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ROMANIAN ARMY`S JOINT FIRE SUPPORT APPROACH AND ITS IMPLICATIONS IN CONDUCTING MILITARY OPERATIONS

LTC. Adrian MIREA
mirea.adrian@yahoo.com

Abstract*: In this paper I wanted to highlight those characteristic elements regarding the joint fire support concept as they are presented and detailed in our standing national doctrine and field manuals. From a national point of view, joint fire support is described as being the use of specific fire support platforms – land, maritime or aerial – that have the ability to execute indirect fire to generate planned effects on ground targets in direct support for land force operations. This is somewhat a limited perspective that comes, in my opinion, from our current level of equipment with modern fire support systems. The increasing need for modernizing armed forces capabilities and for implementing ongoing and future army equipment programs determine from a conceptual and a doctrinal point of view an adaptation regarding how these new structures and capabilities can best contribute to military operation's success. Equipping the Romanian Army with modern systems designed to engage targets from distant standoff positions offers new possibilities for the joint fire support system, possibilities that require a new level of integration and synchronization for activities and actions that specialized armed structures, existing at the component level or attached from higher, need to execute in order to properly engage and exploit these fire support capabilities.*

Keywords: *joint fire support; joint force operation; combat operations; effects.*

Fire support in a military operation consists in using weapons and other specific means to engage targets in order to generate a certain lethal or nonlethal effect on them. At the joint level of operations target engaging systems include conventional weapons that use direct or indirect fire and specialized equipment used in psychological operations, cyber-attacks and electronic warfare. Like in every modern army, Romanian armed forces consider fire support as being essential in an operation and it is currently determined as a warfighting function. This means that the fire support function is an instrument for grouping tasks and responsibilities of armed forces structures in a way that enables efficient applying of combat power on adversary forces and capabilities.

The joint fire support is a constant concern for the joint force staff when developing and conducting specific operational processes. Joint fire support opportunity and effectiveness are among a force commander's priorities, at every level of operation, especially during planning, execution and evaluation of operations. Joint fire support opportunity depends on the specific method used for coordinating force structures or supported elements (maneuver units) with specialized supporting elements that provide fire support in order to achieve established objectives in accordance with the concept of operation.

Fire support with air defense, information and engineer structures, alongside other specialized structures represent essential combat support elements that every commander considers during every stage of the operation. They all have a key role in providing continuous operational support to fighting units through the command and control system and through established supporting relations between structures for conducting the operation.

1. General aspects of joint fire support from a national perspective

In accordance with standing national field manuals, fire support means the use of fire to engage targets while close coordinating with maneuver or fighting structures in order to fix, neutralize or destroy enemy forces and capabilities (SMFT 2020, II-14). The purpose of

providing fire support at the joint level of operations exceeds those lethal and nonlethal effects to fix, neutralize and destroy presented above, as it is considered and included in informational operations, for enemy deception and also takes part in psychological operations when considering certain targets.

Providing fire support and engaging targets to generate effects on enemy combat power is planned and conducted in close relation with the movement of friendly structures and entities thus creating maneuver. In our previously mentioned field manual for general tactics maneuver is described as using forces in combat by combining movement with fire support in order to secure advantageous positions or conditions in relation to the enemy that will enable efficient engagement of enemy forces. Planned and generated effects using the joint fire support system are possible or attainable from a physical, psychological, functional or systemic perspective but, in order to exploit them, integrated and synchronized activities, responsibilities and actions are needed, especially maneuver and joint fires.

Romanian Army concept of joint fire support in a military action involves land, maritime, riverine and aerial platforms that have the capability to engage targets and to generate physical, psychological or functional effects. These effects must be exploited by maneuver elements, components of the joint force. (SMFT 2018, I-5) Joint fire support is described as being the use of specialized platforms – land, naval or airborne – that have the ability to execute indirect fire and to generate planned or desired effects on ground targets, in direct support for land operations.

Every component of the joint force can contribute to providing joint fire support. The multitude of specialized capabilities the joint force commander has available to execute joint fire support should be seen as complementary when planning and conducting operations, as, these diverse specialized structures and systems, offer flexibility for the commander in applying combat power to enemy forces, systems or capabilities. Complex and diverse joint fire support systems available to the joint force commander and to his subordinate commanders are essential aspects to consider when developing options to identify and to exploit enemy vulnerabilities.

