Abstract

Purpose: The purpose of this study is to derive the situational judgment considerations necessary to lead and creatively carry out the battle in close combat, where rational situational judgment of each combatant is very difficult.

Methods: In addition to literature studies, Delphi techniques were used for soldiers who participated in KCTC training, which is most similar to close combat, at least 20 times. Since 10 panels participated in the expert survey, the reliability problem of the Delphi survey process was not considered.

Results: The main results of this study are as follows. First, enemy, friendly state, dangerous area, concealing and concealing possible point, dominant point, immediate shooting possible state, timing, and engagement time were derived as factors for determining the situation of combatants in attack combat. Next, in defensive combat, the enemy’s expected maneuver, the decisive battle area, the friendly situation, the weather and vision, the controllable point, the departure and conversion of positions, and the enemy and timing with great threats were derived.

Conclusion: This study was conducted to derive the situation judgment factors that each combatant should consider in order to be trained as combatants who think and judge by themselves so that combatants can make the fastest situation judgment in close combat, move before the enemy, and act immediately. To this end, a Delphi survey was conducted on KCTC training experts. As a result of the study, nine factors considering the situation in attack combat and eight factors considering the situation in defense battle were derived. It is desirable to find if the soldiers who are trained with these factors are more competent and positively contribute to the combat.

Keywords: KCTC(Korea Combat Training Center), Close Combat, Offensive Combat, Defensive Combat, Situational Judgment

1. Introduction

Looking at various wars, no matter how advanced weapons are, close combat between fighters is inevitable in actual combat. In particular, when there are many areas where mountainous terrain has developed and become urbanized, close combat at the level of small troops is inevitably more frequent. Because of the importance of this close combat capability, the Army is conducting shooting training for enemies within 100 meters and training at battlefields in the building and also teaching soldiers many lessons derived from many real battles so that soldiers can have close combat capabilities[1].

In particular, KCTC(Korea Combat Training Center), which is most similar to the actual battlefield, is stepping up efforts to wear Miles equipment and experience combat like the actual battle. Most units train a lot before coming to KCTC, but the same mistakes are always repeated.
Tactical aspects are also problematic, but when most battles take place within 100 meters, the leader(commander)'s command capability, each soldier's conditional reflex action, and the shooting capability are very inadequate. As a result, the training unit easily lose to the opposing forces, and questions are raised about whether they are learning actual combat capabilities. This phenomenon is not only due to the lack of training and the leadership of the small unit commander, but also to the fact that individual combatants performing the battle do not know what factors to consider when judging the situation. Therefore, combatants react passively only to the command of the conductor without making a reasonable judgment. By looking at the way education and training of the current army is the basis of these problem mentioned above. Currently, education for each combatant is a form of repeated mastery of the procedure for performing combat, focusing on the action support for how to act. This phenomenon is not only due to the lack of training and the leadership of the small unit commander, but also to the fact that individual combatants performing the battle do not know what factors to consider when judging the situation. Therefore, combatants react passively only to the command of the conductor without making a reasonable judgment. By looking at the way education and training of the current army is the basis of these problem mentioned above. Currently, education for each combatant is a form of repeated mastery of the procedure for performing combat, focusing on the action support for how to act.

Tactical considerations(METT+TC) that tactical units(corps to squad) must consider in order to carry out combat are mainly applied to commanders above squadrons. Combatants who need to exercise their combat capabilities sensibly must analyze and judge information within close range in real time with their five senses and respond immediately. However, the situation judgment elements of individual combatants exist only empirically and are not theoretically systemized. Accordingly, this study aims to derive "combatant individual situation judgment factors" necessary to train combatants who can quickly and accurately judge situations even in battlefield environments where close combat is fierce and think creatively in line with mission-type command.

