

Issue No. 2 - 1982

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The OE Communique

The *OE Communique* is published quarterly under the provisions of Chapter 5, AR 310-1. The Mission of the *OE Communique* is to provide state-of-the-art information on the application of the Organizational Effectiveness (OE) process in units and organizations throughout the Army. The *Communique* seeks to provide a forum for the exchange of innovations and lessons learned in the use of OE techniques and to foster the development of research and evaluation methods for determining the contributions of OE to combat readiness. The *OE Communique* endeavors to develop closer ties with all OE Consultants and to provide a supplement to their continuing training. A major objective is to provide commanders and military and civilian leaders at all levels with practical and timely information for use in initiating and sustaining OE operations.

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The use of masculine pronouns to refer to both sexes has been avoided in the *OE Communique* whenever possible. An author's pronouns are used, however, when editorial changes might result in introducing unintended nuances.

Beetle Bailey cartoons are adapted and used with permission of the artist, Mort Walker.

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Commandant's Comments

COL William L. Golden



Force Modernization, the theme for this *Communique* issue, is the Army's toughest *systemic* challenge.

Three quotes, all from the same source,** seem appropriate, lest we take ourselves *too* seriously:

Beatt's Ruminations #1:

Ours is the age which is proud of machines that think and suspicious of men who try to.

The Systems Paradox:

People in systems do not do what the systems say they do.

The Law of Communications:

The inevitable result of improved and enlarged communications between different levels of hierarchy is a vastly increased area of misunderstanding.

Excerpts from addresses delivered to OEMC and OECC classes are printed in this issue. MG Augerson, speaking to OECC #1-82, discusses the precedent for an OE role in combat. He addresses the very MISSION of the Total Force Army and highlights the potential value of OE Consultants as TO&E assets.

LTG Becton, speaking to OEMC #2-82, states that Commanders and OE Managers are not always using their OE Consultants to full capacity and for maximum effect. His point is well taken and reminds me of a similar statement by Jay Beecroft: "Line management has been the victim of consultants and trainers who work harder and harder at doing the wrong things better and better."

"Motor Pool OE" is fun, and, yes, our graduates are capable of doing it well, but how are you gonna keep 'em down in the motor pool after they've seen Force Modernization? (And why would you *want* to?)

The articles and interviews contained in this issue are here to give readers the "big picture" of Force Mod. The next step is for all of us to immerse ourselves at our respective levels. We need to ply our wares as "expert" consultants in the areas where the Army most needs our help.

Expert: I'm inclined to award the title to those whose opinions agree with my own.

—Malcom Forbes

That is not what *expert* means to me; I prefer the following thought, also by Forbes:

Executives [Consultants] Who Get There and Stay suggest solutions when they present the problems. Those who don't, don't.

You don't become an expert in consulting to the issues surrounding Force Modernization without immersing yourself in the realities of those complex issues.

Idealism increases in direct proportion to one's distance from the problem.

—John Galsworthy

**From *1001 Logical Laws*, compiled by John Peers, edited by Gordon Bennett, 1979.

Rather, let us dive in, with our special expertise and our systems perspective:

"We need to understand the reality around us—the reality of the whole. The best social science reporting comes from journalism, not from researchers. Norman Mailer's 'Of a Fire on the Moon' is an excellent example of someone's immersing himself in and trying to understand a large complex system, rather than fragmenting it."

—Peter Vaill

A "systems" approach dictates that OE Consultants continue to focus on the implementation of *all* Total Army Goals. To overemphasize one at the expense of others is to take a *sub*-systemic view, thus diluting the potential impact of OE.

The Total Army Goals are printed here to serve as a ready reminder to those of you who do not have them displayed on your wall.

Total Army Goals

The mission of the Total Army is to deter any attack upon U.S. national interests and, if deterrence fails, to engage and defeat any enemy in any environment.

★ Readiness

A Total Army prepared for the "three days of war": to deter the day before war; to fight and win on the day of war; and to terminate conflict in such a manner that on the day after war, the United States and its allies have an acceptable level of security.

★ Human

A Total Army composed of military and civilian professionals who loyally serve their nation in rewarding careers.

★ Leadership

A Total Army whose leaders at all levels possess the highest ethical and professional standards committed to mission accomplishment and the well-being of subordinates.

★ Materiel

A Total Army equipped and sustained to win any land battle.

★ Future Development

A Total Army sensitive to innovative approaches to accomplish its mission.

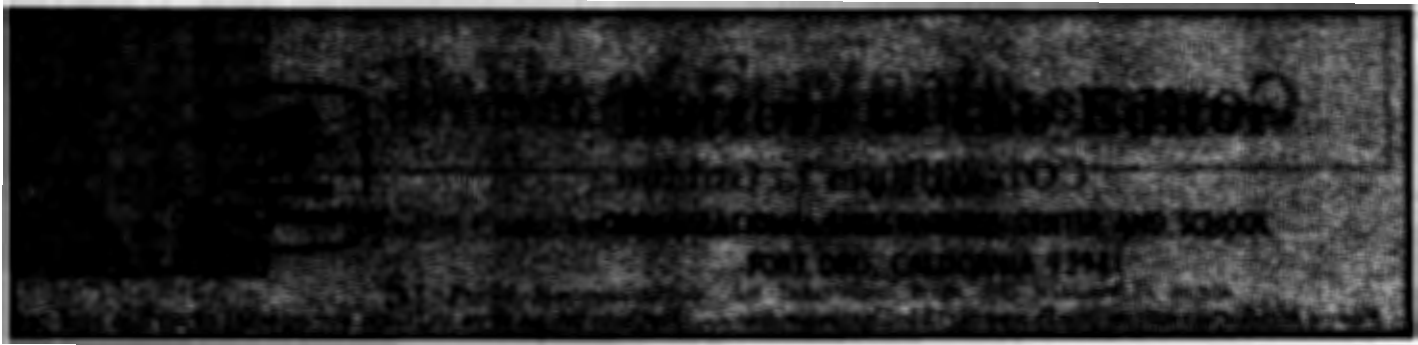
★ Strategic Deployment

A Total Army organized, manned, and equipped so as to be capable of deploying, with transportation assistance, to any part of the globe to counter a wide spectrum of threats.

★ Management

A Total Army which efficiently and effectively uses the resources made available.

"*Be All You Can Be; Implementing Total Army Goals*" is the theme for the next *Communique*. Do good work, document the results of your efforts, and report your accomplishments for the benefit of all. □



Dear Captain Boice:

The management faculty at Capitol Campus are most impressed with the *OE Communique* and have requested its addition to the library. As an organizational psychology graduate at Michigan, I heartily agree. The quality is first rate.

Unfortunately, we have a problem. As far as I can tell, *OE Communique* is not indexed. This makes it difficult for our students (or any others) to access. Have you considered having your publication indexed in *Business Periodicals Index* or *Personnel Literature* (U.S. Dept. of Labor)? If not, I strongly suggest you do so. Three major benefits might accrue:

1. The cost of preparing your own index might be eliminated.
2. Military students, for example Army War College students who often use this library for management information, will find *OE Communique* indexed with other management material. Use of and reference to *OE Communique* would thus be regularized and increased.
3. The excellent work that you are doing will come to the attention of those outside the military. For example, several of our faculty now read your publication after being led to it by a professor who is a Colonel USAF reserve and our Associate Provost who is a Brigadier General in the National Guard.

Keep up the fine work.

Sincerely,
Charles Townley
 Head Librarian
 The Capitol Campus
 Pennsylvania State University

Thanks for the excellent suggestion! We have requested to be indexed accordingly.—Editor

Dear Col Golden:

We have used Implications Charting to map potential impacts of a new performance appraisal/classification system. Having used it with over 16 groups, Major to Senior Executive Service (SES) level personnel, command wide, it has proved useful to —

- a. Identify "hot spots" that must be treated carefully.
- b. Facilitate understanding of key players who impact the project and reduce the level of "doubting Thomases."
- c. Further enhance the market value of Organizational Effectiveness to participating managers.

At times, the scoring methods were cumbersome; limiting probability/desirability might streamline this problem.

I found Implications Charting an extremely useful



OFFICE OF THE ASSISTANT SECRETARY OF DEFENSE

WASHINGTON D.C. 20301

COMPTROLLER

Colonel William L. Golden
 Commandant
 US Army OE Center and School
 Fort Ord, CA 93941

8 JUN 1982

Dear Colonel Golden:

To my good fortune, I have stumbled upon Issue #4-81 of *OE Communique* and its insert, the OE Planning Calendar. They are so stimulating and useful that I am writing to request our office be added to your distribution list, if possible. Please use the following address:

Special Projects Group
 ODASD (Cost and Audit)
 Room 4B-929 Pentagon
 Washington DC 20301

Thanks for producing such a fine publication!

David L. Click
 DAVID L. CLICK, COL, USA
 Acting Director
 For Special Projects

management tool. All Organizational Effectiveness personnel should know the technique. Please commend Mr. Goodfellow and the *Communique* for giving us one more way to grease the organizational gears.

COL Clifton R. Goodwin
 Deputy Commander
 Headquarters, US Army Electronics Research
 and Development Command
 2800 Powder Mill Road
 Adelphi, MD 20783

Editor's note: For information on Implications Charting, see "Managing the Future: A Process for Dealing with the Possible," by Bob Goodfellow, *OE Communique* #4-81, pp. 22-25.



OE Communique Staff

Coy Brown, Larry Boice, Bob Britsch, Steve Lanagan, and Jo Ann Horton

Force Modernization: An Interview with MG Richard D. Boyle

(Conducted by CPT Howard Brosseau and LTC Bob Radcliffe, TRADOC)

MG Richard D. Boyle has been the Deputy Chief of Staff for Combat Developments in TRADOC for nearly a year. He graduated from the United States Military Academy and received a PhD in nuclear physics from the University of Virginia. He has attended the Field Artillery School, the US Army Command and General Staff College, and the US Army War College. He was the Deputy Commander of the Seventh Corps and the Commander of the 56th Field Artillery Brigade in Europe, positions closely involved with force modernization in the field. In past years, he was involved in the testing and the development of nuclear weapons systems. His unit conducted the service test of the Pershing 1A system and he was closely involved with the Pershing system as it evolved from the old P1 system to the P1A and then to PII. In many positions, especially within the nuclear field, he has been closely associated with force modernization for about 16 years.



