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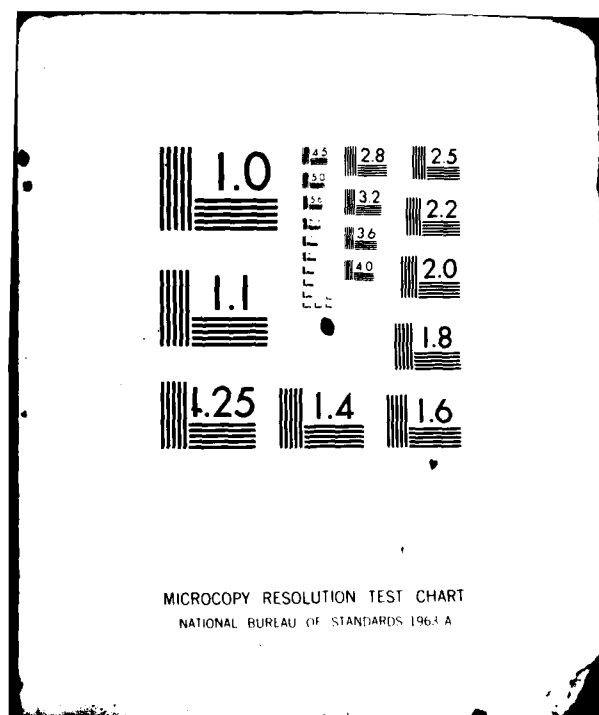
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MAINTENANCE ASSISTANCE AND INSTRUCTION TEAM (MAIT) CONCEPT REVI--ETC(U)
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FINAL REPORT

MAINTENANCE ASSISTANCE AND INSTRUCTION TEAM (MAIT)

CONCEPT REVIEW (Project LEAP, Issue 104)



DEPARTMENT OF THE ARMY
OFFICE OF THE DEPUTY CHIEF OF STAFF FOR LOGISTICS
U S ARMY LOGISTICS EVALUATION AGENCY
NEW CUMBERLAND, PENNSYLVANIA

20 August 1975

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DEPARTMENT OF THE ARMY
OFFICE OF THE DEPUTY CHIEF OF STAFF FOR LOGISTICS
U.S. ARMY LOGISTICS EVALUATION AGENCY
NEW CUMBERLAND ARMY DEPOT
NEW CUMBERLAND, PENNSYLVANIA 17070

REPLY TO ATTENTION OF:

DALO- LER

SUBJECT: MAIT Concept Review (Project LEAP, Issue #104)

SEE DISTRIBUTION (APPENDIX H)

1. Reference: Letter, DALO-PLH, 8 Nov 74, subject:
Study: Review MAIT Team Concept (Project LEAP, Issue #104)
(Appendix A).
2. Referenced letter tasked this Agency to conduct a
review of the MAIT Concept to determine the most effective
method of providing MAIT services to Active Army, Reserve,
and National Guard units. This report presents the results
of the review and is forwarded for information to those
organizations that contributed data to the study.
3. The report conclusions and recommendations were approved
by HQDA (DALO-PLD) on 29 October 1975.

James L. Hudson
JAMES L. HUDSON
Colonel, GS
Commanding



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REPORT SUMMARY

1. Discussion.

a. General.

(1) This report presents the results of the concept review conducted in accordance with the tasking directive (appendix C). The purpose of the review was to determine the most effective method of providing MAIT services to Active Army, Reserve, and National Guard units. The review was also to determine:

(a) The annual cost of the worldwide MAIT program.

(b) Support maintenance capabilities to provide MAIT services;

(c) Major command (MACOM) assessment of identified alternatives.

(2) An approved three-part questionnaire, developed by DALO-LEA served as the vehicle for data collection. A Section I of the questionnaire was completed for each authorized MAIT and provided the necessary data to determine current authorized staffing and annual program costs. A Section II was completed by a statistical sample of the worldwide population of DS/GS maintenance units for the purpose of assessing the capability of support maintenance to assume all or a portion of the MAIT mission. A Section III was completed by each Army MACOM and the National Guard Bureau and provided the command assessment of potential impact for certain alternatives and an opportunity to identify other alternatives for consideration.

b. MAIT Organization.

(1) The Active Army, USAR and Army National Guard (ARNG) each have a separate organization for MAIT. Active Army teams are generally assigned at installation level in CONUS and at COSCOM/DISCOM/Support Brigade level overseas. The USAR MAIT program is controlled by the CONUS armies with the teams assigned to Readiness Group level. The ARNG program is controlled and operated at State level.

c. Personnel.

(1) There are a total of 96 full-time MAIT teams (49 Active Army and 47 USAR). Total personnel authorizations are as follows:

Active Army - 122 Civilian; 299 Military
USAR - 342 Civilian; 195 Military

The Active Army assigned strength when surveyed was approximately 5% below the authorized level, while the USAR assigned strength was about 18% below. The ARNG program functions without dedicated personnel spaces. MAIT is performed as an additional duty by personnel from state combined support maintenance shops, organizational shops, or in some cases Inactive Duty Training (IDT) personnel in weekend drill status.

(2) All full time MAITs, except one, are authorized by a TDA. The exception is Eighth US Army's 2d Infantry Division team which draws personnel from supported units. There is some disparity in team size and authorized grade levels within and between the Active Army and USAR programs. As an example, military positions are authorized at roughly one grade higher in the USAR program than they are in the Active Army program. Civilian positions are graded slightly higher in the Active Army program.

d. Program Cost. The total estimated costs for FY 75 for the 96 full time MAITs was 13.3 million dollars. 7.45 million or 56% represents the cost of the USAR program. The remaining 5.85 million was the cost of the Active Army program.

e. Support Maintenance Capability to Provide MAIT Services.

(1) Seventy-six Active Army DS/GS units/activities were surveyed, including nine division maintenance battalions and two separate brigade support battalions. The results indicate that the support maintenance capability to provide sustained, responsive MAIT type services with currently authorized personnel is very limited. A survey of 56 USAR area maintenance support activities (AMSA) revealed much the same situation. Following are some of the factors cited as detracting from the support maintenance capability:

(a) Heavy maintenance workloads.

(b) Personnel turbulence (24% average turnover in a 90-day period for Active Army).

(c) Chronic shortages of qualified personnel (average MOS fill for Active Army of 82%).

(d) Personnel not qualified as instructors.

(e) Other command-initiated programs which draw personnel support from maintenance units.

(2) In spite of the limited capability, support maintenance should not be overlooked as a source of maintenance related technical assistance. Unit commanders should exhaust the DSU capability before requesting MAIT assistance.

f. Command Assessment of Alternatives. The MACOMs object to any alternative that would result in a reduction in the quality or quantity of service being provided by MAIT. The objections to the use of support maintenance units as a sole source of MAIT services was almost unanimous. The only identified alternatives that gained any degree of support were those that would minimize change to the present program and consequently have little impact on reducing the cost of the program.

2. Conclusions.

a. The quantity and quality of MAIT services currently being provided cannot be duplicated by any other means without significantly increasing overall program costs.

b. Responsive and effective MAIT assistance cannot be provided by support maintenance units/activities without an increase in personnel authorizations.

c. A MAIT staffing guide is required to aid in determining appropriate team size and grade structure.

d. A MAIT activity report is needed to keep commanders above battalion level advised of maintenance trends and recurrent or common-type unit/equipment problems being encountered during MAIT visits. The program has few critics, but those it does have, point to the lack of feedback as their biggest source of complaint.

e. MAIT visit schedules should be coordinated with appropriate DSUs for the purpose of inviting DSU participation in scheduled visits to units supported by the DSU.

In this manner, the DSU will learn the type and range of problems in their supported units and the MAIT recommendations made to correct them; also, it will serve as a training vehicle for DSU personnel to aid them in accomplishing their technical assistance responsibilities.

f. MAITs, particularly in CONUS, should be made up of an appropriate mix of military and civilian personnel. The civilian contingent provides continuity and the military spaces provide a training base for overseas needs.

g. An additional skill identifier (ASI) should be authorized for use in identifying military personnel with MAIT experience. It takes both time and experience to become fully effective in the MAIT role and this talent should not be lost through reassignment, even though consecutive MAIT assignments may not be desirable.

h. When the "one Army" concept becomes a reality and common use of Active Army, USAR and ARNG logistics systems and facilities is practiced, it would be appropriate to merge the Active Army and USAR programs and establish teams on a geographic basis for support of all users - Active Army, USAR and ARNG.

3. Recommendations. Analysis of the data/information submitted by the MACOMs and the conclusions described above support the following recommendations:

a. The MAIT concepts are valid and the program should be continued without major change.

b. DA PAM 750-551, Staffing Guide, US Army Garrison should be revised to include appropriate MAIT personnel staffing guidance. FORSCOM is the proponent of this publication.

c. That DA assign an additional skill identifier in the MOS system to identify military enlisted personnel with MAIT training and experience.

d. That AR 750-51 be revised to reflect the current Army organization and to clarify/expand and improve previous instructions as follows:

(1) Encourage the utilization of a combination of military and civilian space authorizations for MAIT.

(2) Identify a "unit" and the commander who is to receive the unit summary as a company, detachment or equivalent organizational element.

(3) Enjoin unit commanders to exhaust organic and supporting DSU assistance capabilities before requesting MAIT services.

(4) Require a periodic MAIT activity report.

(5) Encourage MAIT-DSU coordination on MAIT visit schedules.

(6) Provide for copies of unit visit summaries to be retained in MAIT files for team reference.

e. At an appropriate time, DA should consider the feasibility of combining the Active Army and USAR MAIT programs.

f. That further evaluation of the MAIT program not be undertaken for a minimum of three years following the revision of the regulation.

CHAPTER 1

INTRODUCTION

1-1. Problem. The current Maintenance Assistance and Instruction Team (MAIT) concept may require some adjustment in order to be continued as an element of the Army Assistance Program.

