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CCF IN THE ATTACK
(PART II)

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ORO-S-34 (EUSAK)
27 January 1951

Staff Memorandum

CCF IN THE ATTACK (PART II)

A Study Based on the Operations
of 1st Marine Division in the
Koto-ri, Hagaru-ri, Yudam-ni Area
20 November - 10 December 1950

by

S. L. A. Marshall

Operations Research Office
The Johns Hopkins University
Far East Command

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Introduction

Detailed study of the operations of 1st Mar Div against CCF in the Koto-ri, Hagaru-ri, Yudam-ni area 20 Nov to 10 Dec 1950 substantiates in nearly all major particulars the conclusions drawn in the paper, "CCF in the Attack," published on 5 Jan 1951, ORO-S-26 (EUSAK), wherein CCF tactical methods and weapons employment were evaluated on the basis of the experience of 2nd Inf Div in the Battle of Kunu-ri, 24 Nov to 1 Dec 1950.

In its onfall against 1st Mar Div, CCF did not at any time succeed in enveloping and fractionizing any major element of the command, or in overrunning more than a minor outwork of a general defensive perimeter. Hence its tactical elements were at no time as fully extended in the attack against local positions as occurred during the enemy assault against 2nd Inf Div's line east of the Chongchon River. There was thus far less chance to observe CCF characteristics in the fire fight under wholly fluid conditions.

Since the circumstances of the fighting around Kunu-ri by 2nd Inf Div and north of Koto-ri by 1st Mar Div were wholly unlike, not only as to the character of the countryside, but as to the manner of initial employment by our forces and initial deployment by CCF, there is no warrant for any broad comparison between the two operations. Where that is done hereinafter, it is solely with the object of emphasizing CCF characteristics and capabilities.

Weapons and Works

In general, the CCF Divisions engaged by 1st Mar Div appear to have been no better armed than those engaged by 2nd Inf Div at about the same time. The major material difference was that the CCF divs engaged by 1st Mar Div appear to have been critically in short supply, both as to food and ammunition. Whereas the persistence of CCF fire from fixed positions, the circumstance that the machine gunners and grenadiers seemed never to run short of munitions, and the observation that troops in the rifle line were backed up by an ample train of bearers, were noteworthy in CCF operations against 2nd Inf Div, the situation was quite the

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reverse among CCF operating in the Chosen Reservoir area. CCF divs committed to the battle seem quickly to have exhausted such stocks as they had brought forward. Their effectiveness ceased at this point, since resupply had not overtaken them. When they withdrew because of ammunition failure, fresh divisions came forward into that part of the line, and the supply-exhausted division then disappeared from the front.

This phenomenon was remarked upon by Maj Gen Oliver P. Smith, commanding, and was confirmed by regimental and battalion commanders. PW interrogations showed that the great body of these troops had crossed the Yalu River between 13 and 16 Nov, concurrently with 1st Mar Div's first advance from the base ports northward, and had then pressed on toward the battle area as rapidly as possible. It seems probable that all other major considerations, such as competent supply arrangements, were subordinated to the necessity for getting these troops forward in time to intercept 1st Mar Div's column and cut the MSR after the preponderant strength of the Div had been committed to the attack in the Reservoir area.

Consistent with this hypothesis, it was also noted by all forces within 1st Mar Div that the CCF enemy were invariably committed to the attack on one line, with no options. This held true of divisions, as of battalion and company formations. Each had been given one set task. Each appeared to persist in this task so long as any cohesive fighting strength remained. When at last beaten back from it, the CCF appeared planless and aimless, incapable of rallying toward some alternative object. The troops withdrew and sat on the countryside.

Even so, prisoner interrogations indicated a high order of average intelligence. Not alone among officers, but in the rank-and-file, the average interrogee could name his company, regiment, division, army and army group, and was knowledgeable of the plans and intentions of higher headquarters. Thus it was from enlisted PW's that 1st Mar Div first learned that the CCF plan was to attack in main against the MSR "after two regiments had passed to the northward." This intelligence was gained while the advance was still in progress. But what was particularly puzzling was that PW's had little or no consciousness of rank. The prisoner would identify himself as a "soldier" or "officer" but could not state his grade. If there were CCF NCO's, they could not identify themselves as such.

During 1st Mar Div's campaign, there were six instances in which the CCF attack was supported by light artillery pieces. Not more than two or three guns were employed at any one time, and the shelling was limited as to rounds. In the main, enemy offensive power was based upon automatic weapons, chiefly the .30 caliber machine gun (including Lewis and Hotchkiss types),

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WEAPONS AND WORKS

with the submachine gun, the rifle and the light potato-masher grenade being the principal other arms used by CCF infantry, both in defense and during the enemy attacks on 1st Mar Div's defensive perimeters. There were no novel or eccentric employments of any of these weapons, other than ineffective attempts to string grenades so that they could be used to booby-trap the facings of physical roadblocks, with a lanyard leading back to a roadside pit. This device usually failed because the Chinese soldier in the pit was dead before the time came to pull the string. In one instance the failure was due to the grenade pins freezing.

On the defense, these CCF furnished their hilltop positions with artillery-resistant bunkers, walled with heavy logs wired together in double thickness, with timbered ceilings and a two-foot-thick rock and earth covering. These works resisted air attack except under a direct hit by rockets. Their materials had been moved to the high ground on horseback, and after the CCF deployment through the general area, the horses had then been withdrawn into the back country, away from the MSR. There were few horses to be seen in the area by the time that the US air began to work it over.