In a joint operation effective fire support rely on an integrated and synchronized use of specific systems to detect and engage enemy targets in order to generate desired lethal and/or nonlethal effects, and also to evaluate the impact of these effects on the ongoing operations. Joint fire support must be integrated and synchronized with activities and actions that are specific for special destination structures or entities such as special operation forces, forces and equipment involved in informational operations, psychological operations and electronic warfare. The multitude of capabilities for command and control, target information, acquisition and engagement are used and exploited with unity of concept to generate lethal and nonlethal effects in every domain of confrontation. Furthermore, consistent discoveries in informational technology domain that facilitate intelligence products through satellite or aerial platforms and high precision weapon guiding systems, have ultimately changed the physiognomy of armed confrontations. (Stanciu 2016, 13)

Integrated and synchronized action of available joint fire elements are key to mission accomplishment for the providing component that has specialized fire support capabilities and, at the same time, for the joint force as a whole. Fire support integration translates as optimal exploitation of available fire systems to complete established missions or objectives for components and for the joint force as a whole. On the other hand, fire support synchronization represents target engagement in a prioritized, simultaneous or successive manner, in accordance with operational requirements for generating planned effects. These aspects are also valid for every joint force component and other tactical level structures. (SMFT 2019, III-33)

Joint fire support is integrated and synchronized through a specific structure, a comity existent in a joint force headquarters, called *Fire support coordination element*. (SMFT 2018, I-1) This entity is responsible for planning, preparing, executing, evaluating, integrating, synchronizing and coordinating actions and activities required for providing effective fire support and for generating desired effects. The fire support coordination element also has responsibilities in target management domain thus being able to integrate and synchronize actions and activities for component elements of the fire support system in order to generate planned effects on designated targets.

Fire support in land force operations manual states that the fire support coordination element is a designated structure within the force headquarters that is responsible with fire support planning, execution and evaluation in an integrated, synchronized and coordinated manner in order to generate effects. This fire support coordination element established at the joint level considers specific actions and activities that are planned and executed by the fire support system component elements – those structures and entities designed for providing relevant target data and information or for engaging/striking targets – available at the component level of the joint force.

At the joint level of operations planned lethal and nonlethal effects can be required at any desired time in the entire area of operations, whether it is in close contact with the enemy, behind enemy lines in the deep or further back in rear sectors of the joint area of operation. Also, of great importance, is that, in modern operations, simultaneous actions and activities are the norm as a joint force commander can conduct specific armed combat operations in one area and stability or support operation in another, within the same joint area of operations that was previously assigned to him.

2. Fire support system components and desired or planned effects

The efficiency of joint fire support comes from the ability of the joint force commander to coordinate and to concentrate activities and actions for the specialized fire support structures in an integrated and synchronized manner with maneuver structures, in accordance with the concept of operation.

2.1. Fire support system components

In accordance with our standing fire support in land force operations manual, the fire support system has four main components: the command, control and intelligence system, a data and information acquiring system, the target engagement or striking system and a sustainment system.

The command, control and intelligence system consists of specialized personnel and equipment within the command posts that plan, conduct and assess fire support components, specific activities and actions. The joint fire support coordination element or the joint fire element is the main structure that integrates and synchronizes joint fire planning and execution as directed by the joint force commander.

The second component data and information acquiring system, includes personnel and equipment required for providing necessary meteorological, geographic or other data and information for effective target detection, engagement and assessment purposes. In this category we can find every type of sensor like forward observers, artillery radars, aerial unmanned vehicles, acoustic weapon locators, etc. The data and information acquiring system is essential in creating the common operational picture and in providing relevant intelligence, surveillance and reconnaissance products.