1-2. Background. The US Army Logistics Evaluation Agency (USALEA) was tasked (Appendix C) by HQDA (DALO-PLH) in November 1974 to conduct a review of the MAIT concept to determine if there are alternative less costly ways of providing MAIT services. The tasking, identified as Project LEAP, Issue 104 is part of the DA DCSLOG effort to streamline the logistic system and identify resource savings - men, money, or materiel - to contribute to the attainment of a 16 Division Active Army.

1-3. Study Approach.

a. The MAIT program came into being when the Command Maintenance Management Inspection (CMMI) program was discontinued in December 1970. CMMI personnel spaces were transferred and became the nucleus of the MAIT program. Since its inception in February 1971, the MAIT program has been evaluated three times to determine how well the program objectives were being met as follows:

(1) Jul-Sep 71 - This evaluation obtained data by visitation, interview and correspondence with 191 major commands, installations, and units Army-wide. (Included all major commands, 19% of all combat companies/battalions, 20% of all combat support companies/battalions, and 37% of all service support companies/battalions.)

(2) Jan-Feb 73 - Data obtained by visitation and interview with 67 major commands, installations and units Army-wide. (Included all major commands, five corps, 12 divisions/brigades, and 31 battalion/company size units.)

(3) Feb-Sep 74 - Data obtained by visitation and interview with major commands, 15 installations, three readiness regions, four State Maintenance Offices, MAIT teams, and 81 battalion/company/detachment size units who are the users of MAIT services.

b. The consensus of each evaluation indicated a continuing need for maintenance assistance and instruction at unit level. Also, increasing utilization of MAIT services was indicated where viable programs were operating. In summary, the three previous evaluations confirmed the viability of the MAIT concept and a continuing need for the services provided by MAIT.

c. It was directed that the objective of this review should be to determine the most effective method of providing MAIT services to Active Army, Reserve and National Guard units, to include the following:

(1) Determine the current cost of providing MAIT services to the Active Army and Reserve Component forces, to include identification of military and civilian authorized spaces, their associated equipment, salary, and travel costs.

(2) Determine if DS and GS maintenance units (TOE and TDA), have a capability to provide on-call responsive assistance and instruction to supported units on a sustained basis, concurrent with the performance of their normal supply/maintenance support and technical assistance mission responsibilities.

(3) Obtain major command recommendations, risk assessment, and an estimate of potential savings if the program was revised, reduced, or eliminated.

d. The DA approved study plan (Appendix D) provided for a three-section questionnaire as the data collection vehicle. To obtain maximum response and validity for the review, the questionnaires were distributed and collected by the Army Major Commands (MACOM) and the National Guard Bureau (NGB). The study plan provided for coordination visits to all MACOMs and the NGB to assess the feasibility of the overall plan and to validate the questionnaire but travel restrictions precluded those visits. As an alternative, the plan and questionnaire were validated by correspondence with FORSCOM (DCSLOG). DA assigned Reports Control Symbol RCS LOGLD-(OT)-1764 to the validated questionnaire (Appendix E).

e. A questionnaire, Sections I and III, was completed by each MAIT and MACOM, respectively. Section II was completed by a statistical sample of the worldwide population of TOE/TDA support maintenance units and activities. The rationale used to determine the sample size for the Active Army and USAR is at Appendix F.

f. The data collection phase of the concept review was initiated 3 April 1975 with the dispatch of letters to each MACOM and the NGB. This phase was scheduled to be completed 1 June 1975 but due to unforeseen delays, the data collection phase was not completed until late July 1975.

g. The survey data has been analyzed and the report commences in Chapter II.

1-4. References: A list of references is at Appendix G.

CHAPTER 2

CONCEPT REVIEW REPORT

2-1. General.

a. This report presents the results of the MAIT Concept Review performed in accordance with the DALO-PLH tasking directive (Appendix C). The purpose of the review was to determine the most effective method of providing MAIT services to Active Army, Reserve, and National Guard units.

b. The USALEA-developed three section questionnaire was designed to gather the data necessary to address each of the Essential Elements for Analysis identified in the tasking directive as well as obtain major command assessment of alternatives. Major command inputs were as shown in table 1, appendix A.

c. Forty-nine (49) of the fifty-one (51) Active Army Section I's represent full time MAIT teams operating in support of Active Army units. The remaining two Section I's were from MACOMs that form "on call" teams as necessary from available personnel resources but without dedicated TDA MAIT spaces. The forty-seven (47) Reserve Component Section I's represent full time, TDA authorized teams in support of USAR units. The USAR teams also provide back-up support to ARNG units on request.

d. Table 2, appendix A, compares the statistical sample of Active Army DS/GS maintenance units/activities selected in accordance with the rationale at Appendix F, with the actual major command Section II submissions. The greater than anticipated Active Army response (76 units surveyed as opposed to the required statistical sample size of 50) increases the level of confidence in the data from 90 to 95%. The fifty-six (56) completed Section II's received from FORSCOM USAR Area Maintenance Support Activities (AMSA) also exceeded the fifty called for by the plan. In this case, the increased sample was not sufficient to change the level of confidence in the results beyond the 90% envisioned by the statistical sample plan. The information contained in the eighteen (18) completed Section II's received from ARNG support maintenance units and activities was noted, but a separate ARNG analysis was not performed. ARNG does not

have dedicated MAIT spaces; therefore, personnel from support maintenance activities are already performing MAIT services as an additional duty.

e. One questionnaire Section III from each MACOM would have satisfied the review plan. However, to provide a basis for their analysis, several MACOMs obtained Section III inputs from subordinate commands and these in turn were furnished as part of the MACOM response.

2-2. MAIT Program.

a. Organization:

(1) All Army major commands operate a MAIT program, except AMC, USACIC, and USAHSC. AMC and USACIC have been granted exemptions by DA and USAHSC units/activities receive medical MAIT services from the US Army Medical Materiel Agency (USAMMA), an activity under The Surgeon General. Medical units receive MAIT services on other commodities from host installation teams.

(2) Most major commands operate full time teams and have authorized personnel spaces to support the MAIT program. Only MTMC, National Guard Bureau, and USAMMA operate programs without dedicated MAIT spaces.

(3) The Active Army, USAR, and Army National Guard each have a separate and distinct organization for MAIT. Active Army MAIT operations are controlled at installation level in CONUS and at COSCOM/DISCOM/Spt Bde level in overseas areas. The USAR MAIT program is controlled by the numbered Continental US Armies (CONUSA). USAR teams are assigned to the Readiness Groups and a MAIT coordinator is assigned at Readiness Region level. The MAIT program for the National Guard is established at State level. Program control is shared by the State Maintenance Officer and the State Aviation Officer.

b. Personnel:

(1) The forty-nine (49) full time Active Army MAIT teams are distributed among the major commands as indicated in table 3, appendix A. Assigned civilian personnel total 110; assigned military personnel total 289 (271 enlisted; 18 officers & warrant officers). In each instance the total assigned strength is slightly lower than the total authorized.

The figures appearing under the column headed "units supported" are an approximation of the number of company size units supported by the MAIT teams within the MACOM.

(2) Table 4, appendix A, portrays the grade structure by major command for the Active Army authorized military and civilian MAIT spaces.

(3) The USAR program consists of an additional 47 MAIT teams providing support for USAR units and back-up support to ARNG units. Team distribution and personnel authorizations by CONUSA are indicated in table 5, appendix A.

(4) The USAR grade structure by CONUSA for authorized military and civilian MAIT spaces is shown in table 6, appendix A.

(5) Personnel for full time MAITs, both Active Army and USAR, are authorized by TDA except for EUSA which has one team (2d Inf Div) drawing its personnel from supported units. As indicated in para 2-2a(2) above, the ARNG operates their MAIT program without dedicated personnel spaces. A&I teams are formed using full time maintenance technician personnel drawn from organizational or DS/GS state maintenance shops. Several states utilize NG unit or Inactive Duty Training (IDT) personnel in weekend drill status to perform MAIT visits.

(6) A complete listing of MACOM team locations with personnel authorized and assigned is at appendix B. A comparison of USAR and Active Army team locations reveals that both USAR and Active Army MAITs are colocated at the following CONUS installations:

Ft Devens, MA	Ft Bragg, NC	Ft Sill, OK
Ft Dix, NJ	Ft Jackson, SC	Ft Riley, KS
Ft Meade, MD	Ft Knox, KY	Ft Lewis, WA
Ft Lee, VA	Ft Sheridan, IL	Ft Carson, CO

c. PROGRAM COSTS: The total estimated cost of the world-wide MAIT program for FY 75 was 13.3 million dollars. Of this total, approximately 5.85 million or 44% was in support of the Active Army program. The remainder (7.45 million) represents the cost of the USAR program. Table 7, appendix A, indicates the distribution of costs by major command for FY 74 and 75. Military personnel cost figures were developed using the standard, by grade rates shown in Figure 17-2, AR 37-108. The remaining cost figures are approximations based upon the best information available.

2-3. Support Maintenance.

a. Capability of DS/GS units/activities to provide MAIT services.

(1) Active Army.

(a) Twenty-one of the DS/GS units/activities (28%) in the survey indicated they did not have a capability to provide any of the MAIT services without additional personnel. Seven of the twenty-one were CONUS TDA DS/GS maintenance shops.

(b) Twelve of the units/activities (16%) indicated that they have a capability to provide all MAIT services without additional personnel. This group consisted largely of aircraft, missile, or medical DS/GS maintenance units/activities.

(c) The remaining units/activities indicated varying degrees of capability to provide MAIT services with existing personnel. However, the number of units indicating a support capability for any specific operation/management area supported by MAIT was in every case less than 50% of the total DS/GS units and activities surveyed.

(d) Several unit commanders pointed out that it takes an entirely different type of expertise to instruct (formal or OJT) than it does to repair equipment and although their unit could furnish some MAIT services with present personnel, the quality of service provided would not be equal to MAIT and could not be sustained concurrent with the normal support mission.

(e) Commanders of support maintenance units/activities surveyed, estimated that they would require an average eight-man increase in authorized personnel in order to provide responsive on-call assistance and instruction to supported units in all of the operations and management areas currently supported by MAIT. Utilizing this average increase, an estimated 1500 additional authorized spaces would be required to man all Active Army DS/GS maintenance units/activities to provide all MAIT services. This is a gross estimate, but it does indicate that the same services could not be provided by DS/GS units with fewer resources than the 421 spaces currently authorized for Active Army MAIT's.

