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MEDICAL DEVELOPMENT AND INVESTIGATION IMPLICATIONS STUDY (MEDII--ETC(U)
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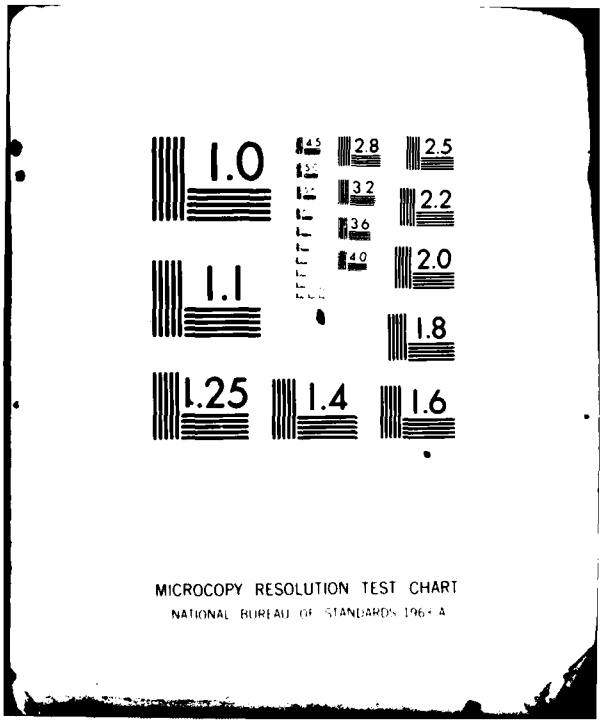
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Medical Development and Investigation Implications Study (MEDIIS)

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Principal Investigator

Final Report
March 1982

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20. ABSTRACT *(Continue on reverse side if necessary and identify by block number)*

The intent of the Medical Development and Investigation Implications Study (MEDIIS) was to identify and develop a formalized, comprehensive, and integrated methodology for identifying, evaluating, translating, and utilizing civilian and military state-of-the-art information on new technological developments which impact on doctrinal development and the operational processes associated with the combat/peacetime missions of the Army Medical Department (AMEDD). Based on interagency coordination and the direct involvement of over 35 Office of the Surgeon General (OTSG) consultants, a realistic scenario was derived which

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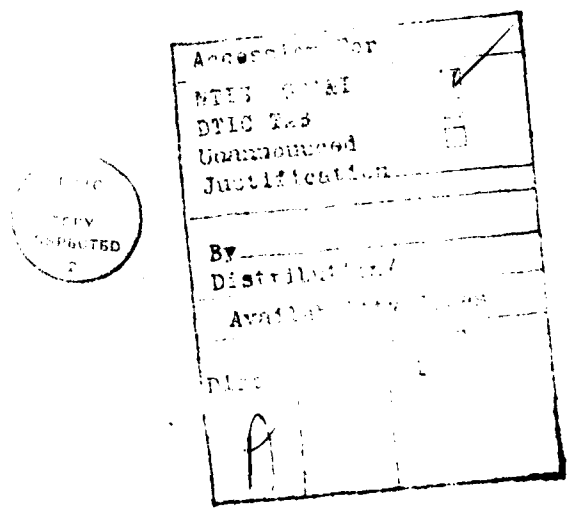
established agency/staff responsibilities for the implementation of an AMEDD-wide Technology Evaluation and Transfer Program (TETP). This scenario was predicated upon a computer conferencing network similar to TRADOCs Task Force Delta, with the initial phases of development to be targeted on medical materiel with gradual time-phasing into the clinical areas. Also, it was recommended that a system should be established and monitored by key OTSG consultants that would provide for the ongoing compilation and periodic evaluation of potential applications of new developments, and the transfer input of information into the appropriate doctrinal planning bases.

TABLE OF CONTENTS



MEDICAL DEVELOPMENT AND INVESTIGATION IMPLICATIONS STUDY (MEDIIS)

I. PROBLEM.

A. Problem Statement. There exists within the Army Medical Department (AMEDD) a need to establish a formalized, comprehensive, and integrated methodology for identifying, evaluating, translating, and utilizing civilian and military state of the art information on new technological developments which impact on doctrinal development and the operational processes associated with the combat/peacetime missions of the AMEDD.