In cutting 1st Mar Div's MSR north of Koto-ri and west of Hagaru-ri, with the object of isolating and destroying the division, CCF used both roadblocks (physical) in substantial number, and demolitions in lesser number. The explosives were properly employed in the most sensitive spots along the withdrawal route, a notable example being the blowing of the apron bridge across the pennstocks not far from the base of Hill 1081, south of Koto-ri. This bridge was directly above the facing of a 1500-foot-deep gorge. Unreplaced, it meant that the road south was blocked to all vehicles. The division had foreseen the problem and was prepared to span the gap without loss of vital time to the column. A treadway bridge had been flown in to move with the column. Even so, CCF had accomplished this block with some expertness, getting a maximum of impairment with a minimum of explosive. The whole road was replete with opportunities of this sort had the enemy been well fixed with explosives. The MSR was a narrow track cut into the side of a mountain. A few heavy rockslides would have completed its ruin. But though CCF was in possession of this part of the countryside for more than one week, no major demolitions of this type were attempted. There, and farther to the north, between Hagaru-ri and Yudam-ni, CCF appears to have had only enough explosives at hand to wreck a few minor bridges which could be unhinged with small charges.

The usual physical road block was accomplished by the piling-up of rock, earth, and rubble so as to form a not-too resistant barrier averaging between $2\frac{1}{2}$ and $3\frac{1}{2}$ feet in height. About half the time, these road blocks were given some supporting fire from

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the flanks--usually one or two machine guns, and perhaps a mortar, firing from the ridgelines off the flanks. In other cases, the block was not given active support, even though the high ground off flank had not been swept by friendly skirmishers, and was readily pushed aside by the decoys moving in the van of the infantry column.

However, there are also examples in which the road block was supported strongly and persistently by automatic fire from the high ground, and snipers closing in at practical small arms distance. There then ensued the knocking-out of vehicles by bullet fire, the temporary blocking of the column, and a steady attrition in men and materiel along the road, until at last the CCF were brought in check by superior fire and movement.

Discipline in the Column

Among the incidents of this character, the most instructive is the experience of TF Drysdale, on the road from Koto-ri to Hagaru-ri on the night of 27-28 Nov. This small TF of British Commandos, one company of Marines and one company of infantry, was sent north from Koto-ri, to open the MSR to Hagaru-ri after receipt of the first report that CCF had cut the road. It moved in trucks after having first swept the ridges immediately north of Koto-ri--the one area where there were commanding ridgelines right next to the MSR. A supply convoy was supposed to follow in its wake, moving under its protection. In the forefront of the TF moved one platoon of medium tanks. Another platoon was assigned to follow after the truck convoy, serving as rearguard for the column as a whole.

The subsequent breakdown of this column, as it ran into an ambush installed by CCF (the force was estimated at less than 3 battalions of enemy) in the open country beyond the Koto-ri ridges can be attributed largely to the manner in which the armor was handled. On a small scale, the action and reaction were almost identical with the misfortunes of 2nd Inf Div's column on the road between Kumu-ri and Sunchon, three days later. Whereas the safety of the thin-skinned vehicles, once they came into the fire gauntlet, depended almost wholly on rapidity of movement, the armor stopped to engage as soon as CCF fire began to rattle against its sides. This in turn blocked the road and subjected the motorized elements to a punishing fire from the flanks, which they were in no position amply to return. Argument and pleading with the tankers proved largely futile. They had not been placed under direct command of the TF leader, and they were largely insensitive to the effects which their tactics were having on the friendly elements to their rear.

In an effort to save the TF from total ruin, the officers with the infantry elements (and the Air FO as well) sought to

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DISCIPLINE IN THE COLUMN

intervene with the armor, and to persuade it to desist from fire and keep moving. Those farthest to the rear could not even understand what was happening and did not realize that it was the armor, more than the enemy, which had produced the paralysis. About half of TF Drysdale's personnel got through this ambush finally; fifty percent of its vehicles had been lost. The supply convoy was lost altogether; the personnel were either killed or captured. Notably, the tanks, which by their fire had brought the other elements into jeopardy, escaped without loss.

Those who were in best position to observe the ambush and breakdown of this small column, agreed that the losses had been due less to the direct effects of CCF fire than to lack of control within the armored force, lack of communication between it and the motorized element, and the failure of the tankers to understand what their halt-and-fire tactics were doing to the train behind them.

This is a relatively new problem for US armor and motorization in joint movement via the road. Its common denominators are emphasized by the identicality of experience between TF Drysdale and 2nd Inf Div's column. They should perhaps be given rather close study in common, since there are several major lessons to be emphasized, and the problem is likely to be a recurrent one for so long as enemy tactics are directed toward crossing the rear and closing the escape route. What is plainly indicated is that short of a clear appraisal of the problem, and the determination of SOP's which will assure tactical unity within the column, the presence of armor does not of itself assure additional protection to a motorized column moving through enemy country over narrow roads, and may vastly increase its vulnerability. What is intended as a shield becomes in fact a drag upon all movement, in a situation where mobility is requisite to safety.

In the case of 2nd Inf Div, the armor was interspersed through the length of the column. With TF Drysdale, it was used as a covering force front and rear. The results were alike dismal, because in both cases the means of control and communication had not been made firm prior to movement.

CCF's Grand Object

TF Drysdale's experience has here been stressed out of all proportion to its significance, in the general operations of 1st Mar Div, because it illuminates the one point at which CCF's general object in the attack upon 1st Mar Div achieved a measure of local tactical success. Here, once again, as in CCF's operations against 2nd Inf Div south on Kunu-ri, the main purpose of the Chinese enemy was to entice and permit a maximum extension of the forces in the attack, then close across the MSR, and undertake the general envelopment and destruction of the main column as it responded to the mounting pressure against its rear.