The following interview was conducted on 17 April 1982 in MG Boyle's office at TRADOC Headquarters.

Editor's note: The questions used in this interview and in the interview with MG Anson, also in this issue, were developed by CPT Bill Barko.

Communique: Sir, what do you see as the major challenges facing you as the TRADOC coordinator of force modernization?

MG Boyle: The biggest challenge that I see might be somewhat surprising, but it is the need to get the everyday nuts and bolts to the field. We spend billions of dollars

developing new equipment, much of which is highly technical and requires a great amount of study, research, and developmental effort. Yet the force modernization process is critically dependent on getting to units such everyday items as trucks, radios, generators, and a whole variety of other equipment that is pertinent to the soldier and the soldier's organization. Also, the soldier must be trained and available at the right time. This does not necessarily involve high technology. I think we can handle high technology rather well, since many people work on it and we spend so much money for it. The important issue in modernization must be to get the necessary equipment to the soldiers, and to provide the documentation for the organization itself. This detailed nitty gritty work will bring the organization into being.

Communique: Would you briefly highlight how the Force Modernization process impacts in the areas of doctrine, training, structure, and equipment?

MG Boyle: We are establishing now the doctrine that will have a tremendous impact on future battlefields, particularly in the intelligence and electronic warfare (IEW) areas. We haven't had the quality of IEW equipment that we will have in our Army, and doctrine within which we will operate is evolving. This is a difficult area because in most cases, we don't know all the details of this equipment. We know what we want, but don't know how it will operate, the shape it will take, how many soldiers are needed to operate it, and in some cases, all that it will do for us. All this has to be worked out. We are going to need a much newer doctrine as we approach 1986 and beyond. Of course, people in TRADOC have been working feverishly for several years to develop that doctrine and I think they have done a good job, but there is still a long way to go. Doctrinal development will continue over many years as this equipment comes into the active forces.

In the training area similar problems arise. With some complicated equipment we have only a sketchy idea of what the equipment is going to be like; therefore, we don't



LTC Robert F. Radcliffe is the Chief of the OE HQ TRADOC. He is responsible for management of the OE Program within TRADOC and for headquarters internal and command wide external consulting. An Aug 78 graduate of the OE Consultant Course, he has an undergraduate BS Degree from USMA and Master of Education Degree from Georgia State University.

CPT Howie Brosseau, a 9 October 1981 graduate of OECC, is an Organizational Effectiveness Consultant at HQ TRADOC. He has a Master of Arts Degree in Industrial/Organizational Psychology and a Bachelor of Science Degree in Physical Education.

yet know how we will train soldiers. We don't know how many soldiers we will need, what the training POI should have, and what the overall effect on the Army's training program will be. TRADOC is working hard on the problem, however, and in most cases has plans well in hand.

As we move this new equipment into our active units, we are also going to have to train other units, particularly in the National Guard and Reserves, on some of the displaced equipment from the active elements. In the next 10 to 15 years this process of acquiring new equipment, training the troops, and making organizations combat ready on a whole host of equipment will require tremendous energies and foresight to the extent of which we have only begun to envision.

Communique: What do you see as the impact of force modernization on the role of tomorrow's leaders?

MG Boyle: I don't believe we fully comprehend the great combat capability we are going to have in the future. We could be just in the early stages of understanding the capability of our weapons systems and our electronic

warfare and intelligence equipment. We will be significantly more capable than we have ever been before. It will take, however, better training, new outlooks, and new roles for the leaders of tomorrow. Consider that, in battlefield intelligence, commanders in the past might be fed 10-20 pieces of information per hour. In the future we will handle several thousand items per hour. The leaders of these future forces will therefore have to be a lot more skilled in handling information than they are today. This will be very difficult. Of course, it's going to involve much automatic data processing equipment. The complexity of this interface between man and machine will be very difficult to overcome—probably our major challenge of the future.

Communique: From your perspective, what would you say is the most misunderstood aspect of force modernization among today's Army leaders?

MG Boyle: I think the first thing we need to do is, get everybody in tune with the Army's AirLand Battle doctrine. This is the key. I know it's been published in variety of publications, briefings, documents, etc., but I

Force Modernization: An Inside View

COL Mike McAdams

COL Michael C. McAdams is the Director of Force Development Directorate, ODCSCD, HQ TRADOC. He has commanded field artillery organizations from battery to battalion level. He is a graduate of CGSC and has been assigned to TRADOC since July 1978.

QUESTION: COL McAdams, the buzz word today in the Army seems to be *Force Modernization*. How do you define Force Modernization?

Force Modernization means different things to different people. The definition that the DA has come up with is that "Force Modernization is the developing and fielding of new equipment, materiel systems and organizations and the fieldings of displaced materiel systems together with associated and supporting equipment and associated activities." This definition is important because it is from this definition that the subordinate commands of the Army must determine their appropriate Force Modernization definition and then translate into the appropriate functions that their MACOM must accomplish. The Force Modernization definition that we in TRADOC have derived from the DA definition and are using is "The evolutionary process of upgrading the Total Force through the development of concepts, doctrine, organizations, and training in order to meet the anticipated threat through the optimum use of developing systems, technology and available force structure." I think you can see from this definition that we have very clearly slanted it to those TRADOC areas of responsibility.

QUESTION: COL McAdams, we hear much today about the *complexity* of Force Modernization. What is meant by that statement?

Well, it is certainly a very true statement. Force Modernization in the '80's and into the '90's is and will be very complex. The chief of Staff in his white paper stated that "Next to manning the force, the management of Modernization is the most complex challenge facing the Army in the 1980's". This is where almost every Army echelon is struggling, trying to determine that best management apparatus or organization to handle Force Modernization. I think it is important that we talk about what has occurred to make Force Modernization the tremendous challenge it is today. In the past years, Force Modernization in most cases was primarily the development of only a few new materiel systems, and those generally replaced another system and went into a current organization. Another way of putting it is, swapping new equipment for old equipment in existing organizations. It was a relatively smooth and simple process. But after the Viet Nam period things started picking up once again in combat developments with the developing of new materiel systems to counter the increasing Soviet threat; we are no longer dealing with just a few systems as in the past but are now faced with some 400 new systems coming into the Army's inventory in the next ten to twenty years. This immediately compounds the modernization problems, and in most cases there is synergistic effect between new systems that further aggravates the problems. Now in addition to that Force Modernization I just described of many new systems coming into the force, we have another challenge. We have recognized that there is a tremendous capability represented by these new systems and that it's equally important and essential to have modernized organizations for these new systems. We certainly want to optimize the new system capability with an organization designed to get the maximum effectiveness from that particular new system. We have this optimization occurring in

the form of the new organizational design products of Army 86. For example, Division 86, the new heavy division design for the 1980's, is an organizational design capitalizing on the new weapon systems of the 1980's. So, with the current Force Modernization problem of fielding many new systems, we have added modernization of organization. In essence we have compounded our problem of modernizing in terms of both new equipment and organizations. This is the scope of the Force Modernization challenge facing the Army now.

QUESTION: What is the Army doing about it, then?

I think the key occurrence Army-wide is the recognition of this Force Modernization problem. This awareness from my perspective started about 1978 when people recognized that in just the fielding of multiple systems alone, we had to change our way of doing business. In about 1980, the new organizational design products from the Army 86 study work emerged, and it was then that all of us within the Force Modernization business started changing the manner in which we were *managing* Force Modernization. New management elements were created within DA and at various MACOMs. DA activated an Army Force Modernization Coordination Office (AFMCO) under the Director of the Army Staff Office. Their orientation was primarily on the current problems of fielding new systems. DA DCSOPS activated a Transition Planning Integration Group (TPIG) which focused its attention on developing a master transition plan for the Army. These two DA elements have more recently been merged into one element, AFMCO, under the operational control of the DA DCSOPS, USAREUR, FORSCOM and DARCOM have developed separate elements charged with managing their respective Force Modernization efforts. In TRADOC, the Force Development Directorate, ODCSCD, is responsible for Force Modernization transition planning for the Army 86 organizations. It was agreed to try to utilize within TRADOC as much of our existing processes (the TRADOC System Managers, the Integrating Centers and schools) to accomplish Force Modernization. Presently, we are reexamining this management process and looking toward maybe a single element within HQ TRADOC that would be charged with Force Modernization management for HQ TRADOC. I would suspect a need for a similar element at both the Integrating Centers and schools will be necessary. We are still uncertain what this Force Modernization element will look like and exactly what its mission will be, but that should be resolved soon. There is another positive Army ongoing effort. The VCSA tasked the Army Inspector General to look at the Army Force Modernization process and its management and to recommend fixes for solving some of today's problems. This IG inspection team, upon completion of its inspection of TRADOC, should provide some insights that will help us determine exactly what particular type Force Modernization elements we need within TRADOC. So I think overall the Army is doing a great deal toward handling the problem.

QUESTION: What is the prospectus for being able to cope with, accomplish and continue Force Modernization?

I think the biggest plus we have right now is that all people are keenly aware of the Force Modernization problem and all are doing positive things to handle it. I think that the DAIG Inspectors' findings on Force Modernization will help the Army examine itself on

modernization and that we in TRADOC will be satisfied as we receive this sea of new equipment and organizations that will shortly be upon us. As you know, out at Fort Lewis, Washington, they have been looking closely in the 9th Infantry Division at equipment that we may be interested in having in our light divisions. Once we can ascertain just what equipment we are going to have, we must very quickly look at *how we are going to train our soldiers on that equipment* and what it will mean to the training community.

In the *force structure area*, there are going to be many changes. I think we know generally the shape of Heavy Division 86. The 9th Infantry Division is actively looking at the Light Division. Certainly there will be other implications in the force structure for the Airborne Division and the Air Mobile Division. You can see that in the next five years almost all the Army's organizations we have today will have to be changed to some degree, based on the Force Modernization wave that is with us now and will be with us for the next 20 years.

