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Measuring The Intangible: How Can An Operational Commander Know If His Information-

Based Operations Are Effective?

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*Thesis*

Current doctrine, when combined with existing Tactics, Techniques and Procedures (TTP), can provide operational commanders with a measure of effectiveness for their information operations. Commanders must be able to measure the effectiveness of their information operations (IO) in order to know if they are accomplishing their purpose. Measuring effectiveness, however, is more than just a function a staff performs; it is part of the entire process of planning and executing military operations.

*Introduction*

Operational commanders have a wide variety of tools available to accomplish their military objectives. IO are simply a set of specialized tools that can accomplish objectives on their own, or in concert with other tools. The problem for the operational commander, however, is that the wide variety of IO, their high degree of specialization, and the ever-changing methods and technologies they employ often present a great deal of uncertainty and unfamiliarity in their application and effects. This also means that the technical gap between information operators and their operational commanders will likely continue to widen, creating even greater uncertainty while exponentially increasing the requirement to trust operators to achieve their assigned objectives. Trust, though, should not be blind. As with

any other tool, commanders must have a method of knowing if their IO are effective in achieving their objectives.

This paper explores current doctrinal process and techniques available for commanders to use in order to know if their IO are effective. It begins with a general discussion of what IO entail, how commanders decide when to employ them, how they articulate those decisions to their staffs, and what is meant by measures of effectiveness (MOE). It then takes a more detailed look at existing TTPs for establishing MOE, and how this process

occurred during Operation Allied Force in order to gleam lessons learned. Finally, this paper provides recommendations for future operational commanders.

*Information Operations*

Joint doctrine provides a seemingly simple definition: "Information Operations involve actions taken to affect adversary information and information systems while defending one's own information and information systems."[1] IO, then, have important offensive and defensive purposes and come in many forms, making them more complex than that simple definition may lead one to believe. To accomplish it's purpose, IO use many varied tools. Offensive IO "…include, but are not limited to operations security (OPSEC), military deception, psychological operations (PsyOps), electronic warfare (EW), physical attack/destruction, and special information operations (SIO), and may include computer network attack."[2] Defensive IO "…are conducted through information assurance, OPSEC, physical security, counter-deception, counter-propaganda, counterintelligence, EW, and SIO."[3] Furthermore, IO

"…apply across all phases of an operation, the range of military operations, and at every level of war."[4]

While this paper is primarily concerned with IO at the operational level, it is important to understand the goals of IO at all levels of war in order to provide more clarity for the purpose at the operational level. At the strategic level, IO "…achieves national objectives by influencing or affecting all elements (political, military, economic, or informational) of an adversary's or potential adversary's national power while protecting similar friendly elements."[5] At the operational level, it "affects adversary's lines of communication (LOCs), logistics, command and control (C2), and related capabilities while protecting similar friendly

capabilities."[6] And at the tactical level, IO affect adversary information and information systems relating to C2, intelligence, and other information-based processes directly relating to the conduct of military operations while protecting similar friendly capabilities."[7] Operational commanders can use this doctrine to form an idea, or set of boundaries, for their informational "area of operations." Their area of influence, then, includes their area of operations, as well as the areas they can deliberately (intentionally) or unintentionally affect operations at the tactical and strategic levels. The staff must then consider the deliberate purpose, that is, objective, for IO in the context of their area of operations in order to determine the proper measure of application. It must also determine what indicators will exist to alert them if and when IO fail to achieve their purpose or unintentionally exceed the area of operations.

The first step in measuring effectiveness, then, is knowing what is supposed to be measured.  Commanders must effectively articulate this guidance to the staff.  The staff must then be able to apply IO in a manner consistent with that guidance, and must have a means of measuring its effects within their area of influence.

*Commander's Guidance*

The commander's guidance begins with his intent statement.  The commander's intent emphasizes four major points:  "purpose, method, risk, and end state."[8]  When developing his intent statement, the commander typically considers his restated mission, based on his essential tasks (derived during the mission analysis), and the desired end-state that he expects to achieve upon completing those tasks.  With that in mind, he develops a general, broad-based idea of how he expects to achieve the

desired end state and provides the staff with risks he is and/or is not willing to take.  The commander's intent is important because it provides the staff with a starting point in their course of action development, and a common end-point toward which they should direct the effects of those courses of action.