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This effort was beaten down in detail at every point by 1st Mar Div which, throughout its advance to the Chosen Reservoir and westward to Udam-ni, and subsequently during its withdrawal southward to Chinghung-ni, put uppermost the principle of firmness within its own lines, both during the attack and when on defense. After the one sally by TF Drysdale, made with the object of reopening the MSR between Koto-ri and Hagaru-ri, 1st Mar Div did not again employ minor forces in any attempt to shake CCF's hold on the MSR, though the enemy had closed across the road, both between Koto-ri and Hagaru-ri (1st Mar Div's CP) and between Hagaru-ri and Yudam-ni, where 5th and 7th RCT's were operating. Temporarily, 1st Mar Div accepted this situation. At all points its forces operated fortress fashion within their own perimeters, counter-attacking in such measure as was necessary to keep CCF off balance, and to deny the enemy an undue advantage in ground. In effect, 1st Mar Div stood in column on a line of strong points within enemy country. Supply of critical materials to these strong points, and the evacuation of the wounded from them, was maintained by air. The construction of airstrips had been undertaken immediately, and the construction was in process even before the strength of CCF in the Reservoir area had been felt.

As will be discussed later, 1st Mar Div at its four main positions--Yudam-ni, Hagaru-ri, Koto-ri, and Chinghung-ni--put depth of organization, and unity within the local force, above all else, and occasionally with deliberate intent foreswore certain of the higher ridges in the immediate vicinity to the enemy, for the sake of greater tightness within its own lines. This choice paid phenomenal dividends and in no instance invoked any inordinate cost. CCF proceeded to impale itself upon this line of strong points. In all four areas, as the days and nights wore on, its attacks, at first pressed in full fury, gradually diminished in violence, until finally the enemy pulled off, having had enough. Though they continued in great numbers in the countryside and swarmed among the ridges during the daylight hours, their role was strictly passive and they did not resume the organized attack.

Perhaps the most startling example of the effect of a resolute defense upon CCF's moral aggressiveness was provided by Fox Company, 7th Marines, which for five days and nights preserved a perimeter defense in isolation, holding the pass between the division force at Hagaru-ri and the 7th and 5th RCT's at Yudam-ni. During this period the Company was wholly surrounded by CCF troops in aggregate strength of perhaps two battalions. The perimeter was close invested and broken at one point on the first night, though the ground was regained and CCF driven off before morning came. The enemy attacked along the same line and in about the same strength on the second night, but was again repulsed. On the third night, CCF came on less surely, though by that time

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Fox Company had taken heavy losses. Then came the respite; though CCF forces in large number remained within seeking distance during the next two days, there was no further assault. On the fifth morning, a battalion of 7th Regt, moving cross-country to the relief of Fox Company, was temporarily halted by strong CCF resistance within less than 1000 yards of the latter's lines. Such was the morale of Fox Company, after its successful defense of the position for five days that it offered by radio to send a patrol out and bring the relieving battalion in.

The incident was not the rare exception; it was typical of the spirit which activated 1st Mar Div's operations as a whole. "We had the feeling at all times that we had the upper hand and that we were giving the enemy a beating wherever he chose to fight," said General Smith of the operations of his forces. This estimate is supported by the detailed study of what occurred to companies and platoons in 1st Mar Div main areas of engagement, and of what was seen, by men in the fighting line, of CCF's losses and reactions. They believed, on the basis of what they saw and felt, that they had been victor on every field. They were confident that they had achieved these results mainly with their own fighting power. They were indignant that what they had done had been in past discounted by those press reports which said by inference that 1st Mar Div, having become over-extended in enemy-held country, had to be extricated by the intervention of other than Marine forces.

It suffices to add that, on the record, 1st Mar Div was fully confident of its own situation and power to contend against such further pressures as CCF might put upon it from the hour that 5th and 7th RCT's, withdrawing from Yudam-ni to the westward, closed upon Hagaru-ri at the southern tip of the Chosen Reservoir, where the division CP and defensive perimeter were established. Thenceforward, it was a question of how best to conserve force and drive CCF from the ridges flanking the MSR to the southward, with minimal loss in personnel and vehicles to the column.

Attrition and Concealment Within CCF

Apart from those enemy forces which had become broken or neutralized in the attempt to destroy, by direct assault, 1st Mar Div's defensive perimeters at Yudam-ni (a two-RCT position), Hagaru-ri (a re-enforced battalion position), and Koto-ri (a re-enforced battalion position), the effort of CCF during the period 27 Nov to 2 Dec had been directed toward deploying other maneuver bodies against the corridors connecting these focal points in the battle. These CCF, though out of range of the infantry weapons in the defensive bases, were not left unmolested. From Chinghung-ni to Koto-ri was 12 miles, from Koto-ri to Hagaru-ri 9 miles, from Hagaru-ri to Yudam-ni 13 miles. Such targets as were

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brought under observation by air or by road patrols were thus usually within range of 1st Mar Div artillery in one or two of the four defensive bases. Weather, for the most part, was favorable for air strikes.

Early in the campaign, 1st Mar Div G2 had become convinced, on the basis of reports from civilian sources, that CCF was moving through the countryside in columns of substantial size, and that these bodies were harboring in native villages, and in mine shafts which were common in the Koto-ri, Yudam-ni area. These views were reported to the air arm; it was thought that the enemy's disappearance during daylight hours could be accounted for in this manner, rather than because any considerable number was dug-in and concealed along the high ground. Initially, the air arm discounted this theory because daylight reconnaissance failed to show any number of troops active within the villages, but the civilian reports persisted, and North Korean natives besought the command to attack the villages in order to destroy the Chinese invaders.

Following the cutting of the MSR, air bombardment of villages adjacent to the road and in the back country was undertaken on a large scale. The results wholly confirmed what the natives had first reported. When the bombs crashed on the thatched huts, Chinese spewed forth on every hand. They were so wedded to this cover that air observers noted that, after the bomb runs were completed and before the planes had left the vicinity, the surviving Chinese went right back into the half-wrecked buildings. So concentrated were their numbers that it was estimated the strength of one battalion might remain concealed within 20, or so, huts. These same findings were confirmed by Marine patrols attacking into the back country. They found minor forces operating from within works along the hilltops, in front of main bodies which had taken refuge in the villages. The air attack was credited with effectively sealing one mineshaft that was supposed to be sheltering the greater part of one CCF regiment. Eye-witness accounts both by patrols and companies in the attack and by US soldiers who were taken prisoners and later liberated, provide a substantial body of proof that CCF made systematic use of the normal man-made cover in the countryside throughout this campaign.

