

TRADOC Pamphlet 525-3-0
The Army in Joint Operations
(The Army's Future Force Capstone Concept 2015-2024)
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(Cover Slide)

Today I'd like to have a little desk-side discussion with you about the Army and Joint Operations TRADOC pamphlet 525-3, our Capstone Operational Concept. It's really not my intent to brief TRADOC pamphlet 525-3 to you. We published 525-3 in April of this year. It's available for you. You can read this basically at any time at your own leisure. I'm not going to brief the concept to you, but what I would like to do, is try to explain the logic behind the concept. I mean you can read the seven key operational ideas in the concept, but I want you to understand the logic. Now the logic of a concept is driven by our estimate of what we think the conditions will be in the future, particularly in the period 2015 to 2025. We call that estimate of the future conditions the Joint Operating Environment, or the JOE, and the JOE basically describes the problem we're going to have to solve in the future. I'm going to very quickly describe the problem that we think the JOE defines for us and then I'm going to describe the solution that is the logic of our operational concept from three perspectives: tactical, operational and strategic.

(Slide #2 – The Joint Operating Environment)

Let's take a look at the fundamental problem we anticipate in the future. What is the future going to be like in 2015, 2025? What is the problem going to be? Well, you know the big picture. It's going to be volatile, uncertain, complex, and ambiguous. There's going to be a wide range of threats across the globe - what OSD (Office of Secretary of Defense) describes as the challenges that are traditional, irregular, disruptive, and catastrophic. Basically across the globe, our adversaries are going to try to do bad things to good people. Perhaps their own people; perhaps their neighbors; perhaps, of course, to us, and we are going to want to stop this, preferably at a distance overseas. Now each situation is going to be unique but generally we think our adversaries have their own logic; their own logic that in turn has strategic operational and tactical dimensions. They're going to seek tactical access denial, operational exclusion, and strategic preclusion. Let's talk a little bit about how they're going to do this.

(Slide #3 – Tactical Access Denial)

To achieve tactical access denial, they're going to first try to pose very complex threats to us. Not just one type of threat, but dynamic combinations of heavy forces, medium forces, light forces, and of course, also irregular forces. You know in our war gaming, when we try to find the best people in the country to play the adaptive red threat, we consistently find that the most serious challenge to us is not the heavy threat; it's not the light threat, and many cases, it's not even the irregular threat. It's the combination of threats. That is the most daunting challenge to us because it precludes us from optimizing for one type of challenge. Our forces have to be full spectrum so we think the enemy is going to pose complex threats to us. We also think that he is going to seek to adapt continuously. He's going to vary the combinations he presents to us, denying us the benefit of a consistent and predictable pattern. He's also going to disburse in a complex terrain. We're talking about urban areas, mountain areas, and remote areas. Remote areas in particular that are distant from hard stands, major roads, air

fields, sea ports; the types of infrastructure that we know we need in order to deploy strategically or move operationally. This idea of disbursing into complex terrain; I mean if you read the Capstone Concept, you'll see that we talk about complexity, not just with respect to terrain, but also with respect to the information environment and also with respect to culture. Our forces are going to be presented with complexity in every dimension and we're going to have to deal with that. That's how he's going to try to seek to achieve tactical access denial.

(Slide #4 - Operational Exclusion)

He's also going to want to try to achieve operational exclusion, and to do that, he's going to use niche technology. All the technology he can find; his relationships with his allies, and perhaps partners in the region, to deny us access to the area of operations; to keep us outside the limits of our current operational reach, both by land, by sea, and by air. The first thing he's going to try to do is block points of entry and he is also going to try to protect some of his key assets, and particular key assets, like cruise missiles or intermediate range ballistic missiles that may be married up with weapons of mass destruction. He wants to protect these key assets because he's going to try to use them to threaten our Intermediate Staging Bases (ISBs) which we need in order to deploy our force. He's going to try to threaten the ISBs.