The target engagement or striking system include specialized means for striking and generating lethal or nonlethal effects on designated targets. In this category we can find

weapon systems and platforms at every joint force component level – air, naval, land – alongside other special destination elements or structures available for the operation. The aerial component of the joint force contributes to joint fire support mainly with weapons and platforms that can provide close air support and air interdiction. These aerial weapons and platforms are manned or unmanned multipurpose airplanes and helicopters carrying various weapons and rockets. Joint force naval component provides fire support from riverine and maritime platforms carrying rockets, artillery or other target engagement systems. Special destination structures or elements from the joint force also contribute to the joint fire support with special operation forces, electronic attack structures and equipment or through informational, psychological and civilian-military cooperation operations. The multitude and complexity of effects planned or desired at the joint level can sometimes require exploiting other entities and capabilities existent in the joint area of operations for intelligence or striking purposes.

The sustainment system includes logistic support units available at every force component, logistic bases and other specialized entities existent in the joint area of operations that provide necessary logistic support for reaching established force objectives.

2.2. Joint fire support effects

Joint fire support in a joint force operation comes as a result of going through several stages: deciding upon target engagement for generating planned effects, fire support system elements maneuver for detection and engagement purposes, actual target detection and efficient engagement with required weapons and ammunitions in order to generate desired or planned effects.

Lethal effects of joint fire support are generated by using kinetic actions through ammunitions fired or launched by land weapon systems (field artillery, antiaircraft artillery, etc.), naval weapon systems (artillery, rockets, etc.) and airborne weapon systems.

Nonlethal effects of joint fire support are generated by both kinetic and non-kinetic actions of electronic attack systems, through psychological and deceiving operations and also by using special destination ammunitions like smoke or illumination rounds.

From another perspective desired effects for joint fire support systems can be classified by type in physical, functional, psychological and systemic effects. Physical effects are produced by conducting military actions with direct impact on the engaged target activities. On the other hand, functional effects are produced by conducting direct or indirect military actions against a target with the purpose of affecting target functionality. Psychological effects are generated as a result of military actions conducted within the joint area of operations, actions that can be executed immediately or that can be conducted at any time - potential actions. The final category of effects by type are systemic effects that are indirect by nature and are generated through actions or operations against a certain enemy system and all of its components.

Effects generated through fire support system can also be classified by nature in collateral effects, rapid (in cascade) effects and cumulative effects. We talk about collateral effects when unanticipated or unplanned consequences of executed actions are considered. The impact of these effects can have a positive or a negative influence regarding an ongoing operation. On the other hand, rapid or in cascade effects generated on a target or system are a result of direct or indirect actions against other enemy targets or systems. These effects are propagated within a system and they often influence other integrated structures or systems. Cascade effect evolves from higher to lower levels as it is a product of affecting critical points in enemy systems. (Stanciu 2016, 116) one last category of effect by nature is represented by cumulative effects that represent the sum of all generated effects through direct and indirect actions. This effect type is to be preferred for the joint fire support system as it gives the joint

force commander the possibility to harmonize the potential of assigned fire support capabilities with available forces as to generate the highest cumulative effect possible, effect that is higher than the sum of individual effects generated by each joint force component.

Effects can be generated at every level of operation: strategic, operational or tactical. (SMFT 2018, A-2-2) At the strategic level planned effects are generated by attacking or affecting enemy will and capacity to continue hostilities for a longer period of time. Strategic targets for the joint fire support system include enemy command and control system, weapons of mass destruction and corresponding infrastructure needed for their use in conflict. In lower operational level effects are generated by attacking or affecting enemy military capabilities like air defense systems, ammunition and fuel reserves, lines of communication and other capabilities that directly supports enemy combat operations. At the lowest level of operations, the tactical level, effects are generated by attacking or affecting enemy armed forces that are capable to prevent or influence friendly action such as air force structures, enemy forces in reserve, etc.

From another perspective effects generated through target engagement are also described in our national field manuals by specific terms: annihilation, destroy, neutralize, exploit, suppress, harass, disrupt, delay and deceive.

By target annihilation fire support system inflict severe casualties and material or infrastructure losses that determines a full loss of combat power for the designated target – striking success rate is above 60%. Considering a lower striking success destruction is considered, when inflicted casualties and material or infrastructure losses determine the designated target to lose combat power – 30% strike success rate. A lower striking success generates a different effect as a target is considered neutralized when inflicted casualties and material or infrastructure losses determines a temporary loss of combat power – 10% strike success rate.