Whether the use of villages for daylight cover was peculiar to this one operation, and was super-induced by the effects of sub-zero temperatures on any army traveling for the most part without blankets, or heavy overcoats, and shod in tennis shoes, is a point worthy of close regard.

Certainly the loss to CCF caused by cold alone, during the long week in which its blocking groups camped on 1st Mar Div's MSR, vainly hoping to trap the Division when it attacked south,

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ATTRITION AND CONCEALMENT WITHIN CCF

must have been terrible indeed. Hundreds of these enemy surrendered because they were no longer fit to fight; under the lash of the weather the hunters became the hunted. Many were found dead, victims of freezing, untouched by a bullet or shard. Some who surrendered were frozen through in all limbs. Others reported that they had been without food for the greater part of one week. They had kept alive by digging foxholes just barely wide enough for one man to squeeze his body into, and then like animals, had sunk themselves in these burrows, trying to conserve such warmth as their bodies would impart to the frozen ground.

Among these fighters were many who could no longer work a rifle bolt or pull a trigger. A sufficient number retained enough bodily activity, however, to persist in the main mission, until destroyed by 1st Mar Div's battalions in the sweep from ridgeline to ridgeline which permitted the advance of the motorized column through the mountain passes. By progressive fire-and-movement, 1st Mar Div eradicated these CCF over a wide belt on both sides of the MSR. The Division strong-points farther to the southward served as dustpans to the broom during this sweep, and portions of their garisons attacked northward concurrently with the advance southward of the main column, thereby entrapping greater numbers of CCF within the corridor which they had purposed to use as a deadfall for the US force. The seemingly slow progress of this movement, which was watched with apprehension, if not alarm, by the outside world, was due to the natural difficulties of the countryside and the painstaking care with which 1st Mar Div had reorganized its resources before proceeding with the attack.

During the campaign as a whole, the temperature varied between 20° above zero and 20° below. There had been one major snowstorm with a fall approximating six inches, which built up drifts five to six feet deep in some places.

Systematic Use of Cover

As inexorable as were these conditions imposed by man and Nature on those of the enemy who thus took position in the open country, it does not follow that the use of village cover by the great body of CCF in this same vicinity was an expedient of the time and place.

Rather, the absence of any logical alternative supports the premise that the systematic use of village cover is standard procedure with CCF, and that they must refuge in the native huts in numbers which would be unthinkable to any western soldiery. They concentrate their field forces in this manner during daylight hours, using village concealment adjacent to their axis of advance and main object of attack, for the express reason that there is no other place to hide, except in caves or heavily

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forested areas. Whole armies cannot hide themselves in man-made works and escape detection by the normal means of air reconnaissance, however skilled their camouflage discipline. Nor can they dispose themselves along ridgelines and among hilltops and remain capable of reassembly within such an interval as would permit them to achieve effective concentrations against a more mobile opponent. These things are not within human possibility, and the CCF thus far have shown no super-human capabilities in its Korean operations. To deny these forces any use of village concealment would seem, therefore, to be an essential step toward the disruption and paralysis of their operations. Thrown upon the open countryside, they will lose effective mobility, in whatever season.

Lines of Advance

The mountain-plateau region above Chinghung-ni is a conifer belt and the sparse vegetation of firs, aspen and brush is thickest on the northern and western facings of the ridges except for tracts which have been reforested in recent years. CCF attacks were usually pressed along a line which took advantage of this natural cover. When CCF tactical forces were harboring in these wooded areas for any period, they sometimes cut these trees halfway up, and bent the upper portion over so as to give themselves greater concealment.

In operations against 1st Mar Div, as against 2nd Inf Div, in general the enemy came forward along the natural lines of drainage, and the paralleling tracks and paths, feeding into the US MSR. There was no stealth in the approach; they came in erect, sometimes walking, sometimes at a slow run. In repeated attacks on the same position, their initial line of advance became a beaten path, and there was little or no variation in their application of fire. Either because their lack of material things was so vast, or simply through lack of a combat discipline, they stopped to loot and pillage on occasions when their attack had been pushed within the possibility of a local success.

In the defense, their main tactic was to rely upon the effects of automatic fire from the commanding ridgelines; their skirmishers operated in close juncture to this base, and only a minority of hardy individuals would attempt to close to within effective small arms or grenade range when the US line was brought in check by fire from the heights.

In the attack, they seldom came over and down the ridges, but moved around the hill bases and through the draws. This pattern seemed to be almost invariable, except in those instances when the two sides were locked in a close fight to gain the dominating high ground.

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LINES OF ADVANCE

Equally marked in this operation, as in 2nd Inf Div's operations around Kunu-ri, was CCF's preference for the night attack, which when held or repulsed, would consummate in a withdrawal just prior to dawn. Their tactics in the night attack were in no wise different than those described in the paper "CCF in the attack" except that they were not experienced in full extension because they were invariably beaten on the local ground by 1st Mar Div's perimeter forces. The attack almost invariably sought to achieve local penetration under the cover of a pinning machine gun fire. The grenade and submachine gun were the main weapons in the subsequent attempt to develop a breach. On at least six occasions these thrusts achieved an initial, partial success. This done, the enemy attempt to follow-up proved fruitless. Either further exploitation was prevented by a dam of fire lowered against the breach by 1st Mar Div's supporting weapons, or the ground was retaken and CCF driven off by the counter-attacking infantry.

