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15. Abstract: This paper examines the validity of the concept of "Centralized Command, De-centralized Control", and offers an alternative view of Operational-level involvement in tactical execution made possible by current and developing information technology. The paper begins by citing positive examples of Centralized control during several recent tactical actions. A review of information factors necessary to provide overall battlefield situational awareness is conducted, including current and developing capabilities. Instances where Centralized control of tactical execution would not be desired are discussed, along with the requirement to retain current capabilities to operate without Centralized control of tactical actions. The scope of operations where a Joint Force Commander might become involved in tactical control is discussed with examples delivered. The current Joint Staff composition is given and a modified Joint Staff Organization is presented to help the Joint Force Commander integrate himself into tactical execution in a positive fashion. This paper questions the universal application of accepted doctrine. It asserts the value of deviating from doctrine where such deviation would work to more rapidly achieve Operational objectives. Recommendations are made regarding the composition of the typical Joint Staff in order to take advantage of technological innovation. While technological advances provide the basis of the paper's premise, the paper is focused on Leadership and Command relationships rather than technology			
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NAVAL WAR COLLEGE
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Network-Centric Warfare:

Are We Past the Age of De-centralized Execution?

By

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A paper submitted to the Faculty of the Naval War College in partial satisfaction of the requirements of the Department of Joint Military Operations.

The contents of this paper reflect my own personal views and are not necessarily endorsed by the Naval War College or the Department of the Navy.

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09 February 2004

So far had the art of communication advanced, so powerful were the transmitters, so swift the coding, so deliberate the movements of fleets traversing long distances at twenty or twenty-five miles an hour, that the far-off high commands could watch this entire battle like Homeric gods hovering overhead, or like Napoleon on a hill at Austerlitz. The Battle of Leyte Gulf was not only the biggest sea fight of all time, it was unique in having all these distant spectators; unique, too, in the flood of on-the-spot facts pouring out of transmitters and cryptograph machines.

It is interesting, therefore, that nobody on the scene, or anywhere else in the world, really knew what the hell was going on.¹

The concept of “Centralized Command and De-Centralized Execution” is pervasive throughout military professional literature. The ancient Chinese war theorist Sun Tzu warned, “*He whose generals are able and not interfered with by the sovereign will be victorious.*”² Given the widespread acceptance of this philosophy, I will attempt to dissuade the reader from the view that it is a universally applied protocol and examine those instances wherein centralized execution might be desired and required. The role of the Joint Force Commander in tactical execution will be reviewed and discussed.³

The modern reality of the 24 hour news cycle has given global implications to tactical actions and has placed a heretofore unknown strategic burden on tactical actors. A case in point is the international furor that resulted from the 1999 NATO air strike which inadvertently targeted the Chinese embassy in Kosovo.⁴ One can easily imagine the damage such an event could have on a coalition participating in operations where there is no clearly defined necessity for every coalition partner’s involvement. The maintenance of the coalition itself could wither away in the face of negative international pressure resulting from a failure on the tactical level. The Combatant Commander’s strategic objectives might be forfeited for the decision of a Lieutenant or Corporal.

¹ Herman Wouk, War and Remembrance, Back Bay Books

² Sun Tzu, The Art of War, Translated by Samuel B. Griffith, Oxford University Press 1963, pp 83

³ In this paper, the term Joint Force Commander is used to connote any Operational level commander.

We look at levels of war from the Strategic, Operational and Tactical levels, usually based on the objectives to be obtained. We assign levels of command based upon these levels of war.⁵ When a single member of a tactical unit can take actions that might produce strategic consequences, is it not in the Joint Force Commander's interest and responsibility to ensure that the actions taken have positive effect? What of his responsibility to prevent such actions from having a negative effect?

