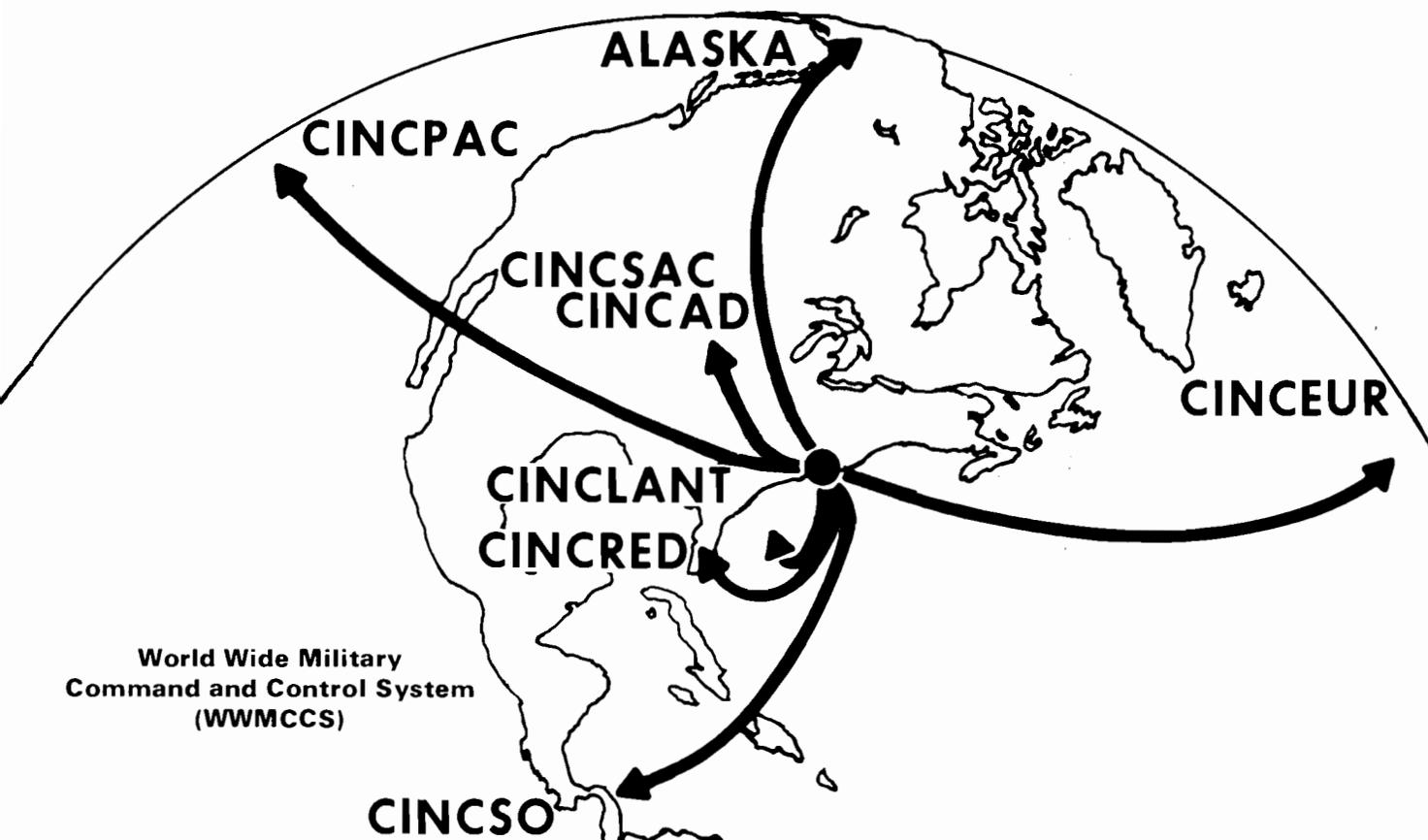


COMMUNICATIONS

ESSENTIAL FOR CRISIS MANAGEMENT



World Wide Military
Command and Control System
(WWMCCS)

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A crisis is a time of decision—the point in time when a course of action must be determined. Making the correct decision is essential, and to make the correct decision all the up-to-date facts must be known, or as many of them as possible. In today's world, events move swiftly and the military decision maker must have a clear picture of the current situation in the affected area—and frequently a clear picture of events throughout the whole world. This requires a worldwide communications net capable of instant response if the crisis is to be met.