(2) USAR.

(a) Ten (10) of the fifty-six (56) AMSAs in the Survey (18%) indicated they were capable of providing all MAIT services to supported units without additional personnel. A like number of AMSAs indicated they could not provide any MAIT services without additional personnel.

(b) The remaining thirty-six (36) AMSAs indicated a somewhat greater capability to provide MAIT services with existing personnel than did the Active Army units/activities, however, it was indicated that AMSA personnel are not currently trained to provide this type of support and as a result, the quality of service provided would not be equal to MAIT.

(c) Factors indicated as impacting on the AMSA capability to provide responsive MAIT services concurrent with their normal mission were:

- o Heavy maintenance workloads.
- o Lack of instructor trained personnel.
- o AMSA technicians are also members of reserve units and would in many cases be in drill status and unavailable when other units needed assistance.

b. Technical Assistance Provided by Support Maintenance Units/Activities.

(1) Active Army.

(a) Only about 50% of the DS/GS maintenance units/activities now schedule technical assistance visits to supported units. The remainder provide technical assistance only on request. Of those scheduling visits, 60% visit quarterly, 22% semi-annually, 14% monthly and the remaining 4% conduct annual visits.

(b) Seven of the nine division maintenance battalions surveyed were in the group that provide technical assistance to supported units only on request.

(c) When asked how many requests for technical assistance had been received in the last six months which resulted in nonscheduled visits to supported units, 20 TDA activities

and nondivisional units indicated "none", division maintenance battalions indicated an average of 50, and the remaining nondivisional TOE units indicated an average of 20 requests.

(d) Heavy maintenance workloads, personnel turbulence, chronic shortages of qualified personnel, and other operational contingencies were some of the reasons cited for not scheduling technical assistance visits. Several units indicated that they refer technical assistance requests to MAIT.

(e) All DS/GS units/activities surveyed indicated they were familiar with the MAIT program and 70% of them had received a MAIT visit in the past year. The group not receiving a MAIT visit was composed largely of TDA activities.

(2) USAR.

(a) 87% of the AMSAs surveyed indicated that they conduct scheduled technical assistance visits to supported units. The remainder provide technical assistance on request. Of those conducting scheduled visits, 53% visit supported units monthly, 22% quarterly, 16% semiannually, and 9% annually.

(b) When asked how many requests for technical assistance had been received in the last six months that required non-scheduled visits to supported units, sixteen (16) AMSAs indicated no requests were received, while the remaining forty (40) AMSAs indicated an average of fifteen (15) requests.

(c) All AMSAs indicated they are familiar with the MAIT program. 68% indicated that their shop had a scheduled MAIT visit or requested a visit in the last year.

c. Military Personnel turbulence.

(1) Active Army.

(a) The average percentage of turnover in the DS/GS units included in the survey was 24%. Turnover rates indicated as being normal ranged from a low of 5% to a high of 72%; however, a 20 to 30% turnover rate was indicated by most units.

(b) The average percentage of MOS fill, in the grade authorized, for a six month period was 82%. The responses ranged from a low of 20% to a high of 100%. The majority however, indicated percentages in the range of 80 to 95%.

(c) When asked to indicate the percentage of time that assigned military personnel are available to perform assigned maintenance/supply tasks, the responses were as follows:

20%	indicated	less than 50% of the time
30%	"	50 to 60%
20%	"	60 to 70%
13%	"	70 to 80%
17%	"	above 80%

Normal unit record keeping does not provide the data needed for an accurate response to this question; therefore, the answers reflect the "best estimate" of the individuals completing the questionnaire. It does indicate however, that 50% of those responding believe that military personnel are available to perform assigned maintenance/supply tasks less than 60% of the time.

(2) USAR - The question was not applicable to the civilianized TDA AMSAs.

d. Commanders Evaluation Teams drawing personnel support from DS/GS units/activities.

(1) Active Army.

(a) Many installations and organizations have formed maintenance evaluation teams for the purpose of assessing the state of materiel readiness. Some teams are operated full time, while others are formed as needed. The teams have a variety of names, such as: Command Maintenance Evaluation Team (COMET), Division Maintenance Evaluation Team (DMET), Battalion Assistance Team (BAT), Roadside Spot Check Inspection Team (RSIT), etc.

(b) The units surveyed were evenly divided between those who are tasked to provide manpower for evaluation teams and those who are not. Those units providing support indicated the requirement averages four manyears.

(2) USAR - Only nine (9) or 16% of the AMSAS surveyed indicate that they are called upon to provide personnel to support command initiated evaluation programs.

2-4 Command Assessment of Alternatives - Section III of the questionnaire provided six possible alternatives to the current MAIT program and solicited MACOM assessment as to

order of preference; risks of degrading unit readiness associated with each alternative; the estimated cost savings (personnel and dollars) that would be achieved by the MACOM if the alternative selected as their first preference was implemented. The six alternatives are listed below along with a summary of the MACOM responses.

a. Continue the MAIT program, but determine possible team space reductions by eliminating the requirement for scheduled MAIT visits.

(1) Order of Preference: 50% of the headquarters responding selected this alternative as their first or second choice. 22% selected it as their third choice.

(2) Risk of Degrading Readiness: Overseas major commands generally believe that the risks associated with this alternative are unacceptable, even though the responses from their subordinate commands do not support this position. CONUS major commands generally believe the level of risk is acceptable. Overall 64% of the headquarters responding feel the level of risk is acceptable. USAR commands were evenly divided; half feeling the risks are acceptable and the other half, unacceptable.

(3) Savings Potential: This alternative does not appear to offer much potential for savings, either in personnel spaces or dollar resources because:

(a) In active Army commands where viable programs are operating, the volume of requests for assistance is such that no scheduled visits are currently made.

(b) Because of distances involved between units and their supporting MAIT, it is frequently necessary to provide MAIT support by schedule in order to conserve TDY funds. The cost of providing MAIT services in some MACOMs and most Reserve Component programs would thus increase if all visit schedules were terminated.

b. Continue the MAIT program but civilianize all MAIT spaces.

(1) Order of Preference: 53% of those responding selected this alternative as their first or second choice. Another 20% selected it as their third choice.

(2) Risk of Degrading Readiness: Most overseas commands find this alternative unacceptable, because it would require hiring US civilians at greatly increased cost. Other O/S commands indicated the risks were negligible, but the alternative was not considered feasible. Most CONUS commands believe the risks associated with this alternative are acceptable, although many questioned the advisability of a completely civilianized MAIT.

(3) Savings Potential: This alternative would provide approximately 500 military spaces for reassignment, however, it would result in a need for a like increase in civilian spaces. Implementation of this alternative would result in increased program costs due to higher civilian payroll costs, the need for overtime funds and higher travel costs.

c. Continue the MAIT program but reduce the number of teams in each MACOM by realignment, cross servicing or consolidation of support areas.

(1) Order of preference: This alternative seems to offer the greatest potential. 64% of the active Army commands believe that some consolidations or realignments are possible with acceptable levels of risk. USAREUR, EUSA and USARJ indicate they have already reduced the number of teams in their respective commands by consolidation of support areas.

(2) Risks of degrading readiness: All of the MACOMs indicate that the risks associated with this alternative were acceptable.

(3) Savings Potential: Very little could be gained in overseas commands, because the MAIT teams are already assigned to support a specified geographical area. The alternative does have potential in CONUS but only if it can be established that there is not a need for separate active Army and USAR programs. There is little difference in the operation of the two programs other than the fact that USAR MAITs provide most of their assistance on week-ends, in the evening, or during other periods of extended active duty training, while active Army MAITs provide their support during normal day-time duty hours. If the programs were merged most of the immediate savings would be the result of a need for fewer MAIT chief positions and a possible reduction in administrative spaces. A logical first step in implementing this alternative would be the merging of active Army and USAR MAITs that are collocated at the twelve installations identified in paragraph 2-2b(6).

d. Continue the MAIT program but reduce the number of operations and management areas supported by MAIT.

(1) Order of preference: Active Army and USAR commands are opposed to the elimination of any of the areas supported by MAIT. All areas are interrelated; failure in one area could cause a complete failure in a unit's maintenance program.

(2) Risk of degrading readiness: Five MACOMs (FORSCOM, TRADOC, USAREUR, EUSA and MDW) and the three CONUSAs believe the risks associated with this alternative are unacceptable.

(3) Savings potential: Most commands indicate that no savings would result from an implementation of this alternative. There isn't a direct relationship between the number of personnel on a team and the number of operations and management areas supported. MAIT personnel needs are based primarily on the number of units supported and the quantity and types of equipment involved. Cross training then provides the expertise in those operations and management areas identified in AR 750-51.

e. Eliminate MAIT and related TDA authorizations and rely on the capabilities of support maintenance units/activities to provide MAIT services when requested by units or directed by higher headquarters.

(1) Order of preference: The only commands favoring this alternative are those that now operate a MAIT program without dedicated spaces. FORSCOM, TRADOC, USAREUR and EUSA rank this alternative near the bottom of the list.

(2) Risk of degrading readiness: Five MACOMs and the three CONUSAs rate the risks unacceptable.

(3) Potential for savings: Based upon responses of support unit commanders surveyed (para 2-3a(e)), it now appears that the savings of MAIT authorized space contemplated by this alternative would be more than offset by the increased personnel requirements support commanders estimate as necessary for them to provide A&I service comparable to MAIT. Implementation of this alternative would be contrary to the recommendations of commanders at all levels.

f. Continue the MAIT concept as a standard technique for commanders' use in improving their maintenance programs, but eliminate MAIT authorized spaces.

(1) Order of preference: This alternative was at the bottom of nearly everyone's list.

(2) Risk of degrading readiness: Rated unsatisfactory by all MACOMs and the CONUSAs.