Field manuals also use specific terms to describe specific effects as follows. A desired exploit effect for target engagement secures a specific domain superiority and a higher level of friendly forces freedom of movement. Suppressing effect appears when target engagement renders impossible enemy retaliation through fire or it actively denies conducting enemy action and activities. Planning a harassing effect requires target engagement with the purpose of influencing enemy morale, creating a permanent state of incertitude and expanding enemy focus ability. A disrupting effect is achieved when target engagement renders impossible conducting and executing standard enemy activities or actions. Considering operational dynamics, a more feasible delay effect may be more appropriate at a given time or place, as this effect is generated when target engagement makes it hard or impossible for the enemy to plan, conduct and execute activities and actions in accordance with established battle rhythms or matrixes.

One of the most complex effects involving the fire support system is, in my opinion, deception as this is described as the effect through which a certain situation is created so that a person or group believes something else is happening in the operational environment. From a military point of view this effect secures a certain influence of enemy decision-making factors in order to conveniently shape their thought process.

Although fire support is specific to every component of the joint force it presents some similarities when considering army branches. Whether it is an intelligence, surveillance and reconnaissance sensor or a surface-to-surface striking capability from any joint force component, at the joint level of operations fire support provided by available capabilities is directed by generating and exploiting planned effects for the entire joint force, for a particular maneuver structure or for a specific component element.

3. Joint fire support contribution to combat operations

Timely joint fire support contributes directly to effective and efficient military actions conducted by a joint force. Exploiting limited resources that the joint force commander has at his disposal for a given mission require proper use of fire support capabilities, as stated above, in an integrated and synchronized manner while constantly considering fighting structures maneuver and the concept of operation.

Joint fire support tasks are common for all joint force components as they include: establishing specialized personnel and equipment designed for target detection and engagement, fire support integration and contribution to the target management process, exercising command and control of subordinate fire support elements, securing force protection and sustainment throughout developing operations.

The joint fire support comes as an essential element in generating and preserving combat power for every force structure engaged in a military operation. As a warfighting function, fire support groups specific capabilities and activities to assist the joint force commander in directing force structures efforts in accordance with the concept of operation. Modern confrontational environment dictates conducting combat operations simultaneously with stability and support operations in the same joint area of responsibility.

Offensive combat operations have objectives like seizing and exploiting initiative, surprising the enemy, mass of effort or rapid action in order to defeat the enemy and achieve established objectives of the joint force. Timely and effective fire support ensure objective achievement by exploiting maneuver and fire mass possibilities fulfilling effect requirements upon engaged targets or upon enemy forces and capabilities. Fire support system components can participate in rapid and decisive engagement of designated targets, in the most advantageous method ant moment, needed for operation progress or for a friendly force structure action. One other important aspect is the joint force staff possibility to exploit available fire support capabilities in an unconventional or atypical manner, thinking outside the box, in an orchestrated attempt to deceive or misinform the enemy about friendly actions or operations.

Prioritizing target engagement and concentrating fire support elements effort to generate planned effects at the required time and place, in accordance with the concept of operation, facilitate seizing and maintaining initiative while sustaining a higher offensive rhythm for the joint force. This high offensive rhythm facilitated by the fire support system also comes from timely maneuver of forces or fire and from a coherent application of mission command principle maintaining a centralized command and a decentralized execution at the fire support component level.

Joint fire support contribution to a developing offensive operation comes in the form of securing target data and information, target engagement in accordance with operational requirements especially for fire preparation, for targeting enemy air defense elements thus enabling aerial assaults or operations using friendly aerial platforms and for engaging enemy fire support components securing freedom of movement for our own force structures. Between these specific tasks fire preparation for the offensive operation is the main concern when planning, conducting and assessing fire support actions and activities because of its high complexity and the increased need for specific fire support elements that contribute at this time to isolate enemy force structures for the attack, to provide proper force protection when friendly forces approach enemy positions and to engage designated targets in accordance with fighting units maneuver scheme.

