

UNCLASSIFIED

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(Processing) which was replaced by the 317th, the 367th Chemical Depot Company (ComZ), and the 384th Chemical Company (Decontamination) which was replaced by the 21st Chemical Company (Decon) from the Far East.

(UNCLASSIFIED)

The mission of technical service units in the General Reserve is to support combat elements of the General Reserve and to provide support for the emergency reinforcement of USAREUR. While the Chemical Corps General Reserve units were adequate for the support of combat elements within the overall General Reserve, additional units were required to provide world-wide balanced support as authorized by law. This requirement stemmed from personnel limitations placed on overseas theaters and their consequent resort to T/D type organizations to make maximum use of indigenous personnel.

~~(S)~~

When CONARC assumed overall responsibility for units of the General Reserve, DEP LCG required the technical services to consider assignment of as many such units as possible to continental army commands. While General Creasy was willing to recommend assignment of the 216th Chemical Service Company (located at Rocky Mountain Arsenal) to the commanding general, Fifth Army, he expressed the desire to retain other units of the General Reserve performing special services for the Chemical Corps. These included the 42d Chemical Laboratory and 51st and 52d Chemical Detachments (Technical Intelligence) at Army Chemical Center, Md., the 17th Chemical Detachment (Technical Intelligence) at Camp Detrick, Md., and the 2d Chemical Weapons Battalion (a T/D unit) stationed at Dugway Proving Ground.¹²⁵

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125

DF, DEP LOG to CCmlO et al., 19 Feb 55, sub: Stationing on Technical Service Installations; Cmt #2, 25 Feb 55.

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Repeated efforts by DEP LCG succeeded in FY 1955 in reorganizing the 2d Chemical Weapons Battalion. Although the Chemical Corps had stated the irreducible minimum strength of the battalion was 26 officers and 402 enlisted men,¹²⁶ nonetheless the battalion was reorganized with 20 officers and 291 men on 30 December 1954.¹²⁷ The Chemical Corps used this cut of 210 spaces in the actual authorization to retain other chemical units in the General Reserve and to activate the 13th Chemical Company (Maintenance) in Second Army. (UNCLASSIFIED)

At the request of DEP LCG the Chemical Corps made two units available to assist the Transportation Corps on Project 572 in carrying out joint supply operations in the Arctic during the summer of 1955. This project involved logistical support of the establishment of the early-warning radar net across northern Canada (EWELINE). The 60th and 501st Chemical Depot Companies from Fort McClellan, Alabama, were reassigned to CONARC on 1 April 1955 and sent to Fort Eustis, Virginia, to train as part

¹²⁶

(1) DF, ACoFS 2 - 3 to CCmLO, 12 Jun 54, sub: Reorganization of 2d Cml Wpns Bn; Cmt #2, 9 Jul 54. (2) Interv, Hist Off with Lt Col Samuel E Baker, Actg C PT&I Div, 11 Aug 54.

¹²⁷

(1) Ltr, TAG to CCmLO, 13 Dec 54, sub: Reorganization of the 2d Chemical Weapons Battalion. (2) Ltr, CCmLO to CG RECCM, 30 Dec 54.

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transportation companies before departing for Fort Lewis, Washington.¹²⁸

In order to augment these companies with sixty-five additional men each as requested by DEP LOG, it was necessary to transfer personnel from other General Reserve units at Fort McClellan, Ala., thereby leaving the latter at greatly reduced strength and capability for a six-month period. The Chemical Corps requested and received approval to increase its General Reserve troop ceiling by 130 spaces.¹²⁹ (UNCLASSIFIED)

In the latter part of the year DEP LOG asked the Chemical Corps to prepare the General Reserve Troop Basis (GRTB) for FY 1957 as an extension to the approved GRTB for FYs 1955 and 1956. DEP LOG placed a ceiling on chemical combat support units amounting to the 1941 aggregate or a GRTB amounting to 1,941 out of a total for the technical services of 70,679 men. The Chemical Corps combat elements (the smoke generator units and the weapons battalion) fortunately fell under another ceiling for which G - 3 was responsible.¹³⁰ ~~()~~

128

(1) DA and USAF ltr (AGAC-I (M) 322), 25 Mar 55, sub: Assignment of Department of the Army Units to Department of the Air Forces as SCARMAF.
(2) DF, CCmlO to DEP LOG, 30 Dec 54, sub: Availability of Units to Assist Transportation Corps. (3) Quart Hist Rpt, 501st Cml Co (Depot) (ComZ), Apr - Jun 55.

129

DF, CCmlO to DEP LOG, 16 Mar 55, sub: Request for Increase in General Reserve Troop Ceiling due to Project 572; Cmt #2, 4 Apr 55.

130

DF, DEP LOG to CCmlO et al., 6 May 55, sub: General Reserve Troop Bases Technical Services for FY 1957; Cmt #2, 11 May 55.

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Training

FY 1955 saw a determined effort on the part of the Chemical Corps to improve its training techniques and better prepare its own personnel, as well as that of the whole army, for CBR warfare. This effort took the shape of a scientific self-evaluation of the training activities of the Chemical Corps. For the first time in the history of the Corps civilian agencies were contracted to investigate problem areas of Chemical Corps training. (UNCLASSIFIED)

The Peabody Report

One of the civilian contractors was the George Peabody College for Teachers, of Vanderbilt University, which submitted a report¹³¹ on the efficacy of army-wide CBR training and on the adequacy of CBR training aids. The Chemical Corps originally proposed that training aids be the main subject of investigation but Office, Chief, Army Field Forces (OCAFF) and the Peabody investigators themselves favored an appraisal of the ten hours of CBR instruction given to all recruits in basic training.¹³² Although the report was entitled "CBR Training Aid Requirements, Army-Wide," it concentrated on (and was most valuable in) the fields of basic and advanced individual training. Peabody's contract with OCAFF, later Continental Army Command (CONARC), was managed through the Army Participation

131

Technical Report SPECLETCEN 1267-1-1, "CBR Training Aid Requirements, Army Wide", better known as the "Peabody Report".

