

KLEIN ASSOCIATES INC.

25

AD-A259 512



**ADVANCED TEAM
DECISION MAKING:
*A Developmental Model***

**S DTIC
ELECTE
DEC 30 1992
A D**

Caroline E. Zsombok, Ph.D.
Gary Klein, Ph.D.
Molly M. Kyne
David W. Klinger

Klein Associates Inc.
582 E. Dayton-Yellow Springs Road
Fairborn, OH 45324-3987

92-32926
280

This document has been approved
for public release and sale; its
distribution is unlimited.

Funding for this project was received from the U.S. Army Research Institute for the Behavioral and Social Sciences, under Contract MDA903-90-C-0117. The views, opinions, and findings contained in this report are those of the authors and should not be construed as an official Department of the Army position or policy.

August 3, 1992

92 12 28 101

ADVANCED TEAM DECISION MAKING: *A Developmental Model*

OVERVIEW

Klein Associates is pleased to be a part of your curriculum year at the Industrial College of the Armed Forces. Our goal is to help provide you with the tools you will need to operate as a high performance team member or leader — while you are here at ICAF and, more importantly, as you take on the challenges that lie ahead after you leave.

One of the major challenges will involve the necessity to work increasingly with groups and teams in order to make the decisions required by the responsibilities of the work environment. Team decision making is certainly not new to you — everyone has worked with decision making groups and teams at one time or another in the past. And some of those groups may have even been highly productive and successful in their outcomes.

Our experience, however, is that most are not. Over the past four years, Klein Associates has observed a wide variety of decision making teams. Very small teams, like helicopter and cockpit crews, to very large teams, such as those staffed to suppress forest fires. Command and control teams on all levels — from Battalions at Ft. Stewart, Ft. Hood and Ft. Irwin to Corps and Divisions at Ft. Leavenworth and even in echelons above the Corps level at the Army War College, the National Defense University and right here at ICAF. Teams engaged in real time operations, such as senior officers formulating the strategic plans for national security, to those involved in simulated activities, like crews reacting to simulated flight emergencies at Ft. Campbell and NASA/Ames.

Against this backdrop of experience, observing, and analyzing decision making teams, we have found few *advanced* teams — teams that have reached their full potential. And those which do perform well have not been able to tell us what they were doing that made them so effective. These teams did have some ideas about what was going right. They spoke of the need for good communication and good coordination; for better teamwork, better leadership. But they could not describe the process used or specific behaviors exhibited by their group. This indicated that the team members lacked the know-how to replicate their high performance — as a member or a leader — in future team decision making experiences.

As a result of our observations, Klein Associates identified several *critical* behaviors among the hundreds teams may exhibit, behaviors which distinguished the high performance teams from less productive ones. And we developed an Advanced Team Decision Making Model based on these critical behaviors.

We believe this model is not only a sound theoretical construct for describing how advanced team decision making occurs but a powerful tool for expanding your own personal team decision making

REPORT DOCUMENTATION PAGE

Form Approved
OMB No. 0704-0188

Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden to Washington Headquarters Service, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503

1. AGENCY USE ONLY (Leave blank)		2. REPORT DATE 92AUG03		3. REPORT TYPE AND DATES COVERED	
4. TITLE AND SUBTITLE Advanced Team Decision Making: A Developmental Model			5. FUNDING NUMBERS MDA903-90-C-0117		
6. AUTHOR(S) Caroline E. Zsombok, Gary Klein, Molly M. Kyne, and David W. Klinger					
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) Klein Associates Inc. 582 E. Dayton-Yellow Springs Road Fairborn, OH 45324-3987			8. PERFORMING ORGANIZATION REPORT NUMBER		
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) U.S. Army Research Institute 5001 Eisenhower Avenue Alexandria, VA 22333-5600			10. SPONSORING/MONITORING AGENCY REPORT NUMBER		
11. SUPPLEMENTARY NOTES COR: T. Owen Jacobs Reference card should accompany booklet					
12a. DISTRIBUTION/AVAILABILITY STATEMENT Unclassified			12b. DISTRIBUTION CODE <div style="border: 1px solid black; padding: 5px; text-align: center;"> This document has been approved for public release and sale; its distribution is unlimited. </div>		
13. ABSTRACT (Maximum 200 words) This document describes Advanced Team Decision Making: A Developmental Model (ATDM). Based on our observations of numerous tactical and strategic decision making teams, and on a review of relevant literature, Klein Associates derived three key components of advanced team decision making: team self identity, team conceptual level, and team self monitoring. The model contains ten key behaviors critical to team development in these components. We developed this document for the Industrial College of the Armed Forces (ICAF). It describes the ATDM model in language compatible with the needs of ICAF students, who are being trained to transition into strategic-level leadership positions. ATDM was first introduced in ICAF's 1992 curriculum. This document is the second of three components of the team training program Klein Associates designed for ICAF. The first component is an introductory lecture about ATDM (called "Lesson 11" in this document) that we delivered to the faculty and student body. The third component (called "Lesson 13") is an exercise designed for experiential learning. The exercise and facilitated after-action review sessions give students an opportunity to practice, discuss, and improve their team decision-making skills in a manner consistent with the ATDM model. Copies of this document are also available from Klein Associates. Call 513-873-8166.					
14. SUBJECT TERMS teamwork, team decision making, team building, team training, group decision making, strategic decision making, ad hoc teams				15. NUMBER OF PAGES 27	
				16. PRICE CODE	
17. SECURITY CLASSIFICATION OF REPORT Unclassified		18. SECURITY CLASSIFICATION OF THIS PAGE Unclassified		19. SECURITY CLASSIFICATION OF ABSTRACT Unclassified	
20. LIMITATION OF ABSTRACT Unclassified					

capabilities as well. Our model gives you the handful of critical team behaviors which lead to advanced team decision making and organizes them in a simple, direct, and memorable system.

However, before you can capitalize on the full potential of the model as an advanced team decision making tool, you must first understand advanced team decision making on a conceptual level. Consequently, we present a complete explanation of the model in the following pages. This explanation concludes with a case study to help demonstrate the model in action as a decision making team takes on a strategic decision making task, not unlike those you may encounter in the future. We'll also describe the model in lecture format in Lesson 11, providing an opportunity for questions and discussion. The reading and lecture will give you a new perspective on team decision making, much like putting on night vision goggles to see an otherwise vague or invisible setting. You'll be able to see teams in ways that were not apparent before.

This is a necessary first step, but not completely sufficient. The surest way to change team performance is through direct training and experiential learning. Therefore, we'll give you the opportunity to apply this conceptual knowledge — to practice these key behaviors — in a team decision making exercise in Lesson 13A. Afterwards, led by ICAF faculty in Lesson 13B, you'll participate in a review session to discuss what went right and what went wrong — and, most importantly, the specific ways to improve performance. The hands-on experience of practicing these behaviors will help you achieve your team goal more effectively and efficiently than in the past. You'll learn how to perform these critical team behaviors.

The final step in mastering the power of this tool is to take this learning forward — into the remaining exercises scheduled this curriculum year. ICAF faculty will provide additional opportunities for sharpening your advanced team decision making skills in the National Security Strategy Exercise this semester and the end-of-the-year exercise. These exercises are particularly useful because they require multiple work sessions with built-in review periods for evaluating team performance, formulating specific plans about which team behaviors you want to modify in subsequent sessions, and assessing how well the correctives worked.

Ultimately, the Advanced Team Decision Making Model can be of most value after you leave ICAF and take on a role as a strategic leader or as a support person to someone in a strategic leadership position. When you encounter teams that have not been exposed to this process, the tool then provides the capability to model — and even teach — the advanced team decision making critical behaviors you've learned. To assist you in the future when teams are your vehicle for decision making, we've enclosed a pocket-sized card to remind you of the key behavioral markers of advanced team decision making.