Detailed study of these fire fights show five instances in which enemy personnel were either killed or wounded by the bayonet. 1st Mar Div has retained its bayonets, and in perimeter defense, bayonets were usually fixed. However, three of these killings were done by one Marine. The grenade was little used by the defender in beating back these attacks, mainly because the pins were sticking in consequence of the cold, and when troops removed their mittens to handle the grenade for any length of time, their hands became frostbitten.

Attitude of CCF

Throughout the campaign the enemy's attitude toward US wounded remained inscrutable and in major respects contradictory. For example, during the evacuations of US wounded across the frozen surface of Chosen Reservoir from the east bank to the Hagaru-ri position, CCF riflemen stood on the embankment within 100 feet or less of the rescue party. But not one shot was fired throughout two days against the wounded as they walked or crawled down the embankment and across the ice toward succor. Native North Korean agents went into huts on the east shore where US wounded were in common quarters with CCF. The latter had made no effort to feed or otherwise serve these casualties, but if they reached for food or drink for themselves, the CCF did not interfere. The native agents delivered notes to these men, in full sight of CCF, telling them what steps they were to take toward rescue. CCF did not molest the agents, nor did they attempt to stop the US wounded when they quit the shelter to comply with the instructions.

On the other hand, in repeated instances, during their attacks upon a road column, they centered their fire upon ambulances bearing the red cross marker to the extent that other vehicles moving next to these vehicles in the same convoy escaped relatively unscathed.

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Organization of the US Defense Perimeter

Except for the extraordinary situation of Fox Company, 7th Marines, the organization of 1st Mar Div's defensive perimeters was based upon the battalion, as a minimum. At Yudam-ni, 7th and 5th RCT's were unified and integrated in one great perimeter enclosing their artillery, all other supporting arms, and people. One unique aspect of the defense at that point is that, despite its abnormal complexities and unremitting pressure, all command decisions were taken by the two Regimental Commanders and their S-3's, acting in council, and that unanimity of opinion and estimate, and the absence of any friction, attended this mechanism. At the other pivotal strong points along the MSR, each battalion defense was a tightly-knit "hedgehog," enclosing the artillery and airstrip, and organized to fight over 360 degrees, with the artillery usually so faced that it could fire immediately against the draws along which the enemy were most likely to advance. Combat patrols and companies in the attack, moving outward from these bases, maneuvered only within effective range of the defending artillery. Also, the operating radius of small parties in excursions beyond the perimeter was limited absolutely to that distance at which they remained within effective radio contact of the main body.

In the positioning of these perimeters, the seeming advantages of vast fields of fire were yielded in favor of that use of ground which gave the defenders assurance of maximum mutual support around the circle. Instead of going to positions which might improve the prospect for an effective kill at long range, 1st Mar Div built its defenses so as to be certain of stopping CCF at short range, while preserving the integrity of its own ground.

There was no over-stretching. On the contrary, the positions were contracted to the point of permitting organization of a mobile, local reserve. In the initial stage, the position at Hagaru-ri was perhaps an exception to this general rule, because of the slender numbers of the defending force, the nature of the terrain, and the necessity for enclosing the large airstrip. However, service and administrative personnel were used to plug gaps in the line and as local reserve during the emergencies arising from the CCF attack.

All positions were well dug-in, despite ground conditions which made the issue trenching tool little more than a chipping instrument, and battalion commanders personally inspected the fox holes and other installations. It is deserving of special note that in the few instances where CCF succeeded in impinging

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on any of these defensive positions, it was under circumstances in which the defenders had not yet completed their protective works, because of insufficient time.

Use and Effect of Wire

1st Mar Div wired-in all of its defensive works to the limit afforded by the availability of materials, which were scant. Concertinas and a few double-aprons were emplaced across the draws that seemed to afford favorable avenues of approach, and these were supplemented at some points by piled-up brush and rude abatis, though the general lack of timber in the country shortened this procedure.

Trip-wires were strung in front of the defensive lines. Trip flares were used where available.

Operations at the company level afforded a clear view of the extraordinary reaction of CCF to all wire installations. They seemed to be nonplused upon meeting defensive wire in any form. Even when they came against trip-wire strung 18 inches above the ground, they would stop and attempt to crawl under it. This was the reaction not of the occasional individual, but of nearly all. Likewise, they would try to crawl under a concertina or double apron, rather than attempt to remove the obstacle. A line lieutenant commented: "It is as if they had some superstitious dread of wire; it will stop them every time."

Use of Illumination

There was relatively little opportunity in this operation to observe the effects of illumination behind the CCF in the night attack which would present targets in silhouette. The mortars had what should have been, numerically, a supply adequate to the testing of this technique. But the WP was a bad lot of 1944 ammunition. The excessive cold appears also to have been a factor in its deterioration. Only one WP shell out of four would fire, on the average. On the other hand, the CCF WP, which burns with a light whiter than our own, but of short duration, had almost 100 percent effectiveness.

For these reasons, and because troops tended to believe that the CCF WP were their own shells falling short, orders were soon issued at Hagaru-ri to discontinue the firing of all WP. However, in the few cases where WP was fired, and the material burned, the illumination had a marked effect in checking the Chinese.

Mechanics of Defense

1st Mar Div used both outposts and listening posts beyond

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its defensive perimeters, though this practice varied from base to base, depending upon the situation and the views of the local commander.

At Yudami-ni there was some use of outposts in platoon strength as far as 1000 yards outside the perimeter.

Small listening posts were used from 200 to 300 yards beyond the front.

There were no local surprises.

Recognition of CCF usually took place at between 40 and 150 yards range.

When, during his approach, the enemy gave a hail in good English (as happened frequently), the defending line fired toward the sound of the voice.

This was done even when the speaker identified himself as a Marine, naming his unit.

Through the day and into the late afternoon, there was active patrolling along the main avenues leading into the position.