Traditionally, theater commanders have had to choose and train worthy subordinates and trust them to carry out assigned tasks without direct interference or detailed guidance. It was incumbent upon the Joint Force Commander to establish clearly defined Operational objectives and guidance prior to an operation's commencement, but once the bullets started flying, he was left to depend on the initiative, intuition, and expertise of his battlefield commander and that commander's tactical units. Admiral Nimitz gave wide latitude to Admiral Halsey in his control of Third Fleet at the Battle of Leyte Gulf. Nimitz's orders to Halsey stated,

*In case opportunity for destruction of major portion of the enemy fleet offer or can be created, such destruction becomes the primary task.*⁶

It is arguable that Admiral Halsey interpreted this guidance as a license to leave the amphibious assault forces at Leyte relatively uncovered when he took Third Fleet northwards after Admiral Ozawa's decoy Japanese carrier force. He later wrote that he did not see his job as to cover Seventh Fleet, but to seek decisive action against the Japanese fleet.⁷ If Admiral Nimitz had possessed the capability to "look down from

⁴ Adi Ignatius. "China's Kosovo Problem", *Time Asia*, May 17, 1999

⁵ Milan Vego. *Operational Warfare*, NWC 2002, pp 1-4

⁶ E. B. Potter. *Sea Power: A Naval History*, Prentice Hall, New Jersey, 1960, pp.782

⁷ Ibid

Olympus” and see the possible consequences of Halsey’s actions, would he not have faced a tremendous temptation, if not a direct obligation, to interfere with Halsey’s control of Third Fleet?

We exist in an age of vast information resources, and these resources continue to increase exponentially with time. The technological leaps we have seen occur over the past ten years have carried us to a place where tactical execution is being overseen and, in some instances, controlled from an operational level. From personal experience I will relate an event that shows how joint military forces have already begun to exercise centralized control. During Operation Southern Watch, in August 2001, a combined strike package of U.S. Navy, Royal Air Force and U.S. Air Force aircraft was put together to provide a Response Option (RO) against a node of the Iraqi enemy air defenses in the Iraqi Southern No-fly Zone. The entire package was assembled and sent into southern Iraq to destroy the target. A Predator un-manned aerial vehicle (UAV) was airborne providing real-time video of the target to the Combatant Commander. When the strike package was less than five minutes from the target the Predator relayed images of men preparing to move the targeted equipment. The RO package was recalled and held over the Northern Arabian Gulf to await further direction. When the equipment operators stopped the truck the RO Package was sent back in. Again, scant minutes before “Bomb’s Away” the men were seen preparing to move the equipment. Once again, the RO package returned to a holding position over the Northern Arabian Gulf. This occurred through another full iteration, and the target was never destroyed. A large amount of fuel was consumed and many aviators padded their logbooks, but it is arguable that any tactical, operational or strategic objective was achieved. Or is it?

This incident occurred before the terrorist attacks against the World Trade Center and Pentagon on September 11, 2001. A prime consideration, indeed a primary objective, was to take no action which would cause a negative impact on the diplomatic efforts ongoing in this area of operations.⁸ The Combatant Commander was able to maintain sight of this objective and decided that the risk to national objectives was not worth the attainment of a tactical objective. Although the aviators of the RO Package could have found and destroyed the targeted equipment, the Combatant Commander would not take the risk that the equipment had moved to a location of increased collateral damage. A cost-benefit analysis would show that quite a bit of treasure and effort had been expended with no perceptible effect. Had the Combatant Commander possessed a more complete picture of the overall battle space, he might have been able to achieve the tactical objective without damage to the larger objective. His inability to determine quickly and accurately the collateral risk associated with the target movement forced him to intervene to prevent possible negative effects to his strategic objectives. This then could be looked at as either a failure or a success of centralized control, depending on one's level of command.