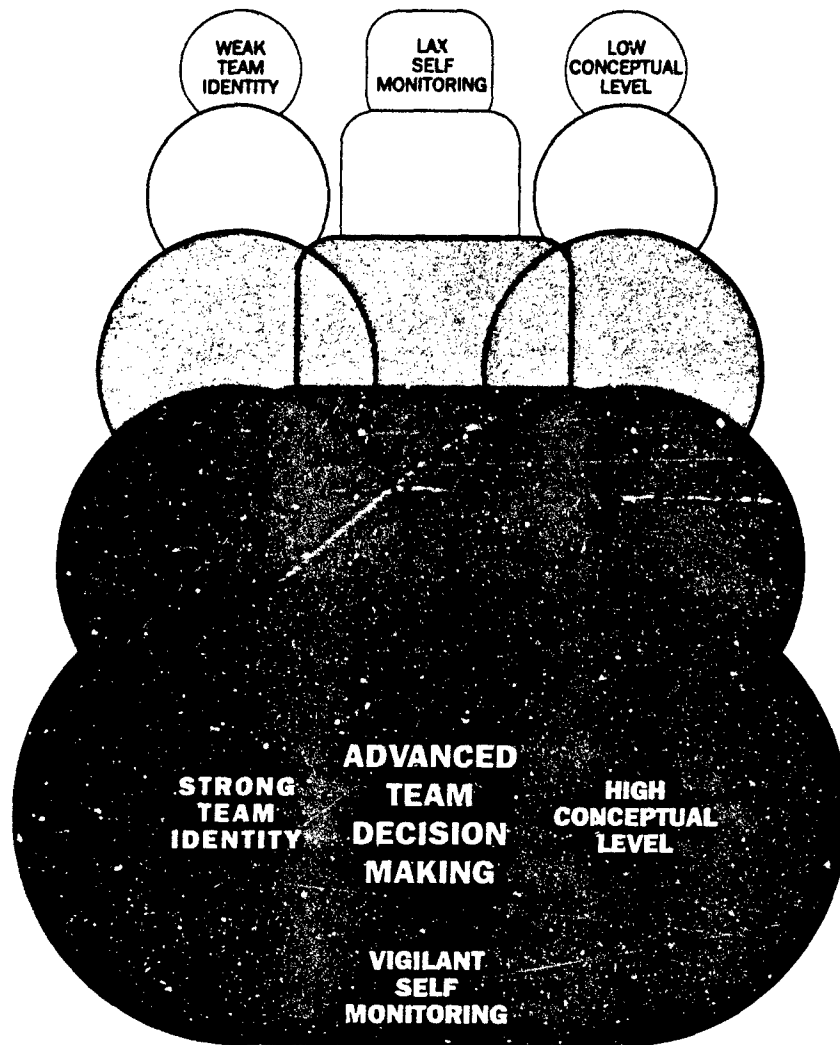
DTIC QUALITY INSPECTED

Accession For	
NTIS CRA&I	<input checked="" type="checkbox"/>
DTIC TAB	<input type="checkbox"/>
Unannounced	<input type="checkbox"/>
Justification	
By _____	
Distribution /	
Availability Codes	
Dist	Avail and/or Special
A-1	

THE ADVANCED TEAM DECISION MAKING MODEL

The Advanced Team Decision Making Model describes a thinking, collective body capable of high performance — by expressing behaviors critical to advanced team decision making and organizing them into three basic components of advanced team decision making: Team Identity, Team Conceptual Level and Team Self Monitoring.

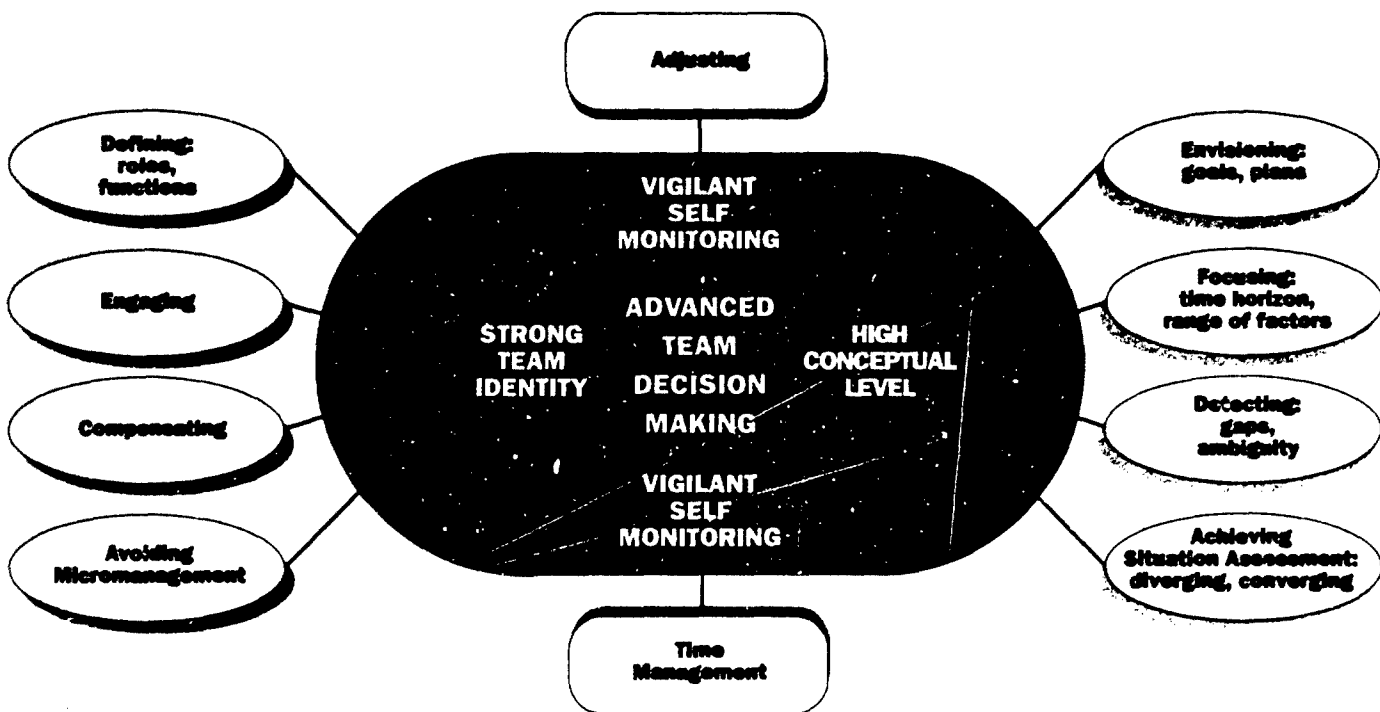
ADVANCED TEAM DECISION MAKING: A DEVELOPMENTAL MODEL



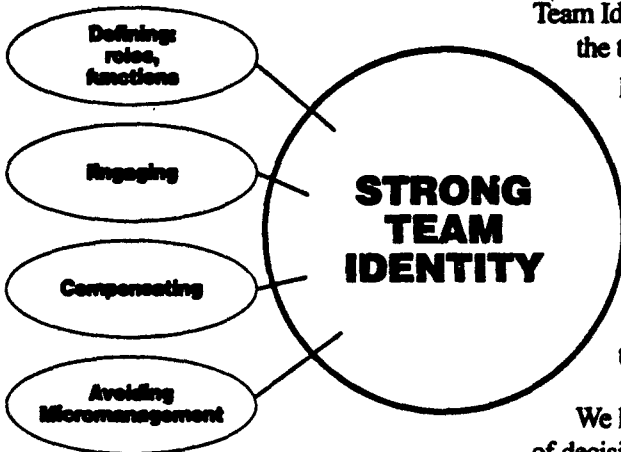
All teams, even those functioning on a very basic level, can be described in terms of these components because they intuitively demonstrate many of the key behaviors — only with varying degrees of effectiveness. But it is the conscious commitment to practice the behaviors appropriately and track them explicitly which differentiates — and in fact defines — the advanced team.

Consequently, we've stated the model in developmental terms not only to indicate that teams can improve but to provide the framework for affecting positive changes. Teams become high performance teams by moving from weak to strong team identity, from low to high conceptual level and from lax to vigilant self monitoring.

KEY BEHAVIORS FOR ADVANCED TEAM DECISION MAKING



Team Identity



Team Identity describes the extent to which members conceive of the team as an interdependent unit, and then operate from that perspective while engaged in their tasks. Think of a hockey team. Each member has his own role — right wing, center, goalie — but as they set up plays and bring the puck down the ice, those individuals begin to function collectively. Every player knows his own zone, where his teammates are, where the opponent is, how much time is left on the clock, what each of them needs to do to hold onto the puck, etc. Equally important, he knows that all of his team members know these things as well.

