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CONTINUATION OF CURRENT COMBAT DEVELOPMENT PROGRAMS AND PROJECT--ETC(U)
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US ARMY ARMOR-COMBAT DEVELOPMENTS AGENCY
Fort Knox, Kentucky



CONTINUATION OF CURRENT COMBAT DEVELOPMENT
PROGRAMS AND PROJECTS

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US ARMY ~~ARMOR~~ COMBAT DEVELOPMENTS AGENCY
Fort Knox, Kentucky

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SUBJECT: Continuation of Current Combat Development Programs and Projects,

12 42 p.

TO: Commanding General
US Army Combat Developments Command
Fort Belvoir, Virginia

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1. (U) References:

a. Letter, USACDC, Headquarters US Army Combat Developments Command, 1 July 1962, subject as above, which directs the US Army Armor Combat Developments Agency to submit a list of currently active and planned actions.

b. Letter, AIBK-SBG, US Army Armor School, 20 January 1962, subject: Review of CDOG Study Program, with four inclosures containing the last Armor School recommendations on the study program. (A copy is attached at inclosure 1.)

c. Letter, ATSWD-R 461(S), Headquarters US Continental Army Command, 25 May 1962, subject: Combat Development Study Program, with two inclosures, which is a USCONARC review of CDOG studies.

d. Letter, AIBK-SBG, US Army Armor School, 9 May 1962, subject: Troop Tests and Field Experiments for FY 1964 through FY 1968, with 13 inclosures containing the last Armor School recommendation on the troop test and field experiment program. (A copy is attached at inclosure 3.)

e. US Continental Army Command Directive 11-3, Army Programs, Troop Test Program FY 63, 16 April 1962.

f. US Army Combat Developments Command Directive 310-3, Military Publications, 28 June 1962.

2. (U) This letter with its inclosures is submitted in accordance with reference law and contains information grouped according to certain categories, as requested in paragraph 4 thereof. Each category includes

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27 July 1962

SUBJECT: Continuation of Current Combat Development Programs and Projects (U)

cont.

several agencies' actions whose initiation or completion is contingent upon the outcome of other major actions within the combat developments system, such as the approval of RODAC-70 and Army-80 studies, and the US Army Tactical Mobility Requirements Board (Howze Board) findings.

3. (U) Studies. (Inclosure 1) With the exception of one new item, the studies listed in the inclosure are those which are contained in the Combat Development Objectives Guide, or which were previously recommended by US Continental Army Command (reference 1c, above) for inclusion therein. Each major study will usually have a direct effect upon every other category in that each study normally contains conclusions and recommendations concerning organization, operations, and materiel. Such conclusions and recommendations should be validated by war gaming, field experiments, and troop testing prior to their inclusion in doctrinal publications. For this reason, each of this Agency's actions has been time phased so as to provide an integrated program (para 8, below).

4. (U) Materiel Requirements. (Inclosure 2) Those materiel requirements which this Agency has submitted or plans to submit for approval and inclusion in CDOG and other materiel actions in which it has a direct interest are contained in the inclosure. It is necessary that this Agency maintain liaison with developmental and service test agencies when an item of materiel is under development to meet a QMR of major interest to Armor. Such liaison is required to ensure that the items being developed satisfy the QMR with respect to Armor's needs. If a deviation therefrom is necessary, this Agency will thereby be fully cognizant of the reasons for any proposed modifications and be in a position to make necessary decisions and recommendations. USAARMCDAs responsibilities for those current developmental items affected by the foregoing are contained in the inclosure.

5. (U) Troop Tests, Field Experiments, and Operations Research. (Inclosure 3) The inclosure includes a list of actions in this category which are of vital interest to this Agency (contained in CDOG and references 1d and 1e) and one operations research contract which it administers.

6. (U) Doctrinal Publications. (Inclosure 4) The doctrinal publications listed in the inclosure include training literature assigned to this Agency by reference 1f, and TOE which are currently the responsibility of the US Army Armor School and expected to be assigned to this Agency on or about 1 October 1962. Your attention is invited to reference 1f which assigns this Agency responsibility for FM 17-20, Armored Infantry Units, Platoon, Company, and Battalion. The responsibility for armored infantry doctrine, including organization, tactics, techniques and procedures

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SUBJECT: Continuation of Current Combat Development Programs and
Projects (U)

relating to operations, training, and administrative support was assigned to the US Army Infantry School in USCONARC Directive No 10-1. Therefore, this Agency recommends that proponency for FM 17-20 be transferred to the US Army Infantry Combat Developments Agency.

7. (U) Others. (Inclosure 5)

a. This Agency will be deeply involved in the near future in preparation for and participation in the forthcoming Armor Policy Conference and the Sixth Tripartite Conference on Armor (third and fourth quarter, FY 63, respectively). The workload which these commitments will entail cannot be accurately determined at this time. However, it will most probably have a heavy impact upon the capability to conduct actions other than those programmed herein.

b. Included in this category are operational evaluations. In the past, higher headquarters have directed that specific items of new equipment, because of their significantly different or improved characteristics, receive a detailed evaluation to determine their roles and suitability in Armor organizations. These are normally tactical type evaluations conducted in conjunction with the US Army boards immediately following service tests and are not intended to replace either service or troop tests. The pending operational evaluations are contained in the inclosure.

8. (U) Inclosure 6 depicts graphically the various actions enumerated in inclosures 1 through 5 which can be meaningfully portrayed with respect to their planned chronological occurrence within each category. The accomplishment of the work programmed herein obviously relies largely upon the assignment of requisite personnel. Some portions of the program will, of necessity, have to be deferred and others curtailed or deleted if personnel authorized the Armor Combat Developments Agency by TD 68 6812 are not made available within a reasonable period of time.

6 Incl

1. Studies
2. Materiel Requirements
3. Troop Tests, Field Experiments, and Operations Research.
4. Doctrinal Publications

William H. Niland

WILLIAM H. NILAND
Lt Colonel, Armor
Commanding Officer

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US ARMY ARMOR COMBAT DEVELOPMENTS AGENCY
Fort Knox, Kentucky

STUDIES

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Inclosure 1

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US ARMY ARMOR COMBAT DEVELOPMENTS AGENCY

STUDIES

(U) The studies listed herein are believed to constitute a program which this Agency will be able to accomplish within projected resources. The five studies programmed are arranged so as to permit the inclusion of additional studies which may be required as a result of unforeseeable developments. The program is projected for only three years since it is not feasible at this time to envision formal study requirements beyond that time. During the course of the next several years the need for other studies undoubtedly will become apparent. One previously proposed study, "Armor Units in Adverse Environment," is recommended for deletion, and one new study, "Armored Division Brigade Operations -- Post 1966," is recommended for addition. Priorities assigned herein are based on the Agency's judgment as to the relative military importance and timeliness of the subject matter and also reflects chronological sequence.

a. ^U~~(S)~~ The Role of Armored Cavalry in Counterinsurgency Operations (U). This study has been recommended for inclusion in CDOG. (See page 12, para 320a, of reference 1c.)

(1) Description of the study. This study examines organizational and operational concepts for armored cavalry units in counterinsurgency operations to determine changes which may be required in organization, equipment, doctrine, and techniques to provide an optimum performance capability for such operations during the time frame 1962-1967. Primary emphasis is placed upon Southeast Asia. The nature of the enemy and restrictive terrain peculiar to these operations and areas are major factors influencing the problem.

(2) Priority and resources committed. Priority I. Draft copies of the study were distributed 28 June 1962 to appropriate agencies for comment by 31 July 1962. Approximately six man-months have been expended thus far on the study. It will require approximately four more man-months to complete.

b. ^U~~(S)~~ Logistical Support for Armor Operations, 1966-1969 (U). This study has been recommended for inclusion in CDOG. (See page 12, para 320b, reference 1c.)

(1) Description of the study. To determine the optimum logistical organizations and procedures for the support of RODAC-70 brigade and smaller size armor and armored cavalry units equipped with new items programmed for adoption during the mid range time frame. A determination of the needs required for the conduct of independent and semi-independent operations will be included. The European operational environment will be the primary one considered; however, the study will determine what modifications are required in logistical organization and procedures to ensure proper support in other areas where large scale armor operations may be likely to occur.

(2) Priority and resources committed. Priority II. This study will require approximately 1 1/2 man-years to complete. It is anticipated the study will be completed within nine months after receipt of the study directive.

(3) This study should be initiated during the third quarter of FY 63.

c. (U) River and Barrier Crossing in Conjunction with Armor Operations, 1965-1970 (U). This study project is contained in CDOG (USAARMS 60-3, para 320v).

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USAARMCDA - STUDIES

(1) Description of the study. To determine operational concepts and tactical doctrine for the passage of rivers and barriers by armor units in combat operations during 1965-1970. The impact of rivers, natural and man-made obstacles, and enemy-laid minefields (including chemical) on Armor offensive and defensive operations will be analyzed. The study will recommend necessary QMRs not considered in other studies.

(2) Priority and resources committed. Priority III. This study will require approximately 1 1/2 man-years to complete. It is anticipated the study will be completed within nine months after receipt of the study directive.

(3) This study should be initiated during the first quarter of FY 64.

d. (C) Armored Division Brigade Operations, Post 1966 (U). This is a recommended new study not previously proposed for inclusion in CDOG.

(1) Description of study. To determine the optimum operational, organizational, and materiel requirements for brigade and smaller size armor units during the long and very long range time frame. It will be based largely on guidance developed by the Army-80 study covering operations, organizations, and equipment. The impact which integration of the Shillelagh Weapons System will have upon armor operations, organizations, and equipment will be thoroughly analyzed. A determination will be made of what are the best organizational assignments for Shillelagh-equipped tanks during various periods of their phase-in. The optimum quantity and mix of Shillelagh and conventionally armed tanks within the limitations of feasible costs will be determined. The effects which the integration of other major items of equipment will have upon armor operations and organizations will be similarly analyzed and appropriate recommendations made.

(2) Priority and resources committed. Priority IV. This study will require approximately 2 man-years to complete. It is anticipated the study will be completed within one year after receipt of the study directive.