Operational level oversight and direction of tactical assets through UAV control already exists. Operations against high-placed individuals within terrorist organizations are now occurring on a tactical level under the decision authority and direct oversight of Operational level, or higher, leaders. During an operation against the Taliban in Afghanistan, a Predator was being used to direct the efforts of Air Force F-15s. The Predator relayed video of a Taliban convoy that was seen stopping at a hotel, allowing the F-15s to attack the building. As Taliban vehicles fled, the Predator tracked them and

⁸ Thomas E. Ricks. "Containing Iraq: A Forgotten War", [Washington Post](#), October 25, 2000,

destroyed them with its own Hellfire missiles. This mission shows how a commander was able to interject himself to seize a fleeting objective when the operators on the scene could not.⁹

Command, Control, Communications, Computers/Intelligence, Surveillance and Reconnaissance (C4/ISR) capabilities have given the Joint Force Commander the capability to see what is occurring on the battlefield, in many instances quite more broadly than a unit commander involved in an isolated tactical action. With the ability to perceive more of the total picture and, one would suppose, a tighter grasp of the wider Operational objectives, when should a centralized commander take control of a lower echelon skirmish? Is the “Fog of war” made clearer through increased information, or does the overwhelming amount of information become a mountain in that fog? Von Clausewitz wrote,

*Since all information and assumptions are open to doubt, and with chance working everywhere, the commander continually finds that things are not as he expected. This is bound to influence his plans, or at least the assumptions underlying them. If this influence is sufficiently powerful to cause a change in his plans, he must usually work out new ones; but for these the necessary information might not be readily available. During an operation decisions usually have to be made at once: there may be no time to review the situation or even think it through. Usually, of course, new information and reevaluation are not enough to make us give up our intentions: they only call them into question. We now know more, but this makes us more, not less uncertain. The latest reports do not arrive all at once. They trickle in. They continually impinge on our decisions and our mind must be permanently armed, so to speak, to deal with them.*¹⁰

Clearly, fidelity of information is a crucial factor in the decision on whether to engage in a lower echelon skirmish. If the overall commander is receiving conflicting,

⁹ CDI Terrorism Project. “Q&A on the Use of Predator in Operation Enduring Freedom”, February 11, 2002, www.cdi.org/terrorism/predator.cfm

incomplete or inaccurate information, it would seem much the wiser course to leave control of the fighting to the on-scene commander who has eyes on the tactical situation. If, however, the commander has an overall picture of the entire battle space and the situational awareness to interpret it correctly, calamities could be avoided and decisive actions taken to achieve Operational objectives more quickly than would have occurred without such involvement. The problem exists to the extent that the commander will be forced to decide when his information is accurate, timely, relevant and complete.

For the sake of argument, we will assume that C4/ISR capabilities will be able to provide the commander with a real-time picture of the battle space. This should decide the question of timeliness for most instances, but if the C4/ISR picture is relatively new to the theater, historical trends may not be available for a truly accurate picture. This could prevent the development of a complete C4/ISR picture. How does the commander know that he is seeing all the pertinent aspects of the tactical commander's problem? While an overhead Predator might provide the real-time video of an immediate threat, it could very well ignore the threats that are invisible to its particular sensor array.¹¹ In this instance the commander's picture is not truly complete. There is no way for a commander to be able to perceive a platoon's spirit or willingness to fight via overhead imagery. Based purely on the numbers he sees on the field, he could be tempted to throw an exhausted unit, past its ability to conduct offensive operations, into a fight it is not prepared to join.

It becomes apparent that overhead imagery alone is not up to the task of providing a complete picture. Fortunately overhead imagery is assisted in the effort to paint a

¹⁰ Carl Von Clausewitz. On War, Michael Howard and Peter Paret, trans, Knopf, New York, 1976

complete picture by communications, intelligence, and associated capabilities. National imagery can provide timely pictures of a broad geographic area that might be outside real-time battlefield sensor capabilities. This would help the commander to know what lies outside the field-of-regard of his real-time sensors. Technologies now coming on-line, such as Blue Force Tracker, will show unit positions and movement when the “eyes in the sky” are blinded by environmental factors.¹² Communications from his forces will provide the information for factors which cannot be seen on video, and communications intercepts and exploitation will deliver clues as to the status and capabilities of the enemy forces.

So the foundation has been laid upon which enough information will be available to form a complete, timely, relevant and accurate picture of the battlefield that can be relayed to an overall commander, one charged with achieving Operational or Strategic Goals.¹³ What then should prevent him from taking control over tactical actions that are occurring in his Area of Operations (AO)?

