies, HMG Co, 82-mm-Mortar Co, 45-mm AT- Gun Plt, Sign Plt, Med Plt, Supply Plt) — Strength 200.

3d Division's objective was Taegu via Sindong RR Sta on Taegu line, 13 km NW of Taegu. Morale was low due to lack of weapons.

ATIS-1508

Prisoner: Sgt (21), 3d Div, 9th Regt, 76-mm AT Gun Co, Command Plt.
Capture: —
Statements: Equipment for 9th Regt as of 19th Sep 1950:

[REDACTED]

50 x PPsh M-1941 Guns
60 x DP LMGs
40 x MAXIM HMGs, M-1910
6 x 82-mm Mortars, M-1938
4 x 120-mm Mortars, M-1938
3 x 76-mm, M-1943 Howitzers
4 x 45-mm, M-1937 AT Guns
6 x 45-mm, M-1942 AT Guns

... The unit's intention was to capture Taegu at any cost.

ATIS-971

Prisoner: Pvt, 3d Div, 8th Regt, 2d Bn, 4th Co, 3d Plt, a South Korean.
Capture: 051200 Sep, 4 km E of Naktong River, 4 km NE of Waegwan.
Statements: On or about 2 Sep: 15 men from 3d Plt, 4th Co, 2d Bn, dispatched on ammunition details. An NCO in charge of detail led men to an ammunition dump 200-300 meters west of the Naktong River and approximately 8 km north of Waegwan. Ammunition dumps, consisting mostly of 82-mm and 120-mm mortar shells, were dispersed on both sides of a single lane dirt road. Ammunition piles were camouflaged with leaves...

ATIS-1157

Prisoner: Pvt (rifleman), 3d Div, 8th Regt, 3d Bn, 8th Co, 1st Plt, 1st Sqd, a South Korean.
Capture: 131800 Sep on Hill 188 (1147.4-1447.5) by 1st Bn, 5th Cav Regt.
Statements: Original strength of 8th Co 200 men, present strength 100 men.

ATIS-1048

Prisoner: Pvt, 3d Div, 8th Regt, 3d Bn, 7th Co, 1st Plt, 2d Sqd.
Capture: 7 Sep at Manyondong by G Co, 7th Cav Regt.
Statements: Locations on 7 Sep:
8th Regt - on mountain 6 kms SW of Waegwan; preparing defensive positions.

[REDACTED]

9th Regt — located on hill 3 kms west of the 8th Regt about 4 kms south of Waegwan; also preparing defensive positions.

7th Regt — located in the hills east of 8th Regt. The self-propelled guns and tanks supporting the 3d Div were in camouflaged revetments 500 meters east of the Naktong River and 4 kms south of Waegwan.

The 8th Regiment lost most of its artillery and heavy mortars when it retreated from Waegwan on 3 September.

The informant saw only two (2) 82-mm mortars in the 8th Regt after 3 September.

Up until 7 September each rifle company received about 6,000 rounds of small arms ammunition daily. This was sufficient.

The wounded of the 8th Regt were not evacuated to the rear because of the lack of personnel. Wounded troops were given first aid and left alone to look after themselves. Most of the wounded died from the lack of medical care.

The mission of the 3d Div (7th, 8th, and 9th Regts) was to take Waegwan by attacking from the southern flank.

Elements of the 15th Div were on the left flank of the 3d Div. After occupying Waegwan the 3d Div was to advance to Taegu.

ATIS-1191

Prisoner: Pvt (16) (rifleman), 3d Div, 3d Bn, 8th Co, 1st Plt, 2d Sqd. (Unknown Regt — see below).

Capture: 140600 Sep

Statements: 132000K: PW and 11 troops arrived at 9th Inf Regt positions in wooded mountain immediately west of Waegwan-Taegu highway 14 km northwest of Taegu. In wooded mountain PW learned from troops in unit that the strength of the 9th Regt had been reduced to 500 by US-ROK Army artillery-mortar shelling and US air attack. As a result of the reduced strength and no replacements, the 9th Inf Regt was redesignated the 3d Bn.

Weapons and personnel on 14 September: The strength of the (now) 3d Bn, Unknown Regiment,

was 500. Only 30 percent armed with used M-1891/30 and used US Army M1 carbines and rifles, 20-30 rounds each. Remaining unarmed troops instructed to pick up weapons and ammunition from unit casualties.
Strength of 8th Co on 14 September was 80 men.

PART B. PRISONERS FROM 13th DIV, NKPA (IN CONTACT WITH 7th CAV REGT)

ATIS-895

Prisoner: Maj (25), 13th Div, 19th Regt Hqs.

Capture: Surrendered 2040 hrs, 1 Sep.

Statements: 31 August: 4,000 replacements arrived at the 13th Div. Only 2,000 of the men arrived with weapons. The remaining 2,000 men were equipped on assignment to regiments. By 31 August the strength of the division was approximately 9,000 men. Replacements, stragglers, and wounded personnel were absorbed. General preparation for an offensive was made. Each man was issued 300 rounds of ammunition. Each regimental artillery piece was issued 120 rounds of ammunition. . . Objective: Taegu, via the Taegu-Sangju highway. The division was expecting the arrival of an undetermined number of heavy tanks, type unknown.

Present Strength (31 August):

19th Regt: 1,800 men 4 x 82-mm Mortars
4 x 76-mm Howitzers
6 x 120-mm Mortars
12 x 45-mm AT Guns

21st Regt: 1,800 men Same weapons as
19th Regt.

23d Regt: 1,800 men Hardly any heavy weapons;
no details about these and
other weapons.

Div Arty: 20 guns remaining —
10 x 122-mm Howitzers
10 x 76-mm Guns

Standard unit of fire for each artillery piece was 60 rounds. The unit was never short of ammunition (during August, that is).

On 31 August, 50 tanks. Hearsay: 13th Div expecting arrival of an undetermined number of heavy tanks, type unknown.

ATIS-1193

Prisoner: Sgt (24), 13th Div, 19th Regt, 1st Bn, 2d Co, 2d Plt, 2d Sqd.

Capture: —

Statements: On or about 11-14 September: troops deployed on hill in defensive positions. Strength of 19th Regt about 700 men.

14 September: at 1500 hrs the regiment was attacked by aircraft and at the same time artillery shells began to fall in the area. Shelling and air attack lasted until 1900 hrs. Losses sustained unknown. The 19th Regt withdrew immediately after the attack lifted.

ATIS-1203

Prisoner: Pvt (25), 13th Div, 19th Regt, 1st Bn, 3d Plt, 1st Sqd, a South Korean.

Capture: 15 September.

Statements: On or about 10 September: 19th Regt Hqs located approximately 3 km south of Kasan. The 70 men were separated into squads and took positions along the hills located approximately 4 km south of Kasan. The troops dug foxholes and remained there for about 4 days.

14 September: US troops started to attack with artillery, mortars, machine guns. The 1st Co retreated to the 19th Regt Hqs area (3 km south of Kasan). After the firing ceased in the evening, the troops advanced toward the US positions. About 50 men, including PW, came as close as 50 meters to the US positions.

15 September: The 50 men were discovered by US troops. The US troops fired machine guns, and many North Koreans were killed. Some of the North Koreans escaped, but PW and two others were captured by US troops at the point 1154.6-1456.1.

On the night (14 September) that POW and 50 others advanced to the US positions, PW heard from his platoon leader that most of the men in the 1st Bn,



19th Regt, were killed.

ATIS-1216

Prisoner: A South Korean conscriptee.
Capture: —
Statements: PW was one of approximately 2,000 South Korean conscriptees from Wonju for the 13th Div, who arrived on or about 10 September, at a mountain about 18 km N of Taegu.

ATIS-1465

Prisoner: Pvt (17), 13th Div, 23d Regt, 1st Bn, Med Plt.
Capture: 23 September.
Statements: Last known strength of 23d Regt approximately 300 men.

ATIS-1293

Prisoner: Sr Col (30),* 13th Div, Hqs Staff.
Capture: 210700K September, 2 km southwest of Tabu Dong.
Statements: The 13th Div has only approximately 200-250 rounds of artillery shells at the present time. There is a sizable amount of small arms ammunition and also a fair amount of anti-tank ammunition. . . There is definitely a food and artillery shortage in the 13th Div. The strength of the 13th Div as of 20 September was approximately 3,500 troops. PW stated that about one month ago a tank battalion, the 105th Armored Div, was attached to the 13th Div. Since that date, however, all tanks have been destroyed. Of a total of 16 self-propelled guns in the 13th Div SP-Gun Bn, only two (2) remain at present.

*See Table 29 for further data on this officer.