B. Purpose. The purpose of this proposal is to develop for OTSG consideration a formal methodology for identifying, evaluating, and translating civilian and military medical technology into doctrine for the Army Medical Department.

C. Objectives. The objectives of this proposal are to:

1. Establish a realistic scenario for the implementation of a Technology Evaluation and Transfer Program (TETP) which is specialty-based and time-phased.

2. Establish agency/staff responsibilities for the ongoing conduct of the TETP on an AMEDD-wide basis.

D. Background.

1. Based on continuing concerns within the AMEDD, The Surgeon General formally documented in the FY 81-82 AMEDD Health Care Study Program (AR 5-5) the need to conduct an in-depth study directed toward the development of a technology transfer methodology which would have AMEDD-wide applications. Basic premises of this study were that it provide a mechanism for: (1) establishing a central repository or "clearing house" concept with "specialty data bases;" (2) evaluating new knowledge and technical developments (materiel and clinical) emerging from the civilian and military communities; and (3) transferring comprehensive and current information on technological advances to those who have a need to know in the areas of equipment, procedures, systems, supplies, drugs and chemicals, etc. for use in doctrinal planning and other developmental efforts in the AMEDD.

2. There presently exists within the AMEDD many agencies which have "pockets" of technological information which are usually mission specific to that agency. Although there are some mechanisms that provide for information flow periodically between these agencies, e.g. the Army Medical Department Technical Committee, on-line transfer of information is essentially non-existent.

3. The AMEDD Life Cycle System Management Model for Medical Materiel (HQDA Letter 40-77-3) delineates responsibilities for acquisition of or change to medical materiel which is utilized by the Army in the field. All applicable regulatory material identifies The Surgeon General (TSG) as the materiel developer responsible for research, development, test and evaluation. This authority is subdelegated to the Academy of Health Sciences (AHS) as the combat developer and trainer, the Medical Research and Development Command (USAMRDC) as primary developer of materiel, the US Army Medical Materiel Agency (USAMMA) for logistics support, the Directorate of Medical Equipment Test and Evaluation, AHS (DMETE) to conduct operational testing and the Directorate of Health Care Operations to establish policies and objectives and provide reviews and approvals on behalf of TSG. The Logistics Division is the designated staff element responsible for materiel acquisition, product improvement, life cycle management and monitorship of test and evaluation of medical materiel.

4. AR 70-45, Scientific and Technical Information Program (STINFO) establishes procedures that apply to all Department of Army organizations that direct, administer, perform or support research, development, test and evaluation. This program includes all efforts devoted to the collection, analysis, evaluation, storage, retrieval and dissemination of scientific and technical information.

5. AR 40-61, Medical Logistics Policies and Procedures provides procedures for the submission of recommendations for the adoption of new or improved items of medical materiel to the Logistics Division, Directorate of Health Care Operations, OTSG.

6. Significant developments regarding MEDIIS since 1 Dec 80 when the study was initiated follow:

a. A fact gathering and coordination staff visit to USAMRDC was accomplished. Key personnel such as the Deputy Commander and Research Area Managers were briefed on MEDIIS and ideas were generated from extensive discussions.

b. Literature surveys were performed in medical research and technology requesting information on how the Army is using new medical research and technology. The searches were by Defense Technical Information Center, Work Unit Summaries and Report Bibliography (search numbers T 31563 and 99737), Defense Documentation Center, Research and Development Planning Summaries (search number PP3436) and various articles on medical technology problems and health information networks.

c. Professional consultants identified by TSG to assist the Directorate of Combat Developments and Health Care Studies, AHS, were individually mailed a letter by the Commandant, AHS. Additional consultants identified by the Director, Directorate of Professional Services, OTSG were queried to provide input on possible mechanisms which could be developed to assure that the latest developments in their respective professional areas would receive timely consideration in the ongoing

processes of planning doctrine. An example of a small working advisory committee by specialty was provided as a potential method. Information was solicited on the organization of the program to include the staff agency to monitor the program, the element of centralization vs decentralization by specialty data base, and the frequency of information input. A procedural description of existing methodologies in each respective organization was requested as well as information concerning similar efforts known to exist in the civilian sector.

