

The Search For New Logistical Concepts

By Colonel Earl H. Hauschultz



FEW days before that December morning when gray-clad Germans broke through the fog hanging low in the Ardennes, S. L. A. Marshall stopped near Utah Beach to talk to a sentry walking post around a supply dump. The sentry said that both he and the dump had been there since three weeks after the invasion and that it had been a long time since anything had been removed from the dump. That was one aspect of logistics in World War II.

Another was the payoff of the doctrine that the "impetus of supply is from the rear"—so tremendous was the outpouring of the arsenal of democracy that no soldier, in theory, had ever to do without either chocolate bar or ammunition. That some soldiers did do without revealed a hidden gimmick in the concept: a pipeline can be stuffed to the point of constipation by the massive forced feeding of a wealthy and talented nation.

That the gimmick hadn't been foreseen isn't surprising; no other country had ever lavished such a largess of goods on armies sent so far from home. Now we know that that very lavishness contained the germs of defeat and our logisticians are searching for an antidote. Colonel Hauschultz, in the article beginning on the facing page, ably diagnoses the problems and suggests the direction the science of logistics must take. In the article following it, Joseph Bourdow reports on a step the Army is taking right now: the inauguration of a limited experiment that reverses the concept and makes the impetus of supply come from the front.



MUCH more attention is being given to developing revolutionary changes in our tactical concepts than in the equally important field of logistics. Our nation's security in the Atomic Age requires us to develop logistical concepts that are workable and in har-

mony with tactical changes. In this article I shall examine briefly the nature of the logistical problem in modern war and define a concept for meeting the nuclear challenge.

As we proceed, it would be wise to remember that although planning for war may be a science, its con-

duct is an art and as such is subject to the imponderables found in the variables which characterize military operations.

The foremost of these variables is that wars are waged by fallible human beings. Here we deal with the unpredictable and many-sided reactions of superiors, equals and subordinates. Out of human frailties and foibles come misunderstanding, misinterpretation, selfishness, contrariness and incompetence. — all failings that can disconcert the best-laid plans.

In our search for the truth in the struggle for survival, the areas of richest promise lie in ourselves and the courage of our own convictions. The Bible says it clearly: *The thing*

that hath been, it is that which shall be, and that which is done is that which shall be done; and there is no new thing under the sun.

Historical Evolution of Logistics

It is significant that recognition of logistics, as a third major subdivision (after strategy and tactics) of the science of war, has been relatively tardy. Although Alexander understood its principles and Napoleon learned at Moscow that armies march on their stomachs, logistics was only faintly understood by history's great commanders. Lincoln had a profound understanding of logistical implications. In a letter to General Banks he demonstrated that the Union armies moved more slow-



ly than the Confederates because every U.S. commander insisted on gathering huge supplies before he advanced, then had to get horses and wagons to haul the supplies, then had to get forage for the horses, and then had to get extra-duty men to care for the animals and the supplies. "My Dear General," wrote Lincoln, "this expanding and piling up of impedimenta (sic) has been so far almost our ruin, and will be our final ruin if it is not abandoned."

There are several reasons for the laggardness in perfecting logistical organization for war. Before the complexities of modern equipment were made available by the Industrial Revolution, the ageless practice of living off the land made extensive logistical support unnecessary. On the April night in 1775, when Paul Revere rode the few miles from Charlestown to Lexington with the news that the British were coming, he set in motion forces which made history. Within the next twenty-four hours these forces produced three results: the militia was mobi-



lized, it was equipped, and it met the enemy.

Six generations after the ride of Paul Revere, the U.S. declaration of war against Germany released the same forces, but in 1917 the process was in exaggerated slow motion. Three and a half months elapsed before the first number was drawn in a draft which was to provide an army of nearly four million men. Another one and a half months elapsed before the first group of selectees started for the training camps. The United States had been at war with Germany nearly seven months before the first shot was fired by American troops on the Western Front, and at the close of 1917 there was but a single American division in action.

It was in this war that the high command found a need for an offi-

cial service and supply organization.

