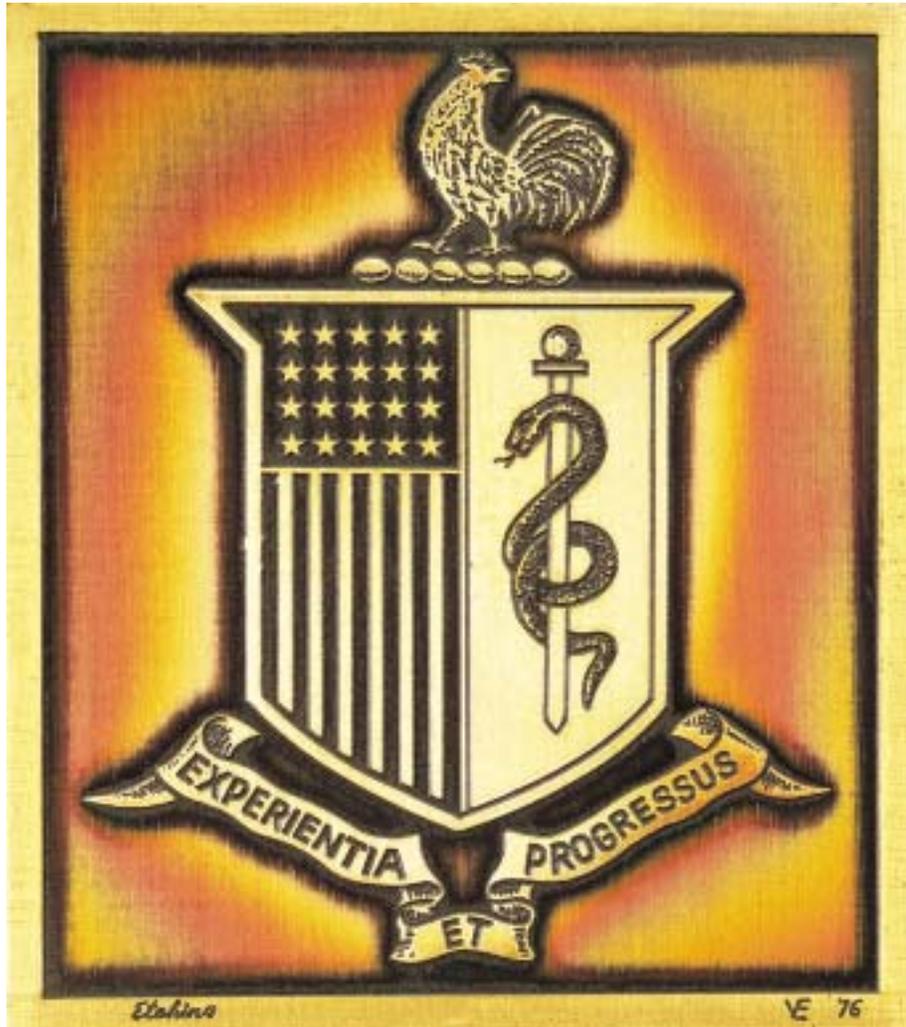


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**OCCUPATIONAL HEALTH**  
**THE SOLDIER AND THE INDUSTRIAL BASE**

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The Coat of Arms  
1818  
Medical Department of the Army

A 1976 etching by Vassil Ekimov of an original color print that appeared in *The Military Surgeon*, Vol XLI, No 2, 1917

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The first line of medical defense in wartime is the combat medic. Although in ancient times medics carried the caduceus into battle to signify the neutral, humanitarian nature of their tasks, they have never been immune to the perils of war. They have made the highest sacrifices to save the lives of others, and their dedication to the wounded soldier is the foundation of military medical care.