d. The literature search produced a large amount of content oriented information to be included in a repository, but revealed no significant studies or recommended mechanisms to establish such a technology control center.

e. The fact gathering trip to USAMRDC provided significant insight for the development of this study particularly with regard to the Command's Science and Technical Information Division. The USAMRDC is a member of the Federal Laboratory Consortium for Technology Transfer which was established to transfer existing technical knowledge developed under federal R&D funding. To promote this transfer, 70 major Federal R&D Laboratories and Centers representing the Department of Defense (DOD), Department of Transportation (DOT), National Aeronautics and Space Administration (NASA), Department of Commerce (DOC) and the Energy Research and Development Administration (ERDA) have joined in an informal technology transfer consortium. The system is driven by technology transfer coordinators at each agency who act as "technology brokers" bringing together an individual agency which has a problem with another which has solved it or is working in that area.

f. Responses received from OTSG consultants were most favorable concerning the need for the establishment of a methodology to process medical technology. The concept of specialty based standing committees under the direction of the respective OTSG consultants was indorsed, including annual specialty meetings in conjunction with ongoing and cyclical professional meetings to determine potential applications of new developments in applied clinical doctrine. An actual test of this concept was accomplished by the Cardiology Consultant to The Surgeon General and several other senior cardiologists who substantiated the validity for adopting such a procedure to be followed by each of TSG's consultants.

g. Medical materiel was identified as a critical area of concern due to the need for current information input into the process of doctrine formulation and clinical application.

h. The feasibility of a technique of limited computer conferencing patterned on TRADOC's Task Force Delta was addressed with the Commandant, AHS. He sanctioned the conference technique with regard to MEDIIS, recommending that its development initially should be limited to the area of medical materiel. (Note: A separate staffing action is currently in progress at the

AHS addressing the feasibility for the establishment of an AMEDD Task Force Delta which would interface with the TRADOC Task Force Delta. This concept, based on a systems perspective would integrate various disciplines and approaches into a plan to enhance battlefield force-effectiveness within the AMEDD.)

i. A preliminary MEDIIS report incorporating the concepts discussed above and several alternatives was submitted to OTSG for staff review in May 1981. There was general approval of the concepts presented and the request that recommendations be developed for TSG review via an implementation proposal and a Decision Memorandum.

E. Summary Comments.

1. Based on the recommendations of the OTSG staff and further study conducted regarding the application of a TETP within the AMEDD it has been concluded that:

a. A limited AMEDD Technology Evaluation and Transfer Program (TETP) should be initiated as soon as possible.

b. The initial phases of development should be targeted on medical materiel with time-phased expansion into the more clinical areas.

c. A TETP computer conferencing network similar to TRADOC's Task Force Delta should be developed and eventually linked to the AMEDD Task Force Delta if that concept is approved by TSG for implementation.

d. The USAMRDC, due to its present mission, current technology information base, and operational interface with both the materiel and clinical aspects of the AMEDD, should be tasked as the nucleus for the TETP computer conferencing network responsible for the execution of the time-phased implementation of the program.

e. The Director, Directorate of Professional Services should promote the establishment of a system monitored by key OTSG consultants that would provide for ongoing compilation, the periodic evaluation of potential applications of new developments, and the transfer input of appropriate information into the TETP by specialty.

f. The Deputy Surgeon General should provide overall monitoring of the TETP via the Directorate of Health Care Operations and the Directorate of Professional Services, OTSG.

II. METHODOLOGY.

A. Overview. If the TETP concept is approved for implementation, a USAMRDC TETP project officer with a medical materiel background should be identified to coordinate the establishment of a materiel computer conferencing network system. Concomitantly, an OTSG consultant specialty based system should be initiated to provide a mechanism for the periodic compilation of new technology within each specialty for eventual integration into the materiel computer conferencing network. Key individuals should be identified by the

Director, Directorate of Professional Services, OTSG and the Commander, USAMRDC for linkage into the network to provide the capability for the expeditious on-line transfer of information to users within the AMEDD.

