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Abstracts Of Master Of Military Art
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Theses And Special Studies
1976-1977
Annual Edition,

Martin H. / Beach,
Joseph B. / Bergey, Jr.,
Elbert C. / Black, III,
Lee H. / Bradley
Dennis W. / Brewer

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241. COMPUTER SECURITY FOR ASSIST, by Major Martin H. Beach, FA, 56 pages.

This thesis examines the multilevel security problem of simultaneous processing of compartmented and collateral data at the Intelligence Data Handling Site, Forces Command Intelligence Group, Fort Bragg, North Carolina. Existing security controls are examined, and a list of software controls are discussed to reduce the risk of penetration, whether accidental or deliberate. Software controls are described in four major areas: access controls, input/output controls, residual controls, and audit trail controls. The security kernel is discussed as the heart of all software controls. A method of verifying the software is discussed and a procedure is explained for certifying the ASSIST system as possessing an acceptable security risk. Recommendations are described to reduce the risk of penetration and certify the system as secure through software controls.

242. WILL JAPAN REARM? by Major Joseph Bertrand Berger, Jr., AD, 84 pages.

This thesis examines the possibility of Japanese rearmament using a comparative case study approach examining the periods 1870 to 1945 and 1945 to 1976. Major actors in each period are examined in order to understand the role they play and their views toward rearmament. For the period 1870 to 1945, the actors are the Emperor, the politicians, the military, the population, and the economic sector. During the later period, these same actors together with the American Occupation force are examined. The shift of political power and influence during each period is charted in order to determine any significant similarities between the two. An examination of the literature of both periods allows for additional similarities to be drawn. It is concluded that Japan probably will continue along a course of conventional but gradual rearmament.

243. CURRENT SOVIET PERCEPTIONS ON THE ACHIEVEMENT OF A WAR-WINNING CAPABILITY, by Major Elbert C. Black III, FA, 289 pages.

This thesis challenges the traditional concept of counting bombers, missiles and warheads to evaluate the relative state of deterrence between the United States and the Soviet Union. Instead, it examines the degree to which Soviet leaders "perceive" themselves as having achieved doctrinal requirements for a war-fighting, war-winning capability. The methodology is based upon the Marxist concept that armed forces alone cannot assure ultimate victory in a major war. Evaluation of the other factors which Soviet military leaders consider essential for national survival suggests that the United States may not need to maintain the current pace in strategic nuclear weapon development in order to maintain deterrence. The study results indicate that Soviet leaders probably do not currently perceive themselves as having achieved a war-winning capability. Consequently, the existing Soviet lead in numbers and throw-weight of missiles may have little, if any, utility for the present. The major impact of the study is to place the nuclear weapons debate into the broader perspective of a war-winning capability. Hopefully, it will initiate a new dialogue concerning priorities and methods of allocating scarce resources to maintain peace.

244. USE OF RESERVE COMPONENT SUPPLY AND SERVICE UNITS DURING MAJOR REFUGEE BUILDUP AT FORT CHAFFEE, ARKANSAS, 1975, by Lieutenant Colonel Lee H. Bradley, QM, 70 pages.

In May 1975, refugees caused by the fall of the Republic of Vietnam, and Reserve Component supply and service units arrived simultaneously at Fort Chaffee, Arkansas. This participant observer thesis is based upon analysis of background material on Vietnam, available documentation on Fort Chaffee, and the active Army task force which supported the refugees.

Documentation, historical reports, personal observations, evaluation reports, and assorted personal papers used by the author while evaluating those supply and service units were also used. Active Training-1975 provided a special training environment for Reserve Component supply and service units. The combination of normal site support for Reserve Component summer training coupled with requirements caused by the major refugee buildup provided a constantly changing work load that tested the capabilities of these units to the maximum.

The results indicate that national policy may dictate utilization of Department of Defense resources in support of international refugees and/or domestic displaced persons at a future date. The experience gained from accomplishments of the Reserve Component supply and service units at Fort Chaffee should be evaluated when considering resources for such a mission in the future. The current evaluation system coupled with suggested training for use in emergencies can insure readiness that would be required. Selection of emergency centers with prepositioned equipment would provide the base in which Reserve Components could provide the service when needed. Active Training-1975 at Fort Chaffee clearly demonstrated that Reserve Component supply and service units have the capability and flexibility to perform multiple site support missions. They are a valuable national resource available for utilization when needed.

245. COST EFFECTIVENESS OF SMOKE SCREENS EMPLOYED BY INDIRECT FIRE MEANS, by Major Dennis W. Brewer, OD, 95 pages.

This thesis examines cost effectiveness of smoke screens employed by indirect fire means. Large area smoke employment means are included for comparison with the indirect fire means, and for demonstration of a potential source of smoke screens unfamiliar to many tacticians. Optimal tactics for smoke screen employment are not addressed. Two computer models are developed, one for indirect fire means (60 millimeter, and 4.2-in mortars, as well as 105 millimeter and 155 millimeter howitzers) and one for large area means (smoke generators and smoke pots). Performance characteristics of indirect fire smoke ammunition are incorporated into the model based on recent experimentation by the U.S. Army Systems Analysis Activity. Smoke screens are described by input parameters, which are varied by a heuristic search procedure. These parameters (and their limits) include: weather (lapse, neutral, and inverse conditions with accompanying wind), screen duration (1 through 60 minutes), and sheaf width (100 through 1050 meters).

Cost effective preferences are recommended for various smoke screen employment means. Possible areas for future research are suggested.

246. THE POW PROBLEM IN RUSSIA: JUSTIFICATION FOR ALLIED INTERVENTION, 1918-1920, by Major Charles H. Briscoe, IN, 192 pages.

In September 1918, the United States intervened in Russia with 20,000 soldiers as part of Allied expeditions in north Russia and Siberia. U.S. officials justified the American military intervention as being necessary to assist the evacuation of the Czech Army from Russia. In this movement to the western front, the Czechs had been attacked by armed German and Austrian prisoners of war. The decision to intervene was based on confusing and inaccurate field reports which reinforced strongly-held perceptions about the new Bolshevik government. The rationalization of a threat from thousands of released war prisoners, and the image of the Bolsheviks as German agents, were typical of American attitudes towards Russia from the eve of the Bolshevik revolution to the armistice ending World War I.

American policy towards Russia prior to the Bolshevik takeover reflected governmental attitudes which considered the nation a traditional backwater area. After the Bolshevik revolution, American policy reacted to developments in Russia and to other major events in the international arena. Perceptions and attitudes in Washington were greatly influenced by the diplomatic reports received from the field posts. A study of the prisoner of war issue in the diplomatic message traffic is complicated by the complexity of the chaotic Russian situation from 1917 to 1920. Equally chaotic was the international wartime environment. Allied tendencies to identify the Bolshevik regime with that of the Central Powers, and the preferential treatment provided to certain POW groups by the Allies, further complicated the situation.

Nevertheless, the prisoner threat was the issue which most influenced the American decision to intervene in Russia. The two million POW's in Russia represented a definite threat to the Allied Powers for several reasons: they were a manpower pool from which units already on the fronts could be reinforced; they were capable of seizing control of the Trans-Siberian Railway, the key to Czech evacuation and counterrevolutionary resupply; they were capable of blocking the emigration of the Czechs, badly-needed reinforcements for the Allies on the western front; they were a threat to the stockpiled war materials at Murmansk, Archangel, and Vladivostok; they were capable of creating further chaos in the internal affairs of Russia; and they could be used by the Bolsheviks to form a viable Red Army capable of eliminating the counterrevolutionaries and intervening Allied forces.

