CSI Historical Bibliography No. 2

LIGHT INFANTRY FORCES

by

Major Scott R. McMichael

Combat Studies Institute
U.S. Army Command and General Staff College
Fort Leavenworth, Kansas

January 1984
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preface</td>
<td>v</td>
</tr>
<tr>
<td>Notes on Document Locations</td>
<td>vii</td>
</tr>
<tr>
<td>I. Overview</td>
<td>1</td>
</tr>
<tr>
<td>II. World War II American Experience</td>
<td>5</td>
</tr>
<tr>
<td>III. Airborne Divisions--World War II and Later</td>
<td>7</td>
</tr>
<tr>
<td>IV. Divisions of the 1950s and 1960s--ATFA, PENTANA, ROAD</td>
<td>11</td>
</tr>
<tr>
<td>V. Comparative Views and Alternative Proposals</td>
<td>13</td>
</tr>
<tr>
<td>VI. Technical Analyses</td>
<td>15</td>
</tr>
<tr>
<td>VII. Foreign Armies</td>
<td>17</td>
</tr>
</tbody>
</table>
This annotated bibliography was initially developed in conjunction with the initiative of the Department of the Army in 1983 to develop the force structure for 10,000-man light infantry divisions. Its goals were to provide annotated historical references for the combat experiences of previous light divisions and to list historical sources on the force design process, especially in regard to attempts to lighten the force or to respond to improvements in technology on the battlefield. The first draft of this bibliography was distributed in September and October 1983 as a quick reference to force planners across the Army.

Since that time, the bibliography has been expanded, but the general focus remains the same, historical light divisions and the force design process. It addresses light infantry forces of the twentieth century with primary emphasis on World War II and later. This document can serve as a starting point for force designers' research into the origins, organizations, capabilities, and combat experiences of light infantry forces.

In order to permit widespread distribution of this bibliography, only unclassified sources have been cited. However, additional classified documents on the subject exist, particularly in regard to technical analyses of force capabilities. A number of these are available in the Combined Arms Research Library (CARL) at Fort Leavenworth, Kansas.

The enclosed charts describe light infantry and close combat forces of World War II as well as some of those in being today. The selection of the contemporary units was based on their capability for strategic mobility, since this is the overriding design parameter for the new U.S. light division. The charts afford an opportunity to discern how different countries have approached similar military requirements, developing military organizations that differed widely in size, structure, equipment, and tactics. Data depicted on the charts has been taken from sources cited in the bibliography.

Since World War II, factors such as mechanization, nuclear weapons, and electronic wizardry have obscured the significant role to be played by confident, agile, fit, motivated, and well-trained infantrymen. Yet, even in this era of high technology, groups of foot soldiers remain powerful and influential forces on the battlefield. This bibliography is intended to contribute toward the rediscovery of the utility of light infantry.
NOTES ON DOCUMENT LOCATIONS

Many of the references in this bibliography are available in large public and university libraries or in military libraries established across the United States. However, a number of them exist only in special libraries or special offices. The author has identified those not widely available by notations and call numbers at the end of the bibliographic citation. The abbreviations below are provided for assistance.

CARL .... Combined Arms Research Library
Combined Arms Center, Fort Leavenworth, Kansas

CSI.... Combat Studies Institute
USACGSC, Fort Leavenworth, Kansas

DTIC.... Defense Technical Information Center
Cameron Station, Alexandria, Virginia

MHI.... Military History Institute
Carlisle Barracks, Pennsylvania
Section I. OVERVIEW


This work deals with elite military units of the twentieth century. The author analyzes the reasons for the formation of these units, their relationships to conventional forces and their parent systems, and their successes on the battlefield in meeting the goals of their creators. The U.S. Army Tank Destroyer Corps, the U.S. Army Rangers, the First Special Service Force, the British Long Range Desert Group, the Afrika Korps, the Waffen SS, the U.S. Army Special Forces, the Irgun, and national paraatroop units are among the many units discussed by Beaumont. The author maintains that, given the limited benefits of elite forces to the overall outcome of major battles and campaigns, their cost has been too high, in terms of the diversion (from conventional forces) and loss (through death) of the military's best young leaders.