132

(1) Memo, C PTRA Div, OCCmIC for CCmIO, 18 Jan 55, sub: Contract Study of Army-Wide CBR Training. (2) Interv, Hist Off with Col Frank M Arthur, C PTRA Div, OCCmIC, 6 Sep 55.

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Group, Special Devices Center, Port Washington, New York. (UNCLASSIFIED)

A conference was held on the Peabody Report at Headquarters, CONARC on 8 - 9 February 1955¹³³ where representatives of the Office, Chief Chemical Officer (OCCMLO), the Chemical Corps Training Command, The Chemical Corps School, and the Chemical Section, CONARC, surveyed the results of the Peabody investigation. Although some of the conclusions of the Peabody Report were unacceptable, the report did serve to unify the thinking of all concerned in the areas of basic and advanced CBR training.¹³⁴ The report itself contained several general conclusions, among them the need for some precise statements of training objectives, for increased emphasis on student self-evaluation, and for more realistic means of assessing the results of training. The members of the conference considered the Peabody report to determine what should be done with those recommendations of which they approved. (UNCLASSIFIED)

As an interim measure, the conferees decided to revise Annex "E" of the CONARC (OCAFF) Training Memorandum 1954 to reflect the accepted recommendations of the Peabody Report. These recommendations were specific of the general statements which appear above. For example, in basic individual training there was to be more emphasis on "doing" rather than on "knowing"; The readability of instructional material was to be improved; and standardized accomplishment tests to measure basic skills were to be

¹³³

Report on Conference, Fort Monroe, Va., 8 - 9 Feb 55.

¹³⁴

Arthur interv.

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developed. In advanced individual training more emphasis was to be placed on the integrated training and on practical work in the decontamination of weapons and equipment. This revised annex was to appear as a CONARC numbered training memorandum.¹³⁵ (UNCLASSIFIED)

A long term objective resulting from the Peabody Report was the revision of FM 21-43, "CBR Training Exercises." The Chemical Corps included this project in the FY 1956 Training Literature Program, and probably it will extend into FY 1957. The revised manual was to be divided into three parts: Training of the Individual Soldier, Advanced Individual Training, and Unit Training. Suggested training exercises were to be included for the three phases of training. In this way the CONARC training memorandum would eventually become a concise statement of objectives and standards of proficiency; for details there were to be references to appropriate Department of Army literature such as FM 21-43. The specifications for some of the suggested training aids were to be included in the forthcoming CONARC training memorandum and in FM 21-43. Two of these were an enlargement of the M5A1 Protective Ointment Kit and a CBR obstacle course. (UNCLASSIFIED)

Burton Wright Contract on Curricula Research

On 2 February 1955 the Chemical Corps signed a contract on curricula requirements with Burton Wright and Associates of Alexandria, Virginia, the

135

(1) Interv, Hist Off with Maj Clyde H Westbrook, Jr, Tng Br, PT&I Div, OCCm10, 31 Aug 55. (2) Memo, Maj Charles W Cook, 2 Tng Br for Col Frank M Arthur, 7 Mar 55, sub: Peabody Report. (3) Report on Conference, Fort Monroe, Va, 8 - 9 Feb 55.

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second agency used to investigate Chemical Corps training.¹³⁶ From the time of the First Chemical Advanced Class in 1946 there had been controversy as to what (and how much) should be included in its program of instruction. Maj. Gen. William M. Creasy wrote that there were as many concepts as to what should be taught at The Chemical Corps School as there have been people trying to resolve the problem.¹³⁷ FY 1955 saw steps taken to determine scientifically the curricula of the School's three career courses.
(UNCLASSIFIED)

Wright was to find out just what Chemical Corps officers had to know for the proper performance of their duties. His researchers used two methods to obtain these findings. First, an examination, prepared by The Chemical Corps School and covering the present curricula, was sent to about 1600 Chemical Corps officers. A substantial number of these officers completed the examination. These results were to be statistically analyzed to determine which areas in the current curricula were valid according to job requirements. The second method was a work diary sent to 400 selected Chemical Corps officers to ascertain what important areas of study did not appear in the curricula of the three career courses, but which, according to job requirements, should be included.¹³⁸ The results of the Wright investigations were not available as the year ended. (UNCLASSIFIED)

¹³⁶ Quart Hist Rpt, Training Br, PT&I Div, OCCmLO, Jan - Mar 55.

¹³⁷ Ltr, Maj Gen W M Creasy to "Each Officer Concerned," 24 Mar 55 (Cover letter to Wright examination).

¹³⁸ (1) Interv, Hist Off with Col William Foley, Exec Off, PT&I Div, OCCmLO, 27 Jul 55. (2) Arthur interv. (3) Westbrook interv.

Developments at Staff Level

Among the activities of the PT&I Division which affected training in FY 1955 there were two which because of their nature were apt to produce intangible, albeit important, results. These fell under the general categories of liaison and public relations. First, the number of personal visits between the division and the Chemical Corps Training Command were increased to insure effective liaison and a thorough understanding of mutual and individual problems. Secondly, PT&I Division personnel visited other commands and installations in an attempt to instill in them a deeper appreciation for the training function.¹³⁹ (UNCLASSIFIED)

PT&I Division showed concern in FY 1955 for the Reserve and ROTC training programs. For the first time the division made staff visits to all institutions where the Chemical Corps was represented in the ROTC program. There were improvements in the type of training that Chief's Office mobilization designees received during their two-week tours of active duty for training. Projects for these tours were approved in advance by the Chief Chemical Officer, who also interviewed the officers early in their active duty training. And as before, the trainee submitted a report of his activities at the end of his tour.¹⁴⁰ (UNCLASSIFIED)

Fiscal year 1955 saw an appreciable increase in the number of Chemical Corps officers assigned to training in civilian educational institutions.