(3) Potential for savings: Great potential, but not considered worth the risk.

g. As part of their analysis, all MACOMs were encouraged to offer other viable alternatives that could achieve the objectives of the concept review. There were variations or combinations of the listed alternatives offered, but nothing totally new was suggested.

h. In response to the question "Do you believe that the effectiveness of the current MAIT program would be enhanced if the concept was revised to add an inspection responsibility?" Only four MACOMs (USARJ, EUSA, USAHSC and USACC) answered affirmatively. All other MACOMs, all CONUSAs, and NGB are opposed to such a change. The consensus indicated that unit personnel are now being widely used in support of command inspection teams of one type or another, and these teams perform a necessary function, but a separate MAIT, free from any association with inspection is also required. The assistance and inspection functions cannot both be successfully performed by the same group.

CHAPTER 3

CONCLUSIONS AND RECOMMENDATIONS

3-1. Conclusions: A thorough analysis of all data submitted by the major commands, including expanded narrative comments provided by many commanders, result in the following conclusions:

a. The quality and quantity of services being provided Army units by the MAIT program cannot readily be duplicated in any other way without significantly increasing overall program costs. - The MACOM's assessment of identified MAIT alternatives does not provide a clear mandate for change to the current program. The results of this review and past evaluations have demonstrated that the MAIT program has few critics. The opinions of commanders from company to major command level have been sampled and the vast majority believe that the MAIT program is an essential element of the Army effort to improve and sustain unit logistic readiness. The annual costs of the program are significant (13.3 million dollars in FY 75), but on an annual basis it represents less than one tenth of one percent of the cost of the Army's major end item inventory. Extended over the useful life of the inventory it would not exceed 2% of today's inventory costs.

b. Responsive and effective MAIT type assistance cannot currently be provided solely by support maintenance units/activities - Support maintenance units have a very limited capability to provide assistance and instruction to supported units without additional authorized personnel. Most DS/GS maintenance units have some personnel who could be fully qualified to provide MAIT services after a short period of OJT and a course in instructor techniques, but they cannot be continuously diverted to this mission without detriment to the primary supply/repair mission. This review has demonstrated however, that support maintenance units/activities do have some capability to provide MAIT type assistance. To insure that this capability is not overlooked, unit commanders should be enjoined to explore the capability of the DSU before requesting MAIT assistance.

c. A MAIT staffing guide is required - A review of the listing of MAITs at appendix B and tables 4 and 6, appendix A, reveal a disparity in grades and individual team strengths within and between active Army and USAR programs. Also

narrative comments furnished by MAIT chiefs and some commanders, indicate the lack of a staffing guide makes it increasingly difficult to justify additional personnel or to defend current manning levels to manpower survey teams.

d. AR 750-51 does not properly identify the unit commander who is to receive the MAIT visit summary. Most have interpreted the "unit" to be a company, detachment or equivalent size organizational element, but there are exceptions. Also, the regulation should provide for copies of the unit summaries to be retained by the MAIT for team reference.

e. A MAIT activity report is required to periodically provide commanders above battalion level with general information concerning accomplishments and maintenance trends or common, recurrent type logistic problems encountered during MAIT visits. Critics of the program have in the past pointed to a lack of feedback as the major cause for complaint. A summary of significant activities should satisfy feedback requirements, be supportive of manpower requirements, but still protect the confidential unit/MAIT relationship essential to success of the program.

f. MAIT visit schedules should be coordinated with appropriate DS maintenance units for the purpose of inviting DSU participation - The DSU commander should be invited to send an observer along with the MAIT on all scheduled visits to units supported by the DSU. The unit and the DSU should mutually benefit: first, because the DSU would be aware of the type and range of logistic problems in the unit and the MAIT recommendations for correction, and second, it should provide a training vehicle for DSU personnel that will enable the DSU to improve or expand its technical assistance capabilities.

g. MAITs, particularly in CONUS, should be composed of an appropriate mix of military and civilian personnel. The civilian contingent provides the continuity so essential to the program, while the military spaces provide for recent field experience, customer rapport and a training base to draw upon for overseas assignments. In this regard, an additional skill identifier (ASI) should be authorized for use in identifying military personnel with MAIT experience. Consecutive MAIT assignments are not recommended, but it takes considerable time on the job to become fully effective in the MAIT role and identification of this talent should not be lost through reassignment.

h. The current separate active Army and USAR MAIT programs are effective in today's environment, but as the "one Army" concept becomes a reality, it may be appropriate at a time in the future to merge the two programs and establish teams on a geographic basis with responsibility to provide MAIT services to all users - active Army, USAR and ARNG. Only minor savings would be realized from such a merger, but it would improve effectiveness by providing larger, better staffed teams with a wider range of skills available to all users.

i. An economic analysis is not furnished with this report because the recommendations (para 3-2 below) will not result in space or tangible dollar savings but should improve efficiency and program effectiveness.

3-2. Recommendations: Analysis of the data/information submitted by the MACOMs and the conclusions described above support the following recommendations:

a. The MAIT concepts are valid and the program should be continued without major change.

b. That DA PAM 570-551 Staffing Guide, US Army Garrison, be revised to include appropriate MAIT personnel staffing guidance. FORSCOM is the proponent of this publication.

c. That DA assign an additional skill identifier in the MOS system, to identify military enlisted personnel with MAIT training and experience.

d. That AR 750-51 be revised to reflect the current Army organization and to clarify/expand previous instructions as follows:

(1) Encourage the authorization of a combination of military and civilian spaces for MAIT.

(2) Identify a "unit" and the commander who is to receive the unit summary as a company, detachment or equivalent organizational element.

(3) Encourage unit commanders to exhaust organic and supporting DSU assistance capabilities before requesting MAIT assistance.

(4) Provide for a periodic MAIT activity report to apprise higher level commanders of accomplishments and logistic trends or common, recurrent type problems being encountered.

(5) Encourage MAIT - DSU coordination on visit schedules that involve units supported by the DSU, to include inviting a DSU representative to accompany MAIT during the visit.

(6) Provide for copies of unit visit summaries to be retained in MAIT files for team reference.

e. That DA consider the merging of USAR-active Army MAIT programs as one element of the larger review undertaken to determine logistic systems and facilities appropriate for joint active Army - Reserve component use.

f. That further evaluation of the MAIT program not be undertaken for a minimum of three years following the revision of the regulation.

A

Quantity of Questionnaire Responses

<u>Major Command</u>	<u>Section</u>		
	<u>I</u>	<u>II</u>	<u>III</u>
<u>Active Army</u>			
FORSCOM	13	31	1
TRADOC	14	5	1
USAREUR	12	16	10
EUSA	2	5	1
USARJ	2	5	3
USASA	3	0	1
USACC	2	8	6
USAHSC	1	6	1
USAMDW	1	0	1
MTMC	<u>1</u>	<u>0</u>	<u>1</u>
	51	76	26
<u>Reserve Components</u>			
FORSCOM	47	56	10
ARNG	<u>0</u>	<u>18</u>	<u>1</u>
Total	47	74	11

Table 1

Questionnaire Section II (Active Army)

	FORSCOM	USAREUR	TRADOC	EUSA	USARJ	USACC	USAHSC	TOTALS
	Plan Rcvd	Plan Rcvd	Plan Rcvd	Plan Rcvd	Plan Rcvd	Plan Rcvd	Plan Rcvd	Plan Rcvd
Div Maint Battalion	2	7	2	1	1	1	5	9
Sep Bde SPT Bn	1	2					1	2
Nondiv DS Co	6	6	7	6	1	1	14	13
Nondiv GS Co	3	3	4	4	1	1	8	8
Acft DS&GS Maint								
Co/Det	3	2	2	2	1	1	6	5
GM/Rkt&MSL Maint								
CO/Det	3	1	3	1	1	1	7	3
TDA DS/GS Maint								
Activity	4	10	0	2	5	5	0	36
Totals	22	31	18	16	5	5	0	76

Table 2

MAIT Team/Personnel Distribution

<u>Major Command</u>	<u>Units</u>		<u>Civilian</u>		<u>Military</u>		<u>Total</u>	
	<u>Sptd</u>	<u>Teams</u>	<u>Auth</u>	<u>Asgnd</u>	<u>Auth</u>	<u>Asgnd</u>	<u>Auth</u>	<u>Asgnd</u>
FORSCOM(Active)	1622	13	49	45	75	80	124	125
TRADOC	904	14	65	56	27	27	92	83
USAREUR	1443	12	0	1	130	119	130	120
EUSA	280	2	0	0	14	23	14	23
USACC	18+	2	1	1	6	6	7	7
USASA	119	3	1	1	34	24	35	25
USARJ	82	2	1	1	10	8	11	9
MDW	94	1	5	5	3	2	8	7
Totals	4,562	49	122	110	299	289	421	399

Table 3

AUTHORIZED PERSONNEL BY GRADE (ACTIVE ARMY)

MILITARY

<u>MACOM</u>	<u>04</u>	<u>03</u>	<u>WO</u>	<u>E9</u>	<u>E8</u>	<u>E7</u>	<u>E6</u>	<u>TOTAL</u>
FORSCOM	2	1	2	0	6	44	20	75
TRADOC	0	1	0	0	7	10	9	27
USAREUR	0	1	9	0	4	33	83	130
EUSA	0	1	1	0	1	10	1	14
USASA	1	0	4	2	3	18	6	34
USARJ	0	0	1	0	0	9	0	10
USACC	0	0	0	0	1	0	5	6
USAMDW	0	0	0	0	3	0	0	3
TOTALS	3	4	17	2	25	124	124	299

CIVILIAN

	<u>GS-12</u>	<u>GS-11</u>	<u>GS-10</u>	<u>GS-9</u>	<u>GS-7</u>	<u>GS-5</u>	<u>GS-4</u>	<u>GS-3</u>	<u>TOTAL</u>
FORSCOM	1	27	2	10	2	2	2	3	49
TRADOC	3	15	10	27	8	0	0	2	65
USASA	0	0	0	0	0	0	0	1	1
USARJ	0	1	0	0	0	0	0	0	1
USACC	0	1	0	0	0	0	0	0	1
USAMDW	1	4	0	0	0	0	0	0	5
TOTALS	5	48	12	37	1	2	2	6	122