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APPENDIX B

**COMBAT EFFICIENCY OF THE 3D NORTH KOREAN DIVISION
AT START OF OFFENSIVE AGAINST THE 1ST CAVALRY DIVISION**

(Quotations from Study Published in Daily
Intelligence Summary Number 2920, G-2,
GHQ-FEC)

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COMBAT EFFICIENCY OF 3d NK DIV

"This estimate of the combat efficiency of the 3d NK Division is based on information contained in the 42 interrogation reports received to date from PWs of that unit; the latest report is dated 31 August. Informants include 12 company grade officers, six NCOs, 19 privates and one civilian agent. Information from one of the interrogees, a political officer, was derived from experience at a higher than company level; observations of the remainder were based on experience at company and platoon level."

"1. Movement ..."

"2. Strength. The three infantry regiments of the division have been identified as the 7th, 8th, and 9th; while the number of the artillery regiment remains unreported. In addition [there are] infantry battalions and one engineer battalion. Personnel strength immediately prior to the invasion is reported as 11,000 (which compares with the accepted strength figure of 10,970 for a NK division). Casualty figures supplied by PWs total 6,282 with the reported replacements amounting to 2,600. On the basis of PW estimates, the adjusted strength of the division as of 31 August becomes 7,318, or about 68 percent of the original 11,000. A comprehensive survey of all sources available indicates, however, that a more realistic figure is 8,568 casualties, and a present strength of 4300."

"3. Training and Combat Experience. By NKPA standards, the original cadre of the 3d Div was highly trained and experienced ... [There were] 15 Russian officers..."

"4. Replacements. Of the 2,600 replacements reportedly received, 800 were Seoul draftees with no training; the remainder were from N Korea and had received an average of 10 days' training. The comparatively low proportion of South Koreans as opposed to NK recruits will probably make desertions less likely and discipline much easier to enforce than in other reorganized NK divisions. But with 40 percent of the organization in this category, the combat effectiveness of the unit may be assumed to have fallen at least 40 percent."

"5. Equipment and Supply. Equipment of the 3d Div appears to be similar to that of other NK Divisions. From the outset the

division had very few motorized vehicles. . . After being committed, gasoline and ammunition were issued on a 24-hour supply basis. . . After early August no supplies of gasoline, ammunition, food or equipment replacements reached the division from the rear. . . Unless large amounts of supplies are stored in the southwestern sector, it may be assumed that the division is running extremely low on ammunition and gasoline, and that its mobility and offensive power have fallen sharply. ”

“6. Physical Condition, Morale. Inadequate medical facilities (death rate of the wounded is estimated at 40 percent), the dearth of food, battle fatigue, all have served to debilitate health of the division’s personnel. The incessant artillery shelling and aerial bombing [etc., etc.] . . . Notwithstanding, . . . only a very small portion of the 42 PWs reported on were deserters rather than captives. . . ”

“7. Summary . . . It is estimated that as of 31 August the combat efficiency of the 3d NK Division stood at approximately 50 percent. ”

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APPENDIX C

REGIMENTAL HISTORIES, 1ST CAVALRY DIVISION COMPILED
FROM ENTRIES IN DAILY INTELLIGENCE SUMMARIES
AND EIGHTH ARMY WAR DIARY

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PART A. 5th CAV REGT

1 September – No relevant entries.

2 September – DIS: “Waegwan: 020400K: enemy patrol crossing river interrupted and dispersed by 5th Cav Regt in area to south.”

3 September – No relevant entries.

4 September – DIS: “Waegwan: 040400K: two enemy groups of unknown strength [simultaneously] attacked the 3d Battalion, 7th Cav Regt and the boundary between the 5th and 7th Cav Regts, 4 and 5 miles northeast.”

5 September – WD: “Enemy of unknown strength attacked elements of the 5th Cav Regt one mile west of AGOK TONG (1139-1456) at 0420. This attack was supported by 3 tanks but no enemy gains were reported. Enemy forces on Hill 518 (1142-1462) were reinforced and exerted Heavy pressure on friendly forces in that area throughout the period.”

– DIS: “Waegwan: 050420K: enemy of unknown strength supported by 3 tanks attacked elements of the 5th Cav Regt in the vicinity 2 miles north.”

6 September – WD: “Enemy of unknown strength launched two attacks against the 5th Cav Regt in the vicinity of Hill 303 (1139-1456), which were repelled with no loss of ground.”

– DIS: “Waegwan: unknown number of enemy attack 5th Cav Regt positions in the vicinity 3 miles NW.

– DIS: “At 060520K, an undetermined number of 3d NK Division troops attacked positions of the 5th Cav Regt 3 miles northwest of Waegwan; this engagement was still in progress as of 060630K.”

7 September – WD: “... The enemy, of undetermined strength, launched an attack supported by tanks against elements of the 2d Battalion, 5th Cav Regt at 0500. This attack was repulsed with no appreciable enemy gains.”

— DIS: "Waegwan: ... 070530K; enemy force of unknown strength supported by 2 tanks attacked positions of elements of 5th Cav Regt in the vicinity 2 miles northeast. 070530K: 2 enemy tanks reported in vicinity 1 mile east... 071600K: previously reported tank supported attack in vicinity 2 miles northeast repulsed by 5th Cav Regt."

8 September — WD: "The 5th Cav Regt zone remained quiet throughout the period except in the area of the 1st Battalion (attached to the 7th Cav Regt), where the enemy, with estimated battalion strength, launched an attack at 1500. At the end of the period, no loss of ground was reported by friendly elements."

— DIS: "Waegwan: 081000K: reported enemy not in contact on 5th and 7th Cav Regts front in vicinity east and south of city."

9 September — WD: "The zone of the 5th Cav Regt had several enemy patrols probing friendly front lines."

— DIS: "Waegwan: ... 9 Sept: enemy probing patrol activity reported in 5th and 7th Cav Regt zones during the day."

10 September — WD: "The zone of the 5th Cav Regt also remained quiet except in the area of the 1st Battalion, 7th Cav Regt (attached to the 5th Cav Regt). In this sector the enemy of unknown strength launched an attack at the end of the previous period in the vicinity of Samchong Dong (1141.3-1454.3) which caused Company C to withdraw to vicinity one mile southwest of Hyonnae Dong (1146.8-1452.1) ... Increased enemy movement of personnel and tanks was observed toward the 5th Cav Regt zone from the direction of Waegwan."

11 September — WD: "In the 5th Cav Regt zone, the enemy stubbornly resisted friendly units in their advance to retake Hill 203, one half mile southwest of Talso Dong (1145.9-1451.2). Friendly units succeeded in overcoming this resistance and by late evening had retaken the hill."

— DIS: "Waegwan: 110015I: enemy of unknown strength attacked elements of 5th Cav Regt, effecting slight penetration. Initial enemy penetration under counterattack; two subsequent enemy attacks resulted in seesaw action in area 5 miles

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southeast. 110600I: enemy activity subsided in 5th Cav Regt zone of action with enemy gain of 1,000 yards in the vicinity 5 1/2 miles southeast. 111730I: light enemy resistance encountered as 5th Cav Regt counterattack advanced to the vicinity 4 1/2 miles southeast."

- DIS: "Waegwan: ... 111730I: enemy driven from hill by E Company, 5th Cav Regt, in vicinity 5 miles southeast."

12 September - DIS: "Waegwan: 122130I: estimated 2 enemy companies attacked E Company, 5th Cav Regt, preceded by 40 minutes of artillery concentration in vicinity of 4 miles southeast. 122150I: estimated 2 enemy companies attacked L Company, 5th Cav Regt in vicinity 5 miles southeast."

13 September - WD: "In the 5th Cav Regt zone, a strong enemy force supported by artillery and mortar fire attacked friendly units in the vicinities of Hill 188, one mile west [south?] of Sin Dong (1145.4-1447.4), Hill 203, one mile south of Talso Dong (1147.0-1451.5), and forced friendly units to withdraw approximately 1,000 yards. After occupying this high ground, the enemy strongly resisted friendly counterattacks throughout the day and held all gains except Hill 188, which was retaken by the end of the period. During these attacks, enemy groups infiltrated into the rear areas, but were being contained and reduced by friendly forces."

- DIS: "Waegwan: ... 130130I: estimated 2 enemy companies attack elements of B and F Companies of the 5th Cav Regt in the vicinity 6 miles southeast. Enemy attacks forced the 5th Cav Regt to withdraw approximately 1,000 yards. 130430I: enemy attacks subsided. 130815I: estimated 100 enemy troops moving south in vicinity 1 mile north engaged by USAF, good results reported. 131500I: unknown number of enemy succeeded in infiltrating behind the lines of the 5th Cav Regt during the night attacks. 132200I: reported enemy strength resisting counterattacks by 5th Cav Regt. Enemy troops still hold high ground in vicinity 5-6 miles southeast."