(3) This study should be initiated during the first quarter of FY 64.

e. ^U ~~(C)~~ Armored Cavalry Reconnaissance and Security Operations, Post 1970 (U). This study has been recommended for inclusion in CDOG. (See page 12, para 320c, reference 1c.)

(1) Description of the study. To determine the optimum operational, organizational, and materiel requirements for brigade and smaller size units which perform reconnaissance and security missions for all echelons of the army in the field during the long and very long range time frames. It will be based largely on guidance developed by the Army-80 study. The study will include consideration of ground and air reconnaissance units, employed together or separately, to satisfy the requirement of all echelons for battle-field reconnaissance and security.

(2) Priority and resources committed. Priority V. This study will require approximately 2 man-years to complete. It is anticipated the study will be completed within one year after receipt of the study directive.

(3) Contingent upon approval of the Army-80 study, it is planned that this study be commenced during the first quarter of FY 65. Technological feasibility and probable dates of availability for developmental equipments should be more firmly established by that time.

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USAARMCDA - STUDIES

f. ~~(c)~~ ^(U) Armor Units in Adverse Environment (U). This study has been recommended for inclusion in CDOG. (See page 14, para 321a, reference 1c.)

(1) Description of the study. To investigate and determine the degree to which and under which conditions (ROAD) TOEs are inadequate to permit armor and armored cavalry units to conduct sustained operations in adverse environments. It will develop and propose such changes and variations in organizations as are required to attain a more flexible operational concept. The study will determine the feasibility of tailoring equipment and organizations of armor and armored cavalry units for combat in mountains, jungles, and northland areas.

(2) Priority and resources committed. It is recommended that this study be deleted. The subject matter of this study will be adequately covered by other studies such as The Role of Armored Cavalry in Counter-insurgency Operations (USAARMS 63-3, tentative CDOG para 320a), Employment of Armor in Northern Areas (page 13, para 320n, reference 1c), Employment of Armor in Mountain Operations (USARAL 62-4, CDOG para 320aa); and proposed troop tests, Armored Cavalry Troop in Northern Operations (see page 4, para f, inclosure 3), and the Air Cavalry Troop in Northern Operations (see page 6, para j, inclosure 3) to be conducted by USARAL. Studies covering more specific adverse environmental areas will be conducted when and as required.

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EXTRACT COPY -- reference 1b

AIBK-SBG

SUBJECT: Review of CDOG Study Program (U)

TO: Commanding General
United States Continental Army Command
Fort Monroe, Virginia

1. (U) References:
 - a. Letter, ATSWD-CA 461, Headquarters US Continental Army Command, 2 January 1962, subject as above, which directs a review of CDOG study projects and submission of recommended changes.
 - b. Letter, ATSWD-R 461(S), Headquarters US Continental Army Command, 25 August 1961, subject: Formulation of Combat Development System Study Program for FY 62-63 (U), to Deputy Chief of Staff for Military Operations, Department of the Army.
 - c. Letter, AIBK-SBG, Headquarters US Army Armor School, 5 December 1961, subject: Combat Development Study Directive.
2. (U) The CDOG study program has been reviewed as directed by reference 1a.
3. (U) It is recommended that the study projects assigned to the Armor School as listed on page 8 of inclosure 2, reference 1b, above, be rescinded except for the following study: Project 60-3, River and Barrier Crossing in Conjunction with Armor Operations, 1965-1970 (U), paragraph 320v.
4. (U) The following additional study projects are recommended to be performed by the Armor School. Statements of scope for each of these proposed study projects are included as inclosures.
 - a. Armor Units in Counter-Insurgency Operations.
 - b. Logistical Support for Armor Units, 1967-1972.
 - c. Armor Units in Adverse Environment.
 - d. Armored Cavalry Reconnaissance and Security Operations, Post 1970.
5. (U) It is recommended that the study project submitted by reference 1c still be performed as requested.

FOR THE COMMANDANT:

INCLOSURE 1

SUBJECT: Armor Units in Counter-Insurgency Operations

SCOPE: The study will investigate and determine the capabilities and limitations of ROAD type armored cavalry and other armor units to participate successfully in counter-insurgency operations as a part of a USFLAG-type organization, and will determine such variations in organization and equipment and necessary revisions of tactical doctrine as may be required to improve their operational capabilities. Areas considered in the study will be South-east Asia, the Middle East, North and Central Africa, and Central and South America. If a requirement for new equipment is determined, QMR/MC will be prepared.

PRIORITY: 1 - FY 1963

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INCLOSURE 2

SUBJECT: Logistical Support for Armor Units, 1967-1972

SCOPE: The study will examine the logistical requirements and procedures for tank and armored cavalry units under the ROAD organization based on the Tripartite agreed 48-hour operational capability, the dispersed battlefield of the 1967-1972 period, and new equipment expected to be in use during this period. The study will determine prescribed loads, fuel, transportation, and other logistical requirements in detail in order to develop techniques and procedures which will allow maximum mobility and flexibility of tank and armored cavalry units.

PRIORITY: 2 - FY 1963

INCLOSURE 3

SUBJECT: Armor Units in Adverse Environment

SCOPE: The study will investigate and determine the degree to which and under which conditions current (ROAD) TOE are inadequate to permit armor and armored cavalry units to conduct sustained operations in adverse environment, and will develop and propose such changes and variations in organizations (TOE) in order to attain a more flexible operational concept. The study will determine the feasibility of tailoring equipment and organizations of armor and armored cavalry units for combat in mountainous, jungle, and northland areas.

PRIORITY: 3 - FY 1963

INCLOSURE 4

SUBJECT: Armored Cavalry Reconnaissance and Security Operations, Post 1970

SCOPE: The study will determine the requirement for and operational and organizational concepts of armored cavalry units organic to the various echelons of the field army or comparable forces after 1970. The study will include full consideration of the employment of ground and aerial reconnaissance units employed together or separately to provide necessary reconnaissance and security for the various echelons. This study will develop and determine the need for such new equipment as may be required and will include the necessary qualitative materiel requirements. Of specific interest will be the need for and operational use of an air-ground reconnaissance vehicle and whether this vehicle should have a greater air or ground capability.

PRIORITY: 4 - FY 1964

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US ARMY ARMOR COMBAT DEVELOPMENTS AGENCY
Fort Knox, Kentucky

MATERIEL REQUIREMENTS

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US ARMY ARMOR COMBAT DEVELOPMENTS AGENCY

MATERIEL

(U) This inclosure is divided into two subsections: I - current and future materiel development programs which require major actions by this Agency; and II - QMRs and one QMDO which this Agency has submitted or plans to submit for approval and inclusion in CDOG. The resources required to perform the actions listed in subsection I cannot be accurately estimated. These actions normally require substantial project time and travel by individual action officers on a continuing unscheduled basis. The priorities assigned the various actions contained herein conform to those prescribed by CDOG.

I. MATERIEL DEVELOPMENT PROGRAMS

a. ^U ~~(S)~~ Main Battle Tank (CDOG 336a(11)).

(1) Description. A radically new Main Battle Tank is required to replace the M60 series tank. Mounting the Combat Vehicle Weapon System and weighing 35 - 40 tons, this vehicle will be designed to furnish protection against the prompt effects of nuclear explosions. Other significant features will include: multifuel engine, commander's cupola, hydropneumatic suspension, Vehicle Rapid Fire Weapons System, reduced size and weight, and passive night vision.

(2) Priority and status. Priority I, Component development. Two QMR/MCs have been written; one for 1966 production, another that could be produced in 1970. The 1966 QMR has been disapproved; the 1970 QMR is being used as a guide for the Army's Component Development Program.

(3) Future actions by this Agency. Furnish guidance and monitor development of each component, e.g., hydropneumatic suspension. Prepare QMR/MC when project has progressed to the point when a radically new tank can be firmly visualized. Revise QMDOs as dictated by advances in the state of the art.

b. ^U ~~(S)~~ Armored Reconnaissance/Airborne Assault Vehicle (CDOG 336a(8)).

(1) Description. This vehicle is being developed to provide reconnaissance and airborne units with a fighting vehicle possessing outstanding mobility and firepower characteristics. It will be capable of crossing inland waterways and can be air-dropped from the C-130, C-141, and C-135 aircraft in Phase I airborne operations. Its combination 152mm gun/Shillelagh guided missile weapon system will destroy the heaviest enemy tank out to 2,000 meters. It will replace the M41 light tank and the M56 airborne assault weapon.

(2) Priority and status. Priority I. One test bed and one pilot vehicle have been completed. The conventional round has been successfully fired from the vehicle test bed by user crews. Vehicle is currently undergoing swimming and durability tests by contractor at Cleveland Ordnance facilities.

(3) Future actions by this Agency. This vehicle has reached the stage in development where it is imperative that this Agency maintain close monitorship of the program. At this time there are two outstanding actions to be accomplished: (1) A means must be provided for the commander to lay the gun on point targets during both daylight and darkness; (2) take necessary action to have a stabilizer included in the vehicle.

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c. ~~(C)~~ ^U Vehicle Rapid Fire Weapons System (CDOG 336b(10)).

(1) Description. This weapons system is being developed to provide armored personnel carriers and armored command and reconnaissance vehicles with the capability of destroying lightly armored vehicles and material targets out to 1,000 meters and personnel and unarmored material targets to a range of 1,800 meters. The weapons system may also serve as the primary armament on general purpose vehicles such as those in the wheeled tactical fleet, recovery vehicles, Armored Engineer Vehicle, and armored, self-propelled, artillery vehicles, as a replacement for the current .50 caliber machineguns. It is also planned that the second generation system will serve as the secondary armament for the Main Battle Tank and AR/AAV.