Though these patrols sought information of the enemy, their main purpose was this: 1st Mar Div held itself to be under active CCF observation at all times and it sought to impress the enemy with its own aggressiveness.

These patrols were usually in company strength, though sometimes a re-enforced platoon was used. They moved by motor or on foot, according to conditions and the purpose of the moment.

These excursions usually did not extend beyond 1500 yards, though at Yudam-ni there was active patrolling up to five miles beyond the central position. The patrols always moved within covering by their artillery. They were accompanied by an Artillery FO, and whenever possible, attended by an OY aircraft, to assist the patrol's observation and communication with home base.

1st Mar Div believed that one consequence of its extensive patrol activity was that its main bases were never harassed by small enemy groups during the day.

Getting into the back country, the patrols in numerous instances were able to get positive information about enemy concentrations and the line of an impending attack.

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The perimeters usually entered the night on a 50 percent alert basis, one man resting in each two-man foxhole, with inspecting teams making the rounds to insure this being done.

The weapons were given such special care as the sub-zero weather required (see further notes on this subject).

These were the general security tactics and procedures which characterized and invigorated the defense.

To describe in full the weapons usages which kept these bases, on the whole, inviolable is not within the scope of this analysis, since it would require a blow-by-blow description of how CCF's attack was met and countered at the company level. However, a great part of this detail of action has been collected from company and platoon leaders, and provides the substance for this evaluation in brief.

The salient note in the whole record of in-fighting during the campaign is found in the promptness and strength with which all supporting weapons were brought to bear in the decisive area of engagement whenever any part of the rifle line came under pressure by direct assault.

The curtain of fire--all the mortars, the artillery, and sometimes part of the armor joining--was dropped down across the portal before CCF had time to swarm in large numbers against any wide portion of the defending front. Thereby the attack was kept canalized and the CCF assault wave was denied immediate strong support.

In this, there was nothing radical or unorthodox. The defense at all points simply exploited the full advantages of the supporting weapons, using them in varying combinations so as to achieve the maximum effect, according to the manner in which the enemy attack was developing. It was war waged "according to the book" but done with such precision and power as to re-illuminate the ancient truth that weapons when correctly used will invariably bring success. The moral effects upon the defenders of these stoutly resistant small "hedgehogs" were as pronounced as upon the CCF who were beaten down by the fire. It is an old and familiar story that the rifleman feels himself pretty much alone and unhelped when at close grips with the enemy. But from riflemen who manned 1st Mar Div's front lines in the several perimeters came abundant testimony that they were so impressed with the power and flexibility of their supporting fires as to be "absolutely confident" of turning back the CCF attack. In vouching for the morale effect upon themselves of these systematized fires, they spoke as individuals who had survived an ordeal rather than as Marines putting in a plug for their own methods.

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Under the system used in 1st Mar Div, the platoon and company leaders are relieved of the complex task of plotting, planning and then directing supporting fires by the heavier weapons, in preparation for, and during the course of, the fire fight. This devolves upon the SAC (Supporting Arms Center) which operates at battalion level. Essentially the SAC Coordinator is a sort of assistant S-3 in charge of the plan of fires, both in the attack and on defense. In the normal situation, he operates at the battalion OP; when in perimeter and defending all around a circle, his station is at the CP, or the S-3 tent. During the organization of a defense, he accompanies the S-3 on initial reconnaissance; this gives him opportunity to familiarize himself with the front, spot the HMG's, and take note of the approaches which must be covered by artillery and mortar fire. When the reconnaissance is completed, the front lines are plotted on a situation map. The mortar and artillery officers are then told what fires to register. The actual conduct of fire is done by their FO's; when the registrations are completed, this information is relayed to the SAC and the concentrations are plotted on an overlay to the situation map. Also, when patrols move out, the SAC keeps their positions plotted so that supporting fires can be loosed quickly. Usually, the SAC Coordinator is an infantry officer. He ties in closely to the Tactical Air Control Center so that if there are targets on which his weapons are working that would also be suitable for attack by air, coordination will be immediate and complete.

1st Mar Div's battalions attribute a great measure of the effectiveness and total organization of their supporting fires to the perfecting of SAC's operations in the course of the campaign in Korea.

The enthusiasm for the technique is general in all ranks and particularly among the line companies.

Mechanics of the Attack

The main characteristic of 1st Mar Div in the attack is the care with which it elaborates the employment and synchronization of all weapons which will assist the rifle company or battalion to win ground at minimal cost.

In the typical situation, the rifle company has temporarily been brought in check by intense automatic rifle from the high ground, and the enemy deployment* as such as to indicate that

*It has been found that CCF tends toward this practice in the setting up of hilltop positions: Not infrequently the dug-in works along the hill crests are of lesser consequence, and are intended to draw attention away from the real strength in automatic weapons which is well-concealed in the saddles between the crests.

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the line cannot continue its advance without taking excessive losses from fire coming at it from several directions.

The company then calls for mortar fire on the position, meanwhile holding its ground.

Simultaneously, or immediately following the mortar fire, artillery works over the enemy ground from which the fire has been coming, as well as the ridges beyond it.

There is an air control officer with the company.

A number of planes have been called in and are on station. It is arranged that as the final rounds of artillery fall, the planes will make their first strikes at these same positions.

The infantry bounds forward as the planes begin to attack, or---depending upon proximity to the CCF position--starts to advance at the moment of the final impact.

This is not the rare or unusual instance of coordination between 1st Mar Div's rifle components and the supporting arms, in the attack.

It is the average procedure, and during operations in the north there were relatively few deviations from it. Attack after attack, by the company, battalion or regiment, was according to this same pattern.

Clear to the average rifleman was the proof that he was being helped by every agency possible.

That this conviction gave extraordinary impetus to the infantry attack would seem to be beyond question.

The multiplying of fires, and the combining of flat trajectory, angle and vertical missiles no doubt resulted in the killing of more CCF than would have been done by any part of this combination acting singly.