- DIS: "Waegwan: 131800I: enemy troops with moderate resistance withdrew from hill in vicinity 5 1/2 miles southeast, as elements of the 5th Cav Regt took the hill."

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INFORMATION

14 September — WD: "In the area of the 5th Cav Regt, the enemy offered stubborn resistance against friendly forces attempting to regain the high ground lost previously. At the end of the period, the enemy continued to hold Hill 203, one mile south of Talso Dong (1145.5-1451.0) and Hill 401, three miles west of Tonam Dong (1151.0-1451.3); however, elements of the 5th Cav Regt regained Hill 174, one mile southeast of Talso Dong (1145.0-1451.5)."

— DIS: "Waegwan: ... 140600I: enemy resistance stiffening, heavy enemy mortar and artillery fire on advancing elements of the 5th Cav Regt in the vicinity 5 miles east and southeast. ... 141800I enemy driven from hill in vicinity 6 miles southeast by the 3d Battalion, 5th Cav Regt. ... 142000I: enemy stubbornly holding ground in vicinity 5 miles east.

— DIS: "Tabu: ... 13-14 Sep: enemy artillery fire fell on ... positions of the 5th and 7th Cav Regts during the night. ... 141200I: enemy penetration on hill engaged by elements of the 5th Cav Regt in the vicinity 5 miles south."

15 September — WD: "During the early morning hours, the enemy launched a coordinated attack of regimental strength against the 5th Cav Regt. The enemy succeeded in seizing Hills 174 (1147.0-1451.5), 313 (1148.8-1452.8), 530 (1149.5-1453.8) and the north side of Hill 401 (1151.0-1451.3). Pressure continued on the 5th Cav Regt throughout the day, with moderate to heavy artillery and mortar fire, but a decrease in pressure was noted after 1700 hours. The enemy withdrew from newly won positions after the air attacks."

— DIS: "Waegwan: ... 150400I: estimated enemy regiment made coordinated attack on 5th Cav Regt positions on hill in vicinity 6 miles east, 5 1/2 miles southeast, and 6 miles southeast. Enemy attack repulsed with heavy casualties. 150600I: estimated enemy battalion supported by armor engaged the 5th Cav Regt in the vicinity 6 1/2 miles east; 1 enemy tank knocked out. 151125I: estimated enemy battalion captured hill in vicinity 5 1/2 miles southeast."

16 September — WD: "In the 5th Cav Regt zone, the enemy was forced to withdraw from Hills 174, 2 miles southeast of Talso Dong (1147.0-1451.8) and 232, 2 miles northeast of Sin Dong (1148.6-1451.4) in the face of friendly attack."

[REDACTED]

— DIS: “Waegwan: 161000I: strong enemy resistance met advancing 5th Cav Regt in vicinity 6 1/2 miles southeast. 161100I: heavy artillery and mortar concentrations laid on 5th Cav Regt attacking hills 5 miles southeast and 6 1/2 miles southeast. . . 161500I: . . . strong enemy resistance supported by large volume of artillery and mortar concentrations slowed advance of 5th Cav Regt toward hills in vicinity 4 1/2 miles southeast, 5 miles southeast, and 7 miles southeast. . . 161630I: . . . estimated 2 enemy companies cleared from hill in vicinity 7 1/2 miles southeast by the 5th Cav Regt.”

17 September — WD: “The 5th Cav Regt continued a limited advance against stubborn enemy resistance. During the first part of the period, friendly forces received a considerable amount of fire from north and west of the Naktong River, which slowed their advance. During the late evening hours, the enemy apparently attempted to reinforce his positions as groups of enemy of undetermined strength were observed moving down the road on the east side of the Naktong River from Waegwan (1138-1453). . . Some elements of the 5th Cav Regt advanced approximately 3,000 yards, by-passing two hills occupied by the enemy; other elements of the regiment were held to slight gains in the vicinity of Hill 203, one mile south of Talso Dong (1145.9-1451.0).”

— DIS: “Waegwan: . . . 171000I: reported possible regiment of 3d NK Division dug-in on hill in vicinity 4 1/2 miles southeast continues to deny hill to attacking 5th Cav Regt.”

18 September — WD: “The enemy on Hills 371, near Talso Dong, (1144.9-1453.3) and 253, 2 miles south of Samchong Dong (1142.9-1452.1) resisted all attempts of the 5th Cav Regt to take them. During the first part of the period, the enemy launched several attacks, which are repulsed.”

— DIS: “Waegwan: 180600I: enemy continues strong resistance in front of 5th Cav Regt in vicinity 4 1/2 miles east to 5 1/2 miles northeast . . . 181100I: . . . Enemy driven from strong point in vicinity 4 1/2 miles east as 5th Cav Regt occupied hill in that area.”

19 September — WD: “Friendly forces in the 5th and 8th Cav Regt zones drove the enemy off Hills 268 (1140.7-1449.6), 392 (1149-1455), 624 (1149-1450), and 303 203 (1144-1451).”

— DIS: “Waegwan: 190610I: light enemy resistance met 5th Cav Regt in vicinity 2 1/2 miles east. 190930I: enemy strongly resisting advance of 5th and 7th Cav Regts in vicinity 3 miles southeast. Hill objective seized by US troops but mopping up enemy remnant on crest continues. . . 191055I: enemy remnants driven from hill in rear areas in vicinity 4 miles southeast by the 5th Cav Regt. . . 191100I: one enemy tank destroyed by USAF approximately 1 mile south. Enemy resistance increasing in 5th and 7th Cav Regt zones in vicinity 3 miles east-southeast and 4 miles east.”

20 September — No relevant entries.

PART B. 7th CAV REGT

1 September — No relevant entries.

2 September — No relevant entries.

3 September — WD: “An undetermined number of enemy crossed the river north of Waegwan and exerted moderate pressure against elements of the US 7th Cavalry Regiment throughout the period.”

— DIS: “Waegwan: 030500K: unknown number of enemy attack 7th US Cav Regt forcing approximately 500 yards withdrawal vicinity 2-3 miles north. . . 03160K: enemy forced to withdraw from gains made during the day by counterattack by the US 7th Cav Regt in the vicinity 2-3 miles north.”

— DIS: “Hajang: . . . 030600K: enemy probing attack [against 8th Cav Regt] contained, enemy mortar fire decreasing under 7th Cav Regt counterbattery fire.

4 September — WD: “. . . attacks on the 7th Cavalry and 8th Cavalry Regiments were repulsed early in the period. Enemy pressure along these fronts decreased toward the end of the period. Elements of one enemy regiment occupying Hill 518 (1142-1461) continued to resist a battalion of the 7th Cavalry Regiment which was attempting to capture this high ground. An enemy group of undetermined strength which had infiltrated to the rear of the 7th Cavalry Regiment was contained and friendly operations continued to reduce this group.”

— DIS: "As of 032000K, small enemy groups had crossed the Naktong River approximately 2 miles NE of Waegwan and were establishing positions... Waegwan: 040400K: two enemy groups of unknown strength [simultaneously] attacked the 3d Battalion, 7th Cav Regt and the boundary between the 5th and 7th Cavalry Regiments, 4 and 5 miles NE. 040615K: enemy attacks on the 7th Cav Regt repulsed.

— DIS: "Hajang: 040600K: enemy mortar fire falling on the positions of the 7th Cav Regt in the vicinity 5 miles south.

5 September — DIS: "Waegwan: ...050600K: enemy pockets mopped up in the 7th Cav Regt vicinity, 4-5 miles NE."

6 September — DIS: "Waegwan: ...061120K: reported enemy [13th NK Division] attacks on positions of 7th and 8th Cavalry Regiments repulsed; no large enemy penetrations; enemy continues to exert heavy pressure on both fronts."

7 September — WD: "...enemy of undetermined strength launched an attack against elements of the 1st Battalion, 7th Cav Regt, and drove one company back approximately 500 yards; however, counterattacking forces succeeded in restoring all positions. An undetermined number of enemy infiltrated during the night in the vicinity of Mangjong Dong (1144-1457) and temporarily cut off elements of the 2d Battalion, 7th Cav Regt. Later in the period, friendly units brought this situation under control and began mopping up the enemy which had reached the rear areas."

— DIS: "Waegwan: ...062305K: unknown number of enemy attack elements of 7th Cav Regt in vicinity 5 miles NE; attack repulsed at 070130K. 070130K: enemy attack repulsed by 7th Cav Regt in vicinity 2 miles north. 070530K: enemy force of unknown strength in heavy fire fight with elements of the 7th Cav Regt in vicinity 5 miles NE... 070710K: unknown number of enemy infiltrated positions of the 7th Cav Regt during the night and cut off elements of the regiment in the vicinity 4 miles northeast. 071600K: enemy infiltration vicinity 4 miles northeast reported previously [now] under control; enemy groups in rear areas being mopped up... 071200K-072400K: enemy small arms, mortar and artillery fire fell on the 7th Cav Regt throughout the period."