(Slide #5 - Strategic Preclusion)

Finally, he's going to try to seek to achieve strategic preclusion. They're going to attempt to keep the United States at a distance by minimizing the perception that the U.S. should become involved at all, or also maximizing our perception of risk to such an involvement. They're going to do that by threatening the homeland of the United States or perhaps the homeland of allies or coalition partners. They can do this with strategic assets or perhaps irregular assets, such as terrorism or disruption of key portions of our infrastructure. They're also going to try to act very quickly to present us with a fait accompli that in a set of conditions that makes it very, very difficult for us to reverse. So they're going to seek strategic preclusion, operational exclusion, and tactical access denial. This is the basic problem we think we have to solve in the future. Now let's talk about what we think we have to do to solve these problems. Let's talk first about tactics.

(Slide #6 - Tactical Engagement)

Not to make light of this serious business of combat but even from the earliest days of human history, from the days of spear chucking, there have been some fundamental consistent considerations of tactics. We chuck spears and so does he, and over time, we have launched missiles at each other from greater distances and we, and our adversaries, have dispersed; but always there has been this fundamental consideration of direct engagement. Over time we have dispersed and extended the range of direct engagement to such an extent that now we also have indirect fires where we engage by systems such as artillery. But even in the case of artillery, the artillery is directly linked to a sensor, and of course in most direct engagements throughout history, the sensor has been directly associated with the shooter. That has been a fundamental consideration of tactics for time immemorial. For time immemorial, with respect to tactics, it's been platform versus platform.

(Slide #7 - Mass and Maneuver)

Now, when we're doing basically the same thing as our adversary, there's only two basic ways in which you can gain advantage. First of all, you can do that by doing more of it. We call that mass or you can do the same thing but from a position of advantage and we call that, of course, maneuver. And when you're in maneuver, you are going to encounter your enemy. You are going to have a contact and,

typically to date, contact has been a meeting engagement. You can talk to (Lieutenant) General Wallace and he will tell you on the road to Baghdad almost all their contacts were meeting engagements. How can that be? Well it is simply a reality that today we still have not succeeded in getting the kind of information that our shooters need at the point of contact. That's a situation we hope to fundamentally reverse in the future. But today the reality is contacts are meeting engagements. If you're going to have a meeting engagement, there's a high probability that you will be shot at, and a high probability you'll be hit and you need to survive it, and therefore, today, survivability is equal to passive protection. This is a reality. You have to be able to take a licking and keep on ticking. That's also why today the main battle tank weighs over 70 tons, because we can anticipate where we're going to have these contacts. We're trying to build platforms that can survive through passive protection. The big challenge we have for the future is that we're not sure that in the future, even in the period 2015 to 2025, that 70 tons is going to be enough to ensure survivability. There are some daunting systems that are beginning to become available, even today, that cause us to seriously reconsider how we're going to provide protection on the future battlefield.

(Slide #8 – Threat to Armor)

Consider the hyperkinetic threats available today. Systems like LOSAT, Line-of-Site Anti-Tank; this is a system we could field right now if we chose to. Line-Of-Site Anti-Tank is a system. Four missiles can be mounted on a Humvee. Each missile delivers 42 megajoules of energy to a target; 42 megajoules of energy. Let me try to put that in a frame of reference for you. The maximum amount of energy you're ever going to generate from a 120 mm main gun on a tank today is 12 megajoules. So what happens when 42 megajoules of energy is coming at a target? Can passive armor absorb this amount of energy? Frankly, we're not sure how. If you could somehow absorb that amount of energy, without fracturing and without melting, you would physically displace a main battle tank several hundred meters. We really have to think hard and rigorously about how we're going to deal with these kinds of threats in the future. Now, a lot of people say, "Well this is technology we have and our adversaries don't." But remember, we're talking about the future. This technology is available to us today and typically those technologies will eventually walk across the street. Our adversaries need information and it's a networked world, and they need money; not a great deal of money. And the top 100 economies in the world only 46 are nation states, so we're very reluctant to bet the future of land combat, particularly protection of our forces, on passive armor alone. And we're having problems today. In Iraq over the past year we lost scores of tanks and Bradleys; some catastrophic losses; many mobility kills to improvised explosive devices. The Russians just put on the market a RPG (Rocket Propelled Grenade) that can penetrate over a meter of steel. Like I said, we are really reluctant to bet the future of land combat on passive armor alone. We have to explore alternative approaches to solving this problem. So what can we do?