We have observed that, unlike this hockey team, the members of decision making teams with weak identity are forced to play as individuals rather than as parts of a unit that work together. Such an observation may seem obvious; however, it speaks directly to the basic difference between decision making teams with weak team identity which must rely on their own individual skills and those with strong team identity which are able to capitalize on the power of the group's shared expertise and collective approach to their task.

The quality of any given team's identity can be defined by how well the team is using the four processes, or behaviors, which promote strong team identity:

- *Defining roles and functions*
- *Engaging*
- *Compensating*
- *Avoiding micromanagement*

Thus, teams can advance in the strength of their identity by developing the ways they use these critical behaviors.

Defining Roles and Functions

Team identity begins with the process of defining roles and functions so that each team member understands the task responsibilities and accountabilities of every other member. This shared knowledge and understanding enables teams to plan their moves, anticipate what can or should occur when circumstances change, and react accordingly. For example, our hockey team players in one particular game know that on one of their opponent's line-ups, the center is particularly good at feinting to his left wing. Consequently, they concentrate most heavily on those parts of their roles and functions that involve protecting the goal from the right, but only when that line-up appears. Otherwise, they adopt their more typical play pattern.

Without this more detailed knowledge, team members cannot assess whether the functions assigned to specific roles (people) are even being accomplished, let alone addressed at the level of quality required to meet the team goal. Even worse, they are powerless to adjust these assignments and assist one another when the need arises.

Advanced teams we have watched did not lose this source of power. They actively and continuously sought complete awareness of their members' functions, which is of particular importance in the dynamic environment in which team decision making typically takes place. In contrast, basic-level teams we have observed had only a nominal awareness of roles and functions at the beginning of a team's work, which usually involved the perfunctory introduction of all team members and a brief and relatively uninformative description of their team responsibilities at the beginning first team session. However, we have seen that as teams develop their ability to use the role and function definition process, they recognize the need to highlight pertinent aspects of these roles and to emphasize how they relate to the task at hand. Also, they become primed for those situations where clarification needs to occur as changes in the situation demand shifts in members' approaches to the task.

The advanced use of the process provides several important benefits for the team, including the ability to:

- Capture any changes affecting team performance that may have evolved as the team progresses in its work
- Identify shifts in a situation which call for the reassignment or expansion of tasks
- Assign team members to handle these new tasks
- Profit from the resource of "buried" expertise where team members have real-life experience relevant to a team task which is outside their assigned role

Teams with strong team identity strive to achieve a deeper understanding of how the distribution of roles and functions helps the team reach its goals, enabling members to direct themselves toward these goals.

Engaging

Team identity is fostered through the process of engaging, the extent to which the team capitalizes on team member participation in the team's work and responsibility for reaching the team goals. Basic level teams may have members who express their disengagement in a variety of ways: with the attitude of "just tell me what you want me to do and let me get on with my job," with the silence of non-participation during group discussions, with the failure to advocate a strongly-held position or express discomfort with the direction in which the team is headed.

We have seen that more advanced teams recognize that disengaged members are resources lost to the team, and that they try to carefully secure the full value of each member. They are primed to act on evidence that members have partially or totally disengaged, so they can bring them back into the team. They watch for signs of the following shutting-down behaviors:

- Failure to pay attention to an ongoing discussion
- Performance of a different task during discussion
- Demonstration of quizzical or negative facial expressions
- Lack of assertiveness in following up on a question or concern

Recognizing these signals, teams with strong identity take on the task of drawing the disengaged member back in, whereas teams with weaker identity continue on the given course of action without attempting to change the situation. For example, we observed one decision making team with a subject matter expert (SME) whose heavy foreign accent resulted in his disengagement. Frustrated with his inability to make himself understood and his team's unwillingness to invest the time in

understanding what he had to say, the SME stopped participating. Not only was the valuable potential of his expertise lost to the team, but the team sent a dangerous message with significant possibility for snowballing effect: that disengagement is tolerable, that the quality of a team's work will not be affected by the loss of some of its parts. When teams accept the disengagement of any member, they effectively give the team permission to operate without all of its resources.

The team does not have to lose these resources. The presence of disengaged members may be the symptom of a problem that can be solved. Members may be fatigued, overworked, or even overwhelmed by the magnitude of the task at hand. By recognizing that such a problem exists, the advanced team has the power to make appropriate adjustments like readjusting work load, or reassigning functions, that allow *all* team members to function productively.

Compensating

Team identity is strengthened by the process of compensating, the ability of team players to step outside of their assigned roles or functions and perform different ones in order to help the team reach its goals. Back to our hockey team: each member is playing his role as the center moves the puck down the ice. Suddenly, the center is knocked down. Before you know it, another team member has moved in to cover his function. It could be a wing, it could be a defensive player who's out of position and just happens to be close by. But someone covers the gap.

As in our example, most teams have members who are either periodically or consistently unable to handle some of their functions. Teams operating at a basic level of team identity lack members who are able to put their own roles aside and help to fulfill these functions. Advanced teams we have watched set a tone that encourages members to step outside their roles in order to remedy the problems that other members are having with accomplishing their functions.

But it is not enough for team members to compensate when problems arise around a given role or function. In the teams we have watched, the advanced decision making teams also try to learn what caused the problem. There are a wide range of reasons for the need to compensate:

- Uneven distribution of workload so that one member has become overloaded
- Unexpected events that have pulled the team member's attention away from assigned work
- Unwise use of a member's expertise in designating roles or functions

In these cases, advanced teams will even-out the work load, allocate the appropriate resources to deal with the sudden turn of events, or realign team responsibilities along expertise. Basic level teams often struggle with the status quo, feeling locked into appointed responsibilities. Advanced teams remain flexible, shuffling functions to improve not only their members' individual effectiveness but the team's overall decision making effectiveness.

Using the compensating process to build stronger team identity also involves knowing who is likely to step forward when a new demand arises and who must hang back to cover the gap. Inexperienced teams often find themselves at one of two extremes: holding members rigidly to their assigned roles and functions to meet set expectations or tolerating members who freelance when others are depending on them to carry out their assignments.

The entire team — and not just the leader — shares the responsibility for the identification of the reasons for and best ways to compensate. After all, the leader cannot be in all places at all times.

Moreover, some of the leader's functions may need to be covered as well. The advanced teams we have observed seem to realize that all of the functions — even the leader's — must be scrutinized to ensure that all functions are fulfilled.

Avoiding Micromanagement

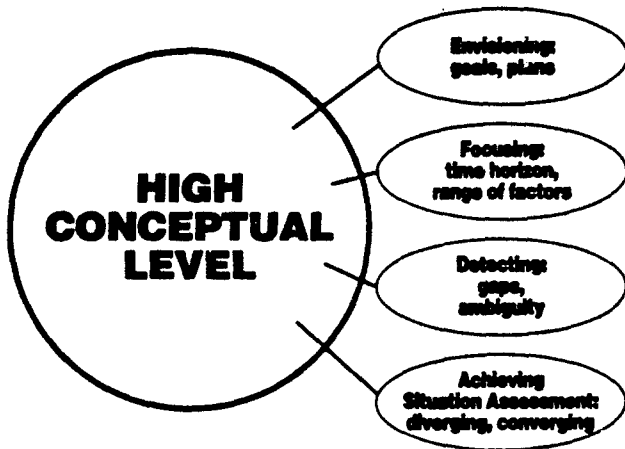
One key way that team identity is maintained is by avoiding micromanagement. Micromanagement occurs when team members manage information, tasks, or people at an inappropriate level of detail. It can divert teams from their goals, compromising the quality of their end products. For example, we once observed a large, multi-service team tasked with the complex goal of developing strategic plans to react to conflicts in two theaters simultaneously. The commander-in-chief (CINC) was unable to fulfill his oversight responsibilities at the higher level because he concerned himself with the tactics, not only helping to develop parts of the plans but giving all parts of the briefing himself. Unlike another, more advanced team we watched, the CINC did not ask his commanders to present their portion of the plan at the briefing. This meant he had to take up a great deal of his time being briefed by each of them so he could give the final briefing.