2. The Concept of Close Combat

It is necessary to look at the definition of close combat for better understanding. First, In terms of terms, close combat can be defined as 'a battle in a state of proximity to the enemy'. Second, a close combat can be defined as 'a battle carried out in all types of battlefield and ground operations in a close area or at a distance that can directly affect the enemy'. Third, Field manual defines that it as "a battle carried out using light weapons, bayonets, and other heavy weapons at close distances, “a battle in the immediate vicinity of an operational area”, and “a battle that takes place within the effective range of light weapons, including hand to hand fight". Putting these various definitions together, close combat is "a battle carried out using light weapons, bayonets, and heavy weapons at a distance where rifle direct fire is possible".

Next, the situation of close combat is as follows. First, two-way units, which are hostile relations, must be in contact with each other. In other words, it refers to the time when both units are located within the transaction of the maximum distance among the direct fire machines held by both units. Second, at least one of the two units is not avoiding combat and is detecting the other in a state that is not penetrating. Third, units must have combat equipment that can damage the opposing unit as combat units, not non-combat units. Close combat is established when both units meet these conditions, and close combat includes direct shooting close combat and indirect shooting close combat.

Direct fire close combat is a battle carried out by a direct firearm such as a rifle, and indirect fire close combat is a battle carried out by a curved firearm such as artillery fire, and the damage caused by these battles can occur in various ways. As seen above, close combat can be achieved only when quick judgment and action are made at a time when enemies and allies can face each other as human-to-human and cause direct damage. No matter how advanced science and technology are and how precise the battle is, it cannot be denied that the final victory or defeat of the battle is determined by close combat and hand-to-hand combat by small troops. As can be seen in the Iraq War and the Afghan-
stan War, which declared that the U.S. military participated and won, close combat of the platoon continued to occur even after the end of the war. The importance of the future combat patterns will be further emphasized by more frequent and diverse small unit close combat, such as the Vietnam War in the past and the modern Iraq War[8].

3. The Judgment and Behavior of Combatants in Close Combat

It is the responsibility of the leader to judge and decide on the combat situation during the operation. In order to apply tactical principles, methods, and procedures creatively and flexibly in uncertain and fluid combat situations, the leader must always apply tactical considerations(METT+TC) to determine, resolve, and respond to the best situation[10]. Tactical consideration factor(METT+TC) is an essential consideration factor for leaders and staff to plan and implement operations in tactical units above the corps level. In close combat, the platoon leader or squad leader evaluates the situation in real time based on this[11].

Due to the nature of military organizations that have to act according to orders in urgent battlefield situations, the leader's judgment serves as the most important factor in determining the success or failure of the unit's mission[10]. Therefore, in an uncertain battlefield situation where it is difficult to predict exactly how the enemy will behave or how the situation will unfold, the leader closely evaluates the current situation according to the tactical consideration factor(METT+TC), decides, and [1].

The leader’s tactical considerations have already been systematized and are appropriately used as a leader’s situational evaluation factor from the corps to the squad, which is the spearhead of close combat, but there is no individual combatant's situational judgment factor. In a small unit battle situation that requires rapid decision and action, much of the situation judgment of combatants is excluded or only exists implicitly for the survival of individual combatants or colleagues.

Team units that have trained a lot can be seen to move more systematically according to the leader's intention, which repeats a lot of training and predicts more in advance and is operated organically according to the leader's intention or style. In other words, according to the leader's intention, an area that the combatant judges and moves on his or her own is created, and when it blends well with the leader's command and command area, the organization can fight as an organism[12].

Non-tactical combat cases, which appear due to poor judgment of the situation of combatants, are common not only in the past but also in the present. Many units train and prepare severely for combat, but the same error always appears in practical exercises such as the KCTC[13].

In particular, in combat situations where most battles take place within 100m, there is a lack of combat capability, such as lack of leadership ability, lack of conditional reflex action by each soldier, and lack of shooting ability in combat situations. As a result, there are growing calls for reviewing the education and training conducted by field units[14].

Currently, education for each combatant in the Army is a procedural repetitive mastery of combat performance, focusing on action guidelines on how to do combat actions. In other words, the main focus is to learn the combat performance procedure so that the individual’s situation judgment element can be excluded according to the battlefield situation and move as it is according to the order[15].