One factor that could preclude Operational-level control over tactical execution is the size of the overall operation. In any situation larger than a tactical battle the scope of the operations occurring simultaneously in an Operational commander’s AO would limit the amount of time he could devote to any single such operation. Major operations are the combination of many tactical actions occurring either simultaneously or sequentially within a commander’s AO.¹⁴ The unit commander has responsibility for achieving

¹¹ Dr. James G. Roche, Secretary of the Air Force. “Applying UAV Lessons to Transform the Battlefield”, remarks delivered July 15, 2003, www.af.mil/news/speech/current/sph2003_24.html

¹² VADM Arthur K. Cebrowski, John J. Garstka. “Network Centric Warfare: Its Origin and Future”, Proceedings 1998, www.usni.org/Proceedings/Articles98/PROcecbrowski.htm

¹³ Ibid

¹⁴ Vego, Chap. 1

tactical objectives and will have a desire to control the means to accomplish them.

Likewise, the Joint Task Force Commander charged with achieving objectives within his AO will have a desire to control the numerous tactical actions, attacks, strikes and battles which exist within the major operation he directs. The Combatant Commander may have several major operations occurring simultaneously or in close sequence, and he will also desire that all the actions that occur under his command conform to achieve his stated objectives.¹⁵

It is this desire on each level of command to achieve Tactical, Operational and Strategic objectives that forms the Unity of Effort necessary to successfully attain those objectives.¹⁶ This desire at each level of command to control the actions of subordinates, carried to the extreme, could lead to single armed combat between the leaders of warring nations, but employing the might of all their armed forces. You can imagine two figures on Olympus hurling lightning bolts at each other, with the lightning bolts being the complete array of forces available to a major military power.

The scope of modern combat is much expanded over the force-on-force conflicts that existed in the days of Clausewitz. No one leader or commander could possibly control the legion tactical actions that occur at any given moment during a major operation. Tactical decisions are made all the way down to the level of a soldier pulling a trigger or an aviator releasing a single bomb. There could conceivably be hundreds of these decisions taking place every second. There needs to be a method to determine the level of centralized control and to guide the Joint Force Commander on the proper use of his C4/ISR capabilities.

¹⁵ Joint Publication 3-0, III-1

¹⁶ Joint Publication 3-0, V-3,b

Since the Vietnam War, the United States military has been involved in the full spectrum of operations. Such operations have ranged from small-scale tactical actions like Operation ELDORADO CANYON against targets in Libya in 1983 to coalition warfare against the sovereign nation of Iraq in Operation IRAQI FREEDOM. Placing earlier operations under the umbrella of a modern day C4/ISR capability will provide some insight on the question of when a commander could use centralized execution to his benefit. Clearly the scope of operations in the 1991 Gulf War and Operation IRAQI FREEDOM in 2003 would limit the commander's ability to direct tactical operations. Operation EAGLE CLAW, the failed Iranian hostage rescue mission in 1979, and Operation URGENT FURY in Grenada in 1983 would be examples where the limited scope of activity would be more conducive to centralized direction.¹⁷

Another point which can be made by reviewing these two complex tactical operations is the degree to which they were negatively affected by poor situational awareness and the benefit each operation could have experienced with a clearer picture of the battle space. It is obvious that de-centralized execution was a necessity due to technological limitations.¹⁸

The shift from one phase of a campaign to another might also provide opportunity for the Joint Force Commander to capitalize on centralized execution made possible by the limited scope of activity. Transition and stabilization operations occurring in Iraq after the completion of major combat operations are, by their nature, limited to tactical actions, but tactical actions that have the potential to tremendously impact theater or even

¹⁷ Stephen E. Anno, Colonel USAF, and William E. Einspahr, Lieutenant Colonel USAF. "Command and Control and Communications Lessons Learned: Iranian Rescue, Falklands Conflict, Grenada Invasion, Libya Raid", Air War College Research Report, No. AU-AWC-88-043, pp36-63

¹⁸ Ibid

strategic objectives. When the objective is something as arbitrary as “stability” it is unreasonable to place the responsibility for achieving it on a Corporal. The ongoing Global War on Terrorism will likely include isolated tactical actions against a dispersed, disguised enemy. This enemy will also likely operate in close proximity to and direct his actions against non-combatants. Taking the fight to these terrorists will involve numerous individual tactical actions. These tactical actions cannot be allowed to become a detriment to national objectives based on the limited tactical objectives each will achieve. These are ideal conditions for a centralized commander to use his C4/ISR capabilities to oversee and, where necessary, direct the actions of his tactical forces.