In the *equipment area*, I think most people have a pretty good insight as to what the Army is going to be like in the years ahead, but we need reevaluations over the next several years as the equipment is fielded. I think we are developing some fantastic new equipment such as the M1, M2, M3. We will have more proficient anti-tank guided missiles and better, technically superior, more combat capable helicopters. The AH64 is going to be a great helicopter that will significantly improve our capabilities 24 hours a day on the next battlefield. The DA AFMCO is publishing the Army's initial Force Modernization management plan, which will help give direction to all the Army in modernizing the forces. Also the Operational Readiness Monitoring System (ORMDNS) committee, a DA General Officer group charged with monitoring the Army's readiness, has recently expanded its scope to that Force Modernization problem-solving. The continuation of the Army 86 studies with their resultant new organizational designs incorporating new systems focuses the addressing of Force Modernization by all of us in the Army. I think the 1980's will be one of the most exciting times for the Army and its people.

QUESTION: COL McAdams, are there any things that the Organizational Effectiveness folks can do to help in this process?

Yes. I think there are many things that OE can do. As a matter of fact, OE has already taken some initiatives. Recently, OECS sponsored a workshop on organizational design and redesign techniques for use in developing and designing a Force Modernization management element. [See article by Roberts, Hungerland and Barke elsewhere in this issue—Editor] This workshop featured a professional consultant with a strong background in working with a large industrial firms in developing management goals and translating them into a management structure and organizations. This knowledge has been useful in helping to determine what is necessary for this Force Modernization management organization. In addition, the OE personnel and their talents can be very helpful to the people today in working and managing Force Modernization. We have our OE folks here at TRADOC attend all our Force Modernization transition planning sessions and then give us recommendations on ways we might improve the effectiveness of these meetings. □

don't feel that it's thoroughly understood. The AirLand Battle doctrine puts great demands on our combined arms organizations. It's going to require efficiencies and abilities and coordination that we have never had before. We must make a quantum, jump in the job knowledge and expertise possessed by our combat leaders. If there is one thing the Army needs, it is to have all our Generals and Colonels and Majors completely in tune to the AirLand Battle and able to train their organizations and soldiers in the tactical requirements of the AirLand Battle.

Communique: So an understanding of the AirLand Battle would take care of a lot of the misunderstandings of force modernization that may be present with our Army leaders?

MG Boyle: Yes. All our modernization—the organization, the doctrine, the training and the equipment that is coming for the next several years—is geared to the AirLand Battle. Our doctrine is that we are going to have to strike deep. This will require very close association with the Air Force. The coordination between the combat units, the intelligence elements, and the maintenance and logistics structure will have to be much better than it has been in the past. We will have to be a closely knit team that is highly trained. The artillery soldier, to be up to date on TACFIRE for instance, is going to require about 18 hours a week training. This will place great demands on our units to insure that the soldiers are up to the capabilities that are inherent in our new equipment.

Communique: We have talked about the force modernization process and the various components of force modernization. What would you see as the basic integrating mechanism for handling this ongoing and apparently accelerating process?

MG Boyle: I think most organizations have force modernization directorates, divisions or staffs. The effort is led by the Army's Force Modernization Office in the Pentagon. Here in TRADOC, we have a General Officer Force Modernization Steering Committee which meets periodically. We discuss problems in doctrine, training, force structure and equipment pertinent to force modernization, and thus try to keep ahead. The key is that in TRADOC we are well integrated with the force modernization structure at DA, which controls the whole process.

Communique: Recently, major Commanders have begun calling for OE assistance in dealing with the force modernization issues within their organizations. What do you see as some possible roles for OE Consultants in support of the force modernization effort?

MG Boyle: First of all I see OE people as fulfilling the role of the honest broker. The OE has the set of impartial

eyes and ears that can help us to work in a smart way.

Some of the things OE has done already have been along these lines. The OEC from Fort Knox, MAJ John Buckley, who accompanied the M-1 New Organization Training Team (NOTT) to Europe early this year, is an example. The types of things done with the NOTT before, during, and after, were valuable to the whole process. Providing support in key planning activities also fits this role. In HQ TRADOC, we have involved our OE people in a wide variety of planning activities like the GOSC, QQPRI Conferences and the like. Another principal role, I think, is as an educator or resource to help us learn better ways of doing things. The Organization Design and Redesign Conference held by OECS in February 1982 was very helpful to us in planning our own structure. These types of activities have been and will continue to be valuable.

I think OE people should get involved at all levels to the extent their own skills allow, and to the extent needed at that particular place and time. I want to emphasize that all OE activities should be aimed where they are most needed. We cannot afford the time or resources to fix things that are not broken. I know this is hard to determine sometimes, but I see it as essential to doing these things smartly.

Communique: Are there any parting thoughts that you would like to convey to the *Communique* readership?

MG Boyle: What I would convey to the Organizational Effectiveness people is my respect for what I have seen them do in different organizations. I have been associated with them in the 82nd Airborne Division, the 56th Field Artillery Brigade, VII Corps, and at TRADOC Headquarters. I have seen many instances in which they have been able to bring forth improved procedures and better environment to the organization. In several cases, the forthright approach that the OE people have taken has significantly helped units bring problems out into the open.

I would like to say, though, that success of the OE process is very much a function of the professionalism and the competency of the Organizational Effectiveness Consultants themselves. I think the OECS training produces a good product, but once they go out into a unit, the OE's effectiveness depends on the quality and professionalism of the individuals and not just on their training background. When the individuals themselves can establish the environment in which people speak freely and say what they feel, the OE Office is very successful. When they don't establish this environment, the OE process does not work well. I leave you with the thought that it is a highly personal process. If good people keep going into the OE business, the OE process will continue to be extremely valuable to the Army. □

OECS Receives Message from TRADOC Commander

30 Jun 82

From: Commander
TRADOC
Ft. Monroe, VA

To: Commander
Organizational Effectiveness Center and School, Ft. Ord, CA
Personal for Colonel W. L. Golden from General Otis, Commander, TRADOC

Subject: Birthday Greeting

Best wishes to the Organizational Effectiveness School on its seventh birthday. The extensive demands placed upon your graduates attest to the fine quality of your instruction and the importance of the school's mission. Keep up the good work.

Organizational Effectiveness and Force Modernization

CPT William F. Barko
MAJ Elwyn V. Hopkins
(OECS)

This article is an effort to begin an outline of how OE can assist the Army's Force Modernization effort. In a very general fashion, it presents a conceptual overview of modernization and offers several approaches for OE Consultants to take in assisting the modernization effort.

Today's Army is headed through a period of intense modernization and change unparalleled in its history. This modernization effort grew out of a desire for:

"the reversal of the shift in the military balance which has allowed the Soviets to place us in an inferior position. We must reestablish a realistic deterrent."¹

The answer to the above problem has been "solved" and operationalized by the various "86" organizational structures—Division 86, Corps 86, etc.—and by new equipment moving out of the laboratories and off the testing grounds into active Army units. The immensity of this effort has caused senior Army leaders to stop and consider the implications of introducing over 400 new pieces of equipment and new organizational structure in the next 3 to 5 years. Their assessments reveal:

"The magnitude of modernization facing the Army necessitates that greater emphasis be placed on 'force integration'—the development of an integrated plan for introducing on a time-phased basis, material systems, organizations (combat, support, service support), personnel, training, and doctrine into the Army."² Other force modernization planners have also stated:

"The major problem confronting effective modernization is the lack of integration of many force modernization activities...that integration of force modernization activities could only take place after management systems were sufficiently disciplined, and in some cases, created."³

So the emphasis in the formulation of the problem has shifted. The solution of *modernizing* the force has shifted from updating the Army with equipment to one of *developing the capability of the Army to introduce change into itself*. This change in focus causes one to consider, what is the Army *really* trying to do? Is it trying to update (modernize) itself? Or is it trying to develop itself into an organization that can adapt to a myriad of combat situations? These are two different philosophical statements. If the Army is updating itself, then the strategy for the future is one which facilitates the arrival, entry, and use of new equipment. If the Army is trying to enhance its ability to solve operational problems presented by various combat contingencies, then the ways it goes about adapting and developing itself are targets for change efforts.

This dilemma is not a new one. Differentiation between the terms *modernization* and *development* has been previously noted. Robert P. Biller illustrated the fundamentals as follows:

"Development is defined as that process by which the adaptation capacity of any unit is increased. The concept of development is *process* rather than *content* oriented and is on this basis to be distinguished from the concept of modernization. Development refers to the interactional process through which individuals associated in unit networks learn how to articulate and solve problems. Modernization refers to those symbols, products, and modes of life associated with modernity—primarily defined in terms of technology at this point—which a unit or its members may acquire."⁴

In short, a developmental process is one that enlarges the problem-solving routines, while modernization enlarges the available number of modern technological equipment. You do one activity to introduce new equipment into an organization, and you do other activities to increase the problem-solving capacity of the unit.

At this time it appears that the Army has more closely aligned itself with modernization. The emphasis has created *strain* and *stress* on its managerial and adaptive systems - on its problem-solving systems. As indicated in the quotes above, this is now being recognized by senior Army leaders. Unfortunately, this is about one year after the initial introduction of major new equipment into the Army inventory. What this means is that when the decisions were being made to solve the problem of readdressing the strategic power of the United States, it would appear that the Army's key problem solvers had a cognitive model of the solutions available that can be illustrated by Figure 1.

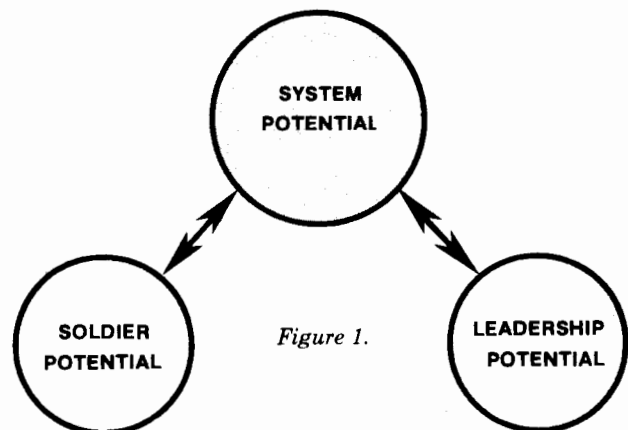


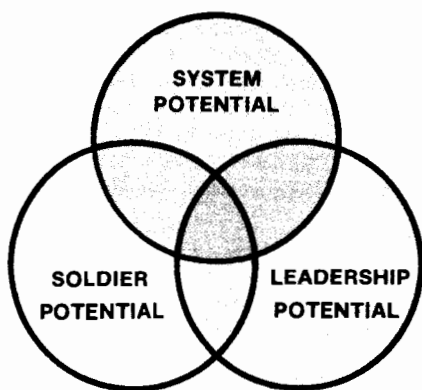
Figure 1.