(2) Priority and status. Priority I. The weapons system program is being implemented in two phases. The Hispano-Suiza 20mm machinegun has been selected to meet the immediate requirement for a system to replace the .50 caliber machinegun on the M113 Armored Personnel Carrier and the T114 Command and Reconnaissance Vehicle. The weapon is to be mounted on the development model "X" commander's station and is currently in the wooden mockup phase. System engineering is being conducted by Cadillac Division, General Motors, on an expedited basis. A contract has been let to produce six pilots. The pilots will start becoming available for tests and evaluation starting in November. Production could start four months after a decision is made. A program to provide a successor system (second generation) has been initiated. Several concepts utilizing low velocity 30mm and 40mm machineguns have already been reviewed. Current indications are that the state of the art has not progressed to the point where hardware could be developed.

(3) Future actions by this Agency. Close monitorship of this program is vital to insure compatibility of the 20mm interim system with the various roles of the T114 and M113 vehicles and to provide a commander's station that incorporates adequate vision and controls so that the system can be effectively utilized.

d. (U) Command Post Vehicle, XM577 (CDOG 136b(5)).

(1) Description. The Command Post Vehicle is a tracked, armored, amphibious vehicle to be used for command post facilities requiring high mobility. The vehicle is basically an M113 Armored Personnel Carrier, factory-modified to be adaptable to a variety of field uses. The XM577 will have a raised roof, portable generator set, two large working tables, master radio shelf, and a canvas tent extension which extends the usable work space.

(2) Priority and status. Priority I. After being field evaluated by the USAARMS CDG the prototype has been returned to the factory for modification. It has been approved for limited production in November 1962.

(3) Future actions by this Agency. In lieu of confirmatory evaluation, the blueprint and mockups must be inspected to assure necessary modifications have been made. Tent extension has to be redesigned.

e. ~~(C)~~ ^U Combat Vehicle Weapon System (CDOG 336b(9)).

(1) Description. The leading candidate for the Combat Vehicle Weapon System is the Shillelagh system. This system features a 152mm missile as well as a 152mm HEAT multipurpose round, both of which are fired from the same low pressure gun tube. The missile, which is the heart of the system, is guided by an infrared command link between the missile and

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the tank. The lethality, kill probability, and range of the missile will amount to a quantum jump in tank gun-ammunition effectiveness. While AR/AAV will be the first vehicle equipped with Shillelagh, it can also be applied on the Main Battle Tank.

(2) Priority and status. Priority I. The missile is in the final stages of feasibility test. The low pressure gun and HEAT round have been successfully fired. The cost and complexity of the system have caused considerable slippage and it is now expected that AR/AAV in initial production may not have the missile capability.

(3) Future actions by this Agency. Monitor engineer, service, and troop test. Determine basis of issue. (The cost of the system may preclude its use on every tank.) Furnish guidance for related components, e.g., stowage of on-tank components, spotting rifles, night vision sights.

f. (U) Carrier, Personnel, Full-tracked, Armored, T114 (CDOG 236a(1)).

(1) Description. This vehicle is a small, tracked, personnel carrier that was designed to replace the 1/4-ton truck used in some command and reconnaissance roles. Weighing nearly eight tons and equipped with a 160 HP gasoline engine, the T114 will furnish light armor protection to those elements who normally are subjected to artillery and small arms fire. The cupola will accommodate either a 20mm or a caliber .50 machine-gun.

(2) Priority and status. Priority I. The T114 is now being service tested and goes into limited production in August 1962. The light-weight band track has been a habitual problem area. The installation of the 20mm in the cupola could compromise its floatability and land agility.

(3) Future actions by this Agency. Plan and implement operational evaluation. Determine new techniques of employment. Finalize radio requirements. Determine basis of issue. Monitor cupola and Vehicle Rapid Fire Weapons System development, and observe troop test.

g. ~~(U)~~ ^U Assault/Antitank Weapon (CDOG 212d (QMD)).

(1) Description. This requirement is for a lightweight, man-portable, one-man operated, assault/antitank weapon capable of successfully engaging moving enemy tanks to 1,000 meters and stationary tanks at 2,000 meters. The weapon is to be noiseless, smokeless, and flashless, and is to be available during the very long range period.

(2) Priority and status. Priority I. The requirement was recently reviewed and approved as a qualitative materiel developmental objective because it was beyond the current state of the art.

(3) Future action by this Agency. Monitor the research efforts in the fields applicable to this development.

h. ~~(U)~~ ^U Heavy Assault Weapons System (CDOG 237b(10)).

(1) Description. This system is being developed to provide appropriate ground forces with a weapons system capable of destroying enemy heavy armored targets at 2,000 meters. The weapon is also being developed as a back-up for the Armored Combat Vehicle Weapons System (Mid Range Shillelagh), and as such, will be capable of being used in conjunction with the 152mm conventional gun as the primary armament on the Main Battle Tank and AR/AAV. Contingent upon its demonstrated capabilities,

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the weapon may replace all heavy antitank/assault weapons in existence or under development, i.e., 106mm and 120mm recoilless rifles, SS-10 and ENTAC.

(2) Priority and status. Priority I. The weapon is now in the advanced engineering feasibility test. Three contractors have been selected to refine their concepts. A decision is expected to be made in September or October 1962 on which concept is to be placed into development.

(3) Future action by this Agency. It is imperative that this Agency actively participate in this program to insure that the requirements for the Armored Combat Vehicle Weapon System are reconciled throughout the development cycle with this requirement.

i. (U) Low Endurance Surveillance Drone System (CDOG 1533a(1)).

(1) Description. A surveillance drone system capable of carrying photographic, infrared, and radar sensors, either singly or in combination. This drone system will be employed at division level.

(2) Priority and status. Priority II. The AN/USD-2 is currently being evaluated for acceptance by the United States Army. Several small drone concepts have been submitted to United States Continental Army Command.

(3) Future action by this Agency. Continue to monitor the development of both the AN/USD-2 Drone System and the concepts for a small, unmanned aerial vehicle.

j. (FOUO) Air-Ground Reconnaissance Vehicle (CDOG 312k (QMDO)).

(1) This vehicle is primarily a ground vehicle with a limited flying capability. It will be used to provide reconnaissance and security units a greatly increased mobility differential over the enemy and supported units.

(2) Priority and status. Priority I. Review by this Agency of recent proposals indicates that an acceptable version of this vehicle appears to be beyond the state of the art at this time.

(3) Future action by this Agency. Monitor developments by industry in this field. Particular attention will be given to concepts which have a potential to provide a true "aerial jeep."

k. (U) Commander's Station (Model X).

(1) The Model X Station is a cupola that has been designed to accommodate either a 20mm or caliber .50 machinegun on the T114. It was required as a result of the selection of a large 20mm weapon to satisfy the interim requirement to the Vehicle Rapid Fire Weapon System and the necessity to accommodate the smaller caliber .50 in those applications where the larger weapon is undesirable. Besides the T114, this cupola may be installed on the M113 and there is a possibility that it may be installed on AR/AAV. The cupola incorporates the new wide angle vision blocks that permit "greenhouse" vision. Either gun can be aimed and fired from a protected position, but exposure is necessary in order to service the gun.

(2) Priority and status. No priority assigned. This cupola has been mocked up in wood. After service test it could be installed on the T114 by about April 1963.

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(3) Future actions by this Agency. Monitor the service test and operational evaluation. Determine basis of issue (in what vehicles and in what roles?). Coordinate with vehicular development to insure compatibility with intended uses.

l. (U) Carrier, Utility, High Mobility, Light (1/2-Ton) with Companion Trailer (CDOG 1636b(7)).

(1) Description. A candidate vehicle to fulfill this requirement is the articulated tracked vehicle, XM571, developed by the Canadair Company of Canada at the expense of the Canadian Government. The vehicle consists of a front tracked power unit and a tracked trailer, each unit capable of carrying a 1/2-ton payload.

(2) Priority and status. Priority I. A vehicle prototype is expected to be available for test this fall. A recent action by USARAF requested a change in the QMR concerning the allowable weight of the vehicle. Such a change would make the prototype vehicle unacceptable. The Armor School recommended that the change not be made at this late stage in the development.

(3) Future actions by this Agency. It is not presently expected that the XM571 will find application in any Armor units. However, its possible consideration for light utility roles by armored cavalry in counterinsurgency operations dictates a requirement for this Agency to monitor the development program.

m. (U) Truck, Utility, High Mobility, Light Duty (1 1/4-Ton) (CDOG 1636c(8))

(1) Description. A wheeled cargo, personnel, and weapons carrier with a rated payload of 1 1/4 tons. It will have an inherent swimming capability and will be air transportable in Phase I of airborne operations. This vehicle will replace the 1/4-ton Front Line Ambulance, the 3/4-ton Cargo Truck, and the 3/4-ton Ambulance.

(2) Priority and status. Priority I. At a recent conference, engineering design proposals were reviewed by interested United States Army agencies. On the basis of this evaluation review, OTAC and USCONARC recommended that the Chance Vought Aircraft 6 X 6 articulated vehicle, GAMA GOAT, most nearly fitted the requirement. At the present time this recommendation is being staffed by Department of Defense.

(3) Future action by this Agency. This vehicle will be used at all levels within the armor brigade. Consequently, monitorship of the program leading to the recommendation of a basis of issue will be required by this Agency.

n. (FOUO) Truck, Logistical, High Mobility (GOER) 4 x 4.

(1) Descriptions. A family of wheeled vehicles with a degree of cross-country mobility for tactical and logistical support elements commensurate with the future concept of widely dispersed operations. The basic GOER characteristics include: large diameter, low pressure tires; positive powered wagon steer; all-wheel drive, forward and reverse; maximum practical ground clearance of not less than 30 inches; a front unit of exoskeletal construction; a rear unit of suitable construction matching the intended use of the vehicle; inherent floatability on inland waterways, with rated payload; and unsprung suspension. The family consists of the following: Truck, cargo, 16-ton, 4 x 4, XM437E1, Priority I (CDOG 1636g(15)); Truck, tank, fuel, 5,000-gallon, 4 x 4, XM438E1, Priority I (CDOG 1636g(10));

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USARARMCDA - MATERIEL

Truck, cargo, 8-ton, 4 x 4, XM520E1, Priority I (CDOG 1636g(17)); Truck, tank, fuel, 2,500-gallon, 4 x 4, XM559E1, Priority I (CDOG 1636g(18)); Truck, wrecker, 20-ton, 4 x 4, XM554, Priority I (CDOG 1636g(20)); and Truck, wrecker, 10-ton, 4 x 4, XM553, Priority II (CDOG 1636g(19)).