Binkley's article addresses the evolution of division organization in the U.S. Army, focusing on the twentieth century. He discusses the World War I'square division, the World War II triangular division, and the postwar pentomic, MOMAR, and ROAD divisions. He achieves his objective of demonstrating how the factors of technology, tactics, and combat experience have influenced division structure through the years.


Since the Second World War, U.S. Army tactical doctrine has owed its character to a number of factors, often at odds with each other. Among these factors, national security policy, new technologies, service and branch parochialism, and actual battlefield experience were the most effective arbiters of what the Army's doctrine and force structure would be.


Small groups of foot soldiers remain even today among the most influential on the battlefield. In support of this thesis, the author examines infantry operations and training and compares organization, equipment, weapons, and tactics of several national infantries since 1864. Well researched and written in a clear style, A Perspective on Infantry is a superb history of modern infantries, convincing the reader of the continued importance of the foot soldier even in this technological age.

Originally printed in 1947, Men Against Fire has become a military classic. Using an eloquent prose distinguished for its clarity of expression, Marshall illuminates the problems of leading men to risk their lives on the battlefield, touching on the physical and psychological aspects of the problems of command in minor tactics. This book identifies some of the most important objects for training programs of light infantry forces and leaders. Men Against Fire uses a number of historical combat actions as examples.


The author provides an overview of the changes to the U.S. infantry division from 1900 to 1939. He makes comparisons with European divisions and presents the historical arguments for change, particularly those addressing the needs to maximize mobility and flexibility. He also analyzes the results of field tests and combat experience.


The author traces the origins of the U.S. Army infantry division from World War I to 1968, focusing on key personalities (e.g., Maj. Gen. Leslie McNair) and changing influences on division structure. The triangular division of World War II gave way to the pentomic (ROCID) division of the 1950s only to be followed again by the triangular ROAD structure. Ney briefly discusses the light infantry divisions of World War II.


The modern U.S. Army infantry battalion has its origins in the pre-World War II army. Since then, its organization has been influenced by combat experiences, the advent of nuclear weapons, and major advances in the technology of war. The author notes that the prevailing trend has been toward even higher increases in the infantry capabilities for fire and movement.

This work is the official TRADOC history of the development of Army 86. The section dealing with the development of the High Tech Light Division is especially interesting. It describes the original initiative and guidance for the formation of a light division, the interaction of the service schools, CAC, and TRADOC, the development and rejection of the three original HTLD designs, and the final acceptance, with reservations, of the fourth design (17,700+ soldiers).


This source is a chart showing the evolution of the division span of control, equipment, and tactical doctrine in the U.S. Army from 1777 to the ROAD division. Force structures of units and staffs are depicted. The chart also explains how improvements in technical capabilities of weaponry and equipment changed force structures and doctrine.


Prepared under the direction of Col. George C. Marshall, Infantry in Battle is concerned with tactics of small units, with detailed examples drawn from World War I as illustrations. Its purpose, which it achieves, is to acquaint the reader with the realities of war through the emphasis of a number of important lessons. Some of the issues developed by the authors are simplicity, obscurity, decisions, mobility, control, and reconnaissance. Like Men Against Fire, this book is a valuable source of information for light infantry trainers and planners.


Wilson made a comprehensive study of U.S. Army force structures in the nineteenth and twentieth centuries. His study includes RA, USAR, and NC units and presents the arguments and influences behind organizational changes. The inability of the Army planners to agree with field commanders on the structure for a World War II light division is revealing.

This source is a yearbook-style history of the 71st Infantry Division during World War II. Of particular interest are pages 11-22 that deal with the division's organization, training, and testing as a light (pack) division in 1942-44.


Much like the selection above, pages 47-62 of this unit history carry the 89th Infantry Division through its organization and training as a light (truck) division in 1942-43, its subsequent testing in Louisiana and against the 71st Light (Pack) Division at Hunter Liggett in 1944, and its deployment to Europe as a reorganized standard infantry division.