The objectives of this study area: to provide background on the war prisoners during the World War; to trace the evolution of the war prisoner threat; and to analyze the effect of the prisoner of war problem on America's relations with Russia during the war and after the Allied armistice with the Central Powers. The study is organized chronologically and is based on the American diplomatic traffic in Russia from 1917 to 1920. The majority of

evidence cited comes from primary sources. The messages and the volume of traffic provide an accurate indication of the influence which the prisoner of war problem had on formulation of America's policy towards Russia; they also show the relationship between policy and critical international events. Analysis of the messages provides insight into the role of key American officials in the development of Russian policy. Finally, the messages reflect rather graphically the confusion of the period and the problems which faced the policymakers of the United States. These statesmen dealt with an issue seemingly minor at the time, but which was destined to affect the future of American-Russian relations to the present day.

247. NORTH VIETNAM'S MILITARY LOGISTICS SYSTEM: ITS CONTRIBUTION TO THE WAR, 1961-1969, by Lieutenant Colonel Lance J. Burton, MI, 137 pages.

Military logistics were extremely important to North Vietnam in the conduct of the Second Indochina War, especially during the period of major United States involvement from 1961 to 1969. This paper sought to determine the extent to which the Communist logistics system contributed to the war effort and answer in part the still puzzling question of why the U.S. armed forces, in spite of their ability to conduct a series of highly successful military campaigns, were unable to defeat a foe greatly inferior in numbers and technology.

Source material used in this study is restricted, insofar as possible, to official U.S. government documents, a number of which were declassified at the author's request. The reader, provided with the same information available to American decisionmakers, should be in a better position to evaluate the judgment of key government leaders.

In support of the war, the North Vietnamese developed a well-run military logistics system which achieved a high level of effectiveness in spite of formidable challenges. Between 1964 and 1969 the system delivered over a half a million troops and comparable quantities of munitions to units operating in South Vietnam. There is no evidence that logistics considerations seriously constrained the Hanoi high command's implementation of particular military strategies.

The policy makers in Washington recognized the importance of the North Vietnamese Army's logistics system to the prosecution of the war in the South. However, U.S. policy consistently emphasized the demand that North Vietnam desist rather than pressing for the adoption of decisive measures to prevent Hanoi from supporting the war. This attempt at dissuasion was translated into military strategy. On the ground it became a war of attrition designed to make the cost in human life so dear that the adversary would cease his aggression. In the air, bombing was part of a "carrot and stick" approach intended to force Hanoi to negotiate on terms favorable to the United States. Even after authoritative studies reported that air interdiction had no effect on North Vietnam's ability to conduct the war in the South the bombing continued. The original ground and air strategies, although bankrupt, were retained. Increased in intensity and made more deadly by technological developments, U.S. military operations failed either to prevent or to dissuade Hanoi from supporting the war.

248. SOVIET NAVAL INFANTRY, by Major J. J. Carroll, USMC, 125 pages.

Except for participation in World War II when naval infantry units were formed to assist in the protection of the strategic flanks of the Red Army, naval infantry had not been part of the Soviet military force structure until 24 July 1964. On that date a 3,000 man naval infantry force was created. During the past 13 years, this force has grown to a five-regiment, 14,500 man force supported by modern amphibious shipping and associated hardware. Activation and maturation of this force coincided with the rapid expansion and increased capabilities of the Soviet Navy. During the past 15 years, the Soviet Navy has developed a global reach and is now capable of supporting military, economic, and political objectives far from the shores of the Soviet Union. What is the connection between the new blue-water Soviet Navy and her naval infantry force? What missions have been assigned to Soviet naval infantry in view of the new dimensions of the Soviet Navy?

As this study demonstrates, global interests of the Soviet Union resulted in the requirement for a permanent naval infantry force. These interests include assured access to sea lines of communication, protection of support facilities for the strategic naval submarine fleet, and fully integrated options for wartime military contingencies in the European and Sino-Soviet theaters of operation. The study concludes that the present naval infantry force structure is designed to accomplish the following missions:

1. In the event of war, protect the strategic flanks of the Soviet Army.
2. Insure continued access to sea lines of communication protecting those choke points critical to Soviet maritime activity and in the event of war, seize those objectives necessary for access to the world's oceans.
3. Protect support facilities for the strategic naval submarine fleet.

The study indicates that although the Soviet Navy has undertaken global operations and has established a permanent presence in areas of traditional Western supremacy, the current naval infantry force is neither structured nor equipped to provide sufficient forces for the defense of new Soviet advanced naval bases. Significant upgrading of naval infantry would be required if Soviet leaders decide to task naval infantry with global responsibilities. Nevertheless, present assigned missions assure Soviet naval infantry a substantial, long-term role in Soviet military affairs. Soviet naval infantry is here to stay.

249. A HUMAN FACTORS TAXONOMY, by Major Noel J. Christman, USAF, 61 pages.

This paper surveys the topic of human factors in the form of a taxonomy. Human factors are and always have been of vital concern to the military commander, and are essential elements in the functioning of all organizations.

Military literature does not offer significant human factors study materials for developing professional knowledge and applicable skills. Civilian literature, however, is available and applicable to the military leader's needs.

The taxonomy, a classification system based on the theory underlying the subject, is a valuable tool for surveying human factors. The structured development inherent to a taxonomy has several practical and intellectual benefits. The practical aspects include information storage arrangement, curriculum design, and terminology clarification. Intellectual implications recognize that new information is more easily understood and remembered when it fits into a pattern, or informational structure, already established in individual thinking. Also, this structure guides attitudes about the relevance of new material to a given subject.

This taxonomy divides human factors into individual, small group, and large group categories as primary divisions. The sub-levels of each address information input, processing, and the attitudinal reactions which result.

250. CIVIL-MILITARY RELATIONS IN NIGERIA AND TANZANIA: A STUDY OF THE SUCCESS AND FAILURE OF CIVIL LEADERSHIP IN AFRICA, by Major James Louis Collins, MI, 122 pages.

The purpose of this research was to examine objective conditions in two Sub-Saharan African countries to determine if there are recurring circumstances which cause the indigenous military to seize power or factors that preclude military intervention. It is felt that an understanding of these factors will permit a military or civilian analysis to develop appropriate policies for the United States to follow toward the independent countries of Sub-Saharan Africa.

A historical survey was conducted to determine if there were identifiable factors in the histories of Nigeria and Tanzania that either caused or precluded military intervention. The basic hypothesis, which was derived from those formerly postulated by Professor Claude E. Welch, Jr., is that military intervention in African politics is most likely when: the prestige of the major political parties wanes coupled with disharmony among leading politicians; there is little likelihood of external intervention and countries nearby have suffered military intervention; the society is not integrated and suffers from declining economic conditions; government corruption and inefficiency are rampant; and the army feels it has a political role.

The Nigerian case tended to validate this hypothesis. Conditions within the country deteriorated to such an extent that military intervention

was inevitable. Tanzania also tended to validate the basic hypothesis in that the conditions suffered by Nigeria did not exist in sufficient number or severity to cause military intervention.

It was concluded that, if one sees the conditions mentioned in the hypothesis as independent variables in a great number and severity in an African country, there is a high probability of military intervention in politics.

251. ORGANIZATIONAL ENVIRONMENT AND PREFERENCES FOR LEADERSHIP AND POWER IN THE OFFICER CORPS, by Major Garrett T. Cowser, IN, 112 pages.