(2) Status.

(a) Military prototypes of the 16-ton cargo truck are under engineering and service test. Problems to date include the predictor unit of the transmission; marginal swimming capability due to leakage at door seals and listing when unevenly loaded; poor reliability of wheel seals; general difficulty in regard to maintainability largely due to inaccessibility of components; incompatibility of the vehicle with existing and developmental materials handling equipment. The vehicle was type classified Limited Production by OTCM 38039, dated 22 March 1962. Fifteen vehicles will be procured in FY 62 for troop test.

(b) The 5,000-gallon tanker is currently under engineering and service tests. As the tanker uses the same front unit as the 16-ton cargo truck, test vehicles are experiencing many of the same problems as the cargo version. In addition, corrosion of the interior of the fuel tank is causing problems. Eight tankers will be procured in FY 62 for troop test.

(c) Military prototypes of the 8-ton cargo truck are currently under engineering and service test. Initial military prototypes were considered to be over-weight. Redesigned prototype front and cargo units of reduced weight are being constructed. Incompatibility of the vehicle with existing and developmental materials handling equipment is a problem area. The 8-ton cargo truck was type classified Limited Production by OTCM 38007, dated 22 March 1962. Fifteen vehicles will be procured in FY 62 for troop test.

(d) The 2,500-gallon tanker has not been constructed. It will incorporate major components of the XM520E1, 8-ton Goer, substituting a 2,500-gallon fuel tank, a filter separator, and fuel dispensing equipment for the cargo body. The vehicle was type classified Limited Production by OTCM 38037, dated 22 March 1962. Fifteen vehicles will be procured in FY 62 for troop test.

(e) The 20-ton wrecker is in the engineering design stage. Two vehicles will be constructed and procured for troop test.

(f) The 10-ton wrecker is in the engineering design stage. OTCM 38038, dated 23 March 1962, approves type classification for Limited Production. Two vehicles will be constructed for troop test.

(3) Future actions by this Agency. (a) Goer vehicles using 8-ton components are of particular concern to Armor in that they will be organic within Armor units of brigade size and lower. This Agency should closely monitor the development program of these vehicles.

(b) Although the 16-ton cargo truck and the 5,000-gallon tanker will not be organic to Armor units of brigade size and lower, their use in the division support command and in direct support depots both as transporting vehicles and as mobile supply points will affect Armor operations. Consequently, the Agency must closely monitor the development program for these vehicles.

(c) It is not anticipated that the 20-ton Goer wrecker will be found in Armor units of brigade size and lower; however, this development program is of interest to this Agency.

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USARAFMCD - MATERIEL

o. (U) In addition to the above listed materiel development programs, this Agency monitors all other developmental items of equipment which affect Armor. Typical fields of interest, with specific examples, are shown below.

- (1) Combat vehicle power plants (turbines).
- (2) Fire control equipment (Lasers).
- (3) Communication equipment (Random Access, Discreet Address System, RADAS).
- (4) Surveillance equipment (AN/TPS-25 mounted in an M113).
- (5) Missile system (Redeye).

II. QUALITATIVE MATERIEL REQUIREMENTS AND DEVELOPMENT OBJECTIVES.

a. ~~(S)~~ Air Scout Vehicle (Armored).

(1) Description. A small, rugged combat air vehicle which is extremely agile, simple to operate, and easily maintained is required to perform the role of a scout vehicle during both day and night reconnaissance and security missions. The crew will consist of an operator and a scout gunner to operate the flexibly mounted light automatic weapons system proposed for development. The crew and vital areas of the vehicle will be protected against small arms fire (7.62mm) at ranges greater than 300 meters. This air vehicle will be assigned to combat units such as the air cavalry troop and will be designed to operate at nap-of-the-earth altitudes in close conjunction with both ground and air elements. The vehicle will be employed in other roles within its capabilities, such as chemical and radiological monitoring and survey. It will replace the H-13, H-23, and LOH as an air scout vehicle in the reconnaissance and security role. The performance characteristics of this vehicle will be at least equal to the air weapons vehicle that the Aviation Combat Developments Agency is proposing for the same time period.

(2) Priority and resources committed. It is recommended that this be a Priority I requirement. A draft QMR has been prepared by this Agency and referred to the Aviation School for comment.

(3) Date commenced and estimated date of completion. This action was initiated in April 1962. It should be completed by the second quarter FY 63.

b. ~~(S)~~ Combat Vehicle Night Vision System.

(1) Description. A system of night viewing devices which will permit crewmen of combat vehicles to engage in tactical operations during periods of near-darkness and darkness with efficiencies approaching those of their daylight capabilities. The system must be capable of permitting detection, recognition, and successful engagement of vehicle targets by passive means at all ranges out to 2,000 meters (3,000 meters desirable) and other type targets at closer ranges under moonlight and starlight conditions. Active infrared light sources are required to provide the same capabilities when ambient light level does not permit effective passive viewing. This system will replace the Infrared-Visible Light Kit for M60 Main Battle Tank and will be installed on all Main Battle Tanks and Armored Reconnaissance/Airborne Assault Vehicles. Components of the system will be used on the Armored Personnel Carriers and Command and Reconnaissance Vehicles. (TF 67-72)

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USARARMCDA - MATERIEL

(2) Priority and resources committed. It is recommended that this be a Priority I requirement. A draft qualitative materiel requirement has been prepared and submitted by this Agency.

Work has commenced and estimated date of completion. The QMR was submitted to US Continental Army Command on 28 May 1962.

Mobile Fuel Production/Engine(s) Combination.

(1) Description. A Mobile Fuel Production/Engine(s) Combination is required which will permit a fast moving armored or mechanized task force to operate logistically independent of fuel resupply points. The system should permit the fuel production vehicle or vehicles to move with the task force, continuously generating fuel and resupplying the other vehicles of the task force with fuel as needed. The successful development of the Mobile Fuel Production/Engine(s) Combination would amount to a technological breakthrough that could revolutionize armored warfare and introduce true logistic mobility to the battlefield. Separated from a home base, relatively free of a logistical life line, and equipped with long range communications equipment, task forces would be capable of deep penetration, exploitation, and independent action over long distances. The combinations will be organic to each maneuver battalion, but the number in each battalion cannot be accurately forecast at this time.

(2) Priority and resources committed. QMDOs are not assigned a priority. A draft QMDO has been prepared by this Agency and submitted to US Continental Army Command on 8 June 1962.

(3) Date commenced and estimated date of completion. This action was initiated 8 June 1962. It is envisioned that this system will not be available prior to the Very Long Range Period.

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US ARMY ARMOR COMBAT DEVELOPMENTS AGENCY
Fort Knox, Kentucky

TROOP TESTS, FIELD EXPERIMENTS,
AND OPERATIONS RESEARCH.

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Inclosure 3

DECLASSIFIED AT 3 YEAR INTERVALS
D. CLASSIFIED BY 12 YEARS
FOI # 5200.10

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US ARMY ARMOR COMBAT DEVELOPMENTS AGENCY

TROOP TESTS, FIELD EXPERIMENTS, AND OPERATIONS RESEARCH

(U) This inclosure is divided into three subsections: I Troop Tests, II Field Experiments, and III Operations Research. The projects contained herein may be subject to substantial modification resulting from future actions which may be taken by both this and other agencies and headquarters. The outcome of significant ad hoc agency activities such as those of the Howze Board, changes directed in responsibilities and proponderancies, and information developed during other tests and evaluations may result in changes. Similarly, changes in equipment programs and new requirements generated as a result of major studies will alter both the extent and number of actions. One troop test, "Air Surveillance Platoon, Aviation Company, Armored Cavalry Brigade/Regiment," previously proposed is recommended for deletion. Priorities assigned herein are based on chronological order within subsections.

I. ~~(S)~~ TROOP TESTS.

a. (U) Troop Test: Production Carrier, Personnel, Full-Trackled, Armored, T114. This test was directed by letter, ATDEV-2 451.6, Headquarters US Continental Army Command, 8 June 1962, subject: Production Carrier, Personnel, Full-Trackled, Armored, T114. It is contained on pages 156-160, reference 1e.

(1) Description of test. To enable the US Army Armor Board to make an early determination of any equipment faults which may be present in the production model of the vehicle. A limited evaluation of the vehicle in a tactical role as used by armored cavalry platoon leaders and scouts will also be conducted.

(2) Priority and resources required. Priority I. No ARMCDA resources are currently committed.

(3) This troop test will take place in the third and fourth quarter FY 63 at Fort Hood, Texas. It is not known by this Agency if this test will replace the troop test referenced in paragraph 340f, CDOG. If this is the case, it will not meet the requirements for evaluating the vehicle in its various tactical uses. Therefore, in order to gain the information required to satisfy the CDOG paragraph, either the above plan of test should be rewritten or the original CDOG troop test conducted in addition thereto.

b. (U) Troop Test: Armored Limited Visibility Operations. This troop test is referenced in CDOG paragraph 340g. The project is programmed on pages 2, 7, and 16 through 27, reference 1e.

(1) Description of test. To determine the techniques of employment of the xenon searchlight and other limited visibility equipment to achieve a complete night fighting capability for armor units.

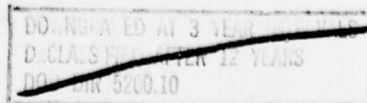
(2) Priority and resources committed. Priority II. No ARMCDA resources are currently committed.

(3) Due to nonavailability of equipment, it is recommended that this test be conducted during the first quarter FY 64 at Fort Hood, Texas.

c. (U) Troop Test: Underwater Reconnaissance in Conjunction with Armor Operations. This is a newly recommended test (inclosure 2 to reference 1d).

