

REGRADED UNCLASSIFIED

APPENDIX 7

ARMY STUDY

5660

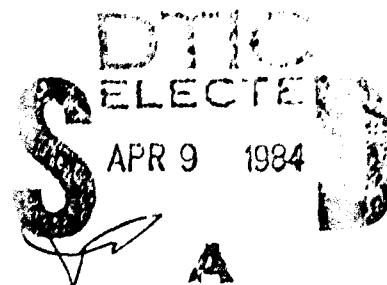
V. 8

OK

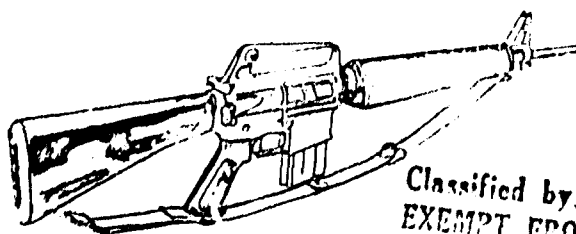
and better

AD A953117

REPORT OF THE M16 RIFLE REVIEW PANEL



The Army Library (ANRLR)
ATTN: Army Studies Section
Room 1A534, Pentagon
Washington, D. C. 20310



Classified by _____
EXEMPT FROM GENERAL DECLASSIFICATION
SCHEDULE OF EXECUTIVE ORDER 11652
EXEMPTION CATEGORY _____
DECLASSIFY ON _____

DTIC FILE COPY

This document has been approved
for public release and sale; its
distribution is unlimited.

1 JUNE 1968

M16 SURVEYS IN THE REPUBLIC OF VIETNAM

84 03 13 284

REGRADED UNCLASSIFIED



DEPARTMENT OF THE ARMY
OFFICE OF THE DEPUTY CHIEF OF STAFF
FOR RESEARCH, DEVELOPMENT, AND ACQUISITION
WASHINGTON, DC 20310

REPLY TO
ATTENTION OF

DAMA-WSW

1 FEB 1969

MEMORANDUM FOR THE RECORD

SUBJECT: Declassification Action - Report of the M16 Rifle Review Panel (C)
dated 1 June 1968. [REDACTED]

1. The Report on the M16 Rifle Review Panel dated 1 June 1968 was prepared for the Office of the Chief of Staff of the Army, by the Office of the Director of Weapons System Analysis. The Ground Combat Systems Division, Office of the Director of Weapons Systems, Office of the Deputy Chief of Staff for Research, Development and Acquisition, is the successor to the originator of the report.
2. This office has completed a review of subject report and appendices 1 through 11 and has determined classification of Confidential is no longer needed. The report is now Unclassified. Selected extracts of the report are at Enclosure 1.
3. Notification of this declassification will be forwarded to all distribution addressees and a declassified copy will be forwarded to the Defense Technical Information Center, Cameron Station, for file.

1 Encl
as


WILLIAM G. COOMER
Colonel, GS
Chief, Ground Combat Systems
Division



[REDACTED]

Appendix 7

M16 SURVEYS IN THE REPUBLIC OF VIETNAM

1 June 1968

[REDACTED] REGRADED UNCLASSIFIED

[REDACTED]

Appendix 7

M16 Surveys in the Republic of Vietnam

Table of Contents

	<u>Page</u>
A. Introduction	7-1
B. U.S. Army Weapons Command Surveys	7-2
C. Congressional Survey	7-8
D. Office of the Assistant Secretary of Defense Survey	7-11
E. Office of the Chief of Staff Survey	7-17
F. Analysis and Conclusions	7-24
G. Bibliography	7-30
Inclosures	
7-1 M16 Rifle Survey in the Republic of Vietnam	7-32



CONFIDENTIAL

Appendix 7

M16 SURVEYS IN THE REPUBLIC OF VIETNAM

A. Introduction

An urgent need for increased firepower in Vietnam was recognized by the Commander, U.S. Military Assistance Command, Vietnam, when he asked for 170,000 M16 rifles in December 1965.^{1/} The request was immediately approved and large numbers of M16's were introduced rapidly into Vietnam in early 1966.

No serious problems with the M16 were reported for several months, but in the fall of 1966 excessive stoppages and malfunctions began to be reported by units in U.S. Army, Vietnam (USARV). A preliminary investigation made by the Customer Assistance Office of the U.S. Army Materiel Command (USAMC), and technicians from the 1st Logistical Command and USARV determined that a lack of proper training and maintenance was the probable cause of the trouble.^{2/} USARV then took steps to improve the quality of M16 maintenance. Among these, USARV requested in early October 1966 that U.S. Army Weapons Command (USAWECOM) furnish technical training teams.

As reliability problems with the M16 continued to be reported, military concern increased and both public and Congressional interest was aroused. This concern and interest brought about a series of field surveys by various agencies and commands.

¹ Hq MACV Msg 42787, 060148Z Dec 65.

² Hq MACV Msg MACJ42-MS 46816, 230911Z Oct 66.

CONFIDENTIAL

CONFIDENTIAL

B. U.S. Army Weapons Command Surveys

On 11 October 1966 USARV requested technical assistance in support of the M16 from U.S. Army Weapons Command,^{3/} and three surveys were made: one from October 1965 to December 1966, another in January - February 1967, and the third in April - May 1967.

October - December 1966

The first USAWECOM survey team stayed in Vietnam from 21 October 1965 until 2 December 1966.^{4/} While the primary purpose of the team^{5/} was to provide maintenance instruction to a nucleus of officers and men from each brigade, who would then teach their own units, direct support organizations were also instructed.

The team taught maintenance in every major USARV unit except the 1st Air Cavalry Division.^{6/} Students brought their own weapons, magazines, ammunition, cleaning materials, and accessories to class. A detailed inspection of each student's equipment revealed that with the exception of the weapons of the 1st Brigade, 101st Airborne Division, the 173d Airborne Brigade, and the 5th Special Forces, all

3

Hq USARV Msg AVHGD-MD 29518, 110206Z, Oct 66.

4 Ltr, PM-RS, USAMC, 15 Dec 66, Subj: Liaison Visit to SEA in Reference to the XM16E1 Rifle. All information about this USAWECOM survey is from this 15 Dec 66 report unless otherwise indicated.

5 The team, headed by Lieutenant Colonel Herbert P. Underwood of the Office of Project Manager, Rifles, had seven other members, four from USAWECOM and three from Colt's Firearms Division of Colt Industries.

6 The 1st Air Cavalry Division had stated that it was having no trouble with the rifle, and asked that instruction be given only to the small arms shop of its maintenance battalion.

CONFIDENTIAL

CONFIDENTIAL

the weapons were poorly maintained. The most common faults observed were:

Excessive oil on the weapon;

Carbon buildup in the chamber, bolt, and bolt carrier group;

Overloading of magazines with 21 rounds of ammunition;

Oil and grit inside magazines (frequently accompanied by lubricated ammunition); and

Failure to replace worn or broken extractors and extractor springs.

Other deficiencies noted frequently were shortages of technical manuals, cleaning equipment, and repair parts, and a general lack of knowledge of the M16 rifle among officers and noncommissioned officers.

The 1st Brigade, 101st Airborne Division, the 173d Airborne Brigade, and the 5th Special Forces were the only units surveyed that had received training with the M16 for a significant period of time prior to deployment to Vietnam. Men in other units had been given training in marksmanship but little or no instruction in care and cleaning of the rifle.

The survey team verified the existence of a malfunction problem and supported the findings of the preliminary investigation by concluding that the malfunctions were primarily due to inadequate cleaning, improper lubrication, and the continued use of worn parts. The team believed, further, that poor rifle maintenance was itself

CONFIDENTIAL

CONFIDENTIAL

the result of insufficient maintenance training; a shortage of technical manuals, repair parts, and cleaning equipment; and a lack of knowledgeable officers and noncommissioned officers. As a result of the technical team's visit the following actions were taken within USARV:

Instruction material on the care and cleaning of the M16 was published and distributed at company or rifleman level.^{7/}

Emphasis was placed on the need for adequate command supervision of maintenance programs.^{8/}

New troops were required to receive a minimum of two hours M16 maintenance training during their first week in Vietnam.

Immediate USARV inspection and repair of all M16's on hand by divisional direct support maintenance teams and elements of the 1st Logistical Command was directed.

Follow-up inspections by teams from the 1st Logistical Command were directed to check on the effectiveness of maintenance training within USARV.

⁷ USAWECOM Ltr, 25 Oct 66. User Care of the M16; USARV Combat Lessons Learned, 28 Oct 66, M16 Care and Cleaning; USARV Training Circular 5, 20 Nov 66; USARV Pamphlet 750-5, 14 Dec 66; and extracts from several PS Magazines.

⁸ COMUSMACV Msg, MACJ42-MS 46816, 230911Z Oct 66; USARV Msg AVHGD-MD 30677, 181215Z Oct 66.

CONFIDENTIAL

CONFIDENTIAL

January - February 1967

A follow-up of the first survey and instruction visit was made by USAWECOM from 17 January through 20 February 1967.^{9/}

No trip report, after action report, or other memoranda exist, and therefore no comment on this survey can be made.

April - May 1967

On 17 April 1967, Headquarters, USARV, requested technical assistance with the XM148 grenade launcher.^{10/} A technical team was sent in response to this request.^{11/} The primary purpose of the survey was to evaluate and correct problems with the XM148 grenade launcher, but the team also examined large numbers of M16 rifles in the hands of troops to determine the status of maintenance, the availability of cleaning materials, and the condition of rifle barrels and chambers.^{12/} The team was in Vietnam

⁹ The team had five members: its team chief, Major Emanuel Podurgal, who was from the Office of the Project Manager, Rifles, two representatives from USAWECOM, one from U.S. Continental Army Command (USCONARC), and one from Colt's Firearms Division.

¹⁰ Ltr, PM-RS, USAMC, 25 May 67, p.1.

¹¹ This team consisted of its chief, Major Podurgal, from the Office of the Project Manager, Rifles, Mr. Wesley B. Eastis from USAWECOM, and Mr. Kanamitsu Ito, Colt's Firearms Division

¹² Ltr, PM-RS, USAMC, 25 May 67, Subj: After Action Report - AMCPM-RS Team Visit to Vietnam, All information regarding this survey is from this report.

CONFIDENTIAL

CONFIDENTIAL

from 27 April through 18 May 1967, and during this time visited the two Marine divisions and every Army division and separate brigade (with the exception of Task Force Orgeon),^{13/} observing rifles, checking maintenance shops, and conducting interviews.

M16 rifles were inspected by the survey team in troop units and maintenance repair shops throughout Vietnam. The findings of this survey were:

No major difficulties were being experienced with the M16. There was still a problem with the extractor, but the frequency of malfunction had been reduced through improved care and cleaning.

Men expressed satisfaction with the M16 and agreed that it was superior to the M14 in the Vietnam environment.

About 50 percent of the M16's inspected in maintenance shops showed signs of chamber deterioration due to pitting.^{14/}

Accumulation of thick deposits of copper fouling in rifle bores was often observed. This condition was worse in units which habitually fired a large volume of tracer ammunition.

¹³ Why Task Force Oregon was not visited is unknown.

¹⁴ These weapons, which had been turned in for repair, however, may not be generally representative of those in the hands of troops.

CONFIDENTIAL

CONFIDENTIAL

The survey team concluded that the major problem was deterioration of rifle barrels caused by chamber pitting and the accumulation of copper fouling. It estimated that approximately 10 percent of the M16's in Vietnam would require a barrel replacement every three months. To reduce the rate of barrel deterioration, the team recommended speeding up deliveries of the recently adopted improved lubricant (MIL-L-46000A) LSA and chrome plating the rifle chambers.

CONFIDENTIAL

CONFIDENTIAL

C. Congressional Survey

On 2 May 1967, the House Committee on Armed Services appointed a special subcommittee to inquire into the M16 rifle program, naming Congressman Richard H. Ichord chairman and Congressmen Speedy O. Long and William G. Bray members. During their investigation the members of the subcommittee, accompanied by three special assistants and one military escort, visited Vietnam from 3 to 10 June 1967. After briefings at both Headquarters, MACV, and Headquarters, USARV, they visited the two Marine divisions and elements of five Army divisions. While in the field, they interviewed commanders, logistic support and training personnel, and soldiers and marines who had used the M16 in combat. Although some documents pertinent to the rifle program were collected, most of the information obtained by this survey came from personal interviews with men in combat units who were armed with the M16. Each of the three congressmen and three special assistants participated, and while no accurate count of the actual number of men interviewed is available, one of the special assistants, Colonel Edward B. Crossman (Ret.), estimated that he personally talked to more than 300 men.

No official report on this survey was published; the findings which follow are based upon observations by Colonel Crossman and the team escort, Colonel Paul B. Henley.^{15/}

¹⁵ Ltr, Col Crossman (Ret) to Mr Ichord, 16 Jun 67, Subj: Report of Investigations of the M16A1 Rifle in Combat.
Memo, USARV for CINCUSARPAC and DA, 15 Jun 67, Report of Congressional Visit (RCS SAOSA-9)

CONFIDENTIAL

CONFIDENTIAL

At least 50 percent of the men interviewed had encountered serious malfunctions with the M16, most of them failures to extract.

The bolt closure device was used frequently enough to justify the Army's insistence upon this product improvement.

Extractors and extractor springs required replacement fairly often.

While there was no general shortage of cleaning and preserving equipment, many individuals were short of the critical cleaning rod and chamber brush.

Approximately 50 percent of the men preferred the M14. Most of the men who wanted the M14 felt that it was a more reliable rifle and were concerned about the M16's possible malfunctions in combat.

The M16's light weight, full-automatic fire capability, handiness, ease of firing, and light ammunition weight were all factors mentioned in its favor.

A large percentage of the men appeared to be shooting their rifles in combat, in marked contrast to experience in Korea.

Many cases of a stuck or jammed selector lever were reported.

It was not possible to correlate kind of lubricant or method of lubrication with malfunctions, nor was such correlation possible

CONFIDENTIAL

CONFIDENTIAL

with ammunition of a particular type or make.

Colonel Crossman recommended in his letter to Mr Ichord that an immediate investigation be conducted of ammunition design and manufacture, rifle design and manufacture, and maintenance in the field to determine the cause and cure for failures to extract. He also recommended modification of the selector lever and related parts to eliminate any tendency to stick.

CONFIDENTIAL

CONFIDENTIAL

D. Office of the Assistant Secretary of Defense Survey

The Directorate for Inspection Services (DINS), Office of the Assistant Secretary of Defense (Administration), conducted a field survey in Vietnam from 22 August to 6 September 1967 to examine the performance of the M16 rifle.^{16/} Findings were to be compared with a technical evaluation of the M16 already completed by the Director of Defense Research and Engineering, who would then submit to the Deputy Secretary of Defense a final report stating whether any major deficiencies existed in the weapons and recommending corrective action accordingly.

Emphasis was placed on identifying corrective actions taken or required to improve the basic weapon and its accessories, the maintenance and logistic support thereof, and individual M16 rifle training (CONUS and SVN). The effectiveness of supervision of the chain of command was examined with respect to implementing corrective actions down to the individual rifleman. The performance and acceptability of the M16 was examined under a variety of combat conditions, terrain and weather. Special interest examinations were made with respect to additional field testing of the weapon in SVN, reporting procedures for performance data, and the effects of varying operating tactics (modes of fire) on reliability. Finally, suggestions for additional improvements to the rifle and accessories were solicited.^{17/}

The survey team questionnaire was completed by 1,585 men armed with the M16. The following is a summary of responses to the questionnaire:^{18/}

¹⁶ This team of six officers was headed by Major General Robert W. Strong, USAF.

¹⁷ Directorate for Inspection Services, OASD (Administration), 30 Sep 67, M16 Rifle Survey in South Vietnam, p.1.

¹⁸ Directorate for Inspection Services, OASD (Administration), undated, M16 Rifle Survey in South Vietnam, pp 17-18. (DINS, OASD (Administration) published two reports, the first undated and the subsequent one dated 30 Sep 67).

CONFIDENTIAL

	<u>Yes</u>	<u>No</u>	<u>UNKNOWN N/A</u>
1. Have you used the M16 rifle in combat operations?	83%	17%	
2. Has the M16 rifle performed well for you in Vietnam?	85%	13%	2%
3. Do you like the M16 as an individual weapon?	87%	12%	1%
4. Do you clean your M16 daily?	71%	28%	1%
5. Did you receive training on firing the M16 rifle after arrival in Vietnam?	82%	17%	1%
6. Did you zero your individual weapon in Vietnam?	77%	20%	3%
7. Have you had stoppage(s) with your rifle during firing? ^{19/}			
8. Were you able to clear the stoppage and continue to fire?	72%	8%	20%
9. Do you carry a cleaning kit for your M16 rifle?	69%	29%	2%
10. Are you able to get cleaning material for your rifle in your unit?	82%	16%	2%
11. Have you received special training in the maintenance of the M16 rifle under field conditions?	65%	32%	3%
12. Does your unit have a daily weapons inspection by the chain of command?	44%	53%	3%

^{19/} None, 17 percent; few, 70 percent; many (more than ten), 10 percent; and no answer, 3 percent.

CONFIDENTIAL

CONFIDENTIAL

	<u>Yes</u>	<u>No</u>	<u>UNKNOWN N/A</u>
13. Have you received the new lubricant for the M16 rifle?	54%	44%	2%
14. Has the new lubricant improved the performance of your M16? (If you have used it)	66%		34%
15. Have you been told to keep your ammunition clean?	96%	4%	
16. Do you clean your ammunition and magazines daily?	29%	69%	2%
17. Would it help to have all magazines preloaded in disposable sealed magazines?	86%	11%	3%
18. Do you usually load 20 rounds in your magazines?	16%	83%	1%
19. If you usually load less than 20 rounds, how many do you load? <u>20/</u>			
20. Have you used the BOLT ASSIST to reduce stoppage?	44%	42%	14%
21. In combat have you usually fired the M16 fully automatic?	38%	51%	11%

The following OSD field survey findings were based upon a synthesis of the data collected from the questionnaire and from more than 600 personal interviews with commanders, maintenance personnel, and riflemen: 21/

20/ 20 rounds, 16 percent; 19 rounds, 10 percent; 18 rounds, 67 percent; 17 rounds, 6 percent; and 15 rounds, 1 percent.

21 Directorate for Inspection Services, OASD (Administration), 30 Sep 67, M16 Rifle Field Survey Vietnam, pp. 13-15.

CONFIDENTIAL

Training

1. In general, adequate training policy, guidance, and directives have been published by the separate services and their subordinate commands in CONUS to remedy the reported deficiencies contributing to M16 malfunctions in South Vietnam.

2. Training in CONUS could be improved by additional emphasis on familiarization firing, use of improved cleaning techniques, rifle disassembly and assembly, and application of procedures to reduce stoppages (immediate action).

3. The functions of rifle inspection and maintenance thereof in the field would be improved by increased CONUS training of company grade officers and noncommissioned officers in the nomenclature, functioning, care, and cleaning of the M16.

4. Adequate policy, guidance, and directives have been published by MACV and major subordinate headquarters prescribing specific training in the familiarization, care, cleaning, maintenance, and zero firing of the M16 rifle. These directives are available at all echelons of command in South Vietnam as a basis for effective training programs for individual combat riflemen.

5. The interview of individual riflemen in South Vietnam disclosed that compliance with MACV training directives had not been achieved to the desired degree. This was caused by some failure to communicate to the operating units, down to the individual rifleman, the training directives issued by MACV and major subordinate commands. There was also some failure in the chain of command to follow up the implementation of the directives in order to achieve compliance.

Support

6. CONUS support of the M16 rifle was found to be adequate in every respect and improving. Adequate quantities of repair parts, cleaning materials, and equipment were available or in supply channels to meet all requirements.

CONFIDENTIAL

CONFIDENTIAL

7. MACV has directed appropriate action to insure the availability to operational units of adequate supplies, repair parts, and cleaning equipment. However, the individual rifleman has not consistently received these items on a routine basis even though available at direct support echelons.

8. The principal direct cause of the stoppages of the M16 rifle in South Vietnam has been the failure to extract the spent case. In turn this is caused by dirty or corroded cartridges, and improperly maintained chambers.

9. Adequate regularly conducted inspections of the M16 rifle were not being accomplished in many units. In the majority of units the inspection of magazines and ammunition on a regular basis was rarely accomplished.

10. Almost one hundred percent issue of the new LSA lubricant had just been completed to combat units at the time of the field survey. More than one half of those surveyed had used it in the field; and these reported improvement over previous lubricants. Noteworthy is the report of its rust and water repellant characteristics when used by units deployed in wet and muddy terrain.

11. Out of millions of rounds of 5.56mm ammunition expended, very few ammunition malfunctions were reported. Where rifles were given proper care, individual riflemen were unable to discern any difference in performance or carbon build-up between ammunition loaded with either ball or IMR propellant from different manufacturers.

12. The new buffer for the M16 had been issued to all maneuver elements. Action had been taken to accomplish retrofit and had been completed in the majority of these elements. Issue to all other units had been programmed and was in progress with scheduled completion during December 1967. In those units in which retrofit had been completed, riflemen surveyed reported that it had improved overall performance of their weapon.

13. No determination could be made of the effect or the impact on the performance of the M16 rifle by the

CONFIDENTIAL

CONFIDENTIAL

substitution of the chrome chambered barrel due to the small number of rifles in Vietnam so modified. Soonest determination could be made of the effect of this modification if it is issued on a priority basis to all U.S. maneuver units in South Vietnam.

Current Problems

14. There are no major problems being experienced in the field with the M16 rifle at this time that have not been identified and for which corrective action had not been instituted. There are minor problems remaining which are within the purview of the product improvement program for the weapon.

Performance and Acceptability

15. The over-all performance of the M16 rifle in Vietnam has had the revolutionary impact of dramatic improvement of the combat capability of U.S. ground maneuver units in all types of operations. This is in spite of reliability problems caused by its accelerated issue and employment on a large scale, and the less than adequate preparation, training and discipline of U.S. forces for its support and maintenance.

16. The general performance of the M16 rifle had been satisfactory in Vietnam. Since June 1967, it has improved steadily as a result of increased training and discipline of the rifleman in the care, cleaning and maintenance of the weapon.

17. The great preponderance of riflemen, their commanders and support personnel accept the M16 as the proper infantry rifle for use throughout Vietnam and like it as an individual weapon. Only thirty-eight individuals out of the more than 2,100 surveyed stated they would exchange their M16 rifle for another weapon. Of this group, thirty-five wanted the shorter, lighter version of the M16--the CAR-15 (XM177).

CONFIDENTIAL

CONFIDENTIAL

E. Office of the Chief of Staff Survey

Early in November of 1967, the Chief of Staff directed a review of the entire M16 rifle program.^{22/} On 8 November the M16 Rifle Review Panel was convened within the Office of the Assistant Vice Chief of Staff and instructed to prepare a comprehensive history and evaluation of the M16 program, recommending further action as required. This panel then conducted a field survey of men armed with the M16 in Vietnam during the period 24 January through 5 February 1968 to collect data on the reliability, status of training, status of maintenance, and general overall effectiveness of the M16-M16A1 rifle system.^{23/} Specific objectives of the field survey were to:

1. Determine the extent of corrective action previously taken to improve the reliability of the M16 rifle system.
2. Identify current problems experienced with the M16 in the field.
3. Evaluate the general performance and acceptability of the system under combat conditions.