# Textbook of Military Medicine

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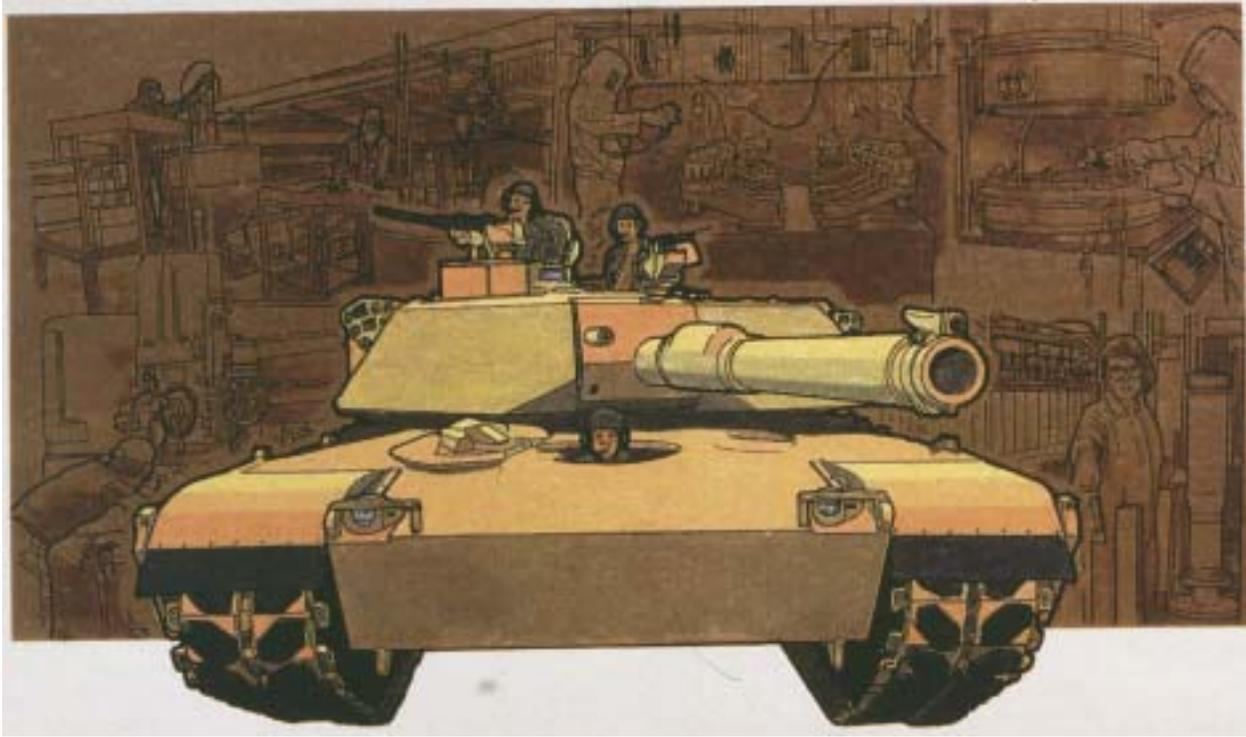
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6. Rehabilitation of the Injured Soldier



The M1 Abrams tank shown above is surrounded by five of the many, oft-times forgotten, industrial operations that support this weapon system and the soldiers who operate it. Represented clockwise from the lower left corner are (1) heavy metal-parts machining, (2) explosives fabrication, (3) vehicle-components painting, (4) electronics fabrication, and (5) ammunition inspection.

# OCCUPATIONAL HEALTH THE SOLDIER AND THE INDUSTRIAL BASE

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*Specialty Editors*

DAVID P. DEETER, M.D., M.P.H.

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# Foreword

Army occupational health came into being during World War I to protect our soldiers and civilian workers against the adverse effects of warfare chemicals that were being produced, stored, transported, and used on the battlefield. During World War II, army occupational health services became even more critical. These assets were absolutely essential for victory. Our civilian workforce had to perform consistently at maximum efficiency for our industrial base to keep pace with our advancing armies. Absenteeism as a result of workplace exposures was intolerable. Additionally, soldier health and performance could not be degraded by potentially harmful stressors like toxic gases in tanks.