139

Arthur interv.

140

Ibid.

Since August 1953, when there were four officers in this program, there had been a gradual increase in Chemical Corps participation, although there had never been more than twelve officers in civilian schools. In May 1955, however, the Chemical Corps received authorization to place an additional eight officers in civilian schools.¹⁴¹ This raised the total to nineteen. There was also an increase in the number of institutions utilized by the Corps; Duquesne, New York University, and the University of Tennessee were among those added.¹⁴² Shortly after World War II a program was instituted to place officers in training with civilian industries. Before it ceased participation in 1950, the Chemical Corps had placed five officers with civilian firms for one year's training. In a revival of this program, the Chemical Corps placed one officer with industry in June 1955 and would send two more in FY 1956.¹⁴³

(UNCLASSIFIED)

Logistical and Field Exercises

From 22 April to 7 May 1955 the students of the Ninth Chemical Officers

141

DF, DEP LOG to CCmlO, 5 May 55, sub: Officers to Attend Civilian Schools during FY 1955.

142

Interv, Hist Off with Dr Lewis W Rathgeber, Jr, Tng Br, PT&I Div, OCCmlO, 2 Sep 55.

143

Id. The officer entering the program in FY 1955 went with General Electric at Schenectady, New York. His training program included industrial organization, planning, engineering, and scheduling; purchasing, and inspection and storage of materials; production, inspection and processing; accounting, disbursement and auditing; industrial and public relations; functions of the legal department; and service and maintenance activities.

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Advanced Course and members of the Staff and Faculty, The Chemical Corps School, participated in LOGEX-55 at Fort Lee, Virginia. Profiting greatly by the interservice command and staff actions, the most important lesson learned by these officers "was the fact that no technical or administrative service can function properly without co-operation and co-ordination with the entire logistical team."¹⁴⁴ (UNCLASSIFIED)

Among the recommendations made by the commandant of The Chemical Corps School were: the inclusion of chemical warfare in the next LOGEX (the introduction of chemical warfare in LOGEX-55 was left somewhat to chance); the increase in number and scope of inter- and cross-service situations; and the participation of the Company Officers Class in LOGEX-56. (UNCLASSIFIED)

One of the purposes of LOGEX-55 was the testing of new logistical support concepts in which field commanders were relieved from logistical responsibility. The Chemical Corps School felt that a detailed evaluation of these concepts would be unfair because of the limited test which they received in LOGEX-55. Consequently, the School recommended that the new concept be tested by field exercise or by a LOGEX lasting at least a month. It was also recommended that the new concepts be tested under conditions of chemical warfare.¹⁴⁵ (UNCLASSIFIED)

¹⁴⁴

Ltr, Comdt, The Chemical Corps School to Maneuver Director LOGEX-55, 16 May 55, sub: Chemical Corps School Report on LOGEX-55.

¹⁴⁵

(1) Ibid. (2) Interv, Hist Off with Brig Gen William R Currie, CG Chemical Corps Training Command, 15 Aug 55. (3) Interv, Hist Off with Col Edwin Van Keuren, Comdt The Chemical Corps School, 15 Aug 55.

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In February 1954 the Chief, Army Field Forces, gave the Chemical Corps the responsibility for the conduct of LOGEX-56.¹⁴⁶ Accordingly, members of a LOGEX-56 planning group, headed by Col. Harold Walmsley, were assigned to Brooke Army Medical Center, Fort Sam Houston, Texas, to serve as deputies to the Medical Corps planning staff for LOGEX-55 so that they would gain planning experience for the logistical exercise for the following year.¹⁴⁷ However, Army Field Forces in November 1954 relieved the Chemical Corps of this responsibility because of a decision to transfer permanently the sponsorship of the LOGEX series to the First Logistical Command. Colonel Walmsley's group stayed at Brooke Army Medical Center to assist in the preparations for LOGEX-55.¹⁴⁸ (UNCLASSIFIED)

The Chemical Corps participation in field exercises in FY 1955 was much less extensive than in the preceding year. None of the exercises saw the number of Chemical Corps units and the extent of CBR play which featured 1954's FLASEBURN. One reason for this may have been the efforts spent in testing Atomic Type Field Army (ATFA) concepts for the Infantry (FOLLOW ME, Fort Benning and Camp Bucker, November 1954 - February 1955) and for the Armor (BLUEBOLT, Fort Hood, November 1954 - February 1955).^{148a} The 62d Chemical Company (Smoke Generator) did participate in BLUEBOLT from

¹⁴⁶

Ltr, CAFF to OCCm10, 19 Feb 54, sub: LOGEX-56.

¹⁴⁷

Interv, Hist Off with Col Edwin Van Keuren, Comdt, The Chemical Corps School, 27 Oct 54.

¹⁴⁸

(1) Quart Hist Rpt, P&I Div, OCCm10, Oct - Dec 54. (2) Ltr, OCAFF to OCCm10, 26 Nov 54, sub: Designation of Maneuver Director LOGEX-56. ATLOG 354/5 (LOGEX-56) (26 Nov 54).

^{148a}

Westbrook interv.