This model is a graphic representation of an over-emphasis on technology and organization - the potential of the system. Thus, the solutions that came out of the problem-solving process to help the Army achieve military parity were technological and organization-structural solutions. The underlying assumption of an organization with a heavy focus on system potential is "we will somehow find someone to operate or work this equipment."

As these solutions began to be operationalized and instituted in the Army, there has been a realization that we need a more balanced approach to the force capability problem. What we need is a model that not only gives an overview of the situation, but also indicates other areas where the Army can make changes to modernize itself and increase its problem-solving capacities. Such a model is proposed at Figure 2.

Figure 2.

Army Force Modernization Model



The components of this model are as follows:

System Potential - that element of the force modernization effort that represents what is possible in the Army's unit structures, technologies, hardware and tactics.

Soldier Potential - the developmental aspects of soldiers in the Army.

Leadership Potential - the possibilities that exist in the ability to get work done through people.

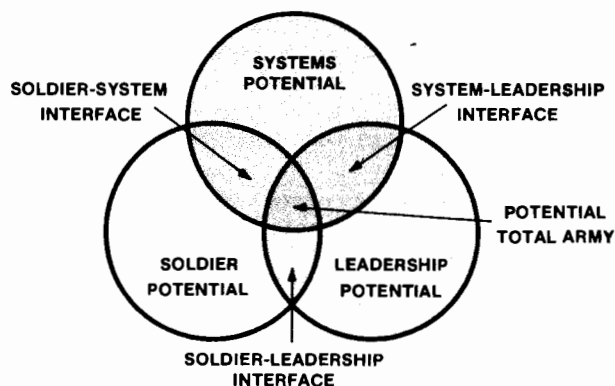
These three areas were chosen above other possibilities because they represent in the broadest sense what the Army is—the bringing together of unit structures, equipment, and soldiers to accomplish missions through leadership.

By representing these areas as circles and arranging them in a concentric pattern as indicated in Figure 2, seven spheres are revealed. These seven spheres become points of focus and actions in the Army's modernization program. These seven areas are shown in Figure 3.

Figure 3 shows the Army seven places where it can modernize instead of one. What is critical to this model is that today's Army must jointly consider soldiers and leadership along with modernizing the technical and structural system. Hardware must not be the primary driving force in a modernization effort with soldiers and leadership always being adapted to fit the technology.

Using this model increases the adaptability of the Army. What is demonstrated is that instead of one area being isolated as the solution to solve an operational problem, changes can be introduced in other arenas to solve the

Figure 3.

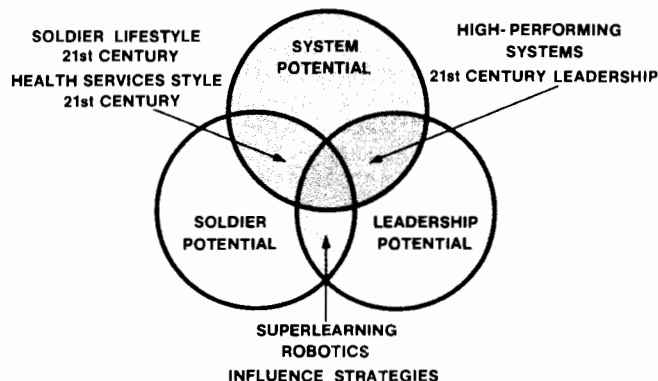


same problem. In short, it gives more options for solutions. The model also shows how a change in one arena will have secondary effects in other areas. This allows the total Army to move along a balanced path of modernization, not one element being improved to the detriment of the other elements.

When using this model to consider force modernization, we begin to creatively "dream up" concepts for the Army to examine and possibly develop. These are indicated in Figure 4.

Figure 4.

Possible Areas For Army to Modernize



To summarize at this point, the Army, in order to move into the future, needs to use a conceptual model that shows all the potential areas for modernization. This will allow the Army as a whole to move into a modernization effort with all parts in concert; not one part overpowering the other parts. The Army also needs to use a conceptual model that enhances its problem-solving capabilities. Such a model will show more than one solution to an operational problem.

A key point to consider for the future is how the Army can reduce the strain that is beginning to show in its problem-solving and management systems. Army force development and modernization will continue at an increasingly faster pace. This will further stress the problem-solving capacities. Effective planning and problem-solving skills will be of paramount importance to units. Today's Organizational Effectiveness consultant can play an integral role in assisting organizations in the use of new and innovative planning and problem-solving mechanisms. In general, there are several OE strategies that OEC's ought to restudy, relearn, and help their organizations to learn. These are:

- (1) Increasing the capacity of your unit to solve problems. If what is happening at the higher levels is a clue to the future, then division and installation management systems will undergo increased stress and strain. This will tax the problem-solving ability of the unit.
- (2) Increase the capacity of your unit to integrate activities. Galbraith, Lawrence and Lorsch describe ways to do this.
- (3) Increase the capacity of your unit to view conflict as healthy and as a symptom of change. Further, increase the capacity to manage conflict (at all levels) in a constructive manner that allows the best solution for problems to emerge.

OE consultants at various levels can specifically assist their commands. OEC's at MACOMs and DA level can help by addressing the systematic imbalance of today's force modernization approach as discussed earlier and assist in facilitating the development of integrating mechanisms, i.e., joint command task forces or teams.^{5 6} These can assist the Army in more effectively coping with modernization, and also assist Army leaders in creating a reasonably stable environment in which subordinate tactical organizations can effectively implement new equipment, technology, organizational structures and human resource systems. For OEC's at the installation or division level, efforts can focus on assisting their commands in the resolution of problems associated with rapid, intense organizational change and development. New problem-solving and planning techniques can be introduced to assist commands in conflict reduction and quick adaptation to change.

A partial list of potential OE activities are summarized in Figure 5 below.

Here at Concepts Directorate, OECS, we are working on several projects that are designed to assist the Army and field OEC's. One project is the development of a "language" of force modernization. The end result will be a commander's guide for introducing changes of equipment and structures into units. The intent is to create a common language of force modernization that will function like the five paragraph Operations Order between various levels of command. Another project is to disseminate the learning that came out of the Organizational Design/Redesign conference that was held at OECS in February, 1982. Dr. Jayaram, in his discussions about organization design and redesign, offered some key insights and ideas about the modernization effort. Written products should be in initial form at OECS in the next few months.

Lastly, to give a specific example of one technique mentioned in Figure 5 that a divisional unit can use to insure that there is no problem in the distribution of its equipment. Such an approach is called the "creation of slack resources" which is taken from Galbraith's *Designing Complex Systems*.

When the Army contracts to build a new weapons system, a unit depends on the equipment to arrive on a given date or within a given period of time. The unit's timetable for receiving, processing, and training then hinges on the ability of a host of people to produce on time. If there is a production problem, work stoppage, strike or anything that delays the delivery of the equipment, ramifications for the receiving unit are tremendous. Training schedules must be adjusted, dead time in training is created and ultimately, readiness is affected. A system which will generally reduce the probability of lost readiness is the creation of "slack resources." In the case of new equipment, slack resources can be created by not delivering equipment to the units below division level until there is a stockpile of the equipment for several units on hand at the post. Such a stockpile will eliminate problems for subordinate units in the change of one type of equipment for another by having sufficient equipment stocks on hand that allow the unit to initiate and complete a replacement cycle without overdependence on delivery times. Thus, there is no lost time and no loss of readiness at division level. While this idea may not be the most "efficient" for transition to new equipment, it certainly is the most "effective," if combat readiness is the standard of measurement.

CONCLUSION

The main thesis of this article has been to highlight the differences between *modernization* and *development*. The Army, through its modernization program, has created a crisis in its developmental systems. That, then is the target for the OEC in the future.

There are several specific things the OEC can do. First, the realization must come to the Army that it needs an overview, a comprehensive model for force modernization. One such model is presented in Figure 2. The requirements for such a model are that it (1) provide a more balanced systemic look at the modernization process, and (2) help the Army identify other areas that need work within the modernization process. Thus, such a model helps the Army to develop by increasing its *problem-finding capacities*. Second, the OEC has some organizational capacities of his or her unit that can be assessed and improved. These are: (1) the problem-solving capacity, (2) the integration

Figure 5.

OE Activities To Support Modernization

ISSUE	OE ACTIVITIES	OEC LEVEL
1. Overemphasis on new equipment (modernization)	Education on model presented in Figure 2.	DA, MACOM
2. Lack of integration between MACOMs	Interventions to create integration mechanisms	DA, MACOM
3. Rapid changes in technology	Transition management using a systems approach* Long-range planning	Division or Installation
4. Fitting the organizational structure with new equipment capabilities	Socio-technical design/redesign	Division or Installation
5. Delays in production/distribution of new equipment	Problem-solving techniques Creation of slack resources	Division or Installation
6. Managing the change or development process	Developing and implementing change management cells	All levels down to Division/Installation

*For more details, see Richard Beckhard and Reuben T. Harris, *Organizational Transitions: Managing Complex Change*.⁷

capacity, and (3) the capacity to manage conflict constructively. Lastly, there are some specific things that various levels of OEC's can do to facilitate modernization. Thus, the charter for an OEC during the 1980's is to help the Army by focusing on its *process* of modernization rather than the *content* of modernization.

As the rate of change in our Army increases, it is imperative that commanders at all levels understand that

modernization and development co-exist and are equal partners in the change of our Army. To ignore one is to create problems in the other.

Organizational effectiveness has a valid role in this modernization process. Its role can be to help the Army make modernization what it was intended to be—a *force enhancing process*.