This study analyzed the relationship between the endorsement of values judged to characterize the army organizational environment and the preferences expressed for leadership and power options by officers in supervisory settings. The subjects were 99 active army majors and lieutenant colonels in a resident Command and General Staff College (CGSC) class at Fort Leavenworth, Kansas. Operational definitions of leadership and power are derived from the literature that limit leadership to actions designed to gain the willing cooperation of one's subordinates and power, conversely, to actions that can force the subordinates' compliance in spite of their opposition. The organization environment is defined in terms of four variables: structure, authority, regulations, and leadership training. Each is demonstrated to have a potentially negative impact on the use and development of leadership. A questionnaire was then developed that assessed one's preference for leadership or power on one part, and one's endorsement of organizational values on another. The organizational values consisted of a series of statements descriptive of the army environment that the respondent was required to rank on six item Likert scales ranging from definitely bad to definitely good. Leadership and power preferences were assessed with multiple choice responses to descriptions of supervisory problems calling for action. It was hypothesized that a negative relationship existed between one's preference for leadership actions and one's endorsement of these organizational values (referred to as institutional socialization). Additional relationships based on career field, source of commission, command experience, length of commissioned service, and age were explored. The only significant finding ($\alpha=.001$) was an overall socialization scores as hypothesized. The main conclusions are that few officers realize the military environment may be inhibiting their use of leadership, that the environment does not reward leadership as defined herein and therefore does not encourage its development outside of the classroom, and that doctrine, with respect to leadership, is poorly understood and in conflict with the environment.

252. MOSCOW--THE PRINCIPLE OF THE OBJECTIVE, by Lieutenant Colonel Michael C. DePrie, IN, 144 pages.

This study analyzes the German failure to decisively conclude Operation Barbarossa by capturing Moscow, asking whether this failure was the result of disregard for the principle of the objective. The failure at Moscow was the first significant setback for the German Army in World War II.

The role played by the notion of the objective in the pre-World War II German Army is investigated along with the backgrounds and personalities of the principal military and civilian leaders involved in the campaign. These background chapters provide the insight needed to understand the relationship that existed between the tactical commander and his superiors during the detailed planning and execution of Operation Barbarossa.

The question of whether the German Army of 1940-1941 subscribed to the principle of the objective and properly applied the principle is examined in detail in the study. Extensive use is made of personal diaries and memoirs of German general officers directly involved in the campaign in Russia.

Conclusions reached in the study are:

1. The principle of the objective evolved differently in the German Army than in the United States Army but both schools of thought were basically the same. The notion of the objectives was well established in the German Army prior to World War II.

2. Moscow was a decisive objective in the campaign because it required the Red Army to stand and fight rather than withdraw deeper into the Soviet Union. Rather than risk serious confrontations, the military leaders of the German Army acquiesced to Hitler and complied with his orders knowingly risking strategic defeat by disregarding the military principle of the objective.

3. The leadership element of the German Army of 1940 and 1941 understood and attempted to apply the principle of the objective throughout Operation Barbarossa and at Moscow in particular. Hitler did not share their views.

4. Political and economic goals were placed ahead of military objectives at the expense of the ultimate objective--destruction of the enemy's armed forces in battle.

253. POLITICAL INTERACTIONS AND THE ARAB SUB-SYSTEM, by Major Donald A. Dubay, MI, 160 pages.

One of the fundamental causes of war, posit a large number of political scientists, is the lack of communications among nations, as the absence of communications contributes to political polarization. The primary inhibitors to international communications are coalitions of nations, in the form of alliances and regions. Theoretically, for the latter, polarization begins with the development of regions as sub-systems within the international system.

It may be assumed that by examining a region's political cohesiveness, or degree of integration, it is possible to determine the impact of the integrative process on international communications (interactions among nations), which is the intent of this thesis. The thesis tests the hypothesis that as regional political integration increases, there is a corresponding decrease in political interactions between the nations of that region and

other nations of the world. The method of analysis for integration and interactions is quantitative. The variables used are national, executive level state visits and diplomatic representative exchanges, both as a function of time. The region selected is the Arab World.

The thesis concludes that, for the Arab World, there is a direct relationship between political integration and extra-regional political interactions, with increases in the former adversely affecting international political interactions.

254. A BRIGADE COMMAND POST FOR THE 1985 ARMORED DIVISION, by Major Michael P. Eskew, IN, 69 pages and VII front pages.

The brigade command post of today is big and unwieldy. It physically covers almost a square kilometer and has an electronic signature of like proportions. Personnel and equipment are authorized for sustained operation from only one location. It requires large communications and working areas and a large staff to operate and maintain it. The brigade headquarters has little organic security and features unique vehicles and radio antennas. This command post will not survive on the 1985 battlefield.

For 1985, this thesis used the newly conceived restructured heavy division and the tactics being developed for it to defeat the Soviet forces it would face in Central Europe. A narrative of this possible 1985 battle emphasizes the actions required by the command post elements of the brigade battle.

These command post elements will be prime targets for the Soviet attacker. He will employ accurate direction finding equipment to locate the brigade command post elements. He will use high power jammers to disrupt command post communications and will direct firepower, ground and possibly airmobile forces against the command post elements.

To operate effectively in this threat environment, the brigade command post of 1985 must be significantly different from the present command post.

The thesis concludes that the brigade requires three distinct and semi-independent command post elements. A command group is required to position the commander where he is best able to communicate with his commanders and focus the combat power of the brigade. A brigade main command post maintains communications with the division, keeps the commander informed of the overall enemy and friendly situation, and does short term planning for the brigade. A displacement team will insure continuity of command.

Each element of the command post requires the Tactical Control System (TCS), a potential technological breakthrough for command and control. TCS will allow the commander and staff to see the overall battle situation in a far more timely and comprehensive manner than is possible today.

The TCS should be mounted in the MICV not a highly distinctive vehicle like today's command post carrier.

Adopting and equipping the command post elements as proposed by this thesis will enhance the survivability and preserve command and control.

Major changes are required in the brigade command post if it is to survive on the 1985 battlefield.

255. MILITARY UNIONS: THE POSSIBILITY - THE COST - THE CONGRESSIONAL RESPONSE. AN ECONOMIC ANALYSIS 1971-1976, by Major Brian J. Fagan, USMC, 102 pages.

This study attempts to identify and analyze the economic aspects of military unionization. The research effort considers the literature on unionism, the evolution of U.S. federal government employees' unions, and the background of U.S. military unions. The time frame for the study is 1971-1976. The investigation answers three questions: Is military unionization a distinct possibility? Will significant additional budgetary costs accrue to the Department of Defense with the unionized military? Are these costs prohibitive? (Might Congress disallow unions for budgetary reasons?)

The analysis reveals that military unionization is a distinct possibility, with possible budgetary cost increases of \$11.5 - \$15 billion accruing over a three year period. These costs are deemed significant by the author, to the extent that Congress could act to allow or prohibit military unions based upon these costs, via several options as outlined in the report. The conclusion is that, whatever the Congressional response, personnel costs will increase with the unionized military.

256. THE TACTICAL AIR COORDINATOR (AIRBORNE) ON THE MODERN BATTLEFIELD, by Major Rupert E. Fairfield, USMC, 71 pages.

The 1973 Mideast War provided insight into the lethality of modern weapons systems with which the United States may be faced in future conflicts. Of the many lessons learned in the conflict, two lessons have particularly important military implications. New infantry weapons provide the individual ground soldier a significant antitank and antiaircraft capability. The small, man-portable, antiaircraft missiles, when coupled with more sophisticated air defense weaponry, pose a threat to tactical aircraft which is historically unsurpassed in its implications. This study will address the nature of the Soviet-oriented air defense threat and seek to determine those areas which must be explored in order to increase the survivability of tactical aircraft employed on the modern battlefield.

The increased effectiveness of the Soviet air defense system when coupled with the Soviet electronic warfare capability is also discussed. This aspect of the threat may make the current, centralized air control system infeasible. The study concludes that the TACA can contribute to the ground commander's mission in a variety of ways and that the TACA's effectiveness can be enhanced if we expand our concept of how he is to be employed

in future conflicts. This conclusion is based on an analysis of the 1973 Mideast War, a discussion of Soviet doctrinal publications, and an analysis of the principles of offensive air support and the TACA's contribution to those principles.

257. THE USE AND TESTING OF THE MOTORCYCLE BY THE U.S. ARMY, by Major Jerry R. Fry, IN, 81 pages.

The purpose of this thesis is to evaluate the use and testing of the motorcycle by the U.S. Army from April 1917 to February 1977. Procurement of the early military motorcycle for tactical operations ceased in 1939 because it could not operate off the road and was mechanically unreliable.