Tactical considerations(METT+TC) that tactical units(corps to squad) must consider in order to carry out combat are mainly applied to commanders above squadrons. On the other hand, combatants sensibly exert their combat capabilities to analyze and judge information within short range in real time with their five senses and react immediately. Nevertheless, the necessary situational judgment factors are not only unclear in concept but also systematic, so training
is not properly conducted. Examples of non-tactical actions that appear during combat training without judging the situation of combatants appear in concealment, shooting, and mobilization that do not take into account enemies and topography[16].

**Figure 1.** Squad battle formation without considering enemy and terrain.

Another non-tactical behavior also appears in maintaining squad combat formation. The infantry squad is supposed to maintain and convert combat formation in consideration of missions, topography, and enemies when maneuvering. However, the combat formation described in the school record lacks flexibility in the location and spacing of combatants and is expressed in a fixed manner[17].

As a result, it can be seen that squad members are obsessed with the stereotype of maintaining formation and make non-tactical maneuvers such as securing a close control area to find the enemy first or avoiding terrain that may be exposed to the risk of direct fire from the enemy.

If the fighters' judgment from experience is not fully demonstrated, it may be difficult to exert combat power considering close combat situations in which they have to overpower the enemy and preserve our survival, especially considering the short combat distance within 100 meters of the mountainous Korean terrain. In the close combat of the platoon, an individual's immediate and rapid judgment of the situation can be seen as an essential factor for the organization's organic combat power and the success or failure of the operation[18].

### 4. The Process of Deriving Situational Judgment Factors

#### 4.1. Definition of consideration factors

In order to cultivate the methodical knowledge(judgment power) necessary for mission-type combat performance, it is necessary to develop the ability to respond through immediate thought by deriving the situation judgment elements of individual combatants to be used immediately in the battlefield.

The combatant contextual consideration factor refers to the survival of not only combatants but also the unit's final combat mission by continuously and fastest in the process of acquiring and judging information within the three basic elements of battle(pia combat power, time, and space).
4.2. The process of deriving factors for contextual judgment

4.2.1. Subject of study

The subjects of this study are soldiers with at least 20 combat experiences at KCTC. The duration of the study subjects’ military service, the number of KCTC combat experiences, and positions/duties at the time are as follows.

4.2.2. Research method

The Delphi method was used to derive the situation judgment element of the close combatant. This method is a method in which experts in the field agree on predictable or socially unconventional issues, and is considered a suitable method at this time when detailed research on the situation judgment factors of close combatants is insufficient.

According to previous studies, the number of expert panels can be at least 4 to 11, and the smaller the group, the more effective it is, Dalkey(1969) reported that the greater the number of panels, the greater the reliability. According to Anderson(1997), it was found that 10 to 15 people could obtain useful results only by small group experts, and Yoon Mi-sook(1999) said that at least 10 panels are needed to minimize average group errors and maximize group reliability(Ewing, 1990). In the study of Ziglio(1996), useful results can be obtained with only 10 to 15 panels. In this study, since 10 panels participated in the expert survey, the reliability problem of the Delphi survey process was not considered[19][20].

Delphi surveys were conducted step by step in the first and second rounds. The first question is asking for subjective opinions which were written as an open questionnaire, and the second was conducted as a closed questionnaire that evaluated the factors of consideration derived from the first questionnaire.

Through the first open survey, the factors considering the situation of close combatants were divided into attacks and defenses, and the second survey was conducted by synthesizing the factors written by experts. The use of overlapping or different terms in the first survey was summarized into 12 attack elements and 11 defense elements by summarizing the literature studies such as existing doctrines and combat cases, and three company leaders and platoon leaders with more than 30 combat experiences in KCTC. Considering the differences in the use of the same concepts or terms and the limitations in conceptualizing and expressing empirical parts considering the academic research ability/education of experts, the second survey was conducted. This is to abbreviate into key elements rather than broad and diverse[21][22][23].