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□

Beetle Bailey—by Mort Walker



Human history becomes more and more a race between education and catastrophe. —Herbert G. Wells

There is the danger that we may become so enthralled by machines and weapons systems that we will lose sight of the fact that the man—the individual soldier—is the supreme element in combat. —General J. Lawton Collins

My center is giving way, my right is in retreat; situation excellent. I shall attack!
—Marshal Ferdinand Foch

NETTs and NOTTs: A Force Modernization Overview

MAJ John Buckley (Ft. Knox)

"Our plan for the future is to use OE against the toughest problems within TRADOC, such as force modernization . . ." —Glenn K. Otis

CG, TRADOC

PROLOGUE

Authors Note: Most everyone in the Army knows the difference between a fairy tale and a war story, well, this is *not* a fairy tale....

Once upon a time there was a starry-eyed and energetic recent graduate of the Institute of Applied Magic and Facilitation (known to unbelievers as OECS) who went about his duties at a large, unnamed TRADOC installation in the land of fast horses and pretty women (or is it the other way around?). While sitting in his bathtub on the night before Thanksgiving, he once again demonstrated the truth of Archimedes' Principle. (Archimedes' Principle, of course, states that when a solid body is totally immersed in water, the telephone rings.)

Lo and behold, on the other end of the

telephone was the big (6' 5") OEC in the sky who spoke from on high (Fort Monroe). "Verily, I say unto you that force modernization is upon us. Do you believe?" "Yes, I believe," our gallant OEC replied, beginning to look like a big white prune. "Further", the big Kahuna rumbled, "I have searched hither and yon for an OEC to transmit this message to our brothers and sisters in the hinterlands. Would you, noble OEC, like to travel abroad and spread the message of force modernization?"



At this point our freezing OEC would have sold his house, his wife, his dog, and his personally autographed photo of Bill Golden in flight jacket ensemble just to be able to get out of the bathtub, which by now sported icebergs bigger than the one which sank the TITANIC. Therefore, only a chattering "Y-Y-Yes!" could escape his purple lips. Then he heard the call, *sotto voce*, over the phone, "Hey guys, we finally found a sucker to go on that trip to Germany in January!"

And that is how our hero found himself on the day after New Year's Day, on a 747 watching "Zorro, The Gay Blade" and winging towards Germany, to participate in something which later came to be known as a "pre-NOTT" trip. But more about that later. . . .

As vividly pointed out in Issue 4-81 of the *OE Communique* ("Division 86 = Transition Management" by LTC Ron Tumelson), the Army of 1990 will be significantly different from the Army of 1980. During no time in the Army's history has as much change taken place so rapidly as will occur in the next decade. Just a few major technological changes for combat units will be the introduction of the M1 Abrams Tank (which has already begun), the issuance of the M2 Bradley Infantry Fighting Vehicle (IFV) to replace the venerable M113 series Armored Personnel Carrier, and the inception of a vehicle especially designed for the reconnaissance/security mission, the M3 Cavalry Fighting Vehicle (CFV).

Major organizational changes also will occur, impacting from platoon through division level. At platoon level, the tank platoon will consist of four M1 tanks (vice five in the M60-series platoon). The infantry company no longer has organic mortars or TOWS (they are now consolidated at battalion level). The divisional cavalry squadron has lost the tanks which were organic to it (and European Cavalry commanders are already pondering their critical covering force missions with reduced organic combat power). A Cavalry Brigade (Air Attack) has been added to the division, consisting of attack helicopters, combat support aviation, and air cavalry units.

The above merely highlight *some* of the many technological and organizational changes that will soon occur in the Army. To help visualize part of the Army's plan to support force modernization, it will be helpful to consider

Major John Buckley was commissioned (2LT, Cavalry) from West Point in 1968. Four separate company commands (in Europe, VietNam and CONUS) left him with a much greater respect for healthy organizations and a lot less hair. A graduate of the Armor Officer Advanced Course, and holder of an MPA from Northern Michigan University, John was dragged, kicking and screaming, from duties as a cavalry squadron XO at Fort Hood to attend OECS in April 1981. He is currently losing what remains of his hair as the installation OEC at Fort Knox, Kentucky.

this simple change model:



¹Richard Beckhard and Reuben Harris, *Organizational Transitions: Managing Complex Change*, pp. 16-17.

Assuming (perhaps wrongfully so) that most organizations have a fairly accurate picture of their present state, the Army, and the Training and Doctrine Command (TRADOC) in particular, which is responsible for developing operational concepts for military operations, have determined that military organizations need the most help in identifying and attaining their future state. To this end, TRADOC has decreed that there should be *New Organization Training Teams (NOTTs)* and *New Equipment Training Teams (NETTs)*.

Training Teams

Some Army Heavy Divisions (Tank and Mechanized Infantry) in Europe have already begun changing to Division 86 structure; the remainder of USAREUR and CONUS heavy divisions will soon follow suit. The function of the New Organization Training Team (NOTT) is to visit those organizations prior to their transitioning to Division 86 structure and instruct leaders (division staffs, brigade and battalion commanders and staff, selected company commanders) on the ramifications and implications of the new structure.

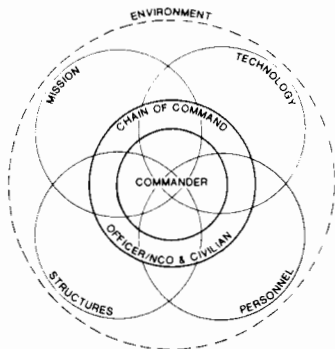
NOTTs will visit units two to six months prior to the reorganization date, and will utilize the "train the trainer" concept, leaving behind training packages which can be used to train personnel at company level—company commanders, platoon leaders, and platoon sergeants. There will be two separate but coordinated NOTTs—one based at the Combined Arms Center, Fort Leavenworth, which will consist of subject matter experts (SME's) from combat and combat support branches; the other NOTT

will be based at the Logistical Center, Fort Lee, and will consist of SME's from the combat service support branches.

While the NOTT specifically addresses the new structure of the organization, the New Equipment Training Team (NETT) is specifically geared to introduce the new technology to the organization. The NETT will introduce the new piece of equipment to the organization and train the operators of the equipment on how to properly operate and maintain it.

The arrival of the NETT is presently planned to occur exactly when the organization initially is issued the new equipment. Similar to the NOTT, SME's will be pooled to form the NETT, thus providing to the user organizations the most expert instruction available.

Obviously, the Army will specifically address two of the K&R Model's subsystems: Structure and Technology. However, no specific reference will be made by the NOTT



or NETT of the remaining subsystems of mission, personnel, and chain of command/commander.

Nor will the environment peculiar to the organization be addressed.

NOTT/NETT Issues for OECs

Local OECs should conduct a thorough assessment of transitioning units prior to the NOTT or NETT. As mentioned previously, NOTT's and NETT's address, in the main, the desired future state (Division 86 structure/technology) of the organization, touching only briefly on the Transition State and not at all on Present State. A pre-assessment by the local OEC must be accomplished to focus the commander on the Present State of his organization. Ideally, this should occur some 90-120 days prior to the arrival of the training team, to allow the commander to initiate any changes desired before the training occurs.

The Transition State is fertile ground for OE intervention. While addressing the Future State, NOTT's and NETT's ignore the critical Transition State, thus overlooking the major problem for commanders: "How do we get there from here?" A thorough plan, which includes milestones, goals, and an evaluation/monitoring system to keep the process on track are essential elements in the transition process. But perhaps even more important is insuring that a commitment to change is prevalent within the organization.²

Quite frankly, some commanders do not hold with all of the precepts of the Division 86 structure. For example, during the "Pre-NOTT", it was determined that one M1 tank battalion commander did not reassign all battalion mechanics to his headquarters company, but kept them organic to the tank companies. His rationale was that he'd "tried consolidating mechanics before, and it didn't work."³

How his battalion operates during this transition is an issue for the on-site OEC to wrestle with.

It is essential that local OECs are able to alert training teams to the environmental idiosyncrasies of their (OEC) organizations. At present, the decision whether to include an OEC on the NOTT or NETT has not been made. Nonetheless, the training teams need to be apprised of the environmental peculiarities of the organization they are servicing. Coordination between the NOTT/NETT team chief and the local OEC can save time, avoid confusion, and greatly enhance the probability of the team's meeting the using unit's needs. OECs are, or should be, uniquely able to assess and address the organizational climate and environment.

Use the OEC technical network. OECs should be adept at using the OEC network to obtain information quickly and accurately. In a fast-moving and rapidly changing situation (which force modernization is), obtaining information through chain of command channels can be a lengthy and frustrating affair. OECs should have at arm's reach a worldwide directory of OECs, if not by name, by position. Miles of red tape can be shredded by picking up the phone and calling the on-site OEC. (*OE Communique* regularly publishes lists of OECs of major commands.) Inspectors General are trained and urged to use their technical IG to IG chain; OECs have as much (if not more) need for fast, accurate information.

Local OECs must assist units in determining their future state in the personnel, mission(s), and chain of command subsystems. These subsystems will not be addressed by either the NOTT or NETT, and can easily be overlooked by commanders coping with major organizational and technological innovations.

While the "headline-maker" subsystems of structure and technology will receive direct emphasis, failure of the commander/OEC to consider the correlative subsystems will result in an organization out of synchronization, and in pain. OECs should force the commander's attention on the total system, not allowing him to proceed with blinders on.

"Bottom Line" OE

The major point to be made is that force modernization is not just in the planning stage; it is happening to us **right now**. Unfortunately, for one reason or another, most of us in the OE Community are now being forced to play "catch up ball." Somewhere in most organizations is a project officer for force modernization. Without pointing fingers, or trying to determine "who shot John", OECs should run, not walk, to this individual and offer assistance in the force modernization process.

Many of the force modernization officers, like the Maytag washer repairman, are very lonely, and will readily accept advice and/or assistance, especially from OECs, who should be in the forefront as change agents.

If OECs cannot get involved at division level, they should work toward getting in at brigade level. If not, brigade, then battalion. The important thing is — **get involved!**

Armed with some knowledge of the NOTT/NETT concept, OECs should be able to get their foot in the door of force modernization. Involvement at the grass roots level of force modernization will continue to legitimize and institutionalize OE within the Army, as well as assist commanders with a complex and weighty challenge. □

² Ibid., p. 57.

³ Authors notes.