Basic level teams often fail to appreciate the damage to team identity which results when team members believe their leaders or managers are looking over their shoulders. The behavior often sets up a downward spiral, undermining the team by setting up:

- Confusion about who is responsible for which tasks
- Duplication of other team members' functions
- Interference with another team member's work
- Compromise of the team members' investment in the team task
- Denial of self-direction and -responsibility
- Distraction from the assigned role and functions of the micromanager

Understanding how damaging micromanagement can be to valuable team resources, advanced teams are primed to be aware of micromanagement behaviors and take corrective action when they encounter them. Sometimes micromanagement is caused by inexperienced or nervous leaders. Here, teams with a strong identity can often resolve the problem by simply discussing it, or the team can restructure some of the leader's functions to reduce the workload and overall nervousness. Other times micromanagement is a function of team members failing to provide feedback to others about the progress of their work. In this case, increasing the frequency with which members exchange clarifying and confirming messages about work in process can help resolve the micromanagement problem. Problems with micro-management can also occur when team members ask for help — and receive it from a leader or manager instead of a more appropriate team member, one who does not have responsibilities at a higher management level. Advanced teams are quick to relieve the manager from this inappropriate role and assign it to a more appropriate member when this occurs. Basic level teams may not even notice that they have essentially become a leaderless team, with no one at the helm.

Team Conceptual Level



Team Conceptual Level captures the notion of a team as an intelligent entity, a "team mind" that thinks, solves problems, makes decisions, and takes actions collectively on a level of complexity and sophistication that matches the demands of the task.

To get a better idea of what we mean by a team's conceptual level, think of a company confronted with the challenge of incorporating a new division into the organization in order to extend their product line. While the potential this new product represents is very exciting, the company must also deal with many complex issues related to the addition of an entire new division. So they call a meeting where all the key players are present—the vice presidents: of strategic

planning who maintains the company's growth plan; of finance who allocates the company's resources and tracks its profitability; of human resources who directs the staffing, compensation, and benefits for the company; of manufacturing who drives production and provides quality assurance mechanisms; of sales and marketing who takes the products to market and maintains customer satisfaction.

Like all teams, this one represents more experience, a greater knowledge base, and more diversity through its multiple members than any individual member would have alone. And drawing on this collective power of the team can lead to more creative solutions to problems, a richer assessment of the situation, and a greater ability to handle a wider range of factors during deliberation and contingency planning than what an individual can ever produce working alone.

However, it is difficult to handle the complexities of decision making as a team. Teams must expend effort to ensure that all their members share a similar understanding of goals, objectives, and situation assessment. In our example, the corporate team must put together a cohesive action plan based on a shared understanding of many variables and the alternative ways to handle them: will the new product require further R&D efforts? does the manufacturing of the new product involve an investment in new equipment and if so, how will the investment be funded? should the new division be managed and staffed with existing employees or does it require new technical expertise? can the existing sales force handle selling of the new product or will it demand a dedicated sales force? how will the company inform existing customers, prospects, the industry, and general public about the new division and/or product or should the addition be non-transparent?

If teams fail to maintain a shared understanding, they are more vulnerable than individuals to the possibility of producing plans that are disjointed, poor in quality, or impossible to implement. Teams can also fall victim to conformity pressures: failing to challenge a prevailing view at the risk of making inferior decisions. Or, they may adopt a view which represents a compromise among competing viewpoints yet which the team does not actually support at all.

Teams can capitalize on the power of their collective status and sidestep the pitfalls described above by practicing the processes which promote high conceptual level:

- *Envisioning goals and plans*
- *Focusing on the time horizon and range of factors*
- *Detecting gaps and ambiguities*
- *Achieving situation assessment by diverging and converging*

Envisioning Goals and Plans

Teams that operate at a high conceptual level demonstrate the ability to articulate both the mission (goals) of the team and the process (plan) the team will use to achieve these goals. The process of envisioning goals and plans requires specific, concrete language, put into a context relevant to the team members, both through examples that relate to their experience and through outcomes that contrast success and failure.

Most basic level teams we have observed fail to ensure that all team members have more than a minimal understanding at the outset about what the team is attempting to accomplish. In effect, these teams substitute an assumption that individual members share a similar understanding of the team's goal for the common understanding itself. Such an assumption can be fatal, especially if the team needs to break into sub-groups to develop various portions of the work. When the team then attempts to integrate the work of the sub-groups into a coordinated whole, they are likely to find differences that are irreconcilable in the time they have left to reach the goal.

Usually, the process of envisioning goals is the function of the leader. In military environments, the leaders of the more advanced decision making teams we have seen provide clarity for the team's overall mission by:

- Conveying a clear image of the desired outcomes
- Describing the outcomes that would count or fail to count as a success
- Providing a basis for determining priorities
- Presenting a clear image of how the team's mission fits into the larger picture

Where the leader's envisioning is less clear, advanced teams will either request the clarification from the leader or develop it through team discussion. They ask for this clarification at the outset rather than wasting their time pursuing vague objectives.

As teams advance to higher conceptual levels, they not only ensure common understanding of goals at the outset of their work sessions but they are primed to clarify them throughout their work sessions. This is particularly important since it is not uncommon for teams to lose focus on agreed-upon goals or for goals to shift. Goals may change for several reasons. Even though the mission statement is relatively firm, the mission itself might include competing or shifting goals. Or goals might need to be refined or even altered as the team becomes more cognizant of what is actually achievable.

In addition to envisioning its goals, the team must also determine the process they will use to meet their goals. Don't confuse these process plans with the kind of mission planning we've just discussed. There is a subtle but important difference between the "mission" plan — *what* the team will accomplish — and the "process" plan — *how* the team will approach the task. In our earlier example, the

company's mission may be to provide a smooth transition for the new division and product by ensuring that the product is ready for market, allocating appropriate financial and human resources, determining the best vehicles for communication with the public, etc. Their process, on the other hand, might include who is going to define the various alternative approaches, when the team members will need to complete this information gathering, and how the final decisions are going to be made. The distinction is subtle but critically important, since, like our company, the mission of decision making teams is frequently the development of plans.

The responsibility for envisioning the process plan also usually falls to the leader. Less advanced teams often let themselves begin work without good direction about how to proceed and struggle too long before they admit their confusion. Their "process" plan is not a plan at all, just the act of "muddling through." In some settings, this "process" works; in many, the lack of an actual process derails a team.

But the opposite can also happen: teams can spend more time than is available detailing directions to a greater level of specificity than is likely necessary to accomplish the team mission. The issue here is balance. Advanced teams are able to weigh the need for detailed direction against the time they have available to accomplish their mission. In cases where they are unsure about the appropriate level of detail and are pressed for time, we have seen teams with a higher conceptual level establish check points in the process plan, predetermined times for reviewing the process to make certain that everyone has sufficient direction on how to proceed. Setting these check points enables a team to begin taskwork, to "get going." Mental simulation — the process of visualizing where the team needs to be in their task by a particular time and what their work should look like by then — can be a useful tool in deciding where these check points should fall in the process plan. Such simulation has helped the teams we've observed to avoid dangerous pitfalls:

- Simplistic mission plans, the result of poor process planning
- Paralyzed teams, the result of teams too overwhelmed even to choose a starting point
- Failed deadlines, the result of teams bogged down in the process plan

In addition to avoiding these pitfalls, the advanced team also periodically checks to see if the team is on course with its process. A clear and shared understanding of the process is especially important if the original plan doesn't work or in the face of emergencies, allowing the team to improvise, create a modified or a wholly new plan, and still land on the targeted goal.

Focusing on Time Horizon and Range of Factors

Teams which operate at a high conceptual level also demonstrate the ability to focus their decision making within an appropriate span of time (time horizon) and on a relevant breadth of concepts and information (range of factors). Our company from the earlier example may have to develop their strategic marketing plan to introduce the new product within a month in order to preempt a competitor and simultaneously consider the wide range of potential economic impacts of adding a new division to the company. Further, this team would also need to look to the future — to anticipate the effects of this new product on their other divisions several years down the road.

Time horizon describes the focal distance at which a team is perceiving and reacting to the world, whether they see their task in terms of current or future events. The appropriate time horizon is a function of the mission and process plan of any given team. For a helicopter crew, the time horizon

may be the cue that is just beyond the next visible navigation marker. For a Division planning team, it's more like 24 to 72 hours into the future, and for higher level strategic planning teams, it could be 5 to 10 years into the future.