Citing original source materials in the form of War Department correspondence (which is not available at MHI or CGSC), the authors describe the efforts made by Maj. Gen. Leslie McNair (CG, Army Ground Forces) and his staff to limit the size of American divisions formed during World War II. They discuss differences between the ACF, the War Department, and field commanders. In particular, the authors describe the U.S. experiment with light divisions in 1943-44.


This source is a collection of individual papers, produced under TRADOC contract DABT-58-82-C-0055. Included in this collection are the three papers below, which deal with nonstandard U.S. Army forces in World War II. The papers discuss the organization, training, testing, and eventual use of these forces in combat.


Postwar TO&Es for infantry, armored, and airborne divisions, submitted by the Commander, Army Ground Forces, are described in this document. After approval by the War Department, peacetime strength reductions were implemented in TO&Es. CARL documents N-15338A through N-15338E support this subject with other diagrams and charts.

This postwar report of the infantry conference formed to consider the lessons of World War II contains a section discussing special divisions. Transcripts of comments by Omar Bradley, Walter Krueger, Courtney Hodges, James Gavin, C. D. Eddleman, et al., are included.

At the conclusion of World War II, the U.S. Forces European Theater Headquarters convened a General Board, composed of some of the most prestigious general officers and commanders from the war. They met to record the most important lessons of the conflict, producing numerous separate studies as a result. The four studies above contain their recommendations for the organization, equipment, and tactical employment of the infantry, airborne, armored, and special divisions.

Several 10th Mountain Division unit histories are on file at Military History Institute, Carlisle Barracks, PA.
Section III. AIRBORNE DIVISIONS—WORLD WAR II AND LATER


In 650 pages, Paratrooper presents a detailed account of every airborne and airdrop operation conducted during World War II by the U.S. Army. The book combines extensive research, based on thousands of interviews, with a stirring narrative. However, its descriptions of airborne operations suffer from a lack of maps, and little attention is given to airborne tactics or force structure.


Unlike some popular accounts of airborne operations in World War II, this book deals comprehensively and systematically with the uniforms, weapons, equipment, training, organization, air transport, combat operations, unit histories, and key personalities of the German Airborne Corps. Although the combat narratives lack some tactical detail and no substantial information on force structure is provided, the maps, photographs, and technical information are excellent.


Once published, Lt. Col. Glantz's work will become one of the most authoritative English-language sources available on Soviet airborne forces. Using sources almost entirely Soviet in origin, with German sources for the World War II operations, Glantz covers the time period from the 1920s to the present day. This study is a valuable source of detailed information on Soviet airborne operations in World War II at the tactical and operational levels. Maps, tables, and data on airborne force structures are included.


This work goes beyond paratroop operations to consider the entire gamut of airborne warfare, including troop delivery by parachutes, gliders, helicopters, and reconnaissance craft. Although the focus is on airborne operations conducted during World War II by all the major belligerents, postwar developments are also discussed; the U.S. airmobile experience in Vietnam receives special attention. The author's objective is to demonstrate the utility, complexity, and changing nature of operations in three dimensions.

*Airborne* is a cursory overview of the history of American airborne forces from 1940 to 1978. Not really a scholarly work, the book is written in a popular style interspersed with war stories and anecdotes. Although it contains little analysis of the utility of airborne forces or airborne force structures, it is useful as a general record of the activities of America's own airborne units. Maps, photographs, and pictures of unit patches are included.


Huston's work is acknowledged as one of the best studies of the American airborne experience in World War II. He discusses the development of American airborne formations in detail, as well as the training, material, and doctrinal bases for the new arm. An operational history is included. The author's analysis of the effectiveness of the airborne arm is illuminating.


This collection of individual papers has been cited previously. The two papers described below concern Soviet and German airborne forces.


The distinguishing characteristic of German airborne troops, especially relative to other airborne forces (U.S., British, Soviet), was their development from a force used solely for raids into a true light infantry noted for their tactical skill and agility. Organizational development, operational methods, comparative uses, and the evolution of tactics are discussed in this paper.