(1) Description of test. To test the conclusions and recommendations reflected in the study, "Selection, Reconnaissance, and Marking of Deep

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USAARMCDA - TROOP TESTS, FIELD EXPERIMENTS, AND OPERATIONS RESEARCH

Water Fords" (CECD 63-1, tentative CDOG para 620a) being conducted by the Corps of Engineers. It should be conducted in conjunction with the assault of a river line by not less than a reinforced tank company equipped with underwater fording kits. Means of underwater illumination should also be examined.

(2) Priority and resources committed. Priority III. No ARMCDAs resources are thus far committed.

(3) It is recommended that this test be conducted during the second quarter FY 64 at Fort Hood, Texas; the date is contingent upon the availability of the necessary equipment and completion of the CECD 63-1 study.

d. (U) Troop Test: Goer Vehicles. This test is scheduled on pages 3, 7, and 53 through 68, reference 1e.

(1) Description of test. To determine the extent to which Goer-type vehicles should be substituted for conventional wheeled vehicles within the division and basis of issue. The comparative cost factors between the two type vehicles will be determined in regard to (1) cost per ton-mile; (2) ton-mile/gallon of fuel, and (3) maintenance costs. The two type vehicles will also be compared as to their ton-mile capability, mobility, and general operating effectiveness. Any modifications which should be incorporated into future production models to include factors of durability and ease of maintenance, and other adaptations of the Goer vehicles will be determined. It is proposed to substitute Goer vehicles for a representative number and types of conventional wheeled vehicles in selected units for use during a three month period which will include field training exercises.

(2) Priority and resources committed. Priority IV. No ARMCDAs resources are thus far committed.

(3) Date commenced and estimated date of completion. It is presently planned to conduct this test during the fourth quarter FY 63 within the 1st Armored Division at Fort Hood, Texas. Due to nonavailability of equipment, it is recommended that this test be rescheduled to first quarter FY 65.

e. ^U~~(S)~~ Troop Test: Redeye in Armored Cavalry Units. This is a newly recommended test (inclosure 5 to reference 1d).

(1) Description of test. To determine if there are sufficient teams in the armored cavalry squadron to provide adequate defense against attack by enemy aircraft over extended areas of operation. Various Redeye units and echelons of command, communication means, and vehicular requirements should be tested to determine the optimum organization and number of teams required in the armored cavalry squadron.

(2) Priority and resources committed. Priority V. No ARMCDAs resources are thus far committed.

(3) Date of commencement. It is recommended that this test be conducted in conjunction with field training exercises in Seventh US Army during the second quarter FY 65.

f. ^U~~(S)~~ Troop Test: Armored Cavalry Troop in Northern Operations. This is a newly recommended test (inclosure 4 to reference 1d).

(1) Description of test. To determine if the armored cavalry troop with the T114 and the AR/AAV is suitable for use in northern areas. Studies conducted in that environment to date reflect that tank units are not generally employable. There is, however, no information available on

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USAARMCDA - TROOP TESTS, FIELD EXPERIMENTS, AND OPERATIONS RESEARCH

use of the armored cavalry formations. Such a test may indicate that the troop with certain vehicle substitutions, such as the M116 for wheeled logistical vehicles, may greatly enhance the capability of armored cavalry to operate in northern areas.

(2) Priority and resources committed. Priority VI. No ARMCDAs resources are thus far committed.

(3) Date of commencement. It is recommended that this test be conducted during FY 65 in conjunction with programmed USARAL field training exercises or other troop tests.

g. (U) Troop Test: Administrative and Logistical Support of the Reinforced Tank Battalion. This is a newly recommended test (inclosure 6 to reference 1d).

(1) Description of test. To determine if concepts of support are adequate for new ROAD organizations having different equipment densities and types. The introduction of new equipment, e.g., the 105mm gun as opposed to the 90mm gun may require more transportation for ammunition; the introduction of diesel engines will require less transport for fuel. A determination of how much support will be required by reinforcing units is required. The introduction of Goer vehicles, both 16- and 8-ton, cargo and fuel configuration, 10-ton Goer wreckers, materiel handling equipment, and the new family of amphibious trucks may require a re-evaluation of logistical organizations and procedures.

(2) Priority and resources committed. Priority VII. No ARMCDAs resources are thus far committed.

(3) Time of commencement. Contingent upon the availability of required equipment, it is recommended that this test be conducted during the third quarter FY 65 in conjunction with annual field training exercises at Fort Hood Texas.

h. (S) Troop Test: The Armored Cavalry Squadron and the Armored Cavalry Brigade Headquarters. This is a newly recommended test (inclosure 8 to reference 1d).

(1) Description of test. To determine the tactical doctrine and administrative support requirements for the armored cavalry squadron when reinforced with mechanized infantry, field artillery, air defense artillery, and armored engineers. The T114, AR/AAV, drones, manned aircraft, and more efficient communication equipment will permit the squadron to operate over a wider zone. This test should determine the width of zone that the reinforced squadron can cover efficiently and still be adequately controlled and resupplied. It should establish the capability of the squadron commander to control the squadron with and without attachments. The desirability of substituting the 155mm howitzer for the organic 105mm howitzer should be examined. Concurrent with this test, the brigade headquarters should be tested. This is a new headquarters and its adequacy should be determined at an early date.

(2) Priority and resources committed. Priority VIII. No ARMCDAs resources are thus far committed.

(3) Date to be commenced. It is recommended that this test be conducted in conjunction with annual field training exercises in Seventh United States Army during the third quarter FY 66.

i. (S) Troop Test: Light Tank Company, Airborne Division Tank Battalion or Army Task Force. This is a newly recommended test (inclosure 9 to reference 1d).

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USARMCDA - TROOP TESTS, FIELD EXPERIMENTS, AND OPERATIONS RESEARCH

(1) Description of test. To determine the airlift requirement, loading, lashing, and Phase I and II landing procedures. It should determine the doctrine for use of the AR/AAV in the airhead in view of the increased efficiency of the main armament and addition of armor protection over the current M56 and the dispersion required on the nuclear battlefield. The impact of the Shillelagh Weapons System as pertains to range, target acquisition and identification, and the capability to employ the main armament at night should be examined. Administrative and logistical procedures should receive realistic play so that data obtained can be applied to the airborne tank battalion.

(2) Priority and resources committed. Priority IX. No ARMCDA resources are thus far committed.

(3) Date of commencement. This test is contingent upon the availability of the proper equipment. If present equipment programming remains valid, this test should be conducted in conjunction with XVIII Airborne Corps field exercises during the fourth quarter FY 65.

j. (U) Troop Test: The Air Cavalry Troop in Northern Operations. This is a newly recommended test (inclosure 10 to reference 1d).

(1) Description of test. To determine the capability of the air cavalry troop to operate in northern areas and to develop the operational doctrine and logistical support requirements for employment in this area. Aircraft have proved themselves in northern areas in the troop carrying and logistical roles. An air cavalry troop with its armed helicopters will be utilized to provide armed escort for airmobile operations. Its capability to seize and hold critical terrain features for a sufficient period of time to prevent ground units from being ambushed or surprised in these areas requires evaluation.

(2) Priority and resources committed. Priority X. No ARMCDA resources are thus far committed.

(3) Date to be commenced. It is recommended the USARAL conduct this test in conjunction with field exercises during the first quarter FY 67.

k. (U) Troop Test: Automatic Data Processing (ADP) Devices at Brigade and Lower Levels. This is a newly recommended test (inclosure 11 to reference 1d).

(1) Description of test. To evaluate newly developed ADP devices (input, output, display) at brigade (divisional and armored cavalry) and lower, to determine their effectiveness in reducing response time, their impact on the communications system in existence at the time of the troop test, the echelon of employment, and implications in regard to cost, personnel, logistics, and training. This test should be conducted in conjunction with a division or larger size exercise (CPX or FTX) so that full advantage of the divisional ADP capability may be realized.

(2) Priority and resources committed. Priority XI. No ARMCDA resources are thus far committed.

(3) Date to be commenced. It is recommended that this test be conducted in conjunction with a division or larger size field exercise in Seventh United States Army during the first quarter FY 67.

l. (U) Troop Test: Armor Units with the Combat Vehicle Night Vision System. This is a newly recommended test (inclosure 12 to reference 1d).

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USAARMCDA - TROOP TESTS, FIELD EXPERIMENTS, AND OPERATIONS RESEARCH

(1) Description of test. The successor to the current active night vision system will greatly increase the capability of armor to conduct operations at night. This test should determine if tactical doctrine developed for the current system is applicable to the successor system. It should be tested on the T114, AR/AAV, and the M113 as well as on tanks. This test should develop techniques of observation and responsibilities of crew members as pertain to close-in security.

(2) Priority and resources committed. Priority XII. No ARMCDAs resources are thus far committed.

(3) Date to be commenced. Contingent upon the availability of the proper equipment, it is recommended that this test be conducted at Fort Hood, Texas, during the first quarter FY 68.

m. ~~(S)~~ Troop Test: Air Surveillance Platoon, Aviation Company, Armored Cavalry Brigade/Regiment. This is a previously proposed test (inclosure 1 to reference id).

(1) Description of test. To determine operational techniques of employment and the capability of the air surveillance platoon to obtain usable information effectively through visual, photographic, and/or electronic observations from aircraft under all conditions of visibility and weather. It should include an evaluation of all available new equipment which is programmed for issue to this type unit during the mid range time frame.

(2) Priority and resources committed. Priority: None. No ARMCDAs resources are thus far committed.

(3) It has been recommended that this test be deleted. This unit was deleted from the armored cavalry regiment/brigade in the advance plan TOE submitted to USCONARC, 29 June 1962.

II. ~~(S)~~ FIELD EXPERIMENTS.

a. (U) Field Experiment: Armor Units with Organic Aircraft. This is a newly recommended experiment (inclosure 3 to reference id).

(1) Description of test. To determine the optimum organizational assignment of air vehicles habitually required by the armored cavalry squadron. Results of a previous troop test, also entitled "Armor Units with Organic Aircraft," proved that the armored cavalry troop has an habitual requirement for four armed air vehicles, but did not determine the optimum organizational assignment, i.e., to troop or squadron, of these aircraft. The armored cavalry squadron which conducted the test did not include an air cavalry troop as is now contemplated; therefore, it should now be determined what, if any, requirements exist for additional aircraft in the ground cavalry troops when the squadron is so organized.