The commander's intent belongs to the commander.  He is free to modify the format and the level of guidance, as well as the emphasis he pays to any, all, or none of the various battle functions. Additionally, he typically does not form his intent in a vacuum.  It is typically based on information he receives from his higher headquarters and his own staff as they conduct their mission analysis.  When integrated, IO planners would include an evaluation of the higher

headquarters' and the adversary's planned and potential IO as well as a summary of his own IO capabilities during the mission analysis briefing. By doing so, the staff better prepares the commander to include how (generally) he intends to use IO and/or what risks he is or is not willing to accept.

Once the commander's intent is issued, the staff begins course of action development. After developing one or more courses of action, the staff briefs the commander and receives his decision and additional guidance. While there are many methods of briefing the courses of action, most, if not all include a discussion of how the various units and/or battle functions support the accomplishment of specific objectives. That is, they tell the commander the task and purpose as they describe how they support the accomplishment of objectives. This helps create a common understanding, or a meeting of the minds, between the commander and his staff as to the purpose of each function. A clear understanding of the purpose and risks the commander is and/or is not willing to accept is critical, as that becomes the yardstick against which staff officers will

measure their operations while providing boundaries for the effects of their operations. In short, it links specific IO tasks to operational objectives, and gives planners the purpose(s) and the boundaries of their area of influence they require in order to determine the right mix and measure of IO. The staff can then use this to develop indicators that effectively measure the effectiveness of IO in achieving the commander's stated tasks within the defined area of influence.

*Measures of Effectiveness*

Joint doctrine, then, provides a process to facilitate the commander's ability to consciously decide what it is he wants IO to accomplish and how to articulate that to his staff.  It also provides a process for staffs to follow when planning and executing operations. Joint doctrine does not, however, provide much in the way of defining how they should measure the effectiveness of their operations.  In fact, measures of effectiveness are not defined at all in joint doctrine. American Heritage Dictionary defines measure as "Dimensions, quantity, or capacity as ascertained by comparison with a standard."[8]  And it defines effect (effectiveness) as "…a result."[9]  For the purpose of this paper, then, measures of effectiveness are quantitative or subjective indicators that *compare* the *results* of IO against their task (*standard*).

 Joint Pub 3-13 provides a reasonable foundation for articulating those standards in the various annexes to OPLANS.[11]  In it's sample annexes to operations plans, it requires the staff to list the specific tasks IO is to accomplish; these tasks, as discussed previously in this paper, should come directly from the commander's approved course of action. The key question for commanders and their staffs then becomes what are the appropriate "indicators" that will

tell them what kinds of effects their IO are having within their area of influence.

To support the stated definition of MOEs, indicators are quantitative or subjective and must be relevant to both the operations being employed and the desired end state for their task.  To best serve the commander, the indicators should typically provide incremental measures of progress toward achieving a goal and they should alert the commander if his

operations threaten to violate his risk criteria.  So how can we identify them and how will we know if we achieve them?

In their article, *Measuring Effectiveness of Theater IW/C2W Campaigns*, Howard Clark and Saundra Wallfesh provide an interesting method of identifying indicators and integrating them throughout the staff.  In their "Reflective Practitioner" approach "…people who are expert in certain areas use subjective judgment, assisted where they deem useful, with objective data."[12]   This method implies a strong need to integrate IO into the plans and operations in order to identify "sensors" and link them to "expert" assessors.  But how can the "Reflective Practitioner" approach ensure the right collection requirements are passed to the right sensors, and that data are assessed by the right "experts."

Clark and Wallfesh suggest the "Theater Level MOE Worksheet" as a TTP for ensuring better staff integration.[13]  Figure 1 provides the worksheet format with a sample requirement (While fictional, such a requirement may have been generated had planners utilized this TTP during Operation Allied Force).  When applied in the context of doctrinal planning, the IO planners would develop a worksheet for each of the tasks in their annex, and work with the staff to identify and task the appropriate sensors and assessors.  This links the "experts" with "objective data" in order to provide more

accurate and consistent assessments.  The assessor then also knows the relative importance of the task and who to pass his assessments to.

Figure 1 (Theater Level MOE

Figure 1 (Theater Level MOE Worksheet)

The MOE Worksheet can be a manual card or automated.  Regardless of the media used, this system offers a method of ensuring IO indicators are tasked to sensors in accordance with the commander's priorities, are assessed by qualified personnel, and that the assessments make it back to the IO planners.  That is, it provides integration during the execution phase to provide a more timely and accurate MOE.

*Do Doctrine and TTPs Really Matter?*

The first half of this paper focused on the doctrinal processes and TTPs available to provide commander's with a MOE.  But joint IO doctrine is still relatively new (Joint Pub 3-13 was published in October 1998)…how do we know if the doctrinal processes and TTPs discussed above really work?  Operation Allied Force in Kosovo is our only completed Theater level combat

action since our doctrine was published.  Does our experience in Kosovo provide any insights to whether or not current doctrinal processes and/or other TTPs work?