Establishing the appropriate focal point is a matter of balancing current and future events. Teams operating at a lower conceptual level typically focus too closely on the here and now, failing to maintain a focus that is far enough out on the time horizon. Advanced teams recognize and control for this tendency by concentrating on the final goal — and even beyond, to the consequences of the goal into the future. However, the opposite problem can occur as well. Teams can become so focused on the distant future that they fail to pay attention to current matters, resulting in short-run emergencies which concatenate into long-range disasters. To avoid being overtaken by the consequences of failing to consider early problems, advanced teams accommodate both the near and far time horizons.

As teams move from a low to high conceptual level, we have observed that they also become more effective at considering an appropriate range of factors in their decision making. This includes the sensitivity to a wider set of causal factors and to the allocation of its attentional resources so that different team members can capture and integrate different types of information.

During planning or situation assessment, teams we have watched usually suffered from too narrow a focus. It is common for teams at a lower conceptual level to concern themselves with only a sub-set of the total dynamics affecting a situation. For example, they might ignore non-military dimensions of a regional conflict such as diplomatic solutions or economic impacts. This typically happens when team members become too focused on generating sub-goals in planning or situation assessment and fail to assess their likely effects on each other or on the plan as a whole (i.e., first and second order effects.). Narrowing can also occur during execution when team members do not step back periodically to assess if their current status has evolved as expected, or if they are headed in the wrong direction.

But the opposite can also occur. Teams at a higher conceptual level are more successful than less advanced teams at recognizing when they are too broadly focused. When they are in danger of becoming paralyzed by trying to consider too many factors, they may simplify their analysis, break it down into more manageable components, or reduce the number of factors by collecting them into categories. If too many still remain, advanced teams prioritize their information so that the most important information receives attention before time runs out.

Detecting Gaps and Ambiguity

Teams operating at a higher conceptual level demonstrate the ability to discover and fill holes in the team's information base and assumptions and to recognize and handle inconsistencies or contradictions that might be present. We've observed many teams in exercises where gaps and ambiguities are a result of the information given to team members as a function of their different roles on the team. Thus, the intelligence officer may have a completely different perspective than the political advisor.

Ambiguities are not necessarily problems for a team in and of themselves; in fact, they may even provide a source for the development of divergent views since they represent opportunities for discussion and clarification as the team works through them. The problem occurs when decision making teams fail to detect or deal with these ambiguities. Gaps are harder to detect — it's easier to notice

differing or ambiguous information than it is to realize something is missing. We have noted that teams which operate at a lower conceptual:

- Fail to seek out potentially important information that is not immediately available to them
- Ignore what's difficult to reconcile

While these mechanisms for coping with information overload may temporarily reduce team frustration and threats to the team's time constraints, they are dangerous, compromising the ultimate quality of their team's work. There is no reason to believe that missing information is less important than what is readily available or that ambiguous information is unimportant. In fact, it is often the case that what you don't know can hurt you most.

Advanced teams actively attempt to detect gaps in information by scrutinizing what they've been given and by clarifying their assumptions about the information base. When gaps are detected, the team attempts to fill them rather than assuming they must continue to operate without this information. If the gaps cannot be filled, the missing information is noted, so that planning and decision making continues with this problem in mind.

Advanced teams may use mental simulation to search for gaps in a plan. As multiple team members visualize the information at hand with regards to the team's mission and process, gaps in the required steps, in their sequencing, or in their assumed consequences become more obvious. Sometimes these gaps are the function of an incomplete information base; sometimes gaps occur when the team has overlooked some logical steps in the process. Mental simulation can also uncover gaps in the way that various members understand the plan, providing the opportunity for clarification in order to reach a shared understanding.

In our experience, advanced teams are also primed to identify and reduce ambiguous information proactively, checking out quizzical expressions, for example, to determine whether the ambiguity is simply a misunderstanding or a genuine inconsistency. Basic level teams frequently fail to address even obvious potentials for misunderstandings. For example, they do not summarize key points following a lengthy description of a plan or of a situation assessment. Or, their members do not request clarification when they are vague in their understanding, unfortunately assuming it is reasonable to proceed with only limited awareness.

Less advanced teams also often ignore ambiguity due to inconsistencies, such as contradictory information, in the information base. Skilled teams attempt to decrease ambiguity by seeking more information, waiting for more of the situation to unfold, or reevaluating existing information. If ambiguity still remains, and deadlines are not threatened, teams at a high conceptual level maintain awareness of the ambiguity. They don't allow the team to become paralyzed by the ambiguity, but neither do they ignore it. If in time the ambiguity cannot be resolved, they incorporate it as a caveat or qualifier to likely success of plans and actions. Or, if the ambiguity is due to differing interpretations of the situation, advanced teams maintain awareness of these various plausible assessments in order to keep an appropriately complex picture of what might be going on.

Achieving Situation Assessment by Diverging and Converging

Teams operating on a high conceptual level actively seek a variety of views from team members about plausible situation assessments or plans. This process of seeking divergence can provide new insights into the decision making process or uncover critical problems which must be considered

before the team determines the final course of action. In one team we observed, for example, the CINC began a work session by polling each team member for his or her assessment of the situation. While explicitly polling each member exemplifies one important aspect of seeking divergent views, in this case it turned out that all team members saw things the same way. Thus, there really wasn't divergence in thinking about this situation. Rather than being overjoyed with the unanimity, the team decided they should take another 20 minutes to interpret the situation from the enemy's position. This exercise revealed a potential flaw in the assessment with dangerous ramifications for the success of the team's mission.

Unlike this team, the basic level teams we've observed often assume that the absence of voiced differences with a prevailing situation assessment or plan means that alternative interpretations of any significance do not exist. They accept the first plausible situation assessment that emerges, without a critical analysis of its potential for serving the team's mission. Then, they plunge headfirst into the creation or execution of a plan based on an unexamined assessment.

Even when divergence is voiced, inexperienced teams sometimes fail to keep track of it. During situation assessment, it is not uncommon to find that alternative interpretations vanish from the team's mind when a narrow majority favors one interpretation of events. This is particularly unfortunate if it later becomes clear that the selected interpretation is wrong, for then the team is unable to substitute portions of the rejected perspective that could have been useful.

Advanced teams value the different experiences and perspectives of their members which are manifested in different assessments. These teams do not just tolerate different viewpoints; they explicitly seek divergence from their members to sharpen and deepen their situation assessments and plans of action. Teams operating at a high conceptual level encourage diversity rather than suppressing it as an unwanted complication. Their commitment to the process of seeking divergence is so strong that advanced teams play devil's advocate when they do not uncover divergent viewpoints, reviewing the expectancies contained within their situation assessment and evaluating them for consistency with incoming information or the projected future. We have observed that even under severe time pressure, advanced teams remain aware of other existing perspectives and temper their actions accordingly.

There is an obvious interaction between the strength of team identity and the team's ability to successfully seek divergence. On teams with weak identity, members are often hesitant to voice dissent or differing views. Teams can overcome this hesitancy, even before they have established strong identity, by voicing their expectation for members to seek out and offer divergent views and for their intention to monitor one another for this behavior.

But again, the issue is balance — balance between getting a variety of views on the table versus attaining agreement before time runs out. When teams spend too much time seeking divergence and are forced to give short shrift to the convergence process, they can wind up with:

- False consensus on the accepted situation assessment
- Simplistic situation assessment
- Uneven understanding of the accepted situation assessment

So, for example, even though the corporate vice presidents from our earlier scenario may have expressed their very different views at the new division/product strategy session, the president hastily summarizes what she presumes constitutes the majority view as time begins to run out. Her assumption sets up a domino effect. Several vice presidents who disagree do not speak up, sensing the time

pressure as well. The vice president of marketing agrees with the president in principle but believes her solution lacks the power to help them anticipate and then deal with some of the counter-measures their competitors are likely to take — issues that the team did discuss but left hanging. Now, those issues seem lost all together as he too decides not to verbalize his concerns in the interest of time.

Worse yet, this silence also prevents the team from knowing if everyone shares the same level of understanding about the accepted situation assessment, critical information for predicting team mate behavior when the inevitable unexpected problems occur. Compensating for those problems — making the necessary adjustments — will be near impossible, just as it is when a team lacks a shared understanding of its goals.