The second survey was conducted by conceptualizing the answers to the first open-ended questionnaire. The contents of the responses are shown in <Table 1> and <Table 2>. The second Delphi confirmed the level of expert agreement on the survey results obtained through the first Delphi. Whether the response results of expert panels are converging can be examined by consensus[24][25].

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1 The Degree of consensus is a method of verifying how much consensus between respondents was reached by modifying the values between Q3(75th percentile) and Q1(25th percentile) using the quartile range and the median value(Kim Hak-beom, 2005).

The degree of agreement can be obtained by $1 - \frac{Q_3 - Q_1}{M_n}$ ($Q_3$: quartile range, $M_n$: central value), a degree of agreement from 0 to 1 is extracted, and the closer to 1, the higher the degree of agreement(Kwon Tae-il, 2009).
### Table 1. Factors to consider for situation judgment of close combatants (offense).

<table>
<thead>
<tr>
<th>Consideration factor</th>
<th>Content (definition)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enemy</td>
<td>Enemy characteristics like the scale and arrangement that combatants must detect and capture in the current battlefield</td>
</tr>
<tr>
<td>Friendly force situation</td>
<td>My close allies' positions and combat capabilities (available weapons, timing, damage conditions), which can directly affect the battle, including myself</td>
</tr>
<tr>
<td>Danger zone</td>
<td>Areas where an enemy is expected to be present or identified, or areas where it is deemed to be damaged by enemy close-range shots, such as direct fire and curved fire extinguishers</td>
</tr>
<tr>
<td>Maneuvering routes</td>
<td>Maneuvering routes that ensure ally survivability, stealth, and access to enemies</td>
</tr>
<tr>
<td>Cover and concealable point</td>
<td>Topographic features that can ensure survival from enemies and effectively eliminate enemies</td>
</tr>
<tr>
<td>Dominant point</td>
<td>Areas (points) that must be secured first in order to preserve survivability from predicted or identified enemies and create favorable conditions for allies when maneuvering or engaging</td>
</tr>
<tr>
<td>Immediate shooting state</td>
<td>Cognitive, psychological, and physical readiness, such as firearms capable of shooting quickly and the thoughts and body posture of the shooter.</td>
</tr>
<tr>
<td>Obstacle</td>
<td>Enemy artifacts that limit ally's survivability and mobility.</td>
</tr>
<tr>
<td>Timing</td>
<td>The most appropriate time and opportunity for combatants to take action based on situational judgment</td>
</tr>
<tr>
<td>Movement and enemy suppression speed</td>
<td>Maneuvering and engagement speed that minimizes the time the enemy can identify and inflict damage to allies</td>
</tr>
<tr>
<td>Engagement time (minimum)</td>
<td>Decide whether to continue or avoid the engagement by considering the mission and end goal or comparing the combat power of the enemy and allies.</td>
</tr>
<tr>
<td>Weather conditions</td>
<td>Circumstances (day/night, fog, rain, etc.) that may have a favorable or unfavorable effect upon engagement</td>
</tr>
</tbody>
</table>

### Table 2. Factors to consider in determining the situation of close combatants (defense).

<table>
<thead>
<tr>
<th>Consideration factor</th>
<th>Content (definition)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anticipated enemy-avenue of approach</td>
<td>The attack maneuver routes of the enemy within the area of responsibility that must be acquired through the five senses or intelligence of higher command</td>
</tr>
<tr>
<td>Decisive battle zone</td>
<td>The area that is most susceptible to fatal damage to the enemy according to the enemy's actual maneuvering path</td>
</tr>
</tbody>
</table>
Combat procedure (method) • Advanced unit firepower plan based on enemy attack patterns, firearms and obstacles linked to neighboring allies, and operational plan for advanced unit firepower

Friendly force situation • Location and combat status of senior and neighboring allies

Weather and field of view • Outline conditions (day/night, fog, rain, etc.) that influence the enemy’s attempt