(Slide #9 – See First)

Well, the first thing we can do is we can put out a network of sensors and do everything we can to see the threats that are out there; to see first. Now do we have to see first? No, we don't always have to see first. Does everything fall to pieces if we don't see first? Our experimentation and war gaming tells us, "No, everything doesn't fall to pieces if we don't see first." But, with the type of threats that are out there, seeing first is a real advantage, and we want to seek to do it.

(Slide #10 – Understand First, Act First, and Finish Decisively)

We not only have to see first, we also have to understand first. We have to network all these sensors into a grid of sensors, command and control assets, decision making processes that enable us to understand first and then act first; act first with platforms that have lethality and mobility and

survivability. If we can see first, understand first, and act first with the appropriate platforms, we can finish these tactical engagements decisively, which of course, is exactly what we want to do. Now, think about what happens if you can see first, understand first, act first, and finish decisively.

(Slide #11 – Key Idea: Network Enabled Battle Command)

Every traditional fundamental consideration of tactics is now changed. Direct engagement and indirect fires are now cooperative engagements and cooperative fires. The sensor is no longer necessarily the shooter because the shooter may be engaged in a target identified by a sensor somewhere else on the net. You are no longer fighting platform versus platform. You're fighting a system versus platforms; you're massing effects. Your contacts become decisive engagements and enable decisive maneuvers, and for survivability, you can no longer depend on passive protection alone. You have to extend protection techniques, not only to use of the network and your ability to see your adversary, but also to active protection systems. Make no mistake about it. There is a role for passive protection in the future. Our Future Combat Systems (FCS) includes protection methods that are not only active protection but also passive protection. Every platform in the Future Combat Systems (FCS) formation is going to have the survivability equivalent to where Bradley vehicle's today. But that survivability is going to be augmented with active protection systems that attempt to disrupt or deflect these kinetic threats (as well as chemical (explosive) threats) that we think are going to be coming at us. This is an obviously key idea in our future force concept; this idea of network enabled battle command. And it's got some obvious relevance to major combat operations in the types of combats we've seen throughout history. Is it relevant to irregular warfare? Well, what's at a premium in irregular warfare? The thing that's at a premium in irregular warfare is information, and any approach to combat that maximizes your ability to understand the area of operations and observe it, maximizes your ability to process information and use it. It's going to be of great use, even in irregular warfare operations. The Future Combat Systems (FCS) is part of the Army's future modular force that is going to be built from the ground up to really leverage this idea of networked enabled battle command. And the Future Combat Systems (FCS) is also going to generate a set of technologies that we're going to spin out to the entire force so that the entire modular force can leverage the network in its tactical engagements. Now given that we can take the network and the information and the sensors and the fusion techniques, and use them on the force we have today, why would we want to build Future Combat Systems brigades and develop them as well? What is this drive to build a set of platforms that's lighter and the 20 to 24 ton class range?

(Slide #12 – Operational Maneuver)

Well, to understand that, you've got to take a look at the next problem we have to solve, which is the problem of operational exclusion. We have to talk about operational maneuver. The fundamental moving parts of the operational level are pretty simple. Our adversary is going to have some key points that he is going to want to protect and we have key points as well. You can call them centers of gravity, decisive points; really doesn't matter, let's just call them key points. He has his; we have ours. Ours typically in an expeditionary environment may include our Intermediate Staging Bases (ISBs) or our Forward Staging Bases (FSBs). Forward Staging Bases (FSBs) would be on land or even at sea for a sea base. And you have the classic dynamic of war. You have the dual between adaptive adversaries; each of whom is attempting to seize the initiative and gain advantage. We're going to want to protect our key points. He wants to protect his key points. We want to seize the initiative. We probably want to make a penetration, kind of like we did on the road to Baghdad, in order to directly attack the key points he values and bring the conflict to a close. Now the typical solution in recent history, particularly if you are an industrial power, has been to fill the sandbox from left to right, if you will, to build a line of contact. This makes it easy for you to protect your key points and the classic problem of maneuver warfare has been, "How can we break this line of contact?"