In early 1972 the Modern Army Selected System, Test Evaluation and Review (MASSTER) began testing the modern motorcycle. It found that the problems experienced with the early motorcycle had been eliminated and that the modern motorcycle had considerable military potential. As a result of this testing, MASSTER recommended that the motorcycle be returned to the Army inventory as a scout and traffic control vehicle. Department of the Army believed the test was inconclusive and disapproved the recommendation.

Testing of the motorcycle has continued since 1972 and has included tests by tactical units and the Armor School. The results of this testing and a survey of foreign armies indicate the motorcycle is suited for use as a messenger vehicle, traffic control vehicle, and scout transporter. However, only the use of the motorcycle as a scout transporter has made any progress along the acquisition cycle.

The Infantry School has scheduled the testing of a scout motorcycle in June 1977. This test and other testing have overlooked the obvious potential and capability of the motorcycle as a messenger and traffic control vehicle. Thus the military value of the modern motorcycle has been recognized, but the U.S. Army has failed to address the issue of total user requirements.

258. FIGHTER FORCE TRAINING FOR THE EUROPEAN SCENARIO, by Major Frank D. Garza, USAF, 73 pages.

The Soviet forces in Europe have dramatically modernized their equipment and are the most heavily armed in the world. The United States tactical air force has responded with increased emphasis on readiness and realistic training. In particular, Red Flag and the aggressor squadrons are two of the most innovative and productive programs that have been developed for the fighter force. This thesis addresses the relevancy of the training by focusing on the Soviet threat and current fighter force training doctrine. A very limited "first battle" scenario in the European theater is presented to analyze the training versus the threat.

The general conclusion of this study is that the current combat training of United States tactical fighter forces is excellent. The recent emphasis on readiness has definitely made the training relevant

to the threat. There are, however, several areas that require additional emphasis and improvement. This thesis proposes specific recommendations in the areas of air superiority, the fighter/FAC/SCAR concept, combat deployments, and night operations.

259. GLOBAL TELECOMMUNICATIONS NETWORKS, by Major Robert E. Gray, SC, 91 pages.

The present international telecommunications system is a mosaic of different and separate telecommunications systems, each providing services of a limited nature to a specialized community of users. All too frequently these international systems are too poorly interconnected to provide telecommunications services on a world-wide basis. The growth pattern of the present international telecommunications systems has been on an incremental basis, characterized by point-to-point telegraph and telephone circuits.

This study traces the growth and evolution of international telecommunications and analyzes the impact of recent technological advances in electronics on the cost and capacity of present international telecommunications systems. The study concludes that a Global Telecommunications Network (GTN), with the capacity to interconnect each of the existing international systems is economically and technically feasible. A proposal to establish such a network is put forth. The proposed network will not supplant the present systems but merely augment them in such a manner as to increase the availability of international circuits while at the same time effecting a reduction in cost for their usage.

By applying the current telecommunications networking technology of automatic circuit and message switching demand assigned transmission channels as well as circuit preemption options, to the design of a GTN, the study has determined that the necessary channelization can be made available to establish specialized subsystems. One subsystem proposed for establishment in this manner is the Global War Avoidance Telecommunications Subsystem (GLOWATS). As a result of an analysis of the impact of the current model of a war avoidance telecommunications system (the Washington-Moscow direct communications link) on relations of the United States and the Soviet Union, the study concluded that such systems may aid in stabilizing crises in international relations.

The technical parameters and network design requirements proposed by the study are based on the use of a communications satellite as the primary transmission medium. Costs of the proposed GTN are analyzed and derived in terms of the cumulative costs of the earth terminal stations, leased satellite channels, leased submarine cable channels and the computerized switches. The proposed system is achievable within the next five years.

260. THE THAI RESISTANCE MOVEMENT DURING WORLD WAR II, by Major John B. Haseman, MI, 217 pages.

The Thai resistance movement began simultaneously in Thailand, the United States, and England, soon after Thailand was forced into an alliance with Japan and declared war against the United States and other allied nations.

elements from all sectors of the Thai society formed anti-Japanese resistance groups that eventually coalesced around Pridi Panomyong, Regent of Thailand, to form an integrated resistance movement.

The United States and England provided support for attempts to initiate operations into Thailand. The first successful infiltrations took place in early 1944 and by the end of the war dozens of allied-trained agents and western intelligence officers were operating inside Thailand. In Thailand the resistance movement operated at a low level from its inception in 1941 until about mid-1944. During that time resistance leaders concentrated on recruiting a small cadre element, collecting intelligence, and monitoring a growing number of sporadic harassment attacks against the Japanese occupation forces.

The arrival of western-sponsored agents spurred the resistance movement to a great expansion that resulted in establishment of cadre and guerrilla units in virtually every area of the country. Virtually the entire military, police, and civil service entered the resistance movement. Although no major combat took place, by the end of the war over 50,000 Thais were prepared to enter the war to support a massive allied offensive operation into Thailand. Only the timing of the war's end prevented that from taking place.

The widespread support for the Thai resistance movement within Thailand, as well as by the United States public, generated crucial post-war political benefits for Thailand. There is no question that the presence of the allies played a major role in the post-war political settlement. United States support of the Thai resistance, particularly through operations conducted by the Office of Strategic Services, continued a tradition of Thai-American friendship that has lasted for over 100 years. While it is unlikely that the present political atmosphere would permit the United States to commit ground forces in support of Thailand in the event of a crisis there, the depth of friendly ties between the two countries would probably require a commitment of some form of military or political force in support of the Thai people.

Research for the details of the Thai resistance movement are very scarce in the open English-language scholarship now available. As a result virtually all details of Thai resistance activities were taken from Thai-language sources. Most of the material in this thesis appears in English for the first time here. Much material is still closed to the researcher and doubtless many details are still unknown. But the thesis presents in an objective way the views of many of those that actively participated in the Thai resistance movement.

261. AN ANALYSIS OF AMERICAN POSTER ART AS A MEDIUM OF COMMUNICATION DURING WORLD WAR I, by Major Philip J. Hickok, AG, 186 pages.

Effective communication on a massive scale between the government and the people of the United States was essential between 1917 and 1919

to mobilize the American people in support of the First World War effort. The pictorial poster is a medium of visual communication that tells a story, usually with few or no words. This study examines the use of the pictorial poster as the primary medium of communicating the government's needs to the American people for the waging of war.

The study is illustrated with 129 plates, consisting primarily of reproductions of World War I war posters. A review of the literature dealing with poster art, the temper of the times (1915-1919), American military heritage, and examination of original and photo reproductions of war posters provide the basis for analysis of the visual communication effort.

Categories of need are defined as groupings of war posters with similar themes designed to reinforce, or change, public attitude or behavior to produce tangible products that answered governmental needs. This study found six primary categories of need: 1) awareness of the threat, 2) the call for resources, 3) societal support of the combatants and the allied effort, 4) humanitarian, 5) finish the job--on to victory, and 6) retrenchment. The categories of need, themes, messages, and symbols are summarized in a matrix at plate 129.

The principles of pictorial poster design are identified, and applied to selected posters to evaluate the effectiveness of the visual message. Analysis resulted in the following conclusions: 1) the pictorial poster was successful in gaining general public support for the American First World War effort; 2) the principles of pictorial poster design are applicable to visual communication regardless of the media; and 3) the graphic art poster can fulfill an important and mission-related external role in today's Army.

262. AN ANALYSIS OF THE INFANTRY'S NEED FOR AN ASSAULT SUBMACHINE GUN, by Major Bruce F. Kay, IN, 90 pages.

For several decades infantrymen have argued over the requirements for the small arms weapons for the infantry. Battlefield experience in the Republic of Vietnam and the involvement of the author in weapons development testing raised doubts as to the validity of the US Army's approach to small arms development.