8 September — WD: “. . .in the area of the 1st Battalion, 5th Cav Regt (attached to the 7th Cav Regt). . .the enemy, with estimated battalion strength, launched an attack at 1500. At the end of the period no loss of ground was reported by friendly elements.”

— DIS: “Waegwan: 081000K: reported enemy not in contact on the 5th and 7th Cavalry Regiments' front, in vicinity east and south of the city. 081500K: estimated 150 enemy attack on center positions of 7th Cav Regt; repulsed, vicinity 4 miles southeast.”

9 September — DIS: “Waegwan: 081800K: an estimated enemy battalion [of the 3d NK Division] attacked the 1st Battalion of the 7th Cav Regt in the vicinity 5 miles east. 090030K: enemy probing attack repulsed [with no enemy gain].”

10 September — WD: “. . .in the area of the 1st Battalion, 7th Cav Regt (attached to the 5th Cav Regt). . .enemy of unknown strength launched an attack at the end of the previous period, vicinity of Samchong Dong (1141.3-1454.3) which caused Company C to withdraw to vicinity 1 mile southwest of Hyonnae Dong (1146.8-1542.1 [1452.1?]). At 0945, a counterattack by elements of the US 7th Cav Regt was stopped short of its objective. At approximately 1800, a second counterattack was launched against heavy enemy resistance and was unable to regain former positions.”

— DIS: “Waegwan: 100001I probing attack by enemy of unknown strength [of 3d NK Division] forced slight withdrawal of elements of the 1st Battalion, 7th Cav Regt in vicinity 6 miles east. 100610I: enemy patrols [of the 13th NK Division] actively engaged OPLR of 7th Cav Regt in vicinity 5 miles east during night.”

11 September — DIS: “Tabu: heavy enemy automatic, small arms, mortar and artillery fire forced elements of the 7th Cav Regt to withdraw 300 yards vicinity 2 1/2 miles south. . .110200I: heavy enemy pressure subsided in 7th Cav Regt zone action vicinity 3 miles south. 111000I: ground previously lost to enemy regained against heavy enemy resistance.”

12 September — WD: “Enemy forces in position on Hill 314, two miles south of Namwon Dong (1156-1454), were attacked following an air and artillery preparation. The enemy stubbornly resisted the attacking force but was driven off the hill by 1600 hours. An enemy counter-attack was repulsed and enemy forces withdrew toward Hill 570, two miles north of Chang Dong (1154.5-1355.0).”

13 September — WD: ... In the US 7th and 8th Cavalry Regimental zones, the situation remained stable throughout the period; however, the enemy continued to place sporadic artillery and mortar fire in the regimental zones and maintained heavy pressure against these units."

— DIS: "Tabu: 132200I: 7th and 8th Cav Regimental zones quiet except for sporadic artillery and mortar fire."

14 September — DIS: "Tabu: 13-14 Sept: enemy artillery fire fell on ... positions of the 5th and 7th Cavalry Regiments during the night."

— DIS: "On 14 September, a small 3d NK Division patrol attempting to infiltrate 7th Cav Regt positions 7 miles south of Waegwan was dispersed."

15 September — DIS: "Tabu: 151800I: reported area south and southeast quiet in 7th and 8th Cav Regt zones."

16 September — [No reported activity.]

17 September — WD: "In the 7th and 8th Cavalry regimental zones, friendly forces were limited to slight gains."

— DIS: "Tabu: ... Stubbornly defending enemy limited 5th, 7th, and 8th Cavalry Regiments to slight gains on line 4-6 miles southeast to southwest."

18 September — DIS: "Tabu: ... 181800I: heavily defending enemy continues to contain the 7th and 8th Cavalry Regiments in the vicinity south."

19 September — DIS: "Waegwan: 190930I: enemy strongly resisting advance of 5th and 7th Cavalry Regiments in the vicinity of 3 miles southeast. Hill objective seized by US troops but mopping up enemy remnant on crest continues... 191100I: ... enemy resistance increasing in the 5th and 7th Cavalry regimental zones, vicinity 3 miles east southeast and 4 miles east."

PART C. 8th CAV REGT

1 September — No relevant entries.

SECRET

2 September — WD: "... At the end of the period an estimated two enemy regiments attacked the right flank of the 8th Cavalry Regiment and succeeded in gaining approximately 2,000 yards. Heavy fighting continued in this area at the close of the period."

— DIS: "Hajang: 021200K: enemy withdrew 1-2 miles in face of counterattack, supported by artillery, of the 8th Cav Regt in vicinity 3 miles southeast."

3 September — WD: "... the enemy launched an attack in the 8th Cav Regt zone and succeeded in gaining approximately 3,000 yards. The attack was contained for the remainder of the period but the enemy continued to exert heavy pressure... An estimated 400 enemy infiltrated along the right boundary of the 8th Cav Regt zone and by the end of the period had occupied the walled city of Kazan."*

— DIS: "Hajang: 022130K: estimated 2 enemy regiments attack positions of 2nd Battalion, 8th Cav Regt in vicinity 4-5 southeast. 022215K: 'F' Company, 8th Cav Regt, forced to withdraw approximately 3,000 yards, enemy attack slackening as enemy mortar fire increasing. 030600K: enemy probing attack contained, enemy fire decreasing under 7th Cav Regt counterbattery fire. 031000K: estimated enemy regiment attacking 8th Cav Regt, instead of two regiments previously reported; attack contained vicinity 8 miles southeast, fighting continues. 032000K: enemy troops reported moving west up slope to walled city, some on top hill, vicinity 8 miles southeast of Hajang."

4 September — WD: "... enemy attacks on the 7th and 8th Cavalry Regiments were repulsed early in the period. Enemy pressure along these fronts decreased toward the end of the period... Elements of the 8th Cav Regt occupied the 'Walled City' of Kazan but were reported surrounded by an enemy force estimated as 800."

— DIS: "Hajang: 031955K: estimated 400 enemy captured the walled city in vicinity 9 miles southeast... Enemy infiltrating in vicinity 9 miles southeast forced withdrawal of 8th

*The "Walled City" of Kazan is not actually a city but a religiously significant mountain furnished with stone retaining walls to prevent landslides.

SECRET

Cav Regt. 041600K: enemy in walled city 9 miles southeast engaged by elements of 1st Cav Div. 041800K: estimated 800 enemy surrounded elements of the 1st Cav Div which entered the walled city. "

5 September - WD: "... Friendly forces attacking towards the Walled City to gain contact with elements cut off within the city were stopped at 0400 approximately 500 yards short of their objective by heavy small arms fire. At the close of the period the Walled City was in enemy hands with a reported five battalions occupying the city. "

- WD: "Hajang: enemy attack (13th NK Division) in unknown strength maintaining heavy pressure on positions of the 8th Cav Regt in vicinity 7 miles south. 050400K: heavy enemy small fire prevented 1st Cav Div relief troops from reaching encircled troops within the walled city 9 miles southeast. 050600K: enemy pressure forced the withdrawal of the 3d Battalion of the 8th Cav Regt to vicinity 8 miles south southeast. 052400K: enemy troops in the vicinity of the walled city 9 miles southeast contained as elements of the 8th Cav Regt withdrew from the city. "

6 September - WD: "... On the right flank of the 8th Cav Regt the enemy attacked from the vicinity of one mile north Namwon Dong (1156-1459) in an attempt to pass through the gap between the 1st Cav Div and the ROK 1st Div. ... Enemy estimated at two regiments continued to maintain pressure along the entire front of the 8th Cav Regt zone throughout the period... Reports estimated an enemy force of 1,500 within the Walled City. Friendly artillery and mortar fire continued in this area. "

- DIS: "Waegwan: ... 061120K: reported enemy attacks [13th NK Division] on positions 7th and 8th Cav Regts repulsed; no large enemy penetrations; enemy continues to exert heavy pressure on both fronts. "

7 September - WD: "The enemy opposing the 8th Cav Regt continued to exert heavy pressure throughout the entire period. Indications of increased enemy strength south and west of the Walled City continued during the period. "

— DIS: "Hajang: 6-7 Sept: enemy forces of unknown strength believed infiltrated between positions of 8th Cav Regt during the night in the vicinity 8 miles southeast. 070730K: enemy probing attacks repulsed by 8th Cav Regt in vicinity 7 miles southeast. 071600K: indications of enemy reinforcing to west and south in vicinity of walled city 9 miles southeast.