*Analysis of Information Operations In Operation Allied Force*

The wide variety of functions that constitute IO are too numerous to study within the limited scope of this paper.  Additionally, how we used and measured many of the functions, such as cyber-attacks and electronic surveillance and C2 counter-measures is classified.  For that reason, I limited the research to a study of public records and the analysis to Public Affairs (PA) and PsyOps.  While PA and PsyOps encompass only a fraction of IO, they do provide insights to the process of measuring effectiveness.  Such "process" insights arguably have applicability across the spectrum of IO.

The discussion that follows indicates that planners did not utilize current doctrine to integrate and assess their IO during Operation Allied Force.  They did not fully include IO in their initial planning efforts and, while they had limited success in establishing indicators, they generally failed to reliably measure them in a timely and accurate manner.  The poor record is primarily due to poor integration leading to unclear IO objectives, as well as the inherent difficulty in conducting subjective analysis.  While Operation Allied Force does not provide many positive examples of how to successfully measure the effectiveness of IO, it can provide us with a better understanding of why the processes and indicators they did use failed to tell key leaders what they needed to know.  Such an understanding is necessary in order to help validate and/or improve our current processes.

## Objectives in Operation Allied Force

Operation Allied Force provides a good case study in the first step of measuring effectiveness - establishing clear objectives.  IO planners were not integrated into the initial plan and did not, therefore, have specific objectives for which they could develop measures of effectiveness and relevant indicators.[15]  This is blamed, in part, on the fact that planners believed Milosevic would return to the negotiating table after a few days of air strikes.[16]  In fact, the IO cell was not even initially located with the planners.

Milosivec, provides a more positive example in that he did incorporate IO in his initial plans.  Milosevic controlled the ground and was able to direct and orchestrate media access to sites where NATO had inadvertently killed innocent civilians.  At the same time, he prevented their access to areas where his forces had intentionally committed far worse atrocities in their deliberate ethnic cleansing campaign.[17]  As a result, pictures of the deaths NATO accidentally inflicted were exponentially more influential on domestic and international opinion than mere statements NATO made about Serbia's ethnic cleansing campaign.[18]  They created such a threat to the alliance that, eventually, President Clinton personally approved each target.[19] General Clark commented that the media enabled small, tactical actions to have significant effects at the political (strategic) level.[20]  In his book *Waging Modern War*, Clark laments that "…public opinion was doing to us what the Serb air defense had failed to do: limit our strikes."[21]

NATO's stated objectives were "…stopping the violence in Kosovo; withdrawing Serb military police and paramilitary from the province;

stationing an international military province there; allowing all Kosovar Albanians safe return home; and working on a political settlement based on

the talks outside Paris."[22]  Certainly IO was not capable of accomplishing any of these objectives alone, but it could, arguably, have assisted in accomplishing them had it been integrated throughout the entire planning process.  A key vulnerability in alliance warfare has always been the fragile nature of alliances.  General Clark was fully aware of the importance of holding the alliance together.  Equally important, Milosevic evidently recognized the alliance as NATO's center of gravity and believed that if he could endure the air strikes long enough, he could fracture the alliance.[23]  His well orchestrated media campaigns indicate that he pursued that goal by  shaping public opinion through aggressive and manipulative use of the press.[23]

    Planners failed to develop such an enemy course of action during the command estimate process.[24]  One possible explanation for why they failed to recognize this as a likely, indeed most dangerous, enemy course of action may have been that they did not include information operators in their command estimate process.  Their inclusion would have provided a person who, by their expertise and specialized function, would likely have recognized potential enemy and friendly uses of PA. Such "experts" would be better able to recognize the potential for Milosevic to chose such a course of action, and may have prompted planners to more seriously consider that possibility.

    Had they been seriously considered during the planning phase, PA would likely have been assigned the objectives they were eventually

called upon to do once Milosevic's plan became more apparent.  While not
formally mentioned as such in any official historical accounts, PA's
eventual efforts did support the following objectives:

1. Shape international public opinion against Milosevic and in
   favor of NATO.
2. Limit the negative effects civilian deaths (unintentionally
   inflicted by NATO air strikes) have on public opinion.