10 February to 4 March 1955. Broken into two sections for the exercise, the company provided support for both friendly and Aggressor forces. Missions included dummy screens, screens to shield bridging operations and river crossings, hazes and screens to conceal mine laying operations, and curtains and screens to conceal troop movements.¹⁴⁹ (UNCLASSIFIED)

A few items of Chemical Corps equipment were tested in extremely cold and mountainous conditions during Exercise HAIL STORM held at Camp Hale, Colorado (November 1954 to April 1955). Tests confirmed that liquid fuel used in flame throwers was more effective than thickened fuel in the extreme cold, although its range was shorter. The gusty winds encountered made flame thrower operations hazardous to the operator as well as to nearby personnel. In one phase of the exercise certain personnel carried gas masks and underwent "simulative gas attacks." The rarefied air of the high altitudes and the snow made extensive movement by masked personnel "almost impracticable."¹⁵⁰ (UNCLASSIFIED)

The Chief Chemical Officer in June 1955 directed the commanding officer, Chemical Corps Training Command, to train and provisionally reorganize several units for participation in Operation SAGEBRUSH. This operation,

¹⁴⁹

Quart Hist Rpt, Chemical Corps Training Command, Jan - Mar 55.

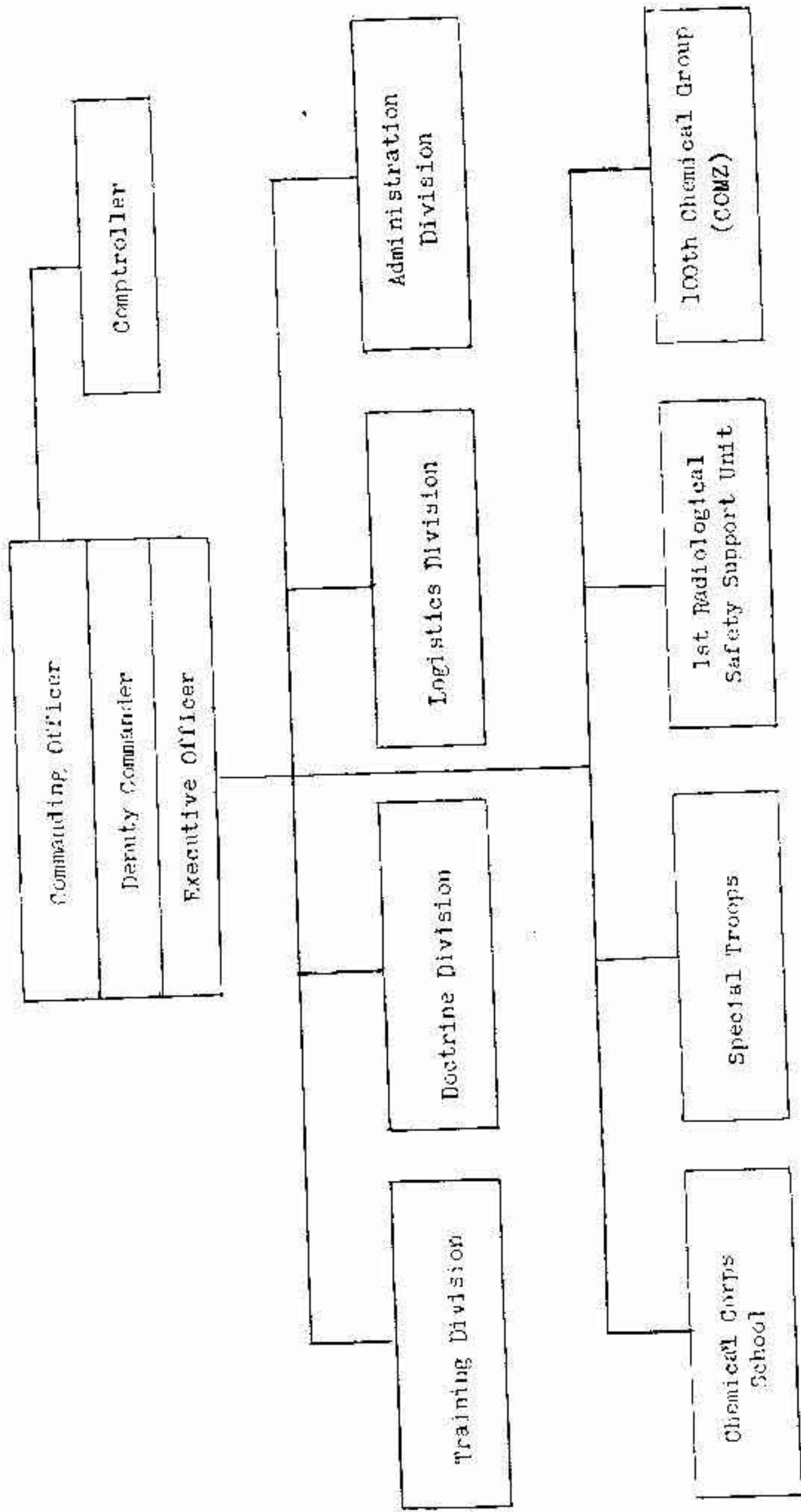
¹⁵⁰

Ltr, Hq 8th Inf Div and Fort Carson to CG Fifth Army, 15 Apr 55, sub: Final Report of Exercise HAIL STORM.

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Chart 5 -- CHEMICAL CORPS TRAINING COMMAND



April 1955

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to be held in Louisiana in FY 1956, was to be the largest of its kind since World War II. The units affected were the 21st Chemical Company (Decontamination), the 59th Chemical Company (Maintenance), Headquarters and Headquarters Detachment, 83d Chemical Battalion, the 18th Chemical Detachment (Technical Intelligence), and a platoon of the 30th Chemical Company (Decontamination). The commanding general, Army Chemical Center, Md., was directed to prepare the 51st Chemical Detachment (Technical Intelligence) for the same operation.¹⁵¹ (UNCLASSIFIED)

The Chemical Corps Training Command

The new Chemical Corps Training Command facilities at Fort McClellan, Alabama, were occupied in FY 1955. These included two 500-man barracks, a headquarters building for the Training Command, and a new school building. Unfortunately, certain deficiencies were noted in the new construction such as a lack of proper soundproofing and an unsatisfactory ventilation system in the school building.¹⁵² Although the latter condition was corrected within the year, the lack of soundproof classrooms and other design deficiencies of the new construction of the Command were to be corrected in FY 1956.¹⁵³ (UNCLASSIFIED)

The construction of other new Chemical Corps Training Command facilities

151

Quart Hist Rpt, PT&I Div, CCGMLO, Apr - Jun 55.