8 September — WD: "In the 8th Cav Regt zone, the enemy, with estimated several hundred strength, counterattacked attacking elements of the regiment and halted their advance. At the close of the period the enemy succeeded in pushing elements of the 3d Battalion back to the vicinity one mile west of Namwon Dong (1154.7-1155.8).

— DIS: "...at 081130K, attacking elements of the 8th Cav Regt were stopped short of their objective by a counterattacking NK force of regimental strength."

9 September — WD: "The enemy opposing the 8th Cav Regt was not as aggressive as he had been during the previous periods. No actual attacks were reported on friendly positions, but the enemy maintained close contact with friendly forces throughout the period. At 0700, an estimated enemy company attacked the 16th Reconnaissance Company vicinity one mile south Namwon Dong (1156.3-1455.8) and forced a withdrawal of approximately 800 yards to the south. Attempts to recover this ground were resisted by the enemy who occupied a hill near Namwon Dong (1156.5-1455.8)."

— DIS: "Hajang: 081800K: enemy attack forced 3d Battalion, 8th Cav Regt to make slight withdrawal to vicinity 9 miles southeast, when enemy attack was contained. 091200K: enemy pressure continuing on front and right flank positions of 8th Cav Regt. 092020K: two small scale enemy attacks supported by enemy mortar fire on positions of 8th Cav Regt in vicinity 2-3 miles south of Walled City, vicinity 12 miles southeast of Dajong."

10 September — WD: "In the 8th Cav Regt zone, an attempt to capture Hill 314 (1156-1453) by friendly forces at 1300 met with heavy enemy resistance, which decreased at approximately 1600. At that time, elements of the 8th Cav Regt and 16th Reconnaissance Company moved forward and recovered the

ground which they had lost the preceding night. "

- DIS: "Hajang: 092020K: enemy attacks [by the 1st NK Division] on the right flank positions of the 8th Cav Regt reported contained. "

- DIS: "Tabu: 101330I: enemy withdrawing in front of advancing 3d Battalion, 8th Cav Regt in vicinity 5 miles southeast. "

11 September - WD: "In the 8th Cav Regt zone, the enemy stubbornly resisted attacking elements of the Regiment. The attacking friendly forces gained approximately 1,200 yards, but after a strong counterattack were forced to withdraw approximately 700 yards. An enemy counterattack was contained by late afternoon. During the remainder of the period, the enemy continued to maintain heavy pressure against friendly units by fire only. "

- DIS: Tabu "... 102345I: estimated 115 enemy attack positions of 8th Cav Regt in vicinity 5 miles southeast, attack repulsed 2 hours later. 102400I: enemy interdiction artillery fire silenced by combined UN air action and 1st Cav Div counterbattery fire. ... 110710I: enemy of undetermined strength attack positions of 8th Cav Regt in vicinity 5 miles southeast, attack repulsed. 110710I: enemy counterattack against positions taken by 3d Battalion, 8th Cav Regt, vicinity 5 mi southeast, caused slight withdrawal of friendly forces. ... 111000I: ground previously lost to enemy regained against heavy enemy resistance [by 8th Cav Regt?]. 111130I: unknown number of enemy engaged elements of 8th Cav Regt in vicinity 5 miles southeast with no enemy gains. " [Elsewhere in same source: "By 111300I, elements of the 8th Cav RCT had advanced 1200 yards against heavy resistance when a strong enemy counterattack of undetermined strength forced friendly withdrawal approximately 800 yards before it was contained, vicinity 4-5 miles southeast of Tabu. "] "111600I: strong enemy resistance encountered by counterattack of 8th Cav Regt, vicinity of 4-5 miles southeast. Estimated enemy regiment occupies key hill in vicinity 5 miles southeast. "

12 September - WD: "Several small enemy patrols which penetrated the area of the 8th Cav Regt were engaged by friendly

elements and dispersed. Friendly elements continued operations to eliminate other enemy pockets."

- DIS: "Tabu: ... 121600I: strong enemy resistance continues in face of attack by 8th Cav Regt in vicinity 6 miles southeast. 121600I: estimated 160 enemy in two groups behind 1st Cav Div lines in vicinity 5 and 6 miles south. 121600I: 6 to 8 enemy artillery pieces attacked by USAF in vicinity 2 miles southeast."

13 September - WD: "In the 7th and 8th Cav Regt zones, the situation remained stable throughout the period; however, the enemy continued to place sporadic artillery and mortar fire in the regimental zones and maintained heavy pressure against these units."

- DIS: "Tabu: 132200I: 7th and 8th Cav Regt zones quiet except for sporadic enemy artillery and mortar fire."

14 September - WD: "In the zone of the 8th Cav Regt, the enemy stubbornly resisted attacking friendly forces but was forced to withdraw from Hill 570 and Namwon Dong (1154.5-1456). Intermittent enemy artillery and mortar fire fell on the 1st Cav Div zone throughout the period."

- DIS: "Tabu: 132135I: estimated enemy company's infiltration around high ground, supported by heavy artillery fire, forced elements of the 8th Cav Regt to withdraw from hill 5 1/2 miles south... 140600I: enemy 30-man group contacts elements of 8th Cav Regt in vicinity 4 miles southeast... 141700I: strongly resisting enemy troops driven off hill in vicinity 4 miles southeast by advancing 8th Cav Regt. 142000I: estimated enemy company successfully defending hill in vicinity 5 miles south, and enemy of unknown strength resisting counterattacks by elements of the 8th Cav Regt on hill 4 miles southeast of Tabu... Enemy patrols dispersed during the night in the vicinity of this hill [vicinity 4 miles southeast]."

15 September - DIS: "Tabu: ... 151200I: heavy enemy resistance denies 8th Cav Regt access to hill in vicinity 4 miles southeast. 151800I: reported area south and southeast quiet in the 7th and 8th Cav Regt zones."

[REDACTED]

16 September — WD: "In the 8th Cav Regt zone, an estimated 100 to 150 enemy attacked elements of the regiment from northeast of Hill 570, 2 miles west of Namwon Dong (1154.5-1456.0) at 0800. At approximately 1100, this position was again attacked by approximately 225 enemy from the vicinity 3 miles west of Namwon Dong (1154.4-1457.0). Both attacks were repelled and friendly elements reported making slight gains by the end of the period."

17 September — WD: "In the 7th and 8th Cav Regt zones, friendly forces were limited to slight gains. The 3d Battalion, 8th Cav Regt, advanced approximately 1,000 yards, driving the enemy from Hill 530, ten [2 1/2] miles east of Talso Dong (1149-1153)."

— DIS: "Tabu: ... 170700I sporadic enemy mortar fire fell on positions of 8th Cav Regt in vicinity 3 miles southeast. 171200I: enemy counterattack on hill 3 1/2 miles southeast repulsed by 8th Cav Regt. Moderate artillery fire and large volume of 120-mm mortar fire preceded enemy counterattack. Stubbornly defending enemy limited 5th, 7th and 8th Cav Regts to slight gains on line 4-6 miles southeast to southwest. . . 171700I: enemy employed moderate volume artillery and small arms fire, with large volume accurate 120-mm mortar fire against advancing elements of 8th Cav Regt, which forced enemy from hill 3 1/2 miles south. 172350I: small enemy force engaged elements of 8th Cav Regt in vicinity 4 miles southeast; after brief fire fight, enemy withdrew."

18 September — DIS: "Tabu: ... 181800I: heavily defending enemy continues to contain 7th and 8th Cav Regts in vicinity south."

19 September — WD: "Friendly forces in the 5th and 8th Cav Regt zones drove the enemy off Hills 268 (1140.7-1449.6), 392 (1149-1455), 624 (1149-1450 [1456], and 303 [203?] (1144-1451)."



APPENDIX D

ENEMY DOCUMENT – NOTES OF MEETING ON 30 AUGUST
1950 AT WHICH OFFENSIVE AGAINST THE 1st CAVALRY
DIVISION WAS ORDERED

(Extracts from Translation of Notebook)





ENEMY DOCUMENT

"a. To operate in our Div main offensive direction date 2 Sep. 3 days for preparation for attack. Begin attack at 1800 hours 2 Sept. (Arty firing for 15 minutes). After capture of Taegu City, advance 15-20 km south from Taegu and give Taegu strong defense.

b. Supreme CG directive rush on 6 km at the first time.

c. Advance before daybreak.

d. 1st Div. at the left side, 3d Div at the right side.

e-n

Ammunition: every private 226, Regt 0.5, Div 0.5, Arty 1.5, Arty 1, Div. 0.5.

Provision cooked for 2 days, raw food for 2 days.

.