(Slide #13 – Key Idea: Intratheater Operational Maneuver)

But imagine a future in which we could bypass this line of contact, in which we could leap over these defenses and totally change the geometry of the enemy's defense. If you can do that, then you are executing another of our key ideas in the operational concept called intratheater operational maneuver. Intratheater operational maneuver is a vertical envelopment mechanized air warfare. It is something that military thinkers have been anxious to do for decades; this attempt to generate a force of operational significance deep in the enemy's rear. We have forces that can do vertical envelopment today. Airborne forces, air assault forces; they're excellent forces particularly for force entry operations, but in many cases lack operational significance. They lack the mobility, the lethality, or the survivability, we need to really do what we want to do, such as, decisive maneuvering; to strike directly at the enemy's key points to fight continuously and fight rapidly with mobility throughout the depth of the battlefield.

(Slide #14 – Key Idea: Decisive Maneuver)

So when you think about intratheater operational maneuver, together with decisive maneuver, you can see that you have some key ideas of our operational concept that we need to generate in order to solve the operational exclusion problem. Now what do we have to do in order to manage intratheater operational maneuver? Well, one of the things we have to do is we have to develop the Future Combat Systems (FCS) program and we have to maintain the discipline to keep the platforms in that program in the range of 20 to 24 tons. Why 20 to 24 tons? Because 20 to 24 tons is the upper limit of what scientists tell us we can develop with respect to vertical lift takeoff and landing capabilities in the future. This is the upper limit. If we build platforms that exceed that limit, then we are not going to be able to get into any of the white spaces in the depth of the enemy's rear, we'll be restricted to predictable points of entry; places like major seaports or large airfields. In order to maximize the points of entry in the enemy's rear area, we have to have vertical takeoff and landing capability, or perhaps super short takeoff and landing capability in an expeditionary airfield environment, and for that reason, we are limiting the platform weight in the Future Combat Systems (FCS) to 20 to 24 tons. So we have intratheater operational maneuver. We have decisive maneuver which is the direct attack of enemy points, rapidly and continuously throughout the area of operations. There's another key idea.

(Slide #15 – Key Ideas: Concurrent and Subsequent Stability Operations;
Distributed Support and Sustainment)

When we are engaged against an adaptive adversary, particularly one that doesn't necessarily look like us, we know that he is going to do everything he can do to make our lives very uncomfortable for that area of operations. He's going to come at us with guerilla warfare; all types of irregular warfare techniques, and we know that from the very beginning of an operation, we have to be prepared for simultaneous and subsequent stability operations. So this notion of having to be prepared with a full spectrum force to simultaneously do stability operations is another of the key ideas in our Capstone Operational Concept. And throughout our operations, we have to sustain this force so distributed support and sustainment is a key idea, and distributed support and sustainment is going to be fundamentally different from what it has been in our past. When you are fighting in a framework that is largely noncontiguous, sustainment is no longer at the tactical and operational level; a continuous stream of thousands of trucks everyday on the road to Baghdad. We're going to have to find different ways to conduct sustainment. We're going to have to develop ideas like pulse logistics; ideas of having forces that are executing vertical envelopment or intratheater operational maneuver; self-sustaining for a limited period of time and a concept of operations that ensures that the self-sustaining units are either replenished within the expiration of that time limit or else they fight their way to a resupply point that

may have been developed by ground force. As you look at this chart that describes our key ideas to solve the operational exclusion problem, one of the things that leaps out of you is the obvious need for the Army in the future to be a hybrid force. We don't need to be an Army that does nothing but vertical envelopment. We need a substantial part of the Army to be able to do vertical envelopment, and the Future Combat Systems (FCS) will be the part of the Army optimized for that, but we're going to need other types of forces in the Army. It makes sense, if you're going into an environment that is volatile, uncertain, complex, and ambiguous and up against a set of adversaries that have demonstrated their ability to adapt and rapidly change their pattern, then you need a hybrid mix of forces with which you, in turn, can flexibly mix and match in order to generate your own solutions to the problems that they present.