B. Computer Conference Network System. A computer conference network system should be established by the USAMRDC through coordination and consultation with the AMEDD representative to TRADOC's Task Force Delta at the AHS (LTC Stephen D. Clement, MSC, AUTOVON 471-5511). The network could be linked by negotiated lease with the Wayne State University, Detroit, MI computer system which supports the TRADOC Task Force Delta. Portable data terminals utilizing telephone coupling devices, e. g. the Texas Instrument Silent 700 Electronic Data Terminal, could be used in conjunction with the nationwide commercial telenet system. (Terminals of this type are already in place and/or available for use in many AMEDD facilities.) An example of an initial material network which should be finitely developed by USAMRDC is presented at Inclosure 1. This conceptual network has the advantage of flexibility for expansion as the TETP is developed beyond the materiel area.

C. Resource Requirements.

1. Equipment. Upon identification of key individual access sites by the Chief, Professional Service, OTSG and the Commander, USAMRDC a determination of available portable terminals would have to be accomplished to ascertain the additional short range and long range requirements.

2. Manpower. A minimum of three additional individuals would be required for nucleus support of the TETP. These individuals could provide augmentation within the Science and Technical Information Division, USAMRDC and would provide the nucleus support for the TETP. Suggested staffing would include: 1 each civilian systems engineer/analyst - GS-9; 2 each secretaries - GS-5.

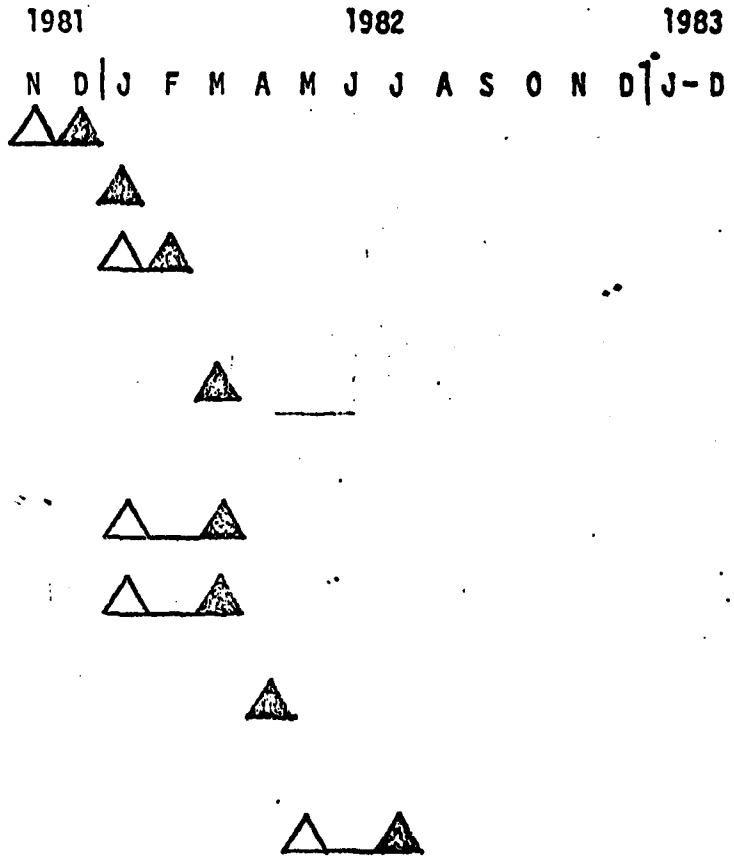
D. Cost Estimate. Costs associated with a TETP are presented below. A detailed budget estimate should be accomplished by the USAMRDC project officer at the time materiel access sites are identified and the availability of existing equipment is determined at each site.

	Description	Approximate Cost
1.	Texas Instrument Silent 700 Electronic Data Terminal (Portable)	$ 950.00
2.	Telenet System charge - (Includes central processing time, storage fee and production surcharge)	$ 8.00/25 min.
3.	Annual personnel salaries	
	GS-9 - 1 each - $22,000 GS-5 - 2 each - $30,000	$52,000.00