Teams operating at a high conceptual level demonstrate the ability to reach a shared understanding across all team members of a commonly held situation assessment. While the corporate vice presidents from our previous example came to the new division/product strategy session with very different expertise and priorities, they were able to work through their distinct perspectives to arrive at a group opinion.

The more advanced teams that we have observed ensure that all their members understand the situation assessment before generating or implementing the plans which will flow from it. They appear to differ from more basic ones in another important respect: they are less likely to be derailed by changing situations than basic level teams because they recognize the need to reassess the situation when information changes. They analyze whether these shifts call for modifications to their plans or actions in order to reach their overall goal and ensure that these shifts in situation assessment are understood by all team members.

Finally, advanced teams are better able to develop complex situation assessments in cases where complexity is warranted. They can use mental simulation, for example, to take the perspective of the opponent, imitating the way the opponent would construe their situation assessment and using the simulation as a means to evaluate its adequacy.

Team Self Monitoring



The model's components of Team Identity and Team Conceptual Level are states of being, qualities which describe the extent to which a team has achieved a more advanced team decision making capability. We have described the critical behaviors or processes that help teams further develop their capabilities in both of these components. The third component in the Advanced Team Decision Making Model is a process in itself — a regulatory process for all of the other processes we have discussed thus far. Self monitoring is a master tool which helps teams promote advanced team decision making, moving from weak to strong identity and from a low to high conceptual level by determining how successfully the team is using key behaviors. Team Self Monitoring by definition is the ability of a team to observe itself while acting within its tasks.

Just as teams vary in how well they use these advanced team decision making processes, teams can also differ in the effectiveness with which they monitor themselves for the use of the behaviors. While the very name of this component — self monitoring — could imply that this process is a function of individual team members, the "self" here is actually the team. The collective body takes on the responsibility for the process. We have observed that successful team self monitoring is frequently a function of two of the most important diagnostic behaviors:

- *Adjusting*
- *Time management*

Adjusting

Adjusting is the ability to modify the way the team is performing when problems are discovered through the monitoring function. It is one thing, for example, to engage dutifully in the process of envisioning goals; it is quite another to sit back and assess whether all team members understand the goals clearly or to determine periodically if everyone is still headed in the same direction. As you've seen in our discussions of Team Self Identity and Team Conceptual Level, adjusting can be used to improve all of the advanced team decision making processes. Most significantly, the advanced decision making teams we've observed frequently and actively incorporate the adjusting process into their taskwork. They do this in an iterative fashion — watching, adjusting, watching again, adjusting again and so forth.

Advanced teams periodically step back from the task work to ask how well the team is doing. They consciously reflect on the processes they are using to accomplish their work. However, it is not enough for teams just to consider or even to alter their use of a process. When the advanced level teams we have observed determine the need for a corrective measure, they implement one and then reevaluate to see if it has solved the problem. We have also seen teams operating on a more basic level

who discovered problems through self monitoring, decided on a corrective, and then stopped monitoring, failing to check out whether the corrective worked. Worse yet, one team determined the need and approach for a corrective and then because of poor time management failed to implement it at all.

We can sum up in one word what a team develops when it exercises the process of adjusting: insight. The act of watching the team for its performance on all the processes associated with team identity and conceptual level, and adjusting or changing its performance when problems are discovered is how insight is learned and team performance ultimately improved. Insight involves having a mental model about how the team should be operating — a mental model that includes a set of expectancies about what the team should look like and what it should be doing. The expectancies concern many things, but the most important ones are the processes associated with team identity and conceptual level.

As the team practices its monitoring of these processes, it develops skills in knowing where to look. As the team tries to improve its use of the processes, it learns how to adjust. By making these changes and recursively monitoring their effects, teams learn how to become vigilant in self monitoring, and they confidently handle new challenges and requirements.

Time Management

Time management is the ability to meet goals before deadlines overtake the team and to sequence sub-tasks effectively so that output from one task becomes timely input to the next one. Inexperienced teams frequently jump directly into a task without considering the amount of time they should allocate to each portion of their activities. The more advanced teams we've observed create schedules and work steadily towards their milestones. They check periodically to see if they are meeting these deadlines. And when their projections indicate that they will not be able to accomplish all the tasks they had originally planned, they re-prioritize so that the most important ones can be completed. They also keep all other team members informed about these changes.

Even teams with developed time management skills may fall victim to inconsistent monitoring of their schedules. They work steadily toward their deadlines, only to realize at the last minute that various portions of their deliberations or product just don't fit well, or that parts are missing altogether. Advanced teams often set up trigger-points to alert them to approaching deadlines and guard against the dangers of focusing entirely on the task work. Sometimes as a deadline approaches, a team finds that the general quality of their product is satisfactory, but realize too late that their work could have been vastly improved with only a little more time.

Protecting that last segment of a work period for review and final revisions is difficult in the midst of competing demands, but it is often what distinguishes an excellent product from a mediocre one. Without this protection, teams lose their ability to monitor and manage their team identity or conceptual level, breaking down into a flurry of activity just prior to a deadline. The result is frequently work which comes frustratingly close to success, but doesn't quite hit the goal.

To avoid this last-minute breakdown, we have observed that more advanced teams build cushions into their time schedules, particularly when they are less experienced with the task at hand. They understand that unexpected additions to their tasks and unavoidable difficulties are more common in this scenario, and use that knowledge to gauge the size of the cushion they will need.

CASE STUDY

What follows is a case study of a decision making team engaged in an exercise conducted at a senior service college. We chose an exercise as our case study because it is immediately applicable to your activities at ICAF this year. However, we believe you will find that the model is even more valuable for "real-life" team decision making situations. As you read through the descriptions of the team's mission, the background information they were given to accomplish their task, and their general practice of team decision making behaviors, be aware of this team's Self Identity, Conceptual Level, and Self Monitoring. Evaluate how successfully they practice the various processes we've examined in the description of the Advanced Team Decision Making Model.

At the end of the case study, we analyze the team's performance by evaluating how they used these specific processes which promote advanced team decision making. Because not every process plays an equal role in the case study, our discussion focuses on those processes which the team either used well, failed to use, or misused.

The exercise scenario simulated a six-month period, compressed into three days of exercise sessions. The team's task was to develop alternative courses of action for the President to consider as the U.S. response to the unfolding situation.

The hypothetical situation concerns two real countries — however, the names have been changed here, as well as some of the background information. The scenario involves a potential threat to Moreva, an ally to the U.S., based on a developing situation which involves its neighbor to the west, Toldornia. The U.S. does not have diplomatic relations with Toldornia.

As the exercise begins, the situation is one of probable hostility between the two countries. The team knows the scenario can change at any time, and that they will be given updates about it as the exercise progresses. They also know that the alternatives they generate need to be consistent with political, economic, and military constraints and objectives described in their exercise materials. These are to be updated or changed periodically, as the situation evolves. Additionally, the team is to respond to diplomatic considerations from the international front which are under continuous flux as deliberations at the United Nations and various other multi-national organizations continue to evolve over the course of the crisis.

***Background:** Toldornia has conducted a series of small-scale military exercises over the previous two years. These culminated in a large-scale mobilization and military exercise that has included the recent movement of sizable forces closer to a de-militarized zone that separates the two countries. (This zone had been established following a civil war 20 years earlier, which had resulted in the formation of the two countries.)*

Reliable intelligence indicates that Toldornia is planning to begin DMZ confrontations, and is prepared to go to war. The exercise materials explain that one plausible reason why these activities are taking place at this particular time is that Toldornia feels it is running out of time to negotiate reunification under terms favorable to them. This assumption is derived from the fact that Moreva has been experiencing increased social cohesion, due to greater democratization and economic development. Toldornia sees a window in which to fuel the reunification fires while taking advantage of Moreva's economy to solve their stagnating economy at home.

Both countries espouse an interest in reunification, but only if they can do so under conditions that meet their political and economic interests. The U.S. and its allies maintain a strategic interest in that portion of the globe, as does the coalition of governments that support Toldornia. Therefore, global involvement is expected if the two countries enter into a confrontation.

The Exercise

The team consists of a commander-in-chief (CINC), several staff members — an assistant, a political advisor, an intelligence expert, a logistics specialist, and an operations specialist — and a commander from each of the services. As the session begins, the CINC is reminding everyone that they have all received their exercise instructions last week, “. . . in plenty of time to read everything. I’ll just remind you that the materials include a mission statement, a schedule of when our alternatives are due each day, and background information about the situation that’s relevant to your role. We’ve got a lot to do in just a little time, so, if you have any questions, just look in your exercise booklet to find what you need — let’s not bother each other about information we can find on our own.”