Had these objectives been assigned to PA during the initial
planning, they could have developed a more deliberate media campaign to
shape public opinion against Milosevic and integrated with intelligence
functions to provide graphic images of Serb atrocities for the press.
Additionally, PA would have been better able to develop a proactive
theme for the press to deal with the likelihood of unintentional
civilian deaths resulting from NATO air strikes.  Such a theme could
have begun before the first air strike (rather than well after it), and
linked Milosevic to the reason the air strikes were occurring.  Finally,
they would likely have recognized a need to integrate PA with
intelligence and current operations in order to provide timely and
accurate press releases regarding such incidents before Milosevic had
the opportunity to exploit them.  Instead, NATO often found its self
retracting it's initial statements and/or waiting days before commenting
on alleged targeting errors.[25]  These problems consistently served to
further Milosevic's goal of diminishing public opinion in order to split
the alliance.

Failure to integrate PsyOps denied them clear objectives as well.
It was not until well after the air strikes had begun that General Clark

recognized that the Serbian center of gravity was not just its forces in Kosovo, but the will of Milosevic and his supporters as well.[26]  Again Milosevic provided a better example of how to integrate PsyOps early. An example of his efforts can be found in the "Bull's Eyes" the Serbians wore during the NATO air strikes.  This tactic is credited for unifying the Serbians in defiance of NATO.[27]  NATO then found it's self with a more

difficult task as it eventually sought to reduce the will of Milosevic and his supporters.

*Measures Of Effectiveness In Operation Allied Force*

There is no official evidence to demonstrate that NATO ever established formal measures of effectiveness and relevant indicators for IO.  The absence of such records indicates that this was not a formal process.  That, and the fact that they were not initially integrated into the operational plans speaks volumes about why commanders find it so difficult to know if their IO are effective.  Extensive readings, however, do demonstrate that NATO did informally attempt to measure the effectiveness of their public affairs and PsyOps, but not until they had more clearly recognized *tasks,* well over a month after the first air strike.

Once they had recognized (though not formal) tasks, and were better integrated into operational plans, PA and PsyOps officers did attempt to measure the effectiveness of their operations.  The IO cell was eventually collocated with the planning staff which provided all players with a better ability to conduct direct coordination and integrate their actions.  A key point to take away from the collective references is

where information operators went to identify and assess their indicators.

Public affairs indicators were typically friendly or neutral based. That is they came from all-source public information as well as privileged conversations between senior military coalition leaders. This implies a need to identify which information venues are most effective in shaping public opinion in the coalition and neutral countries, as well as a need to have close access to the commander. Such access to the commander can provide the PAO with "perception insights" the commander receives from

other senior leaders as well as help in shaping his message for the press.

Various readings indicate that the public affairs cell used prominent newspaper editorials, cable news networks, and high volume internet websites and chat rooms as their indicators for both objectives. While this sounds easy enough, collecting and assessing the feedback from the indicators proved to be a monumental task. Not only did it require linguists to interpret the media, but it also entailed assessing overall success as well as the success in individual coalition member countries. It also meant balancing public affairs' limited resources as they sought to assess their indicators, develop strategies to improve their effectiveness, and respond to inquiries from the press. With augmentation, the staff was able to follow a fairly straightforward assessment methodology - review the feedback from the indicators, assess success to date, and develop strategies to maintain

areas that are favorable to NATO while improving areas that are less favorable.

It also appears that the PAO did have close personal access to the commander. In his book Waging War, General Clark states that his PAO, Air Commodore Wilby, had become a "genuinely close member of my team."[28] Such a relationship likely provided Air Commodore Wilby with insights to the conversations General Clark had with other senior NATO leaders regarding potential fractures in the coalition.

PsyOps indicators, on the other hand, were typically threat-based. That is they came from intelligence sensors (electronic or HUMINT) that can track the actions of threat military and civilians while their analysts can help predict enemy intentions. PsyOps, therefore, relies heavily on intelligence to help identify and assess their indicators. Including intelligence in the process of identifying the indicators not only

increases reliability, but it also brings the intelligence community on board in developing and executing a plan to monitor and assess them as well.

Unclassified research does not provide any official objectives for PsyOps during Operation Allied Force. NATO actions, however, imply that PsyOps objectives were to break the will of the Serbian people and Milosevic's supporters. This is further confirmed by the fact that expanded air strikes were, in part directed towards accomplishing this goal. In their book *Winning Ugly*, Ivo Dadler and Michael O'Hanlon claim that "NATO also showed that it was willing to turn up the heat on Milosevic's inner circle, attacking his cronies' residences and businesses as well as party headquarters."[29] Sanctions and the expanded

air strikes also had effects on the general Serbian population, raising unemployment to 50%.[30]  General Short, the air commander stated that "…he never felt Serbian forces in Kosovo to be a "center of gravity" and argued that destroying assets that kept Serbian leaders in power and in comfort was NATO's key to victory."[31]