More recently, during Operation Desert Storm in 1991, our troops used extremely technical vehicles and equipment and they performed in an outstanding fashion. The army occupational health team played a major role in that victory. During the decade of the 1980s they had worked diligently to improve the soldier-machine interface and to identify, eliminate, or control the stressors that might injure our troops or detract from their ability to fight and survive on the battlefield.

As we move into the 21st century, we must emphasize the practice of occupational medicine for all healthcare providers in the U.S. Army Medical Department. The army of the future, where soldiers will be required to use highly sophisticated and extremely powerful machines properly while also tolerating the stresses of battle, requires that occupational medicine be a core component of military medicine. As the numbers of soldiers and civilians are reduced, we must make every effort to ensure that readiness is not compromised because workplace exposures are adversely affecting our people. Everyone in the Army Medical Department must be alert to the possibility that an illness or injury may be job related, and if it is, take steps to ensure that the harmful exposure is controlled.

This volume will be extremely useful to our active, reserve, national guard, and civilian components, and to contractors, both as an instructional text and as a reference. Every person in the Army Medical Department should know about this volume so that it may be used to support our most valuable resource, our people.

Lieutenant General Alcide M. LaNoue  
The Surgeon General  
U.S. Army

September 1993  
Washington, D.C.



# Preface

A decade ago, as Commander of the Army's Training and Doctrine Command (TRADOC), General Carl Vuono tasked his command to ensure that no United States Army soldier would lose life or limb because of improper or insufficient training. Indeed, during that decade, the army experienced a revitalized and concentrated emphasis on training in all TRADOC schools. Our soldiers became the most highly skilled and trained warriors in the world. However, despite the dramatic increase in the soldier's familiarity with the proper use and capabilities of his equipment, the soldier's workplace and environment present significant threats that still exist and endanger each one of our servicemen and -women.

For the soldier, sailor, marine, and airman, the workplace may be a tank, a submarine, a missile silo, or a garrison motor pool. In the more traditional industrial setting, like the motor pool, the principles and practice of occupational medicine are the same for both civilian workers and soldiers. As our civilian and uniformed workers come into contact with more sophisticated military machines and complex hazards, military occupational specialists face a critical challenge. We must ensure that our soldiers do not suffer serious adverse effects as a result of military service and that they are afforded the opportunity to perform at maximum efficiency. This means that every medical practitioner seeing our employees as patients must be able to recognize and know how to deal with the health hazards of both the installation industrial setting and the hazards of the militarily unique setting.

This is the first textbook totally dedicated to the practice of occupational medicine within the U.S. Army. Many of these unfortunate incidents occur because the typical medical practitioner is not sufficiently aware of the potential hazard, or the preventive measures that can be taken to avoid the hazard, to inform decision makers, leaders, supervisors, and the soldiers themselves about the potential illnesses and injuries that may occur and about the means to prevent these illnesses and injuries.

It is my hope that you will find this volume of the *Textbook of Military Medicine* series useful and that it will contribute to the reduction of injuries due to occupational health hazards. This volume became a reality due to the commitment and hard work of Colonel Joel C. Gaydos and Lieutenant Colonel David P. Deeter. Additionally, the editors gratefully acknowledge the assistance in the preparation of this volume of Ms. Barbara Weyandt and Dr. Melissa McDiarmid.

Brigadier General Russ Zajtchuk  
U.S. Army

September 1993  
Washington, D.C.

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The current medical system to support the U.S. Army at war is a continuum from the forward line of troops through the continental United States; it serves as a primary source of trained replacements during the early stages of a major conflict. The system is designed to optimize the return to duty of the maximum number of trained combat soldiers at the lowest possible level. Far-forward stabilization helps to maintain the physiology of injured soldiers who are unlikely to return to duty and allows for their rapid evacuation from the battlefield without needless sacrifice of life or function.

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**Medical Force 2000 (MF2K)  
PATIENT FLOW IN A THEATER OF OPERATIONS**

