
FM 3-97.6 (90-6)

**MOUNTAIN
OPERATIONS**

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HEADQUARTERS, DEPARTMENT OF THE ARMY

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Mountain Operations

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Preface

FM 3-97.6 describes the tactics, techniques, and procedures that the United States (US) Army uses to fight in mountainous regions. It is directly linked to doctrinal principles found in FM 3-0 and FM 3-100.40 and should be used in conjunction with them. It provides key information and considerations for commanders and staffs regarding how mountains affect personnel, equipment, and operations. It also assists them in planning, preparing, and executing operations, battles, and engagements in a mountainous environment.

Army units do not routinely train for operations in a mountainous environment. Therefore, commanders and trainers at all levels should use this manual in conjunction with TC 90-6-1, Army Training and Evaluation Program (ARTEP) mission training plans, and the training principles in FM 7-0 and FM 7-10 when preparing to conduct operations in mountainous terrain.

The proponent of this publication is Headquarters TRADOC. Send comments and recommendations on DA Form 2028 directly to Commander, US Army Combined Arms Center and Fort Leavenworth, ATTN: ATZL-SWW, Fort Leavenworth, Kansas 66027-6900.

Unless this publication states otherwise, masculine nouns and pronouns do not refer exclusively to men.

Introduction

The US Army has a global area of responsibility and deploys to accomplish missions in both violent and nonviolent environments. The contemporary strategic environment and the scope of US commitment dictate that the US Army be prepared for a wide range of contingencies anywhere in the world, from the deserts of southwest Asia and the jungles of South America and southeast Asia to the Korean Peninsula and central and northern Europe. The multiplicity of possible missions makes the likelihood of US involvement in mountain operations extremely high. With approximately 38 percent of the world's landmass classified as mountains, the Army must be prepared to deter conflict, resist coercion, and defeat aggression in mountains as in other areas.

Throughout the course of history, armies have been significantly affected by the requirement to fight in mountains. During the 1982 Falkland Islands (Malvinas) War, the first British soldier to set foot on enemy-held territory on the island of South Georgia did so on a glacier. A 3,000-meter (10,000-foot) peak crowns the island, and great glaciers descend from the mountain spine. In southwest Asia, the borders of Iraq, Iran, and Turkey come together in mountainous terrain with elevations of up to 3,000 meters (10,000 feet).

Mountainous terrain influenced the outcome of many battles during the Iran-Iraq war of the 1980s. In the mountains of Kurdistan, small Kurdish formations took advantage of the terrain in an attempt to survive the Iraqi Army's attempt to eliminate them. In the wake of the successful United Nations (UN) coalition effort against Iraq, US forces provided humanitarian assistance to Kurdish people suffering from the effects of the harsh mountain climate.

Major mountain ranges, which are found in desert regions, jungles, and cold climate zones, present many challenges to military operations. Mountain operations may require special equipment, special training, and acclimatization. Historically, the focus of mountain operations has been to control the heights or passes. Changes in weaponry, equipment, and technology have not significantly shifted this focus. Commanders should understand a broad range of different requirements imposed by mountain terrain, including two key characteristics addressed in this manual: (1) the significant impact of severe environmental conditions on the capabilities of units and their equipment, and (2) the extreme difficulty of ground mobility in mountainous terrain.

Chapter 1

Intelligence



Before they can understand how to fight in mountainous environment, commanders must analyze the area of operations (AO), understand its distinct characteristics, and understand how these characteristics affect personnel and equipment. This chapter provides detailed information on terrain and weather necessary to conduct a thorough intelligence preparation of the battlefield (IPB), however, the IPB *process* remains unaffected by mountains (see FM 2-01.3 for detailed information on how to conduct IPB).

SECTION I – THE PHYSICAL ENVIRONMENT

1-1. The requirement to conduct military operations in mountainous regions presents commanders with challenges distinct from those encountered in less rugged environments and demands increased perseverance, strength, will, and courage. Terrain characterized by steep slopes, great variations in local relief, natural obstacles, and lack of

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accessible routes restricts mobility, drastically increases movement times, limits the effectiveness of some weapons, and complicates supply operations. The weather, variable with the season and time of day, combined with the terrain, can greatly affect mobility and tactical operations. Even under non-violent conditions, operations in a mountainous environment may pose significant risks and dangers.

TERRAIN

1-2. Mountains may rise abruptly from the plains to form a giant barrier or ascend gradually as a series of parallel ridges extending unbroken for great distances. They may consist of varying combinations of isolated peaks, rounded crests, eroded ridges, high plains cut by valleys, gorges, and deep ravines. Some mountains, such as those found in desert regions, are dry and barren, with temperatures ranging from extreme heat in the summer to extreme cold in the winter. In tropical regions, lush jungles with heavy seasonal rains and little temperature variation frequently cover mountains. High, rocky crags with glaciated peaks and year-round snow cover exist in mountain ranges at most latitudes along the western portion of the Americas and in Asia. No matter what form mountains take, their common denominator is rugged terrain.

MOUNTAINOUS REGIONS

1-3. The principal mountain ranges of the world lie along the broad belts shown in Figure 1-1. Called *cordillera*, after the Spanish word for rope, they encircle the Pacific basin and then lead westward across Eurasia into North Africa. Secondary, though less rugged, chains of mountains lie along the Atlantic margins of America and Europe.

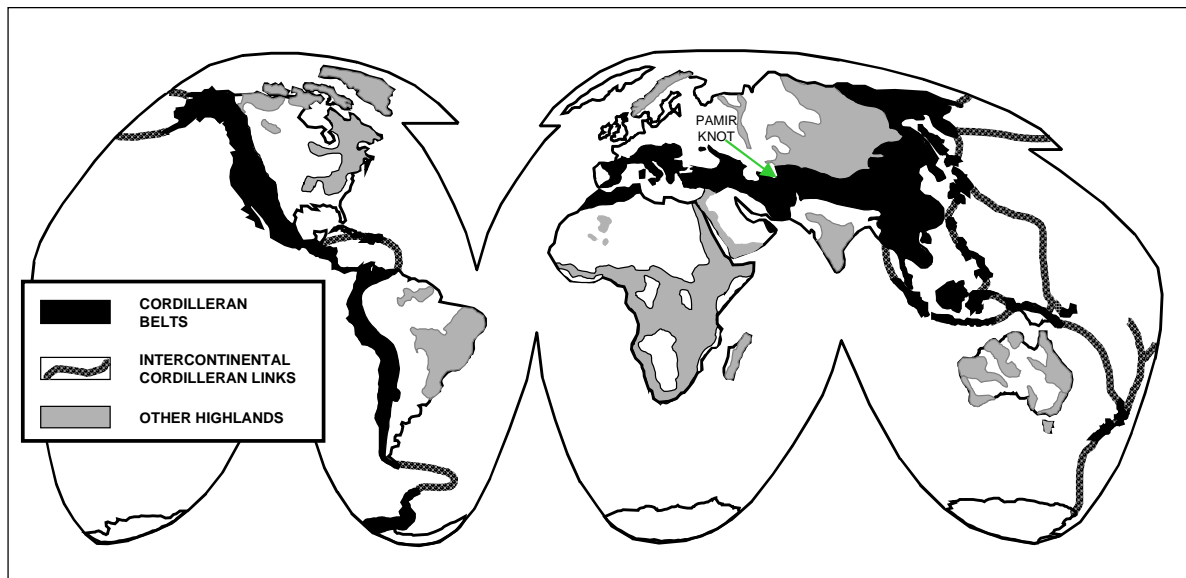


Figure 1-1. Mountain Regions of the World