The period between the two world wars set the stage for conventional modern warfare by advances in technology, production and distribution. It was not, however, until the final stages of the war that the full significance of the impact of total war on logistics was generally realized and its various components assembled.

Today, the relatively small armies of the past have given place to intricate combinations of men and machines. They feature mobility, fire power and destructive capabilities undreamed of a century ago. They create tremendous demands for supplies and equipment of unimaginable variety.

Out of this situation several problems developed: how to maintain production through dispersal of





plant and supporting populations; how to provide shelter, food, clothing and utilities for disaster relief with the attendant drain on reserve stocks intended for the combat forces; how to protect extended lines of communications from interruption.

During World War II the foundation for theater logistics rested on preliminary plans and decisions made in Washington. Though for months before our entrance into the war we had planned for the movement of troops overseas, these plans failed to estimate correctly shipping requirements in terms of existing capability. Throughout the war operations were continually delayed by shipping shortages.

The war in Europe was characterized by mammoth stocks of supplies, equipment and matériel which could not keep up with the tactical pace over comparatively short distances. The war in the Pacific was

typified by austerity — though inspired planning and leadership managed to support the combat forces over tremendous stretches of water and jungle.

An examination of these two theaters should provide some fundamental guide lines for the future.

The landing on the continent of Europe and the consequent defeat of the German armies was an unparalleled movement of men and supplies in which it was conclusively proved that commanders could not ignore supply problems nor disregard their effect upon operations.

Overlord was backed by logistical support based upon a build-up in the United Kingdom. There were, however, three vital factors Overlord planners failed to consider which affected not only the logistics but the over-all strategy of the campaign. The first of these was the tendency of senior combat comman-

ders to override supply considerations and indulge in spectacular, if short-lived, tactical gains. This is illustrated by the dash of the Third Army across France despite the absence of ports to supply it. The dash bogged down, not because of enemy action but because of the supply shortage which the possession of the ports would have insured.

The second factor was overestimating the capabilities of the French railways. With great ingenuity — and publicity — truck transportation was thrown into the breach, and while the Red Ball Express did provide a temporary stopgap, it did so at the expense of long-term problem of forward build-up.

The third factor was logistical organization. During the first phase of the campaign the ComZ comman-

der also served as the deputy theater commander. This created a condition whereby tactical planning was influenced by an unrealistic logistics plan. It created an inflexible situation and finally an inability to support the unanticipated speed of the pursuit across Europe.

Logistics experience in ETO can be summarized as follows:

A tendency to complicate command relationships by excessive decentralization of operations and authority.

Inadequate delineation and control of the relationship between the combat forces and the ComZ and its sections.

A transportation system inadequate to the needs of the combat forces.

Inadequate control of transportation and the flow of supplies from



ComZ to the combat zone.

An inadequate communications system unable to control supply operations.

Failure to plan for and provide adequate, feasible and workable supply levels.

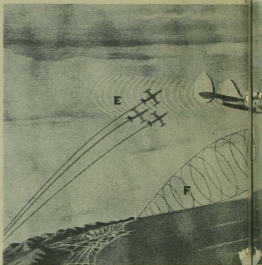
Failure to implement sound principles of stock control.

To a lesser degree these same lessons could be derived from a study of the Southwest Pacific Theater. Here, however, maneuver was on a grand scale, and a study of the distances involved and theater deployment could well be used as the pattern for logistical support under dispersed conditions.

Effect of Nuclear Weapons on the Science of War

The maturing of air capability and mass-destruction weapons has established a requirement for new tactical concepts. Such tactics, according to tacticians, will emphasize the principles of maneuver and surprise. To exploit these two principles, modern tactics envisages deployment in great depth and across broad fronts with the capability of concentrating great striking power rapidly. Where in the past this striking power has been made possible by concentrations of troops, fire power is rapidly achieving dominance, and further advances in automatic weapons of greater power will emphasize this even more.