(2) Priority and resources committed. Priority I. No ARMCDAs resources have been committed to this test.

(3) Although regarded as a high priority requirement, it is recommended that this test be deferred pending the findings of the Howze Board.

b. ~~(S)~~ Field Experiment: Armored Cavalry Platoon and Troop with the T114 and AR/AAV. This is a newly proposed experiment (inclosure 7 to reference id).

(1) Description of experiment. To determine the tactical doctrine and administrative support requirements of candidate reconnaissance platoons and troop organizations. The scope of the experiment

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USAARMCDA - TROOP TESTS, FIELD EXPERIMENTS, AND OPERATIONS RESEARCH

should include the capability of the candidate platoon and troop to conduct integrated ground and air reconnaissance and security missions, to acquire target information suitable for firing destructive weapons, and to perform radiological monitoring and survey missions. The experiment should be phased initially to determine the optimum reconnaissance platoon organization; thereafter, to integrate the basic platoon into candidate troop organization with fire support, aerial combat support, and service support elements necessary for sustained operation.

(2) Priority and resources committed. Priority II. No ARMCDAs resources are thus far committed.

(3) Date to be commenced. It is recommended that USACDEC conduct this experiment during the first quarter FY 66.

c. (U) Field Experiment: Air Vehicle Weapons System. This is a newly proposed experiment (inclosure 13 to reference 1d).

(1) Description of experiment. To evaluate newly developed systems (light weapons, area, point, and air-to-air) and to determine their effectiveness and the concepts, doctrine, tactics and techniques for their employment. The test should be conducted using an organization such as the air cavalry troop that will have organically assigned all of the weapons systems. This will also assist in determining the optimum mix and number of weapons systems. In addition to the above, the test will determine gunnery training problems, logistical support requirements, and the effectiveness of the light weapons system in the air-to-air role.

(2) Priority and resources committed. Priority III. No ARMCDAs resources have thus far been committed to this project.

(3) Date to be commenced. Contingent upon the availability of proper equipment, this test should be conducted at Fort Hood, Texas, during the second quarter FY 68.

III. (U) OPERATIONS RESEARCH.

Contract with the Ohio State University Research Foundation,
Contract DA 15-014-AII-2965.

(1) Description of action. The contract covers the performance of basic research. The objective of the present study is to develop a method for assessing the effect of tank design characteristics on tank effectiveness. It is expected that the study should produce a method of specifying tank characteristics in relation to the probable success of the tank in accomplishing its mission. The method developed by this study should serve as a guide in specifying design characteristics for future equipment in order for the equipment to perform at specified levels in various combat environments. Methods developed should be sufficiently flexible to allow changes in input data in order to accommodate changes in objectives which may stem from changes in desired characteristics, technological capabilities, cost, and other factors which may influence vehicle design.

(2) Priority and resources committed. Priority I. Effective 1 July 1962 the expiration date was extended four years from 30 June 1962 to 30 June 1966. \$57,623.16 is committed for this fiscal year and funds in the amount of \$50,000 annually will be requested for FY 64, 65, and 66 to fund the remaining requirements of this project.

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AIBK-SBG

SUBJECT: Troop Tests and Field Experiments for FY 1964 through FY 1968 (U)

TO: Commanding General
United States Continental Army Command
ATTN: ATSWD
Fort Monroe, Virginia

1. (U) References.

a. TWX, ATSWD-R 706583, HQ USCONARC, 18 April 1962, subject as above. This message requested the Armor School to submit troop tests and field experiments for FY 1964 through 1968.

b. USCONARC Directive Nr 11-3, dated 16 April 1962, subject: Army Programs, Troop Test Program FY 63.

c. Change 10 to CDOG, dated 1 February 1962. This document contains troop tests and field experiments of interest to armor that have been approved.

2. (U) In compliance with reference 1a, the troop tests and field experiments proposed by the Armor School for FY 64 through FY 68 are attached as inclosures 1 through 13.

3. ^U~~(S)~~ The following comments are submitted on troop tests and field experiments contained in reference 1b.

a. Troop Test, Carrier, Personnel, Armored, T114, Command and Reconnaissance Version. It is recommended that this test be conducted in FY 63, but it is recognized that it may have to be deferred until FY 64 due to lack of a sufficient number of T114s.

b. Troop Test, Armored Limited Visibility Operations. It is recommended that this test now scheduled for FY 63 be conducted in FY 64 due to nonavailability of equipment.

c. Troop Test, Trans GOER Vehicle Test. It is recommended that this test be conducted in FY 65 due to nonavailability of equipment.

4. ^U~~(S)~~ The following comment is submitted on test found in reference 1c.

Field Experiment, Armor Equipment in Chemical Attack. It is recommended that this test be conducted in FY 65.

FOR THE COMMANDANT:

INCLOSURE 1

1. Troop Test. Aerial Surveillance Platoon, Aviation Company, Armored Cavalry Brigade/Regiment (U).

2. Purpose. To determine operational techniques of employment and the capability of the aerial surveillance platoon to obtain effectively usable information through visual, photographic, or electronic observations from aerial platforms under all weather, climatic, or visibility conditions. The troop test should include an evaluation of new equipment, such as the AN/USD-2 surveillance drone system, the AO-1 Mohawk aircraft, and the sensory package programmed for use in both the air vehicles organic to the aerial surveillance platoon.

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EXTRACT COPY -- reference 1d

3. Recommended Conducting Agency or Command. Seventh United States Army. To be part of an annual field exercise.
4. Date. 1st Qtr, FY 64.
5. CDOG Paragraph. 110c(4).
6. Estimated Cost. To be charged to an annual field training exercise. \$5,000 for individual travel and TDY.

INCLOSURE 2

1. Troop Test. Underwater Reconnaissance in Conjunction with Armor Operations (U).

2. Purpose. This exercise should test the conclusions and recommendations reflected in the study "Selection, Reconnaissance, and Marking of Deep Water Fords" being conducted by the Corps of Engineers. It should be conducted in conjunction with the assault of a river line by not less than a reinforced tank company. Means of underwater illumination should also be examined.

3. Recommended Conducting Agency or Command. Fourth Army. Fort Hood, Texas.

4. Date. 2nd Qtr, FY 64.
5. CDOG Paragraph. 110c(2).
6. Estimated Cost. \$20,000.

INCLOSURE 3

1. Field Experiment. Armor Units with Organic Aircraft (U)

2. Purpose. This test is required to determine the optimum organizational assignment of air vehicles habitually required by the armored cavalry squadron. Results of troop test, Armor Units with Organic Aircraft, proved that the armored cavalry troop has an habitual requirement for four armed air vehicles. The test did not determine the optimum organizational assignment, i.e., troop or squadron, of air vehicles habitually employed by the armored cavalry troop. Organizational concepts include an air cavalry troop as an organic unit of the armored cavalry squadron. The armored cavalry squadron employed during conduct of the above troop test, did not have an organic air cavalry troop. As a result of the foregoing, the test did not determine the effect that an organic air cavalry troop will have on the requirement for four armed air vehicles at ground troop level.

3. Recommended Conducting Agency or Command. Sixth Army. As a part of the field training exercise "Plain View."

4. Date. March 1964.
5. CDOG Paragraph. 110c(4).
6. Estimated Cost. To be charged to an annual field training exercise. \$4,000 for evaluators and observers.

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INCLOSURE 4

1. Troop Test. Armored Cavalry Troop in Northern Operations. (U)

2. Purpose. To determine if the armored cavalry troop with the T114 and the AR/AAV is suitable for use in northern areas. Studies conducted in that environment to date reflect that tank units are not generally employable. There is, however, no information available on use of the armored cavalry formations. Such a test may indicate that the troop with certain vehicle substitutions, such as the M116 for wheeled logistical vehicles, may greatly enhance the capability of armored cavalry to operate in Northern Areas.

3. Recommended Conducting Agency or Command. United States Army, Alaska. To be part of an annual field exercise.

4. Date. 1st Qtr, FY 65.

5. CDOG Paragraph. 110c(4).

6. Estimated Cost. \$250,000.

INCLOSURE 5

1. Troop Test. Redeye in Armored Cavalry Units (U).

2. Purpose. At present the Redeye teams are planned for assignment on the basis of one per troop. This test is required to determine if there are sufficient teams in the squadron to provide adequate defense against attack by enemy aircraft over extended areas of operation. Various Redeye units and echelons of command, communications means, and vehicular requirements should be tested to determine the optimum organization and number of teams required in the armored cavalry squadron.

3. Recommended Conducting Agency or Command. Seventh United States Army. To be part of an annual field exercise.

4. Date. 2nd Qtr, FY 65.

5. CDOG Paragraph. 110c(8).

6. Estimated Cost. To be charged to an annual field training exercise.

INCLOSURE 6

1. Troop Test. Administrative and Logistical Support of the Reinforced Tank Battalion (U).

2. Purpose. This test is needed to determine if concepts of support are adequate for new ROAD organizations having different equipment densities and types. The introduction of new equipment, e.g., the 105mm gun as opposed to the 90mm gun may require more transportation for ammunition; the introduction of diesel engines will require less transport for fuel. A determination of how much support will be required by reinforcing units is required. The introduction of GOER vehicles both 16 and 8 ton, cargo and fuel configuration, 10 ton GOER wreckers, materiel handling equipment, and the new family of amphibious trucks may require a re-evaluation of logistical organizations and procedures. This test should be conducted in conjunction with "Trans GOER Vehicle" test referred to in paragraph 3c of the cover letter.

3. Recommended Conducting Agency or Command. Fourth Army Area. To be part of an annual armored division field exercise.

4. Date. 3rd Qtr, FY 65.

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5. CDOG Reference. 110c(6).
6. Estimated Cost. To be charged to an annual field exercise. Cost of evaluators and observers not to exceed \$2,000.