All major Army units and one Marine division were surveyed. The survey team used two means of collecting data: personal interviews and a questionnaire. The interviews were with men whose

²² CSM 67-436, 8 Nov 67, Subj: The M16 Rifle Program.

²³ This team of six was headed by Mr John A. Locherd from the Weapon Systems Analysis Directorate of the Office of the Chief of Staff, Army.

CONFIDENTIAL

CONFIDENTIAL

primary duties involved either rifle training or the logistical support of the rifle system, and with members of the chain of command within tactical units. The questionnaire was completed by 2,021 men armed with the M16.

The findings of the survey are summarized below. (For detailed discussion see Inclosure 7-1.)

Training.

1. A total of 23 percent of all men questioned who came direct from the continental United States indicated that they had received no formal M16 training prior to their arrival in Vietnam. Of the men from all other theaters, 73 percent stated they had not received such training before arrival.

2. Although 24 percent of the men indicated they had not received any M16 rifle training before arrival in Vietnam, there is good reason to believe that this problem will be reduced significantly in the near future. Analysis of survey data reveals a pronounced trend toward reduction of the numbers of men slipping through without M16 training. Only 4 percent of the men deploying during October 1967 - January 1968, indicated they were untrained.

3. Adequate training policies, guidance, and directives have been published by Headquarters, MACV, and Headquarters, USARV. These directives were not consistently available among units conducting replacement training at the time of the survey.

4. M16 training observed at divisional replacement centers did not always comply with MACV or USARV training directives.

CONFIDENTIAL

CONFIDENTIAL

5. USARV M16 training policies and procedures did not distinguish among replacements by theater source or by the amount of rifle training men had received before their arrival in Vietnam.

6. 28 percent of the men surveyed said they had not received formal M16 rifle training in Vietnam. The number of men who had received M16 training in Vietnam varied appreciably from one major unit to another.

7. Many unit armorers lacked formal training and adequate knowledge of M16 rifle maintenance. As a result of this failing, rifles that properly should have been repaired by the unit armorer (those with a broken extractor, for example) had to be turned in by the riflemen and repaired at a higher echelon. Other unit armorer duties, such as periodic lubrication of detent springs, were often neglected.

Maintenance and Supply

8. Adequate quantities of repair parts and cleaning materials and equipment were found to be generally available in Vietnam. However, unbalanced distribution among depots occasionally resulted in temporary shortages which did affect using units.

9. Cleaning materials such as the cleaning rod, lubricant, brushes, and patches, were generally available to the rifleman and he usually carried most items with him in the field. Pipe cleaners and bore cleaners, however, were often not available.

CONFIDENTIAL

CONFIDENTIAL

10. Men tended to clean their rifles two to three times more frequently than they cleaned their magazines and ammunition. This tendency was discouraged by unit maintenance inspections, which stressed care of the rifle and failed to emphasize the importance of properly maintained magazines and ammunition.

11. Unit armorers frequently did not accompany units into the field, and as a consequence field repair of weapons was neglected.

12. The buffer retrofit program was not complete at the time of the survey, although units within USARV had reported 100 percent completion of this program during November 1967. 84 percent of those surveyed indicated they had new buffers.

Reliability and Acceptability

13. Failures to extract still occurred with enough frequency to reduce confidence in the M16. Among the men surveyed, 35 percent had experienced at least one such failure within the previous four months. The average number of reported failures to extract was 4.8 per man reporting this type malfunction.

14. Attempts to establish a statistically significant correlation between failures to extract and such possible causes as poor cleaning habits, overlubrication, and the user's lack of mechanical training were unsuccessful. Inability to statistically isolate the causative factors from field survey data suggests that failures to extract are not caused exclusively by user abuse.

CONFIDENTIAL

CONFIDENTIAL

15. Among those surveyed, 42 percent indicated that they had experienced at least one failure to lock. Of those reporting this type failure, the average number of failures was 5.3.

16. Half of the men reported having used the bolt assist and 69 percent indicated that use of the bolt assist had cleared the malfunction.

17. When asked what weapon they would prefer to carry in combat, 85 percent of the men wanted either the M16 or its sub-machine gun version, the XM177.

18. In general, men armed with the M16 in Vietnam rated this rifle's performance high. Most frequently lauded were its light weight and its firepower. However, many men entertained some misgivings about the M16's reliability (33 percent made adverse comments on either the rifle's sensitivity or its reliability).

Product Improvements

19. Although the chrome plated chamber has not been fielded long enough to permit adequate evaluation, many men who had recently received an M16 with a chrome chamber found the rifle significantly more reliable than earlier models they had used.

20. The desire for magazines of greater capacity than 20 rounds was frequently expressed.

21. On-weapon storage capacity for cleaning materials is required. At the time of the survey, there was no means satisfactory to the rifleman for carrying these materials.

CONFIDENTIAL

CONFIDENTIAL

General Usage

22. 83 percent of all men surveyed indicated they did test fire. The manner and frequency of test firing varied appreciably among units. A greater percentage of leaders, from fire team to platoon level, test fired than men within the rifle squads.

23. Within the theater, 10 percent of the men armed with the M16 had never zeroed their rifles. About one-fourth of the men zeroed when their weapons were issued at the beginning of their tours and never thereafter, while about half zeroed quarterly. USARV quarterly training requirements included zeroing of rifles.

24. Ammunition loads carried by the men were generally excessive, although the loads varied greatly. Individual loads ranged from 7 to over 40 magazines. In terms of actual useage, the average individual ammunition load carried was from 39 to 41 normal consumption days of ammunition.

25. Most men loaded 18 rounds in their magazines; the theater average was 18.3 rounds.

26. The theater consumption ratio of ball to tracer ammunition for men armed with the M16 was 4:1. This ratio varied appreciably among units (unit averages were a product of even wider differences among individuals, with many men firing 100 percent tracer).

CONFIDENTIAL

CONFIDENTIAL

27. Men estimated that they used the automatic mode of fire about 34 percent of the time and that about 60 percent of their automatic fire was expended in short bursts.

CONFIDENTIAL

CONFIDENTIAL

F. Analysis and Conclusions

In response to General William C. Westmoreland's request of December 1965, the M16 was fielded in Vietnam as rapidly as the rifles became available. The transition from the M14 to the M16 was accomplished so swiftly that most of the Army's combat forces were equipped with the M16 after they arrived in Vietnam, or so shortly before they left the United States that formal M16 training prior to departure was limited. This accelerated introduction of the M16 into Vietnam, along with shortages of cleaning materials and repair parts, and generally inadequate knowledge of the weapon on the part of the chain of command led to poor maintenance in the early stages of the rifle's use in Vietnam.

In the fall of 1966 excessive malfunctions^{24/} were reported. The first surveys concluded that insufficient training of men in the care and maintenance of the M16 was the basic cause of the high malfunction rate, and a training program designed to increase care and cleaning proficiency was immediately begun. Subsequent surveys found M16 maintenance significantly improved and the malfunction problem reduced.

Despite improved care, malfunctions continued to occur with enough frequency to warrant concern. The Congressional survey in June 1967 found user acceptability relatively low. At that time

²⁴ Primarily failure to extract the spent cartridge.

CONFIDENTIAL

CONFIDENTIAL

about one-half of the riflemen wished to exchange their M16's for M14's, chiefly because they had misgivings about the M16's reliability. This attitude toward the M16 was not entirely the product of a bad press, or rumors, since many men indicated that they had personally experienced one or more failures to extract while they were using the rifle in combat.

In the fall of 1967 the Office of the Secretary of Defense field survey found acceptability unusually high. ^{25/} "The M16 has achieved wide acceptance throughout Vietnam. Only 38 individuals of all those surveyed (2,100) would like to exchange their M16 for another weapon. Of this group 35 wanted the shorter, lighter version of the M16 -- the CAR15." (XM177) This acceptability figure is misleading since the OSD survey questionnaire did not ask the men which weapon they preferred. ^{26/} A better picture can be gained from responses to the OSD question: Do you like the M16? 12 percent of the men answered, "No."

Findings of the 1968 survey conducted by the Office of the Chief of Staff are basically consistent with the other surveys. These earlier surveys stressed the urgent need for improved care of the M16 by the rifleman. Emphasis upon maintenance has reduced the number of M16 malfunctions but has not eliminated the reliability

²⁵ Directorate of Inspection Services, OASD(A), 30 Sep 67, M16 Rifle Field Survey in South Vietnam, p.15.

²⁶ Men could write in comments on weapon preference but were not required to do so.

CONFIDENTIAL

CONFIDENTIAL

problem. It is clear that emphasis should be shifted to an examination of the entire rifle and ammunition system.

The following detailed conclusions are based upon the most recent Vietnam survey, the January-February 1968 visit of the M16 Rifle Review Panel.

Policies and directives throughout Vietnam which govern M16 training, supply, maintenance, and user care and cleaning were found generally adequate in January-February 1968. Continued command supervision is required to improve compliance with these directives.

With the exception of Vietnam-oriented advanced individual training for infantrymen, all M16 training given to men before their deployment to Vietnam should be improved. Many leaders have been hampered in meeting their supervisory responsibilities by insufficient knowledge of the M16. Frequently, riflemen receive either poor M16 training or none before they arrive in Vietnam. ^{27/} In order to improve predeployment rifle training the following measure should be taken:

1. Accelerate introduction of M16 rifles and M16 training for all men in basic combat training at the earliest possible date.
2. Increase the amount of M16 instruction for supervisors in all schools producing junior leaders, for example, NCO refresher courses, officer candidate schools, and basic branch courses.

²⁷ Recently improved clearance procedures within the continental United States have reduced the numbers of men who deploy without rifle training.

CONFIDENTIAL

CONFIDENTIAL

3. Establish procedures to insure receipt of M16 training for men on intertheater transfer to Vietnam.

USARV requires all replacements to complete the same M16 training program. Since many untrained replacements have arrived in Vietnam, it is appropriate that two training programs be operated: the present one for most men and another and more intensive one for the totally untrained.

Unit armorers often lacked formal training and adequate knowledge of M16 rifle maintenance. Provision should therefore be made for additional training for armorers, perhaps through divisional schools or mobile training teams from the 1st Logistical Command.

Men tend to clean their rifles two to three times more frequently than they clean their magazines, yet corroded or dirty ammunition and defective magazines seriously reduce rifle effectiveness. Unit maintenance inspections should emphasize care of the entire rifle system.

Adequate quantities of repair parts and cleaning materials and equipment were found to be generally available in Vietnam. However, unbalanced distribution among depots has occasionally resulted in temporary shortages which have affected rifle maintenance. The causes for this maldistribution should be identified and then procedures to achieve optimum distribution instituted.

CONFIDENTIAL

CONFIDENTIAL

Although individuals usually test fired their rifles, the nature and frequency of such firing varies widely among and within units. Test firing, when properly performed, will increase weapon reliability, and significant improvement in rifle effectiveness will be achieved by:

1. Isolation of defective rifles and magazines through periodic test firing by individuals in a combat zone. The Project Manager, Rifles, should develop a standard test firing procedure for this purpose.

2. Continued command emphasis upon the importance of frequent and properly conducted test firing.

Greater zeroing effort is required, particularly within maneuver battalions. The average frequency of zeroing was every 4.96 months and 10 percent of the men had never zeroed their rifles. Zeroing increases both hit probability and user confidence in the rifle. It also stimulates the appropriate use of aimed fire. Verification of zero should be integrated with test firing, since any object that can visibly register hits may serve as a target.

Current performance and acceptability data indicate:

1. The M16's high rate of lethal fire and light weight are qualities particularly suitable for the war in Vietnam.

2. Failures to extract still occur with enough frequency to reduce confidence in the M16, and these failures have several

CONFIDENTIAL

CONFIDENTIAL

causes. Besides inadequate maintenance, such failures may result from pitted chambers, from defective parts, or from faulty control of ammunition case hardness. Consequently, both continued product improvement and user effort are necessary elements within any program to reduce the M16 reliability problem.

3. Introduction of the chromed chamber appears to have reduced the number of failures to extract, but this improvement has not been fielded long enough to permit adequate evaluation.

4. Most men armed with the M16 in Vietnam rated this rifle's performance high; however, many men entertained some misgivings about the M16's reliability. When asked which weapon they preferred to carry in combat, 85 percent of the men indicated that they wanted either the M16 or its submachine gun version, the XM177.^{28/}

5. A field malfunction reporting system should be established throughout USARV. While such a system does not produce reliability data with laboratory precision, it does permit analysis of malfunction trends and would contribute to further improvement in the reliability of the M16.

²⁸ The M14 was preferred by 15 percent, while less than one percent wished to carry either the Stoner rifle, the AK-47, the carbine, or a pistol.

CONFIDENTIAL

CONFIDENTIAL

G. Bibliography

Headquarters, MACV Message 42787, 060148Z December 1965.

Headquarters, USARV Message AVHGD-MD 29518, 110206Z October 1966.

Headquarters, USARV, Message AVHGD-MD 30677, 181215Z October 1966.

Headquarters, MACV Message MACJ42-MS 46816, 230911Z October 1966.

USAWECOM Letter, 25 October 1966, User Care of the M16.

USARV Combat Lessons Learned, 28 October 1966, M16 Care and Cleaning.

USARV Training Circular 5, 20 November 1966.

USARV Pamphlet 750-5, 14 December 1966, The XM16E1 Rifle.

Letter, Project Manager, Rifles, U.S. Army Materiel Command, 15 December 1966, Liaison Visit to SEA in Reference to the XM16E1 Rifle.

Letter, Project Manager, Rifles, U.S. Army Materiel Command, 25 May 1967, After Action Report - AMCPM-RS Team Visit to Vietnam.

Headquarters, USARV Memorandum for Commander in Chief, U.S. Army, Pacific, and Department of the Army, 15 June 1967, Report of Congressional Visit (RCS SAOSA-9), with Tabs A through L.

Letter, Colonel Edward B. Crossman (Ret.) to Mr. Richard H. Ichord, 16 June 1967, Report of Investigation of the M16A1 Rifle in Combat.

Report, Directorate for Inspection Services, Office of the Assistant Secretary of Defense (Administration), undated, M16 Rifle Field Survey in South Vietnam.

Report, Directorate for Inspection Services, Office of the Assistant Secretary of Defense (Administration), 30 September 1967, M16 Rifle Field Survey in South Vietnam.

CONFIDENTIAL

CONFIDENTIAL

Secretary of Defense Memorandum for the Secretary of the
Army, 18 October 1967, Evaluation and Survey of the M16 Rifle, with
two attachments.

7-31

CONFIDENTIAL

CONFIDENTIAL

**M16 RIFLE SURVEY
IN THE
REPUBLIC OF VIETNAM**

24 JANUARY - 5 FEBRUARY 1968

3 MAY 1968

**PREPARED BY:
OFFICE CHIEF OF STAFF
OFFICE DIRECTOR OF WEAPON SYSTEMS ANALYSIS
WASHINGTON, D. C. 20310**

CONFIDENTIAL

Inclosure 7-1

CONFIDENTIAL

M16 RIFLE SURVEY IN THE REPUBLIC OF VIETNAM

THE PURPOSE OF THIS DOCUMENT IS TO PROVIDE INFORMATION TO ADDRESSEES. REPRODUCTION OF THIS REPORT IN WHOLE IS PROHIBITED. RECIPIENTS ARE AUTHORIZED TO EXTRACT AND REPRODUCE, AS NECESSARY, THOSE PORTIONS OF THE REPORT WHICH ARE DIRECTLY RELATED TO THEIR RESPONSIBILITIES.

DISTRIBUTION

SA	1	CG USCONARC	2
USofA	1	CG USAIS	1
GC	1	CG USACDC	2
Co fSA	1	CG USACDCCAG	1
OAVCofSA	10	CG USACDCEC	1
DCSPER	1	CO USACDC Infantry Agency	1
DCSOPS	1	CG USAMC	2
DCSLOG	1	CG USAWECOM	1
ACSFOR	1	PM Rifles	2
CRD	1	CG USAMUCOM	1
CLL	1	CG USATECOM	1
COMUSMACV	1	President USAIB	1
CG USARV	3		
CINCUSARPAC	1		41

CONFIDENTIAL

CONFIDENTIAL

M16 Rifle Survey in the Republic of Vietnam

Table of Contents

Section	Page
I. Abstract	1
II. Purpose	2
III. Survey Procedures	3
IV. Questionnaire	6
V. General Location of Units Surveyed	10
VI. Survey Team Composition	11
VII. Itinerary Within Vietnam (24 January - 5 February 1968)	12
VIII. Analysis of Survey Data	13
IX. Conclusions	37
X. Frequency Distributions of Responses to Questionnaire	41
XI. Matrix Plots	88
Tables	
1. Cleaning Frequency and Unit Inspections by Unit	16
2. Lubrication of Ammunition, Test Firing and Buffer Retrofit by Unit	17
3. Ammunition Consumption and M16 Training in Vietnam by Unit	18
4. Zeroing History by Unit	19
5. Failure to Extract by Unit	20

CONFIDENTIAL

CONFIDENTIAL

	Page
6. M16 Training BEFORE Vietnam by Theater Source	24
7. Theater Source by MOS for those without M16 Training BEFORE Vietnam	24
8. Theater Source by Duty Position for those without M16 Training BEFORE Vietnam	25
9. Theater Source by Grade for those without M16 Training BEFORE Vietnam	25
10. Receipt of M16 Training BEFORE Vietnam by Deployment Month	26
11. Test Firing by Duty Position	33
12. Test Firing by Type Unit	33
13. Zeroing History by Duty Position	34
14. Zeroing History by Type Unit	34
15. Zeroing History for those having Twelve Months in Vietnam	35
16. Ammunition Load by Type Unit	36

CONFIDENTIAL

CONFIDENTIAL

I. Abstract

A field survey of men armed with the M16 rifle was conducted in Vietnam from 28 January through 5 February 1968 as a part of a review of the M16 program presently under preparation within the Office of the Chief of Staff. This report is an extract from that review.

The purpose of the survey was to evaluate measures already taken to improve M16 reliability, to identify current rifle problems, and to determine the general performance and acceptability of the system under combat conditions. All major Army units in USARV and one marine division were included in the survey sample. Two means were used to collect data: personal interviews and a questionnaire.

The survey indicated that the M16 rifle system was suitable for the war in Vietnam. Particularly desirable qualities were its high rate of lethal fire and light weight. However, failures to extract were still occurring with enough frequency to undermine confidence in the M16. Although men generally preferred to carry this weapon in combat, some misgivings were entertained about its reliability. Introduction of the chromed chamber appeared to reduce the number of failures to extract, but this improvement had not been fielded long enough to permit adequate evaluation. Many factors cause failures to extract, and continued product improvement and user effort are required to improve reliability.

CONFIDENTIAL

CONFIDENTIAL

II. Purpose and Scope

Early in November of 1967, the Chief of Staff directed an intensive review of the entire M16 rifle program. On 8 November 1967 the M16 Rifle Review Panel was convened within the Office of the Assistant Vice Chief of Staff and instructed to prepare a comprehensive history and evaluation of the M16 program, recommending further action as required. This panel then conducted a field survey of men armed with the M16 in Vietnam during the period 24 January through 5 February 1968 to collect data on the reliability, status of training, status of maintenance, and general overall effectiveness of the M16-M16A1 rifle system. The information gathered has permitted comparative evaluation with results obtained in earlier field surveys, and whatever insight has been gained from the comparison, as well as the facts collected during the survey itself, have been added to the overall history and review of the M16 rifle program.

Specific objectives of the field survey were to

1. Determine the extent of corrective action previously taken to improve the reliability of the M16 rifle system.
2. Identify current problems experienced with the M16 in the field.
3. Evaluate the general performance and acceptability of the system under combat conditions.

CONFIDENTIAL

CONFIDENTIAL

III. Survey Procedures

The panel used two means of collecting data: personal interviews and a questionnaire.

The interviews were with men whose primary duties involved either rifle training or the logistical support of the rifle system, and with members of the chain of command within tactical units.

The questionnaire (Section IV) was designed to provide insight as to the reliability of the rifle system, the training of the men who used it, and the manner in which the system has been employed and supported. It was completed only by men armed with the M16. In an attempt to avoid bias or inhibition, no one was asked to place his name on the questionnaire and each individual was urged to base his responses only upon his own experience with the rifle. The questionnaire was administered by members of the survey team and by the 22d and 90th Replacement Battalions. The answers to many of the questions have permitted direct comparison with results of the field survey conducted by the Office of the Secretary of Defense from 24 August through 5 September 1967.

The survey data is based upon responses from 2,021 men. Since the primary user of the rifle in combat is found within the infantry battalion, these units are heavily represented in the sample. One half (51 percent) of all men surveyed were from

CONFIDENTIAL

CONFIDENTIAL

infantry battalions and 681 (38 percent) had an M6 military occupational specialty (light weapons infantryman).

To assure a fair representation of experience under the variety of environmental conditions found within Vietnam all major units were included in the survey. (For the location of units, see Section V.) The distribution of responses by major unit was:

<u>Major Unit</u>	<u>Number of Questionnaires</u>
1st Infantry Division	109
1st Air Cavalry Division	143
4th Infantry Division	51
9th Infantry Division	419
25th Infantry Division	80
Americal Division	285
101st Airborne Division	63
Separate Brigades (173d and 199th)	54
Other USARV Units	693
1st Marine Division	<u>124</u>
Total	2,021

Survey team members selected were those men on the Department of Army Staff who were most intimately involved with and knowledgeable of the M16 rifle system, its training program, logistical support, product improvements, and reliability problems. The team composition is listed in Section VI.

CONFIDENTIAL

The survey team intended to contact each major unit in Vietnam. The Communist TET offensive created a turbulent military situation and shortages of aircraft which reduced the number of units that could be directly contacted during the survey. A broadened survey sample was achieved by administering questionnaires at replacement battalions to individuals who were returning to the United States, having just completed their Vietnam tours.

Information of immediate command interest derived from data collected by the team was provided to the commanders concerned during exit interviews. In those instances when corrective action was appropriate, measures to relieve the situation were immediately initiated by the chain of command.

CONFIDENTIAL

CONFIDENTIAL

IV. Questionnaire

M16A1 Rifle Field Survey, Republic of Vietnam
January - February 1968

What is your unit? (Division or Separate Brigade) _____.

Grade _____

How many months in Vietnam _____.

Where from if not CONUS _____ MOS _____ Duty Position _____.
(Sgd Ldr, Rifleman, etc.)

1. Which of the following weapons have you used in combat?

a. M14 _____; b. M16 w/o new buffer or chrome chamber _____;

c. M16 w/new buffer only _____; d. M16 w/new buffer and chrome
chamber _____.

2. Delete

3. Did you receive formal M16 training before arriving in RVN?

Yes ____; No _____. Since arriving in RVN? Yes ____; No _____.