This establishes the need for small, combat-autonomous, mobile battle groups, trained and equipped for fast attack and quick withdrawal; means of forcing the enemy into concentrations that are rewarding to nuclear weapons; the ability

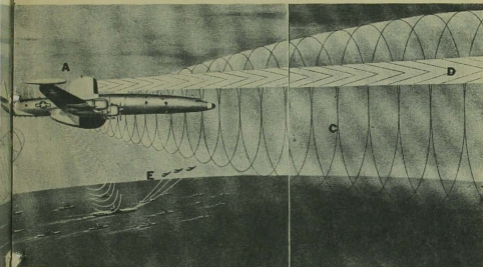


Recent advances in nuclear

to hold strong points for prolonged periods, with supply and reinforcement by air; an integrated, coordinated and effective system of tactical air, or guided-missile, and ground attack; extensive preparations for retarding and denying operations; and, finally, tremendous fire power.

These changing concepts have a definite impact on logistics. They have caused many logisticians to anticipate great increases in the support organization along with the acceptance of added responsibility. If we are to avoid commitment of too large a fraction of our army to supply functions, improvements must be made in the efficiency of logistical support organization and procedures.

Nuclear weapons clearly leave both



weapons and modern aircraft pose added problems in the field of logistics.

strategic and tactical logistics in a vulnerable position. It is no longer true that the impetus of supply from the rear stops short of artillery range at the army supply point. Logistical operations can no longer be conducted with relative safety behind this point.

Current Logistical Problem Areas

The present logistics system operates on the principle of mass by concentrating huge quantities of supplies and matériel contiguous to the combat operations area in static and usually partially unidentified storage. This system will not do in a time of nuclear challenge. It has hindered logistical mobility in the past, and will certainly prove inadequate for the support of modern mobile tactical concepts. The appli-

cation of modern mobility to strategy and tactics dictates its application to logistics. An academic treatment of the problem suggests several means for making the logistics system in the light of technological capabilities.

Any study of logistics must encompass its basic functions: movement and supply. Supply can further be reduced to the functions of procurement, storage and distribution. Our interest lies in the business of getting the means for making war from the ZI stockpile to the combat troops.

It has been demonstrated that in spite of speed capabilities ten to a hundred times greater than those enjoyed by George Washington, the average speed forward for supplies in World War II exceeded Washing-

ton's by only two miles an hour, for a record three and a half miles an hour. This emasculation of transportation capability can be charged mainly to outmoded administrative and handling procedures. To gear logistics to the pace of modern war requires the elimination of administrative and procedural stoppages in the pipeline, and a built-in capability to identify tonnage in terms of line items concurrently with that movement.

A supply system that embraces a complex depot system and emphasizes detailed inventories with attendant segregation of items on a retail basis, plus a requisitioning system reminiscent of a housewife's shopping calendar, is incapable of meeting the requirements of the fu-

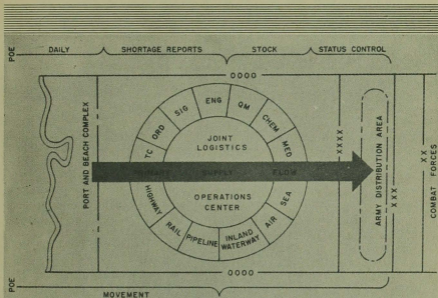
ture. Hindsight convinces the thoughtful that his system has worked successfully in the past only because of an almost inexhaustible wealth in resources. This system has provided adequate front-line supply at the expense of mountainous stockpiles of supplies stretching from the rear of the field army back to the manufacturing plants in the Zone of the Interior, and the farther the distances involved, the more the cavernous maw of the pipeline craved. A large portion of these supplies never see the front lines, being required to support the force that is needed to count and handle them. This creates a vicious cycle: the more supplies, the larger the force required to administer them, which in turn creates the require-

COMPARATIVE ORDER AND SHIPPING TIME (surface transportation only)