The proliferation of new weapons systems in the rifle squad, emerging doctrinal changes for employment of the mechanized infantry rifle squad, and the traditional views of many within the development community all point to a need for an improved small arm for the rifleman.

This study was undertaken to determine the proper role of the small arm in the mechanized rifle squad and investigate a requirement for an assault submachine gun light enough and small enough to improve the capability of the mechanized infantry squad to better perform his mission with increased firepower.

the requirements for small arms is argued with attention to performance characteristics and relative importance in terms of combat effectiveness. The results of empirical research conducted by the US Army Combat Developments Command Experimentation Command, Psychological Research Associates and the US Army Infantry Combat Developments Agency as well as historical commentaries are used to support the argument.

Two essential elements of analysis serve as the basis of the argument. The first deals with the types of effective fire required by the infantry small arm, and the second, with expected engagement ranges requiring effective fire. Component factors of the elements of analysis are target effects, sustainability of effects, tactical employment of the rifle squad, effectiveness by range, small arms characteristics and the doctrinal role of the small arm.

The conclusions are that the adoption of a compact, lightweight assault submachine gun would enhance the capability of the mechanized infantry squad to accomplish its mission by improving target effects, sustainability of effects, tactical versatility, mobility, and maneuver. Further, that the psychological impact on the esprit and elan of its users would collectively be advantageous.

263. THE SOVIET MOTORIZED RIFLE BATTALION IN THE MEETING ENGAGEMENT, by Major John A. Kimball, MI, 130 pages.

This research project is designed to examine the available evidence concerning the employment of a type unit of the Soviet Army in a particular offensive action. This paper is the result of this author's efforts to understand the use of a Soviet Army reinforced motorized rifle battalion in the conduct of a meeting engagement.

Specifically addressed herein are three questions: (1) what is the doctrine for the employment of a reinforced motorized rifle battalion in a meeting engagement; (2) do the units involved train to comply with the doctrine; and (3) how well do they train? In order to answer these questions, this study has concentrated on available Soviet writings published since the Middle East War of 1973.

The investigation of the available material indicates there is some very specific doctrine for the employment of the battalion that has been considered for modification since the Yom Kippur War of 1973. The typical motorized rifle battalion generally follows the doctrine during the training cycle. However, their training seems to leave much to be desired.

264. LOW FREQUENCY RADAR SYSTEMS SHOULD REPLACE CURRENT HIGH FREQUENCY RADAR SYSTEMS ON THE BATTLEFIELD TO OPTIMIZE THE ARMY'S GROUND SURVEILLANCE RADAR CAPABILITY, by Major Paul H. M. LaBay III, FA, 98 pages.

One of the key requirements for U.S. maneuver forces to be able to win the first battle is the quick and accurate location of engaged enemy units in the battle area. At present and into the foreseeable future,

ground surveillance radar will continue to provide the maneuver commander with a substantial part of this immediate intelligence information. Current state-of-the-art technology provides the Army with two distinct types of radar to accomplish the ground surveillance radar mission. The first is a high frequency, line-of-sight system; the second is a low frequency, foliage independent system. Because monetary and manpower constraints will limit the types and numbers of radar systems eventually deployed, the Army must choose that system which best fulfills its ground surveillance radar needs.

This paper investigates the efficacy of both systems to detect, locate, and identify targets of military interest under stated evaluative conditions. It addresses both the machine and the man-machine/human factors aspects of radar operation. The demonstrated capabilities of both systems are compared and evaluated to determine which system shows the greatest potential to optimize the Army's ground surveillance radar capability. The study concludes that low frequency radar systems offer the best practical solution to finding the enemy. It further recommends that the Army place priority effort into developing low frequency radar systems offer the best practical solution to finding the enemy. It further recommends that the Army place priority effort into developing low frequency radar systems for future ground use.

265. THE FORWARD AIR CONTROLLER: IS HE A VIABLE FACTOR IN CENTRAL EUROPE? by Major Don A. Lyon, USAF, 75 pages.

The problem undertaken in this thesis is to determine whether or not the Forward Air Controller (FAC), as currently trained and equipped, would be a viable factor in a mid-intensity conflict in Central Europe.

Areas investigated included the Soviet threat, terrain and climatological factors prevalent in Europe, the number of FACs assigned to support Army maneuver units, the equipment they use, and the training they receive.

The conclusions drawn from this analysis are:

1. The FAC is improperly trained, in that he is not provided sufficient ground FAC training during the initial training period, and the airborne training does not present survivable techniques for a mid-intensity conflict.
2. The FAC does not receive sufficient ground training with the supported maneuver unit once he reaches his final destination.
3. The airborne FAC is not properly equipped, in that the OV-10 aircraft could not survive the vast array of surface-to-air weapons available to Soviet forces.
4. Standardized armored vehicles are not available to the ground FAC for either training or actual combat.

5. Based on the tactics and procedures presently being taught, the number of FACs available in Europe today is not sufficient to meet the demand created by a conflict in Europe.

The United States Air Force is at a critical juncture in its conduct of the close air support mission run by forward air controllers. If the Army is to be provided the type of support they are currently being promised, then several areas must be changed. Training and tactics must be upgraded to reflect the current threat. The FAC must be provided with both aerial and ground vehicles that are designed to survive in a mid-intensity environment. Adequate number of FACs must be trained and available to meet the requirements of a short notice war. Finally, the Army and the Air Force must realistically review the threat, and establish a strong, well trained combined arms team that will accomplish doctrinal requirements.

266. DIFFERENTIATION VERSUS DISCRIMINATION, by Major Alice J. McFarland, AG, 177 pages.

The elimination of sex discrimination in the Army is of military importance because the Women's Army Corps officer will play a very significant role in the all-volunteer Army. In view of the fact that the purpose of the WAC expansion is to provide qualified personnel to make the all-volunteer Army a reality. If women are expected to continue to volunteer to become WAC officers, they must be assured that they will be provided equal opportunity and treatment. It is in the interest of the Army to develop them to their highest potential. If the Army does not, it will be deprived of many highly qualified, patriotic, and competent women.

The focus of this study was to look at attitudes of Army women toward differentiation between male and female officers in their career development which might result in institutional discrimination against WAC officers. The basic issue considered was: Is there discrimination against WAC officers in the areas of promotions, assignment, training, schooling, and utilization and if so, how does it exist, why does it exist, and what action can be taken to eliminate it? This study was based on the following hypothesis: WAC officers are subjected to institutional discrimination in the Army.

The sample for the study included three of the sources for receiving commissions in the Army: OCS, ROTC and direct commissions. The investigation revealed that the direct commissioned officers had more knowledge about the status of the Women's Army Corps and the occupation of arms than officer candidates and ROTC cadets. They also had different attitudes toward institutional discrimination than officer candidates and ROTC cadets. The hypothesis that this difference was based on age, education and experience was supported. Statistical analysis of the data revealed the need for more research to determine how women make occupational choices and the role of women in occupations and professions. Scientific data is also needed to determine what combat positions can be filled by women.

267. THE TACTICAL AIR CONTROL SYSTEM: THE EFFECTS OF ARMY ORGANIZATIONAL CHANGES ON CLOSE AIR SUPPORT, by Major Ronri K. Morrow, USAF, 77 pages.

The U.S. Army has made several changes in its command and control structure that affect the interface relationship of the Air-Ground Operations System (TACS). The study addresses two of these changes, the Echelons Above Division (EAD) change and the split division command post concept, and their effect upon close air support (CAS) coordination.

A review of the development of the TACS from World War II until today provides lessons learned in the development of the TACS and the guiding principles used in its organization. An analysis of U.S. Army organizational changes determined their effects on the U.S. Air Force and U.S. Army interface within the Air-Ground Operations System.