4. If you received fromal M16 training, how many hours did you
receive:

	Before Coming to RVN	In RVN
a. Mechanical training	_____	_____
b. Range firing	_____	_____
c. Tactical live fire exercises	_____	_____

5. Do you have the following cleaning materials or are they
available in the unit?

	Yes	No		Yes	No
a. Cleaning rod	_____	_____	e. Patches	_____	_____
b. LSA lubricant	_____	_____	f. Pipe cleaners	_____	_____
c. Chamber brush	_____	_____	g. Bore cleaner	_____	_____
d. Bore brush	_____	_____			

CONFIDENTIAL

6. Do you normally carry any of the following with you on combat operations?

	Yes	No		Yes	No
a. Cleaning Rod	___	___	e. Patches	___	___
b. LSA lubricant	___	___	f. Pipe cleaners	___	___
c. Chamber brush	___	___	g. Bore cleander	___	___
d. Bore brush	___	___			

If so, how do you usually carry them? _____

7. Is your rifle equipped with: a. New buffer? Yes ___; No ____.
(How long ___ wks); b. Chrome plated chamber? Yes ___; No ____.
(How long? ___ wks).

8. When was the last time you zeroed your M16? ___ wks ago.

9. How many rounds of 5.56 ammo do you normally carry on operations?
ball ___; tracer ___.

10. Do you lubricate your ammo? Yes ___; No ____.

11. When was the last time you received instruction on the care
and cleaning of: a. The M16 _____ (day, month, year);
b. Its ammunition _____ (day, month, year);
c. Its magazine _____ (day, month, year)?

12. Have you ever experienced a failure of the bolt to lock on
the M16? Yes ___; No _____. If so, how many times? _____.

13. Have you ever used the BOLT ASSIST? Yes ___; No _____. If
yes, what percent of the time did it clear the problem? ____%.

CONFIDENTIAL

14. How many magazines do you normally carry on operations? ____.
15. In combat, what percentage of the time do you use the full automatic mode of fire ____%; semiautomatic mode of fire ____%.
16. When using the full automatic mode, what percentage of time do you fire in short bursts (2-3 rounds) ____%; in long bursts (10-20 rounds) ____%.
17. What is largest number of rounds you have fired in any one day of combat? ____ rounds.
18. Have you been issued a card with care and cleaning instructions for the M16? Yes ____; No _____. If so, do you still have it? Yes ____; No _____.
19. Does your unit test fire individual weapons? Yes ____; No _____.
20. If the answer to 19 is yes, is a regular schedule prescribed? Yes ____; No _____. If yes, please explain the schedule _____.
21. To the best of your recollection, how often have you cleaned your M16? _____.
22. How many rounds do you usually load in a magazine? ____ rounds.
23. Approximately how many rounds have you fired with the M16 during the past four months? 0-500 ____, 500-1000 ____, 1000-1500 ____, 1500-2000 ____, more than 2000 _____.
24. During the past four months, did you experience a failure to extract? Yes ____; No _____. If yes, how many times? ____ times.

CONFIDENTIAL

25. Have you, during the last four months, had problems with a round sticking in the chamber when it was left for periods of:

0-8 hours Yes ___, No ___; 9-16 hours Yes ___, No ___; 17-24 hours Yes ___, No ___.

26. Does your unit have weapons inspection? Yes ___; No ___.

If yes, how many times a week? ___. Who inspects the weapons?

Fire team ldr, Sqd ldr, Plat sgt, Plat ldr, CO? (Circle one).

Does your unit inspect magazines and ammo? Yes ___; No ___.

27. Approximately what percentage of the ammo that you fire in combat is tracer? ____%.

28. Give to the best of your recollection, how often you cleaned your magazines and ammo. _____.

29. Which of the following do you prefer as your individual weapon? M16 ___; M14 ___; M16 Commando (XM177E1 SMG) ___; Other ___ (specify).

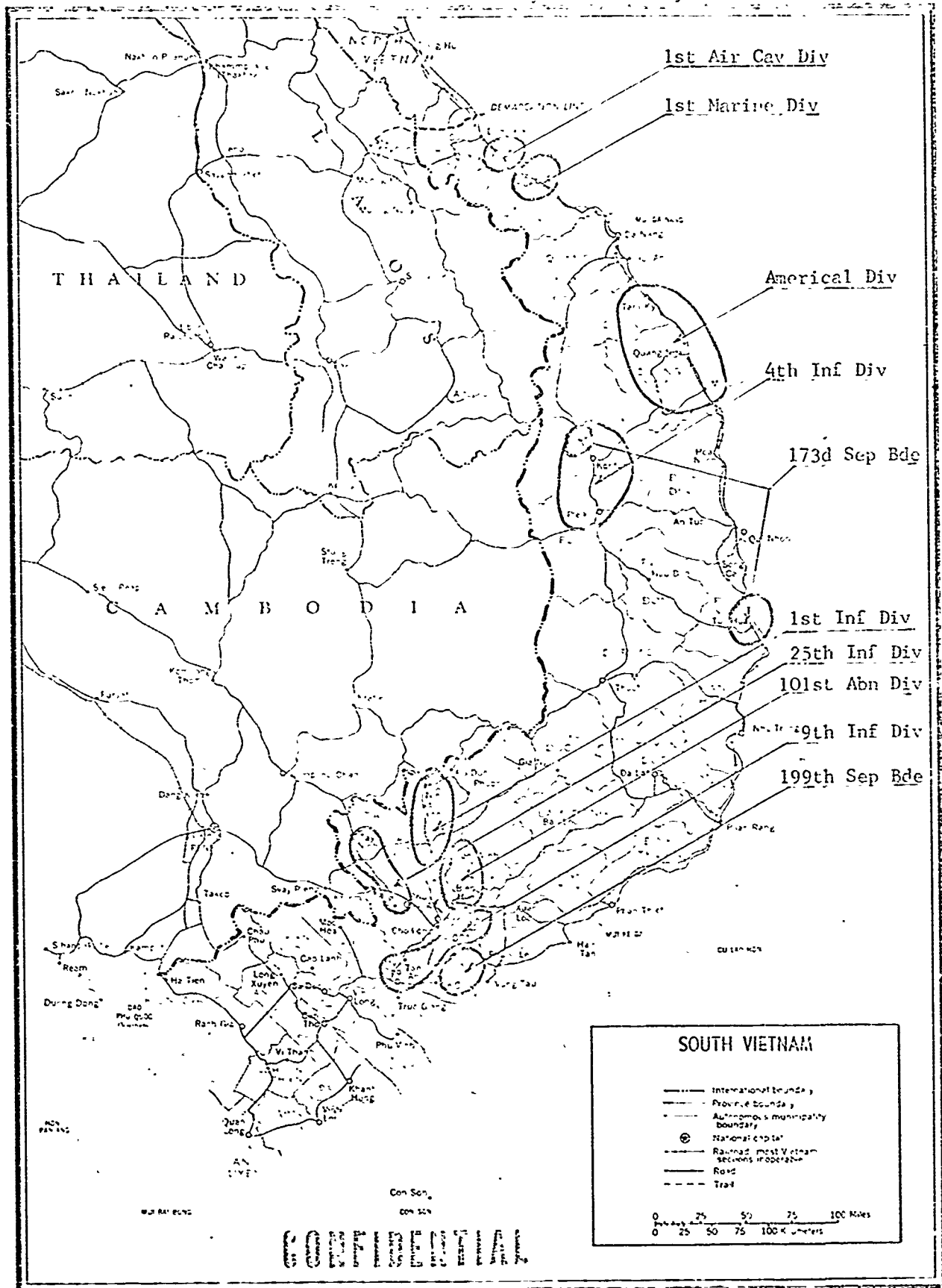
30. What do you like about the M16? _____.

31. What do you dislike about the M16? _____.

32. Additional comments _____.

CONFIDENTIAL

V. General Location of Units Surveyed
(24 January - 5 February 1966)



CONFIDENTIAL

CONFIDENTIAL

VI. Survey Team Composition

Team Chief

Mr. John A. Lockerd (GS-15)
Weapon Systems Analysis Directorate
Office Chief of Staff, Army
Headquarters, Department of the Army

U.S. Army, Pacific Project Officer

Mr. T. C. Murphy (GS-14)
G-3 Section
Headquarters, U.S. Army, Pacific

U.S. Army, Vietnam Project Officer

COL J. T. Price
M16 Project Officer
G-4 Section
Headquarters, U.S. Army, Vietnam

Team Members

LTC Neil G. Nelson
Directorate of Individual Training
Deputy Chief of Staff for Personnel
Headquarters, Department of the Army

LTC Dean F. Schnoor
Directorate of Materiel Acquisition
Deputy Chief of Staff for Logistics
Headquarters, Department of the Army

LTC John D. A. Hogan, Jr.
Directorate of Doctrine and Systems
Assistant Chief of Staff for Force Development
Headquarters, Department of the Army

LTC George H. Gardes
Directorate of Plans and Programs
Office, Chief of Research and Development
Headquarters, Department of the Army

LTC David P. Thoreson
Weapon Systems Analysis Directorate
Office Chief of Staff, Army
Headquarters, Department of the Army

CONFIDENTIAL

VII. Itinerary Within Vietnam (24 January - 5 February 1968)

Headquarters USARV	24 January
Headquarters USARV 1st Logistical Command	25 January
9th Infantry Division	26 January
9th Infantry Division	27 January
1st Logistical Command 90th Replacement Battalion	28 January
Headquarters MACV 90th Replacement Battalion	29 January
22d Replacement Battalion Americal Division	30 January
Americal Division	31 January
Headquarters III Marine Amphibious Force	1 February
1st Marine Division 3d Marine Division	2 February
1st Marine Division 3d Marine Division	3 February
Headquarters USARV 90th Replacement Battalion	4 February
Headquarters USARV Headquarters MACV	5 February

CONFIDENTIAL

CONFIDENTIAL

VIII. Analysis of Survey Data

General

All findings are based upon the results of personal interviews and data collected from questionnaires.

Display and analysis of questionnaire data were simplified through the use of a SUMX computer program. (Frequency distributions of each questionnaire item are contained in Section X.) The SUMX program was also used to produce a series of matrixes which relate responses to one item with those of another. (Items examined through this technique are listed in Section XI.)

Major Unit Comparisons

Cleaning frequency and unit maintenance inspection data shown in Table 1 reflect that:

1. Men tended to clean their rifles two to three times more frequently than they cleaned their magazines and ammunition. This tendency was encouraged through unit maintenance inspections, which also emphasized the rifle rather than the entire rifle system.
2. Frequency of cleaning was generally greater among units that conducted more maintenance inspections. However, other factors also influenced cleaning frequency, for example, how often the rifle was fired and the user's anticipated need for a reliably functioning rifle. Nontactical USARV units, for example, cleaned less frequently than the theater average, despite a higher than theater average

CONFIDENTIAL

CONFIDENTIAL

unit maintenance inspection level. The opposite behavior was observed in the Americal Division where cleaning frequency was relatively high and unit inspections infrequent.

Review of information regarding lubrication of ammunition, test firing, and the buffer retrofit program (Table 2) indicates:

1. One quarter of all men armed with the M16 lubricated their ammunition - a practice contrary to all published directives.

(During the survey over-use of LSA lubricant on the rifle and ammunition appeared to decrease as the survey team traveled northward from the Delta to the demilitarized zone. The general climate was dryer in the north.)

2. Most individuals test fired their rifles. The lowest incidence of test firing was among nondivisional USARV units and separate brigades.

3. The buffer retrofit program was not complete (84 percent of those surveyed indicated they had new buffers) at the time of the survey, although units within USARV had reported 100 percent completion of this program during November 1967.

The following conclusions have been drawn from ammunition consumption data and M16 training information:

1. The theater ratio of ball to tracer ammunition for men armed with the M16 was 4:1. This ratio varied appreciably among units (unit averages were a product of even wider differences among individuals, with many men firing 100 percent tracer).

CONFIDENTIAL

CONFIDENTIAL

2. All men armed with the M16 had not received formal rifle training in-country (28 percent of the men surveyed indicated that they had not received this training). Percentages of men receiving training varied appreciably among major units. The low percentage (61 percent) in the Americal Division was partially due to responses from members of its 11th brigade, which had been in-country two months and was not required to process personnel through the divisional replacement training center upon arrival in Vietnam.

Major unit statistical data regarding zeroing (Table 4) and failures to extract (Table 5) indicate that:

1. Zeroing of rifles varied appreciably among units (the percentage of men who have not zeroed in the 25th Infantry Division was three times greater than that of the 101st Airborne Division). Differences among units with respect to personnel turbulence and rate of weapon exchange also contributed to differences in zeroing history.

2. Failures to extract have occurred with enough frequency to reduce confidence in the M16. The 1st Marine Division had the highest incidence of this failure (an average of 7.0 failures per man reporting failures within the last four months). Close comparison of failures to extract among units could not be made without more accurate information about unit 5.56mm ammunition consumption rates than the survey produced.

CONFIDENTIAL

TABLE 1. CLEANING FREQUENCY & UNIT INSPECTIONS BY UNIT

UNIT	CLEANING FREQUENCY (Number of Times Per Month)		UNIT MAINTENANCE INSPECTIONS (% Indicating Inspections are Conducted)	
	RIFLES	MAGAZINES & AMMUNITION	RIFLES	MAGAZINES & AMMUNITION
1st Inf Div	21.0 (109)	8.7 (109)	91% (100)	78% (93)
1st Air Cav Div	18.3 (143)	5.1 (143)	64% (120)	47% (95)
4th Inf Div	22.5 (37)	4.8 (41)	68% (37)	53% (34)
9th Inf Div	21.6 (419)	8.4 (419)	79% (406)	64% (175)
25th Inf Div	19.5 (79)	6.3 (80)	87% (77)	63% (59)
Americal Div	21.9 (284)	9.0 (285)	66% (273)	39% (214)
101st Abn Div	26.1 (63)	11.1 (63)	82% (58)	71% (45)
Sep Brigades (173d & 199th)	23.1 (54)	9.9 (54)	80% (50)	71% (41)
Other USARV Units	16.8 (692)	6.9 (693)	81% (628)	64% (480)
1st Marine Div	24.9 (124)	10.8 (124)	100% (119)	78% (105)
THEATER AVERAGE	20.4 (2004)	8.1 (2011)	79% (1868)	61% (1341)

1. Numbers contained within parenthesis are total men responding to the question.

CONFIDENTIAL

CONFIDENTIAL

TABLE .. LUBRICATION OF AMMUNITION, TEST FIRING & BUFFER RETROFIT BY UNIT^{1/}

UNIT	ACTIVITY					
	LUBRICATION OF AMMUNITION (% Indicating Ammunition is NOT Lubricated)		TEST FIRING (% Indicating They DO Test Fire Rifles)		BUFFER RETROFIT (% Indicating They HAVE New Buffer Installed)	
1st Inf Div	81%	(103)	96%	(107)	93%	(109)
1st Air Cav Div	79%	(140)	84%	(128)	87%	(142)
4th Inf Div	76%	(51)	79%	(43)	69%	(51)
9th Inf Div	65%	(390)	85%	(407)	85%	(419)
25th Inf Div	78%	(76)	84%	(77)	89%	(80)
Americal Div	74%	(271)	87%	(281)	93%	(283)
101st Abn Div	66%	(62)	95%	(61)	78%	(63)
Sep Brigades (173d & 199th)	64%	(53)	73%	(52)	93%	(54)
Other USARV Units	82%	(660)	74%	(631)	78%	(693)
1st Marine Div	94%	(116)	92%	(124)	93%	(124)
THEATER AVERAGE	77%	(1922)	82%	(1911)	84%	(2018)

1. Numbers contained within parenthesis are total men responding to the question.

CONFIDENTIAL

CONFIDENTIAL

TABLE 3. AMMUNITION CONSUMPTION & M16 TRAINING IN VIETNAM BY UNIT^{1/}

UNIT	ACTIVITY				
	AMMUNITION CONSUMPTION (Consumption Ratio by Type Ammunition)			FORMAL M16 TRAINING IN VIETNAM (% Indicating Training WAS Received in Vietnam)	
	BALL	TRACER	BALL TO TRACER RATIO		
1st Inf Div	79%	21%	3.8 : 1 (109)	78%	(107)
1st Air Cav Div	79%	21%	3.8 : 1 (143)	74%	(128)
4th Inf Div	91%	9%	10.1 : 1 (51)	76%	(45)
9th Inf Div	73%	27%	2.7 : 1 (419)	85%	(377)
25th Inf Div	85%	15%	5.7 : 1 (80)	68%	(78)
Americal Div	73%	27%	2.7 : 1 (285)	61%	(241)
101st Abn Div	72%	28%	2.6 : 1 (63)	77%	(53)
Sep Brigades (173d & 199th)	83%	17%	4.9 : 1 (54)	69%	(49)
Other USARV Units	85%	15%	5.7 : 1 (693)	63%	(597)
1st Marine Div	93%	7%	13.3 : 1 (124)	89%	(123)
THEATER AVERAGE	80%	20%	4.0 : 1 (2021)	72%	(1798)

1. Numbers contained within parenthesis are total men responding to the question.

CONFIDENTIAL

CONFIDENTIAL

TABLE 4. ZEROING HISTORY BY UNIT

UNIT	ZEROING HISTORY				Total Men Responding to Question
	Never Zeroed	Zeroed W/in Last 3 Months ^{1/}	Zeroed Over 3 Months Ago ^{1/}		
1st Inf Div	8% (8)	60% (61)	32% (32)		100% (101)
1st Air Cav Div	8% (11)	41% (54)	50% (66)		100% (131)
4th Inf Div	10% (5)	69% (33)	21% (10)		100% (48)
9th Inf Div	16% (62)	65% (251)	19% (73)		100% (386)
25th Inf Div	25% (19)	19% (14)	56% (42)		100% (75)
Americal Div	11% (30)	64% (174)	24% (66)		100% (270)
101st Abn Div	7% (4)	73% (43)	20% (12)		100% (59)
Sep Brigades (173d & 199th)	14% (6)	55% (24)	32% (14)		100% (44)
Other USARV Units	5% (28)	50% (300)	46% (275)		100% (603)
1st Marine Div	6% (7)	87% (104)	7% (8)		100% (119)
THEATER AVERAGE	10% (180)	58% (1058)	33% (598)		100% (1836)

1. Direct comparison among units is misleading since the average length of time in country varies among units.

CONFIDENTIAL

CONFIDENTIAL

TABLE 3. FAILURE TO EXTRACT BY UNIT

UNIT	FAILURE TO EXTRACT ^{1/}			
	% Indicating No Failures	% Indicating One or More Failures	Average No. of Failures (Per Man Reporting Failures)	Total Men Responding to Question
1st Inf Div	68% (64)	32% (30)	5.2	100% (94)
1st Air Cav Div	55% (63)	45% (52)	4.9	100% (115)
4th Inf Div	68% (25)	32% (12)	3.2	100% (37)
9th Inf Div	56% (135)	44% (104)	4.5	100% (239)
25th Inf Div	73% (54)	27% (20)	5.0	100% (74)
Americal Div	55% (64)	45% (52)	4.4	100% (116)
101st Abn Div	44% (23)	56% (29)	6.3	100% (52)
Sep Brigades (173d & 199th)	57% (28)	43% (21)	5.6	100% (49)
Other USARV Units	76% (432)	24% (136)	3.9	100% (568)
1st Marine Div	52% (37)	48% (34)	7.0	100% (71)
THEATER AVERAGE	65% (925)	35% (490)	4.8	100% (1415)

1. Occurring w/in last four months

CONFIDENTIAL

M16 Training

Training before Vietnam.

A total of 23 percent of all men questioned who came direct from the Continental United States indicated that they had received no formal M16 training prior to arrival in Vietnam (Table 6). Of those men from all other theaters, 73 percent stated they had not received such training before arrival (Table 6). The pronounced tendency for non-CONUS replacements to be untrained was to be expected since M16's were not generally available for training outside of the CONUS training base (84 percent of all men indicating they were non-CONUS replacements were from units in Germany).

How serious the lack of M16 training for men prior to their arrival in Vietnam depends upon how these men are employed after their arrival. Of those men who indicated they had not received any formal M16 training prior to arrival in Vietnam examination by MOS (Table 7), duty position (Table 8), and grade (Table 9) suggests that:

1. Many of the men untrained on the M16 before their arrival in Vietnam were assigned to infantry battalions (35 percent of untrained men noted in the sample had MOS's common to infantry battalions).

2. A significant number of men in this group were in grades and duty positions that required them to have detailed knowledge

CONFIDENTIAL

of the rifle to meet their supervisory responsibilities (16 percent of this untrained group were either fire team leaders, squad leaders, or platoon sergeants and 80 percent of them were in grades E-4 through E-6).

3. The tendency of men in this M16 untrained-before-Vietnam group to be leaders was even more pronounced among non-CONUS replacements (22 percent of non-CONUS M16 untrained men were either fire team leaders, squad leaders or platoon sergeants and 75 percent were in grades E-4 through E-6).

Although a high percentage of men indicated they had not received any M16 rifle training before arrival in Vietnam (24 percent), there is good reason to believe that this problem will be reduced significantly in the near future. Examination of the untrained-before-Vietnam group by deployment month (Table 10) reveals a pronounced trend toward reduction of the numbers of men slipping through without M16 training (only 4 percent of the men deploying during October 1967 - January 1968 indicated they were untrained).

Training in Vietnam.

All men armed with the M16 had not received formal rifle training in-country (28 percent of the men surveyed said they had not received this training). Percentages of men receiving M16 training varied appreciably among major units (Table 3).

CONFIDENTIAL

CONFIDENTIAL

USARV M16 training policies and procedures did not distinguish among replacements by theater source or by the amount of rifle training men have received before their arrival in Vietnam. The number of untrained replacements which have arrived in Vietnam suggests consideration of two training programs, the present one for most men and another more intensive one for the untrained. If two programs are not established, then, as a minimal measure, a system should be used which guarantees that the untrained replacements will have a higher probability of receiving in-country training than those with previous training.

Adequate training policies, guidance, and directives have been published by Headquarters, MACV, and Headquarters, USARV. These directives were not consistently available among units conducting replacement training at the time of the survey.

M16 training observed at divisional replacement centers did not always comply with MACV or USARV training directives.

Unit Armorers

Many unit armorers lacked formal training and adequate knowledge of M16 rifle maintenance. As a result of this failing, many rifles that properly should have been repaired by the unit armorer (a rifle with a broken extractor, for example) were turned in by the rifleman and repaired at a higher echelon. Other unit armorer duties, such as periodic lubrication of detent springs, were often neglected.