Table 4

TEAM DISTRIBUTION AND PERSONNEL AUTHORIZATIONS - CONUSA

<u>CONUSA</u>	<u>Units Supported</u>	<u>Teams</u>	<u>PERSONNEL</u>				<u>TOTAL</u>	
			<u>Civilian</u>	<u>Assgd</u>	<u>Military</u>	<u>Assgd</u>	<u>Auth</u>	<u>Assgd</u>
			<u>Auth</u>		<u>Auth</u>			
FIRST ARMY	3131	14	193	153	109	85	302	238
FIFTH ARMY	1378	8	71	49	61	56	132	105
SIXTH ARMY	<u>1066</u>	<u>25</u>	<u>78</u>	<u>72</u>	<u>25</u>	<u>24</u>	<u>103</u>	<u>96</u>
TOTAL	5575	47	342	274	195	165	537	439

Table 5

AUTHORIZED PERSONNEL BY GRADE (USAR)

MILITARY

<u>CONUSA</u>	<u>05</u>	<u>04</u>	<u>03</u>	<u>WO</u>	<u>E8</u>	<u>E7</u>	<u>E6</u>	<u>TOTAL</u>
FIRST ARMY	2	16	1	4	39	46	1	109
FIFTH ARMY	5	6	3	6	6	22	13	61
SIXTH ARMY	<u>0</u>	<u>25</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>25</u>
TOTALS	7	47	4	10	45	68	14	195

CIVILIAN

	<u>GS-11</u>	<u>GS-9</u>	<u>GS-6</u>	<u>GS-4</u>	<u>GS-3</u>	<u>TOTAL</u>
FIRST ARMY	32	137	3	13	8	193
FIFTH ARMY	10	50	0	6	5	71
SIXTH ARMY	<u>27</u>	<u>51</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>78</u>
TOTALS	69	238	3	19	13	342

Table 6

QUESTIONNAIRE SECTION I

	<u>FY 74 Costs</u>			<u>FY 75 Estimate</u>		
	<u>Civilian</u>	<u>Military</u>	<u>Tvl/Per Diem</u>	<u>Equipment</u>	<u>Civ Pers & Tvl</u>	<u>All Mil Personnel</u>
				<u>PA</u>		<u>OMA</u>
FORSCOM (Active)	721,437	729,538	58,951	0	10,715	824,222
TRADOC	827,951	250,483	11,061	0	4,166	327,077
USAREUR	6,000	1,439,919	264,734	0	2,370	1,361,678
EUSA	None	117,024	None	None	None	259,036
USACC	23,000	15,000	25,000	None	None	62,447
USASA	21,816	326,960	121,841	44,274	None	291,193
USARJ	24,483	134,626	3,776	None	3,964	108,251
MDW	80,615	27,694	None	None	394	27,694
USAHSC	7,167	7,327	18,929	None	None	--
Active Army TOTAL	1,712,469	3,048,571	504,292	44,274	21,609	3,261,598
FORSCOM (USAR)	3,611,682	2,176,451	665,549	4,812	13,683	2,433,604
TOTAL PROGRAM COSTS	5,325,151 ^a	5,225,022 ^b	1,169,841 ^c	49,086 ^d	35,292 ^e	5,695,202 ^f
a+b+c+d+e = \$11,824,372						f+g = \$13,285,289

Table 7

B

APPENDIX B

MAIT Location/Personnel Distribution

<u>Installation/Organization</u>	<u>UNITS</u> <u>SPTD</u>	PERSONNEL			
		CIVILIAN		MILITARY	
		<u>AUTH</u>	<u>ASSGD</u>	<u>AUTH</u>	<u>ASSGD</u>
<u>FORSCOM - Active Army</u>					
1. Ft Bragg, NC	250			17	23
2. Ft Campbell, KY	148	1	1	14	13
3. Ft Carson, CO	142	12	11	0	1
4. Ft Devens, MA	23	0	2		
5. Ft Hood, TX	328	5	5	19	19
6. Ft Lewis, WA	144	9	5	1	0
7. Ft Meade, MD	42	4	3		
8. Ft Riley, KS	122	9	9		
9. Ft Sheridan, IL		1	1	1	1
10. Ft Stewart, GA	60			8	10
11. US Army Spt Cmd, HI	247	7	7	1	0
12. 172d Ind Bde, AK	60	1	1	8	7
13. 193d Bde, CZ	56			6	6
<u>FORSCOM - USAR</u>					
14. Seneca Army Depot	210	15	8	10	9
15. STAX, USMA, Newburg, NY	280	16	12	8	7
16. Ft Devens, MA	588	35	23	10	7
17. Oakdale, PA	116	7	7	3	0

<u>Installation/Organization</u>	<u>UNITS</u> <u>SPTD</u>	<u>PERSONNEL</u>			
		<u>CIVILIAN</u>		<u>MILITARY</u>	
		<u>AUTH</u>	<u>ASSGD</u>	<u>AUTH</u>	<u>ASSGD</u>
18. IGMR, PA	120	14	11	7	7
19. Ft Gillem, GA	209	13	12	8	7
20. Ft Buchannan, PR	62	0	0	7	6
21. Huntsville, AL	527	17	11	11	8
22. Patrick AFB, FL	140	7	7	6	5
23. Ft Meade, MD	185	27	24	11	10
24. Ft Lee, VA	220	7	7	4	4
25. Ft Bragg, NC	231	8	8	6	4
26. Ft Dix, NJ	136	19	15	9	5
27. Ft Jackson, SC	163	8	8	6	6
28. Ft Sheridan, IL	304	9	7	10	10
29. Ft Snelling, MN	109	6	3	11	11
30. St. Louis, MO	66	5	5	3	3
31. Ft McCoy, WI	78	4	4	1	1
32. Ft Knox, KY	120	10	9	9	7
33. Selfridge NGB, MI	165	18	9	12	11
34. Ft Sam Houston, TX	220	10	6	8	7
35. Ft Sill, OK	316	9	6	7	6
36. Presidio of S.F, CA	36	3	3	1	1
37. Sacramento, CA	36	3	3	1	1
38. San Jose, CA	36	3	3	1	1

<u>Installation/Organization</u>	<u>UNITS</u> <u>SPTD</u>	<u>PERSONNEL</u>			
		<u>CIVILIAN</u>		<u>MILITARY</u>	
		<u>AUTH</u>	<u>ASSGD</u>	<u>AUTH</u>	<u>ASSGD</u>
39. Alameda, CA	36	3	3	1	1
40. Ft Lawton, WA	22	3	3	1	1
41. Lt Lewis, WA	26	3	3	1	1
42. Vancouver Barracks, WA	23	3	3	1	1
43. Salem, OR	21	3	3	1	1
44. Yakima, WA	22	3	3	1	1
45. Ft MacArthur, CA (1)	58	3	2	1	1
46. Ft MacArthur, CA (2)	58	3	2	1	1
47. Phoenix, AZ	58	4	4	1	1
48. Los Angeles, CA	57	4	3	1	1
49. Golden, CO	57	4	4	1	1
50. Ft Carson, CO	61	3	3	1	1
51. Santa Fe, NM	57	3	3	1	1
52. Ft Douglas, UT	77	3	4	1	1
53. Boise, ID	43	3	0	1	1
54. Helena, MT	39	3	3	1	1
55. Salina, KS	54	3	3	1	0
56. Kansas City, KS	51	3	3	1	1
57. Bismark, ND	30	3	2	1	1
58. Mitchell, SD	40	3	3	1	1
59. Lincoln, NE	34	3	3	1	1

<u>Installation/Organization</u>	<u>UNITS</u> <u>SPTD</u>	<u>PERSONNEL</u>			
		<u>CIVILIAN</u>		<u>MILITARY</u>	
		<u>AUTH</u>	<u>ASSGD</u>	<u>AUTH</u>	<u>ASSGD</u>
60. Omaha, NE	37	3	3	1	1

TRADOC

61. Ft Belvoir, VA	79	2	2		
62. Ft Benning, GA	71	11	6		
63. Ft Bliss, TX	77	8	7	3	4
64. Ft Dix, NJ	74	2	1		
65. Ft Eustis, VA	104	2	2	3	2
66. Ft Jackson, SC	110	1	1	4	5
67. Ft Knox, KY	122	7	7		
68. Ft Lee, VA	9	2	2		
69. Ft McClellan, AL	29			5	7
70. Ft Ord, CA *	240	12	12		
71. Ft Polk, LA *	89	4	3	3	3
72. Ft Rucker, AL	9	3	2	0	2
73. Ft Sill, OK	104	5	5	7	4
74. Ft Leonard Wood, MO	106	6	6	2	0

USAREUR

75. MEDCOMEUR	28			9	9
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<u>Installation/Organization</u>	<u>UNITS</u> <u>SPTD</u>	<u>PERSONNEL</u>			
		<u>CIVILIAN</u>		<u>MILITARY</u>	
		<u>AUTH</u>	<u>ASSGD</u>	<u>AUTH</u>	<u>ASSGD</u>
76. USASETAF	15			3	2
77. US Army, Berlin	29	0	1	7	4
78. 3d Spt Cmd (Corps)	322			23	23
79. 3d Armored Div	122			10	8
80. 8th Infantry Div	126			8	9
81. 2d Spt Cmd (Corps)	250			14	14
82. 1st Armored Div	119			10	10
83. 1st Infantry Div (Fwd)	31			5	5
84. 3d Infantry Div	105			10	10
85. 32d AADCOM	77			15	12
86. 1st Support Bde	219			16	13

EUSA

87. 19th Support Bde	160			14	13
88. 2d Infantry Div	110			0	10

USARJ

89. USAG, Honshu	26	1	1	3	3
90. USAG, Okinawa	82	1	1	7	5

<u>Installation/Organization</u>	<u>UNITS</u> <u>SPTD</u>	PERSONNEL			
		CIVILIAN		MILITARY	
		<u>AUTH</u>	<u>ASSGD</u>	<u>AUTH</u>	<u>ASSGD</u>
<u>USASA</u>					
91. VHFS, VA	68	1	1	16	9
92. Augsburg, Germany	34			9	7
93. Okinawa	17			9	8

USACC

94. Ft Huachuca, AZ		1	1	1	1
95. 1st Signal Bde, Korea	18	2	2	5	5

USAMDW

96. Cameron Station, VA	94	5	5	3	2
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* Installation since transferred to FORSCOM.