E. TETP Implementation Timetable (To be used as a general guideline)

△ = Action Initiated

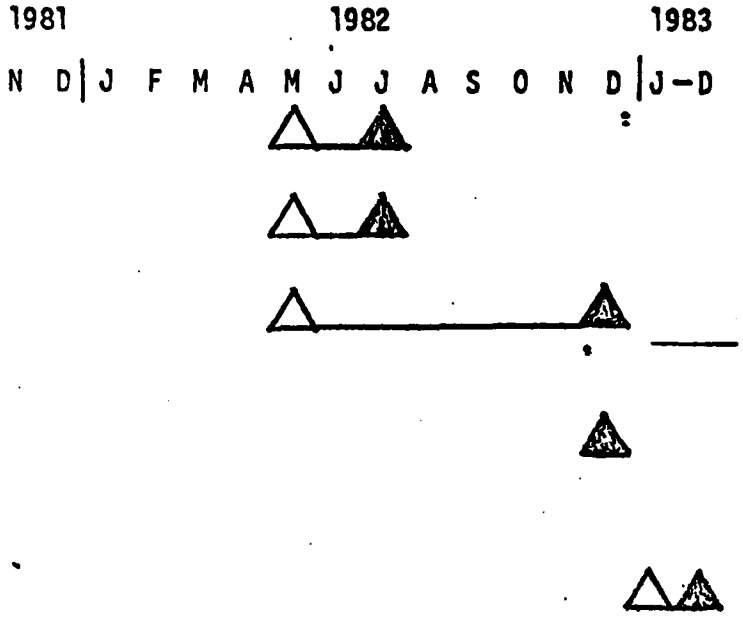
▲ = Action Completed



1. OTSG Review/Approval of TETP Implementation
2. Assignment of USAMRDC TETP Project Officer
3. OTSG Chief of Professional Services Determination of the Key OTSG Consultants to Coordinate an Annual Compilation of New Developments
4. Preparation by OTSG, Chief, Professional Services Letter of Instruction Directing Annual Compilation of New Developments by Identified OTSG Consultants
5. USAMRDC Determination of Specific Access Sites for Materiel Computer Conference Network System
6. USAMRDC Determination of Available Equipment, Required Equipment and Associated Costs
7. OTSG Review/Approval of USAMRDC Budget Estimate for Establishing Materiel Computer Conference Network System
8. USAMRDC Coordination with AHS Task Force Delta Representative and Wayne State University to Establish Material Computer Conference Network System