CONFIDENTIAL

CONFIDENTIAL

TABLE 6. M16 TRAINING "BEFORE" VIETNAM BY THEATER SOURCE

M16 TRAINING BEFORE VIETNAM	THEATER SOURCE ^{1/}		TOTALS
	CONUS	NON-CONUS	
YES	77% (1506)	27% (12)	76% (1518)
NO	23% (445)	73% (32)	24% (477)
TOTALS	100% (1951)	100% (44)	100% (1995)

1. Percentages apply only to responses of YES or NO.
There were 26 non-responses - all by men from CONUS.

TABLE 7. THEATER SOURCE BY MOS FOR THOSE MEN WHO INDICATED
THEY HAD NOT RECEIVED ANY FORMAL M16 TRAINING
PRIOR TO ARRIVAL IN VIETNAM

MOS	THEATER SOURCE		TOTALS
	CONUS	NON-CONUS	
11B (Light Wpns Infantryman)	13% (58)	28% (9)	14% (67)
11C (Inf Indirect Fire Crewman)	4% (18)	3% (1)	4% (19)
11D (Armor Intel Specialist)	2% (8)	6% (2)	2% (10)
11G (Inf Senior Sergeant)	- (0)	- (0)	- (0)
11H (Inf Direct Fire Crewman)	1% (4)	- (0)	1% (4)
31B & F (Radio Mech & Com- munication Chief)	3% (13)	- (0)	3% (13)
36A (Wireman)	1% (3)	3% (1)	1% (4)
64A, B & C (Drivers)	3% (15)	6% (2)	4% (17)
71A & B (Clerk & Clerk Typist)	2% (9)	3% (1)	2% (10)
76K (Gen Supply Specialist)	- (0)	- (0)	- (0)
94A & B (Cooks)	3% (15)	6% (2)	4% (17)
All Other Enl	67% (300)	44% (14)	65% (314)
1542 (Inf Off)	<1% (2)	- (0)	<1% (2)
TOTALS	100% (445)	100% (32)	100% (477)

CONFIDENTIAL

TABLE 8. THEATER SOURCE BY DUTY POSITION FOR THOSE MEN WHO INDICATED THEY HAD NOT RECEIVED ANY FORMAL M16 TRAINING PRIOR TO ARRIVAL IN VIETNAM

DUTY POSITION	THEATER SOURCE		TOTALS
	CONUS	NON-CONUS	
Other or No Response	73% (323)	53% (17)	71% (340)
Rifleman	7% (33)	16% (5)	8% (38)
Grenadier	< 1% (1)	- (0)	< 1% (1)
Auto Rifleman	1% (4)	- (0)	1% (4)
Fire Team Ldr	2% (1)	3% (1)	3% (12)
Squad Ldr	10% (46)	16% (5)	11% (51)
Platoon Sgt	2% (8)	3% (1)	2% (9)
Plat Ldr/CO	1% (4)	- (0)	1% (4)
RTO/Wireman	3% (15)	6% (2)	4% (17)
Armorer	- (0)	3% (1)	< 1% (1)
TOTALS	100% (445)	100% (32)	100% (477)

TABLE 9. THEATER SOURCE BY GRADE FOR THOSE MEN WHO INDICATED THEY HAD NOT RECEIVED ANY FORMAL M16 TRAINING PRIOR TO ARRIVAL IN VIETNAM

GRADE	THEATER SOURCE		TOTALS
	CONUS	NON-CONUS	
Other or No Response	2% (8)	- (0)	2% (8)
E-1 thru E-3	16% (69)	25% (8)	16% (77)
E-4	47% (208)	41% (13)	45% (221)
E-5	27% (122)	22% (7)	27% (129)
E-6	7% (29)	12% (4)	7% (33)
E-7 thru E-9	1% (5)	- (0)	1% (5)
O-1 thru O-4	1% (4)	- (0)	1% (4)
TOTALS	100% (445)	100% (32)	100% (477)

CONFIDENTIAL

TABLE 10. RECEIPT OF FORMAL M16 TRAINING BEFORE ARRIVAL IN VIETNAM
BY DEPLOYMENT MONTH

MONTH OF DEPLOYMENT	RECEIPT OF FORMAL M16 TRAINING BEFORE VN			
	YES		NO	TOTALS
Jan 68	96%	(153)	4% (6)	100% 159
Dec 67	98%	(123)	2% (2)	100% 125
Nov 67	93%	(89)	7% (7)	100% 96
Oct 67	96%	(107)	4% (5)	100% 112
Sep 67	87%	(61)	13% (9)	100% 70
Aug 67	83%	(95)	17% (19)	100% 114
Jul 67	92%	(56)	8% (5)	100% 61
Jun 67	80%	(74)	20% (18)	100% 92
May 67	85%	(89)	15% (16)	100% 105
Apr 67	83%	(86)	17% (18)	100% 104
Mar 67	80%	(139)	20% (35)	100% 174
Feb 67	58%	(359)	42% (260)	100% 619
Jan 67	69%	(37)	31% (17)	100% 54
Dec 66	62%	(8)	38% (5)	100% 13
Nov 66	18%	(2)	82% (9)	100% 11
Oct 66	43%	(3)	57% (4)	100% 7
Sep 66	40%	(2)	60% (3)	100% 5
Aug 66	31%	(11)	69% (24)	100% 35
Jul 66	50%	(7)	50% (7)	100% 14
Jun 66	80%	(4)	20% (1)	100% 5
TOTALS	75%	(1505)	24% (470)	100% 1975

CONFIDENTIAL

CONFIDENTIAL

Maintenance and Supply

Adequate quantities of repair parts, cleaning materials and equipment were generally available in Vietnam. However, unbalanced distribution among depots occasionally resulted in temporary shortages which affected using units. For example, some units reported shortages of bore brushes with due-ins over two months old, while the theater had not been totally out of stock since November 1967.

Cleaning materials such as the cleaning rod, lubricant, brushes, and patches, were generally available to the rifleman and he usually carried most items with him in the field (see questions 5 and 6, Section X). Pipe cleaners and bore cleaner, however, were often not available.

Unit armorers frequently did not accompany units into the field and as a consequence, field repair of weapons was neglected. Greater use of contact teams would reduce this problem and would also compensate for lack of skill among unit armorers.

The quality of maintenance by the rifleman was directly influenced by the degree of supervisory emphasis placed on care and cleaning within the unit. Men tended to clean their rifles two to three times more frequently than they cleaned their magazines and ammunition (Table 1). This trend was encouraged through unit maintenance

CONFIDENTIAL

CONFIDENTIAL

inspections which also emphasized the rifle rather than the entire rifle system. Additional information regarding cleaning frequency and unit inspections is displayed in questions 21, 26, and 28 of Section X.

Survey data supports two product improvements presently under development.

1. The desire for magazines of greater capacity than 20 rounds was frequently expressed.

2. On-weapon storage capacity for cleaning materials is required. This was demonstrated by the data contained in question 6h of Section X, which indicates that there was no means generally satisfactory to the rifleman for carrying these materials.

Reliability and Acceptability.

Failures to extract still occurred with enough frequency to reduce confidence in the M16. (Table 5) Among those men surveyed, 35 percent had experienced at least one such failure within the previous four months (the average number of reported failures was 4.8). Attempts to establish a statistically significant correlation between failures and such possible causes as cleaning habits, overlubrication, and the extent or recency of the user's mechanical training were unsuccessful. The fact that it has been impossible to statistically isolate the causative factors from field survey data

CONFIDENTIAL

CONFIDENTIAL

suggests that failures to extract were caused by more than one variable. That is, the problem was not with maintenance, ammunition, or defective parts alone but was rather a combination of several variables. Consequently, system reliability can be improved only by continued product improvement and user effort.

A total of 42 percent of those surveyed indicated they had experienced at least one failure to lock. (Of those reporting this failure, the average number of failures was 5.3; see question 12, Section X.)

Half of the men reported having used the bolt assist and most of these (69 percent) indicated that use of the bolt assist had cleared the malfunction. (See question 13, Section X.)

Data relating to weapon performance and acceptability are shown in the answers to questions 29, 30, and 31 of Section X. In general, men armed with the M16 in Vietnam rated this rifle's performance high. Most frequently lauded were its light weight and its firepower. However, many men entertained some misgivings about the M16's reliability (33 percent of the men surveyed made adverse comments on either the rifle's sensitivity or its reliability). When asked what weapon they would prefer to carry in combat, 85 percent indicated that they wanted either the M16 or its submachine gun version, the XM177E1-2. The Office Secretary of Defense field survey conducted five months earlier reported: "Less than one half of one percent of

CONFIDENTIAL

CONFIDENTIAL

of all personnel interviewed stated that they would exchange their M16 for another rifle." This difference in acceptance figures may reflect differences in data collection techniques. The Office Secretary of Defense survey derived its 99.5 percent acceptance figure from personal interviews, primarily of leaders, rather than from anonymous questionnaires completed by everyone armed with the weapon. While the 85 percent acceptance figure obtained by this survey does not show a particularly high level of confidence in the M16, continued introduction of the chrome chambered model, with its expected lower incidence of failures to extract, should improve user confidence. Many men who had recently received an M16 with a chrome chamber indicated that the rifle was significantly more reliable than earlier models they had used.

General Usage.

Test firing data displayed in Tables 2, 11, and 12 indicates:

1. Extent of test firing varied appreciably among units (this is an activity strongly influenced by unit standard operating procedures and command emphasis).
2. A greater percentage of leaders, from fire team to platoon level, test fired than men within the rifle squads. (This fact suggests that leaders know what should be done but do not always insist upon performance from their men.)

CONFIDENTIAL

CONFIDENTIAL

3. Maneuver battalions test fired more than other units - 87 percent of personnel in maneuver battalions indicated that they test fired as compared to 77 percent in other units.

Zeroing information contained in Tables 4, 13, 14, and 15 reflect:

1. Within the theater, 10 percent of the men armed with the M16 had never zeroed their rifles. An additional 33 percent had not confirmed their zero within three months. (USARV quarterly training re rements include zeroing of rifles.)

2. There was no significant difference in zeroing trends by duty position.

3. The need for zeroing was particularly pronounced within maneuver battalions. Despite the fact that zeroing was done more frequently in maneuver battalions (see question 8 in Section X), 12 percent of the men in these battalions had never zeroed as compared to 8 percent in other units. A rapid turnover in men and more frequent exchanges of weapons probably contributed to the greater need for zeroing within maneuver battalions than in other units.

4. The zeroing history of men who have completed their 12 month tours in Vietnam is shown in Table 15. This table permits a more accurate evaluation of zeroing frequency, since the total

CONFIDENTIAL

sample contains men with various lengths of time in Vietnam. Table 15 indicates that 10 percent of all men never zeroed, about half zeroed quarterly (according to USARV directives), and about one-fourth zeroed when their weapon was issued at the beginning of their tour and never thereafter.

The average ammunition load carried was from 39 to 41 normal consumption days of ammunition. Variance in the amount of ammunition carried was quite pronounced (loads varied from seven to over 40 magazines). Although user estimates of ammunition consumption tend to be inflated, the survey data displayed in Table 16 support the judgment that men carry more ammunition than they need.

Most men loaded 18 rounds in their magazines (the theater average is 18.3 rounds).

The consumption ratio of ball to tracer ammunition varied appreciably among units (Table 3) and unit averages were a product of even wider differences among individuals, with many men firing 100 percent tracer.

Men estimated that they used the automatic mode of fire about 34 percent of the time and that about 60 percent of their automatic fire was expended in short bursts.

CONFIDENTIAL

CONFIDENTIAL

TABLE 11. TEST FIRING BY DUTY POSITION

DUTY POSITION	TEST FIRING ^{1/}	
	(% Indicating They <u>DO</u> Test Fire Rifles)	
Other or No Response	78%	(1013)
Rifleman	86%	(361)
Grenadier	100%	(9)
Auto Rifleman	79%	(29)
Fire Team Ldr	90%	(103)
Squad Ldr	90%	(232)
Platoon Sgt	97%	(38)
Plat Ldr/CO	95%	(21)
RTO/Wireman	83%	(102)
Armorer	100%	(3)
THEATER AVERAGE	82%	(1911)

1. Numbers contained in parenthesis are total men responding to the question.

TABLE 12. TEST FIRING BY TYPE UNIT

TYPE UNIT	TEST FIRING ^{1/}	
	(% Indicating They <u>DO</u> Test Fire Rifles)	
Maneuver Battalion	87%	(984)
Other	77%	(926)
THEATER AVERAGE	82%	(1910)

1. Numbers contained in parenthesis are total men responding to the question.

CONFIDENTIAL

CONFIDENTIAL

TABLE 13. ZEROING HISTORY BY DUTY POSITION

DUTY POSITION	ZEROING HISTORY				Total Men Responding to Question	
	Never Zeroed	Zeroed W/in Last 3 Months	Zeroed Over 3 Months Ago			
Other or No Response	10% (95)	52% (501)	38% (370)		100%	966
Rifleman	12% (44)	67% (246)	21% (75)		100%	365
Grenadier	- (0)	50% (2)	50% (2)		100%	4
Auto Rifleman	4% (1)	89% (25)	7% (2)		100%	28
Fire Team Ldr	12% (12)	62% (63)	26% (27)		100%	102
Squad Ldr	8% (17)	59% (128)	33% (72)		100%	217
Platoon Sgt	- (0)	56% (18)	44% (14)		100%	32
Plat Ldr/CO	5% (1)	55% (11)	40% (8)		100%	20
RTO/Wireman	10% (10)	62% (61)	28% (28)		100%	99
Armorer	- (0)	100% (3)	- (0)		100%	3
THEATER AVERAGE	10% (180)	58% (1058)	33% (598)		100%	1836

TABLE 14. ZEROING HISTORY BY TYPE UNIT

TYPE UNIT	ZEROING HISTORY				Total Men Responding to Question	
	Never Zeroed	Zeroed W/in Last 3 Months	Zeroed Over 3 Months Ago			
Maneuver Battalion	127 (112)	60% (573)	28% (267)		100%	952
Other	8% (68)	55% (45)	38% (334)		100%	87
THEATER AVERAGE	10% (180)	58% (1058)	33% (601)		100%	1859

CONFIDENTIAL

CONFIDENTIAL

TABLE 15. ZEROING HISTORY BY MONTH FOR ONLY THOSE HAVING
TWELVE MONTHS IN VIETNAM

TIME SINCE ZEROING (In Months)	ZEROING HISTORY		
	By Month	By Quarter	By 3 Months or Less and Over 3 Months
Never Zeroed	10% (51)	10% (51)	10% (51)
1	20% (109)		
2	18% (96)	48% (261)	48% (261)
3	10% (56)		
4	4% (24)		
5	5% (26)	11% (61)	
6	2% (11)		
7	3% (15)		
8	4% (21)	8% (44)	42% (227)
9	1% (8)		
10	1% (8)		
11	3% (15)	23% (122)	
12	18% (99)		
TOTALS	100% 539	100% 539	100% 539

$\bar{x}$ (Average Time Since Zeroing) = 4.96 months
 s (Standard Deviation) = 4.39 months

CONFIDENTIAL

CONFIDENTIAL

TABLE 16. AMMUNITION LOAD BY TYPE UNIT

ITEM	UNIT		
	Maneuver Bn	All Other	Theater
a. Total Rounds Carried	338 rounds	258 rounds	300 rounds
b. Total Magazines Carried	16.6 magazines	11.3 magazines	14.0 magazines
c. Largest consumption ever experienced in a single day of combat	293 rounds/day	327 rounds/day	308 rounds/day
d. Total consumption (within last 4 months)	1040 rounds	750 rounds	878 rounds
e. Average Daily consumption ($d \div 120$)	8.67 rounds/day	6.25 rounds/day	7.32 rounds/day
f. Ammunition Load: Ave Consumption Days ($a \div e$)	39 days	41 days	41 days
Max Consumption days ($a \div c$)	1.15 days	0.79 days	0.97 days

1. This figure appears to be an inflated estimate made by men who are less experienced than those in maneuver battalions (it should be smaller than the battalion figure of 293 rounds.)

CONFIDENTIAL

CONFIDENTIAL

IX. Conclusions and Recommendations

Policies and directives throughout Vietnam which govern M16 training, supply, maintenance, and user care and cleaning were generally adequate. Continued command supervision is necessary to improve compliance with these directives.

With the exception of Vietnam-oriented advanced individual training for infantrymen, all M16 training given to men prior to deployment should be improved. Many leaders were hampered in meeting their supervisory responsibilities by insufficient knowledge of the M16. Frequently, riflemen received either poor M16 training or none before they arrived in Vietnam. (Recently improved clearance procedures within the continental United States have reduced the numbers of men who deploy without rifle training.) In order to improve predeployment rifle training the following measures should be taken:

1. Accelerate introduction of M16 rifles and M16 training for all men in basic combat training at the earliest possible date.
2. Increase M16 instruction for supervisors in all schools producing junior leaders: for example, NCO refresher courses, officer candidate schools, and basic branch courses.
3. Establish procedures to insure receipt of M16 training for men on intertheater transfer to Vietnam.

CONFIDENTIAL

CONFIDENTIAL

USARV required all replacements to complete the same M16 training program. The large number of untrained replacements that have arrived in Vietnam suggest use of two training programs, the present one for most men and another and more intensive one for the totally untrained.

Unit armorers frequently lacked formal training and adequate knowledge of M16 rifle maintenance. Provision for additional training, perhaps through divisional schools or mobile training teams from the 1st Logistical Command, should be made.

Men tended to clean their rifles two to three times more frequently than their magazines. Corroded or dirty ammunition and defective magazines seriously reduce rifle effectiveness. Unit maintenance inspections should emphasize care of the entire rifle system.

Adequate quantities of repair parts and cleaning materials and equipment were generally available in Vietnam. However, unbalanced distribution among depots occasionally resulted in temporary shortages which affected rifle maintenance. Procedures to achieve optimum distribution should be instituted.

Although individuals usually test fired their rifles, the nature and frequency of such firing varied widely among and within units. Test firing, when properly performed, will increase weapon reliability. Significant improvement in rifle effectiveness will

CONFIDENTIAL

CONFIDENTIAL

be achieved by:

1. Isolation of defective rifles and magazines through periodic test firing by individuals in a combat zone. Design of a standard test firing procedure to accomplish this purpose should be developed by the Project Manager Rifles.

2. Continued command emphasis upon the importance of frequent and properly conducted test firing.

Greater zeroing effort is required, particularly within maneuver battalions. The average frequency of zeroing was every 4.96 months and 10 percent of the men had never zeroed their rifles. Zeroing increases both hit probability and user confidence in his rifle. It also stimulates the appropriate use of aimed fire. Verification of zero should be integrated with test firing, since any object that can visibly register hits may serve as a target.

Performance and acceptability data collected during the survey indicate:

1. The M16's high rate of lethal fire and light weight are qualities particularly suitable for the war in Vietnam.

2. Failures to extract still occurred with enough frequency to reduce confidence in the M16. These failures apparently result from a variety of causes. Factors which could contribute are inadequate maintenance, care and cleaning, and control of ammunition case hardness, or from pitted chambers, or defective parts.

CONFIDENTIAL

Consequently, both continued product improvement and user effort are necessary.

3. Introduction of the chromed chamber appeared to reduce the number of failures to extract. However, this improvement has not been fielded long enough to permit adequate evaluation.

4. Most men armed with the M16 in Vietnam rated this rifle's performance high, however, many men entertained some misgivings about the M16's reliability. When asked what weapon they preferred to carry in combat, 85 percent indicated that they wanted either the M16 or its submachine gun version, the XM177E1-2. (The M14 was preferred by 15 percent, while less than one percent wished to carry either the Stoner rifle, the AK-47, the carbine or a pistol.)

5. A field malfunction reporting system should be established throughout USARV. While such a system does not produce reliability data with laboratory precision, it does permit analysis of malfunction trends and would contribute to further improvement in the reliability of the M16.

CONFIDENTIAL

CONFIDENTIAL

X. Frequency Distributions of Responses to Questionnaire

A series of frequency distributions displaying all responses to each item of the questionnaire were prepared to support the analysis. Each distribution is included in this section except where consolidation permitted an omission. Additional information is superimposed upon each of the inclosed distributions to assist in interpretation. (Instructions to assist interpretation of these distributions are contained on the initial distribution, page 44.)

A listing of each frequency distribution prepared follows:

Questionnaire Heading

Where from (theater source)

Major unit

Grade

Months in Vietnam

MOS

Duty position

Questions

1. Type and model of weapon used.
- 3.a. Was formal M16 training received before Vietnam?
- b. Was formal M16 training received in Vietnam?
- 4.a. Hours mechanical training received before Vietnam
- b. Hours of mechanical training received in Vietnam
- c. Total hours of mechanical training received before and in Vietnam.

CONFIDENTIAL

5.a. to g. Do you have cleaning materials (cleaning rod, LSA, chamber brush, bore brush, patches, pipe cleaners and bore cleaner)?

6.a. to g. Do you carry cleaning materials (a. to g.)?

h. Where are cleaning materials carried?

7.a. Receipt of new buffer

b. Receipt of chrome chamber

8.a. to c. Zeroing history (maneuver battalions, all other, and theater)

9.a. Total ball ammunition carried

b. Total tracer ammunition carried

c. Total ammunition carried (ball and tracer)

10. Lubrication of ammunition

11.a. to c. Weeks since instruction on care and cleaning of M16, ammunition, and magazines

12. Number of failures to lock

13.a. Use of bolt assist

b. Percentage of time use of bolt assist cleared problem

14.a. to c. Number of magazines carried (maneuver battalions, all others, and theater)

15. Percentage of fire in fully automatic mode

16. Percentage of automatic fire expended in short bursts

17.a. to c. Largest number of rounds expended in a single day of combat (maneuver battalions, all others, and theater)

CONFIDENTIAL

CONFIDENTIAL

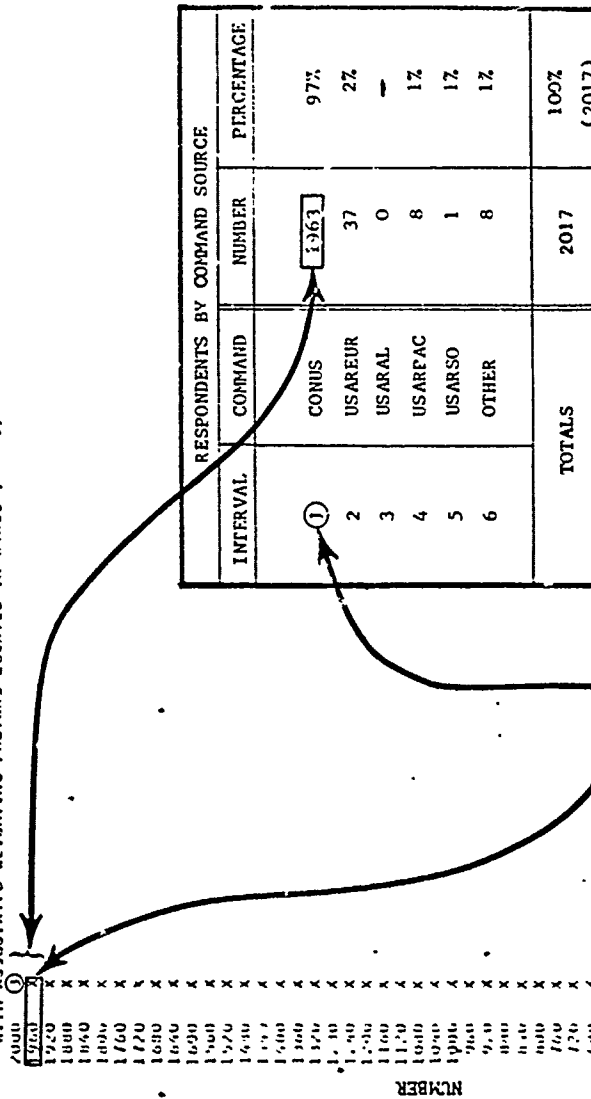
- 18.a. Was care and cleaning card received?
 - b. If issued, is card still in possession?
- 19. Test firing of individual weapons
- 20. Test firing schedule
- 21. M16 rifle cleaning trends
- 22. Number of rounds loaded in magazines
- 23.a. to c. Total rounds fired within last four months
(maneuver battalions, all others, and theater)
- 24.a. to c. Failures to extract (maneuver battalions, all
others, and theater)
- 25.a. to c. Do rounds stick in chamber when left for periods
of 0-8 hours, 9-16 hours, or 17-24 hours?
- 26.a. Frequency of unit rifle inspections
 - b. Who conducts unit rifle inspections?
 - c. Are unit magazine and ammunition inspections conducted?
- 27. Amount of tracer ammunition fired
- 28. Magazine and ammunition cleaning frequency
- 29. Weapon performance
- 30.a. to e. What do you like about the M16 system?
- 31.a. to e. What do you dislike about the M16 system?
- 32.a. to c. Additional comments

CONFIDENTIAL

CONFIDENTIAL

NAME OUTPUT -- VERSION 44
 HIG. STATISTICAL SUMMARIES AS OF 28FEB68

STANDARD HIG. 1, NT# 1 HISTOGRAM OF LOCATION OF SOLDIER LOCATED IN WORDS 45,
 WITH ASSOCIATED WEIGHTING FACTORS LOCATED IN WORDS 0,



An "x" indicates that the number of responses filled up to that level (1960) and a digit (3) was the overflow, i.e. the total number of responses for interval #1 was 1960 + 3 or 1963.