The conclusion was that the EAD change has caused an interface problem that will affect the U.S. Air Force and U.S. Army CAS coordination in a situation where multiple corps are deployed. The change in organizational relationships proposed in this paper will solve this problem.

An analysis of the split command post concept revealed that the concept causes problems in manning, equipment, and procedures within the division Tactical Air Control Party (TACP). An alternate division TACP configuration which uses additional personnel and equipment is recommended. The recommendation also changes the routing system of the immediate and preplanned CAS requests through the division TACP and split command post.

Finally, based upon the historical review and present problems, it was concluded that the U.S. Air Force places very little priority on development of the TACS between wars. Consequently, the system has deficiencies at the beginning of a conflict.

268. THE HOLOCAUST: AMERICAN INCENDIARY BOMBS OF WORLD WAR II, by Major John Wyndham Mountcastle, AR, 79 pages.

Incendiary bombs were among the most effective weapons utilized by the United States during World War II. By the end of the war, the U.S. Army Air Forces had employed various types of incendiaries to destroy a major part of the German and Japanese industrial base, and had used fire bombs in support of American ground troops. The record compiled by this family of weapons is especially remarkable, for the United States had no incendiary bombs until just before the Pearl Harbor attack.

This study evaluates the manner in which the U.S. Army developed and employed aerial incendiaries from 1941 to 1945. The success enjoyed by the Air Forces was due, in large measure, to the efforts of the Chemical Warfare Service, and to the contributions of civilian scientists and industry. Lacking any clear-cut concepts for incendiary warfare, the Army was fortunate to have in its ranks such innovative air commanders as General Curtis LeMay, who found effective ways of employing the flame weapons.

The American experience with aerial incendiaries during World War II provided a basis for continued development of flame bombs and improved employment techniques that were later used during the conflicts in Korea and Vietnam.

By today's standards, the manner in which U.S. incendiary bombs were developed and employed during World War II was less than efficient and far too time-consuming. The many problems encountered by the United States in fielding truly effective aerial incendiaries provide a warning for modern American leaders. This country can no longer hope to develop the weapons needed after a war breaks out, but must be prepared to fight effectively on the first day of the next war.

269. THE MULTIPLE INTEGRATED LASER ENGAGEMENT SYSTEM (MILES) AND THE TOW ARTEP, by Major Antonio Munera III, IN, 156 pages.

The Multiple Integrated Laser Engagement System (MILES) is a training device which will permit two-sided casualty assessment in the "mock" battlefield of training. MILES will revolutionize military training methods and techniques. Using MILES, the individual soldier receives immediate feedback as to the effects of his actions on the battlefield. By "killing" his opponent if he performs correctly and being "killed" if he errs, actions which will permit the individual soldier to perform effectively in the modern battlefield are reinforced.

MILES is currently in the engineering development phase of the materiel acquisition process, and production quantities will be available in the early 1980s. The system uses low power eyesafe lasers to simulate the effects of direct fire weapons such as tanks and antitank missile systems. Each weapon system is equipped with a laser and laser energy detectors. When a "kill" occurs, the target vehicles laser is deactivated, a smoke grenade is ignited, and a continuous tone is sounded for 30 seconds.

Assuming that MILES is operational within the U.S. Army, what is the impact of this system on the Mechanized Infantry Battalion Army Training and Evaluation Program (ARTEP) 7-45 as it relates to antiarmor training and evaluation of the TOW in the Mechanized Infantry Company? The TOW is a Tube-launched, Optically-tracked, Wire-command link guided missile capable of defeating any known armor out to ranges of 3,000m.

A significantly revised TOW squad/section ARTEP training and evaluation outline is the end result of this study. It includes ARTEP changes in terms of tasks, conditions and training/evaluation standards. Changes include use of MILES to: refine gunner tracking techniques out to ranges of 3,000m, pinpoint defensive positions, check range cards, check fire control techniques, and establish a pass/fail criteria for two-sided engagements in terms of number of "enemy" killed vs number of TOWs lost in the TOW section.

270. THE SIMULATION OF TACTICAL SMOKE ON THE MODERN BATTLEFIELD, by Major Christopher J. Needels, IN, 71 pages.

Recent intelligence reports indicate that Warsaw Pact forces are placing increased emphasis on the use of tactical smoke. In response, US forces have begun to evaluate their own capabilities to employ smoke. One method of conducting this evaluation is to include smoke employment in combat models. This thesis presents a computer model, SIMSMOKE, which has this capability.

The first part of the model consists of simulating the smoke employment tactics within a given tactical scenario. Input variables pertaining to command guidance, type of operation, weather conditions, and weapons and ammunition available provide the setting. At the appropriate time during the battle, smoke is automatically placed on or near the opposing force's locations so that the smoke clouds drift into the line-of-sight between attacker and defender.

The second part of the model consists of computing if inter-visibility exists between opposing forces at each second of the battle. As a representation of a smoke cloud, a sphere is used to simulate white phosphorous (WP) and a cone is used to simulate hexachoroethane (HC). The program calculates if the line-of-sight intersects any part of either one of these types of three dimensional figures. If an intersection occurs, the line-of-sight is blocked; therefore, intervisibility does not exist.

A series of test runs were conducted to verify the model. Bursting radii of the smoke rounds, atmospheric stability conditions, type of smoke munitions, wind speeds, and wind directions were the parameters varied for the tests. In all cases the model produced results consistent with the expected outcome.

The methodology used in this study provides a basis for future simulations of tactical smoke employment in computerized combat models.

271. A FEASIBILITY STUDY: THE APPLICATION OF DUTY MODULES TO FRONT END ANALYSIS OF THE COMMAND AND GENERAL STAFF COLLEGE. Regular Course (Joint Study with Major John R. Robbins), by Major James Reece Norris, FA, 110 pages.

The purpose of this study is to examine the feasibility and usefulness of applying Duty Module methodology in the front-end analysis of the Regular Course, U.S. Army Command and General Staff College (CGSC).

A Duty Module is a cluster of related job tasks that tend to go together organizationally and occupationally in meaningful ways. Duty Modules and their associated data of task criticality, level and time of performance can assist the curriculum designer in establishing a need for training and allocating resources to support the curriculum.

The study attempts to correlate the application of Duty Module concepts at CGSC with requirements for systems engineering of the CGSC curriculum. Comparisons of Duty Modules are used to construct a hypothetical curriculum which is compared to the current one.

The study concludes that the application of Duty Module concepts to the CGSC curriculum is useful. Their use would significantly increase the ability to identify curriculum needs. Additional curriculum improvements would result in more efficient resource allocation, reduction of subject matter duplication, and better use of student academic hours to support OPMS specialties. However, Duty Modules do not identify all training needs for course development and are in need of technical refinement. Recommendations include further development of Duty Module methodology with emphasis on the application to curriculum design at CGSC.

272. THE EVOLUTION OF SINO-THAI DIPLOMATIC RELATIONS: 1965-1975, by Major James Thomas Price, IN, 181 pages.

The purpose of this thesis is to examine how the reduction of two major obstacles between 1965 and 1975 facilitated the evolution of formal diplomatic relations between the Kingdom of Thailand and the People's Republic of China. The two obstacles were the United States military presence in Thailand and the Chinese support for an insurgency in northern Thailand.

This thesis constitutes an attempt to demonstrate that Bangkok and Peking each perceived the other as carrying out one major aspect of foreign policy which was unacceptable to the other. Thailand had established close military ties with the United States and was assisting the United States in the conduct of the Indochina war. The large U.S. military presence in Thailand, especially the air units, was perceived by the Chinese as a threat to Chinese security.

On the other hand, Thailand pointed to the insurgency in northern Thailand and perceived that the Communist Party of Thailand was attempting to subvert Thai authority with material and propaganda support from Peking. Both of these obstacles will be traced from their origins and then the thesis will examine how each government went about reducing the two obstacles in an effort to reach an accommodation that would result in more amiable relations, and eventually lead to formal diplomatic recognition in the summer of 1975.