Dominant surveillance areas/unable areas • Areas that can be controlled by surveillance or obstacles among the areas of responsibility within the defensive positions, areas that cannot be controlled and require additional cooperation or action

Line of displacement • Enemy reach line for determining departure and transition from a fixed position to an agreed position in the event that the defense is restricted by enemy attacks

Enemy with great threat • Friendly or most threatening enemy in the surveillance zone

Timing • Time to engage in coordinated defense against attacking enemies, such as reporting/shooting times and departure from position, or to engage in combat actions to ensure their viability

Retreat routes • A maneuver that can secretly leave to ensure future movement or viability

Mission • Purpose of conducting combat at assigned locations and roles, such as local alert units or flyers

Secondary Delphi calculated the validity of the above elements using the number of experts who gave 4 or more points using a 5-point scale. Based on Lawshe’s (1975) theory, the degree of consensus was obtained as a Content Validity Ratio (CVR), and elements that are CVR .62 or higher and satisfy an average of 4.0 or higher were adopted. Among them, elements showing a slight difference from CVR .62 were adopted or rejected after doctrinal review and discussions with experts and researchers in consideration of their conceptual significance. In addition, SD (standard deviation) and degree of consensus were judged as verification data and referenced [26].

5. Results of Consideration of Factors

The results of Delphi survey analysis on the factors considering the situation of combatants are as follows.

Table 3. Necessity of consideration for determining combatants’ conditions in offensive operations.

<table>
<thead>
<tr>
<th>Distinction</th>
<th>M</th>
<th>SO</th>
<th>CVR</th>
<th>Degree of agreement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enemy</td>
<td>4.80</td>
<td>.422</td>
<td>1.00</td>
<td>.960</td>
</tr>
</tbody>
</table>

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As factors for consideration of combatants’ situational judgment during offensive operations, those that satisfy an average of 4.0 or higher and a CVR of .62 or higher were found to be enemies, friendly force situation, dangerous areas, maneuver routes, and dominant point. It can be seen that the first thing that combatants should consider during the joint operation is the location and condition of the enemy, the geographical danger zone considering the enemy, and the maneuver routes that ensures its viability and does not expose the airway. Factors that slightly fell short of the CVR .62 were the cover and concealable point, immediate shooting state, and movement and enemy suppression speed.

These factors are factors that must be considered during engagement, and when experts consider the factors, they seem to have underestimated the necessity of factors to be considered during engagement because they are engaged after starting → contact. Therefore, it is necessary to derive the factors to consider for situation judgment by dividing it into maneuvers and engagements. Non-adopted factors included obstacles, timing, maneuvering and enemy suppression speed, and weather condition. Obstacles are important factors that can inflict damage to allies, but they are not only given priority over enemy direct firearms or surveillance, but also seem to be judged as factors to be overcome when confronted with the exception of booby traps or land mines.

Timing was considered a very important factor by this researcher, and the question of whether individual combatants judge the timing of combat action or shooting is also related to the commander’s command, and experts are part of executive, but it seems that opinions varied. Since it is not a factor that should be judged primarily as an external factor, but rather as it is a