WORLD WAR II		TODAY	
(Experience figures extracted from FM 101-10, August 1949)		(Time estimates by experienced movements control officers using modern facilities capabilities)	
Action	Time	Action	Time
Preparation of requisition in theater	12 days	Daily theater shortage reports	1 day
Airmail time to POE	4	Radio telecon	—
OSD edit and extract time	8	Monitor only	1
Mail time to ZI depot	2	Radio telecon	1 ¹
Depot shipping time	14		2 ²
Transit time to POE	12		6 ³
POE loading time	12		2 ⁴
Transit time to POD	20		15 ⁵
POD unloading time	12		2
Transit time to army	24 ⁶		2 ⁷
Total	120 days		32 days

¹Time acceleration thru 48 message from theater based on 1,500-mile average distance.

²Now MSIS freighters have 22 liner capability.
³Add 10 days for time to divert.
⁴Based on 500-mile average.



The Joint Logistics Operations Center works under the staff supervision of the G4. The elements are directly representative of the pertinent technical service. This organization would appear at the ComZ and subordinate levels. Its World War II precedent in the SWPA was the Cargo Loading Committee.

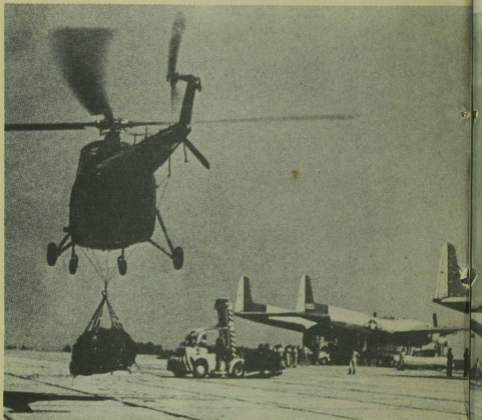
ment for still more supplies, and so on.

An example of what we must achieve can be found in the logistical problem of skyscraper construction in New York City. Space for stockpiling construction materials simply doesn't exist; yet the cost of labor requires that materials be on the job site when the workmen are ready for them. The solution is a carefully controlled delivery system that brings what is needed to the job when it is needed.

The logistical requirements of war

are massive in comparison with the building of the largest skyscraper. And yet the Army must do as well. The secret lies in our organization for logistical support. That means qualified professional officers.

Our organization for logistical support has grown more by happenstance than by considered design. Generally, even a poor organization is not fatal if capable men direct it. However, the logistical organization, comprised as it is of seven separate segments, lends itself to weakness through piecemeal and un-



concerted effort. This has required the superimposition of a staff at the departmental level in both world wars. Our present Deputy Chief of Staff for Logistics may be the answer.

In the final analysis, the fact that our logistical mobility is little better today than that of our Revolutionary ancestors is due mostly to the lack of professional officers who appreciate the problem and have the know-how to solve it. To develop men with such understanding and know-how, we should:

Develop a uniform logistical doctrine that will apply to all the technical services. A single agency must do this, since the development of logistical doctrine cannot be divorced from the development of tactical doctrine.

Effectively coordinate the technical services, particularly in the area of logistical operations.

Create a logistics developments group commensurate to the combat developments function of Continental Army Command.

Provide for professional logisti-



cians by establishing a logistician's career pattern to include schooling above branch level for combat and service officers interested in such a career.

Can Logistics Meet the Challenge?

Armed with these elements, what can logistics do with its present capabilities?

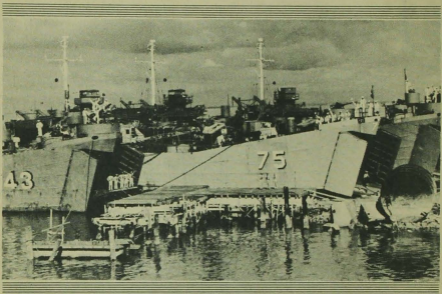
As we have seen, logistics has trailed behind tactics in mobility, maneuverability, dispersion, and deception. Therefore, the problem that faces logisticians is not so much

to embark on revolutionary changes as it is to catch up with evolution.