“You all know I’m the CINC this time. I’ll try to stay out of your hair — commanders, I’m sure you can do your jobs. Why don’t you take a look at whatever you need to be worried about, given the material in your packets. I’ll work with my staff here for a while.”

As the two groups re-seat themselves into two clusters at opposite ends of a large room, one of the commanders and the political advisor remain in their previous places and begin reading through their materials — it appears they had not read them before. Both groups begin without these two people.

Within a few minutes, the rest of the CINC’s group assemble, and two of the members begin a discussion. They throw out pieces of information about Moreva and Toldornia that were contained in their exercise materials. Several other members begin doing the same.

Some of the information appears contradictory — the team becomes increasingly confused. For nearly half an hour the members continue in this vein. Then, the assistant CINC observes that they all had a lot of material — “Just look at the stack of stuff we’ve all been given. We’ll never get through it all this way.” They all look to the CINC, who says he thinks most of their work has already been done for them — “There’s a plausible description of the situation in our exercise material — why don’t we just go with that as our starting point?”

They agree, and begin bringing up information from their materials about events in both countries over the last two years that support that view. They do not return to any of the previously-mentioned contradictory information. They emphasize the recent military build-up near the DMZ, and Toldornia’s “now or never” attitude about taking drastic steps to hasten reunification.

The team’s discussion then turns to speculation about just what Toldornia would do. Three of the members engage in the majority of the conversation. It takes a considerable amount of discussion, but they finally agree that it would be logical for Toldornia to begin with DMZ infractions, then to launch an all-out war against Moreva. They assume that Toldornia would move swiftly and forcefully against the capital, Yalkap, which lies close to the DMZ, since Yalkap is difficult to defend without loss of civilian life. Further, they assume Toldornia could be successful in demanding reunification under terms that are more favorable to them than to Moreva, since Moreva would not want to risk widespread destruction within Yalkap. Last, the team reasons that even if Moreva does not initially agree to

reunification, it is likely to lose Yalkap before it can establish a new defensible border, which would probably lie to the east of Yalkap and the existing border. Thus, they feel that Moreva will soon be faced with two bad choices: Accept reunification on unfavorable terms, or retain independence but lose Yalkap.

The team is now about one hour into their exercise session, which is scheduled to last three hours. The members of the other sub-group wander over to the CINC's group, as had the two members who had been reading through their materials at the start of the exercise.

The CINC asks the commanders, "Have you figured out what you're likely to get?" (meaning, what air, land, and sea assets and forces they were counting on from the U.S., its allies, and Moreva).

The two commanders who had been working together say they figured that out within the first ten minutes — "We just put together a few of the lists and memos that were in our packets and came up with the combined forces and assets we could count on — you know — just in general terms. Like where they are, how long it'll take to get them in place, what their support requirements will be. We've been waiting for you to let us know what to do with them — to tell us what the types of responses are that we'll give to the President so we can work some feasibilities for you."

The Naval commander who had been reading during the time that these two were meeting says, "What about the naval forces?"

"We figured you'd plug in your information — your analysis — when you got done."

The intelligence officer asks if they have taken into account the possibility that Toldornia might use chemical weapons, and how that would affect the force structure they plan for.

"No, we didn't — that wasn't in our information. Was it in yours? We just got a look at what our maximum strength might be — we didn't look at special problems."

The political advisor asks, "Well, what about the problem that's brewing in the mid-central region — we may need to commit some forces there in the near future...did you factor that in? And there's that consideration about using our forces to transport and distribute food in the lower Lantrell region where the famine is spreading. You know how the Secretary of State is pushing us to change the image of our forces — that new idea of 'forces for peace'."

"No, that wasn't in our packet — we're waiting for some guidance about those sorts of things."

The CINC says, "OK, I can see we've been wasting some time here — let's get moving. Let's build some responses for the President." One of the CINC's staff asks: "So what are we saying? That we expect Toldornia to initiate the hostility, and we want to be able to defend?"

The CINC replies, "Well, that could be one, but I think we're also saying we need to preempt that thinking on the part of Toldornia — that we need to have such a huge show of force that they won't even think of starting anything."

"How are we going to get world opinion in our favor for that? You know they said in that memo we can't count on international support for a move like that — you know, because of the potential oil embargo if our intentions are read wrong."

"Why would our intentions be read as anything other than they are? We can use our diplomatic routes to be sure our intentions are known. We'll get world opinion on our side, all right. They'll be just as scared of this situation as we are — they'll be looking to us to keep a lid on everything."

"I'm not so sure. There's been some recent history that might worry some of our allies, let alone the countries where we don't have strong relations."

"Well, we can't know about that, and we've got to get some responses together. Let's just assume we can convince everyone (of our intentions) — and if the President doesn't like that alternative, he doesn't have to go with it."

Another member says, "Yeah, but suppose we do start moving forces — Toldornia will know it. It'll be like lighting a fuse under them. Either we've got to figure a way to be more invisible, or cloak our intent with a convincing alternative explanation."

"Or else we've got to take the pressure off Toldornia — figure out another alternative for them besides attacking Moreva — give them a way to improve their situation short of the attack."

The conversation continues in this fashion for another 30 minutes. The CINC, who is becoming increasingly nervous, says they really must close off the discussion and produce some responses to give to the President.

Several members resist, saying they haven't even gotten to other issues that could impact on the responses they develop, but the majority of the team agrees that it is too late for more discussion and analysis.

In the remainder of the session, the team tries to produce three different responses for the President, based on a plausible assessment of the situation. All three responses are focused almost entirely on assumptions about the two countries; they take little notice of the many pressures from other portions of the globe that could interact with the Toldorian situation, even though some of them had been brought up by team members earlier.

The CINC asks his assistant to record major points of agreement among team members as they hurriedly generate their three responses. The assistant does so, but not in public view. When the CINC eventually briefs the President's Chief of Staff (played by the instructor), his material is based on one team member's impression of the whole team's ideas, along with his own. After the briefing, several team members tell the CINC that his briefing did not capture the essence of several of their important discussions.

The Chief of Staff's reactions to the team's set of recommended responses include questions about:

1. the long-range implications of each response they developed
2. contradictory information contained in their materials that could lead to interpretations besides the plausible one described in their exercise booklet — why hadn't the team considered several other scenarios and a response to each, rather than a single scenario with three different responses to it
3. conditions in other parts of the globe that could impact this situation
4. diplomatic as well as military responses to the situation
5. what led them to believe that they could count on international support for two of their responses, both of which would fail without it

6. the need to address the immediate threat of chemical warfare
7. a few geographic constraints that were not adequately addressed by the responses.

The Team's After-Action Review Session

The team expressed frustration that several of the Chief's criticisms had come up during discussion, but had not been dealt with. Other members said a lot had come up, there was no way to deal with everything that came up, and they only knew by hindsight what turned out to be important.

Another member said "Hey, guys, that's the way things are in real life, too. We've got to get a better handle on how to anticipate things, how to incorporate more information and ideas."

"Yeah, that bit about geographic constraints was easy — we got most of them...I can't believe we missed those other few."

"I didn't miss them — don't you remember when we talked about them?.... I thought you were going to go back over the responses and incorporate the changes we suggested."

"We talked about a lot of things...."

The CINC, who appeared both defensive and apologetic for the team's mediocre showing said, "Well, I think we can handle this assignment. I think we just have to do a better job of working as a team. We've got people here with a lot to offer — a lot of knowledge, a lot of experience. We missed the big picture here today — we got bogged down with too many ideas."

"But I thought we wanted to generate a lot of ideas and pick the best of them."

"Yeah, I know, but we need to think bigger with them. We could have come up with better responses if we had more time...or if we used it better. Tomorrow, let's work harder on coordination and teamwork. And, let's all come prepared having thought about the new material they'll give us for overnight reading."

"How are we going to handle all the information? We may have had a lot of ideas here today, but they sure didn't cover everything they needed to."

"Let's just try to watch for that and interject when we think the team is forgetting something. We're all experienced people here. I think we can handle this."