Joint force defensive operations mainly occur when a deliberate answer to a developing operational situation is needed due to a temporary enemy tactical or operational superiority. These defensive operations take place in order to reach partial or temporary

objectives of the operation but their main purpose remains creating favorable conditions for offensive operations needed for mission accomplishment. Fire support in defensive operations concentrate on striking enemy force structures, preferable as far away as possible or before making contact, supporting friendly forces in direct contact and also supporting rear operations. Providing timely fire support in defensive operations aims at striking enemy forces before they are able to engage friendly forces thus generating specific effects like delaying reserves or denying coherent enemy actions taken in support for direct contact structures. Fire support for forces in direct contact with the enemy concentrates on assisting the covering force and those structures defending the main area of operations. When considering rear fighting structures, the fire support contributes to securing exposed sectors and enable decisive actions against enemy elements infiltrated or operating behind friendly structures securing the forward line of own troops. In essence the fire support system contributes to defensive operation success by securing target data and information and by engaging designated enemy targets in the entire joint area of operations supporting covering or defending force structures and especially counterattacking forces.

Alongside combat operations a joint force must simultaneously conduct stability and support operations in the same area of responsibility. These simultaneous operations are limited or contained by time or location factors but the fire support system must be able to secure specific advantages for friendly structures engaged in various actions and activities. Joint fire support system can influence developing stability and support operations through securing specific informational and intelligence products, ensuring the possibility to use nonlethal target engagement means, providing force protection and avoiding or limiting collateral damage or casualties that might endanger established joint force objectives. Joint fire support system contribution to stability and support operations becomes obvious when considering that this type of operations has specific characteristics like a higher demand for informational and intelligence products, predominant nonlethal effects or an almost mandatory elimination of collateral damage for mission success.

Conclusions

The possibility to influence military action with specific fire support systems is in direct relation with technical characteristics of these systems that the joint force commander has at his disposal for the operation. These technical possibilities depict by definition a so-called zone of influence where lethal or nonlethal effects can be generated in accordance with the concept of operation. In our standing joint operations doctrine as well as in the general tactics manual this influence zone is described as a geographical area where a joint force commander can directly influence operations through maneuver or through physical and psychological effects he can generate using specific joint fire support systems available for a given operation. (SMG 2014, 47)

Although NATO fire support doctrine and its specific procedures stand at the base of our current national field manuals, in my opinion they present a somewhat limited approach to the joint fire support system for several reasons. First of all, we do not have a dedicated join fire support doctrine, as this concept is detailed in a field manual, also known as *the artillery doctrine* (SMFT 2020, II-30), that is developed and destined for land force structures. A joint fire support doctrine should be elaborated at the highest military authority in order to implement a coherent joint fire support concept across every army branch and joint force component. This fire support doctrine should elaborate on sensible subjects like command and control for joint fire support system or essential elements for joint fire support planning, execution and assessment in accordance with joint force operation requirements.

From another perspective a limited approach to joint fire support can be highlighted in the way this concept is defined and described in our current national field manuals. Modern armies, including our NATO partners' armies, consider joint fire support as an assisting capability for force structures provided by any army branch, or any joint force component – land, maritime, aerial, special operation or cyber – in order to ensure force freedom of movement and maneuver to control territory, airspace, cyberspace or targeted audience (NATO 2015, 1-4). From a national point of view, joint fire support is described as being the use of specific fire support platforms – land, maritime or aerial – that have the ability to execute indirect fire to generate planned effects on ground targets in direct support for land force operations. (SMFT 2018, I-5) In my opinion, this limited perspective of joint fire support oriented on supporting land force operations, comes from our traditional and current armed forces capabilities available at the joint force level, capabilities that a joint force commander would have today at his disposal for conducting combat operations.

From a conceptual perspective, in our doctrine and field manuals regarding the fire support concept, there is a direct relation between joint force component capabilities to provide fire support and the actual way Romanian force structures can exploit the joint fire system in combat operations. Considering the fact that, on a national level, several programs to modernize and better equip current armed forces are being implemented (e.g.: M142 HIMARS - High Mobility Artillery Rochet System), doctrines and field manuals have to be updated in order to properly exploit new joint fire support capabilities that this equipment provides now or in the near future for the joint force commander.

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