(Slide #16 – Key Idea: Shaping and Entry Operations)

Let's look next at the last dimension of our problem to be solved, which is strategic preclusion. We're kind of back full circle where we're looking at the presentation of the options the enemy has and we're trying to solve the problem. How do we get there from here? Now there are some classic considerations to the problem of strategic responsiveness of course. One of them is, even before the crisis erupts, you want to shape the conditions in that region and in that area of operations so that when you do have to react, you're doing it from a position of advantage. So the notion of shaping an entry operations is a key idea in our Capstone Operational Concept. We execute shaping operations by our engagements throughout the region and throughout the area; by the relationships we establish with key decision makers and key allies or potential coalition partners in the region. And then of course, at a certain point if a crisis erupts, we're going to have to be prepared to conduct force entry operations. Force entry operations, another good example of the need for a hybrid force, because some of the forces we have today, particularly airborne forces, are optimized for force entry operations. We're going to have to figure out how to solve some of the problems we have with respect to strategic deployment today. Now let's consider those problems. We are today reliant on predictable points of entry. These are points of entry that the enemy will seek to block, very deep seaports, because our ocean going shipping requires a lot of draft, and therefore, the ports that the ocean going ships are going to use are quite predictable and quite limited. Large airfields; if you look at the air leg of our strategic deployment assets, at global ranges, the max we can do with the C-5A is 80 to 100 tons. That's a great capability but there's a very limited number of C-5's. When you get down to the C-17, you're down in comparable tonnage ranges, but the availability of those assets is limited and they, too, require some pretty predictable entry points with respect to the length of the airfield. Even at the tactical level, when you're moving by air, as we talked about in the operational discussion, today's rotary lift assets are restricted to the 8 to 12 ton range depending on the weather conditions; and you can see going down the strategic pipeline of air deployment, the capacity changes appreciably from CONUS (Continental United States) to the ISB (Intermediate Staging Base) to the FSB (Forward Staging Base) and into the area of operations. Every time that capacity changes, you have an operational seam, a deployment seam, and you have the requirement to transition and repackage and that takes up a lot of time. Same problem by sea; if you are going into an ISB that has a deep seaport and you want to transition to shallow draft shipping that can go into more multiple ports and use less predictable points of entry, you have a transshipment problem, and you will go to that ISB; you will transship; you will take time and you will be vulnerable to enemy actions. So what do we do to solve this?

(Slide #17 – Key Idea: Operational Maneuver over Strategic Distances)

Well the idea, the last idea I have to describe to you for the Capstone Operational Concept, is operational maneuver over strategic distance. An operational maneuver over strategic distance, we're going to try to deploy strategically over global distances, but we're trying to go into points of entry that are far less predictable with capabilities such as shallow draft high speed shipping, if we can develop

them. We'll be able to go take large amounts of material at high speeds over global ranges and enter various shallow ports; ports that the enemy will have difficulty anticipating. If we get the right types of air lift assets that can exercise super short takeoff and landing, then we'll be able to move higher volumes of material by air, but more importantly, maneuver to less predictable points. Therefore, the defenses will be less robust and we'll have a better chance of success in our force entry operations. That is the essence of the idea behind operational maneuver over strategic distance.

(Slide #18 – Capstone Concept Key Ideas)

So, let's wrap up with respect to the key ideas in the Capstone Concept. As I mentioned in my introduction seven key ideas; shaping and entry operations, operational maneuver over strategic distances, networked enabled battle command, intratheater operational maneuver, decisive maneuver, distributed support and sustainment, and concurrent and subsequent stability operations. Now if you think about the description of these ideas I've given you and the logic behind them, one of the things you should have noticed, is that these are inherently joint ideas. We don't get very far with any of these ideas unless we are able to implement some key Joint Interdependencies.