UISONG 3000 men
ANDONG 1000 men
Commanding Post 170 men

.

MU JONG
CG, 2 Corps''

Notes: Notebook, 12 sheets handwritten, carried on person of Sr. Col. Lee Hak Ku, C/S 13th Div, NKPA, who surrendered to US Forces at 1153.3-1454.3 on 21 September 1950.





APPENDIX E

EXTRACTS FROM WAR DIARY OF 7TH CAVALRY REGIMENT

(1-3 September 1950)

1 September - "At 0445... the 1st Battalion reported Company A was receiving harassing machine gun and mortar fire from Hill 400 (coord. 41.7-61.4). Company F also reported receiving the same type of harassing fire from this hill. A later report revealed Company A had received 22 rounds of heavy artillery at 0600 which resulted in three casualties..."

"At 1110 the 2d Battalion reported a nine man enemy patrol crossing the river. Enemy artillery continued to fall in each battalion sector during the day, causing the 1st and 2d Battalions to move their CPs. Our artillery knocked out an enemy mortar position 400 yards NE of Hill 518..."

"At 1740 the 1st Battalion reported that... Company B had destroyed an enemy mortar position 250 yards NE of Hill 518 with two rounds of 3.5 inch RL... Opened [this] fire at a range of 400 yards and killed at least one North Korean.

2 September - "The assault on Hill 518 began at 0909 with an air strike of four flights of F-51s who dropped 24 napalm bombs and strafed targets on the ridge and N side of the hill. Pilots reported bombs were 'on target' and effect was good. Artillery preparatory fires were delayed for several minutes due to another air strike; however, it was eventually on the way."

"The 1st Battalion CO issued the order for movement to the first phase line at 1007 as one tank of Task Force Blue opened up on the right front in support of the attack."

"At 1022 hours, the 2d Battalion CO reported that Company F was giving strong machine gun fire in support of the 1st Battalion."

"At 1029 hours the 1st Battalion reported four F-80 jets had halted their attack and artillery fire by making an unscheduled attack on Hill 518. Approximately 15 out of an estimated 40 to 50 enemy sighted by Company I were killed at 1055 hours. By this time, also, the air attacks on Hill 518 were shifted to Hill 346 and other targets, enabling the 1st Battalion to resume the attack."

[REDACTED]

"Harassing enemy artillery fire fell in the Company I sector's left flank at 1101 hours, simultaneous with the movement of approximately 35 enemy across the company front, who were taken under fire. About 40 enemy and 3 field pieces spotted on Hill 346 by a 3d Battalion outpost were hit with good results by four F-80s which struck the position at 1132 hours."

"One of the 2d Battalion's supporting tanks from Company C, 70th Tank Battalion, was hit by an enemy mortar round at 1210, killing one crew member and wounding two more."

"At 1240 hours the Regimental Intelligence and Reconnaissance Platoon reported that our planes had caused explosions with black smoke at coordinates (1139.8-1463.3). Mild enemy tank activity was later reported by this platoon in the vicinity of south of Saji-Dong. Hill 346 was reported as burning furiously at 1300 following an air strike by our F-51s and F-80s."

"At 1320 hours, the 1st Battalion reported that they were held upon phase-line B by intense machine guns and mortar fire. At 1410 hours they reported that their attack was being held up by prepared enemy positions on Hill 490..."

"At 1715 hours, after smoking hills to left front, the 3d Battalion jumped off through Company I's positions north-westerly toward Hill 490, as planned. This allowed the 1st Battalion to resume its assault against Hill 518 from a westerly direction approximately 15 minutes later. The 1st Battalion began its advance on Hill 518 as the 3d Battalion advanced to the base of Hill 490."

"At 1830 the 1st Battalion advance was halted by heavy machine gun fire as they neared the summit of Hill 490 on the north east side of Hill 518. A report was received from the 3d Battalion that Hills 490 and 518 would be assaulted simultaneously at 1850. However, at 1920 two enemy machine guns from Hill 490 opened up on the battalion, necessitating counter-fire from our heavy machine guns before the advance could continue. By 1930 the 3d Battalion was on Hill 490 and within 200 yards of Hill 518. Small arms, automatic and mortar fire

[REDACTED]

harassed them but their advance up the hill continued."


"Heavy harassing fire from enemy artillery and 120-mm mortars fell over the entire regimental sector, with 150 rounds falling in the vicinity of our tanks alone. The Regimental Intelligence and Reconnaissance Platoon was forced off the Regimental Outpost by heavy artillery fire, with an estimated 200 rounds striking the 2d Battalion's sector. Heavy fire was received from 2000 to 2115 hours. All communications lines were broken. The enemy artillery, as heavy as it was, did not appear to be observed and directed. The forward collecting station was forced to withdraw because of the enemy artillery..."

"Several enemy artillery pieces, mortars, tanks and vehicles were reported by observers throughout the sector."

3 September - "The 3d Battalion had succeeded in advancing to within 200 yards of the summit of Hill 518. The 1st Battalion had been stopped near the top of Hill 490, while the 2d Battalion reported that all remained quiet until 0356, when heavy tank and artillery fire struck their positions, and Company E had received and repulsed an enemy attack... The Regiment's I and R Platoon reported one large and one small enemy artillery piece directing fire in vicinity of, along forward slopes, and on the crest of Hill 464. The 2d Battalion was receiving sporadic tank and artillery fire on hill accompanied by a small amount of movement across their front from 0356 to 0440 hours, while the 1st Battalion requested artillery fire on Hill 154 at 0425 hours."

"Company F received a heavy, artillery-supported attack on their sector's right flank at 0515 which had forced them to fall back from their forward positions."

"At 0640 hours the 2d Battalion reported that they had been driven off of Hill 300 [Hill 326?]. Artillery fire was placed on the hill to prevent the enemy from reinforcing this penetration. At 0725 hours the 1st Battalion reported that an unknown number of the enemy had penetrated through Company F to the bridge on the Main Supply Route. At 0802 hours, the 2d Battalion reported they again occupied Hill 300 [326?] as the enemy had been repulsed."



“At 0633 hours, elements of the Security Platoon and Headquarters Platoon of Headquarters Company. . .were alerted to move on regimental orders to intercept and fight off enemy groups which had penetrated the forward positions. At approximately 0730 hours, this force was ordered up the connecting trail, into the saddle, to work out and clear the ridges of enemy groups. By 0849 hours. . . [the I and R Platoon] reported they had been knocked off of Hill 464 and had lost some equipment. Estimated 25 enemy held the hill at that time. . . [Unit of Headquarters Company] reported receiving mortar and automatic fire from Hill 464 at 1000 hours. Reported that the enemy had a radio and an 82-mm mortar on the hill. . . At 1100 hours [I and R Platoon] sighted 10 enemy. He requested his jeep with 57-mm RR be sent to him and it was dispatched immediately. He later reported that results with the 57-mm were wonderful in that the enemy was dispersed all over the hill side. Also reported that this force was two columns of approximately two squads each. . .At 1306 hours [Headquarters unit] reported they had run enemy out of position and were in pursuit. . . At 1403 hours [Headquarters unit] requested litter bearers for five men seriously wounded.”

“At 0730 hours the S-3, 2d Battalion reported seeing a tank in the vicinity. At 0820 the 2d Battalion reported they occupied their original positions. The 1st Battalion reported they were still working for Hill 518 at 0844 hours. At 0926 hours the 3d Battalion reported they were attacking an enemy force estimated at 20 with two machine guns on Hill 518. . .”

“At 1159 hours the 1st Battalion reported ‘Talbert’s Marauders’ were withdrawing back up the draw and moving onto Hill 400 [Hill 395?]*. They reported that the hill draw leading to the NW of Hill 400 was teeming with enemy troops. The 3d Battalion was continuing to assault the enemy on Hill 518, using grenade and rocket launchers in their attack.”

“At 1115 hours three rounds of enemy flat trajectory fire fell in the immediate area of the regimental CP, while additional rounds fell in the draw to the S and E. Six minutes later three additional rounds fell within a radius of 200 yards from the CP. The same pattern was utilized by the enemy in the previous day’s firing.”

*See Morning Reports of 1st Battalion, Table 25.

“At 1330 hours the 1st Battalion reported that the enemy occupied Hill 326 and Hill 400 [Hill 395?] in strength and that Lt. Talbert's Marauders were virtually cut off. They said that they were throwing artillery in an attempt to extricate this force. At 1435 hours Lt. Talbert's marauders were reorganized on Hill 400 [Hill 395?].”

“At 1417 hours the CO, 1st Battalion reported they had knocked out a machine gun, killed an enemy officer and stripped him of documents. They had also captured two prisoners. This had been accomplished by their combat patrol which held ridges and had the enemy in a draw where they were going to polish them off.”