<table>
<thead>
<tr>
<th>Friendly force situation</th>
<th>4.60</th>
<th>.699</th>
<th>.800</th>
<th>.800</th>
</tr>
</thead>
<tbody>
<tr>
<td>Danger zone</td>
<td>4.30</td>
<td>.483</td>
<td>1.00</td>
<td>.750</td>
</tr>
<tr>
<td>Maneuvering routes</td>
<td>4.60</td>
<td>.699</td>
<td>.800</td>
<td>.800</td>
</tr>
<tr>
<td>Cover and concealable point</td>
<td>4.10</td>
<td>.738</td>
<td>.600</td>
<td>.687</td>
</tr>
<tr>
<td>Dominant point</td>
<td>4.20</td>
<td>1.229</td>
<td>.800</td>
<td>.777</td>
</tr>
<tr>
<td>Immediate shooting state</td>
<td>4.10</td>
<td>.738</td>
<td>.600</td>
<td>.687</td>
</tr>
<tr>
<td>Obstacle</td>
<td>3.80</td>
<td>.789</td>
<td>.200</td>
<td>.687</td>
</tr>
<tr>
<td>Timing</td>
<td>4.20</td>
<td>.919</td>
<td>.400</td>
<td>.555</td>
</tr>
<tr>
<td>Movement and enemy suppression speed</td>
<td>4.30</td>
<td>.949</td>
<td>.400</td>
<td>.600</td>
</tr>
<tr>
<td>Engagement time (minimum)</td>
<td>4.20</td>
<td>.789</td>
<td>.600</td>
<td>.687</td>
</tr>
<tr>
<td>Weather conditions</td>
<td>4.00</td>
<td>.816</td>
<td>.400</td>
<td>.500</td>
</tr>
</tbody>
</table>
part of deciding whether to devise my actions after information judgment, there are many parts that need to be considered which mission, commander’s intent, survival or scarcity of opportunity rather than always. However, it can be seen as an essential element when reflecting the research purpose that the researcher derives the judgment factors of the combatants, and that the combatants should think for themselves and give them some right to decide their actions.

The speed of maneuver and enemy suppression is similar to the maintenance of attack momentum, which is the rule of attack tactics, but the tactical part or the part that needs to be determined considering the task can be seen as the conductor’s judgment, it can be low validity. Weather condition is also an important factor in METT-TC, especially in terms of combat readiness or covert menuver, but it seems to have been somewhat less necessary to consider and judge in real time because it is already an environmental factor given to individual combatants[27].

The necessity of consideration factors for judging the situation of combatants in defensive operations is as follows.

Table 4. Necessity of consideration for determining combatants' conditions in defensive operations.

<table>
<thead>
<tr>
<th>Distinction</th>
<th>M</th>
<th>SO</th>
<th>CVR</th>
<th>Degree of agreement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anticipated enemy-avenue of approach</td>
<td>4.40</td>
<td>.699</td>
<td>.800</td>
<td>.777</td>
</tr>
<tr>
<td>Decisive battle zone</td>
<td>4.70</td>
<td>.675</td>
<td>.800</td>
<td>.950</td>
</tr>
<tr>
<td>Combat procedures (methods)</td>
<td>4.00</td>
<td>1.33</td>
<td>.400</td>
<td>.555</td>
</tr>
<tr>
<td>Friendly force situation</td>
<td>4.60</td>
<td>.516</td>
<td>1.00</td>
<td>.800</td>
</tr>
<tr>
<td>Weather and field of view</td>
<td>4.80</td>
<td>.422</td>
<td>1.00</td>
<td>.950</td>
</tr>
<tr>
<td>Dominant surveillance areas/unable areas</td>
<td>4.50</td>
<td>.527</td>
<td>1.00</td>
<td>.777</td>
</tr>
<tr>
<td>Line of displacement</td>
<td>4.10</td>
<td>.568</td>
<td>.800</td>
<td>.937</td>
</tr>
<tr>
<td>Enemy with great threat</td>
<td>4.00</td>
<td>.816</td>
<td>.800</td>
<td>.937</td>
</tr>
<tr>
<td>Timing</td>
<td>4.40</td>
<td>.699</td>
<td>.800</td>
<td>.777</td>
</tr>
<tr>
<td>Retreat routes</td>
<td>4.20</td>
<td>.789</td>
<td>.600</td>
<td>.687</td>
</tr>
<tr>
<td>Mission</td>
<td>4.20</td>
<td>.789</td>
<td>.600</td>
<td>.687</td>
</tr>
</tbody>
</table>