△ = Action Initiated

▲ = Action Completed



9. Purchase of Additional Equipment for Access Sites and USAMRDC Nucleus

10. Personnel Hire for USAMRDC Nucleus

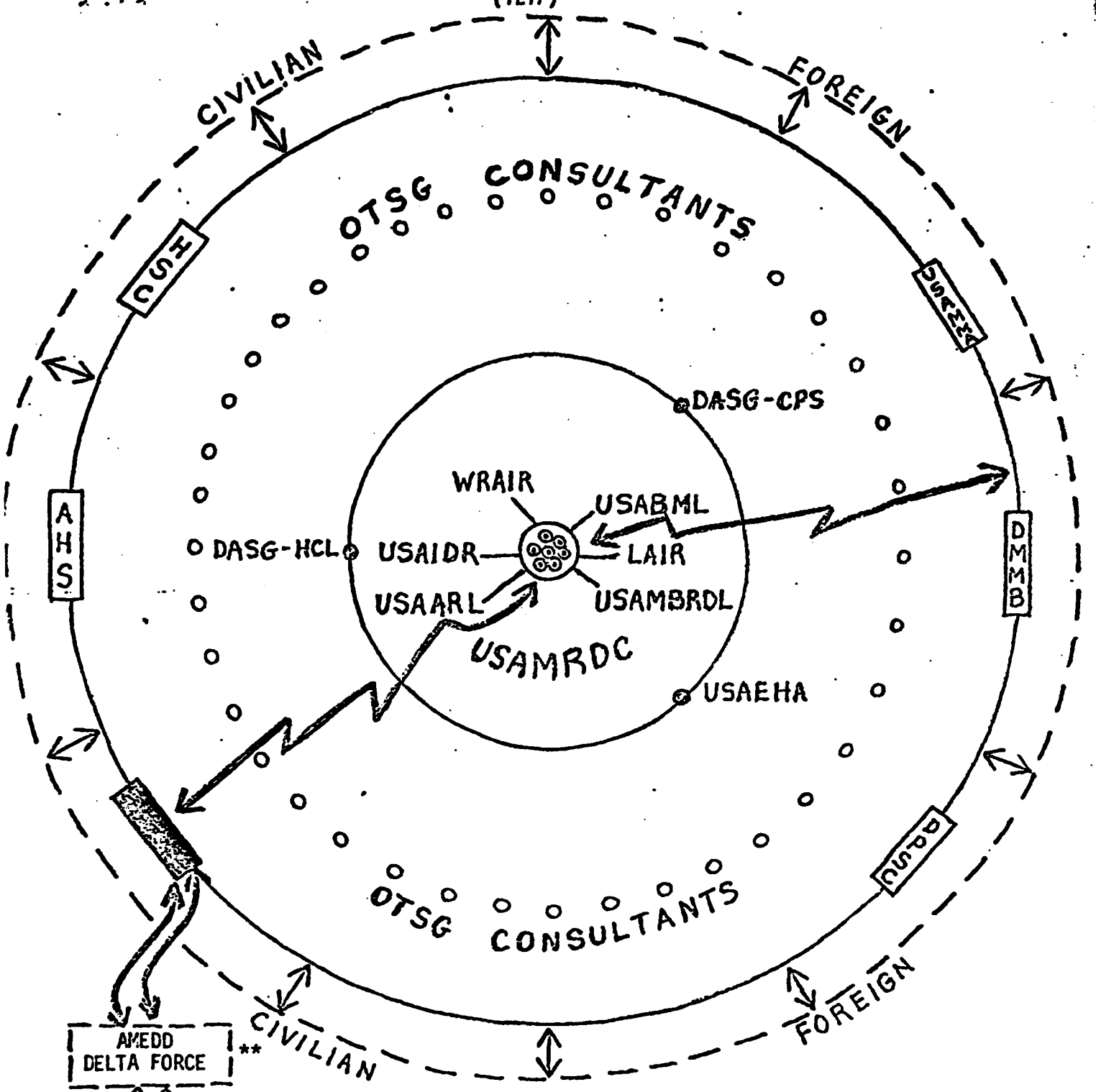
11. USAMRDC Phase-In of Access Sites and Establishment of a Materiel Computer Conference Network System

12. Submission of OTSG Consultants' Annual Compilation of New Developments Through OTSG, Chief, Professional Services to USAMRDC

13. Expansion and Linkage of Materiel Computer Conference Network System to Include Other Specialty Access Sites for a Total AMEDD TETP

III. This concept for the time-phased implementation of an AMEDD Technology Evaluation and Transfer Program has been prepared by the Health Care Studies Division, Directorate of Combat Developments and Health Care Studies, Academy of Health Sciences (Principal Investigator: LTC Phillip C. Breunle, MSC, AUTOVON 471-3331/3116).

THE ARMY MEDICAL DEPARTMENT
TECHNOLOGY EVALUATION AND TRANSFER PROGRAM*
(TETP)



* SAMPLE COMPUTER CONFERENCE NETWORK

** IF APPROVED CONCEPTUALLY

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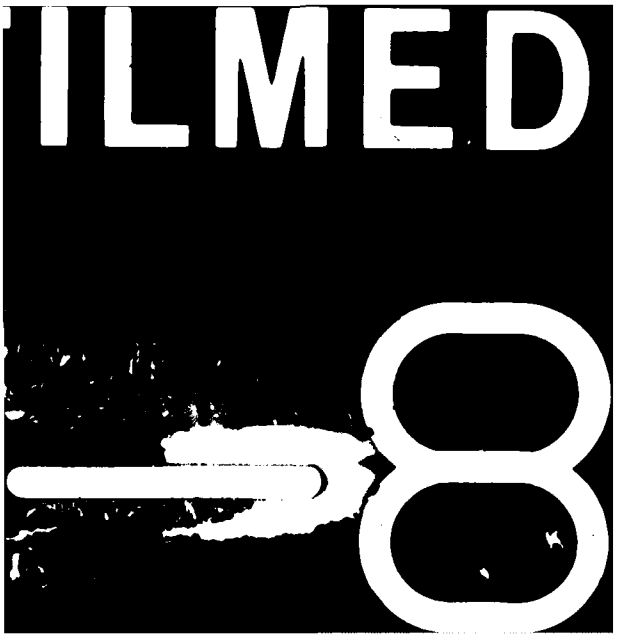
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