The Southwest Pacific Theater of World War II suggests a solution to the dispersion problem. Who can deny that if the scattered bases dispersed along the axis of advance had within themselves been sufficiently dispersed, this would set the doctrinal pattern for a war in the atomic age? The history of this theater indicates that while the strategist and tactician exploited movement for their purpose, the logistician, perhaps through mistaken economic reasoning, allowed the means of movement to exploit him. There were exceptions when, in tactical emergencies, supplies by-passed the chain of bases to flow directly to the consumer. These instances, while rare, show that it is possible for supply and movement to react as one sensitive, intelligent body to the requirements of combat.

Since speed of movement is constantly increasing, it is logical to focus effort on a system employing both movement and dispersion, letting movement compensate, so far as possible, for added manpower and materials required in a system built around dispersion alone.

If logistical mobility is to enable us to evade the fury of the unleashed atom, we must identify what we can do with what we have and then determine the effectiveness of the result. By applying such procedures as automatic supply coupled with daily theater shortage reports, radio telecon, faster loading and unloading of ships, improved materials handling, and such, it is possible to reduce the World War II average



order and shipping time of 120 days to 32 days. Roughly this means that the speed of movement forward has quadrupled. Even with this modest improvement, theater reserve supply levels could be reduced by a minimum of two thirds without jeopardizing combat support.

Logistics'

New Look

Reducing theater supply levels will improve the dispersion capability while concurrently reducing manpower and facilities requirements, which will in turn release movement capability for the additional load created by dispersion. This argument should make it clear that movement and dispersion complement each other.

From these evolutionary trends emerges the shadowy shape of mo-

dern logistics. These trends emphasize an expedited transportation system, which to be fully efficient must revolve about an expedited materials-handling system. Administration of supply reduced through greater use of modern communications facilities using semiautomatic supply methods. This, in turn, can eliminate repetitive screenings of requisitions at various command echelons, some of which can be entirely eliminated from the logistics system. Drastic reduction of theater levels of supply will eliminate manpower and facilities requirements. Modern movement, materials handling, and communications technology now enable the logistician to employ dispersion and movement as his answer to the nuclear challenge.

The line of communications from

source to destination gives us the room to maneuver. In the sense of cross-country mobility, the width of the LOC must be defined as the width of the operational theater.

As segments of this LOC will suffer dislocation from time to time by enemy action, the entire system must move forward at a rate geared to consumption requirements. When a segment is destroyed, the loss, while comparatively small due to its dispersed state, must be replaced from the supplies in "fluid dispersion" and this stock replaced in turn by an increase in speed in all segments to the rear of the one destroyed until the gap is closed. Obviously, the major portion of the theater reserves are in the pipeline itself.

The organizational structure required to man and control this system must provide integration or infinite coordination of supply and movement. It must provide security in fact instead of in theory. And lastly, in its philosophy, it must be unified within itself and be part

and parcel of the combat forces which it supports.

Integration of supply and movement in the current organization can be attained by the introduction of a joint logistics operations center at ComZ and its various subordinate levels. This provides for the integration of the army technical services and the supporting sea and air elements. Stock status and movement control must be exercised around the clock.

It is time to cease conjecturing and time to do! We overcomplicate the science of logistics which, of the sciences of war, is the most factual and manageable if we would make it so.

My concluding thought is best expressed by a quotation from an address to the Industrial College of the Armed Forces made in 1946 by General Somervell: "The important thing is to let the plan be for the next war and not for the one just past. Experience is not enough; you have to have some vision."

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About the Author

Colonel Earl H. Hauschultz was commissioned in the Infantry Reserve after graduating from Ripon College in 1933. After a tour with the CCC and employment as a mechanical engineer he was ordered to active duty in 1941, serving five years in the Southwest and Western Pacific Theatre. Integrated into the Regular Army in 1953, he transferred to the Transportation Corps. He has served on the Seattle Port of Embarkation, The Transportation School, and on the staff of IX Corps in Korea. A graduate of the Army War College, he is now G3 Executive for Plans and Doctrine at CONARC.