152

Incl 2, Tab #30, Quart Hist Rpt, Chemical Corps Training Command, Oct - Dec 54.

153

Quart Hist Rpts, Chemical Corps Training Command, Jan - Mar 55. and Apr - Jun 55.

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scheduled for FY 1955 was 98 percent complete by the end of June 1955. This construction included a battalion motor pool, a service club, and two battalion headquarters buildings for the Command.¹⁵⁴ (UNCLASSIFIED)

Quintard Terrace Apartments, the Wherry Act housing project for Fort McClellan, was completed in the spring of 1955 and thus provided a large number of reasonably priced, adequate apartments for personnel of the Chemical Corps Training Command. (UNCLASSIFIED)

In FY 1955, as in the preceding year, the biggest problem area within the Chemical Corps Training Command was that of personnel. The command as a whole, and particularly The Chemical Corps School, lacked sufficient competent officers of adequate rank.¹⁵⁵ A cursory glance at the strength of the command would be misleading. As of 30 June 1955 it was authorized 203 officers and had 208 officers. Of this number the School was authorized 115 officers and actually had 117.¹⁵⁶ Numbers were obviously there, but these numbers were not in suitable grades. (UNCLASSIFIED)

A personnel study made by The Chemical Corps School for the year 1 May 1954 to 30 April 1955 revealed that several unfavorable trends still persisted.¹⁵⁷ At the latter date the School was authorized 30 Lieutenants but

154: Quart Hist Rpt, Chemical Corps Training Command, Apr - Jun 55.

155 (1) Currie interv. (2) Van Keuren interv. (3) Arthur interv.

156: Quart Hist Rpt, Chemical Corps Training Command, Apr - Jun 55.

157: Incl 2, Tab "B", Quart Hist Rpt, Chemical Corps Training Command, Apr - Jun 55.

had 62; it was authorized 35 majors and had 13; it was authorized 23 lieutenant colonels and had but 13. Even more disturbing was the trend toward lower grades in the School's Table of Distribution. A total of 8 field grade and 22 captain spaces were eliminated during this period — authorized captains went from 45 to 23. On the other hand, authorized lieutenants went from a total of 7 in May 1954 to 30 in April 1955.¹⁵⁸ Part of this change was a result of a general downgrading by DEPLOY and this was merely the School's slice of the whole.¹⁵⁹ (UNCLASSIFIED)

Another serious personnel problem at the School was that of turnover. There were sixty-nine gains and sixty-two losses for the period 1 May 1954 — 30 June 1955, or a turnover of 65.5 percent. With an average authorized strength of 121 officers this represented a turnover rate of 54 percent. Over half of this was accounted for by lieutenants.¹⁶⁰ (UNCLASSIFIED)

The Chemical Corps School needs competent officers with appropriate rank. The annual inspection of the School made by members of Headquarters, Chemical Corps Training Command, pointed out that while the School operated with 90 percent of the requirement for officer instructors, 50 percent of these were quite junior in grade and lacked military experience and military

158

Ibid.

159

(1) Currie interv. (2) Ltr, AGAC-C 320.2(10 Apr 54) G 1 DA, 31 Aug 54. sub: Annex to Military and Civilian Personnel Authorization Voucher and Incl 1 thereto.

160

Incl 2, Tab "B", Quart Hist Rpt, Chemical Corps Training Command, Apr — Jun 55.

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schooling.¹⁶¹ These officers were for the most part both able and eager to do a good job. But both of these characteristics, desirable as they are, cannot make up for experience, and experienced officers were needed to train properly the personnel of the Chemical Corps as well as officers and men of other arms and services. (UNCLASSIFIED)

A personnel problem within the Command, other than military, was the difficulty experienced by the Doctrine Division in recruiting qualified civilians. That division was authorized seven civilian scientists, but only four of these spaces were filled. It was quite possible that if the situation persisted the unfilled spaces might be lost. In an effort to overcome this problem the experience qualifications for the positions might be lowered, thereby attracting capable young men with the proper educational background to the jobs.¹⁶² (UNCLASSIFIED)

The summer camp for Chemical Corps ROTC students conducted at Fort McClellan for the past few years was discontinued by the Army Field Forces with the completion of the 1954 encampment.¹⁶³ In the future, Chemical Corps ROTC students were to attend general military science summer training

161

Incl 6, Tab "C", Quart Hist Rpt, Chemical Corps Training Command, Oct - Dec 54.

162

Interv, Hist Off with Col Robert D Chapman, Doctrine Div, Chemical Corps Training Command, 16 Aug 55.

163

Ltr, AFF to CGs CONUS Armies, Chief, Tech Services, et al., 26 Nov 54, sub: Location and Conduct of 1955 ROTC Summer Training Camps.

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camps at Fort George G. Meade, Md., Fort Benning, Ga., Fort Bragg, N.C., Fort Campbell, Ky., Fort Hood, Tex., Fort Riley, Kan., or Fort Lewis, Wash. The appropriate Continental Army commanders received the responsibility for the conduct of these encampments. Training Branch, PT&I Division, recommended that two Chemical Corps officers and two noncommissioned officers be included on the staff of each of these summer camps,^{163a} and DCAFF agreed to these recommendations.¹⁶⁴

On 22 December 1954, at the request of the Armed Forces Special Weapons Project the Chief Chemical Officer directed the Commanding Officer, Chemical Corps Training Command to move the 1st Radiological Safety Support Unit to the Nevada Test Site at Mercury, Nevada.¹⁶⁵ The unit supported Operation TEAPOT until 18 May when it departed for its home station, Fort McClellan, Alabama.¹⁶⁶ Among its duties were the conduct of radiological survey after each explosion; the issue of dosimeters and film badges and the maintenance of their readings; and the receipt, issue, storage, and cleaning of protective clothing. The unit also conducted both four-day and one-day courses

163a

Ibid., 1st Ind, 3 Dec 54.