The typical Joint Task Force (JTF) Commander’s staff includes positions for gathering and analysis of information by the Joint Intelligence (J2) element. The Joint Operations (J3) staff maintains an Information Operations section, Rules of Engagement Cell, Joint Search and Rescue Center, Joint Fires Element and a Joint Targeting Coordination Board. A Joint Communications Control Center (J6) is in charge of communications operations.¹⁹ It is from these staff positions that the information exists which can be used to provide battle space awareness to the Joint Task Force commander. Drawing from J2, J3, and J6, a staff position could be developed to integrate the products of each, and provide an avenue for information to travel upwards to the JTF commander and thence downward from the JTF commander to the tactical level. Depending on the level to which he is willing to delegate his control, I would argue that within these three cells, personnel need to be drawn or augmented to develop positions to integrate current tactical information into the commander’s real-time decision-making process. These billets could form a sub-cell of the J3 staff or an intermediate clearing house between the

J3 staff and the JTF commander. Ideally this cell would function as the JTF commander's "Battlefield Director" and operate separately from the J2, J3, and J6 cells. This position would be able to provide the commander with information related to the accuracy, timeliness, completeness and relevance of incoming information.

A proposed modification to the typical JTF staff is included in Appendix 2. The proposed "Battlefield Director" position would provide synergy in combining the efforts of three staffs into the rapid direction of the JTF commander's will onto the battlefield in order to more quickly achieve theater objectives. The Battlefield Director could determine the fidelity and timeliness of intelligence as well as its relevance to the scope and tempo of current operations in order to help the JTF commander decide on the requirement (or lack thereof) to take control of tactical operations. Operating with this proposed staff would allow the JTF commander to determine whether it would help to achieve Operational or Strategic objectives were he to intervene, or whether his oversight alone was sufficient to the task. If he wanted more direct control of battlefield situations, he would need to develop these positions to direct his will onto the battlefield. Within a major operation, he would need to provide input to many tactical actions occurring at once. He would necessarily have to trust the people he has placed in the positions of Battlefield Directors to provide him with enough lead time to make a decision, or he could trust in their expertise and delegate control to them, much as he would to a battlefield commander. A possible benefit to such a staff is that the tactical actor would still derive the advantage of more complete knowledge of the overall battle space while the Joint Force Commander would be closer to the controllers and would be able to influence the actions more directly to achieve his objectives. Again, it would be

¹⁹ Joint Publication 5-00.2, Chapter 2, pp II-3, See Appendix 1

incumbent upon the Joint Force Commander to clearly define his Operational objectives so that his Battlefield Directors could continue the fight when the commander himself is not available for each tactical decision. It would be necessary for the Joint Force Commander to maintain a battle rhythm aligned with the actions in which he wishes to be involved. Trying to conduct round-the-clock operations under the control of one man, subject to the whims of sleep, illness and calls of nature, deem it necessary to establish procedures for the continuance of operations in the commander's absence.