The investigation reveals that a dialogue between Bangkok and Peking evolved gradually as the U.S. troop presence in Thailand was lowered, and as Peking placed less emphasis on support for the insurgency in northern Thailand. When the obstacles were reduced to the level that neither country perceived a threat, then diplomatic relations were established.

273. IS A CHANGE IN THE TACTICAL TRAINING OF MARINE CORPS ATTACK HELICOPTER PILOTS ESSENTIAL TO PERFORM THE ANTI-ARMOR MISSION? by Major George A. Ross, USMC, 54 pages.

This study attempts to determine the viability of current United States Marine Corps attack helicopter pilot tactical training. More specifically the researcher addresses only the anti-armor role of the

attack helicopter. The investigation analyzes the threat of the Soviet Combined Arms Army. Current attack helicopter tactical training is analyzed in depth. U.S. Army, U.S. Marine Corps and Israeli Air Force tactical training are specifically addressed. The aviation doctrines and tactics are compared to the threat, with mission accomplishment and survivability the key.

The investigation reveals a lack of adequate tactical training of U.S. Marine Corps attack helicopter pilots in the performance of the anti-armor mission. Proposed by the researcher are changes in the current tactical training program. These changes address involvement with a combined arms army and specifically the anti-armor mission of the attack helicopter. The training proposed will enable the attack helicopter pilot to survive the antiaircraft umbrella, the enemy fixed and rotary wing threat and accomplish his mission. . . destruction of enemy armor.

The tactical training specifically addressed are low level terrain flying which includes low level flights, contour flying and nap-of-the-earth flight and air to air tactics. "Around-the-clock" operations are discussed. Training must be both day and night, foul weather and fair. Emphasis is on realistic training with mission accomplishment as the end result.

274. THE ARMORED AND MECHANIZED DIVISION ARMORED CAVALRY SQUADRON, by Lieutenant Colonel H. Joseph Rozelle, AR, 149 pages.

This study attempts to develop appropriate missions for the divisional armored cavalry squadron that are based upon the needs of its parent division, and to identify an organization and equipment configuration that will enable the armored cavalry squadron to perform these missions against our potential adversaries.

The potential adversaries are either the Soviet Union or armies trained by the Soviet Union, and the greatest threat is in Europe and the Middle East. In both areas U.S. forces and their allies would be faced with armies numerically superior to their own.

In order to properly oppose those forces an analysis of missions determined that the screen, delay, flank guard, movement to contact/zone reconnaissance, and the economy of force offense and defense were the basic missions to be performed. Other missions are conducted as part of or in the same manner as the other basic missions. The covering force mission includes the screen and delay.

Three type squadrons were selected for analysis; a light armor reconnaissance squadron, a heavy armor cavalry squadron and the current TOE squadron (modified). These squadrons were analyzed performing the required missions against Soviet forces they would meet in either Europe or the Middle East.

The conclusions indicated that the traditional cavalry missions of reconnaissance, security, offense and defense are still required, that the air cavalry troop significantly increased the performance of any type squadron and that the heavy armor cavalry squadron with a modified air cavalry troop was the best overall squadron to perform the required missions.

275. AERIAL RESUPPLY OF ENCIRCLED ARMY UNITS DURING A MID-INTENSITY EUROPEAN WAR, by Major Garry A Schneider, USAF, 98 pages.

An attack by the Warsaw Pact on NATO will probably be conducted with high speed armor thrust trying to encircle NATO forces. If encirclements are successful, aerial resupply will have to sustain the encircled units until breakouts or link-ups can be accomplished. This study addresses the aerial resupply mission and the three primary factors that impact on it: weather, Soviet anti-air threat, and resupply requirements. Using these factors as a basis, the C-130 and the Advanced Medium STOL Transport (AMST) are compared against each other and the overall mission requirements.

Resupply operations in the U.S. V and VII Corps areas of West Germany will require an all-weather airlift capability. Presently, the AWADS equipped C-130s can conduct all-weather airdrops, but have a limited all-weather airland capability. New systems, such as the Global Positioning System, will offer navigational improvements and enable the AMST to conduct all-weather STOL operations.

The Soviet air defense weapons, both ground-based and fighters, pose the most difficult challenge. To counter these threats supporting tactical air forces will have to conduct effective suppression and counter air campaigns. However, the AMST with its 30 percent faster speed, and ECM and IRCM equipment will require less support than the C-130.

The AMST will provide a greater airlift capability than the C-130. To resupply an armored brigade the AMST requires 25 to 38 percent less sorties, depending on the delivery mode. However, the AMST's most significant advantage lies in its STOL capability. It can use 90 percent of the V and VII Corps' airfields, while the C-130 can use only 24 percent.

The AMST provides significant advantages over the C-130, however a successful resupply mission may depend on the effectiveness of the suppression and counter air campaign as much as the particular airlift aircraft used.

276. HELICOPTER AEROMEDICAL RESEARCH: THE NEED, by Major Thomas C. Scofield, MS, 112 pages.

The need for helicopter aeromedical research is examined from several aspects: (1) a historical review of aeromedical research from the beginning of flight to the establishment of an Army helicopter aeromedical research laboratory in 1962; (2) the correlation of physiological problems associated with each new development in airplane technology;

(3) an analysis of the Army, Navy, and Air Force aeromedical research facilities, capabilities, and programs; (4) a comparative analysis of the three military departments' aircraft resources; and (5) a review of the threat facing Army ground forces today.

The study reveals an imperative need for a dedicated helicopter aeromedical research capability and indicates that present facilities and funds are inadequate. An analysis of the three military departments' research facilities, capabilities, and programs indicate a duplication of research facilities within the Air Force and between the Air Force and Navy in the areas of impact acceleration and high sustained acceleration. There is no duplication in facilities in the Army or between the Army and the other military departments.

A review of the threat faced by United States ground forces in Europe reinforces the need for a dedicated helicopter aeromedical research facility to support the Army's expanded use of helicopters in a high intensity conflict.

As new and more efficient helicopters are developed, a new generation of physiological problems are created and must be solved if men are to operate helicopters safely and effectively. Among these problems are severe visual restraints, crash survivability, life support equipment needs, combined stresses, new demands on night vision, and sustained performance of aircrews. The need for helicopter aeromedical research continues longitudinally and increases significantly with the development of more complex and sophisticated helicopters.

277. MANPOWER ALTERNATIVES AND A DRAFT FOR THE RESERVE COMPONENTS, by Major Todd R. Starbuck, AR, 139 pages.

This study attempts to identify manpower alternatives available for sustaining the All Volunteer Force, or providing a replacement structure should voluntary programs prove inadequate. It further focuses on the implications of a draft for the Reserve Components. The development of military manpower policy is analyzed from a historical perspective and the status of current programs and policies is examined.

This study concludes that a return to conscription is unwarranted at this time. However, extension of current unfavorable trends will precipitate a manpower crisis in the All Volunteer Force, particularly in the Reserve Components. In order to insure attainment of national security objectives, reinstitution of the draft in some form could be required.

Recommendations include a three-phase graduated response focused on enhancing voluntary programs in Phase I. Phase II is a carefully structured draft to fill the Individual Ready Reserve and Phase III is a full draft for the active forces.