The US Army Communications Command (USACC) has a key role in telecommunications and command and control for crisis management. It is the operating communications organization of the Army, around the world, around the clock—in peace, in war, in crisis. Twenty-nine thousand men and women of the command provide substantially all the long-haul, local distribution, terminal, and special purpose communications for the Army, as well as for certain joint service activities.

Communications-electronics systems breathe life into command and control systems. They enable commanders and battle staffs to make accurate decisions and react swiftly in times of crisis.

The Worldwide Military Command and Control System (WWMCCS) is the key to the control of forces and crisis management. Figure 1 is an artist's conception of WWMCCS. Each commander supported by the WWMCCS has a subsystem which provides communications support necessary for his command to accomplish its mission and at the same time form a part of the composite global system supporting the National Command Authority. The composite global system provides commanders at all levels with the information needed to assess developing situations so that they may direct and maintain control of the operations of their commands effectively throughout any crisis. The Defense Communications Agency and the communications commands of all the services have interrelated responsibilities. The US Army Communications Command provides, maintains, and operates extensive communications-electronics facilities for the National Command Authority; the Joint Chiefs of Staff; Headquarters, Department of the Army; some of the Unified Commands; and the Major Army Commands. USACC missions include providing long distance communications service to link command control systems, connecting networks, and operating facilities for message, voice, and secure voice

transmission. The command also provides and operates sophisticated communications-electronics subsystems for command centers and command and control facilities.

C-E Subsystems

A wide variety of communications-electronics subsystems are necessary to support Joint Command Headquarters and Army Component Command Headquarters. Figure 2 lists typical subsystem requirements. These communications-electronics systems are becoming increasingly automated.

Also, to insure there is no break in communications, the number of interconnects between subsystems have been increased and the routing has become increasingly diversified. In addition, all communications today are more secure from an intelligence viewpoint than in the past. There is an increased use of television and facsimile to transmit classified graphic data rapidly between headquarters.

The Defense Communications Agency is responsible for the operation and maintenance of the National Military Command Center. USACC performs the same function for the alternate National Military Command Center. In addition, the Army Communications Command provides engineering design, equipment, and installation of new equipment at both the National Military Command Center and the alternate center that will provide improved secure data exchange and record message service through increased automation, and is upgrading other capabilities of the center.

Army Communications Command provides extensive support to the Department of the Army Command and Control System (DACCS), the Army's global subsystem in support of the WWMCCS. DACCS has its hub at the Army Operations Center in the Pentagon. Here are located many communications-electronics subsystems to provide the voice and record communications essential to the operation of the center. High precedence direct voice contact with subordinate Army commanders is provided over dedicated circuits and preempted general purpose circuits. Conference, as well as individual, calls can be made from the center. Secure voice service, essential in crisis, is also provided.

The record communications requirements of the Army Operations Center are supported by the AOC telecommunications facility and the Pentagon Telecommunications Center. There is another telecommunications center at the alternate AOC location.

A standard computer system supports command and control facilities at the Army Operations Center. USACC also provides communications-electronics support of ten similar standard command and control computer facilities located throughout the world.

Two of the computer facilities supported have been provided direct access to the Automatic Digital Network (AUTODIN), and USACC has been tasked with connecting four more. Currently, Army Communications Command is participating in expanding local remote device access and is supporting the Defense Communications Agency in developing the Prototype WWMCCS Inter-computer Network (PWIN), an R&D effort to develop the optimum software for WWMCCS computers so they may exchange data via networks.