164

Ltr, AFF ATENG-RC 353/1 (HCTC) (25 Jan 55) to CG's CCNUS Armies, sub: HCTC Summer Training Camps, 1955.

165

(1) Ltr, Field Command, AFSWP to CCmLO, 13 Oct 54, sub: Request for Support During Operation TEAPOT. (2) Quart Hist Rpt, PT&I Div, CCCmLO, Oct - Dec 54.

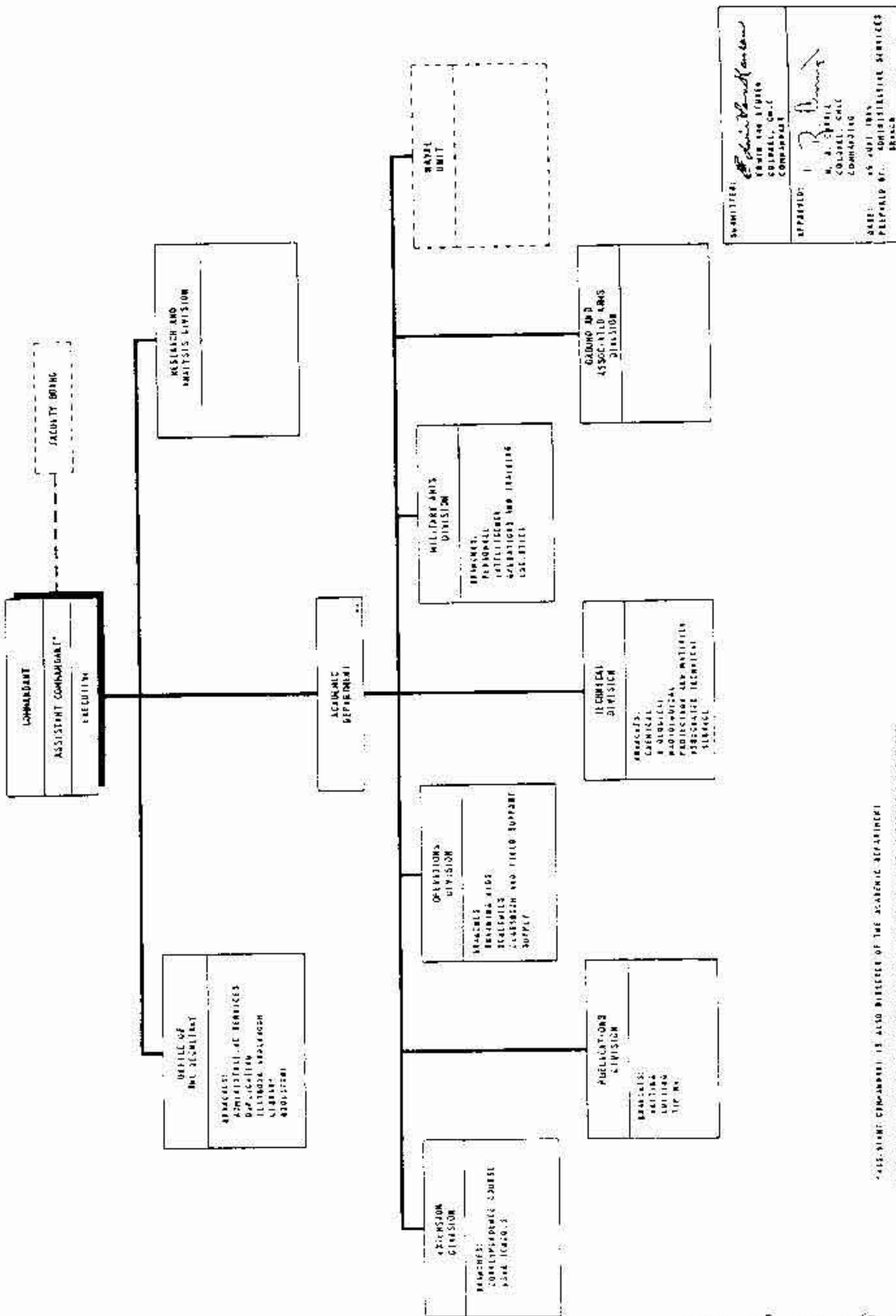
166

Quart Hist Rpt, Chemical Corps Training Command, Apr - Jun 55.

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CHEMICAL CORPS SCHOOL



*ASSISTANT COMMANDANT IS ALSO DIRECTOR OF THE ACADEMIC DEPARTMENT
 **ASSISTANT DIRECTOR OF ACADEMIC DEPARTMENT IS ALSO LIEUTENANT COLONEL

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in radiological survey techniques for augmentation personnel needed for the operation.¹⁶⁷ (UNCLASSIFIED)

The Chemical Corps School

The dedication of the splendid new Chemical Corps School building took place on 11 June 1955 and coincided with the graduation of the Ninth Chemical Officer Advanced Course. The principal speaker was Gen. John E. Dahlquist, Commanding General, Continental Army Command. Included in the dedication ceremony was the unveiling of two plaques. General Dahlquist unveiled a memorial plaque which was "dedicated to carrying on those principles of service to country so well exemplified by those members of the Chemical Warfare Service and the Chemical Corps who laid down their lives in World War I, World War II, and the Korean Conflict."¹⁵⁸ Rear Adm. N.S. Prime, USN (Ret), President of the Armed Forces Chemical Association, unveiled another plaque presented by his association in recognition of the role played by the Chemical Corps School in maintaining the strength of our defense through the military application of chemistry and allied science.^{168a} (UNCLASSIFIED)

The Chemical Corps School conducted nineteen courses in FY 1955 with a total of ninety-one classes. In all, the School graduated 1,400 officers

167

Interv, Hist Off with Capt D S McClellan, Rad Div, C&E, 22 Sep 55.