Soviet airborne operations have not been characterized by notable success, yet the Soviet Army persists in maintaining a large number (seven) of airborne divisions which are considerably lighter than the U.S. airborne division. This paper reviews the Soviet use of airborne troops over the past sixty years and describes the changes in organization, equipment, and doctrine.

A tribute to the daring, toughness, perseverance, and indomitable spirit of German paratroopers. This book provides an operational history of German airborne units in World War II. Well researched, it describes the key figures in the development and employment of the German parachute corps and illuminates some of the strategy and tactics of their use. Few maps are included, and no information on force structure or weapon systems is provided. The book serves reasonably well as a record of German airborne operations but contains very little doctrinal analysis of the military art embodied in the airborne capability.
Section IV. DIVISIONS OF THE 1950s AND 1960s--ATFA, PENTANA, ROAD

Although many documents discuss Army force structures during the 1950s and 1960s, the items below are among the best and are the most germane to the current DA programs aimed at developing a new light infantry division force.


In a short survey of the capabilities and organization of the pentomic division, the author describes the improvements in mobility, combat power, and command and control that the pentomic division was supposed to provide. The article includes a discussion of offensive and defensive tactics for the new organization.


Perret-Gentil compares and contrasts the U.S. pentomic division with European and Soviet triangular divisions. In general, the author recommends the triangular organization because of its advantages in flexibility, simplicity, and command and control.


Maj. Scotter proposes that the best way to reduce the size of the infantry division is to organize platoons with five five-man sections, in lieu of three nine-man squad companies with four platoons, and battalions with four rifle companies and a support company. Brigade HQs should be dropped. Each division should fight seven infantry battalions.


The small 8,600-man, pentomic-style division discussed in this short paper comprised up to five maneuver elements directly subordinate to the division headquarters. The advantages and disadvantages of fielding a small division during the nuclear age instead of a large division are discussed. The 1956 viewpoint on new technology versus tactical organization is interesting.

In response to a directive by the Chief, Army Field Forces, the CGSC undertook this detailed study to investigate the optimum organization for Army divisions in 1960. It considers three types of divisions--armored, infantry, and airborne--and discusses the conventional and nuclear battlefield. It reviews the results of the post-World War II studies and conferences and considers weaponry, manpower ceilings, technological advances, and division missions and capabilities. This work is an important historical document in regard to the theoretical arguments on division organization in the 1950s.


A companion piece to the CGSC study, "Organization of the Army During the Period 1960-1970," this document represents the proposal from the Infantry School for the optimum organization for the infantry division in 1960, incorporating the new equipment expected to be available at that time.


As the title indicates, the 3d Infantry Division tested the ATFA organization and reported its evaluation of the structures and capabilities of all echelons in the proposed division. Based on Exercise Sagebrush as well as other premaneuver training and testing, this study reports on the Army's first significant effort to deal concretely with infantry maneuver and logistics under nuclear conditions.


As part of the implementation of the pentomic division, the 1st Infantry Division was required to test ROCID capabilities. The document above is a short report from the 1st Battle Group, 18th Infantry, to the CG, 1st ID, on a field test of the unit's ability to fight conventional combat. It provides some informative comments on command, control, and mobility of the unit and compares triangular and ROCID division capabilities.
Section V. COMPARATIVE VIEWS AND ALTERNATIVE PROPOSALS


A CGSC work group produced this study in 1971. It proposes a 10,000-man light division designed for operations in a non-European, light-to mid-intensity scenario. The organization is austere, with three mechanized and four leg infantry battalions and separate howitzer batteries for each battalion.


Prepared under contract for the U.S. Army Combat Developments Command, this study compares the air assault division with the ROAD airborne, infantry, mechanized, and armored divisions. It also compares a proposed (at that time) airborne division and an infantry division supported by an aviation brigade with the AAD. Both offensive and defensive missions were analyzed. An apparent flaw in the study is the absence of significant air defenses in the enemy force array.


The division proposed by this CGSC work group is designed to provide more firepower over the same area than the ROAD division, but at a smaller cost in manpower. It contains organizational diagrams, short descriptions of changes from the ROAD structure, and justifications for those changes.