However, the chief findings have to do with morale values, particularly those redounding to the benefit of the attacker.

Line companies in the attack noted that artillery fire, even when generously used, and accurately delivered upon the target area, was not a marked depressant to CCF fire except at the moment when the shells were impacting. As these fires lifted, CCF automatic weapons immediately resumed the engagement.

With the air strike, however, the shock to the morale of the defender was noticeable and immediate. The position would

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go silent, even though CCF had not been eliminated by the bombing and strafing. From the examination of repeated instances of this character, it is even possible to hypothesize that the shock interval, in which the defender is unable so to command himself as to make use of such weapons as remain available to his hand, varies between 12 and 25 minutes, seemingly according to the extent of material damage and disarrangement done the defender.

The transcendent morale value deriving from close air support is best explained in the words of one battalion commander in 1st Mar Div: "An air strike puts new zest and determination in our line in a way that no amount of artillery fire delivered before our eyes could do. The men see our pilots; they watch them come in low and take terrible chances. It makes them want to go forward again. The effect is as if they were drawn by a magnet." Statements similar to this were made by many other leaders at platoon and company level; they spoke with reference to the effects achieved in tactical situations which they proceeded to describe in utmost detail.

The data on this cooperation between ground and air, on the incidents wherein it was applied, and on the techniques which made it possible, were collected as part of the basic operational study from which this analysis-in-brief has been extracted. They are not discussed at length here because the evaluation of tactical air does not come within the scope of this study.

March Requirement

During its attack southward from Hagaru-ri, 1st Mar Div directed that every able-bodied man, other than drivers, and gunners with the vehicles, move on foot, and be ready for service as a rifleman, or his equivalent, as needed.

It was ordered that no vehicle be left which might be capable of salvage; any wrecked vehicle could be abandoned only on permission of the senior commander present.

Today, it is a main point of pride throughout this Div that this order was published and followed.

Effects of Cold

Operations by 1st Mar Div north of Chinghung-ni provided one of the best opportunities for the study of effects of extreme cold on men, weapons and other equipment under actual combat conditions, of any American battle in modern times.

A vast amount of data, covering the varying aspects of this subject, has been collected and partially collated.

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EFFECTS OF COLD

It permits of some broad generalizations and considerable specification.

1st Mar Div was as well clad and equipped for cold weather fighting as any US division is likely to be under existing T/E's and issues.

Moreover, its disciplines were such as to give the individual maximum chance for survival against the cold, and to spare him abnormal privation and rigor. Tentage was taken along, and was used to the full extent permitted by the fighting situation. Troops brought in from outpost, or coming in from sustained bouts with the cold during attack beyond the defensive perimeters, were rotated through warming tents. In these tents they were enabled to dry their socks and thaw-out shoe-pacs. Hot coffee was served there and hot C rations, after thawing in boiling water.

The wounded were kept in warming tents. When the tents began to overflow, those with lesser injuries were rotated back to the line, and thereafter watched, lest their condition worsen.

Cases of extreme shock or exhaustion--either from the intense cold or that combined with unusual exertion--were given 24 hours rest in warming tents before being returned to duty.

Such were some of the precautions taken to maintain the health and vigor of the command against the adverse weather. The results can be summarized as follows:

1. About 20 percent of the command suffered from respiratory ailments, including everything from bad colds to pneumonia. The medical authorities considered that this figure was low in view of the conditions.
2. "Combat fatigue" cases, in the degree that the man became permanently non-duty, were so rare as not to constitute a medical problem. Of relative frequency were the "shock" cases in which the individual could return to duty after 24 hours rest.
3. The Division had about 2700 non-battle casualty (NBC) cases, of which approximately 2000 were frostbite cases. Of the latter, about 95 percent were foot cases. Most of the hand cases were mild. The ear cases were found to be due in most instances to carelessness. However, in taking survey of the foot cases, General Smith, his subordinate commanders, and the Regimental Surgeons, after questioning men, platoon leaders and others, and going into the attendant circumstances, arrived at the estimate that only 20 percent of these cases came of any carelessness on the part of the individuals, and 80 percent were

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due to the conditions of the fight and the inadequacy of the footwear. (See subsequent note on shoepac.)

4. A high percentage of men (uncounted) was lost to the line because of acute intestinal disorders induced by the eating of half-frozen C rations. This danger became so well known to the command that the biscuit component was at a premium. In the worst stages of the fighting, men on the line ate nothing else. The criteria showed that present field rations do not supply the needs of troops on the move in combat under conditions of extreme cold weather.

Shock and Fatigue

The effects of the first cold blast, when the Division was moving north, surprised some of the attending surgeons. Among troops which had been on the line for several hours and then returned to the warming tents, they noted that there was a "severe shock reaction among many of the men." It was described in the following words: "These men by the hundreds came to the aid stations in a condition similar to what you see in men under terrific mortar or artillery pounding. There was a marked tremor which was not that simply of men shivering from cold; in some cases there was a marked suppression of the respiratory rate. They responded to stimulant. In the less serious cases a shot of brandy and a little stove heat brought them back fairly quickly. While in shock, there were marked mental and physical changes in these men. Many stared into space and did not seem to understand when they were spoken to. Others sobbed for a long period, saying nothing. But over a period of days, as the units became more accustomed to the extreme temperatures, we noted the disappearance of this shock reaction."