The factors that satisfy the average of 4.0, CVR.62 or higher were considered anticipated enemy-avenue of approach, decisive battle zone, friendly force situation, weather and field of view.
view dominant surveillance areas/unable areas, line of displacement, a threatening enemy and timing. As for the anticipated enemy-avenue of approach, it can be said to be the most important factor in determining the direction of firearms and the location of obstacles within the area of my defense responsibility. Decisive battle zone is average of 4.7 and the agreement is high at .950. It is important to monitor real-time enemies in order to determine how to fight with the enemy’s expected firearms and obstacles. Friendly force situation also showed a high consensus of 4.6 on average and CVR 1.00, which seems to have been cited as an important factor because defense is a fight with dynamically moving enemies in a static state, and if we do not engage in coordinated combat with our troops, the defense line will collapse. Unlike attacks, weather and field of view have been adopted as important factors in defense. It is important factor to consider for operational success, as they can affect combatants who must always be wary of certain places by having a great mental, physical impact. Dominant surveillance areas and unable areas can also be seen as having a similar effect to weather and field of view. Line of displacement, it is not currently doctrinal for combatants to decide whether to leave or change positions without the commander’s approval, but the enemy’s advance line and our fighting power should be considered what determines the transition from a static state to a dynamic state for combatants survival. This is sometimes judged in engagement, and in the case of a local border unit, it is also a part to consider when determining that the position must be changed even when the enemy moves to a place other than the expected area. Enemy with great threat is the most threatening enemy in the area of responsibility between battles in defensive combat, which will cause great damage to allies or become a major operational obstacle, which must be destroyed in consideration of enemy priorities.

Unlike offensive combat, timing is considered a necessary factor in defensive combat, but unlike dynamic attack operations, action constraints can be imposed, it seems necessary to continuously think about when to cause great damage to the attacking enemy with cooperative defense such as report, shooting and displacement or when to take combat action to ensure survival. Retreat maneuver and missions were considered somewhat below the standard with an average of 4.2 CVR.600, but the task of defending the responsible area seems to be low in importance because the responsible area remains unchanged even if operational situations such as displacement, decisive battle area are changed. Retreat is also an important factor for viability in the case of a position change, but rather than a judgment factor, it is judged that it was considered a maneuver to be initiated between the group’s defense operations to continuously damage the enemy when changing the decisive battle area.

Researchers integrated and embodied the concepts by considering above the contents.

The concept of terrain or region is specifically conceptualized using terms such as points and status in consideration of the perspective of individual combatants, and the term time is literally expressed as a foreign word expression of timing in order to describe a more instantaneous and opportunistic concept. Other comprehensive concepts such as enemies, troops, and weather are also expressed as concepts that are relative to the enemy and immediately recognizable with five senses so that individuals could recognize the concepts as information at the battlefield.

The factors to consider for determining close combat are as follows.

**Table 5.** Combatants close combat situation judgement considerations.

<table>
<thead>
<tr>
<th>Consideration factor</th>
<th>Content (definition)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Offensive operations</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Enemy</strong></td>
<td>• The size, deployment, and combat power of the enemy that combatants must detect and capture in the battlefield</td>
</tr>
<tr>
<td><strong>Friendly force status</strong></td>
<td>• The position and combat power of close allies that can directly affect the battle, including oneself (available firearms, morale, damage conditions)</td>
</tr>
</tbody>
</table>
Danger zone
• Areas where an enemy is expected to be present or identified, or areas where it is deemed to be damaged by enemy close-range shots, such as direct fire and curved fire extinguishers

Maneuvering routes
• Maneuvering routes that ensure ally survivability, stealth, and access to enemies

Cover and concealable point
• Topographic features that can ensure survival from enemies and effectively eliminate enemies

Dominant point
• Areas (points) that must be secured first in order to preserve survivability from predicted or identified enemies and create favorable conditions for allies when maneuvering or engaging

Immediate shooting state
• Cognitive, psychological, and physical readiness, such as firearms capable of shooting quickly and the thoughts and body posture of the shooter.

Timing
• The most appropriate time and opportunity for a combatant to take action immediately or under the command of the commander through an inter-battle situation judgment

Engagement time (minimum)
• Engagement or avoidance is determined by comparing each forces and considering the mission & final objective.