168

Quart Hist Rpt, The Chemical Corps School, Apr - Jun 55, pp. 12 - 13.

168a

Id.

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and 2,423 enlisted men. This was 107 percent of the scheduled output of both categories and represented a marked improvement in planning of officer trainees over FY 1954, which saw only 67 percent of the planned output actually graduate. The actual training load for the year was only 3 percent greater than that scheduled. This agreement between scheduled and actual training loads was another great improvement over the previous fiscal year when only 20.6 percent of the planned goal was met.¹⁶⁹ (UNCLASSIFIED)

The year was featured by the large number of Allied officers assigned either as observers or students to The Chemical Corps School. Of particular interest was the six-week Atomic Defense course held for thirty-five Canadian officer personnel which began 29 October 1954. This was part of the assistance in radiological defense training which the Chemical Corps, by Department of Defense direction, gave Canada.¹⁷⁰ (~~CONFIDENTIAL~~)

The enlisted courses taught at The Chemical Corps School were to be affected by the changes in the Army MOS system. Under the old scheme The Chemical Corps School trained eight different MOS's. The new system would combine four chemical MOS's, and hence school courses, into one. Those entitled chemical equipment repairman, decontamination equipment operator, smoke generator operator, and chemical staff specialist would all become chemical warfare helpers. A man graduating from the chemical warfare helper's course would receive on-the-job or unit training and thus qualify

169

(1) See Appendix A. (2) Tab "B", Quart Hist Rpts, Chemical Corps Training Command, FY 55.

170

Quart Hist Rpts, PT&I Div, OCCmlC, Jul - Sep, Oct - Dec 54.

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for an advance in the MOS family. (UNCLASSIFIED)

The Chemical Corps School would maintain training responsibility for but one of the remaining four MOS's; the chemical laboratory specialist and his course would remain unchanged. The impregnation equipment operator would be changed to laundry and impregnation operator, with the training responsibility to be that of the Quartermaster Corps. QMC would also assume control over a new MOS family, General Supply, including the old chemical supply specialist. The Ordnance Corps would receive the training responsibility for the Parts Supply family and the former chemical parts specialist. In the last two cases recruits would be trained in basic courses and then branch out to the various services. The Chemical Corps had no plans for advanced training in the chemical supply and chemical parts field. Consequently, two courses -- chemical warfare helper and chemical laboratory specialist -- were to take the place of eight enlisted MOS courses at The Chemical Corps School. These changes had not gone into effect by the end of the fiscal year.^{170a} (UNCLASSIFIED)

In the field of non-resident instruction, the Extension Division of The Chemical Corps School initiated a "sales promotion" program during the year. The division planned a new prospectus of extension courses for distribution early in FY 1956. Letters were sent to reservists soliciting enrollment in the program, and approximately 10 percent of the persons thus contacted complied. These efforts led to a 15 percent increase in extension

^{170a}

(1) Westbrook Interv. (2) AR 611-201, 9 Mar 55.

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course enrollment during the fiscal year.¹⁷¹ (UNCLASSIFIED)

The writing and preparation of such publications as field manuals technical manuals,¹⁷² and graphic training aids continued to be a major activity of The Chemical Corps School, in conjunction with the Doctrine Division of Training Command and under staff supervision of Training Branch, PT&I Division, OCCmLO. (UNCLASSIFIED)

The Chemical Corps completed, and TAG published, the following field manuals in FY 1955: FM 3-5, "Tactics and Techniques of CBR Warfare" (1 September 1954); FM 3-8, "Chemical Corps Reference Handbook" (14 February 1955); FM 3-9, "Staff Chemical Officer" (1 April 1955); FM 3-80, "Chemical Group (Field) and Chemical Battalion" (28 July 1954); FM 21-40, "Defense Against CBR Attack" (17 August 1954); FM 21-43, "CBR Training Exercises" (15 November 1954).¹⁷³ Four of the five field manual projects suspended during the year dealt with Chemical Corps units. These were suspended to await information from the current Atomic Type Field Army studies. The Chief, Army Field Forces transferred a sixth field manual (ground flame warfare) to the Infantry School.¹⁷⁴ (UNCLASSIFIED)

171

(1) Interv, Hist Off with Col Maurice A Peerenboom, C, Extension Div, The Cml C Sch, 16 Aug 55. (2) Quart Hist Rpt, PT&I Div, OCCmLO, Jan - Mar 55.

172

Those technical manuals dealing with equipment continued to be the responsibility of the Chemical Corps Engineering Agency.

173

Interv, Hist Off with Mr Seymour Waxman, PT&I Div, OCCmLO, 26 Jul 55.

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Incl 2, Quart Hist Rpt, PT&I Div, OCCmLO, Oct - Dec 54.