The Analysis of the Team

OVERVIEW

The CINC's approach to the situation was to give the team a pep-talk. While he did put his finger on some of the problems — not looking at the big picture, getting bogged down with all their ideas, and the need for better teamwork, neither he nor any of the team members worked towards specific changes they could make in the subsequent session.

Sensitivity to problems is a necessary first step to solving them. But without a plan for addressing difficulties and helping people know what to do differently the next time, chances for improvement are slim. Further, without knowing how to systematically diagnose the full range of problems, the team can miss several that can wind up derailing it.

Unfortunately, few teams happen to have members who are aware of the key behaviors that need monitoring and managing. Most teams ignore their decision making processes altogether, or else they struggle with a haphazard review much like this team did. A more structured review session and systematic evaluation of key behaviors addressed by the Advanced Team Decision Making Model would have allowed the team to identify specific ways to improve. In the following sections, we provide a critique of the decision making processes of the team presented in the case account. While the issues presented are ones that we would have addressed in a feedback session with this team, we typically would not deal with every process or every one in the amount of detail which follows. Even relatively advanced teams would be overwhelmed by so much information. For the instructional purposes of the case study, however, we wanted to discuss all relevant team identity and team conceptual level processes to enhance the learning potential of the exercise. We examine all processes except for avoiding micromanagement, which wasn't an issue in this particular situation. We also offer ideas about how the team could have done things differently and suggestions for remedying some of the problems they encountered.

ENVISIONING GOALS AND PLANS

Envisioning goals and plans was essentially absent as a team process. The CINC began the session by stating his assumption that most information, including the mission statement, was contained in their exercise materials. It was as if he felt it would insult their intelligence and waste their time if he went over the obvious. And, no one from the team questioned whether it made sense to begin without this clarification. Nor did anyone ask for clarification during their work session.

If the team had evaluated their use of that process during the review session, they would have discovered its absence. Most probably they would have resolved not to begin their subsequent session without having a better sense of what their goal was. They wouldn't have wasted as much time during their disjointed discussions if they had begun by envisioning what would count as a successful set of responses and maybe contrasting that to what an unsuccessful product would look like. For example, they needed to consider political and well as military responses to the problem. International support for the responses was also important. The need for a bigger picture would have emerged from this envisioning of the goal.

Also of major importance for this team was a process plan, and some time management of that plan. It's not as if the CINC was unaware of the need to manage time — he did remind the team several times of the need to "get moving." But, a more detailed plan of how to approach the problem, and how much time to devote to various steps in the approach was needed.

If the team had taken the time to develop a process plan, they would most likely have realized that the commanders' team would need to meet for only a short while to discover maximum assets and forces. They could have been given other tasks, they could have re-joined the larger group sooner, or they could have worked with staff members like the political advisor who had some information that they didn't — such as the threat of chemical weapons and the possible use of forces elsewhere.

More important, they could have laid out the steps they would need in order to generate the responses, estimating the amount of time it should take for each. Also, they could have set check points where they would stop to evaluate whether they were still on course.

DEFINING ROLES AND FUNCTIONS

The team got off to a poor start partly because the CINC assumed that team members had a firm grasp on how each others' roles and functions would work in this exercise. This was a risky assumption, and none of the other team members questioned it. While it is common in scenarios like this to divide tasks into command and staff functions, there is no reason to believe that team members would have an understanding of what particular tasks they would need to address, given this specific exercise and their assigned role in it. This assumption was not warranted, as evidenced by the commanders requiring only ten minutes to do what they thought was initially expected, and then waiting an hour before approaching the others to see where they were in their work as it might relate to their next task.

Another indication of a poor start for this team was their lack of awareness of the perspective each person would be representing during decision making. The best teams we have watched have asked each member to briefly state how they interpret the information they have, or what information they are particularly sensitive to, given the perspective of a political advisor, for example. In this case, there would have been a big pay-off to this behavior. It would have aided in clarifying what kind of information any particular team member might expect from another, or who should be on the receiving end of some data analysis (the common pay-off). In addition, the team would also have been likely to discover that each person had some information that the others didn't — that it would be very important to get this information onto the table.

COMPENSATING

A subtle yet powerful example of the need to compensate happened toward the end of the exercise. When the assistant CINC was asked to summarize and record the major points of agreement among team members he did exactly what he was asked to do. But he was so locked into capturing the ideas, that he failed to present them to the rest of the team as he was summarizing them.

They had no opportunity to determine if he was capturing their thoughts as they intended them. An example of compensating would have been for another member to step outside his or her role to get some butcher block paper and write down the summary in full view of the team. Or, if none was available, some one could have requested the Assistant CINC to read each point as he complete it, to get the team's reaction to his wording.

ENGAGING

The political advisor and the naval commander did not engage in the first hour of the collective task because they were not prepared — they needed to spend time reading through the materials. We have observed this in many teams and the behavior is usually ignored, as it was here. These members were lost resources to the team during the initial work period, and a message was sent that this was okay. A better approach would have been to ask how long they would need to get up to speed, and to figure out the best way to proceed without them until they could join in.

Second, having seen that this was a problem in the first work session, the CINC should have asked at the end of their review session if everyone would be able to come prepared the next day. Instead, he

just told everyone to think about their over-night reading. Either he, or another team member should have asked if everyone would be able to do that. If not, they could have generated a plan to re-allocate some roles and functions on a temporary basis.

DETECTING GAPS

One of the early steps would have been to poll the team members for their understanding of the situation. Differences across members about their understanding would have alerted them to differences in the information provided to them in their exercise packets. The team appeared unaware that the political advisor and intelligence officer each had information that the others did not have. Even when the team discovered (by accident) that they had been given different sets of information, they did not then redirect the ongoing discussion to find out what the full range of factors was.

Nor did they keep track of what information the team was missing in order to later develop responses that were compatible with all of it. The step of evaluating their responses for this compatibility was entirely absent.

DETECTING AMBIGUITY

Another problem with this team was their inability to deal with contradictory or ambiguous information. They became confused by it. Instead of explicitly exposing contradictions and ambiguities in the information base, they threw them into the discussion and then ignored them.

Suppose the team had made a deliberate attempt to get the full range of factors out on the table before beginning to develop their situation assessment. Any contradictory or ambiguous information could have been noted, so they could try to resolve it. Likewise, they could have searched for gaps in the information base, and tried to fill them. Remaining gaps or ambiguity could then be noted so that caveats could be attached to their responses, describing them as feasible under specified interpretations of the data. Later, if the factors changed (the team had been forewarned that the situation would change over time), the team could adjust their responses accordingly.

This process would also have helped them focus on an appropriate time horizon. Some of the factors required them to deal with immediate concerns (was an invasion imminent?... were chemical weapons likely?), while others needed a longer view (what's the likely long-range implication of each response?). According to the Chief of Staff, their responses did not address either of these.

SEEKING DIVERGENCE

The team was willing to surface and discuss differing opinions. However, these opinions were limited to small segments of the information. After they had explored the range of factors to be considered, the team could have sought a variety of different situation assessments and possible responses from its membership. Although one team member offered a creative response (i.e., helping Toldomia to improve their situation so aggression against Moreva didn't seem so attractive), the team didn't keep track of it or discuss it as a viable option. Later, when pressed for time, the team's memory for that response had vanished.

In this case, the team created only a single assessment of the situation. Actually, they adopted an assessment provided in the exercise materials but ignored the fact that it was identified in the materials only as one possible view. When a single assessment is all the team can produce, one tactic it can use

is to take on a devil's advocate role of challenging the assessment. For example, this team did a reasonable job of mentally simulating how Toldornia would attack Moreva. But, only three of the members engaged in that discussion. Some of the others could have challenged their reasoning during the simulation. This might have led to a realization that this particular scenario isn't necessarily the most likely one. Or, it could have led them to realize that while this scenario was consistent with the one suggested in the exercise booklet, they had never sought evidence to support other plausible ones.

The team neglected to evaluate whether members held a shared situation assessment and response. Rather, the Assistant CINC recorded his version of what the team was saying as it hurriedly tried to throw together the responses as their deadline approached. At a minimum, this should have been done in full view of the team so they could verify his summary, and so they could revise their decisions if necessary. Beyond that, a reasonable amount of time should have been set aside to discuss differences in situation assessments, and to develop one (or several) that the team agreed on, so that it could develop its responses.