Heading: are from

CONFIDENTIAL

CONFIDENTIAL

STANDARD OUTPUT -- VERSION M4
M16 STATISTICAL SUBROUTINES AS OF 24H EUGB

STANDARD OUTPUT -- VERSION M4
M16 STATISTICAL SUBROUTINES AS OF 24H EUGB

RESPONDENTS BY MAJOR UNIT			
INTERVAL	UNIT	NUMBER	PERCENTAGE
1	1st Inf Div	109	5%
2	1st Air Cav Div	143	7%
3	4th Inf Div	51	3%
4	9th Inf Div	419	21%
5	25th Inf Div	80	4%
6	Americal Div	285	14%
7	101st Abn Div	63	3%
8	173d & 199th Bde	54	3%
9	Other USARV	693	34%
10	1st Marine Div	124	6%
TOTALS		2021	100%

Heading: Major Unit

CONFIDENTIAL

CONFIDENTIAL

DATA OUTPUT -- VLSJLH, M4
H10 SIMILITICAL SUMMARIES AS OF 28FEB68

65FANDAKUC HLOC10 AT# 1 HISTOGRAM OF GRADE LOCATED IN WORDS 0, 0, 4,
41F11 ASSOCIATED WEIGHTING FACTORS LOCATED IN WORDS 0, 0, 4,

NUMBER
520
521
522
523
524
525
526
527
528
529
530
531
532
533
534
535
536
537
538
539
540
541
542
543
544
545
546
547
548
549
550
551
552
553
554
555
556
557
558
559
560
561
562
563
564
565
566
567
568
569
570
571
572
573
574
575
576
577
578
579
580
581
582
583
584
585
586
587
588
589
590
591
592
593
594
595
596
597
598
599
600
601
602
603
604
605
606
607
608
609
610
611
612
613
614
615
616
617
618
619
620
621
622
623
624
625
626
627
628
629
630
631
632
633
634
635
636
637
638
639
640
641
642
643
644
645
646
647
648
649
650
651
652
653
654
655
656
657
658
659
660
661
662
663
664
665
666
667
668
669
670
671
672
673
674
675
676
677
678
679
680
681
682
683
684
685
686
687
688
689
690
691
692
693
694
695
696
697
698
699
700
701
702
703
704
705
706
707
708
709
710
711
712
713
714
715
716
717
718
719
720
721
722
723
724
725
726
727
728
729
730
731
732
733
734
735
736
737
738
739
740
741
742
743
744
745
746
747
748
749
750
751
752
753
754
755
756
757
758
759
760
761
762
763
764
765
766
767
768
769
770
771
772
773
774
775
776
777
778
779
780
781
782
783
784
785
786
787
788
789
790
791
792
793
794
795
796
797
798
799
800
801
802
803
804
805
806
807
808
809
810
811
812
813
814
815
816
817
818
819
820
821
822
823
824
825
826
827
828
829
830
831
832
833
834
835
836
837
838
839
840
841
842
843
844
845
846
847
848
849
850
851
852
853
854
855
856
857
858
859
860
861
862
863
864
865
866
867
868
869
870
871
872
873
874
875
876
877
878
879
880
881
882
883
884
885
886
887
888
889
890
891
892
893
894
895
896
897
898
899
900
901
902
903
904
905
906
907
908
909
910
911
912
913
914
915
916
917
918
919
920
921
922
923
924
925
926
927
928
929
930
931
932
933
934
935
936
937
938
939
940
941
942
943
944
945
946
947
948
949
950
951
952
953
954
955
956
957
958
959
960
961
962
963
964
965
966
967
968
969
970
971
972
973
974
975
976
977
978
979
980
981
982
983
984
985
986
987
988
989
990
991
992
993
994
995
996
997
998
999
1000
1001
1002
1003
1004
1005
1006
1007
1008
1009
1010
1011
1012
1013
1014
1015
1016
1017
1018
1019
1020
1021
1022
1023
1024
1025
1026
1027
1028
1029
1030
1031
1032
1033
1034
1035
1036
1037
1038
1039
1040
1041
1042
1043
1044
1045
1046
1047
1048
1049
1050
1051
1052
1053
1054
1055
1056
1057
1058
1059
1060
1061
1062
1063
1064
1065
1066
1067
1068
1069
1070
1071
1072
1073
1074
1075
1076
1077
1078
1079
1080
1081
1082
1083
1084
1085
1086
1087
1088
1089
1090
1091
1092
1093
1094
1095
1096
1097
1098
1099
1100
1101
1102
1103
1104
1105
1106
1107
1108
1109
1110
1111
1112
1113
1114
1115
1116
1117
1118
1119
1120
1121
1122
1123
1124
1125
1126
1127
1128
1129
1130
1131
1132
1133
1134
1135
1136
1137
1138
1139
1140
1141
1142
1143
1144
1145
1146
1147
1148
1149
1150
1151
1152
1153
1154
1155
1156
1157
1158
1159
1160
1161
1162
1163
1164
1165
1166
1167
1168
1169
1170
1171
1172
1173
1174
1175
1176
1177
1178
1179
1180
1181
1182
1183
1184
1185
1186
1187
1188
1189
1190
1191
1192
1193
1194
1195
1196
1197
1198
1199
1200
1201
1202
1203
1204
1205
1206
1207
1208
1209
1210
1211
1212
1213
1214
1215
1216
1217
1218
1219
1220
1221
1222
1223
1224
1225
1226
1227
1228
1229
1230
1231
1232
1233
1234
1235
1236
1237
1238
1239
1240
1241
1242
1243
1244
1245
1246
1247
1248
1249
1250
1251
1252
1253
1254
1255
1256
1257
1258
1259
1260
1261
1262
1263
1264
1265
1266
1267
1268
1269
1270
1271
1272
1273
1274
1275
1276
1277
1278
1279
1280
1281
1282
1283
1284
1285
1286
1287
1288
1289
1290
1291
1292
1293
1294
1295
1296
1297
1298
1299
1300
1301
1302
1303
1304
1305
1306
1307
1308
1309
1310
1311
1312
1313
1314
1315
1316
1317
1318
1319
1320
1321
1322
1323
1324
1325
1326
1327
1328
1329
1330
1331
1332
1333
1334
1335
1336
1337
1338
1339
1340
1341
1342
1343
1344
1345
1346
1347
1348
1349
1350
1351
1352
1353
1354
1355
1356
1357
1358
1359
1360
1361
1362
1363
1364
1365
1366
1367
1368
1369
1370
1371
1372
1373
1374
1375
1376
1377
1378
1379
1380
1381
1382
1383
1384
1385
1386
1387
1388
1389
1390
1391
1392
1393
1394
1395
1396
1397
1398
1399
1400
1401
1402
1403
1404
1405
1406
1407
1408
1409
1410
1411
1412
1413
1414
1415
1416
1417
1418
1419
1420
1421
1422
1423
1424
1425
1426
1427
1428
1429
1430
1431
1432
1433
1434
1435
1436
1437
1438
1439
1440
1441
1442
1443
1444
1445
1446
1447
1448
1449
1450
1451
1452
1453
1454
1455
1456
1457
1458
1459
1460
1461
1462
1463
1464
1465
1466
1467
1468
1469
1470
1471
1472
1473
1474
1475
1476
1477
1478
1479
1480
1481
1482
1483
1484
1485
1486
1487
1488
1489
1490
1491
1492
1493
1494
1495
1496
1497
1498
1499
1500
1501
1502
1503
1504
1505
1506
1507
1508
1509
1510
1511
1512
1513
1514
1515
1516
1517
1518
1519
1520
1521
1522
1523
1524
1525
1526
1527
1528
1529
1530
1531
1532
1533
1534
1535
1536
1537
1538
1539
1540
1541
1542
1543
1544
1545
1546
1547
1548
1549
1550
1551
1552
1553
1554
1555
1556
1557
1558
1559
1560
1561
1562
1563
1564
1565
1566
1567
1568
1569
1570
1571
1572
1573
1574
1575
1576
1577
1578
1579
1580
1581
1582
1583
1584
1585
1586
1587
1588
1589
1590
1591
1592
1593
1594
1595
1596
1597
1598
1599
1600
1601
1602
1603
1604
1605
1606
1607
1608
1609
1610
1611
1612
1613
1614
1615
1616
1617
1618
1619
1620
1621
1622
1623
1624
1625
1626
1627
1628
1629
1630
1631
1632
1633
1634
1635
1636
1637
1638
1639
1640
1641
1642
1643
1644
1645
1646
1647
1648
1649
1650
1651
1652
1653
1654
1655
1656
1657
1658
1659
1660
1661
1662
1663
1664
1665
1666
1667
1668
1669
1670
1671
1672
1673
1674
1675
1676
1677
1678
1679
1680
1681
1682
1683
1684
1685
1686
1687
1688
1689
1690
1691
1692
1693
1694
1695
1696
1697
1698
1699
1700
1701
1702
1703
1704
1705
1706
1707
1708
1709
1710
1711
1712
1713
1714
1715
1716
1717
1718
1719
1720
1721
1722
1723
1724
1725
1726
1727
1728
1729
1730
1731
1732
1733
1734
1735
1736
1737
1738
1739
1740
1741
1742
1743
1744
1745
1746
1747
1748
1749
1750
1751
1752
1753
1754
1755
1756
1757
1758
1759
1760
1761
1762
1763
1764
1765
1766
1767
1768
1769
1770
1771
1772
1773
1774
1775
1776
1777
1778
1779
1780
1781
1782
1783
1784
1785
1786
1787
1788
1789
1790
1791
1792
1793
1794
1795
1796
1797
1798
1799
1800
1801
1802
1803
1804
1805
1806
1807
1808
1809
1810
1811
1812
1813
1814
1815
1816
1817
1818
1819
1820
1821
1822
1823
1824
1825
1826
1827
1828
1829
1830
1831
1832
1833
1834
1835
1836
1837
1838
1839
1840
1841
1842
1843
1844
1845
1846
1847
1848
1849
1850
1851
1852
1853
1854
1855
1856
1857
1858
1859
1860
1861
1862
1863
1864
1865
1866
1867
1868
1869
1870
1871
1872
1873
1874
1875
1876
1877
1878
1879
1880
1881
1882
1883
1884
1885
1886
1887
1888
1889
1890
1891
1892
1893
1894
1895
1896
1897
1898
1899
1900
1901
1902
1903
1904
1905
1906
1907
1908
1909
1910
1911
1912
1913
1914
1915
1916
1917
1918
1919
1920
1921
1922
1923
1924
1925
1926
1927
1928
1929
1930
1931
1932
1933
1934
1935
1936
1937
1938
1939
1940
1941
1942
1943
1944
1945
1946
1947
1948
1949
1950
1951
1952
1953
1954
1955
1956
1957
1958
1959
1960
1961
1962
1963
1964
1965
1966
1967
1968
1969
1970
1971
1972
1973
1974
1975
1976
1977
1978
1979
1980
1981
1982
1983
1984
1985
1986
1987
1988
1989
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2031
2032
2033
2034
2035
2036
2037
2038
2039
2040
2041
2042
2043
2044
2045
2046
2047
2048
2049
2050
2051
2052
2053
2054
2055
2056
2057
2058
2059
2060
2061
2062
2063
2064
2065
2066
2067
2068
2069
2070
2071
2072
2073
2074
2075
2076
2077
2078
2079
2080
2081
2082
2083
2084
2085
2086
2087
2088
2089
2090
2091
2092
2093
2094
2095
2096
2097
2098
2099
2100
2101
2102
2103
2104
2105
2106
2107
2108
2109
2110
2111
2112
2113
2114
2115
2116
2117
2118
2119
2120
2121
2122
2123
2124
2125
2126
2127
2128
2129
2130
2131
2132
2133
2134
2135
2136
2137
2138
2139
2140
2141
2142
2143
2144
2145
2146
2147
2148
2149
2150
2151
2152
2153
2154
2155
2156
2157
2158
2159
2160
2161
2162
2163
2164
2165
2166
2167
2168
2169
2170
2171
2172
2173
2174
2175
2176
2177
2178
2179
2180
2181
2182
2183
2184
2185
2186
2187
2188
2189
2190
2191
2192
2193
2194
2195
2196
2197
2198
2199
2200
2201
2202
2203
2204
2205
2206
2207
2208
2209
2210
2211
2212
2213
2214
2215
2216
2217
2218
2219
2220
2221
2222
2223
2224
2225
2226
2227
2228
2229
2230
2231
2232
2233
2234
2235
2236
2237
2238
2239
2240
2241
2242
2243
2244
2245
2246
2247
2248
2249
2250
2251
2252
2253
2254
2255
2256
2257
2258
2259
2260
2261
2262
2263
2264
2265
2266
2267
2268
2269
2270
2271
2272
2273
2274
2275
2276
2277
2278
2279
2280
2281
2282
2283
2284
2285
2286
2287
2288
2289
2290
2291
2292
2293
2294
2295
2296
2297
2298
2299
2300
2301
2302
2303
2304
2305
2306
2307
2308
2309
2310
2311
2312
2313
2314
2315
2316
2317
2318
2319
2320
2321
2322
2323
2324
2325
2326
2327
2328
2329
2330
2331
2332
2333
2334
2335
2336
2337
2338
2339
2340
2341
2342
2343
2344
2345
2346
2347
2348
2349
2350
2351
2352
2353
2354
2355
2356
2357
2358
2359
2360
2361
2362
2363
2364
2365
2366
2367
2368
2369
2370
2371
2372
2373
2374
2375
2376
2377
2378
2379
2380
2381
2382
2383
2384
2385
2386
2387
2388
2389
2390
2391
2392
2393
2394
2395
2396
2397
2398
2399
2400
2401
2402
2403
2404
2405
2406
2407
2408
2409
2410
2411
2412
2413
2414
2415
2416
2417
2418
2419
2420
2421
2422
2423
2424
2425
2426
2427
2428
2429
2430
2431
2432
2433
2434
2435
2436
2437
2438
2439
2440
2441
2442
2443
2444
2445
2446
2447
2448
2449
2450
2451
2452
2453
2454
2455
2456
2457
2458
2459
2460
2461
2462
2463
2464
2465
2466
2467
2468
2469
2470
2471
2472
2473
2474
2475
2476
2477
2478
2479
2480
2481
2482
2483
2484
2485
2486
2487
2488
2489
2490
2491
2492
2493
2494
2495
2496
2497
2498
2499
2500
2501
2502
2503
2504
2505
2506
2507
2508
2509
2510
2511
2512
2513
2514
2515
2516
2517
2518
2519
2520
2521
2522
2523
2524
2525
2526
2527
2528
2529
2530
2531
2532
2533
2534
2535
2536
2537
2538
2539
2540
2541
2542
2543
2544
2545
2546
2547
2548
2549
2550
2551
2552
2553
2554
2555
2556
2557
2558
2559
2560
2561
2562
2563
2564
2565
2566
2567
2568
2569
2570
2571
2572
2573
2574
2575
2576
2577
2578
2579
2580
2581
2582
2583
2584
2585
2586
2587
2588
2589
2590
2591
2592
2593
2594
2595
2596
2597
2598
2599
2600
2601
2602
2603
2604
2605
2606
2607
2608
2609
2610
2611
2612
2613
2614
2615
2616
2617
2618
2619
2620
2621
2622
2623
2624
2625
26

CONFIDENTIAL

NAME OUTPUT -- VERSION 44
M16 STATISTICAL SUMMARIES AS OF 28FEB68

STANDARD BLOCIO. NT# 1 HISTOGRAM OF MONTHS IN VIETNAM LOCATED IN WORDS 5,
WITH ASSOCIATED WEIGHTING FACTORS LOCATED IN WORDS 0,

NUMBER

650
637
626
611
590
585
572
559
546
533
520
507
494
481
460
455
442
429
416
403
390
377
364
351
330
325
312
299
286
273
260
247
234
221
208
195
182
169
156
143
130
117
104
91
78
65
52
39
26
13
INTERVAL 1234567890102030

RESPONDENTS BY NUMBER OF MONTHS IN VIETNAM			
INTERVAL	MONTHS	NUMBER	PERCENTAGE
1	Less Than 1	2	4%
2	1	159	8%
3	2	126	6%
4	3	96	5%
5	4	112	6%
6	5	70	3%
7	6	115	6%
8	7	65	3%
9	8	92	5%
10	9	105	5%
11	10	107	5%
12	11	176	9%
13	12	631	31%
14-25	Over 12	157	8%
TOTALS		2013	100%

$\bar{X}$ (ave)=8.65 mos. in VN.
 σ (std dev)=4.49 mos.

Heading: Number of Months in Vietnam

CONFIDENTIAL

CONFIDENTIAL

416 STATISTICAL SUMMARIES AS OF 28FEB68

STANDARD BLOCIO, MT# 1 HISTOGRAM OF DUTY POSITION LOCATED IN WORDS 7,
WITH ASSOCIATED WEIGHTING FACTORS LOCATED IN WORDS 0,

1100

1070

1040

1010

980

950

920

890

860

830

800

770

740

710

680

650

620

590

560

530

500

470

440

410

380

350

320

290

260

230

200

170

140

110

80

50

20

0

INTERVAL 123456789C

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

RESPONDENTS BY DUTY POSITION			
INTERVAL	DUTY POSITION	NUMBER	PERCENTAGE
1	Others - or No Response	1077	
2	Rifleman	384	41%
3	Grenadier	10	1%
4	Auto Rifleman	29	3%
5	Fire Team Ldr	109	12%
6	Squad Ldr	239	25%
7	Plat Sgt	39	4%
8	Plat Ldr, Co Comdr	21	2%
9	Ammo Bearer, RTU, Wireman	110	12%
10	Armorer	3	0.1%
TOTALS		2021	100% (944)

Heading: Duty Position

CONFIDENTIAL

CONFIDENTIAL

STATISTICAL SUMMARY AS OF 28 FEB 68

45414400C BLOCIO, NT# 1 HISTOGRAM OF WEAPONS USED
WITH ASSOCIATED WEIGHTING FACTORS LOCATED IN WORDS, O.

LOCATED IN WORDS 8.

NUMBER
1100 7
1078 X
1056 X
1034 X
1012 X
990 X
968 X
946 X
924 X
902 X
880 X
858 X
836 X
814 X
792 X
770 X
748 X
726 X
704 X
682 X
660 X
638 X
616 X
594 X
572 X
550 X
528 X
506 X
484 X
462 X
440 X
418 X
396 X
374 X
352 X
330 X
308 X
286 X
264 X
242 X
220 X
198 X
176 X
154 X
132 X
110 X
88 X
66 X
44 X
22 X
00 X
INTERVAL 12 10007092
10

WEAPONS PRESENTLY IN POSSESSION			
INTERVAL	WEAPON	NUMBER	PERCENTAGE
1	No Answer	15	-
2	M14	15	< 1%
3	M16 - w/o New Buffer	298	15%
4	M16 - w/New Buffer	1063	53%
5	M16 - w/New Buffer & Chrome	629	31%
TOTALS		2020	100% (2005)

Question 1: Type and Model Weapon Used

CONFIDENTIAL

CONFIDENTIAL

SUMX OUTPUT -- VERSION M4
M16 STATISTICAL SUMMARIES AS OF 20 FEB 68

STANDARDUS 010C10, NT# 1 HISTOGRAM OF TRAINING BEFORE R.V. LOCATED IN WORDS 9,
WITH ASSOCIATED WEIGHTING FACTORS LOCATED IN WORDS 10,

1520
1510
1480
1450
1420
1390
1360
1330
1300
1270
1240
1210
1180
1150
1120
1090
1060
1030
1000
970
940
910
880
850
820
790
760
730
700
670
640
610
580
550
520
490
460
430
400
370
340
310
280
250
220
190
160
130
100
70
40
10
INTERVAL 1210, 67890
10

RECEIPT OF FORMAL M16 TRAINING BEFORE VIETNAM			
INTERVAL	RESPONSE	NUMBER	PERCENTAGE
1	No Response	26	—
2	Yes	1518	76%
3	No	477	24%
TOTALS		2021	100% (1995)

Question 3a: Receipt of M16 Training BEFORE Vietnam

CONFIDENTIAL

CONFIDENTIAL

STATISTICAL SUMMARY AS OF 200 HOURS

STANDARD PLUNCIO, MIB 1 HISTOGRAM OF MECH. TRAIN. BEFORE VN LOCATED IN WORDS 110
WITH ASSOCIATED WEIGHTING FACTORS LOCATED IN WORDS 0.

HOURS MECHANICAL TRAINING RECEIVED - BEFORE VIETNAM		
INTERVAL	HOURS	PERCENTAGE
1	None	32%
2	1	7%
3	2	12%
4	3	4%
5	4	10%
6	5	5%
7	6	3%
8	7	1%
9	8	9%
10	9	1%
11	10	5%
12-31	11-30	9%
32-81	31-80	4%
82-100	No Response	-
TOTALS		100% (1831)

$\bar{X}(\text{ave}) = 5.2$ hours mechanical tng

$\sigma(\text{std dev}) = 8.2$ hours

Question 4A: Hours mechanical training received BEFORE Vietnam

INTERVAL 10 20 30 40 50 60 70 80 90 100 110

CONFIDENTIAL

C

1. THE HISTORY OF THE UNITED STATES

121

ANS

222

H. FRA

AM 01

SH

NY 4

777 76176

Abstract

.

10

HOURS MECHANICAL TRAINING RECEIVED IN VIETNAM			
INTERVAL	HOURS	NUMBER	PERCENTAGE
1	None	690	44%
2	1	318	20%
3	2	241	15%
4	3	56	4%
5	4	81	5%
6	5	31	2%
7	6	18	1%
8	7	3	< 1%
9	8	53	3%
10	9	0	-
11	10	27	1%
12-21	11-20	38	2%
22-88	21-89	24	2%
89-96	No Response	441	-
TOTALS		2021	100% (100%)

$$\bar{X} = 2.1 \text{ hours}$$

40 hours

Question 4a: Hours Mechanical Training in VW

[illegible]

THE

54

CONFIDENTIAL

M16 SUMX OUTPUT -- VERSION M4
M16 STATISTICAL SUMMARIES AS OF 20FEB68

STANDARD: M16C10, M16 1. HISTOGRAM OF CLEANING ROD IN UNIT LOCATED IN WORDS 17,
WITH ASSOCIATED WEIGHTING FACTORS LOCATED IN WORDS 0,

NUMBER

1900

1807

1804

1706

1706

1706

1710

1672

1634

1596

1558

1520

1482

1444

1406

1368

1330

1292

1254

1216

1178

1140

1102

1064

1026

988

912

836

760

684

608

532

456

380

304

228

152

76

0

AXC

AXX

AXX

AXX

AXX

AXX

AXX

AXX

AXX

AXX

AXX

AXX

AXX

NOTE: This table is a consolidation of all seven histograms on Question 5.