Using Central Command (CENTCOM) as an example of a current Command and Control apparatus, we find that the Combatant Commander is established in Tampa, Florida. He has cognizance over Army (USARCENT), Navy (USNAVCENT), Air Force, (USCENTAF), Marine Corps (USMARCENT) and Special Operations (SOCCENT) forces.²⁰ Each of these commands maintains a separate headquarters in different locations while providing staff to CENTCOM. One method of achieving the benefits of centralized control would be to combine the Supporting Command headquarters of all but the tactical commanders in the same location as the Combatant Commander. An increase in experienced personnel would be necessary to maintain a complete battlefield picture. Relatively senior personnel with tactical experience, trained in the use of specific C4/ISR components, would form the staff of the Battlefield Directors reporting to the Component Commander. Ideally, each Component Commander would assume control over his Battlefield Directors and coordinate his efforts with other Component Commanders. The Component Commanders would then become the Combatant Commander's Battlefield Directors. This would allow the Combatant Commander to maintain an overall control over his area of operations while

also allowing him to delegate individual decision-making during major operations to the control of a Joint Task Force or Component Commander. Maintaining a headquarters of this type would allow the Combatant Commander to more closely coordinate his JTF or Component Commander's actions in accordance with his overall Operational or Strategic objectives. He would still be delegating down some of the direct battlefield control but would retain the ability to intervene where necessary to achieve (or prevent the loss of) his objectives. The Joint Task Force or Component Commander would still be able to provide control through his own Battlefield Directors, feeding crucial information to the units conducting tactical actions.

Instances will occur where a Joint Force Commander does not have a full and complete picture of the tactical battlefield. A new or rapidly developing operation may not allow the time necessary to take full advantage of C4/ISR capabilities. Enemy actions or the actions of terrorists or insurgents in unexpected locations might require immediate response. It is these instances which will continue to require the initiative, intuition and expertise of unit level commanders acting through tactical operations to achieve objectives conducive to the Joint Force Commander's stated objectives. The methods by which we conduct warfare have proven to be successful, and I would not advocate a radical departure from them. Commanders still need to provide concrete guidance on their overall objectives, choose competent unit level commanders, and provide the training necessary to conduct operations in the absence of a complete C4/ISR picture. The present and emerging informational capabilities can not yet be counted on for 100 per cent accuracy and reliability. Systems are subject to failure, destruction,

²⁰United States Central Command website, <http://www.centcom.mil/aboutus/centcom.htm>

deception and denial.²¹ We must continue to train to this level of informational uncertainty. We can and should use increased information capabilities to our advantage when appropriate, but tactical forces need to maintain the ability to succeed in the absence of direct involvement from higher command. We also need to be able to determine when a deficiency in situational awareness exists, either through a lack of information or an abundance of conflicting information. In these situations it will be necessary to trust in unit-level commanders to successfully carry out operations based on their skill, training and intuition.

With the advent of weapons on unmanned aerial vehicles we already have the ability to perform some limited tactical actions from a centralized location. The future holds promise for vast increases in the informational resources available to the Joint Force Commander.²² In order to effectively use these resources to achieve Strategic and Operational objectives in the shortest time and with the least effort, the Joint Force Commander will be required to have the necessary infrastructure, including people, policy and equipment, in place prior to major operations commencing. To do otherwise risks being hindered by an overwhelming flood of data instead of riding the crest of the information tidal wave to victory. The wise commander will continue to define objectives clearly and provide subordinates with every tool at his disposal so that they may succeed in securing his objectives. One of these tools is information. Sometimes it will be necessary for the Joint Force Commander to make decisions for the tactician based on information he possesses that the tactical actor does not. The procedures and

²¹ John A. Gentry. "Doomed to Fail: America's Blind Faith in Military Technology", *Parameters*, Winter 2002-3, pp. 88-103

²² Cebrowski

training need to be in place so that the incoming information helps the tactical operator to achieve his objective and doesn't hinder his efforts. This benefits the individual tactical actor and the Joint Force Commander. To allow compromise on a concept as time-tested as de-centralized execution will require a significant leap of faith on the part of unit level commanders. The benefits of such doctrine need to be explained fully before they are put into practice. Unit level commanders need to know that higher-level involvement in their decisions is not a function of a lack of trust in their capacity. It is the synergistic application of information and objective, exercised through command. It has been shown that de-centralized execution can help to achieve Operational objectives. It has also been demonstrated that such direction can serve to prevent the loss of Operational or Strategic Objectives. If, as tactical operators, we divorce our egos from the equation of "Centralized Command, De-centralized Control" we will be able to use current and developing technologies to the nation's advantage. War is never clean. Therefore it is necessary to accomplish its objectives as quickly and decisively as possible. Ignoring an emerging capability in order to hang on to a possibly obsolete doctrine serves neither us nor our nation. If we maintain our current capabilities, while continuing to develop the integration of Operational-level battle space awareness on a tactical level, we will provide America with a force capable of winning rapidly, decisively, and at minimum cost to us, our allies, and our enemies.