Defensive operations

Anticipated enemy-avenue of approach
• The enemy’s attack maneuver within the responsible area to be acquired through five sense and the intelligence of superior units, such as enemy activities, movement routes, etc

Decisive battle zone
• The area that is most susceptible to fatal damage to the enemy according to the enemy’s actual maneuvering path.

Combat procedure (method)
• Advanced unit firepower plan based on enemy attack patterns, firearms and obstacles linked to neighboring allies, and operational plan for advanced unit firepower

Friendly force situation
• Location and combat situation of superior and adjacent troops

Weather and field of view
• Outline conditions affecting the identification of enemy intention (day, night, fog, rain, etc.)

Dominant surveillance areas/unable areas
• Areas that can be controlled by surveillance or obstacles among the areas of responsibility within the defensive positions, and areas where additional cooperation or measures are required due to lack of control

Line of displacement
• If the defense is restricted from a fixed position because of an enemy attack, the evacuation or transition is determined to an pre-agreed point

Enemy with great threat
• Enemy in the surveillance zone that poses the greatest threat to our friendlies or to me

Timing
• Time to engage in coordinated defense against attacking enemies, such as reporting/shooting times and departure from position or when combat action is to be taken to ensure their survival

6. Conclusion

This study derived situation judgement considerations to be applied to individual combatants in order to become combatants who move and judge themselves earlier than the enemy and immediately engage in combat action[28]. To this end, Delphi survey method was conducted on scientific combat training experts who train practically and the investigation is related to the factors that combatants should think about and judge in attack and defense battles, respectively.

As a result of the study, enemy, friendly force status, danger zone, Maneuvering routes, cover & concealable point, dominant point, immediate shooting state, timing, engagement time were derived in offensive operations. Anticipated enemy-avenue of approach, decisive battle zone, combat procedure (Method), friendly force situation, weather and field of view, dominant surveillance areas/unable areas, line of displacement, enemy with great threat and timing were derived in defensive operations[29]. These factors are situational judgment elements so that combatants can immediately acquire information with their five senses at the battlefield, derive
Thinking combatants and warriors are always insufficient in combat training, so they should study and master what needs to be supplemented\[32\]. In particular, special forces in which each combatant performs a solo mission on a highly trained unit or team basis can think, judge, and act on their own through high-level training. Not only special forces but also field soldiers who have trained a lot such as corporals and sergeants think and act on their own roles, provide important judgment elements to squad leaders or platoon leaders, and fill gaps in the command ability and leadership with their thoughts and actions in order to achieve decisive operational success\[33\].

A series of tactical combat actions that preserve the survival of our squad by immediately firing and occupying the highlands are not conducted by the conductor in words or signals, but by the fighters themselves through training. The judgment and behavior of combatants are the authority of the commander, and it is the story of a person who has not experienced combat to take issue with the command capabilities because each combatant can not control the behavior of each combatant in a combat situation. Within the highly trained small sized units like platoon or squad, the leader and the members implicitly acknowledge and share each other’s thoughts and actions, and when this is achieved, command is made with only one simple expression, and hand signal, and mission command between the commander and combatants is possible.

Currently, soldier’s training mainly consists of acquiring basic combat skills through maintaining combat formation and signal familiarity within the squad and platoon, and focusing on action tips and procedures. But doing only these trainings make soldiers who can be easily panicked in unexpected situations, and even the commander is panicked and unable to command. At a time when individual combat capabilities are more important due to close-quarters combat and acceleration of urbanization, combatants must be trained to achieve missions through their instinct with judgment factors to think for themselves. The commander should train together to lead the battle to victory by directing the individual’s thoughts and judgments, not the combat command that controls the movements and actions of the individual combatants\[34\].

### 7. References

#### 7.1. Journal articles


### 7.2. Thesis degree


### 7.3. Books


8. Appendix

8.1. Authors contribution

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