ITEM	DO YOU HAVE CLEANING MATERIALS?				TOTAL MEN RESPONDING
	INTERVAL 1 (NO RESPONSE)	INTERVAL 2 (YES)	INTERVAL 3 (NO)		
Cleaning Rod	103	97%	3%	(54)	1916
LSA Lubricant	103	91%	9%	(179)	1918
Chamber Brush	103	93%	7%	(134)	1918
Bore Brush	103	94%	6%	(116)	1918
Pipe Cleaners	104	69%	31%	(589)	1917
Patches	104	91%	9%	(163)	1917
Bore Cleaner	144	63%	37%	(686)	1877

Question 5a: Have cleaning rod (histograms for 5b-g available
on request)

55
CONFIDENTIAL

INTERVAL 1714567894
10

CONFIDENTIAL

STATISTICAL SUMMARY -- VERSION 44
M16 STATISTICAL SUMMARIES AS OF 20 FEB 68

NOTE: This table is a consolidation of all seven histograms on question 6a through 8.

ITEM	DO YOU CARRY CLEANING MATERIALS ON OPERATIONS?			TOTAL MEN RESPONDING
	INTERVAL 1 (NO RESPONSE)	INTERVAL 2 (YES)	INTERVAL 3 (NO)	
Cleaning Rod	126	85% (1614)	15% (281)	100% 1895
LSA Lubricant	126	75% (1416)	25% (479)	100% 1895
Chamber Brush	126	70% (1332)	30% (563)	100% 1895
Bore Brush	126	70% (1334)	30% (561)	100% 1895
Pipe Cleaners	127	36% (689)	64% (1205)	100% 1894
Patches	126	71% (1348)	29% (546)	100% 1894
Bore Cleaner	161	34% (651)	64% (1209)	100% 1860

Question 6a: Carry Cleaning Rod (histograms for 6b-g available on request)

CONFIDENTIAL

CONFIDENTIAL

STANDARD 80010, MT 1, HISTOGRAM OF HOW CARRIED
4TH ASSOCIATED WEIGHTING FACTORS LOCATED IN WORDS

LOCATED IN WORDS 44,

WHERE ARE CLEANING MATERIALS CARRIED?		
INTERVAL	PLACE	PERCENTAGE
1	No Response	867
2	Ammunition Pouch	56
3	Cleaning Kit	487
4	Pockets	51
5	In Pack	191
6	On Belt	49
7	Other	310
TOTALS		2011
		100% (1146)

Question 6h: Where are cleaning materials carried?

CONFIDENTIAL

CONFIDENTIAL

M16 STATISTICAL SUMMARIES AS OF 28 FEB 68

STANDARD C BLOCIO, M16 1 HISTOGRAM OF NEW BUFFER EQUIPPED LOCATED IN WORDS 31.

500

400

300

200

100

0

10

20

30

40

50

60

70

80

90

100

110

120

130

140

150

160

170

180

190

200

210

220

230

240

250

260

270

280

290

300

310

320

330

340

350

360

370

380

390

400

410

420

430

440

450

460

470

480

490

500

NUMBER

IS YOUR M16 EQUIPPED W/NEW BUFFER?			
INTERVAL	RESPONSE	NUMBER	PERCENTAGE
1	No	315	16%
2-99	Yes	1706	84%
TOTALS		2021	100%

Question 7a: Presence of new buffer, and number of weeks it has been installed.

9

8

7

6

5

4

3

2

1

0

10

20

30

40

50

60

70

80

90

100

110

120

130

140

150

160

170

180

190

200

INTERVAL

2

1

0

10

20

30

40

50

60

70

80

90

100

CONFIDENTIAL

CONFIDENTIAL

SUMX OUTPUT -- VERSION M4
M16 STATISTICAL SUMMARIES AS OF 2HFEB68

STANDARD DUDLO;	MT# 1	HISTOGRAM OF C.P.C. EQUIPED	LOCATED IN WORDS	32;
WITH ASSOCIATED WEIGHTING FACTORS	LOCATED IN WORDS	0;		

IS YOUR M16 EQUIPPED WITH A CHROMED CHAMBER?			
INTERVAL	RESPONSE	NUMBER	PERCENTAGE
1	No	1385	69%
2-99	Yes	636	31%
TOTALS		2021	100%

Question 7b: Presence of chromed chamber, and number of weeks in possession.

[illegible][illegible]

CONFIDENTIAL

SUNX OUTPUT -- VERSION M4
M16 STATISTICAL SUMMARY AS OF 20FEB68

STANUARD 810C10, NT# 3 HISTOGRAM OF TIME SINCE ZERO #2 LOCATED IN WORDS 33,
WITH ASSOCIATED WEIGHTING FACTORS LOCATED IN WORDS 0,

150
157
164
161
136
135
129
126
123
120
117
114
111
108
105
102
99
96
93
90
87
84
81
78
75
72
69
66
63
60
57
54
51
48
45
42
39
36
33
30
27
24
21
18
15
12
9
6
3
INTERVAL

ZEROING HISTORY				
INTERVAL	RESPONSE	MANEUVER BNS	ALL OTHERS	THEATER
1	No. Response	84	97	181
2-13	1. Months	60% (573)	55% (485)	58% (1058)
14-99	3. Months	28% (267)	32% (334)	33% (601)
100	Never	12% (112)	8% (68)	10% (180)
TOTALS	Responding Questioned	100% (952) 1036	100% (887) 984	100% (1839) 2020

$\bar{X}$ (ava. time. since zeroing): 11.6 weeks 16.3 weeks 13.9 weeks
(std. dev) : 13.7 weeks 17.9 weeks 16.0 weeks

Question 81. Zeroing history--maneuver bns (histograms for all others
and theater available on request)

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65
66
67
68
69
70
71
72
73
74
75
76
77
78
79
80
81
82
83
84
85
86
87
88
89
90
91
92
93
94
95
96
97
98
99
100
101
102
103
104
105
106
107
108
109
110
111
112
113
114
115
116
117
118
119
120
121
122
123
124
125
126
127
128
129
130
131
132
133
134
135
136
137
138
139
140
141
142
143
144
145
146
147
148
149
150
151
152
153
154
155
156
157
158
159
160
161
162
163
164
165
166
167
168
169
170
171
172
173
174
175
176
177
178
179
180
181
182
183
184
185
186
187
188
189
190
191
192
193
194
195
196
197
198
199
200
201
202
203
204
205
206
207
208
209
210
211
212
213
214
215
216
217
218
219
220
221
222
223
224
225
226
227
228
229
230
231
232
233
234
235
236
237
238
239
240
241
242
243
244
245
246
247
248
249
250
251
252
253
254
255
256
257
258
259
260
261
262
263
264
265
266
267
268
269
270
271
272
273
274
275
276
277
278
279
280
281
282
283
284
285
286
287
288
289
290
291
292
293
294
295
296
297
298
299
300
301
302
303
304
305
306
307
308
309
310
311
312
313
314
315
316
317
318
319
320
321
322
323
324
325
326
327
328
329
330
331
332
333
334
335
336
337
338
339
340
341
342
343
344
345
346
347
348
349
350
351
352
353
354
355
356
357
358
359
360
361
362
363
364
365
366
367
368
369
370
371
372
373
374
375
376
377
378
379
380
381
382
383
384
385
386
387
388
389
390
391
392
393
394
395
396
397
398
399
400
401
402
403
404
405
406
407
408
409
410
411
412
413
414
415
416
417
418
419
420
421
422
423
424
425
426
427
428
429
430
431
432
433
434
435
436
437
438
439
440
441
442
443
444
445
446
447
448
449
450
451
452
453
454
455
456
457
458
459
460
461
462
463
464
465
466
467
468
469
470
471
472
473
474
475
476
477
478
479
480
481
482
483
484
485
486
487
488
489
490
491
492
493
494
495
496
497
498
499
500
501
502
503
504
505
506
507
508
509
510
511
512
513
514
515
516
517
518
519
520
521
522
523
524
525
526
527
528
529
530
531
532
533
534
535
536
537
538
539
540
541
542
543
544
545
546
547
548
549
550
551
552
553
554
555
556
557
558
559
560
561
562
563
564
565
566
567
568
569
570
571
572
573
574
575
576
577
578
579
580
581
582
583
584
585
586
587
588
589
590
591
592
593
594
595
596
597
598
599
600
601
602
603
604
605
606
607
608
609
610
611
612
613
614
615
616
617
618
619
620
621
622
623
624
625
626
627
628
629
630
631
632
633
634
635
636
637
638
639
640
641
642
643
644
645
646
647
648
649
650
651
652
653
654
655
656
657
658
659
660
661
662
663
664
665
666
667
668
669
670
671
672
673
674
675
676
677
678
679
680
681
682
683
684
685
686
687
688
689
690
691
692
693
694
695
696
697
698
699
700
701
702
703
704
705
706
707
708
709
710
711
712
713
714
715
716
717
718
719
720
721
722
723
724
725
726
727
728
729
730
731
732
733
734
735
736
737
738
739
740
741
742
743
744
745
746
747
748
749
750
751
752
753
754
755
756
757
758
759
760
761
762
763
764
765
766
767
768
769
770
771
772
773
774
775
776
777
778
779
780
781
782
783
784
785
786
787
788
789
790
791
792
793
794
795
796
797
798
799
800
801
802
803
804
805
806
807
808
809
810
811
812
813
814
815
816
817
818
819
820
821
822
823
824
825
826
827
828
829
830
831
832
833
834
835
836
837
838
839
840
841
842
843
844
845
846
847
848
849
850
851
852
853
854
855
856
857
858
859
860
861
862
863
864
865
866
867
868
869
870
871
872
873
874
875
876
877
878
879
880
881
882
883
884
885
886
887
888
889
890
891
892
893
894
895
896
897
898
899
900
901
902
903
904
905
906
907
908
909
910
911
912
913
914
915
916
917
918
919
920
921
922
923
924
925
926
927
928
929
930
931
932
933
934
935
936
937
938
939
940
941
942
943
944
945
946
947
948
949
950
951
952
953
954
955
956
957
958
959
960
961
962
963
964
965
966
967
968
969
970
971
972
973
974
975
976
977
978
979
980
981
982
983
984
985
986
987
988
989
990
991
992
993
994
995
996
997
998
999
1000

CONFIDENTIAL

CONFIDENTIAL

SUMX OUTPUT -- VERSION M4
M16 STATISTICAL SUMMARIES AS OF 28FEB68

STANDARDX DLUCIO, NY# 1 HISTOGRAM OF TRACER ANNO CARRIED LOCATED IN WORDS 35,
WITH ASSOCIATED WEIGHTING FACTORS LOCATED IN WORDS , 0.

NOTE: This table is a consolidation of all three histograms on question 9.

ROUNDS OF AMMUNITION CARRIED ON OPERATIONS				
CHARACTERISTICS	BALL	TRACER	TOTAL	
$\bar{X}$ (Ave. Number)	224.3	65.1		297.8
σ (Std Dev)	145.2	87.0		180.7

Question 9: Total rounds tracer carried (histograms for ball and total rounds available on request)

11-11-67

CONFIDENTIAL

SUMMARY OUTPUT --- VERSION M4
M4 STATISTICAL SUMMARY AS OF 28FEB68

STANDARD 80010, M4 1 HISTOGRAM OF LUBRICATION OF AMMO LOCATED IN WORDS 36,
WITH ASSOCIATED WEIGHTING FACTORS LOCATED IN WORDS 0,

1500

1470

1440

1410

1380

1350

1320

1290

1260

1230

1200

1170

1140

1110

1080

1050

1020

990

960

930

900

870

840

810

780

750

720

690

660

630

600

570

540

510

480

450

420

390

360

330

300

270

240

210

180

150

120

90

60

30

0

INTERVAL 1234567890

10

DO YOU LUBRICATE AMMUNITION?		
INTERVAL	RESPONSE	PERCENTAGE
1	No Response	98
2	Yes	450
3	No	1472
TOTALS		2020
		100% (1922)

Question 10: Lubrication of Ammunition

CONFIDENTIAL

CONFIDENTIAL

SIXX INPUT -- VEXSIN M4
 H16 STATISTICAL SUMMARY AS OF 20FEB60

39, LOCATED IN WORDS
INST. CLEAN. MAG. HISTOGRAM OF
NT# 1
ULUCIO, WITH ASSOCIATED WEIGHING FACTORS LOCATED IN WORDS.

NOTE: This table is a consolidation of all three histograms in question 11.

HAS INSTRUCTION ON CARE & CLEANING BEEN RECEIVED?				
INTERVAL	RESPONSE	M16	AMMUNITION	MAGAZINE
1	No	6% (97)	11% (171)	10% (157)
2-99	Yes	94% (1580)	89% (1414)	90% (1439)
100	No Response	— 344	— 436	— 425
TOTALS:	Responding	100% (1677)	100% (1585)	100% (1596)
	Questioned	2021	2021	2021
$\bar{X}$ (Ave Time Since Inst.)				
		16.5 Weeks	15.8 Weeks	15.9 Weeks
		16.1 Weeks	16.2 Weeks	16.1 Weeks

Question 11c: Weeks since receipt of magazine, cleaning, instruction -
(histograms for M16 and ammunition cleaning available
on request)

CONFIDENTIAL

CONFIDENTIAL

STATISTICAL SUMMARY AS OF 201 ED060

STANDARD OUTPUT, NEW 1 HISTOGRAM OF FAILURE TO LOCK LOCATED IN WORDS 40,
WITH ASSOCIATED WEIGHTING FACTORS LOCATED IN WORDS 0,

NUMBER
1150
1127
1104
1081
1058
1035
1012
989
966
943
920
897
874
851
828
805
782
759
736
713
690
667
644
621
598
575
552
529
506
483
460
437
414
391
368
345
322
299
276
253
230
207
184
161
138
115
92
69
46
23
0

NUMBER OF FAILURES TO LOCK			
INTERVAL	NUMBER OF FAILURES	NUMBER	PERCENTAGE
1	None	1142	58%
2-6	1-5	519	26%
7-11	6-10	125	6%
12-88	Over 10	56	3%
89	No Response	44	-
90-100	Some - No Number Given	135	07%
TOTAL		2021	100% (1977)

$\bar{X}_2$ (average) = 5.3 failures/men reporting failures
 σ_2 (std dev) = 6.3 failures

$\bar{X}_1$ (ave) = 2.0 failures/all men
 σ_1 (std dev) = 4.6 failures

Question 12: Number of failures to lock.

INTERVAL
10
20
30
40
50
60
70
80
90
100
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
34
35
36
37
38
39
40
41
42
43
44
45
46
47
48
49
50
51
52
53
54
55
56
57
58
59
60
61
62
63
64
65
66
67
68
69
70
71
72
73
74
75
76
77
78
79
80
81
82
83
84
85
86
87
88
89
90
91
92
93
94
95
96
97
98
99
100
101
102
103
104
105
106
107
108
109
110
111
112
113
114
115
116
117
118
119
120
121
122
123
124
125
126
127
128
129
130
131
132
133
134
135
136
137
138
139
140
141
142
143
144
145
146
147
148
149
150
151
152
153
154
155
156
157
158
159
160
161
162
163
164
165
166
167
168
169
170
171
172
173
174
175
176
177
178
179
180
181
182
183
184
185
186
187
188
189
190
191
192
193
194
195
196
197
198
199
200
201
202
203
204
205
206
207
208
209
210
211
212
213
214
215
216
217
218
219
220
221
222
223
224
225
226
227
228
229
230
231
232
233
234
235
236
237
238
239
240
241
242
243
244
245
246
247
248
249
250
251
252
253
254
255
256
257
258
259
260
261
262
263
264
265
266
267
268
269
270
271
272
273
274
275
276
277
278
279
280
281
282
283
284
285
286
287
288
289
290
291
292
293
294
295
296
297
298
299
300
301
302
303
304
305
306
307
308
309
310
311
312
313
314
315
316
317
318
319
320
321
322
323
324
325
326
327
328
329
330
331
332
333
334
335
336
337
338
339
340
341
342
343
344
345
346
347
348
349
350
351
352
353
354
355
356
357
358
359
360
361
362
363
364
365
366
367
368
369
370
371
372
373
374
375
376
377
378
379
380
381
382
383
384
385
386
387
388
389
390
391
392
393
394
395
396
397
398
399
400
401
402
403
404
405
406
407
408
409
410
411
412
413
414
415
416
417
418
419
420
421
422
423
424
425
426
427
428
429
430
431
432
433
434
435
436
437
438
439
440
441
442
443
444
445
446
447
448
449
450
451
452
453
454
455
456
457
458
459
460
461
462
463
464
465
466
467
468
469
470
471
472
473
474
475
476
477
478
479
480
481
482
483
484
485
486
487
488
489
490
491
492
493
494
495
496
497
498
499
500
501
502
503
504
505
506
507
508
509
510
511
512
513
514
515
516
517
518
519
520
521
522
523
524
525
526
527
528
529
530
531
532
533
534
535
536
537
538
539
540
541
542
543
544
545
546
547
548
549
550
551
552
553
554
555
556
557
558
559
560
561
562
563
564
565
566
567
568
569
570
571
572
573
574
575
576
577
578
579
580
581
582
583
584
585
586
587
588
589
590
591
592
593
594
595
596
597
598
599
600
601
602
603
604
605
606
607
608
609
610
611
612
613
614
615
616
617
618
619
620
621
622
623
624
625
626
627
628
629
630
631
632
633
634
635
636
637
638
639
640
641
642
643
644
645
646
647
648
649
650
651
652
653
654
655
656
657
658
659
660
661
662
663
664
665
666
667
668
669
670
671
672
673
674
675
676
677
678
679
680
681
682
683
684
685
686
687
688
689
690
691
692
693
694
695
696
697
698
699
700
701
702
703
704
705
706
707
708
709
710
711
712
713
714
715
716
717
718
719
720
721
722
723
724
725
726
727
728
729
730
731
732
733
734
735
736
737
738
739
740
741
742
743
744
745
746
747
748
749
750
751
752
753
754
755
756
757
758
759
760
761
762
763
764
765
766
767
768
769
770
771
772
773
774
775
776
777
778
779
780
781
782
783
784
785
786
787
788
789
790
791
792
793
794
795
796
797
798
799
800
801
802
803
804
805
806
807
808
809
810
811
812
813
814
815
816
817
818
819
820
821
822
823
824
825
826
827
828
829
830
831
832
833
834
835
836
837
838
839
840
841
842
843
844
845
846
847
848
849
850
851
852
853
854
855
856
857
858
859
860
861
862
863
864
865
866
867
868
869
870
871
872
873
874
875
876
877
878
879
880
881
882
883
884
885
886
887
888
889
890
891
892
893
894
895
896
897
898
899
900
901
902
903
904
905
906
907
908
909
910
911
912
913
914
915
916
917
918
919
920
921
922
923
924
925
926
927
928
929
930
931
932
933
934
935
936
937
938
939
940
941
942
943
944
945
946
947
948
949
950
951
952
953
954
955
956
957
958
959
960
961
962
963
964
965
966
967
968
969
970
971
972
973
974
975
976
977
978
979
980
981
982
983
984
985
986
987
988
989
990
991
992
993
994
995
996
997
998
999
1000

CONFIDENTIAL

CONFIDENTIAL

SUMX OUTPUT -- VERSION M4
M10 STATISTICAL SUMMARY AS OF 20FEB68

45 STANDARD ULOC10; NT# 1 HISTOGRAM OF BUILT ASSIST LOCATED IN WORDS 41;
4111 ASSOCIATED WEIGHTING FACTORS LOCATED IN WORDS 0;

1050
1029
1000
987
966
945
924
903
882
861
840
819
798
777
756
735
714
693
672
651
630
609
588
567
546
525
504
483
462
441
420
399
378
357
336
315
294
273
252
231
210
189
168
147
126
105
84
63
42
21
0
INTERVAL 1214507092
10

HAVE YOU USED BOLT ASSIST?		
INTERVAL	RESPONSE	PERCENTAGE
1	No Response	93
2	Yes	48%
3	No	52%
TOTALS		2015 100% (1922)

Question 13: Use of bolt assist.

CONFIDENTIAL

CONFIDENTIAL

STATISTICAL SUMMARY AS OF 20FEB68

STANDARD HUCIO, MTB 1 HISTOGRAM OF BOLT ASSIST WORKED LOCATED IN WORDS 42.
WITH ASSOCIATED WEIGHING FACTORS LOCATED IN WORDS 0.

1100
1070
1050
1030
1010
990
970
950
930
910
890
870
850
830
810
790
770
750
730
710
690
670
650
630
610
590
570
550
530
510
490
470
450
430
410
390
370
350
330
310
290
270
250
230
210
190
170
150
130
110
90
70
50
30
10

DID BOLT ASSIST CLEAR PROBLEM?		
INTERVAL	RESPONSE	PERCENTAGE
1	Never	11%
2-88,90-99	Sometimes	43%
100	Always	46%
89	No Response	-
TOTALS	2021	100% (941)

$\bar{X}$ (average) = 68.9% of time it cleared problem
 σ (std dev) = 39.1%

Question 13: Percentage of the time that use of bolt assist cleared problem.

INTERVAL

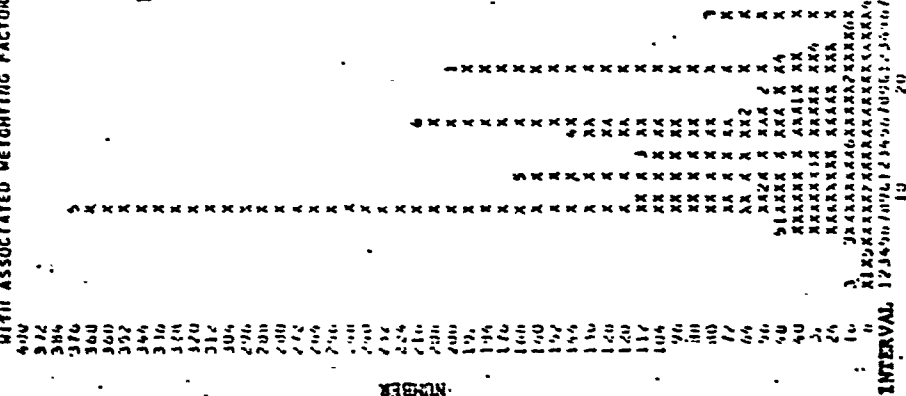
110
100
90
80
70
60
50
40
30
20
10
0

CONFIDENTIAL

CONFIDENTIAL

SUMMARY OUTPUT -- VERSION M4
M16 STATISTICAL SUMMARIES AS OF 20FEB68

STANDARD CUBIC: N18 1 HISTOGRAM OF MAGAZINES CARRIED LOCATED IN WORDS 13,
WITH ASSOCIATED WEIGHTING FACTORS LOCATED IN WORDS 1, 0,



NOTE: This table is a consolidation of all three histograms on question 14.