278. TRAINING THE FIRST AMERICAN DIVISION FOR COMBAT IN FRANCE 1917-1918, by Major Edwin S. Stone III, AD, 60 pages.

The purpose of this study is to examine the program for training of America's first division in Europe in 1917, from the date of its activation until it was certified ready for combat as a division in January, 1918. Thus, the training program of the 1st Division is explored chronologically through three phases: basic individual training as conducted by the division; the centralization and promulgation of training doctrine and training policies by Headquarters, American Expeditionary Forces, and the final phase of the training program during which the division was judged prepared to enter combat. The primary sources used for this study were drawn from a compilation of letters, training programs, and memoranda of the A.E.F., 1st Division, and French Army, gathered into several volumes by the War College and entitled World War Records, First Division, A.E.F. Memoirs and biographies of some of the principals involved in this effort were also used. Conclusions of the thesis are that American training doctrine and principles for the 1st Division was evolutionary in nature and emerged as members of the A.E.F. gained experience. The 1st Division was trained in a very systematic manner from the simplest to the most difficult of tasks, and was successfully prepared for its entry into combat.

279. THE ARMY COLLEGIATE COMMISSIONING PROGRAM - A FEASIBILITY STUDY, by Major Phillip Errol Tucker, USMC, 79 pages.

This study examined the feasibility of a U.S. Army Collegiate Commissioning Program (CCP) as a supplemental method of officer procurement. The study assumed that any CCP will operate like the Marine Platoon Leaders Class (PLC) Program and used data from the PLC Program and existing Army programs (ROTC, USMA, OCS) as the basis for predicting CCP results.

The study investigated the U.S. undergraduate collegiate population, Army officer procurement goals, program production capabilities, costs, and retention rates, projected through fiscal year 1982.

The study found that through FY 1982 a sufficient collegiate population will continue to exist to meet projected Army officer procurement and production goals but that existing programs as currently operating can be expected to produce a shortfall of nearly 5,000 officers annually. The study also found that (1) CCP can initially be expected to produce 3,300-4,000 new officers per year, (2) that CCP source officers will cost about ten thousand dollars per capita (in 1975 dollars), and (3) that CCP officers can be expected to experience a 15-28 percent retention rate beyond ten years commissioned service.

The study determined that (1) expansion of existing Army procurement programs (ROTC, USMA, OCS) to meet projected FY 82 production goals is not cost effective, (2) that CCP can be expected to alleviate nearly 80 percent of the expected officer shortfall and (3) that CCP will procure officers at an initial and at a ten-year per-capita cost lower than any existing program.

The study concluded that CCP is a feasible supplement to existing programs in terms of procurement potential and productivity, cost effectiveness, and retention. The study also concluded that the combination of existing programs (with present operating costs per capita) plus CCP (similarly funded) will not achieve projected FY 1982 production goals. The study recommended development of a CCP model for detailed analysis and evaluation during the next 16-36 months (September, 1978-May, 1980).

280. BRAINSTORMING TO INCREASE ALTERNATIVE GENERATION: A COMPARISON OF GROUP PARTICIPATION AND POOLED INDIVIDUAL EFFORT, by Major John M. Wattendorf, QM, 164 pages.

The ability to creatively solve problems is a critical skill for a military commander/manager. Creative problem-solving depends upon creative alternative generation or ideation. An often espoused method of improving ideation is the use of group brainstorming. However, the findings reported from numerous brainstorming experiments cast doubt on the efficacy of group participation in brainstorming. Nevertheless, criticisms of the experiments abound and the technique continues to be a popular, recommended management tool.

This pilot study compares the effectiveness of group brainstorming to individual brainstorming by contrasting the quantity and quality of ideas generated in a brainstorming group to the pooled ideas produced by an equal number of individuals working alone. The study reviews the major brainstorming experiments and attempts to directly address the major criticisms of those studies in the experiments and attempts to directly address the major criticisms of those studies in the experimental design. The methodology maximizes the potential for effective group brainstorming within the constraint of practicality in a military setting in order to evaluate the technique and determine the desirability of a more comprehensive field study.

The findings clearly support the superiority of individual over group brainstorming using currently recommended techniques. Nevertheless, the study demonstrates that the potential usefulness of group brainstorming is not a dead issue and further study is warranted.

281. THE INFILTRATION OF PATROLS BY MEANS OF RAM AIR PARACHUTE, by Major Charles E. Whittle, IN, 40 pages.

This thesis evaluates current parachute infiltration doctrine aimed at achieving secrecy during the insertion. It also presents a new concept which uses the new ram-air, high performance type parachute.

The study initially undertakes an examination of historical precedents that have been established using the airborne concept of static line deployed parachutes and the HALO (high altitude, low opening) technique. These examples point out the advantages and disadvantages of current doctrine relative to achieving secrecy during the infiltration.

The new concept is called STOTPINS (stand-off technique for parachute insertion). STOTPINS, using a ram-air, high performance parachute

called the STRATO-CLOUD, allows for personnel to exit from high altitudes, immediately deploy their parachutes, assemble in formation, and glide over long distances to the predetermined drop zone.

The increased capability of the STRATO-CLOUD and use of modern navigational aids provide the capability to secretly infiltrate a unit, while assuring pinpoint accuracy, over distances greater than fifty kilometers.

It was concluded that the STROPINS concept can provide an additional dimension to current doctrine. The highly maneuverable, off-setting descent trajectory of the STRATO-CLOUD parachute is a demonstrable capability for achieving secrecy during infiltration. This concept is waiting for operational application for special missions such as raids, ambushes, sabotage, or intelligence acquisition.

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C36. (S) THE NVA IN LAOS: 1951-73 (U), by Major Wayne M. McDonnell, MI, 105 pages.

(U) Laos was designed to be a buffer state between Thailand and North Vietnam. The North Vietnamese, however, were determined to influence if not actually control events in the country. In response, the United States and Thailand backed various right-wing elements and selected tribal groups (principally the Meo) to frustrate North Vietnamese designs and to establish Western centers of influence where feasible.

(U) Though initially constrained by weather and poor roads, the North Vietnamese Army (NVA) began a pattern of ebb and flow, expanding military activity in Laos in response to political setbacks in Vientiane, pulling back when their clients, the Pathet Lao, did well. Gradually, the NVA policy evolved from one of bolstering the position of their buffer allies to one of maintaining total domination over large areas of Laos to protect the Ho Chi Minh Trail. Thus, from 1965 onward, the North Vietnamese viewed Laos not only as a buffer but as the corridor through which their lifeline to the south must pass. Eventually, Laos became one more battlefield in the Indochina War as the NVA launched multi-division operations while the United States flew up to 700 sorties per day in Laos, and Thai infantry and artillery battalions assisted the CIA-supported Meo Irregulars and the Royal Lao Army.

(U) Following collapse of the French military position in Indochina in 1954, the level of military activity in Laos remained low until the end of Prime Minister Souvanna Phouma's coalition government in 1958. The United States encouraged right-wing reaction in the wake of Pathet Lao electoral gains followed by the neutralist coup of Kong Le left the Lao political scene fragmented in Rightist, Neutralist, and Pathet Lao factions. When it became apparent that the right-wing forces under Phoumi Nosavan would never prevail, U.S. policy shifted behind Souvanna Phouma's neutralist position and, in the wake of the Geneva Convention, another coalition government was formed. However, polarization again ensued in early 1963 when the CIA organized a Meo offensive which hill-hopped to within 15 kilometers of Sam Neua City and Pathet Lao forces, with NVA backing, attempted to drive Kong Le's neutralist forces from the Plain of Jars. The CIA responded to Kong Le's plight by ordering Vang Pao's Meo to support his forces. The NVA then reacted with a series of Dry Season offensives to clear the Meo positions from the dominating terrain along Route 6, leading to the Plain of Jars. By 1969, the NVA had achieved their objective and had improved their lines of communication to a point where they were subsequently able to contest Vang Pao for the Plain with multi-division offensives by 1970-71. By 1973, the Meo had lost the Plain of Jars and had only one remaining major base at Long Tieng. Finally, in Central and South Laos, NVA concern about the eastern flank of the Ho Chi Minh Trail caused steady escalation from 1965 onward until, by the early 1970's, the NVA conducted brigade-size operations in Central Laos and division-size operations in South Laos (on the Bolovens Plateau).

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