INCLOSURE 7

1. Field Experiment. Armored Cavalry Platoon and Troop with the T114 and AR/AAV (C).
2. Purpose. To determine the tactical doctrine and administrative support requirements of candidate reconnaissance platoons and troop organizations. The scope of the experiment should include the capability of the candidate platoon and troop to conduct integrated ground and air reconnaissance and security missions, to acquire target information suitable for firing destructive weapons and to perform radiological monitoring and survey missions. The experiment should be phased initially to determine the optimum reconnaissance platoon organization; thereafter, to integrate the basic platoon into candidate troop organization with fire support, aerial combat support, and service support elements necessary for sustained operation.
3. Recommended Conducting Agency or Command. Sixth Army. CDEC.
4. Date. 1st Qtr, FY 66.
5. CDOG Paragraph. 110c(4).
6. Estimated Cost. \$100,000.

INCLOSURE 8

1. Troop Test. The Armored Cavalry Squadron and the Armored Cavalry Brigade Headquarters (U).
2. Purpose. To determine the tactical doctrine and administrative support requirements for the armored cavalry squadron when reinforced with mechanized infantry, field artillery, air defense artillery and armored engineers. The T114, AR/AAV, drones, aircraft and more efficient communication equipment will permit the squadron to operate over a wider zone. This test should determine the width of zone that the reinforced squadron can cover efficiently and still be adequately controlled and resupplied. It should establish the capability of the squadron commander to control the squadron with and without attachments. The desirability of substituting the 155mm howitzer for the organic 105mm howitzer should be examined. Concurrent with this test, the brigade headquarters should be tested. This is a new headquarters and its adequacy should be determined at an early date.
3. Recommended Conducting Agency or Command. Seventh Army. To be part of an annual field training exercise.
4. Date. 3rd Qtr, FY 66.
5. CDOG Paragraph. 110c(4)(5).
6. Estimated Cost. To be charged to an annual field training exercise. \$3,000 for evaluators and observers.

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INCLOSURE 9

1. Troop Test. Light Tank Company, Airborne Division Tank Battalion or ATF ~~for~~.

2. Purpose. This test is necessary to determine the air lift requirement, loading, lashing and Phase I and II landing procedures. It should determine the doctrine for use of the AR/AAV in the airhead in view of the increased efficiency of the main armament and addition of armor protection over the current M56 and the dispersion required on the nuclear battlefield. The impact of the Shillelagh Weapons System as pertains to range, target acquisition and identification and the capability to employ the main armament at night should be examined. Administrative and logistical procedures should receive realistic play so that data obtained can be applied to the airborne tank battalion.

3. Recommended Conducting Agency or Command. Third Army, XVIII Airborne Corps. To be part of an annual field exercise.

4. Date. 4th Qtr, FY 66.

5. CDOG Reference. 111a.

6. Estimated Cost. To be charged to an annual training exercise. Cost of evaluators and observers not to exceed \$2,000.

INCLOSURE 10

1. Troop Test. The Air Cavalry Troop in Northern Operations (U).

2. Purpose. This test should determine the capability of the air cavalry troop to operate in the northern region and should develop the operational doctrine and logistical support requirements for employment in this area. Aircraft have proven themselves in the northern areas in the troop carrying and logistical roles. An air cavalry troop with its armed helicopters will be utilized to provide armed escort for airmobile operations. Its capability to seize and hold critical terrain features for a sufficient period of time to prevent ground units from being ambushed or surprised in these areas requires evaluation.

3. Recommended Conducting Agency or Command. United States Army, Alaska. To be part of an annual exercise.

4. Date. 1st Qtr, FY 67.

5. CDOG Paragraph. 110c(4).

6. Estimated Cost. \$250,000.

INCLOSURE 11

1. Troop Test. Automatic Data Processing (ADP) Devices at Brigade and Lower (U).

2. Purpose. To evaluate newly developed ADP devices (input, output, display) at brigade (divisional and armored cavalry) and lower, to determine their effectiveness in reducing response time, their impact on the communications system in existence at the time of the troop test, the echelon of employment, and implications in regards to cost, personnel, logistics and training. This test should be conducted in conjunction with a division size exercise (CPX or FTX) so that full advantage of the divisional ADP capability can be realized.

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3. Recommended Conducting Agency or Command. Seventh Army. To be part of an annual field training (Corps or Division) exercise.
4. Date. 2nd Qtr, FY 67.
5. CDOG Paragraph. 110c(5).
6. Estimated Cost. To be charged to an annual field training exercise. \$4,000 for evaluators and observers.

INCLOSURE 12

1. Troop Test. Armor Units with the Combat Vehicle Night Vision System (C7).
2. Purpose. The successor to the current, active night vision system will greatly increase the capability of armor to conduct operations at night. This test should determine if tactical doctrine developed for the current system is applicable to the successor system. It should be tested on the T114, AR/AAV and the M113 as well as on tanks. This test should develop gunnery techniques for the main and secondary armament. It should develop techniques of observation and responsibilities of crew members as pertains to close-in security.
3. Recommended Conducting Agency or Command. Second Army, Fort Knox, Kentucky.
4. Date. 1st Qtr, FY 68.
5. CDOG Paragraph. 110c(17).
6. Estimated Cost. \$50,000.

INCLOSURE 13.

1. Field Experiment. Air Vehicle Weapons System (U).
2. Purpose. To evaluate newly developed systems (light weapons, area, point and air to air) to determine their effectiveness and the concepts, doctrine, tactics and techniques for their employment. The test should be conducted using an organization such as the air cavalry troop that will have organically assigned all of the weapons systems. This will also assist in determining the optimum mix and numbers of weapons systems. In addition to the above, the test will determine gunnery training problems, logistical support requirements and the effectiveness of the light weapons system in the air-to-air-role.
3. Recommended Conducting Agency or Command. Fourth Army. To be conducted by an armored division stationed at Fort Hood, Texas.
4. Date. 2nd Qtr, FY 68.
5. CDOG Paragraph. 111b(2).
6. Estimated Cost. \$100,000.

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US ARMY ARMOR COMBAT DEVELOPMENTS AGENCY
Fort Knox, Kentucky

DOCTRINAL PUBLICATIONS

Inclosure 4

US ARMY ARMOR COMBAT DEVELOPMENTS AGENCY
DOCTRINAL PUBLICATIONS

This inclosure contains information relative to the status of proponent training literature assigned this Agency by US Army Combat Developments Command Directive No 310-3 and the status of US Army Armor School proponent TOE which this Agency anticipates pronency.

1. TRAINING LITERATURE.

a. Revisions of FM 17-95, Armored Cavalry Regiment.

(1) Description of requirement. Major revision of FM 17-95 is required to support the Armor School proposed reorganization of the regiment. The advance plan TOE was submitted to US Continental Army Command on 29 June 1962. This reorganization includes the addition of one air cavalry troop, the deletion of the aviation company, and an increase in the tank strength of the regiment.

(2) Priority and resources committed. It is recommended that this be Priority I requirement in this category. No ARMCDA resources are thus far committed.

(3) Date of commencement. It is recommended that preparation of the revision to FM 17-95 begin after Department of the Army approval of the major organizational changes contained in the advance plan TOE. Approximately six months will be required for writing, review, and submission of the final manuscript.

b. Revisions of FM 17-15, Tank Units, Platoon, Company, and Battalion; Revision of FM 17-30, Armored Division Brigade; and Revision of FM 17-36, Armored Cavalry Units, Platoon and Troop, Air Cavalry Troop and Divisional Armored Cavalry Squadron.

(1) Description of requirement. To submit changes to ROAD training literature resulting from finalization of ROAD TOE, troop evaluation of ROAD units, test and evaluation of the air cavalry troop, and review of related manuals in the interest of reducing duplication.

(2) Priority and resources committed. Recommend Priority II in this category. No ARMCDA resources are thus far committed.

(3) Date of commencement. It is anticipated that information on which to base revisions will be available during the third quarter FY 63. The extent of revision required to up-date these manuals cannot be forecast at this time.

c. Preparation of Chapters on Armor Operations for FM 31-(), Counter guerrilla Operations.

(1) Description of requirement. To prepare doctrine, including tactics and techniques, applicable to Armor operations in counter guerrilla operations for inclusion in the first revision of FM 31-().

(2) Priority and resources committed. Recommend Priority III in this category. No ARMCDA resources are thus far committed.

(3) Date of commencement. Action is deferred pending completion of a related study, "The Role of Armored Cavalry in Counter-Insurgency Operations," shown at Inclosure 1.

d. Revision of FM 17-34, Amphibious Tank and Tractor Battalions. Revision of this field manual and companion TOE was indeterminately deferred by USCONARC. This Agency is not aware of the reason for deferrment nor of any requirement for the manual and proposes no action.

USARARMCD - DOCTRINAL PUBLICATIONS

e. Revision of Training Literature Applicable to D Series TOE.

With the advent of ROAD, annual revision of training literature was not conducted by USAARMS during FY 62. With the final implementation of ROAD, proponent training literature applicable to D series organizations, with the exception of FM 17-1 and FM 17-95, will be superseded by ROAD training literature or revision of the two aforementioned manuals. Summary of status of training literature supporting D series TOE follows:

<u>FM/TC</u>	<u>TITLE</u>	<u>REMARKS</u>
17-1	Armor Operations, Small Units	USAARMS draft manuscript to revise the manual to support ROAD Armor units is currently undergoing field review. This is a residual project which will be completed by USAARMS.
17-20	Armored Infantry Units, Platoon, Company, and Battalion	To be superseded by 7 series manuals. See para 6, basic communication.
17-33	Tank Units, Platoon, Company and Battalion	To be superseded by FM 17-15.
17-35	Armored Cavalry Platoon, Troop and Squadron	To be superseded by FM 17-36.
17-50	Armor Logistics	Revision of FM 17-1 and FM 17-95 together with ROAD field manuals 54-2, 8-15, 9-30, and 10-50 will eliminate the requirement for this manual.
17-70	Communications for Armored Units	To be superseded by FM 61-24. USAARMS final manuscript is at Department of the Army for printing.
17-95	The Armored Cavalry Regiment	See paragraph 1a, above.
55-17	Airborne Division Cavalry Troop	To be superseded by FM 17-36.
17-7	Aerial Surveillance Platoon, Division and Armored Cavalry Regiment	FM 1-15 supersedes portions of TC applicable to the division aerial surveillance platoon. USAARMS advance plan TOE recommends deletion of the aerial surveillance platoon from the regiment and provision of aerial surveillance capabilities to the regiment on a mission basis from corps or army units. If this recommendation is not accepted, the material applicable to the regimental aerial surveillance platoon will be included in the revision to FM 17-95.
21-60	Visual Signals	Current for ROAD and "D" series units.