(Slide #19 – Capstone Concept Joint Interdependencies)

The Army has identified these Joint Interdependencies and they are basically in five categories. Joint battle command is a fundamental Joint Interdependency. If we don't have some standardization of data elements and communication protocols to enable the network to pass data effectively between the services, and with our joint and interagency and allied partners, then we're going to have problems; so joint battle command is a key interdependency. Joint fires and effects; the Army can leverage the robust capabilities of our sister Services to deliver fires, and that is particularly important in an expeditionary environment when we're going to unanticipated areas, and in particular, during the initial phases of a force entry operation. We want to leverage the operational reach and speed and precision of our sister Services, and to the extent that we can do that, we can optimize our own assets in other areas; so joint fire is very, very important. Joint force projection; obviously we can't execute ideas like operational maneuver over strategic distance or intratheater operational maneuver without significant reliance on the lift assets of our sister Services and we have to work together with them to make progress on developing the types of capabilities that will get us into unpredictable points of entry. Joint sustainment; joint sustainment's going to be very important. If we can minimize the seams between the Services and maximize the efficiencies in passing from that strategic sustainment seam to the operational and tactical ones, we'll make great progress in minimizing the footprint of our forces in the area of operation. And finally, of course, joint air and missile defense. We're still going to need the ISB's. We'll eventually need FSB's; intermediate staging bases (ISBs), forward staging bases (FSBs); we're going to need to be able to protect them and leveraging joint capabilities of air and missile defense will be key to doing that. So let's wrap up.

(Slide #20 – Summary: Key Ideas and Capabilities)

We talked about some seven key ideas and with those ideas we have some estimates of the key capabilities we think we're going to need for the future force. First, of course, we're going to need soldiers and leaders. Soldiers and leaders have been the key to our success in the past; they'll be the key to our success in the future. They are, in many ways, our own disruptive threat to our adversaries; because their ability to put together adaptive combinations and out-think and out-maneuver their adversaries has been proven in the past; it's proven every day today and it will be that way in the future. We are going to keep our eye focused on the soldiers; the center of our formations. The network is going to be important. It's going to be important, not only for us, but for the entire Joint Force if we are going to integrate these key ideas and integrate our efforts across the Services and with our interagency

and multinational partners. We're going to need an effective network. The Army has a part of providing that network, so do the other Services and elements outside the Service; we need to facilitate that. As I mentioned before, we're going to need some advanced strategic and operational lift capabilities. We're in a robust dialogue with our Service partners to encourage that development. That will be a key capability for implementation of the future force ideas. The Army modular force is key. I have to say this again, when you're going into an environment that is volatile, uncertain, complex, ambiguous; you don't know what the enemy is going to present to you. You know he's going to work very hard to give you dynamic shifting patterns that you can't anticipate. You have got to have a flexible menu of forces. You have got to have your own ability to anticipate his patterns and present him with new patterns of your own. A modular force; a flexible array of capabilities that can be linked and delinked from headquarters is absolutely essential to make that possible. The future force ideas we describe in the Capstone Operational Concept are applicable to the entire force. But there is one element of our force in the future, a future component of the modular force, which is going to be the Future Combat Systems (FCS) Brigade Combat Team (BCT), that is going to be the element of the force that has been designed from the ground up to maximize the leverage of these ideas. It will leverage the network and networked enabled battle command, and most effectively, it's going to generate a set of technologies that we are going to spin off to the entire force that enables them to leverage these ideas. So the Future Combat Systems (FCS) is a key capability. Logistics transformation; some key notions in our concept are related to how we're going to sustain this force. Reducing the footprint is absolutely key and that means logistics transformation and we will be working collectively on logistics transformation very hard. And finally, of course, the Army fights as part of a broader team. Our own transformation is linked to transformation over the entire Joint Force; therefore, the Army is working very hard to support joint transformation; to be a part of that transformation, because if they don't succeed we certainly can't. I've tried to describe to you today the logic behind our seven key operational ideas. It's just logic. We don't even know if this is the right logic.

(Slide #21 – The Army in Joint Operations)

We need to take these ideas and, between now and 2015, continue the campaign of learning. We have to conduct studies, war games, experiments; we need to stretch these ideas to the breaking point, because we have to make sure they're right. We've already begun a campaign of capability development. We have to be adaptive throughout that campaign. We have to be very rigorous with what we think our experiments and war games are telling us. We have to be prepared to change as we go to get this right for the future. For those of you who are in the Army, you are going to be a part of this campaign of learning. I thank you for what you have done to date and I thank you even more for what you will do in the future.