“At 1450 hours the CO, 1st Battalion, reported Company A was at a point approximately 500 yards from Hill 518.”

“Several rounds of enemy artillery harassing fire began falling in the vicinity of the Regimental CP between 2010 and 2025 hours.”

“The 1st Battalion launched another attack at 2228 hours on Hill 518 with four platoons moving from the N. The leading platoon continued to move from this direction while the other platoons infiltrated with the mission of capturing Hill 518 tonight. An additional report revealed that the attack was continuing and that they were engaging in hand to hand combat.”

“The 2d Battalion reported negative at 2240 hours, and a report from the 3d Battalion revealed no change at 0330 hours except for heavy concentration of artillery on the Battalion's left flank.”

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APPENDIX F

ACTION OF 5TH CAVALRY REGIMENT AS DESCRIBED
IN PERIOD OPERATIONS REPORTS
(4, 5, 13-19 Sep 1950)

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4 September - Period Operations Report No. 128, covering period
040600-041810

“As a result of enemy infiltration thru Skirmish area, George Co reported at 040020K enemy troops in unknown strength were on east side of river and moving east in draw on our right boundary. At 040125K George Co received light attack on right flank which lasted until 0150K. At 0408K Fox Co patrol (Opn Rpt No 125) was driven from position in draw by enemy of unknown strength. At 0630K George Co was attacked on their right flank by a force of enemy est at 250-300. Attack was held off [of] Hill 303 but George was still receiving enemy fire from adjacent hill-mass. In an effort to drive enemy off aforementioned hill-mass, two platoons of Co A 70th Tk Bn were used to fire in direct support of George Co. At 1112K one plt Fox Co [was] attached to George Co in preparation for counterattack on hill mass. One platoon Easy Co moved to 1140.5-1457.3 to establish outpost and maintain contact with Skirmish White; closed at 1249K. At 1158K second platoon was ordered to support George Co. Attack was launched at 1445K with George Co and 1 platoon of Fox Co participating. At 1605K the objective was reached and our force began reorganizing. Remaining platoon of Fox Co [was] ordered to support George Co in final seizure and security but only the 1st platoon had joined as of 1600K. Accurate enemy small-arms fire caused a delay in the complete seizure and coordination of objective. At 1640K third plt Fox Co was committed. At 1740K furthestmost troops in attack were withdrawn approximately 100 yds, and prearranged artillery and mortar fire was effectively placed on final objective. As of 1800K troops were moving in on final assault and encountering accurate sniper fire. As of 1740K casualties among our troops were 6 KIA and 66 WIA.”

Note: “Swing” designates the 5th Cav Regt, “Skirmish” the 7th Cav Regt. “Red,” “White,” and “Blue” are, respectively, 1st, 2d, and 3d Bns. “Stateside” appears to be 1st Cav Div Engrs.

4 September (Con'd) - Periodic Operations Report No. 129, covering
period 041800-042400K

“Hill-mass adjacent to Hill 303 was completely taken by George and Fox Cos at 1840K through employment of marching assault fire. Troops immediately dug-in and consolidated positions.”

[REDACTED] ON

5 September - Periodic Operations Report No. 130, covering period 042400-050600K

"White reported enemy in unknown strength attacking northernmost point of hill mass adjacent to Hill 303 from the West. Directed mortar fire on enemy. At 0330K enemy attack had subsided somewhat. At 0335K George Co was receiving what they believed to be tank fire. At 0420K a heavy fire-fight was in progress and by 0500K some enemy were moving toward Hv Mort positions at 1140.5-1455.2). By 0515K our units had been driven back to the top of Hill 303. Hv Mort Plt displaced one gun slightly to rear of positions and succeeded in driving enemy off under heavy mortar fire..."

13 September - Periodic Operations Report No. 153, covering period 130600-131800.

"After considerable reorganization and preparation thruout the morning, plans for attacks on Hills 188, 203, and 174 were completed. Baker Co reinforced by 1 platoon of Charlie Co and 1 platoon of Able Co jumped off in assault on Hill 188 at 131331I to clean up enemy pocket on hill. At 1450I George Co reinforced by 1 platoon of Fox Co were ready to attack Hill 203 and were receiving excellent artillery and mortar preparation. Fire was lifted and the attack started at 1500I. By 1500I Swing Red reported unit two thirds of the way up Hill 188 and receiving heavy enemy fire. At 1530I Swing Blue Love Co reinforced by one platoon of Item Co jumped off in attack on Hill 474. At 1255I [1525I ?] Swing Red reported his unit was on Hill 188 and was pushing out on slopes to secure it. At 1635I advance on Hill 203 was held up due to extremely heavy enemy artillery and mortar fire. At 1645 Swing Blue reported attack on Hill 174 was progressing nicely. At 1720I Swing Red reported Hill 188 secured and his unit digging in. At 1800I attack on Hills 203 and 174 were continuing against stubborn enemy resistance and heavy artillery and mortar fire. At 1240I Able and Baker Cos, 8th Engr (C) Bn received units of 5th Cav south of grid line 1143. The 5th Cavalry Regiment readjusted battalion boundaries during period (see Overlay)."

14 September - Periodic Operations Report No. 156, covering period 140600-141800

"At 141015I elements of Easy, Fox, and George again moved

[REDACTED] ON

[REDACTED]

out in attack of Hill 203 from southeasterly direction. At 1415I our force was pinned down by heavy enemy mortar and small arms fire. At 1425I our unit shifted their attack around to the left side of Hill 203 and were slowly advancing in a northeasterly direction. In the meantime Swing Blue moved out in attack on Hill 174 at 141500I after 3 airstrikes [one of which was scheduled for Hill 203 but was erroneously directed to Hill 174] and artillery preparation. At 1605I our troops had taken Hill 203 and continued attacking down opposite slope. At 1637I, Swing White called for additional artillery prior to all-out effort to seize and secure Hill 203 before darkness. At 1735I White was at coordinates 1146.0-1449.8 and under heavy enemy mortar and small arms fire. As of 1800I White was still at above positions and Blue was consolidating positions on Hill 174."

15 September - Periodic Operations Report No. covering period 150600-151800.

"Swing White under orders to attack and seize Hill 203 (1145.8-1451.2) at 150700I Sept 50 was receiving fire at that time and was ordered to hold their positions. S6 went forward to get entire situation. Hill 203 was reported occupied by an estimated 250 enemy troops supported by considerable numbers of other terrain features to the northwest. Blue at 150700I reported enemy grouping for attack on Hill 174 (1147.0-1451.7) and at 0815 hours reported the platoon of Stern Co on Hill 312 being attacked and falling back to Hill 232 at 0825. The platoon of Stern amounted to 20 men; the attacking force of North Koreans from 70 to 80. Love Company at 0925 hours sighted what was reported to be a reinforced battalion, equipped with tanks and AT guns at (1149.6-1452.5). The artillery liaison plane, directed to that area, was unable to locate this force. Item Co at 1105 hours on Hill 174 was attacked by an estimated 200 enemy from the east and 150 from the west. Blue reported being forced off Hill 174 and planned to consolidate Item, King and Love companies on Hill 174 (correction Hill 232). Enemy forces were detected advancing down a draw to south of Hill 232 at 1105 hours. Swing 6 ordered Blue at 1210 hours to retake Hill 174 in order to support Red's attack on Hill 203, which would follow later. Red reported at 1250 hours that they could not be ready for their attack on Hill 203 before 1600 hrs. Able Co, part of the assaulting force for Hill 203, cleared their own area at 1515 hours and arrived at the jump-off spot at 1618 hours. H-hour for Blue's attack on Hill 174 was set at 1600 hours and Blue was ordered to hold present

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positions until that time... Five attacks by air were made in the course of the preparation for the attack. The H-hour for the attacks on both hills was set at 1700 hours. ... Air finished its attacks at 1750 hours and the artillery began its supporting and preparatory fires at that time. Able Co 70th Tk Bn (--) fired in general support of all battalions during the course of the day. The Regt was forced into the defensive positions as shown by the overlay due to very strong enemy action."