This AWC student thesis compares the pentomic (ROCID) division with the triangular division of World War II and the Korean War. The study concludes that both organizations are battle worthy and proposes that conventional artillery, maneuver firepower, and communications be strengthened in the pentomic division.

The U.S. short-lived MOMAR division is compared with the Australian Pentropic Division. The U.S. division of 15,594 men was designed as a general purpose force; the Australian division, patterned after the U.S. pentomic structure, was designed for the Southwest Pacific and Southeast Asia.


About two-thirds diagrams, the INSCOM-prepared handbook compares U.S. and Soviet infantry, armored, and airborne divisions down to company level for tank/infantry forces and down to battalion level for combat support forces. CSS elements are not compared.

U.S. Army Strike Command. "Infantry Division Tailored for Airlift." Fort Monroe, VA, 7 July 1962. CARL N-18888.2-B.

This study proposes an infantry division specifically tailored for strategic airlift into a secured airfield. Only 7,951 tons were permitted in the design. As a result, the organization is very light, has reduced mobility and no armor, and includes 1,215 vehicles with 867 trailers and 10,165 men. Also included is a discussion of a 4th Infantry Division proposal for a light division.

The author traces the development of the HTLD and discusses its strategic implications as a component of the RDJTF. Because of the technological force structure and its capability for strategic deployment, it provides more conventional power along the escalation spectrum than current forces.


The development of the High Technology Light Division (HTLD) as a strategically mobile, state-of-the-art, high tech division required an in-depth analysis of the bridging requirements in the theaters to which it might be deployed. This study provides that analysis along with an excellent review of the purposes, missions, and capabilities of the HTLD.


The author discusses the new equipment that could be included in a new light infantry division. The 1,230 sorties of C5A and C141 aircraft estimated as needed to move the HTLD could be reduced through the use of new light armored vehicles (LAV) and other light trucks like those developed by Austria, Germany, and Sweden.


The HTLD final design calls for it to be deployable on 1,000 C141 sorties. Aspects of the contingency area and tactics to be employed by the HTLD will increase reliance on tactical airlift for logistical support. Increased use of LAPES and CDS is expected.


This work proposes a methodology for mission area analyses for light infantry organizations. No conclusions are included in this draft proposal, but most of the significant force design issues are identified.
Charged with cutting 200 to 250 vehicles from the infantry division, the CGSC solicited comments from the infantry, artillery, armor, and transportation schools. The disagreements were numerous; a consensus was not reached.


Several different methods are offered for computing combat potential through an analysis of manpower ratios in Army organizations.


The LMIB was designed as a component of the HTLD capable of performing virtually any mission. The LMIB is armed with HMMWV/TOWs, MK-19s, Dragons, FAVs, and 4.2" mortars. As a 770+ man battalion, it does not appear to deserve to be called "light."

Published for the British Staff College 1984 Course, this handbook serves as a one-source reference for operational planning. It contains a vast amount of unclassified data on equipment capabilities and vulnerabilities, ammunition effects, unit organizations, and the like, including information on the force structure of UK expeditionary forces. The handbook is not widely available in the United States, being subject to a limited distribution outside the Staff College.


Without doubt, this book is the best English language source on the German mountain divisions of World War II. Based on extensive research and interviews with some 200 former members of the Gebirgsjaeger, the book provides both a stirring narrative of the exploits of these mountain units and a wealth of information on their equipment, organization, and tactics. It is an indispensable reference for persons interested in combat in mountainous terrain.


This collection of individual papers produced under TRADOC contract DABT-58-82-C-0055 has been cited previously. The papers described below concern foreign nonstandard forces, mostly light formations, organized during and after World War II.


Between 1920 and 1960, the Soviet Army maintained a small number of divisions specially organized, equipped, and trained for use in mountainous terrain. The divisions were manned at levels from 9,500 to 12,500 and used pack and man-portable heavy weapons and alpine personal equipment. The rifle battalions numbered about 600 men each.