Visions of the Future



It's not enough to talk about the future...we must actually try to make clear pictures of how we want that future to be.

These ideas were generated to take the FORSCOM missions of today and see if they will hold up in the future.

- Open your mind to these new ideas.
- Let them stimulate your thinking.
- Improve upon them.
- Develop and communicate ideas that will guide your thinking into the 1990s.

This is a notional review of the items the FORSCOM commander of 1991 might be able to use to describe the Army's progress during the 1980s.

LTC Jim Channon serves as Chief, Soldier Needs, High Technology Test Bed (HTTB), 9th Infantry Division, Fort Lewis, Washington. He has an MA in Human Communication and is a graduate of the Army War College. He is a member of Delta Force; his areas of expertise include complex systems design, imagineering, systems integration, human potential, and the future.

THE 1990 ENVIRONMENT: PEOPLE

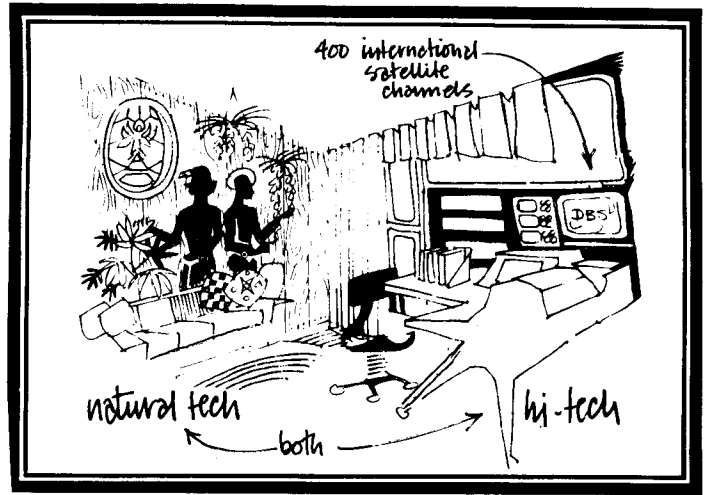
The American in 1990

Values changed throughout the eighties.

Americans were connected to over 400 international television channels by the end of the decade.

They became more concerned with the entire planet and the state of humanity in general.

The American home became an interesting mixture of nature and science. People did more business electronically in the late eighties. They came to expect the military to use technology wisely to win on the battlefield and also make a quality contribution to the state of the environment.

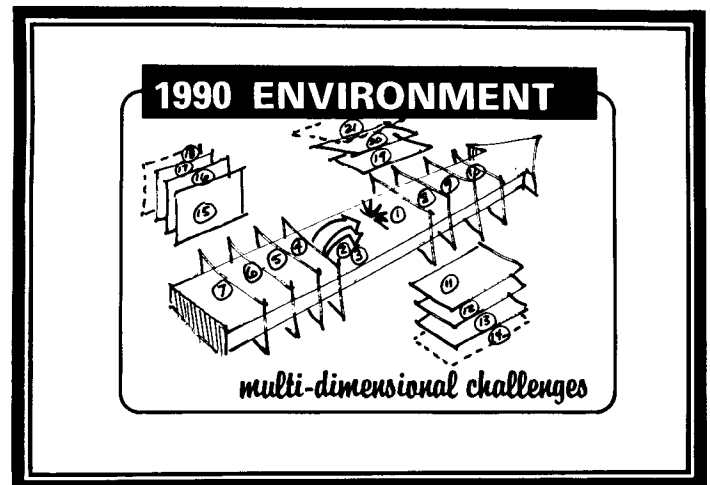


The Army faces a growing number of concerns for which it must provide effective solutions.

The Battlefield

From 17 dimensions in 1980 to 21 dimensions in 1990.
(New dimensions underlined)

- | | |
|--|-----------------------------------|
| 1. The modern mechanized threat remains. | 11. Nuclear battlefield. |
| 2. Strategic airlift that works. | 12. Chemical battlefield. |
| 3. Strategic sealift that works. | 13. Electronic threat. |
| 4. Supply lines intact. | 14. <u>Terrorist threats.</u> |
| 5. Manpower pool available. | 15. <u>Varied terrain.</u> |
| 6. Industrial base (warm). | 16. <u>Varied weather.</u> |
| 7. National public opinion. | 17. <u>Night/Day operations.</u> |
| 8. Partisan guerrilla threat. | 18. <u>Urban terrain.</u> |
| 9. Extended battlefield operations. | 19. <u>Close air integration.</u> |
| 10. <u>International public opinion.</u> | 20. <u>Strategic air assets.</u> |
| | 21. <u>Space based platforms.</u> |

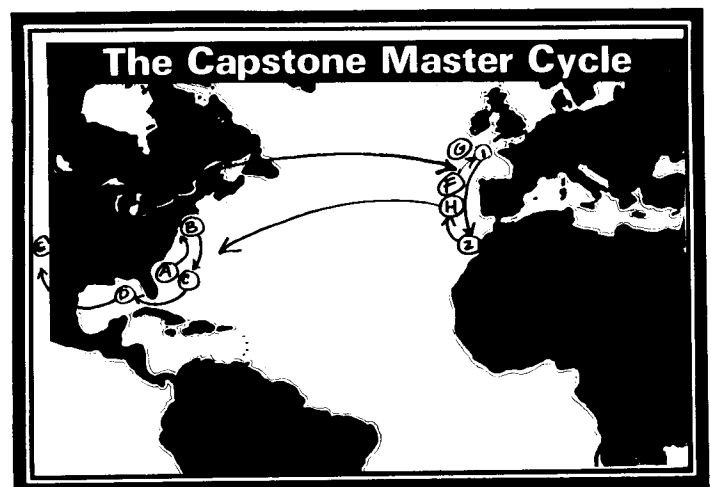


FORCE READINESS

An Honest Readiness Plan

By 1986, FORSCOM units were following a two to three year cycle that allowed them to intelligently get a new fill of people, a new set of equipment, and then to begin a systematic readiness training cycle that eventually brought them to peak readiness on station.

- A. New people fill (individual training).
- B. New equipment fill (individual training).
- C. Team training begins.
- D. Unit training (ARTEP-EDRE).
- E. NTC qualified.
- F. Overseas deployment (rotation for period).
- G. Contingency area 1 work.
Contingency area 2 work.
- H. Unit calibration (AGI-CMMI) 8 step cycle repeats.

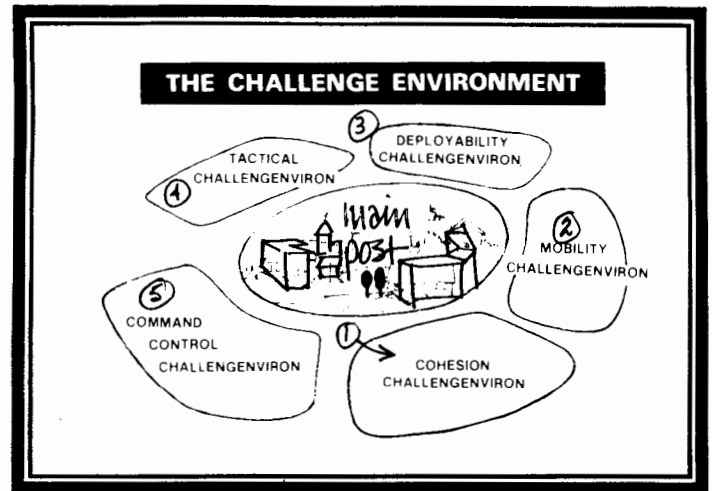


PREPARING TO FIGHT

From Information to Inspiration

In the seventies, we concentrated on the details of each soldier's job...in the eighties we designed realistic challenge environments to allow the soldiers to test and correct their skills. Honest readiness!

1. The regiment puts all new soldiers through a battlefield experience course that qualifies them to be members of the unit...and powerfully impresses upon the soldiers the lethality of the battlefield and, therefore, the value of their training.
2. The drivers and mechanics have a tough qualification course with challenging obstacles and maintenance tests.
3. Units have deployability alerts that cause them to actually load-out on CX mock-ups and Ro Ro ship mock-ups.

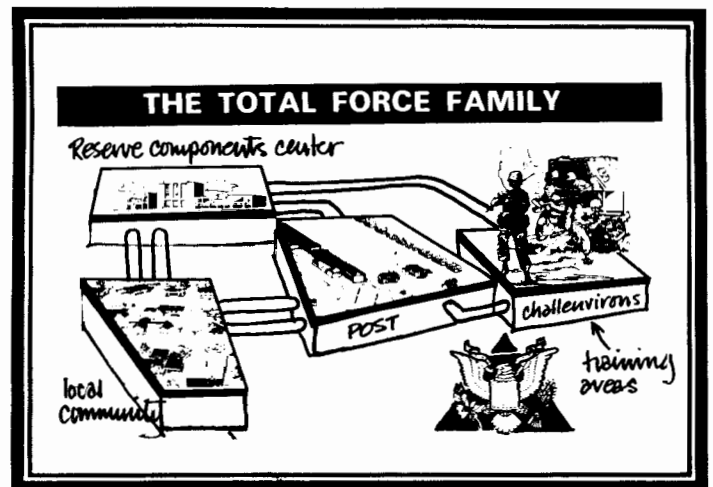


4. Range instrumentation, lasers and TV cameras record the game of the week, as tactical units pit their skills in realistic combat scrimmage.

5. The command and control simulations center is the heart of training for the staff.

LIFE WITH THE REGIMENTS

1. Once soldiers were assigned a regiment upon entering the Army.
2. And **once** they bought a home around the **home base** of that regiment.
3. And the reserve components were **affiliated** with that regiment and had permanent access to the post and the training areas, even deploying with the regiment during rotation (for a short time).
4. And finally, the local retired community became active working members of the garrison when the troops deployed; then
5. We became a total Force family.



THE TOTAL FORCE FAMILY

The Army continued as the leader in programs that made a real and appreciated contribution to the nation.