NUMBER OF MAGAZINES CARRIED ON OPERATIONS			
CENTRAL TENDENCY	MANEUVER BNS	ALL OTHERS	THEATER
$\bar{X}$ (Average No. Carried)	16.6	11.3	14.0
σ (Standard Deviation of Distribution)	7.5	8.2	7.8

Question 14: Number of magazines carried--theater (histograms for maneuver bns & all others available on request)

INTERVAL 10 20 30 40 50 60 70 80 90 100 110 120 130 140 150 160 170 180 190 200 210 220 230 240 250 260 270 280 290 300 310 320 330 340 350 360 370 380 390 400

CONFIDENTIAL

CONFIDENTIAL

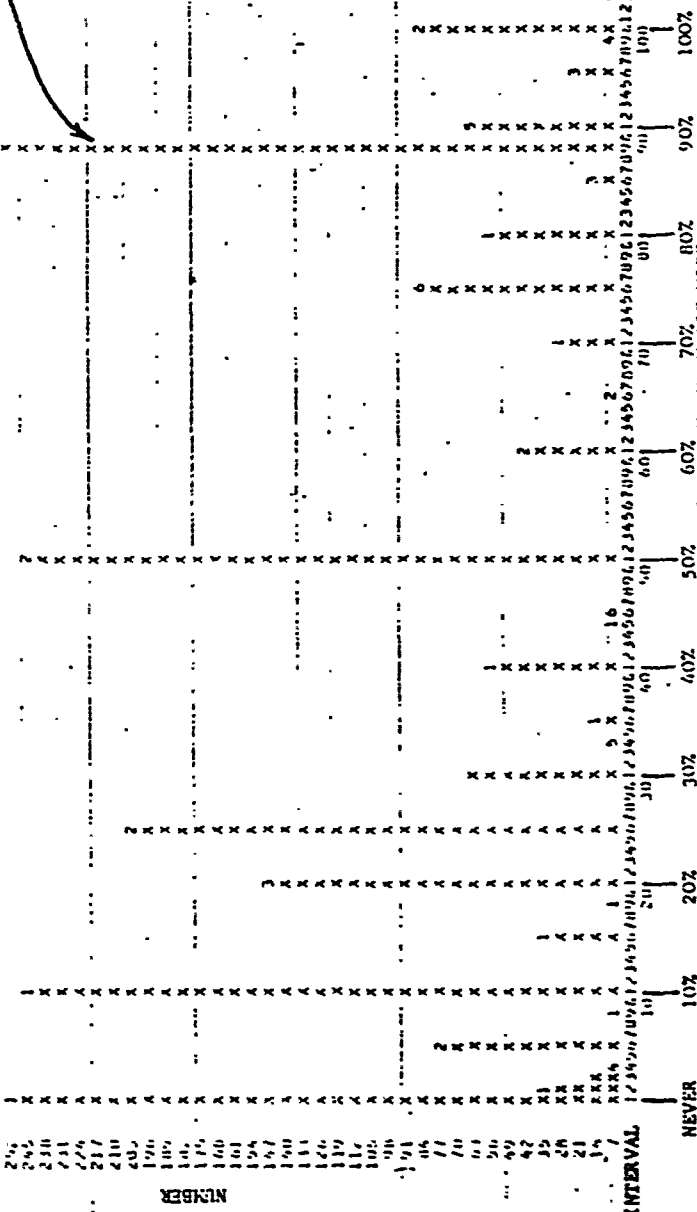
DATA INPUT -- VERSION 44
M16 STATISTICAL SUMMARY AS OF 20 FEB 68

STANDARD DEVIATION, M16 1. DISTRIBUTION OF FULLY AUTOMATIC FIPL LOCATED IN WORDS 48,
WITH ASSOCIATED WEIGHTING FACTORS LOCATED IN WORDS 5, 0,

Question 13: Percentage of Fire Expended in Fully Automatic Mode

$\bar{X}$ (avn) = 33.9%
 σ (std dev) = 30.4%

No Response



CONFIDENTIAL

CONFIDENTIAL

STATISTICAL SUMMARY -- VERSION M4
M16 STATISTICAL SUMMARY AS IN ZHTEH00

STANDARD DEVIATION, N/A 1 HISTOGRAM OF SHIRT BURST FINE LOCATED IN WORDS 49,
WITH ASSOCIATED WEIGHTING FACTORS LOCATED IN WORDS 0,

Question 16: Percentage of Automatic Fire Expended in Short Bursts

$\bar{X}$ (ave) = 60.2%
 σ (std dev) = 32.9%

No Response

NUMBER

INTERVAL	10%	20%	30%	40%	50%	60%	70%	80%	90%	100%
1	1	1	1	1	1	1	1	1	1	1
2	1	1	1	1	1	1	1	1	1	1
3	1	1	1	1	1	1	1	1	1	1
4	1	1	1	1	1	1	1	1	1	1
5	1	1	1	1	1	1	1	1	1	1
6	1	1	1	1	1	1	1	1	1	1
7	1	1	1	1	1	1	1	1	1	1
8	1	1	1	1	1	1	1	1	1	1
9	1	1	1	1	1	1	1	1	1	1
10	1	1	1	1	1	1	1	1	1	1
11	1	1	1	1	1	1	1	1	1	1
12	1	1	1	1	1	1	1	1	1	1
13	1	1	1	1	1	1	1	1	1	1
14	1	1	1	1	1	1	1	1	1	1
15	1	1	1	1	1	1	1	1	1	1
16	1	1	1	1	1	1	1	1	1	1
17	1	1	1	1	1	1	1	1	1	1
18	1	1	1	1	1	1	1	1	1	1
19	1	1	1	1	1	1	1	1	1	1
20	1	1	1	1	1	1	1	1	1	1
21	1	1	1	1	1	1	1	1	1	1
22	1	1	1	1	1	1	1	1	1	1
23	1	1	1	1	1	1	1	1	1	1
24	1	1	1	1	1	1	1	1	1	1
25	1	1	1	1	1	1	1	1	1	1
26	1	1	1	1	1	1	1	1	1	1
27	1	1	1	1	1	1	1	1	1	1
28	1	1	1	1	1	1	1	1	1	1
29	1	1	1	1	1	1	1	1	1	1
30	1	1	1	1	1	1	1	1	1	1
31	1	1	1	1	1	1	1	1	1	1
32	1	1	1	1	1	1	1	1	1	1
33	1	1	1	1	1	1	1	1	1	1
34	1	1	1	1	1	1	1	1	1	1
35	1	1	1	1	1	1	1	1	1	1
36	1	1	1	1	1	1	1	1	1	1
37	1	1	1	1	1	1	1	1	1	1
38	1	1	1	1	1	1	1	1	1	1
39	1	1	1	1	1	1	1	1	1	1
40	1	1	1	1	1	1	1	1	1	1
41	1	1	1	1	1	1	1	1	1	1
42	1	1	1	1	1	1	1	1	1	1
43	1	1	1	1	1	1	1	1	1	1
44	1	1	1	1	1	1	1	1	1	1
45	1	1	1	1	1	1	1	1	1	1
46	1	1	1	1	1	1	1	1	1	1
47	1	1	1	1	1	1	1	1	1	1
48	1	1	1	1	1	1	1	1	1	1
49	1	1	1	1	1	1	1	1	1	1
50	1	1	1	1	1	1	1	1	1	1
51	1	1	1	1	1	1	1	1	1	1
52	1	1	1	1	1	1	1	1	1	1
53	1	1	1	1	1	1	1	1	1	1
54	1	1	1	1	1	1	1	1	1	1
55	1	1	1	1	1	1	1	1	1	1
56	1	1	1	1	1	1	1	1	1	1
57	1	1	1	1	1	1	1	1	1	1
58	1	1	1	1	1	1	1	1	1	1
59	1	1	1	1	1	1	1	1	1	1
60	1	1	1	1	1	1	1	1	1	1
61	1	1	1	1	1	1	1	1	1	1
62	1	1	1	1	1	1	1	1	1	1
63	1	1	1	1	1	1	1	1	1	1
64	1	1	1	1	1	1	1	1	1	1
65	1	1	1	1	1	1	1	1	1	1
66	1	1	1	1	1	1	1	1	1	1
67	1	1	1	1	1	1	1	1	1	1
68	1	1	1	1	1	1	1	1	1	1
69	1	1	1	1	1	1	1	1	1	1
70	1	1	1	1	1	1	1	1	1	1
71	1	1	1	1	1	1	1	1	1	1
72	1	1	1	1	1	1	1	1	1	1
73	1	1	1	1	1	1	1	1	1	1
74	1	1	1	1	1	1	1	1	1	1
75	1	1	1	1	1	1	1	1	1	1
76	1	1	1	1	1	1	1	1	1	1
77	1	1	1	1	1	1	1	1	1	1
78	1	1	1	1	1	1	1	1	1	1
79	1	1	1	1	1	1	1	1	1	1
80	1	1	1	1	1	1	1	1	1	1
81	1	1	1	1	1	1	1	1	1	1
82	1	1	1	1	1	1	1	1	1	1
83	1	1	1	1	1	1	1	1	1	1
84	1	1	1	1	1	1	1	1	1	1
85	1	1	1	1	1	1	1	1	1	1
86	1	1	1	1	1	1	1	1	1	1
87	1	1	1	1	1	1	1	1	1	1
88	1	1	1	1	1	1	1	1	1	1
89	1	1	1	1	1	1	1	1	1	1
90	1	1	1	1	1	1	1	1	1	1
91	1	1	1	1	1	1	1	1	1	1
92	1	1	1	1	1	1	1	1	1	1
93	1	1	1	1	1	1	1	1	1	1
94	1	1	1	1	1	1	1	1	1	1
95	1	1	1	1	1	1	1	1	1	1
96	1	1	1	1	1	1	1	1	1	1
97	1	1	1	1	1	1	1	1	1	1
98	1	1	1	1	1	1	1	1	1	1
99	1	1	1	1	1	1	1	1	1	1
100	1	1	1	1	1	1	1	1	1	1

100% 100% 100% 100% 100% 100% 100% 100% 100% 100% 100%

SUMX OUTPUT -- VERSION M4
M16 STATISTICAL SUMMARY AS OF 20FEB68

STANDARD C BLOCIO,	NT# 1	HISTOGRAM OF MOST ROUNDS FIRED	LOCATED IN WORDS
WITH ASSOCIATED WEIGHTING FACTORS	LOCATED IN WORDS	0.	0.

NOTE: This table is a consolidation of all three histograms on question 17.

LARGEST NUMBER OF ROUNDS EXPENDED IN A SINGLE DAY OF COMBAT				
CENTRAL TENDENCY	MANEUVER BNS	ALL OTHERS	THEATER	
$\bar{X}$ (Average No. Expended)	293.3	327.0	307.7	
σ (Standard Deviation of Distribution)	334.2	357.5	344.7	

Question 17: Largest number of rounds expended in a single day of combat—theater (histograms for maneuver units & all others available on request)

[illegible]

70

CONFIDENTIAL

SUMX OUTPUT -- VERSION MA
M16 STATISTICAL SUMMARIES AS OF 20FEB68

LOCATED IN WORDS 51.

STANDARD 110C10. M16 1 HISTOGRAM OF CARD ISSUED
WITH ASSOCIATED HEIGHTING FACTORS LOCATED IN WORDS 0.

1150 8
1121 X
1104 X
1081 X
1058 X
1035 X
1012 X
989 X
966 X
943 X
920 X
897 X
874 X
851 X
828 X
805 X
782 X
759 X
736 X
713 X
690 X
667 X
644 X
621 X
598 X
575 X
552 X
529 X
506 X
483 X
460 X
437 X
414 X
391 X
368 X
345 X
322 X
299 X
276 X
253 X
230 X
207 X
184 X
161 X
138 X
115 X
92 X
69 X
46 X
23 X
INTERVAL 1/14567892
10

NOTE: This table is a consolidation of two histograms on question 18.

M16 CARE & CLEANING INSTRUCTION CARD			
INTERVAL	RESPONSE	WAS CARD ISSUED?	IF ISSUED, DO YOU STILL HAVE IT?
1	No Response	-	-
2	Yes	58% (1112)	51% (547)
3	No	42% (797)	49% (535)
TOTALS:	Responding	100% (1909)	100% (1082)
	Questioned	2019	2018

Question 18a: Was instruction card issued? (histogram for presence of card available on request)

CONFIDENTIAL

CONFIDENTIAL

STATISTICAL SUMMARY -- VERSION 14
M16 STATISTICAL SUMMARY AS OF 20F0608

LOCATED IN WORDS 53.

HISTOGRAM OF TEST FIRING
FACTORS LOCATED IN WORDS 0.

STANDARD WLOCIO,
WITH ASSOCIATED WEIGHTING

1400 8

1500 x

1516 x

1506 x

1472 x

1440 x

1400 x

1376 x

1344 x

1312 x

1280 x

1240 x

1216 x

1184 x

1152 x

1120 x

1088 x

1056 x

1024 x

992 x

960 x

928 x

896 x

864 x

832 x

800 x

768 x

736 x

704 x

672 x

640 x

608 x

576 x

544 x

512 x

480 x

448 x

416 x

384 x

352 x

320 x

288 x

256 x

224 x

192 x

160 x

128 x

96 x

64 x

32 x

16 x

8 x

4 x

2 x

1 x

0 x

INTERVAL 1234567890

10

DOES YOUR UNIT TEST FIRE INDIVIDUAL WEAPONS?		
INTERVAL	RESPONSE	PERCENTAGE
1	No Response	110
2	YES	1576
3	NO	335
TOTALS		2021
		100% (1911)

Question 19: Does your unit test fire individual weapons?

CONFIDENTIAL

CONFIDENTIAL

SUNX OUTPUT -- VERSION M4
M16 STATISTICAL SUMMARY AS OF 20FEB68

STANDARD UCUCIO, NT# 1 HISTOGRAM OF TEST SCHEDULE
WITH ASSOCIATED WEIGHTING FACTORS LOCATED IN WORDS, 0, LOCATED IN WORDS 5%,

1250 X
1225 X
1200 X
1175 X
1150 X
1125 X
1100 X
1075 X
1050 X
1025 X
1000 X
975 X
950 X
925 X
900 X
875 X
850 X
825 X
800 X
775 X
750 X
725 X
700 X
675 X
650 X
625 X
600 X
575 X
550 X
525 X
500 X
475 X
450 X
425 X
400 X
375 X
350 X
325 X
300 X
275 X
250 X
225 X
200 X
175 X
150 X
125 X
100 X
75 X
50 X
25 X
INTERVAL 125

IF TEST FIRING IS CONDUCTED, IS THERE A SCHEDULE?			
INTERVAL	SCHEDULE	NUMBER	PERCENTAGE
1	None	1236	73%
2	At First Light	13	1%
3	Before Moving Out	70	4%
4	Daily	73	4%
5	Every Second Day	14	1%
6	Weekly	67	4%
7	Other	215	13%
10	No Response	333	-
TOTALS		2021	100% (1688)

Question 20: If you test fire, what is the test firing schedule?

CONFIDENTIAL

CONFIDENTIAL

SUNX OUTPUT -- VERSION M6
M16 STATISTICAL SUMMARIES AS OF 28FEB68

LOCATED IN WORDS 55

M16 HISTOGRAM OF CLEANING OF M16
FACTORS LOCATED IN WORDS 0

STANDARD DEVIATION

M16 ASSOCIATED LIGHTING FACTORS

800 5

794 4

788 3

782 2

776 1

770 0

764 0

758 0

752 0

746 0

740 0

734 0

728 0

722 0

716 0

710 0

704 0

698 0

682 0

676 0

670 0

664 0

658 0

652 0

646 0

640 0

634 0

628 0

622 0

616 0

610 0

604 0

598 0

592 0

586 0

580 0

574 0

568 0

562 0

556 0

550 0

544 0

538 0

532 0

526 0

520 0

514 0

508 0

502 0

496 0

490 0

484 0

478 0

472 0

466 0

460 0

454 0

448 0

442 0

436 0

430 0

424 0

418 0

412 0

406 0

400 0

394 0

388 0

382 0

376 0

370 0

364 0

358 0

352 0

346 0

340 0

334 0

328 0

322 0

316 0

310 0

304 0

298 0

292 0

286 0

280 0

274 0

268 0

262 0

256 0

250 0

244 0

238 0

232 0

226 0

220 0

214 0

208 0

202 0

196 0

190 0

184 0

178 0

172 0

166 0

160 0

154 0

148 0

142 0

136 0

130 0

124 0

118 0

112 0

106 0

100 0

94 0

88 0

82 0

76 0

70 0

64 0

58 0

52 0

46 0

40 0

34 0

28 0

22 0

16 0

10 0

4 0

0 0

M16 RIFLE CLEANING FREQUENCY			
INTERVAL	FREQUENCY	NUMBER	PERCENTAGE
1	Never	13	1%
2	Daily	789	54%
3	Every 2d Day	224	15%
4	Every 3d Day	174	12%
5	Weekly	204	14%
6	Every 2 Weeks	76	5%
7	No Response	551	-
TOTALS		2004	100% (1453)

$\bar{X}$ (ave) = 20.4 times per month
 σ (std dev) = 11.1 times per month

Question 21: Rifle cleaning frequency.

CONFIDENTIAL

CONFIDENTIAL

ML6 STATISTICAL SUMMARIES AS OF 29FEB68

ESTIMATED BLUCIO, NIF 1 HISTOGRAM OF MAGAZINE LOAD LOCATED IN WORDS 56,
WITH ASSOCIATED WEIGHTING FACTORS LOCATED IN WORDS, 0,

1250
1225
1200
1175
1150
1125
1100
1075
1050
1025
1000
975
950
925
900
875
850
825
800
775
750
725
700
675
650
625
600
575
550
525
500
475
450
425
400
375
350
325
300
275
250
225
200
175
150
125
100
75
50
25
0

NUMBER

1250 1225 1200 1175 1150 1125 1100 1075 1050 1025 1000 975 950 925 900 875 850 825 800 775 750 725 700 675 650 625 600 575 550 525 500 475 450 425 400 375 350 325 300 275 250 225 200 175 150 125 100 75 50 25 0

INTERVAL 1250 1225 1200 1175 1150 1125 1100 1075 1050 1025 1000 975 950 925 900 875 850 825 800 775 750 725 700 675 650 625 600 575 550 525 500 475 450 425 400 375 350 325 300 275 250 225 200 175 150 125 100 75 50 25 0

NUMBER OF POUNDS LOADED IN MAGAZINES			
INTERVAL	RESPONSE	NUMBER	PERCENTAGE
1	No Response	136	-
16	15	18	1%
17	16	10	1%
18	17	69	4%
19	18	1241	66%
20	19	316	17%
21	20	220	12%
TOTALS		2010	100% (1874)

$\bar{X}$ (ave) = 18.3 rounds
 σ (std dev) = 0.82 rounds

Question 22: Number of rounds loaded into magazines.

CONFIDENTIAL

CONFIDENTIAL

SUMX OUTPUT -- VERSION M4
M16 STATISTICAL SUMMARY AS OF 20FEB68

STANDARD C BLOC 10. MT# 2 HISTOGRAM OF ROUNDS FIRED/4MO #1 LOCATED IN WORDS 58.
WITH ASSOCIATED WEIGHTING FACTORS LOCATED IN WORDS 0.

NOTE: This table is a consolidation of all three histograms on question 23.

TOTAL ROUNDS FIRED W/IN LAST FOUR MONTHS 1/				
INTERVAL	ROUNDS	ALL OTHERS	MANEUVER BNS	THEATER
1	No Response	20	29	49
2	0-500	51% (407)	30% (190)	42% (597)
3	500-1000	21% (169)	24% (150)	22% (319)
4	1000-1500	11% (86)	16% (100)	13% (186)
5	1500-2000	5% (38)	10% (63)	7% (101)
6	Over 2000	12% (98)	21% (133)	16% (231)
10	No Response	84	70	154
TOTALS:	Responding	100% (798)	100% (636)	100% (1436)
	Questioned	902	735	1637

$\bar{X}$ (avg) : 750.0 rds 1039.7 rds 878.0 rds

(std dev): 628.1 rds 675.7 rds 665.0 rds

1/ All men with less than four months in-country were excluded.

Question 23: Total number of rounds fired within the last four months -- all others
(histograms for maneuver bns and theater available on request)

CONFIDENTIAL

CONFIDENTIAL

STATISTICAL SUMMARY -- VERSION M4
M16 STATISTICAL SUMMARIES AS OF 20F0060

STANDARD OLCIO, HT# 1. HISTOGRAM OF STICKING IN CHAMBER LOCATED IN WORDS 40,
WITH ASSOCIATED WEIGHTING FACTORS LOCATED IN WORDS 0,

1400
1372
1364
1316
1288
1200
1212
1204
1176
1160
1120
1092
1004
1000
996
972
924
876
808
760
712
664
616
568
520
472
424
376
328
280
232
184
136
88
40
0
INTERVAL 1234567890
10

NOTE: This table is a consolidation of all three histograms on question 25.

DID ROUNDS STICK IN CHAMBER WHEN CHAMBERED FOR:				
INTERVAL	RESPONSE	0-8 HOURS	9-16 HOURS	17-24 HOURS
1	No Response	-	438	-
2	Yes	13% (206)	8% (88)	12% (141)
3	No	87% (1376)	92% (1068)	88% (1029)
TOTALS:	Respondents	100% (1582)	100% (1156)	100% (1170)
	Questioned	2020	2021	2019

Question 25a: Do rounds stick in the chamber when left for: 0-8 hours?
(Histograms for 9-16 hours and 17-24 hours available on request)

CONFIDENTIAL

[illegible]

STATISTICAL SUMMARIES AS OF 2011:260

STANDARD ILLUSTRATION # 1 HISTOGRAM OF NO. INSPECTIONS/NO. LOCATED IN WORDS WITH ASSOCIATED WEIGHTING FACTORS LOCATED IN WORDS, 0, 63,

UNIT RIFLE INSPECTION FREQUENCY (INSPECTIONS/MONTH)			
INTERVAL	RESPONSE	NUMBER	PERCENTAGE
1	No Inspections Conducted	391	21%
2	1/Month (Monthly)	277	15%
3-4	2 or 3/Month	99	5%
5	4/Month (Weekly)	396	21%
6-8	5-7/Month	113	6%
9	8/Month (Twice Weekly)	100	5%
10-28	9-27/Month	120	6%
32-99	31-98/Month	7	4%
89	No Response	147	-
100	Yes--No Number Indicated	249	13%
TOTALS		2021	100% (1874)

$\bar{X}$ (ave freq. of insps) = 5.6 inspections per month
 σ (std dev) = 8.0 inspections

Question 26a: Frequency of unit rifle inspections.

[illegible]

79

1
2
3
4
5
6
7
8
9
10

SUMX OUTPUT -- VERSION 114
416 STATISTICAL SUMMARIES AS OF 20FEB68

ESTADÍSTICA DE ULCIOU, WIF 3 HISTOGRAM OF WHU INSPLCTS LOCATED IN WORDS 64,
WITH ASSOCIATED WEIGHTING FACTORS LOCATED IN WORDS, O.