C

DEPARTMENT OF THE ARMY
OFFICE OF THE DEPUTY CHIEF OF STAFF FOR LOGISTICS
WASHINGTON, D.C. 20315

DALO-PLH

610V 87

SUBJECT: Study: Review MAIT Team Concept (Project LEAP,
Issue #104)

SEE DISTRIBUTION

1. Purpose: To identify resource savings - men, money, and materiel - to contribute to streamlining the logistic system.
2. References:
 - a. CSM 74-5-73, Resources for a 16 Division Active Army (Project 16-78), 13 August 1974 (S).
 - b. Task Directive - Project 16-73 (Resources for a 16 Division Active Army), DCSLOG, HQDA, dated 27 August 1974 (FOUO).
 - c. AR 750-51
 - d. AR 310-31
3. Study Sponsor: Deputy Chief of Staff for Logistics, Headquarters, Department of the Army.
4. Study Agency: The United States Army Logistics Evaluation Agency will conduct the study according to the guidance contained herein/or modified in process by the study sponsor.
5. Terms of Reference:
 - a. Problem: The current MAIT concept may require some adjustment in order to be continued as an element of the Army Assistance Program.
 - b. Objective: Determine the most effective method of providing MAIT services to Active Army, Reserve, and National Guard units.

8 NOV 1974

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SUBJECT: Study: Review MAIT Team Concept (Project LEAP),
Issue #104

c. Scope: The study will summarize the consensus of previous MAIT evaluations, determine current personnel spaces and costs associated with the program and develop the potential for space/dollar savings if the program were revised or reduced. The study will include a cost analysis.

d. Time Frame 1975 - 1980.

e. Limits: The study will be limited to those functions now provided by MAIT.

f. Assumptions:

(1) Maintenance assistance and instruction will be made available at unit level.

(2) Personnel will continue to receive maintenance (MOS) training at the Army service schools.

(3) Personnel turbulence will not decrease.

g. Essential Elements of Analysis:

(1) Do DS/GS units/activities have a current capability to provide sustained and concurrent responsive assistance and instruction to supported units in following areas:

(a) Operator requirements.

(b) Preventive maintenance and equipment repair.

(c) Equipment condition and serviceability (e.g., ESC and technical inspection).

(d) Unit readiness reporting.

(e) Repair parts supply procedures.

(f) Records and reports management.

(g) Modification work order (MWO), calibration, and administrative storage.

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Issue #104

(h) Proper use of tools, test equipment, trouble shooting, and fault diagnosis.

(i) Maintenance personnel management and training.

(j) Proper use of publications, to include distribution procedures.

(k) Shop layout.

(l) Production and quality control procedures.

(m) Safety.

(n) Shop operations, to include SOPs.

(o) Facilities.

(2) What percentage of DS/GS units/activities make scheduled assistance visits to supported units? How frequently are visits scheduled? What percentage of visits scheduled for past year were accomplished?

(3) What percentage of the time is assigned DS/GS maintenance personnel available to perform assigned maintenance tasks?

(4) What was the percentage of personnel turnover in DS/GS units for past 90-120 days?

(5) How many MAIT teams are authorized/assigned to each major command by installation (location)?

(6) How many MAIT are in support of Active Forces, US Army Reserve, US Army National Guard?

(7) How many units (company, detachments) and what installation or geographic area does each team support?

(8) How many military/civilian personnel are authorized each MAIT by grade and what is the quantity, by grade and length of service, of personnel currently assigned?

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(9) What are annual salary costs for MAIT based upon authorized/assigned personnel?

(10) What are the one-time costs of TDA equipment (vehicles, tool sets, test equipment, training aids) authorized for and dedicated to MAIT?

(11) What are average annual travel and transportation costs (Fiscal Code 2100) chargeable to MAIT for Active Forces, the USAR and the National Guard?

(12) As a minimum, the following alternative courses of action should be considered:

(a) Continue the MAIT program with currently authorized personnel.

(b) Military space savings which could be generated by civilianization of MAIT military spaces.

(c) Reduction of the number of MAIT teams by realignment, cross-servicing or consolidation of support areas.

(d) Provide limited MAIT services from supporting maintenance unit resources.

(e) Some combinations of (a), (b), (c), and (d) above.

(f) Revise the present MAIT concept to provide an inspection capability.

(g) Eliminate MAIT as a concept and establish a concept of command inspection using local unit assets.

(h) Models to be used will be determined by the Logistics Evaluation Agency.

(i) Risk: As the study agency's analysis is made, the risk associated with possible implementation must be carefully weighed. Additional alternatives should be indicated when appropriate.

6. Support and Resource Requirements:

8 NOV 1974

DALO-PLH

SUBJECT: Study: Review MAIT Team Concept (Project LEAP),
Issue #104

a. The Directorate for Supply and Maintenance, ODCSLOG, HQDA, is the study proponent.

b. The US Army Logistics Evaluation Agency will use its existing capabilities and available resources in accomplishing the study effort.

c. Addressees will provide input data as requested by the study agency.

7. Administration:

a. Study Title: Review Mait Team Concept.

b. Study Schedule: The study agency will prepare a study plan to include a milestone schedule within (40 days) of the publication of this letter for approval by the study sponsor. Target completion date for the study is 1 July 1975.

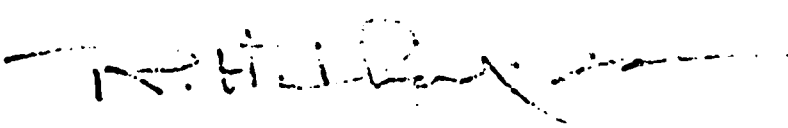
c. Control Procedures: All correspondence between the study agency and study proponent will be routed through the Task Director, ATTN: DALO-PLH.

d. Reports:

(1) Progress reports will be submitted monthly after approval of the study plan.

(2) A draft final report will be submitted to the study proponent NLT 15 June 1975.

FOR THE DEPUTY CHIEF OF STAFF FOR LOGISTICS:


R. H. THOMPSON
Brigadier General, GS
Director of Logistics Plans,
Operations and Systems

8 NOV 74

DALO-PLH

SUBJECT: Study: Review MAIT Team Concept (Project LEAP),
Issue #104

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MAIT CONCEPT REVIEW PLAN
(PROJECT LEAP, ISSUE #104)

1. General. This review of the MAIT team concept is to be conducted to determine the most efficient method of providing essential MAIT services to Active Army, Army Reserve, and Army National Guard units.

2. Organization. The review will be accomplished through a combination of field visits and major/field command responses to an LEA developed questionnaire(s) designed to provide the necessary basic data/information. A two man team with experience in past MAIT evaluations will be used throughout the period of the review.

3. Procedures:

a. The basic data/information necessary to achieve the objectives stated in the tasking directive, will for the most part, be obtained from the major commands by correspondence. The vehicle to provide the necessary data/information will be a three-part questionnaire as follows:

(1) Section I will provide a report format to be used to identify all civilian/military spaces authorized each MAIT team and the annual operating costs for each team.

(2) Section II will be a questionnaire which will assess the capability of active Army and Reserve Component maintenance units/activities to assume all, or a part, of the MAIT mission.

(3) Section III will provide the major command/Army/Corps analysis of the various MAIT alternatives and their recommendations.

b. The MAIT concept review will be a topic of special interest on all scheduled field visits, having USALEA Logistics Readiness Division participation during the period of this study. During field visits, LEA personnel will solicit the views, opinions, and recommendations of senior commanders, DIO/G4, and selected unit commanders regarding the impact and risks associated with the program alternatives under consideration. The existence of other viable alternatives will also be explored.

c. The results of past MAIT evaluations will be used to compile a consensus of the effectiveness of the current MAIT concept, and to support the need for assistance and instruction at unit level.

4. Visit schedule:

a. Major command headquarters coordination: 13-23 Jan 74.

b. USALEA does not have a projected schedule of field visits at this time, but past experience would indicate that between 1 Jan and 30 May 75 we can anticipate eight to ten Command Logistics Review Team (CLRT) visits (FORSCOM and TRADOC) and two DA Logistics Readiness Assistance Visits (DALRAVs).

5. Manpower Requirements:

a. Action officers: 12 man months.

b. Secretarial: 2 man months.

6. Fund requirements:

Estimate total cost per action officer	\$ 500.00
per week of travel	

Estimate 12 scheduled visits - one action	12
officer/visit	

\$6,000.00

Major Hq Coord, 2 wks, 2 action officers	<u>2,000.00</u>
--	-----------------

TOTAL	\$8,000.00
-------	------------

E

QUESTIONNAIRE

MAIT CONCEPT REVIEW

SECTION I MAIT STATISTICAL SUMMARY

I. The purpose of this questionnaire is to support the HQDA directed review of the Maintenance Assistance and Instruction Team (MAIT) concept (AR 750-51). The review is being conducted to identify alternative ways of providing MAIT services that would result in a savings of personnel spaces and/or dollar resources. The impact on unit readiness must also be assessed for each alternative considered for implementation.

II. In making this review of the MAIT concept, the following assumptions are made:

a. Logistic assistance and instruction will continue to be made available to unit level.

b. Military personnel will continue to receive maintenance (MOS) training at the Army service schools.

c. Military personnel turbulence will not decrease.

III. The responses to this section of the questionnaire will provide the data/information necessary to identify resources presently committed to the MAIT program and provide the basic data required for an economic analysis of program alternatives. Section I data must be provided for each authorized MAIT team within the Active Army and the Reserve Components.

IV. If assistance is needed to complete this questionnaire, please contact: Mr. W. W. Bothwell, US Army Logistics Evaluation Agency, Autovon 977-6552/6309.