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Joint Task Force Organization and Staffing

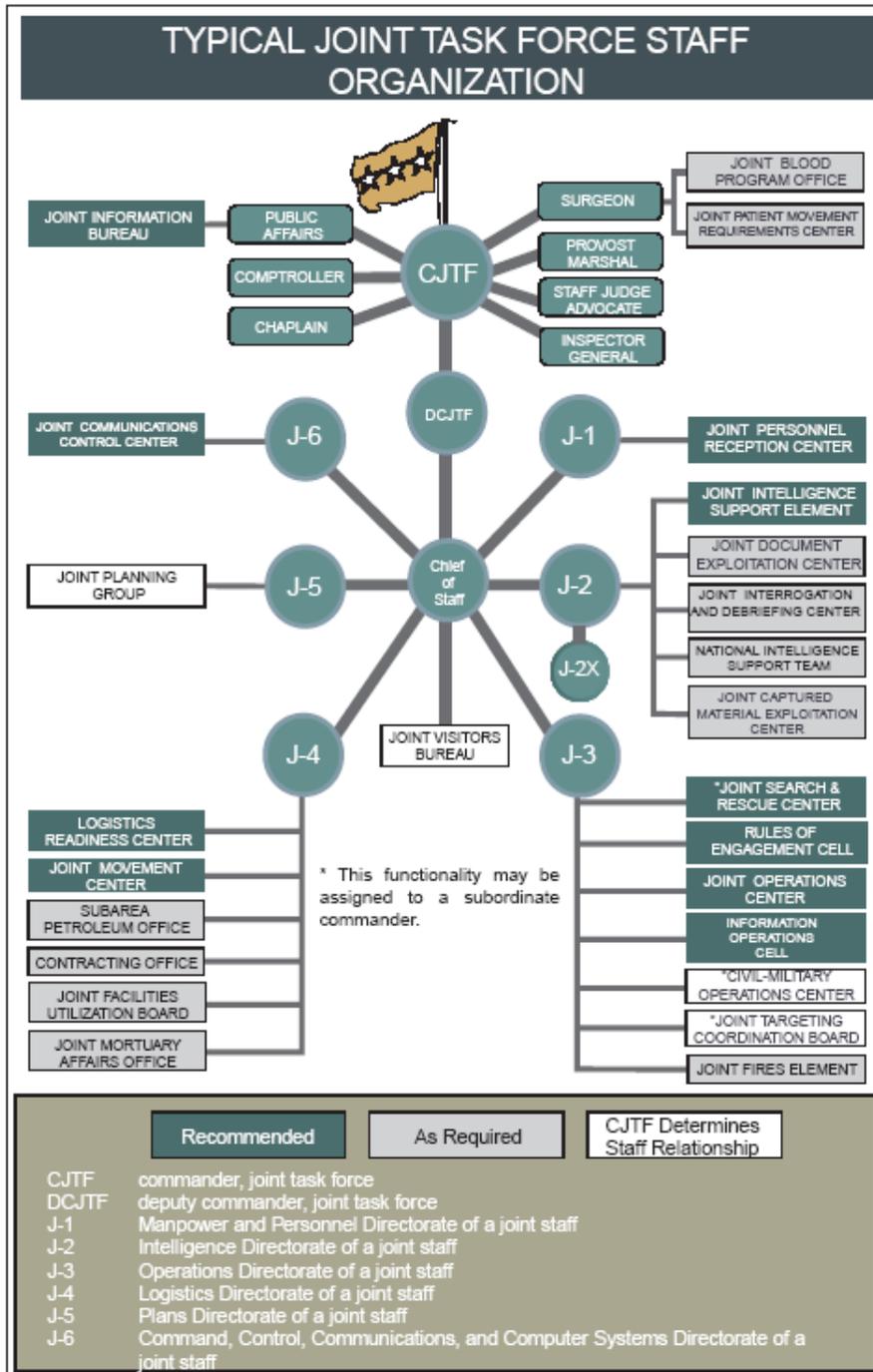