2. TABLES OF ORGANIZATION AND EQUIPMENT (TOE).

a. All Armor TOE, except amphibious, have undergone revision by USAARMS since 19 April 1961. Revision of amphibious unit TOE was deferred by USCONARC for an unspecified period. This Agency is currently monitoring

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USAARMS actions in this category. Future requirements cannot be forecast at this time.

b. Status Armor TOE. (For brevity, subordinate unit TOE having the same status as the parent TOE are omitted).

<u>TOE</u>	<u>UNIT</u>	<u>DATE</u>	<u>REFL OR REV TOE</u>	<u>STATUS OF NEW TOE</u>
17-17D	Sep Tk Co, 76mm or 90mm	Mar 59	17-17E	Adv Plan forwarded to US CONARC 7Jun62
17-22D	Hq & Hq Co, Cbt Comd	May 60	17-42E	CONARC finalizing draft
17-25D	Armd Div Armor Bn	May 60	17-35E	CONARC finalizing draft
17-32D	Hq & Hq Co, Armor Gp	24Nov58	17-32E	Adv Plan submitted to CONARC 29Apr62
17-45D	Armd Div Cav Sqdn	May 60	17-105E	CONARC Finalizing Draft
17-51D	Armd Cav Regt	Mar 60	17-51E	Adv Plan forwarded to USCONARC 29Jun62
17-65D	Inf Div Armor Bn, 90mm	Feb 60	17-35E	See 17-35, above
17-77D	Abn Div Cav Trp	Jul 58	17-75E	CONARC draft to DA for review
17-85D	Inf Div Cav Sqdn	Feb 60	17-105E	CONARC draft to DA for review
17-115D	Armd Amph Bn	May 59		(deferred by CONARC)
17-15E	Abn Div Tk Bn	New		CONARC draft to DA for review
17-127E	Sep Abn Bde Cav Trp	New		CONARC draft to DA for review
17-135E	Sep Armd, Inf, or Mech Bde Cav Sqdn	New		CONARC draft to DA for review
17-157E	Sep Abn Bde Tk Co	New		CONARC draft to DA for review
17-403T	Sep Air Cav Trp	New		Current for test and evaluation.

US ARMY ARMOR COMBAT DEVELOPMENTS AGENCY
Fort Knox, Kentucky

OTHERS (ARMOR POLICY CONF, SIXTH TRIPARTITE CONF,
OPERATIONAL EVALUATIONS)

Inclosure 5

US ARMY ARMOR COMBAT DEVELOPMENTS AGENCY

OTHERS

This inclosure embraces those actions which do not lend themselves to inclusion in the other categories. Not specifically covered herein or in the basic letter are numerous miscellaneous actions which this Agency must plan to accomplish although the timing and extent of the tasks cannot be foreseen. Examples of such actions include: visits between this Agency and other CDC agencies, AMC agencies and civilian developmental agencies; review (coordination) of actions being prepared by other agencies; and contacts with industry and review of new proposals. This Agency's participation in the forthcoming Armor Policy Conference and the 6th Tripartite Conference on Armor are covered in paragraph 7a of the basic letter. It is recommended that those operational evaluations required by this Agency (par 7b of the basic letter) be conducted immediately following service tests. Listed below in order of priority are four operational evaluations to which this Agency is currently committed.

a. Tactical Evaluation of the ROAD Division.

(1) Description of action. To determine the capabilities, adequacy, and effectiveness of organizational and operational concepts of ROAD armor units in mechanized and infantry divisions at the earliest possible date. Modifications to the ROAD Armor organizations and doctrine will be made prior to final implementation as required. This evaluation will be made in conjunction with normal field training exercises, CPKs, and any special exercises conducted which will enable necessary evaluations to be made. It is recommended that this Agency be kept informed of field operations involving battalion or larger size armor units and that it have the opportunity and option to send observers to such operations. It is further recommended that this Agency be included in the distribution list of the final reports of the evaluation.

(2) Priority and resources committed. Priority I. Evaluator's questionnaires for armor units have been prepared and submitted.

(3) Date to be commenced. Begins on 1 August 1962 and is a continuing action being performed by the two divisions organized under ROAD TOEs.

b. Tactical Evaluation of T114 (C&R Version). Reference letter, ATDEV-2 451.6, HQ USCONARC, Ft Monroe, Va, 30 March 1962, subject: Service Test of Armored Personnel Carrier, T114 (Low Cost C&R Version) (DA Project Nr 545-07-032). Letter, ATDEV-2 451.6, HQ USCONARC, Ft Monroe, Va, 24 April 1962, subject: USCONARC Requirements for Initial Production T114 C&R Vehicles. Letter, ATDEV-2 451.6, HQ USCONARC, Ft Monroe, Va, 8 June 1962, subject: Troop Evaluation Test of Production Carrier, Personnel, Full Tracked, Armored, T114. Letter, ATDEV-2 451.6, HQ USCONARC, Ft Monroe, Va, 3 Oct 1961, subject: Service Test of Armored Personnel Carrier, T114 (Low Cost C&R Version) (DA Project Nr 545-07-032).

(1) Description of action. To determine the suitability of the vehicle in all appropriate roles for armor operations. It is planned that subject evaluation will be conducted with a production vehicle incorporating the Dual Purpose Commander's Station. This evaluation was originally directed by USCONARC and will supplement, but will not duplicate, tests being conducted by other agencies such as the Armor Board.

(2) Priority and resources committed. Priority II. No ARMCDAs resources are currently committed to this action.

(3) Date commenced and estimated date of completion. The initial evaluation was begun 30 March 1962. It was interrupted due to return of the T114s to the developer for correction of deficiencies. A vehicle is now programmed for availability to this Agency for two weeks during the second

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quarter FY 63. Due to the publication of several letters which superseded the original (see references cited above), it is no longer entirely clear whether this is a firm requirement; therefore, it is requested that action be taken by HQ CDC to establish this as a formal requirement between the Armor Board and this Agency. The conduct of the evaluation and the report thereon should be completed within four weeks after receipt of a vehicle. This Agency recommends that the tactical evaluation continue to have as its principal objective the requirements shown in paragraph 1 above.

c. Tactical Evaluation of the Air Cavalry Troop. CG, USAARMC, on 23 April 1962 directed the Armor School to conduct this evaluation.

(1) Description of project. To determine the validity and adequacy of ATP and ATT 17-108, Air Cavalry doctrine contained in MM 17-36 and the adequacy of the air cavalry troop TOE at the earliest possible date. This evaluation will permit necessary additions, deletions, and changes to these publications to be made prior to their wider implementation, thereby greatly reducing the problem of accomplishing those modifications which are found necessary.

(2) Priority and resources committed. Priority - See (3) below. No ARMCDAs resources have been committed thus far to this project.

(3) In view of the nonavailability of an air cavalry troop this time and the troop test currently scheduled for the third quarter FY 63, it is recommended that this evaluation be deleted.

d. Evaluation of the SS-11 on the HU-1B Aircraft. Letter, ATAVN 413(C), USCONARC, 1 December 1961, subject: Program to Conduct the HU-1B/SS-11 Weapon System (U), directed the evaluation be conducted by USAARMS essentially as in paragraph d(1), below. Letter, ATUTR-AVN 413(C), USCONARC, 8 June 1962, subject: Program to Evaluate the HU-1B/SS-11 Weapons System (U), directed USAARMS to conduct the Armor portion of this evaluation at Fort Bragg with the 17th Cavalry Troop in support of the Howze Board.

(1) Description of project. To determine the effectiveness of the system in accomplishing the point aerial fire mission to include aspects of equipment performance, operational procedures and techniques, training, logistics, and maintenance requirements. The evaluation should be performed in conjunction with the AC troop tests and other appropriate exercises. Although this action remains a responsibility of the Armor School, this Agency desires to send observers to the evaluation.

(2) Priority and resources committed. Priority III. No ARMCDAs resources have been committed.

(3) Date to be commenced. It is believed that this action has already been initiated.

US ARMY ARMOR COMBAT DEVELOPMENTS AGENCY
Fort Knox, Kentucky

GRAPH OF PROGRAMS AND PROJECTS

DO. NOT RECLASSIFIED AT 3 YEAR INTERVALS
DECLASSIFIED AFTER 12 YEARS
E.O. 12958 DIR 5200.10

Inclosure 6

ARMOR CD AGENCY PROGRAMS AND PROJECTS

UNCLASSIFIED

CATEGORY	FY 63				FY 64				FY 65				FY 66				FY 67				FY 68			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
STUDIES	Counterinsurgency Ops																							
	Lead Spt/Armor Ops																							
TROOP TESTS	Armor Div Bde Ops																							
	Armor Div Bde Ops																							
FIELD EXPERIMENTS	Armor 1st Div Ops																							
	Underwater Recon/Armor Ops																							
OPERATIONS RESEARCH	Armor w/OTG A/C																							
	Armor w/OTG A/C																							
OTHERS	Road Divs																							
	Road Divs																							
OPERATIONAL EVALUATIONS	TTL (O&R Version)																							
	SS-11/HR-1B																							
CONFERENCES	Armor Divy Conf																							
	Cdn Tridpart Conf on Armor																							

DOWNGRADED AT 3 YEAR INTERVALS
DECLASSIFIED AFTER 12 YEARS
DOD ENV 5200.10

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UNCLASSIFIED

NOTES

- Tentative Program
- Status Indefinite
- Doctrinal Publications and Materiel Actions are continuing projects not portrayed.