1

REPORTING HQ: _____
TEAM TDA: _____
UNITS SUPPORTED: _____
TELEPHONE: _____

1. MAJOR COMMAND: Self-explanatory
2. REPORTING HQ: The headquarters preparing the report.
3. TEAM LOCATION: Installation or address of the MAIT team.
4. TEAM TDA: MAIT team authorization document number.
5. COMPONENT: Units/activities supported by the team (Active Army, USAR or ARNG as appropriate).
6. UNITS SUPPORTED: Indicate the number of company size units supported by the MAIT team.
7. POINT OF CONTACT: Name and telephone number of the individual preparing the report.
8. DATE: Self-explanatory
9. CIVILIAN PERSONNEL: Indicate, by grade, the number of civilian personnel authorized and assigned.
10. MILITARY PERSONNEL: Indicate, by MOS and grade, the number of military personnel authorized and assigned.
11. CIVILIAN PERSONNEL COSTS: Indicate salary (element of expense codes 1110 thru 1180 as appropriate) and associated personnel benefit costs (element of expense code 1200) for FY 74.
12. MILITARY PERSONNEL COSTS: Compute an annual cost based on the pay and allowances of assigned personnel for FY 74 (use the standard by grade rates shown in Figure 17-2, AR 37-108).
13. TRAVEL COSTS: Include all transportation and per diem costs for FY 74 for both civilian and military personnel (element of expense code 2100).
14. EQUIPMENT COSTS: The one time cost of all equipment authorized the team by the TDA. Do not include equipment on temporary hand receipt to the team or vehicles on dispatch from a TMP.
15. FY 75 BUDGET: FY 75 MAIT team budget.

QUESTIONNAIRE

MAIT CONCEPT REVIEW

SECTION II SUPPORT MAINTENANCE

MAJOR COMMAND _____

UNIT/ACTIVITY _____

LOCATION _____

MTOE/MTDA _____

POINT OF CONTACT _____

TELEPHONE NUMBER _____

DATE QUESTIONNAIRE COMPLETED _____

I. The purpose of this questionnaire is to support the HQDA directed review of the Maintenance Assistance and Instruction Team (MAIT) concept (AR 750-51). The review is being conducted to identify alternative ways of providing MAIT services that would result in a savings of personnel spaces and/or dollar resources. The impact on unit readiness must also be assessed for each alternative considered for implementation.

II. In making this review of the MAIT concept, the following assumptions are made:

a. Logistic assistance and instruction will continue to be made available to unit level.

b. Military personnel will continue to receive maintenance (MOS) training at the Army service schools.

c. Military personnel turbulence will not decrease.

III. The responses to this section of the questionnaire will provide the data/information necessary to assess the capability of support maintenance units/activities to assume a part, or all of the MAIT mission. The unit/activity commander will validate the data provided by signing the

questionnaire in the space provided following question 15.
The information furnished will not be used to measure
the performance of any individual nor will it be used to
judge effectiveness of the unit.

IV. If assistance is needed to complete this questionnaire,
please contact: Mr. W. W. Bothwell, US Army Logistics
Evaluation Agency, AUTOVON 977-6552/6309.

1. What category of maintenance support is provided by your
unit/activity? (check only one)

ORGN/DS _____ DS _____ GS _____ DS/GS _____

2. How many company size units do you support? _____

3. (TOE units only) What is your Authorized Level of
Organization (ALO)?

ALO 1 _____ ALO 2 _____ ALO 3 _____ ALO 4 _____ OTHER _____

4. Which of the following types of equipment are supported
by your unit/activity? (Check those appropriate)

Vehicles:

Administrative _____

Tactical _____

Combat _____

Missile Systems:

Surface to Surface _____

Air Defense _____

Armament:

Small Arms _____

Artillery Weapons _____

Communications/Electronics:

Tactical _____
Fixed Plant (Strategic) _____
Communications Security _____

Aircraft:

Fixed Wing _____
Rotary Wing _____
Avionics _____
Armanent Systems _____

Construction Equipment _____

Floating Equipment _____

Power Generating Equipment _____

Chemical Equipment _____

Other (List) _____

5. Does your maintenance unit/activity schedule recurring technical assistance visits to supported units? YES _____
NO _____. If YES, how frequently is each unit visited?

Monthly _____ Quarterly _____ Semi-Annually _____ Annually _____

6. How many requests for technical assistance have been received in the last six months that required maintenance/supply personnel to make nonscheduled visits to supported units? (Excluding contact team visits made solely to perform on-site DS/GS maintenance.) _____

7. Are you familiar with the MAIT program concept (AR 750-51)?

YES _____ NO _____

8. Has your unit received a scheduled MAIT visit within the past year or had need to request a visit? YES _____ NO _____

9. Does your unit/activity, with current MTOE/MTDA authorizations, have a capability to provide on-call responsive assistance and instruction to supported units on a sustained (continuing) basis concurrent with performance of your normal maintenance/supply support mission? Indicate your unit's capability for support in each of the following operations/management areas that are presently supported by MAIT.

<u>AREA</u>	<u>YES</u>	<u>NO</u>
a. Equipment operator requirements	_____	_____
b. Preventive maintenance and equipment repair	_____	_____
c. Equipment condition and serviceability (e.g., ESC and technical inspection)	_____	_____
d. Unit readiness reporting	_____	_____
e. Repair parts supply procedures	_____	_____
f. Records and reports management	_____	_____
g. Modification Work Orders (MWO) calibration and administrative storage	_____	_____
h. Proper use of tools & test equipment in troubleshooting and fault diagnosis	_____	_____
i. Maintenance personnel management and training	_____	_____
j. Proper use of publications, to include request procedures	_____	_____
k. Shop layout	_____	_____
l. Production and quality control procedures	_____	_____
m. Safety	_____	_____

<u>AREA</u>	<u>YES</u>	<u>NO</u>
n. Shop operations to include SOPs	_____	_____
o. Facilities	_____	_____

10. What is your estimate of the total number of additional authorized personnel that your unit/activity would require in order to provide on-call responsive assistance and instruction in those areas where a capability does not now exist? _____

11. What was the average percentage of military personnel turnover in your unit/activity for the past six months? _____%. (See paragraph B-6, AR 220-1 for method of computation.) Do you consider this turnover rate to be normal for your unit? YES _____ NO _____ (If NO, indicate the normal rate) _____%

12. What was the average percentage of MOS (Qualified) fill, in grade authorized, for the past six months for military personnel spaces authorized for your unit/activity? _____%

13. What is the percentage of time (based on a five day, 40 hour week) that assigned military personnel in your unit/activity are available to perform assigned maintenance and/or supply tasks? (If data is unavailable, provide your best estimate)

Less than 50% _____ 60 to 70% _____ Above 80% _____
 50 to 60% _____ 70 to 80% _____

14. Do local installation/higher headquarters initiated technical programs draw personnel support from your unit/activity on a regular basis (i.e., commander's evaluation teams, roadside inspection teams, etc.)? YES _____ NO _____. If YES, how many personnel? _____. Were these activities considered in computing the figures in question 13? YES _____ NO _____.

15. Are there other pertinent comments, suggestions or recommendations which you wish to contribute to this review of the MAIT concept? (If additional space is needed, use the reverse side of this page or attach additional pages.)

 Unit/Activity Commander's
 Signature

QUESTIONNAIRE

MAIT CONCEPT REVIEW

SECTION III COMMAND SUMMARY

MANOR COMMAND _____

PREPARING COMMAND _____

LOCATION _____

POINT OF CONTACT _____

TELEPHONE _____

DATE QUESTIONNAIRE COMPLETED _____

I. The purpose of this questionnaire is to support the HQDA directed review of the Maintenance Assistance and Instruction Team (MAIT) concept (AR 750-51). The review is being conducted to identify alternative ways of providing MAIT services that would result in a savings of personnel spaces and/or dollar resources. The impact on unit readiness must also be assessed for each alternative considered for implementation.

II. In making this review of the MAIT concept, the following assumptions are made:

a. Logistic assistance and instruction will continue to be made available to unit level.

b. Military personnel will continue to receive maintenance (MOS) training at the Army service schools.

c. Military personnel turbulence will not decrease.

III. Your response to this section of the questionnaire will aid in establishing an order of merit for known alternatives, as well as identify other viable options. Indicate a numerical order of preference for the alternatives listed below and indicate your estimate of the risk of degrading unit logistic readiness. For your first preference, provide an estimate of the potential for savings in personnel spaces and/or dollar resources within your command.

IV. If assistance is needed to complete this questionnaire, please contact: Mr. W. W. Bothwell, US Army Logistics Evaluation Agency, AUTOVON 977-6552/6309.

1. Continue the MAIT program, but determine possible team space reductions by eliminating the requirement for scheduled MAIT visits. Provide assistance only upon unit request or when directed by higher headquarters.

ORDER OF PREFERENCE _____

RISK: NEGLIGIBLE _____ ACCEPTABLE _____ UNACCEPTABLE _____

SAVINGS POTENTIAL: PERSONNEL _____ MONETARY _____

COMMENTS:

2. Continue the MAIT program, but civilianize all authorized TDA MAIT spaces thus making military MAIT spaces available for reassignment in support of a 16 division Active Army.

ORDER OF PREFERENCE _____

RISK: NEGLIGIBLE _____ ACCEPTABLE _____ UNACCEPTABLE _____

SAVINGS POTENTIAL: PERSONNEL _____ MONETARY _____

COMMENTS:

3. Continue the MAIT program, but reduce the number of teams in each Major Command by realignment, cross-servicing or consolidation of support areas. (Indicate how reductions could be accomplished in your command if this alternative is indicated as your first preference.)

ORDER OF PREFERENCE _____

RISK: NEGLIGIBLE _____ ACCEPTABLE _____ UNACCEPTABLE _____

SAVINGS POTENTIAL: PERSONNEL _____ MONETARY _____

COMMENTS:

4. Continue the MAIT program but determine possible team space reductions by reducing the number of operations and management areas supported by MAIT. (Identify areas from Paragraph 1, Appendix, AR 750-51 that you would recommend for deletion.)