Cold, combined with acute physical exhaustion, continued, however, radically to influence the response of the individual, presenting hitherto unexplored problems for the command. The absolute limit was reached by 1st Battalion, 7th Marines, in its nighttime attack across country to the relief of Fox Company, 7th Rgt. Its commander, Lt. Col. Davis, bears witness that in the 20-degree-below-zero weather, as his forces continued to engage CCF, he found himself almost succumbing to the desire to do nothing. The bitter cold so froze his thought that he resorted "to checking everything two or three ways" fearing that his judgments were clouded. Aware that his men had been pushed almost to their extreme physical limit, he halted them, intending to go into perimeter defense. This was near midnight. However, within a few minutes he noticed that the effects of the cold were such that this troops were "folding completely" and he decided that the best choice was to keep moving. The force toiled on through the deep snows past several more ridges. At the last hill short of Fox Company's position, the command,

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reaching the crest, came into ground already held by CCF. Firing began, and Col. Davis made the first moves to get his people going in the attack. Yet as his companies topped the rise, under these conditions, he saw the files successively fall flat and remain motionless, like a line of dominoes going down when impulse is given to the first one. They stayed there "paying absolutely no attention to the fire breaking around them" and they had to be vigorously shaken and otherwise manhandled by their leaders before they would rise again.

However, after winning this fight on the high ground, and resting briefly on the crest, the battalion was able again to bound forward when morning came.

The Shoepac

The shoepac is condemned by all concerned in 1st Mar Div and is blamed for the greater part of the Division's NBC losses. Among men in the line, and among commanders and medical staff, the gist of the criticism is this: During the march, and while moving in the attack, the foot perspires heavily. When movement is checked for any reason, and the line comes to rest, the perspiration freezes. Ice actually forms within the shoe next to the liner. There is then no means of protecting the foot unless socks can be changed and the shoepac dried. Under combat conditions this is impossible a great part of the time.

Weapons Under Cold

Under sub-zero conditions the performance of the M1, the machine guns, and the 75 mm recoilless, was sturdy, and in general, highly satisfactory.

Praise for the latter weapon is universal among 1st Mar Div' battalions. They describe it as "indispensable" for hilltop fighting and far from finding men reluctant to use this weapon because it "might give away the position," all concerned reported that it is such a valuable fighting tool, particularly against enemy emplacements, that ranks have a particular enthusiasm for it. In use against bunkers and other gun positions, it was effective up to 1200 yards. The unanimous comment on the weapon is that "we need more of the same."

In the sub-zero fighting, the 105 mm howitzer would sometimes take two minutes to move back into position, thus markedly slowing the rate of fire.

There is considerable variation in the reports on the BAR, which variation may reflect differences in methods of maintenance under cold conditions. Battalions within 1st Marines used no oil, washed the guns in gasoline to clean them of all oil, fired

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them periodically to keep the weapon warm, and experienced no difficulty. On the other hand, there were companies within this same Rgt which used a light coating of oil, did not fire warm-ups, and still found the weapon working well from first to last. Fox Company, 7th Marines, had its BAR's go out night after night in repeated actions, yet during daylight inspection was unable to find the source of the difficulty; care and cleaning did not help. Other units reported similar experiences. On the average, however, BAR performance was good, and the weapon retained the confidence of its users. The variations in performance, and in methods of maintenance under cold conditions (in 1st Mar Div as in 2nd Inf Div) may point up the need for further study and experiment looking to the best possible solution.

The carbine does not have the confidence of 1st Mar Div's commanders or line. The universal comment is that when the weapon was changed to include automatic features, it became "too delicate." The optimum performance by any line company in 1st Mar Div would show about 30 percent failure on the part of the carbine. Troops discarded the weapon as rapidly as they could get hold of M1's. There was also complaint about its lack of "stopping" characteristics. Junior leaders tell of putting two or three bullets into a CCF fighter at less than 50-foot range, and of seeing the target wince and still keep on coming.

In general, the fire performance by the family of mortars was highly satisfactory to 1st Mar Div's battalions, with a number of the latter expressing especial appreciation of the 4.2. They felt that they could make good use of this weapon in greater numbers, particularly if it was lightened with a view to making it more portable, while still producing the same heavy burst at shorter ranges. However, the mortars in all sizes, when subjected to high rates of fire, tended to "beat themselves to death" against the frozen ground. The seat of greatest difficulty was in the base plates which buckled from corner to corner, or cracked, or broke apart. But there was also trouble with the elevating screws which shook loose in the cold and then eroded rapidly. The data also show that firing pins broke so excessively that Ordnance Battalion had to resort to making them on the spot. The 4.2 stood up better than the lighter mortars in these respects. As to tubes, none blew up, but the armorers noted that one effect of the cold seemed to be deeper scoring by the fins, resulting in excessive muzzle flash. The most intensive use of mortars throughout the operation was by 1st Marine Rgt. The 60's, for example, fired continuously for about 14 nights. At the conclusion of operations, all mortars within this Regiment had to be replaced in whole or in part. None remained in sound operating condition.

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1st Marines also resorted to washing machine guns with gasoline. The oil preservant became very heavy and slowed the action of the gun until it was warm. The HMG's were fired at about 20-30 minute intervals, irrespective of situation, to make sure of operating. The anti-freeze in this weapon is set to approximately 30° below, but it covers only the barrel. Barrel extensions, bolt and buffer groups are unprotected. Frost forms on the metal, and tends to freeze the gun solid; periodic firing was therefore considered necessary.

Ammunition for the 3.5 rocket launcher cracked wide open on the coldest days. It is supposed to be set for 20° below, according to those who know this subject. Personnel tried to protect it by burying it below the frost line, but the expedient did not work.

Major General Smith noted that the helicopter lost some of its hovering characteristics in the cold, thin air, and tended to land with a hard bump, dropping the last 10 feet. At least one helicopter was washed out in this manner.

Also, during the air drops, bundles tore away from their chutes before the silk could open in a high percentage of cases, perhaps 1 in 10. It is a question whether this was due to the cold in combination with altitude, or to some other condition. However, in the ammo bundles which dropped free into the perimeter at Yudam-ni, the retrievers took note that the artillery and mortar ammo dropped in wooden cases could almost invariably be salvaged, while that dropped in metal cases was destroyed beyond possibility of use.

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