WHO CONDUCTS UNIT WEAPONS INSPECTIONS?			
INTERVAL	RESPONSE	NUMBER	PERCENTAGE
1	No Response	803	--
2	Fire Team Ldr	79	7%
3	Squad Ldr	297	24%
4	Platoon Sgt	362	30%
5	Platoon Ldr	225	19%
6	Company Comdr	229	19%
7	Other Supervisor	23	2%
TOTALS:		2018	100%

Question 26b: Who inspects weapons?

1-10

INTERVAL 1234567896 10

CONFIDENTIAL

ML6 SUMMARY OUTPUT -- VERSION M4
ML6 STATISTICAL SUMMARIES AS OF 2010000

STANDARD: BLOCIO, M4 1 HISTOGRAM OF MAG. AND AMMO INSP. LOCATED IN WORDS 57,
ML6 ASSOCIATED WEIGHTING FACTORS LOCATED IN WORDS 0,

030 2

031 2

016 2

709 2

702 2

705 2

740 2

731 2

714 2

697 2

000 7X

003 2X

006 2X

029 2X

012 2X

005 2X

010 2X

001 2X

004 2X

027 2X

010 2X

010 2X

010 2X

010 2X

010 2X

010 2X

010 2X

010 2X

010 2X

010 2X

010 2X

010 2X

ARE UNIT MAG & AMMO INSPECTIONS CONDUCTED?			
INTERVAL	RESPONSE	NUMBER	PERCENTAGE
1	No Response	670	--
2	Yes	818	61%
3	No	523	39%
TOTALS		2011	100% (1341)

Question 26c: Are unit magazine and ammunition inspections conducted?

INTERVAL 1/1650/896
10

CONFIDENTIAL

3UMX OUTPUT -- VERSION M4
 M16 STATISTICAL SUMMARY AS OF 20080808

STANDARD CUBIC, M3	1. MISTUCHON OF PERCENT OF TRACER WITH ASSOCIATED WEIGHTING FACTORS LOCATED IN WORDS, %	LOCATED IN WORDS
65		65

PERCENTAGE TRACER FIRED IN COMBAT			
INTERVAL	RESPONSE	NUMBER	PERCENTAGE
1	No. Response	738	-
2-11	1-10%	424	34%
12-21	11-20%	264	21%
22-31	21-30%	177	14%
32-41	31-40%	88	7%
42-51	41-50%	142	14%
52-61	51-60%	3	1%
62-71	61-70%	4	1%
72-81	71-80%	46	4%
82-91	81-90%	20	2%
92-100	91-100%	55	4%
TOTALS		2021	100%

 $\bar{X}_{(ave)} = 28.5\% \text{ tracer}$

... ..
103033 25:5% (p q v d b t)

Question 27: Percentage tracer fired in combat

[illegible]

986

CONFIDENTIAL

M16 DATA OUTPUT -- VERSION M6
M16 STATISTICAL SUMMARIES AS OF 28FF068

STANDARD INCLIO, 1000 1. HISTOGRAM OF PREFERENCE OF WEAPON LOCATED IN WORDS 67,
WITH ASSOCIATED WEIGHTING FACTORS LOCATED IN WORDS 0,

1300 4
1276 X
1263 X
1222 X
1196 X
1170 X
1144 X
1116 X
1092 X
1066 X
1040 X
1014 X
988 X
962 X
936 X
910 X
884 X
858 X
832 X
806 X
780 X
754 X
728 X
702 X
676 X
650 X
624 X
598 X
572 X
546 X
520 X
494 X
468 X
442 X
416 X
390 X
364 X
338 X
312 X
286 X
260 X
234 X
208 X
182 X
156 X
130 X
104 X
78 X
52 X
26 X
0

WEAPON PREFERENCE			
INTERVAL	WEAPON	NUMBER	PERCENTAGE
1	No Response	203	-
2	M16	1252	69%
3	M14	258	14%
4	XM177E1	291	16%
5	Other	16	< 1%
TOTALS		2020	100% (1817)

WEAPON PREFERENCE		
WEAPON	NUMBER	PERCENTAGE
M16 & XM177E1	1543	85%
M14	258	14%
Other	16	< 1%
TOTALS	1817	100%

Question 29: What weapon do you prefer?

INTERVAL 13550 1096
10

CONFIDENTIAL

CONFIDENTIAL

SHIVA OUTPUT -- VERSION M4
M16 STATISTICAL SUMMARIES AS OF 20 FEB 68

STANDARD BLUCTION, M16 1 HISTOGRAM OF LIKES 1 LOCATED IN WORDS 68,
ALL ASSOCIATED REIGHTING FACTORS LOCATED IN WORDS 0,

1350
1373
1406
1439
1472
1505
1538
1571
1604
1637
1670
1703
1736
1769
1802
1835
1868
1901
1934
1967
2000
2033
2066
2099
2132
2165
2198
2231
2264
2297
2330
2363
2396
2429
2462
2495
2528
2561
2594
2627
2660
2693
2726
2759
2792
2825
2858
2891
2924
2957
2990
3023
3056
3089
3122
3155
3188
3221
3254
3287
3320
3353
3386
3419
3452
3485
3518
3551
3584
3617
3650
3683
3716
3749
3782
3815
3848
3881
3914
3947
3980
4013
4046
4079
4112
4145
4178
4211
4244
4277
4310
4343
4376
4409
4442
4475
4508
4541
4574
4607
4640
4673
4706
4739
4772
4805
4838
4871
4904
4937
4970
5003
5036
5069
5102
5135
5168
5201
5234
5267
5300
5333
5366
5399
5432
5465
5498
5531
5564
5597
5630
5663
5696
5729
5762
5795
5828
5861
5894
5927
5960
5993
6026
6059
6092
6125
6158
6191
6224
6257
6290
6323
6356
6389
6422
6455
6488
6521
6554
6587
6620
6653
6686
6719
6752
6785
6818
6851
6884
6917
6950
6983
7016
7049
7082
7115
7148
7181
7214
7247
7280
7313
7346
7379
7412
7445
7478
7511
7544
7577
7610
7643
7676
7709
7742
7775
7808
7841
7874
7907
7940
7973
8006
8039
8072
8105
8138
8171
8204
8237
8270
8303
8336
8369
8402
8435
8468
8501
8534
8567
8600
8633
8666
8699
8732
8765
8798
8831
8864
8897
8930
8963
8996
9029
9062
9095
9128
9161
9194
9227
9260
9293
9326
9359
9392
9425
9458
9491
9524
9557
9590
9623
9656
9689
9722
9755
9788
9821
9854
9887
9920
9953
9986
10019
10052
10085
10118
10151
10184
10217
10250
10283
10316
10349
10382
10415
10448
10481
10514
10547
10580
10613
10646
10679
10712
10745
10778
10811
10844
10877
10910
10943
10976
11009
11042
11075
11108
11141
11174
11207
11240
11273
11306
11339
11372
11405
11438
11471
11504
11537
11570
11603
11636
11669
11702
11735
11768
11801
11834
11867
11900
11933
11966
11999
12032
12065
12098
12131
12164
12197
12230
12263
12296
12329
12362
12395
12428
12461
12494
12527
12560
12593
12626
12659
12692
12725
12758
12791
12824
12857
12890
12923
12956
12989
13022
13055
13088
13121
13154
13187
13220
13253
13286
13319
13352
13385
13418
13451
13484
13517
13550
13583
13616
13649
13682
13715
13748
13781
13814
13847
13880
13913
13946
13979
14012
14045
14078
14111
14144
14177
14210
14243
14276
14309
14342
14375
14408
14441
14474
14507
14540
14573
14606
14639
14672
14705
14738
14771
14804
14837
14870
14903
14936
14969
15002
15035
15068
15101
15134
15167
15200
15233
15266
15299
15332
15365
15398
15431
15464
15497
15530
15563
15596
15629
15662
15695
15728
15761
15794
15827
15860
15893
15926
15959
15992
16025
16058
16091
16124
16157
16190
16223
16256
16289
16322
16355
16388
16421
16454
16487
16520
16553
16586
16619
16652
16685
16718
16751
16784
16817
16850
16883
16916
16949
16982
17015
17048
17081
17114
17147
17180
17213
17246
17279
17312
17345
17378
17411
17444
17477
17510
17543
17576
17609
17642
17675
17708
17741
17774
17807
17840
17873
17906
17939
17972
18005
18038
18071
18104
18137
18170
18203
18236
18269
18302
18335
18368
18401
18434
18467
18500
18533
18566
18599
18632
18665
18698
18731
18764
18797
18830
18863
18896
18929
18962
18995
19028
19061
19094
19127
19160
19193
19226
19259
19292
19325
19358
19391
19424
19457
19490
19523
19556
19589
19622
19655
19688
19721
19754
19787
19820
19853
19886
19919
19952
19985
20018
20051
20084
20117
20150
20183
20216
20249
20282
20315
20348
20381
20414
20447
20480
20513
20546
20579
20612
20645
20678
20711
20744
20777
20810
20843
20876
20909
20942
20975
21008
21041
21074
21107
21140
21173
21206
21239
21272
21305
21338
21371
21404
21437
21470
21503
21536
21569
21602
21635
21668
21701
21734
21767
21800
21833
21866
21899
21932
21965
21998
22031
22064
22097
22130
22163
22196
22229
22262
22295
22328
22361
22394
22427
22460
22493
22526
22559
22592
22625
22658
22691
22724
22757
22790
22823
22856
22889
22922
22955
22988
23021
23054
23087
23120
23153
23186
23219
23252
23285
23318
23351
23384
23417
23450
23483
23516
23549
23582
23615
23648
23681
23714
23747
23780
23813
23846
23879
23912
23945
23978
24011
24044
24077
24110
24143
24176
24209
24242
24275
24308
24341
24374
24407
24440
24473
24506
24539
24572
24605
24638
24671
24704
24737
24770
24803
24836
24869
24902
24935
24968
25001
25034
25067
25100
25133
25166
25199
25232
25265
25298
25331
25364
25397
25430
25463
25496
25529
25562
25595
25628
25661
25694
25727
25760
25793
25826
25859
25892
25925
25958
25991
26024
26057
26090
26123
26156
26189
26222
26255
26288
26321
26354
26387
26420
26453
26486
26519
26552
26585
26618
26651
26684
26717
26750
26783
26816
26849
26882
26915
26948
26981
27014
27047
27080
27113
27146
27179
27212
27245
27278
27311
27344
27377
27410
27443
27476
27509
27542
27575
27608
27641
27674
27707
27740
27773
27806
27839
27872
27905
27938
27971
28004
28037
28070
28103
28136
28169
28202
28235
28268
28301
28334
28367
28400
28433
28466
28499
28532
28565
28598
28631
28664
28697
28730
28763
28796
28829
28862
28895
28928
28961
28994
29027
29060
29093
29126
29159
29192
29225
29258
29291
29324
29357
29390
29423
29456
29489
29522
29555
29588
29621
29654
29687
29720
29753
29786
29819
29852
29885
29918
29951
29984
30017
30050
30083
30116
30149
30182
30215
30248
30281
30314
30347
30380
30413
30446
30479
30512
30545
30578
30611
30644
30677
30710
30743
30776
30809
30842
30875
30908
30941
30974
31007
31040
31073
31106
31139
31172
31205
31238
31271
31304
31337
31370
31403
31436
31469
31502
31535
31568
31601
31634
31667
31700
31733
31766
31799
31832
31865
31898
31931
31964
31997
32030
32063
32096
32129
32162
32195
32228
32261
32294
32327
32360
32393
32426
32459
32492
32525
32558
32591
32624
32657
32690
32723
32756
32789
32822
32855
32888
32921
32954
32987
33020
33053
33086
33119
33152
33185
33218
33251
33284
33317
33350
33383
33416
33449
33482
33515
33548
33581
33614
33647
33680
33713
33746
33779
33812
33845
33878
33911
33944
33977
34010
34043
34076
34109
34142
34175
34208
34241
34274
34307
34340
34373
34406
34439
34472
34505
34538
34571
34604
34637
34670
34703
34736
34769
34802
34835
34868
34901
34934
34967
35000
35033
35066
35099
35132
35165
35198
35231
35264
35297
35330
35363
35396
35429
35462
35495
35528
35561
35594
35627
35660
35693
35726
35759
35792
35825
35858
35891
35924
35957
35990
36023
36056
36089
36122
36155
36188
36221
36254
36287
36320
36353
36386
36419
36452
36485
36518
36551
36584
36617
36650
36683
36716
36749
36782
36815
36848
36881
36914
36947
36980
37013
37046
37079
37112
37145
37178
37211
37244
37277
37310
37343
37376
37409
37442
37475
37508
37541
37574
37607
37640
37673
37706
37739
37772
37805
37838
37871
37904
37937
37970
38003
38036
38069
38102
38135
38168
38201
38234
38267
38300
38333
38366
38399
38432
38465
38498
38531
38564
38597
38630
38663
38696
38729
38762
38795
38828
38861
38894
38927
38960
38993
39026
39059
39092
39125
39158
39191
39224
39257
39290
39323
39356
39389
39422
39455
39488
39521
39554
39587
39620
39653
39686
39719
39752
39785
39818
39851
39884
39917
39950
39983
40016
40049
40082
40115
40148
40181
40214
40247
40280
40313
40346
40379
40412
40445
40478
40511
40544
40577
40610
40643
40676
40709
40742
40775
40808
40841
40874
40907
40940
40973
41006
41039
41072
41105
41138
41171
41204
41237
41270
41303
41336
41369
41402
41435
41468
41501
41534
41567
41600
41633
41666
41699
41732
41765
41798
41831
41864
41897
41930
41963
41996
42029
42062
42095
42128
42161
42194
42227
42260
42293
42326
42359
42392
42425
42458
42491
42524
42557
42590
42623
42656
42689
42722
42755
42788
42821
42854
42887
42920
42953
42986
43019
43052
43085
43118
43151
43184
43217
43250
43283
43316
43349
43382
43415
43448
43481
43514
43547
43580
43613
43646
43679
43712
43745
43778
43811
43844
43877
43910
43943
43976
44009
44042
44075
44108
44141
44174
44207
44240
44273
44306
44339
44372
44405
44438
44471
44504
44537
44570
44603
44636
44669
44702
44735
44768
44801
44834
44867
44900
44933
44966
45000
45033
45066
45099
45132
45165
45198
45231
45264
45297
45330
45363
45396
45429
45462
45495
45528
45561
45594
45627
45660
45693
45726
45759
45792
45825
45858
45891
45924
45957
45990
46023
46056
46089
46122
46155
46188
46221
46254
46287
46320
46353
46386
46419
46452
46485
46518
46551
46584
46617
46650
46683
46716
46749
46782
46815
46848
46881
46914
46947
46980
47013
47046
47079
47112
47145
47178
47211
47244
47277
47310
47343
47376
47409
47442
47475
47508
47541
47574
47607
47640
47673
47706
47739
47772
47805
47838
47871
47904
47937
47970
48003
48036
48069
48102
48135
48168
48201
48234
48267
48300
48333
48366
48399
48432
48465
48498
48531
48564
48597
48630
48663
48696
48729
48762
48795
48828
48861
48894
48927
48960
48993
49026
49059
49092
49125
49158
49191
49224
49257
49290
49323
49356
49389
49422
49455
49488
49521
49554
49587
49620
49653
49686
49719
49752
49785
49818
49851
49884
49917
49950
49983
50016
50049
50082
50115
50148
50181
50214
50247
50280
50313
50346
50379
50412
50445
50478
50511
50544
50577
50610
50643
50676
50709
50742
50775
50808
50841
50874
50907
50940
50973
51006
51039
51072
51105
51138
51171
51204
51237
51270
51303
51336
51369
51402
51435
51468
51501
51534
51567
51600
51633
51666
51699
51732
51765
51798
51831
51864
51897
51930
51963
51996
52029
52062
52095
52128
52161
52194
52227
52260
52293
52326
52359
52392
52425
52458
52491
52524
52557
52590
52623
52656
52689
52722
52755
52788
52821
52854
52887
52920
52953
52986
53019
53052
53085
53118
53151
53184
53217
53250
53283
53316
53349
53382
53415
53448
53481
53514
53547
53580
53613
53646
53679
53712
53745
53778
53811
53844
53877
53910
53943
53976
54009
54042
54075
54108
54141
54174
54207
54240
54273
54306
54339
54372
54405
54438
54471
54504
54537
54570
54603
54636
54669
54702
54735
54768
54801
54834
54867
54900
54933
54966
55000
55033
55066
55099
55132
55165
55198
55231
55264
55297
55330
55363
55396
55429
55462
55495
55528
55561
55594
55627
55660
55693
55726
55759
55792
55825
55858
55891
55924
55957
55990
56023
56056
56089
56122
56155
56188
56221
56254
56287
56320
56353
56386
56419
56452
56485
56518
56551
56584
56617
56650
56683
56716
56749
56782
56815
56848
56881
56914
56947
56980
57013
57046
57079
57112
57145
57178
57211
57244
57277
57310
57343
57376
57409
57442
57475
57508
57541
57574
57607
57640
57673
57706
57739
57772
57805
57838
57871
57904
57937
57970
58003
58036
58069
58102
58135
58168
58201
58234
58267
58300
58333
58366
58399
58432
58465
58498
58531
58564
58597
58630
58663
58696
58729
58762
58795
58828
58861
58894
58927
58960
58993
59026
59059
59092
59125
59158
59191
59224
59257
59290
59323
59356
59389
59422
59455
59488
59521
59554
59587
59620
59653
59686
59719
59752
59785
59818
59851
59884
59917

CONFIDENTIAL

SUMX OUTPUT -- VERSION M4
M16 STATISTICAL SUMMARIES AS OF 20FEB68

STANDARD NO. 10, N16 1 HISTOGRAM OF DISLIKES 1 0, LOCATED IN WORDS 73,
WITH ASSOCIATED WEIGHTING FACTORS LOCATED IN WORDS 0,

NUMBER

1100

1070

1040

1010

980

950

920

890

860

830

800

770

740

710

680

650

620

590

560

530

500

470

440

410

380

350

320

290

260

230

200

170

140

110

80

50

20

0

INTERVAL

10

10

10

10

10

10

10

10

10

10

10

10

10

10

10

10

10

10

10

10

10

10

10

10

10

10

WHAT DO YOU DISLIKE ABOUT THE M16? 1/ 2/

INTERVAL	RESPONSE	NUMBER BY COLUMN					TOTAL NUMBER	PERCENTAGE
		1	2	3	4	5		
1	No Response	1064	1924	2009	2017	2018	1064	-
2	Sensitive to Dirt or Abuse	175	11	0	1	0	187	24%
3	I Dislike Nothing	303	2	0	0	0	305	-
4	Difficult to Clean	170	16	3	0	0	189	25%
5	Inadequate Range	8	1	3	1	0	13	2%
6	Poor Lethality	9	2	0	1	1	13	2%
7	Inaccurate	29	5	1	0	2	37	5%
8	Poor Reliability	242	52	5	1	0	300	39%
9	Poor Penetration	1	2	0	0	0	3	< 1%
10	Magazine	20	6	0	0	0	26	3%
TOTALS							2137	100% (768)

1/ "Dislikes" were recorded from each questionnaire in a 5 column field to assure the recording of all responses (an individual frequently listed several "dislikes"). A histogram was printed for each column and then responses totaled in this table.

2/ "Haverick" or unusual "Dislikes" were recorded separately.

Question 31: What do you "dislike" about the M16? (Column 1)

CONFIDENTIAL

CONFIDENTIAL

XI. Matrix Plots

A series of matrix plots which permitted correlation of responses to two or more questionnaire items were prepared to support the analysis. Tables 1 through 16 (Section VIII) were developed from these plots. A listing of each matrix print-out prepared follows by subject area.

Reliability

1. Lubrication of ammunition vs failures to extract
2. Percent tracer vs failures to lock
- 3.a. Hours mechanical training (before Vietnam) vs failures to lock and extract
- b. Hours mechanical training (in Vietnam) vs failures to lock and extract
- c. Total hours mechanical training vs failures to lock and extract
4. Time since last trained on M16 vs failures to lock and extract
5. M16 cleaning trends vs failures to lock and extract
6. Magazine and ammunition cleaning trends vs failures to lock and extract
7. Number of rounds expended within 4 months vs failures to extract

Supervision

1. M16 cleaning trends vs unit inspections of M16
2. Magazines and ammunition cleaning trends vs unit inspections of magazines and ammunition

CONFIDENTIAL

Training

1. Training received before arrival in Vietnam vs MOS
2. Training received before arrival in Vietnam vs months
in Vietnam
3. Of those not receiving training before arrival in Vietnam
("No" answer on question 3A)
 - a. Theater source vs duty position
 - b. Theater source vs MOS
 - c. Theater source vs grade
4. Of those receiving training before arrival in Vietnam
("Yes" answer on question 3A)
 - a. Duty position vs hours mechanical training before
Vietnam
 - b. MOS vs hours mechanical training before Vietnam
 - c. Duty position vs hours range firing before Vietnam
 - d. MOS vs hours range firing before Vietnam
 - e. Duty position vs hours tactical training before
Vietnam
 - f. MOS vs hours tactical training before Vietnam
5. Of those receiving training in Vietnam
 - a. Duty position vs hours mechanical training in
Vietnam

~~CONFIDENTIAL~~

UNCLASSIFIED

- b. MOS vs hours mechanical training in Vietnam
 - c. Duty position vs hours range firing in Vietnam
 - d. MOS vs hours range firing in Vietnam
 - e. Duty position vs hours tactical training in Vietnam
 - f. MOS vs hours tactical training in Vietnam
6. Of those not receiving training either before arrival in Vietnam or in Vietnam

Major unit vs Duty Position

Cleaning Materials

Of those having cleaning materials ("Yes" answer on question 5a to g)

- 1. to 7. Men who carry materials (a-g) vs MOS

Zeroing

- 1. Zeroing history vs MOS
- 2. Zeroing history vs duty position
- 3. Zeroing history vs time in Vietnam
- 4. Zeroing history vs type of unit (maneuver battalion and other)

Ammunition Load

- 1. MOS vs ball ammunition load
- 2. MOS vs tracer ammunition load
- 3. MOS vs number of magazines carried
- 4. Type of unit (maneuver battalions and other) vs total ammunition load

UNCLASSIFIED

~~CONFIDENTIAL~~

~~CONFIDENTIAL~~

UNCLASSIFIED

General Usage

1. MOS vs percent of fire expended in fully automatic mode
2. MOS vs percent of automatic fire expended in short bursts
3. MOS vs largest number of rounds fired within 1 day of combat
4. MOS vs percent tracer used
5. Duty position vs percent tracer used
6. Weapon preference vs MOS
7. Test firing vs duty position
8. Test firing vs type of unit (maneuver battalion and other)

Major unit

1. Major unit vs presence of new buffer
2. Major unit vs zeroing history
3. Major unit vs lubrication of ammunition
4. Major unit vs test firing
5. Major unit vs M16 cleaning trends
6. Major unit vs unit inspections of M16
7. Major unit vs magazine and ammunition cleaning trends
8. Major unit vs unit inspection of magazines and ammunition
9. Major unit vs percent tracer
10. Major unit vs failures to lock and extract
11. Major unit vs training received in Vietnam

UNCLASSIFIED

~~CONFIDENTIAL~~