ORDER OF PREFERENCE _____

RISK: NEGLIGIBLE _____ ACCEPTABLE _____ UNACCEPTABLE _____

SAVINGS POTENTIAL: PERSONNEL _____ MONETARY _____

COMMENTS:

5. Eliminate MAIT and related TDA authorizations, and rely on the existing technical assistance capabilities of support maintenance units/activities to provide MAIT services (para 1, App A-1, AR 750-51) when requested by units or directed by higher headquarters.

ORDER OF PREFERENCE _____

RISK: NEGLIGIBLE _____ ACCEPTABLE _____ UNACCEPTABLE _____

SAVINGS POTENTIAL: PERSONNEL _____ MONETARY _____

COMMENTS:

6. Continue the concept of MAIT as a standard technique for commanders' use in improving their maintenance programs (DA Pam 750-4), but eliminate MAIT authorized spaces and provide personnel from other existing manpower authorizations.

ORDER OF PREFERENCE _____

RISK: NEGLIGIBLE _____ ACCEPTABLE _____ UNACCEPTABLE _____

SAVINGS POTENTIAL: PERSONNEL _____ MONETARY _____

COMMENTS:

7. Are there other viable alternatives that you believe could accomplish the review objectives? If so, list them and assess their potential in relation to the alternatives listed above. (If more space is needed, attach additional pages.)

8. Do you believe that the effectiveness of the current MAIT program would be enhanced if the concept was revised to add an inspection responsibility? YES _____ NO _____

COMMENTS:

F

Section II Sample Size

1. Rationale:

(1) To compute an appropriate sample size, it was first necessary to determine the worldwide population of TOE and TDA support maintenance units/activities. This figure was placed at 200, although by actual count there are slightly more than this number in the worldwide population. Included in this figure, are the following types of units/activities:

- (a) Divisional maintenance battalions.
- (b) Separate brigade support battalions.
- (c) Nondivisional composite DS maintenance companies.
- (d) Nondivisional composite GS maintenance companies.
- (e) Aviation DS and GS maintenance companies and detachments.
- (f) Guided missile/rocket and missile maintenance companies and detachments.
- (g) Installation TDA DS/GS maintenance activities.

(2) The tables at Incl 1 were developed to portray a range of sample sizes for three different confidence levels (90%, 95% and 99%). The figures are based on the active Army universe (worldwide population) of 200 support maintenance units/activities. The formula* used to develop the table is:

$$n = \frac{Z^2 N}{Z^2 + \frac{Ne^2}{P(1-P)}}$$

Where:

n=Sample Size.

Z=Confidence Coefficient (1.64 for 90% confidence levels, 1.96 for 95%, and 2.58 for 99%).

N=Size of the Universe (200).

e=Measure of reliability (a predetermined, maximum percentage of error in the estimation).

P=Proportion of the Universe having the desired characteristic. This is an unknown quantity prior to the survey, however, "n" will be maximum when P is equal to 0.50. This value of P will provide a sample size large enough to insure that the recorded data has the desired reliability (e).

*Source: Taro Yamane, Statistics, An Introductory Analysis, Chapter 18, Harper & Row Publishers, 1964.

(3) A review of the tables shows that for a 90% confidence level, an "e" of + 10%, and a "P" of .50 the proper sample size is 50 units/activities. Using the same values of "e" and "P", but increasing the confidence level to 95%, would require an increase in the sample size to 65. Likewise, an increase in the confidence level to 99% would require a further increase in the sample size to 91. The right hand column of the first line of each table indicates the results of a sensitivity analysis. The analysis is based on the sample size indicated for an "e" of + 10% and was performed to determine what the impact would be on the measure of reliability (e), if only 80% of the sample responded to the survey. For a 90% confidence level, reliability would only be degraded an additional + 1.6%.

(4) After analysis, it was determined that a confidence level of 90% was adequate and a sample size of fifty (50) was selected as the best balance between data reliability and the size of the workload imposed on the Major Commands and the reporting units. Following are some of the factors that influenced this decision:

(a) A "P" of .50 must be used regardless of the desired level of confidence because it is not possible to predict the responses to the questionnaire.

(b) A Measure of reliability (e) of + 10% is considered appropriate because of the subjective nature of the responses for some of the key questions.

(c) The need to strike a balance between the desired level of confidence, data reliability, and workload imposed on the major commands.

b. USAR - The population of Area Maintenance Support Activities (AMSAs) is slightly less than the population of Active Army support maintenance units. However, the sample size drops very slowly with a decrease in population; for example, a decrease in population from 200 to 160 will decrease the size of the sample by only 3 (50 to 47).

For this reason the same table and rationale was used to obtain a USAR sample size of 50 AMSAs.

2. Sample Distribution.

a. Active Army - A proportionate distribution of the 50 support maintenance units/activities in the sample was made as follows:

(1) FORSCOM - 45% of the total population and a sample size of 22. Ideally, the following quantities and types of units would be represented in the sample:

(a) 2 Division maintenance battalions.

(b) 1 Separate Brigade support battalion.

(c) 6 Nondivisional Composite DS companies.

(d) 3 Nondivisional Composite GS companies.

(e) 3 Aircraft DS and GS Maintenance companies and/or detachments.

(f) 3 Guided missile/rocket and missile maintenance companies and/or detachments.

(g) 4 Installation TDA DS/GS maintenance activities.

(2) USAREUR - 35% of the total population and a sample size of 18. Ideally, the following quantities and types of units would be sampled:

(a) 2 Division maintenance battalions.

(b) 7 Nondivisional, Composite DS companies.

(c) 4 Nondivisional, Composite GS companies.

(d) 3 Guided missile/rocket and missile maintenance companies and/or detachments.

(e) 2 Aircraft maintenance companies.

(3) TRADOC - 10% of the total population and a sample size of 5. The TRADOC maintenance support activities included in the population were installation TDA DS/GS activities. Therefore, five of these TDA facilities would be selected for the survey.

(4) EIGHTH ARMY - 10% of the total population and a sample size of 5. Ideally, one of each of the following types of units would be sampled:

- (a) 2 Division maintenance battalion.
- (b) Nondivisional composite DS companies.
- (c) Nondivisional composite GS companies.
- (d) Guided missile maintenance company or rocket and missile support detachment.
- (e) Aircraft maintenance company.

b. FORSCOM-USAR:

The 50 AMSA sample should be proportionately distributed to the three numbered Armies in the Continental US (CONUSA).

1 Incl
as

90% CONFIDENCE LEVELS $z=1.64$ $N=200$: POPULATION

TABLE 1

← e →

P ↓	±1%	2	3	4	5	6	7	8	9	10	
.50	b	b	b	b	b	97	82	69	59	50	±11.6%: 40
.40	b	b	b	b	b	95	80	67	57	49	
.30	b	b	b	b	b	88	73	62	52	44	
.25	b	b	b	b	b	83	68	57	48	41	
.20	b	b	b	b	93	75	61	51	42	36	
.15	b	b	b	b	82	65	52	43	35	30	
.10	b	b	b	86	66	51	40	32	26	22	
.05	b	b	83	57	41	31	23	19	15	12	
.01	b	50	26	16	11	8	6	5	4	3	

TABLE 2

95% CONFIDENCE LEVELS $z=1.96$

P ↓	±1%	2	3	4	5	6	7	8	9	10	
.50	b	b	b	b	b	b	99	86	75	65	±11.7%: 52
.40	b	b	b	b	b	b	97	84	73	64	
.30	b	b	b	b	b	b	91	78	67	58	
.25	b	b	b	b	b	b	85	72	62	53	
.20	b	b	b	b	b	92	77	65	55	47	
.15	b	b	b	b	99	81	67	56	47	40	
.10	b	b	b	b	82	65	53	43	36	30	
.05	b	b	b	73	54	41	32	25	21	17	
.01	b	65	35	22	15	10	8	6	5	4	

TABLE 3

99% CONFIDENCE LEVELS $z=2.58$

P ↓	±1%	2	3	4	5	6	7	8	9	10	
.50	b	b	b	b	b	b	b	b	b	91	±12.1%: 73
.40	b	b	b	b	b	b	b	b	b	89	
.30	b	b	b	b	b	b	b	b	93	83	
.25	b	b	b	b	b	b	b	99	87	77	
.20	b	b	b	b	b	b	b	91	80	70	
.15	b	b	b	b	b	b	93	80	69	60	
.10	b	b	b	b	b	91	76	64	54	46	
.05	b	b	b	b	78	61	49	40	33	28	
.01	b	91	54	34	24	17	13	10	8	7	

b = IN THESE CASES 50% OF THE UNIVERSE IN THE
SAMPLE WILL PRODUCE THE REQUIRED ACCURACY.

G

APPENDIX G

REFERENCES

AR 11-14, Logistic Readiness

AR 700-4, Logistic Assistance Program

AR 750-1, Army Materiel Maintenance Concepts and Policies

AR 750-7, Installation Support Maintenance Activities

AR 750-51, Maintenance Assistance and Instruction Team
(MAIT) Program

DA PAM 750-4, Commander's Maintenance Evaluation Techniques

FM 9-59, Missile Support Unit Operations

FM 29-23, Direct Support Maintenance Battalion (Nondivisional)

FM 29-24, General Support Maintenance Operations

FM 29-30-1, Division Maintenance Battalion

FM 29-36, Aircraft Maintenance Support (Nondivisional)

FM 29-39, Marine Equipment Maintenance Support in the Army in
the Field

H

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Sixth US Army (AFKC-LG) Presidio of SF, CA 94129 (1)

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189th Maint Bn, Ft Bragg, NC 28307 (1)

782d Maint Bn, Ft Bragg, NC 28307 (1)

Ft Campbell (AFZB-DI) Ft Campbell, KY 42223 (1)

801st Maint Bn, Ft Campbell, KY 42223 (1)

561st Maint Bn, Ft Campbell, KY 42223 (1)

Ft Carson (DIO) Ft Carson, CO 80913 (1)

704th Maint Bn, Ft Carson, CO 80913 (1)

183d Maint Bn, Ft Carson, CO 80913 (1)

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