COMMAND AND CONTROL FACILITY TYPICAL C-E SUBSYSTEM REQUIREMENTS

MICROWAVE AND CABLE INTERCONNECTIONS TO BOTH THE DCS AND TACTICAL SYSTEMS

Dial Central Office	Single Sideband Radio
Internal Wire Distribution	WWMCCS Computer Interface
Telephone Terminal Equipment	Public Announcing System
Tech Control Facility	Audio Visual Facilities
Tactical Operations Commcenter	Emergency Action Console
Common User Autodin	High Frequency Radio
Long Distance Secure Voice	Minimum Essential Emergency Communications Network
C-E Maintenance Facility	Special Intelligence Commcenter
Tactical Teletype, Terminal	Emergency Action Facilities

Telecommunications

USACC provides planning and program assistance for command and control telecommunications facilities to Major Army Commands as directed by Department of the Army. The command also provides communications-electronics support of Army command and control systems as required. One such element supported is the emergency action voice system which provides controlled access to dedicated, preempted, and common user circuits. Emergency action consoles connect directly to the Army Operations Center in the Pentagon. Secure voice terminal service is also provided, as well as C-E devices and systems to serve the command centers. Service provided Army commands by USACC includes telecommunications center operation, maintenance, and access to the worldwide records message systems.

USACC provides communications support for another aspect of crisis management, Civil Defense. The command provides radio, teletypewriter, voice, message, and special communications and warning systems in direct support of Defense Civil Preparedness Agency facilities. There are eight DCPA regions covering all fifty states in addition to the District of Columbia, Puerto Rico, the Panama Canal Zone, Virgin Islands, and American Samoa and Guam.

Communications support of the Defense Civil Preparedness Agency makes possible the dissemination of emergency information in case of natural disasters such as floods, hurricanes, and earthquakes as well as domestic disturbances, all-out war, or nuclear disaster.

Writer-to-Reader Time

Significant to crisis management is minimal writer-to-reader time in record communications. The Army Telecommunications Automation Program (ATCAP) is reducing this time through selective automation within the communications system. The thrust of the program is development of a family of flexible multimedia facilities and standard remote terminals for narrative and data traffic. The remote terminals are designed to deliver messages electronically to the reader.



FIGURE 3—A view of ACC's first automated multimedia exchange at the Oakland (California) Army Base. This automated telecommunications center serves the Military Traffic Management command on the West Coast.

The heart of the automation program is the automated multimedia exchange—AMME (figure 3). The Army is scheduled to establish twenty-one such exchanges. One of these will go into Campbell Barracks in Heidelberg, a major automation facility which will serve the Heidelberg-Stuttgart area. Administrative and battle staffs, Headquarters European Command, Army Europe Command, and others will be served by remote terminal devices connected to this automated multimedia exchange.

Routine Communications

The routine day-to-day communications operations and maintenance responsibilities of the US Army Communications Command are many. They include the operation of major facilities and transmission media in Defense Communications System (DCS) and non-DCS long distance systems. These link command and control systems and centers together provide the essential connections. These long distance communications activities of USACC must also be able to handle the increased administrative and logistic traffic generated in any crisis situation.

The command operates nine satellite communications terminals in the Defense Satellite Communications System (DSCS) which provide long distance transmission channels for the Worldwide Military Command System as a primary mission. Current plans call for the expansion of DSCS to add greater flexibility to crisis management communication.

USACC also has provisions to provide for extension and/or restoration of global communications during emergencies. The 11th Signal Group is the quick reaction force charged with this mission. The group is specially trained and equipped with mobile and transportable communications equipment to provide support for virtually any military or civilian emergency. A typical communications package the 11st Signal Group is able to deploy in the event of a crisis includes radio terminals, tropospheric scatter radio terminals, secure voice facilities, automatic voice switching facilities, on-line and off-line digital subscriber terminal equipment, AUTODIN terminals, and many more items of transportable gear important to communications.

Summary

Capable communications are essential for competent command and control. The US Army Communications Command provides this support—24 hours a day, every day. Additionally, the command can provide on demand the essential communications support for crisis management. Although able to cope with today's communications needs, both routine and emergency, USACC must and does look ahead to assure that it will be able to handle tomorrow's needs and emergencies in this rapidly changing world. The command works closely with others of the military and civilian sectors to enhance reliability and security of communications and survival of our Nation while holding costs to a reasonable minimum.