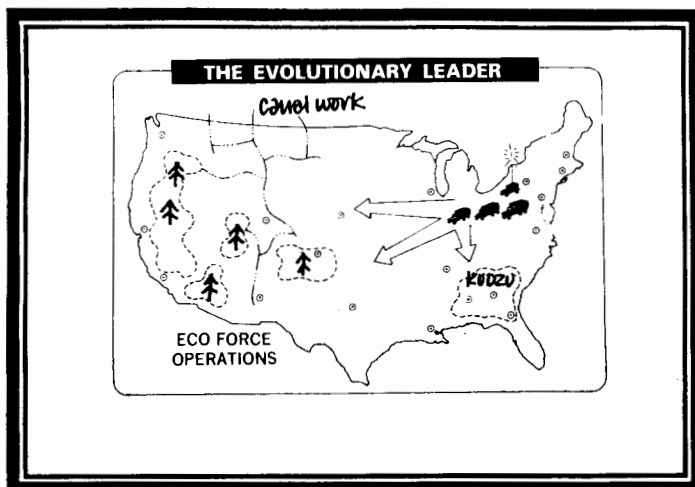
1984 - The first massive forest planting exercises begin, using school children and older folks.

1985 - Canal work begins to join NW canals with Canadian canals.

1986 - Regiments in the southeast harvest kudzu for use as cattle feed and methane gas.

1988 - Army Posts lead the nation as energy-efficient townships.

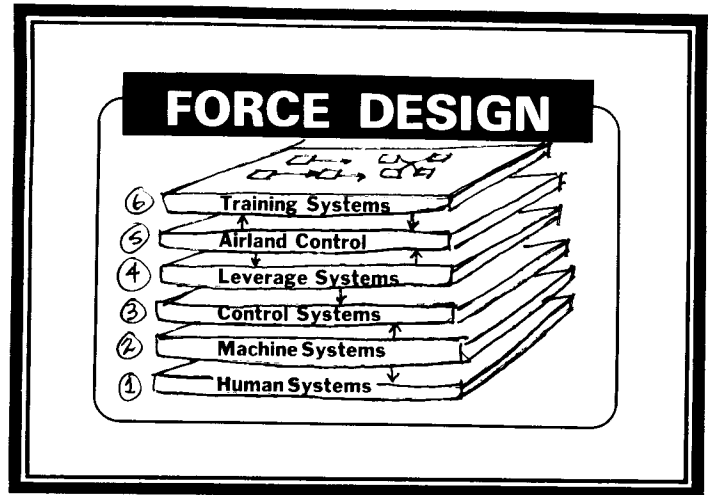
The Regiments each sponsor a township and, using Army organization, communication and transportation assets, ECO FORCE (Ecology Force) begins on an unprecedented scale.



INTEGRATED 3-DIMENSIONAL THINKING!

1984 - FORSCOM commanders finally convinced Army that Force design must blend the needs of the total fighting system...not just fancy technology!

1. The soldier must be attracted to and be able to use the machinery.
2. The machines must be simple and rugged and do the job.
3. Simple control doctrine must guide the employment.
4. The tactics must focus on destroying the enemy's ability to prosecute the battle...not just destroy his systems.
5. The master control grid must include the Air Force systems and their integrated employment.
6. Realistic training challengenvirons must be designed right along with the weapons and doctrine.



They Are All Designed Together.

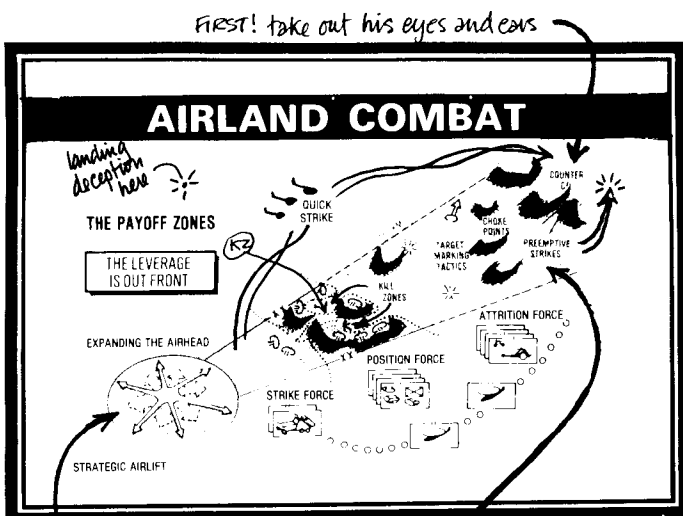
1987 - An ARI study confirmed that you can't describe a 3 or 4 dimensional battlefield in 2 dimensional word language...so officers began to study conceptual graphics in the TRADOC school system.

LEARNING TO LEVERAGE

A warfighting study done by the Brits in 1984 revealed that American officers lacked cunning.

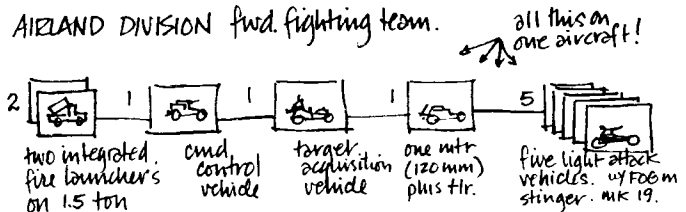
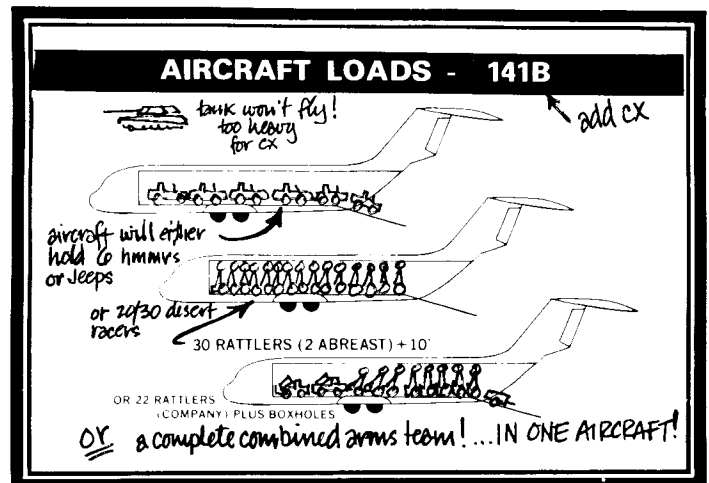
And so there was a push by CSA/CG to teach all our officers to leverage their resources better...in other words, learn how to hit the bastards where they live.

Be *effective*, not *fair*!



"expanding the airhead" cx and 141 c aircraft deliver high speed packages that get out to attrition zone at 60 mph.

this is more like soccer than football. We take advantage of our high speed technological quirk with style to hunt him in the attrition zone.



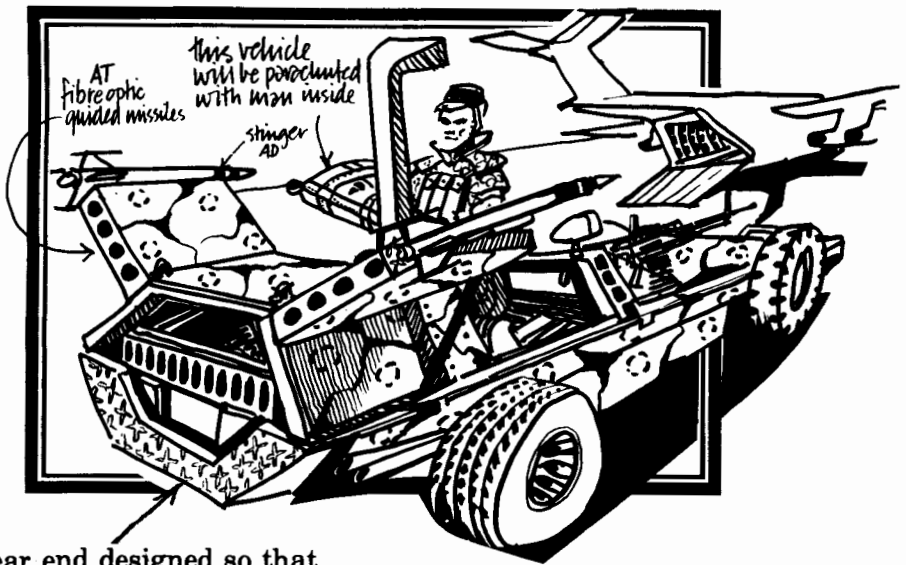
THE AIRLAND DIVISION

The design is based on the American youth's need for exciting machine to drive...but more importantly the Army finally got serious enough about the AirLand concept (this happened in '85) to begin to design complete tactical units around the mother ship required to deliver them to contingency areas all over the globe.

Note: When airborne desert racer was modified into light attack vehicle, the recruiters were overwhelmed with requests to be airborne dune buggy drivers.

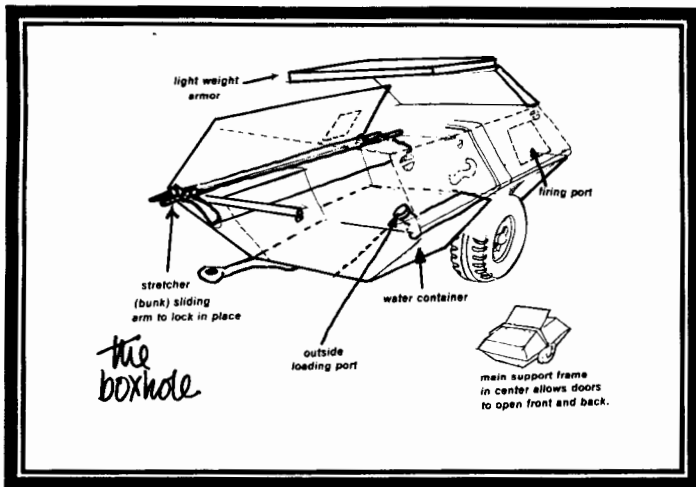
THE AIRLAND DIVISION: THE LIGHT ATTACK VEHICLE A Modified Desert Racer

Army Recruiting jumped when we finally had something as sexy as the AF fighter.



Rear end designed so that vehicle can be loaded vertically.

THE AIRLAND DIVISION: THE BOXHOLE Don't Forget the Soldier



The boxhole surfaced in '84. Finally the infantry soldiers got:

- a. Some protection from enemy artillery.
- b. Protection from chemical attack.
- c. Enough water to survive in the desert.
- d. A field ambulance.
- e. Storage for their mission load.
- f. Protection from extreme heat and cold.
- g. A quality fighting position!