Measuring how effective NATO was at breaking the will of Milosevic and his supporters was a difficult task during Operation Allied Force and remains a source of much controversy today.  The initial air strikes directed against military targets proved difficult to execute and did not convince Milosevic to concede.  Counting the number of vehicles or combat systems served no purpose in determining whether or not Milosevic's will, or support, was diminishing.  After the first few days of air strikes, General Clark said "…we need better means to measure our efforts."[32]  And asked his staff to "…develop a system, setting our objectives against Milosevic's probable objectives, and rating each side."[33]  His staff then provided a quantitative BDA assessment in describing NATO's effects.  Soon

after that assessment of their effectiveness, General Clark recognized or determined that the purpose of these air strikes was not to simply reduce the military forces, but rather, the purpose was to apply enough force to convince Milosevic that he could not win.  In coming to that realization, General Clark concluded that the BDA driven methodology "…was too mechanical.  We weren't, ultimately, in a battle of attrition, but rather we were using military force to force Milosevic to comply.[34]

Reducing Milosevic's support was one of General Clark's overall objectives.  He believed that "…the point of the campaign was to break

Milosevic's will (or the will of his supporters) or, ultimately, deny him the capability to continue the ethnic cleansing in Kosovo."[35] Troop oriented BDA, then, was a quantitative indicator that failed to tell the commander what he really wanted to know. Unfortunately, it was the only indicator set available because information operators were not yet integrated and, therefore, lacked the ability to measure intangibles like "will" or "support". Without clear tasks, IO planners lacked the MOE and appropriate indicators. Sensors and expert assessors were not looking for and evaluating the "non-mechanical" kinds of information General Clark intuitively knew he needed. As a result, General Clark's questions, that required non-mechanical" kinds of assessments, went largely unanswered.

While there are no formal accounts of indicators to measure Milosevic's support, there is evidence that they did eventually attempt to establish indicators and that they integrated their efforts within the staff. For example, in late April, the expanded air strikes spared Serbia's telephone network, presumably to "eavesdrop on conversations of the Serb elite."[36] Such conversations would provide a measurement of how effective NATO was at breaking the will of Milosevic's supporters. Sparing the telephone lines

and implementing eavesdropping capabilities also implies some integration among the staff.

### Recommendation

Commanders and staffs should utilize joint doctrine and current TTP to develop IO tasks and measure their effectiveness in accomplishing those tasks. As Clark and Wallfesh point out "…doctrine is guidance

rather than directive, deviation is at the risk of the commander."[37]
Operation Allied Force is a case study in which the commander and his
staff deviated from current doctrine and previously studied TTP.  As a
result, the commander was in the dark regarding his second enemy center
of gravity – the will of Milosevic and his supporters.

　　IO indicators are subjective and objective; accordingly, their
measurements of effectiveness will always entail some degree of
uncertainty.  Current doctrine and TTPs can minimize that uncertainty by
providing more effective processes.  Process is important because
successful measurement of effectiveness requires full staff integration,
clear IO objectives (tasks), and reliable indicators.  Indicators must
be assigned to appropriate sensors that are linked to "expert
assessors," capable of providing timely feedback.  While current joint
doctrine provides the process required to ensure planners pursue clear
IO objectives in a manner consistent with the commander's guidance, it
does not provide a process to produce reliable indicators and expert
assessments.

　　In developing and measuring indicators, staffs should experiment
with
the "Reflective Practitioner" approach, utilizing the MOE Worksheets
forwarded by Clark and Wallfesh.  Such a technique can provide the
critical
linkages required to focus the right sensors and assessors on the right
indicators in order to more accurately tell the commander if his IO are
effective.

## NOTES

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　　[2] Ibid, viii.
　　[3] Ibid.

⁴ Ibid, I-1.

⁵ Ibid, I-2.

⁶ Ibid, I-1-2.

⁷ Ibid, I-1-2.

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²² Ibid, 271.

²³ Ivo H. Daalder and Michael E. O'Hanlon, Winning Ugly: NATO's War to Save Kosovo (Washington, DC: Brookings Institute Press 2000), 94.

²⁴ Pounder, 17.

²⁵ Ibid, 15.

²⁶ Wesley Clark, 236-237.

²⁷ Thomas, 9.

²⁸ Wesley Clark, 250.

²⁹ Daalder and O'Hanlon, 201.

³⁰  Iid.

³¹  Ibid, 203.

³²  Ibid, 221.

³³ Ibid.

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³⁴ Ibid, 222.

[35] Ibid, 242.
[36] Ibid, 145.
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