16 September -- Periodic Operations Report No. 162, covering period 160600-161800

"... At 0850I barrage commenced by all supporting artillery and continued for 10 minutes. At 0900I Swing Red and Blue crossed LD in attack. No air support due to poor visibility. At 1035I Red and Blue were moving up on objectives. Blue was at 1148.2-1450.9 and reported no enemy opposition. At 1055I Red reports attack on Hill 203 held up due to automatic weapons fire from slopes of Hill 203. Called for artillery and at 1107I moved forward in second phase of attack. Meanwhile the mine-lifting team from 8th Engr were pinned down at our road block (1145.8-1449.4) by enemy machine gun and mortar fire and were unable to lift the mines. At 1145I Red was again pinned down by enemy fire, this fire coming from Hill 174. At 1306I part of road block was blown, Engr team leaving east half of road open. At 1310I Red was driven off slopes of Hill 203 by strong enemy counterattack. At 1332I Blue was reported within 100 yds of Hill 174. At 1455I Engr team reported destroying remainder of road block. At 1550 Blue had two platoons on Hill 174 and were moving more troops up to strengthen positions. At 1650 Red and Blue commenced consolidating positions occupied and resupplying for continuation of attack 170630 as per plan submitted to Div courier 161330I. At 1700I Skirmish White closed assembly area vicinity (1147.0-1447.0) and passed to operational control of 5th Cav VCOG... Skirmish White Easy occupied Hill 188 at 1700I..."

17 September -- No periodic operations report included in regimental history.

18 September -- Periodic Operations Report No. 168, covering period 180600-181800.

"Swing 6 at 0730 hours coordinated the Red attack on Hill 203 and set H-hour at 1000 hours. When completed, a small security

force was to remain there and the attack be continued to higher ground in the direction of Hill 371. Skirmish White to attack at the same time. Skirmish White at 0825 hours reported an enemy roadblock at (1144.9-1450.3) with tanks possibly in the area, this unconfirmed. Air liaison reported large concentrations of enemy troops north of Hill 174, Blue called for artillery. Swing Red at 1150 hours was reported near top of Hill 203 moving slowly ahead. Stateside Able 6 reported having cleared enemy minefield at 1210 hours and all tanks recovered. Starting with 5 tanks along Taegu-Waegwan road toward Amdong (1143.2-1450.6). Skirmish White was directed to follow the tanks closely. Red at 1220 hours was held up just short of the top of the Hill 203 by mortar fire and requested air strikes. Skirmish White on the high ground at 1144.5-14449.5 was endeavoring to contact the tanks and was ordered to leave a platoon on Hill 184 and attack toward Hill 253 (1143.0-1452.1)... Swing White at 1458 has Easy, Fox and George at (1144.2-1449.6) heading in easterly direction behind Skirmish White. 1515 hours, Red had Charlie and Baker companies on Hill 203, Able Co on right and were reorganizing; directed to complete consolidation, leave small security force and continue to attack toward Hill 371... Red reported beating off a platoon of enemy counterattack on Hill 203. Blue jumped off in the attack at 1615 hours encountering some fire but continuing to advance. Red, at 1655 reported battalion advancing toward Hill 371 after leaving security force on Hill 203, meeting light enemy resistance but continuing to advance. Blue at 1745 hours reports receiving considerable small arms and automatic fire from north of Hill 174 (1146.8-1452.2). All elements of Blue still on Hill 174..."


19 September - Periodic Operations Report covering period 190600-191800

"Swing White at 0610 hours reported his unit in fire fight in approaches to Hill 253. White at 0715 receiving small arms fire from top of Hill 253. Regiment reported moving CP forward. Blue started attack at 0845 hours meeting some resistance. Skirmish White's disposition at 0845 hours: Fox Co (1144.1-1451.3). Easy and George Cos at (0144.3-1451.3) meeting strong resistance. Fox to take high ground at ridge supported by Easy and George. White moving ahead slowly at 0820 hours meeting small arms resistance... Skirmish White at 1033 hours involved in heavy fire fight, using artillery and endeavoring to hold positions. Blue advancing toward Hill, now located at (1145.0-1452.3) at 1100 hours.

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White at 1155 meeting heavy resistance 300 yards short of top of Hill 253. . . White at 1303 hours held down by mortar and small arms fire. At 1410 hours Blue had moved back to Hill 174 and Red to Hill 203. White reported some of his troops at 1142.8-1451.8, others south of road, will give coordinates. . . White's forward elements at 1530 hours at (1142.8-1451.8) and at hours 1607 their replacements and I and R platoon at (1142.7-1451.0), one platoon of Fox Co on Hill 184. Skirmish White at 1630 hours stopped short of Hill 300 (1144.2-1451.5) and will hold their positions. Radio from Red at 1632 hours relayed to White that Red is attacking Hill 300 from direction of Hill 203. 1748 hours Swing Red reported gaining top of Hill 300. Red ordered to continue attack toward Hill 371. ''

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APPENDIX G

WEATHER IN SOUTH KOREA DURING SEPTEMBER AS
REPORTED IN DAILY INTELLIGENCE SUMMARIES

(Data taken from Daily Intelligence
Summaries G-2, GHQ, FEC)

Unclassified



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- 1 September. South Korea: Visibility ten miles lowering to three miles in scattered showers.
- 2 September. Scattered rains (sic) showers to broken low clouds at 300 feet, broken to overcast clouds at 8,000 feet, decreasing cloudiness. Visibility unrestricted becoming 1 mile in haze and fog in early morning slowly improving to 7 miles.
- 3 September. Clear to scattered low clouds with thin high clouds above 20,000 feet. Visibility unrestricted except in early morning haze.
- 4 September. Rain showers and thunderstorms over southeastern Korea with broken to overcast low clouds at 1,000 feet. Elsewhere, clear to scattered middle and high clouds. Visibility unrestricted except 4 miles in rain showers and 4 miles in early morning haze along southeast coast and in valleys.
- 5 September. Scattered low becoming low and overcast middle clouds with scattered thunderstorms, visibility 10 miles lowering to 2 miles in showers over South Korea.
- 6 September. Scattered low clouds over Korea.
- 7 September. Broken low clouds bases 2,500 feet frequent showers, broken to overcast middle clouds bases 9,000. Visibility 10 miles except 3 miles in rain showers.
- 8 September. In South Korea, scattered to broken low clouds broken middle and high clouds becoming broken to overcast low clouds at 2,000 feet with tops to 20,000 feet. Light rain and rain showers over southeastern Korea. Visibility unrestricted except 3 miles in rain and showers.
- 9 September. South Korea: multiple layers of low and middle high clouds from 500 feet to 30,000 feet with intermittent rain and numerous rain showers. Visibility 10-15 miles except 1-3 miles in rain and rain showers and 3 miles in ground fog during early morning hours along the southeast coast.
- 10 September. ... overcast low clouds with rain and layers of clouds which reached to 23,000 feet in the southern portion. Visibility unrestricted except 5 miles in haze and ground fog during early morning, reduced to 1-3 miles in rain.

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- 11 September. South Korea had scattered low clouds and scattered to broken middle clouds becoming overcast over southeastern Korea. Visibility 10 to 15 miles except 1 mile in early morning fog in low places.
- 12 September. Scattered to broken middle clouds at 9,000 feet over Southern Korea with Central Korea having scattered clouds. Visibility unrestricted except in early morning haze.
- 13 September. Broken middle clouds at 9,000 feet over southern Korea; visibility 8-10 miles.
- 14 September. Southeast Korea had low and middle clouds with intermittent rain; visibility unlimited except in rain areas, where visibility was 3-4 miles.
- 15 September. . . . broken low clouds at 2,000 feet over southeastern Korea. Visibility 15 miles except 3-5 miles in early morning haze in valleys and coastal areas.
- 16 September. South sectors had broken to overcast low clouds at 1,500 feet, becoming multiple layers from 2,000 feet to 17,000 feet in the southeastern sector. Scattered rain showers and thunderstorms over Korea south of 38°30' North Latitude, with intermittent light rain over the southeast sector. Visibility 3 to 6 miles in rain and in haze.
- 17 September. Scattered low clouds over all of Korea except for broken low clouds in extreme southern Korea until 181000I and broken low clouds on the East Coast in the early morning hours of 18 Sept.
- 18 September. . . . broken to overcast middle clouds at 9,000 feet over Korea south of 37° North Latitude. Visibility unrestricted lowering to 1 mile in rain along the southeast coast.
- 19 September. Southern Korea scattered to broken low clouds at 3,500 feet. Visibility 10 miles lowering in early morning to 4-6 miles in haze.
- 20 September. Scattered low clouds over north and west central Korea becoming broken over east in south sectors with bases 3,000 feet. Visibility unrestricted lowering to 5 miles in

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intermittent light rain over south coast and 4-6 miles along coast in early morning haze.

21 September. —

22 September. Scattered low clouds over all of Korea except broken over east coast and scattered to broken over southeast Korea. Broken to overcast thin high clouds over South Korea. Visibility unlimited lowering to 2 miles in ground fog in low places and 4 miles in early morning haze.

23 September. Korea south of the 37th parallel had clear to scattered low and middle clouds with middle clouds occasionally broken. Visibility 15 miles, lower to 4 in early morning fog in low places.

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