Another simple, rugged and multi-purpose idea characterizing the Army's new emphasis on *things that work*.

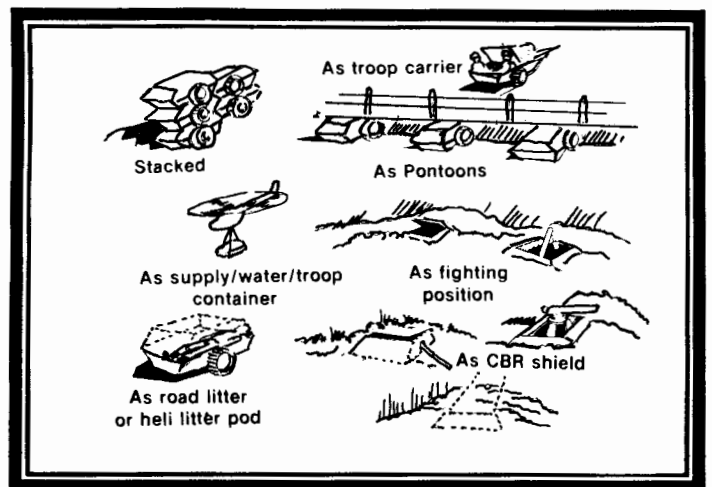
The logisticians loved this because they had a mobile supply container that could preposition many needed resupply items in one simple, air mobile and disposable container.

THE BOXHOLE High Tech

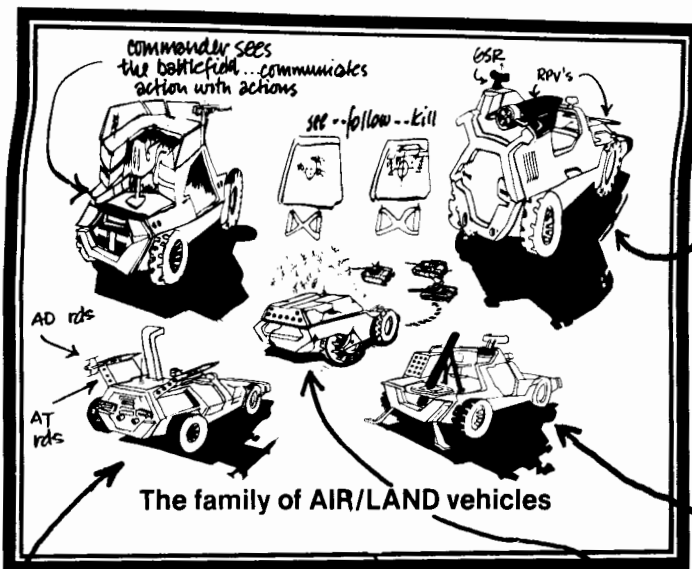
The Army initially thought that high tech meant sophisticated equipment.

By 1983 it realized that high tech was really simple designs...that met a broad number of needs...that made sense logistically...that made sense to the soldier...and that made sense to the taxpayers.

The boxhole is an example of high tech. Simple but elegant in its design.



THE AIRLAND DIVISION: VEHICLES



1985 - Army realizes target acquisition must accompany firepower for the complete system.

1987 - Warrant officer positions authorized for commanders and target acquisition officer jobs.

Army goes with 120 mortar for reach and illumination requirements.

Robotics. Army robotics program 1987 delivers small tank killer that watches with TV camera and then follows enemy tanks...shooting them in rear one at a time.

This airborne desert racer becomes backbone of forward elements. Uses fibre optic guided missile with 10k range against tanks. Uses viper/stinger combination against aircraft and mark 19 automatic grenade launcher against people and BMPs.

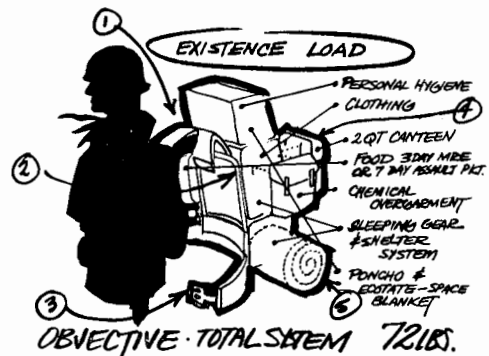
THE AIRLAND DIVISION: SOLDIERS Soldiers' Needs

With a continuing effort the Army was able to achieve some important efficiencies in the soldiers' fighting gear during the '80s.

Beginning the decade the infantry man's load was in excess of 130 lbs; by 1990 it had been reduced to 72 lbs.

We finally realized in late 1981 that civilian industry was already making and testing some back-packing and sleeping gear that was excellent.

So instead of going through the long agonizing R&D process, the HTTB just bought some off the shelf...made a soldier-proof check and included it in the existence load for the soldier.



competitive sports manufacturers improved:

- ① - the harness
 - ② - the frame
 - ③ - the buckles
 - ④ - the clip on pouches
 - ⑤ - the sleeping gear with hi-tech materials
- } for the back pack

THE FIGHTING LOAD - 1986

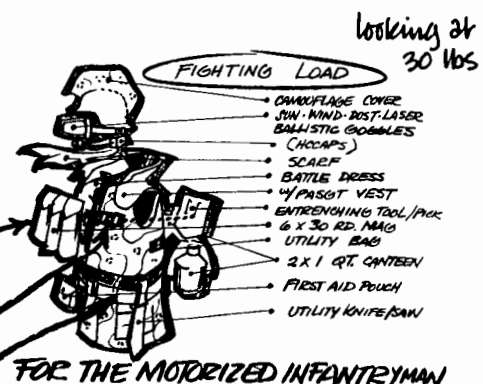
Advances in materials and design helped the human engineering labs and Natick put a more compact and effective battle dress together.

But many of the advances were made by intelligently repositioning the gear for the motorized infantryman and taking ideas from our allies.

Magazines and entrenching tool with pick are repositioned to add protection for the heart area.

Attachment strip on jacket allows infantryman to tailor load.

Israeli belt loops allow pistol belt to help support weight of improved flak jacket.



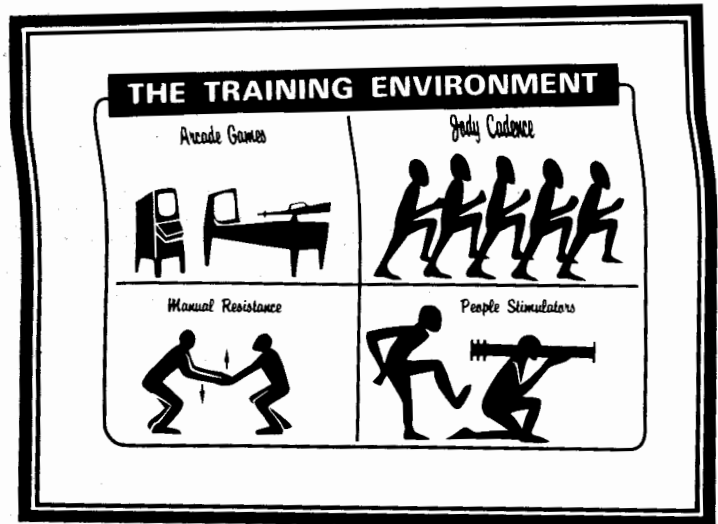
THE TRAINING ENVIRONMENT

The Barracks Home

By 1987 the barracks and living quarters for soldiers were designed by several master computer models. There were five soldiers to a room and the rooms were near the unit work place.

Teaching on the sly...arcade games with the same hardware found on Army weapons were in by 1985...physical training keyed to cohesion was in by 1986 with a military olympics and PT badge. Simulators were placed all around the barracks by the late 1980s to include some good old field expedients.

Byword: KEEP EM HAPPY...KEEP EM ON BASE...KEEP EM IN THE ARMY!



THE TRAINING ENVIRONMENT

Commander's Notes - June 16, 1990

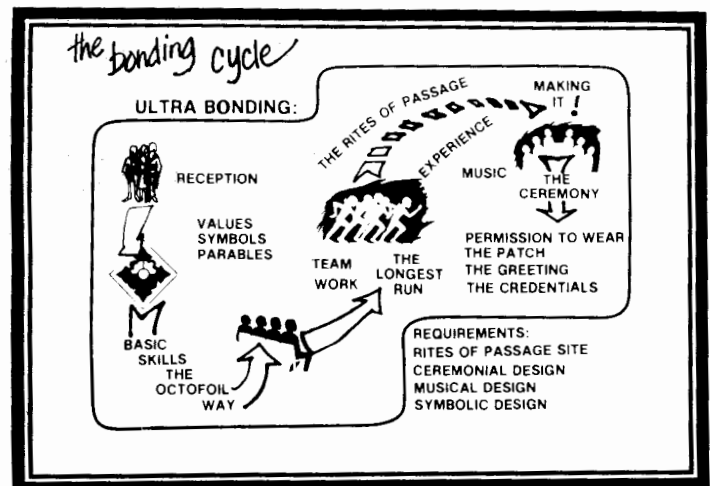
Army officers know a lot about what makes family. So why don't we coordinate all those things into one absolutely workable week? The Army ranger battalion at Ft. Lewis takes men out of their daily hide (NCOs) to run a program like this...it works!

NOTE: We need to seek out the musicians who could put a lot of values and tactics into "up to the times" music.

Find the storytellers who could develop myths and stories about soldiers who behaved just like we need them to.

Employ ceremonial designers to make all the other work stick emotionally.

Find the best Jody Cadence callers and give them intelligent material to develop into appropriate "Jody Jive"—then we can deliver good training and sing at the same time.



CONTINGENCY COMBAT: FLEXIBLE RESPONSES

1985 - Japan—Treaty violation of northern islands by Soviets. US sends planes, ships and soldiers into exercises in northern Japan. Soviets back off.

1987 - South America—Nuclear reactor is seized and terrorists demand all US interests leave the country. US strike force...makes high speed night operation that recaptures the reactor.

1989 - Small southeast African nation changes governments and threatens to blockade US ships bearing critical metals.

Special Forces assist by getting advice to the opposing political faction and assisting them back into power.