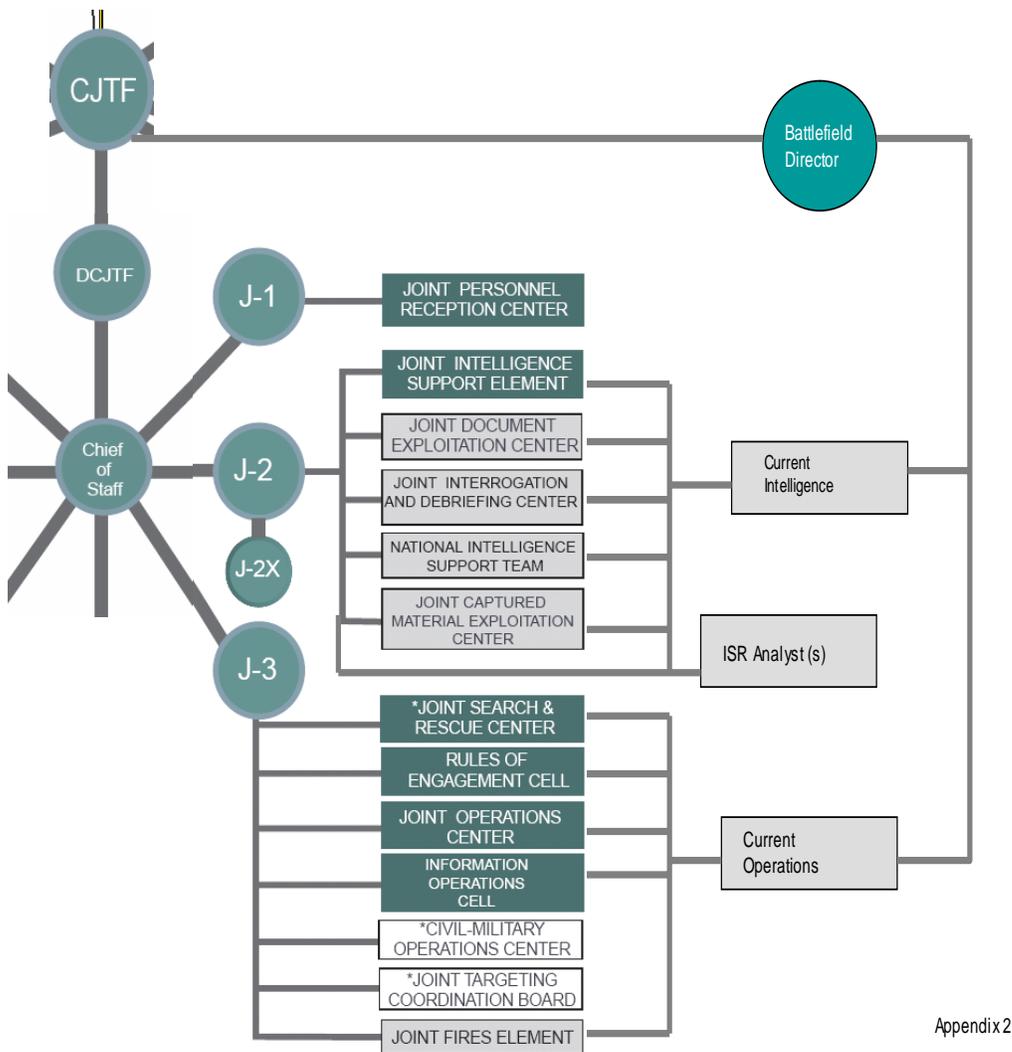


Figure II-1. Typical Joint Task Force Staff Organization

Modified Joint Task Force Organization



Appendix 2