One of the Soviet responses to the problems of defense against German massed armor attacks was the formation of antitank regiments and brigades as part of the mobile reserve of corps, army, and front commands. When properly integrated operationally, these units were highly effective in halting enemy attacks.
Soviet airborne operations have not been characterized by notable success, yet the Soviet Army persists in maintaining a large number (seven) of airborne divisions which are considerably lighter than the U.S. airborne division. This paper reviews the Soviet use of airborne troops over the past sixty years and describes the changes in organization, equipment, and doctrine.

Considered by the author to be the most versatile formations of the Wehrmacht, the mountain divisions performed extremely well in all kinds of close terrain. Many features of the mountain division—innovative tactics, exploitation of agility, avoidance of enemy firepower—are relevant today as possible models for light infantry formations and particularly for RDF forces.

The distinguishing characteristic of German airborne troops, especially relative to other airborne forces (U.S., British, Soviet), was their development from a force used solely for raids into a true light infantry noted for their tactical skill and agility. Organizational development, operational methods, comparative uses, and the evolution of tactics are discussed in this paper.

To meet both planned and unplanned requirements for close combat in urban areas, the German Army in World War II formed ad hoc and formally structured urban-warfare units. Many of these units were regimental size and smaller, although a number were division size or greater (Stalingrad, Sebastopol). The organizational history and tactics of these units are analyzed in this paper.

The following papers, nos. 11-18, concern contemporary light infantry and mountain forces.

The Swedish Norrland brigades have been especially organized to fight in the sub-Arctic, varied terrain of the Swedish north. The brigades are characterized by their heavy use of all-terrain vehicles and use of local recruits. The primary unit of the brigades is the reduced 566-man Jagar battalion.
The Swiss perspective on mountain warfare is reflected in the organization of the three Swiss mountain divisions. This paper maintains that the Swiss tactical emphasis is on fixed defenses, positional forces (versus agile, mobile, foot forces), and concentrations.

Austrian plans for the use of ultra-light infantry in a frontless defense against invading forces is unique among modern armies. The concept and plans for implementation are deemed unrealistic, although the organization of the light infantry has some enlightening aspects.

The German Army Structure 4 provides for one mountain infantry brigade and three heliborne infantry brigades. This study covers the development, organization, and intended uses of these light infantry forces since 1956.

Current German offensive and defensive mountain tactics are analyzed in this short article.

Israeli paratrooper forces are intended for use primarily for operations in close terrain at night or by helicopter insertion, as opposed to long-range airborne or air-landed operations. The combat records of the 35th (Paratrooper) Brigade and derived reserve brigades are examined in this paper.

Because of its historical involvement in small-scale, extra-continental forays throughout the "Empire," the British Army has developed "dissimilar" terrain-specialized and task-specialized forces in contrast to general purpose forces. Their experience in the use of these forces represents a large store of valuable knowledge.
The final report in the Luttwak series of papers contains extensive historical analysis drawn from the individual research papers above. The author draws conclusions regarding the most advantageous uses and organizations for light infantry in modern warfare.


The military history of the Israeli Army from its inception in 1948 through its participation in the October War of 1973 is covered in this book. Its utility to persons interested in light forces is found in its limited discussions of the development, training, equipment, force structure, tactics, and operations of the airborne units and the Golani Brigade.


This unpublished CGSC staff group battle analysis is an in-depth look at the battle for Darwin and Goose Green in the recent Falklands War. The story of the deployment, commitment to battle, and support of the British light forces that won this battle contains some timely lessons on low- to mid-intensity, long-range intervention worthy of close study. The paper includes a three-page bibliography on the Falklands War.


The author describes the historical background of the Israeli Army and records the history of its formation, organization, and operations from 1947 to 1978. Of particular interest to the reader are those passages dealing with the airborne forces and the many dismounted combat actions. However, the author does not present in-depth analyses of force structures or of small unit actions.


The large majority of the Chinese forces are dismounted infantry organized along Soviet lines. The absence of mechanized and armored formations is due more to economic and industrial factors than to a disposition for dismounted operations, although large areas of China are favorable for light infantry.