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FM 3-3 was very favorably received. There had been a long existing need for a ready reference handbook on different aspects of chemical activities. This was the first loose-leaf manual to be published by the Chemical Corps, the only service which had a manual with such a format. Because of the nature of the manual it was expected that changes would occur on an average of one a month. At these times replacement pages would be sent out, thus justifying the manual's loose-leaf format.¹⁷⁵
(UNCLASSIFIED)

TAG also published 4 graphic training aids, 5 technical manuals (4 of which were equipment manuals) and 6 technical bulletins. One training film, TF 3-2196, Employment of Toxic Chemical Agents, was approved and released, and four more were approved and the initial stages completed in FY 1955.
(UNCLASSIFIED)

In submitting his training literature program for FY 1956 to the Assistant Chief of Staff, G - 3, the Chief Chemical Officer called attention to the Chemical Corps' proposed training literature structure concept for its DA publications. This concept resulted from a re-evaluation of the requirements for Department of Army training literature based on current Army reorganization plans, new logistical concepts, and experience with the publications on hand. The structure of the publications program would include the following categories: manual for training the individual (FM 21-41); manual for training and guidance for units below division size (FM 21-40); manuals for training Chemical Corps units (FM's 3-25, 3-30, 3-50, et al.);

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(1) Interv, Hist Off with Col George W Lorn, C Publications Division, The C&I C Sch, 16 Aug 55. (2) Change 1 was issued on 16 June 1955 and another was to follow early in July.

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manuals for staff chemical officers (extension of FM 100- and 101- series, e.g., FM's 3-5, 3-8, 3-9, et al.); technical manuals providing detailed information to support field manuals (TM's 3-215, 3-216, 3-240 et al.); miscellaneous manuals (FM's 21-48, 3-230); and equipment publications.

Considered as a long range project, the program included changes in the orientation of some manuals and a consolidation of others. FM 21-41, "Soldier's Handbook for Defense Against CBR Attack," for example, would be revised to coincide with CONARC's concept of simplified CBR training for individuals, then under development. Gaps in the area of radiological aspects of atomic defense now existing in publications would be filled. And finally, the consolidation of the manuals on five Chemical Corps units appeared feasible following the functional groupings of service support units under the current army reorganization studies.¹⁷⁶ (UNCLASSIFIED)

Several years ago Col. Leonard M. Johnson, then President of the Chemical Corps Board, suggested that the status of the staff chemical officer be explored by a series of conferences of officers with this kind of experience. FY 1955 saw the fulfillment of this plan. The Chief Chemical Officer directed that the Chemical Corps Training Command be responsible for the series of conferences, and the latter delegated the mission to The Chemical Corps School. (UNCLASSIFIED)

The results of three staff chemical officer conferences held in FY 1955 were very rewarding. Col. Jack E. Babcock, Chief, Military Arts Division, served as director or monitor of these meetings. Twenty-eight

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Ltr, CCCalO to ACoFS G - 3, 11 Mar 55, sub: Training Literature Program for FY 1956.

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officers, fourteen of whom were participating observers, attended the first conference held 6 - 9 December 1954. In this conference, as in those which followed, the conferees discussed the various phases of the job of staff chemical officer with the desire to find out how to improve that officer. Tape recordings and stenographic notes were made of the proceedings, and upon termination of the series a final report would be prepared from the body of knowledge thus accrued. In the meantime instructors at the school had access to tape and notes and thus immediately benefited from the material. A bonus benefit of the conferences resulted from the discussion and solution of current problems of the conferees.¹⁷⁷ (UNCLASSIFIED)

A point emphasized by the chemical staff officer conferences was the difficulty with which pertinent information reached the officer in the field. This had been a long existing problem. A proposed solution was the preparation of a publication which would provide the Chemical Corps Officer, be he a company commander in Germany or on ROTC duty in Texas, with the latest on CBR warfare, doctrine, equipment, training, and the like. The Chemical Corps School prepared an outline for the first issue of such a publication and sent it to higher headquarters for approval. Called the Training Information Pamphlet, or appropriately TIP, the publication, if approved, would appear in an unclassified form and would be published whenever there was pertinent information to be disseminated.¹⁷⁸ (UNCLASSIFIED)

¹⁷⁷

(1) Interv, Hist Off with Col Jack E Babcock, The Cml C Sch, 16 Aug 55.
(2) Van Keuren interv. (3) Arthur interv. (4) Van Keuren, Mission and Scope, Third Staff Chemical Officer's Conference, 25 May 1955.

¹⁷⁸

Dorn interv.

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Intelligence

The Chemical Corps intelligence program received a shot in the arm in FY 1955 by means of a reorganization of intelligence activities which permitted the expansion of those involving collection, dissemination, production, and maintenance.¹⁷⁹ These functions were transferred from Intelligence Branch of Plans, Training, and Intelligence Division to a newly-created Chemical Corps Intelligence Agency. Intelligence Branch itself was abolished, and the residual elements were re-established as the Security Branch to handle security matters and an Intelligence Office to provide staff guidance in plans, policies, and programming.¹⁸⁰ (UNCLASSIFIED)

Chemical Corps Intelligence Agency

Early in the year, in an effort to improve the capability of Intelligence Branch in the production of intelligence, it had been proposed to establish a field intelligence agency at Army Chemical Center, Md., which would function under the operational control of Intelligence Branch. At Army Chemical Center this field agency would have been in close contact with its evaluating agency for the exploitation of foreign material, the 42d (formerly the 390th) Chemical Laboratory. At the same time the intelligence agency would have had ready access to the extensive technical facilities

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Except where otherwise cited, this section is based on quarterly historical reports, Plans, Training and Intelligence Division, OCCmIO, the Chemical Corps Intelligence Agency, and interviews with Col William Foley, Exec Officer, PT&I Div, OCCmIO, Lt Col Donald G McNamara, Chief, Chemical Corps Intelligence Agency, and Maj Ralph Lounsberry, Chief, Security Branch, PT&I Div, OCCmIO, 17 and 25 August 1955.

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(1) Interv, Hist Off with Dr Michael J Filippi, C Intell Off, PT&I Div, OCCmIO, 16 Aug 55. (2) OCCmIO CO 11, 13 Jul 55, eff 2 May 55.

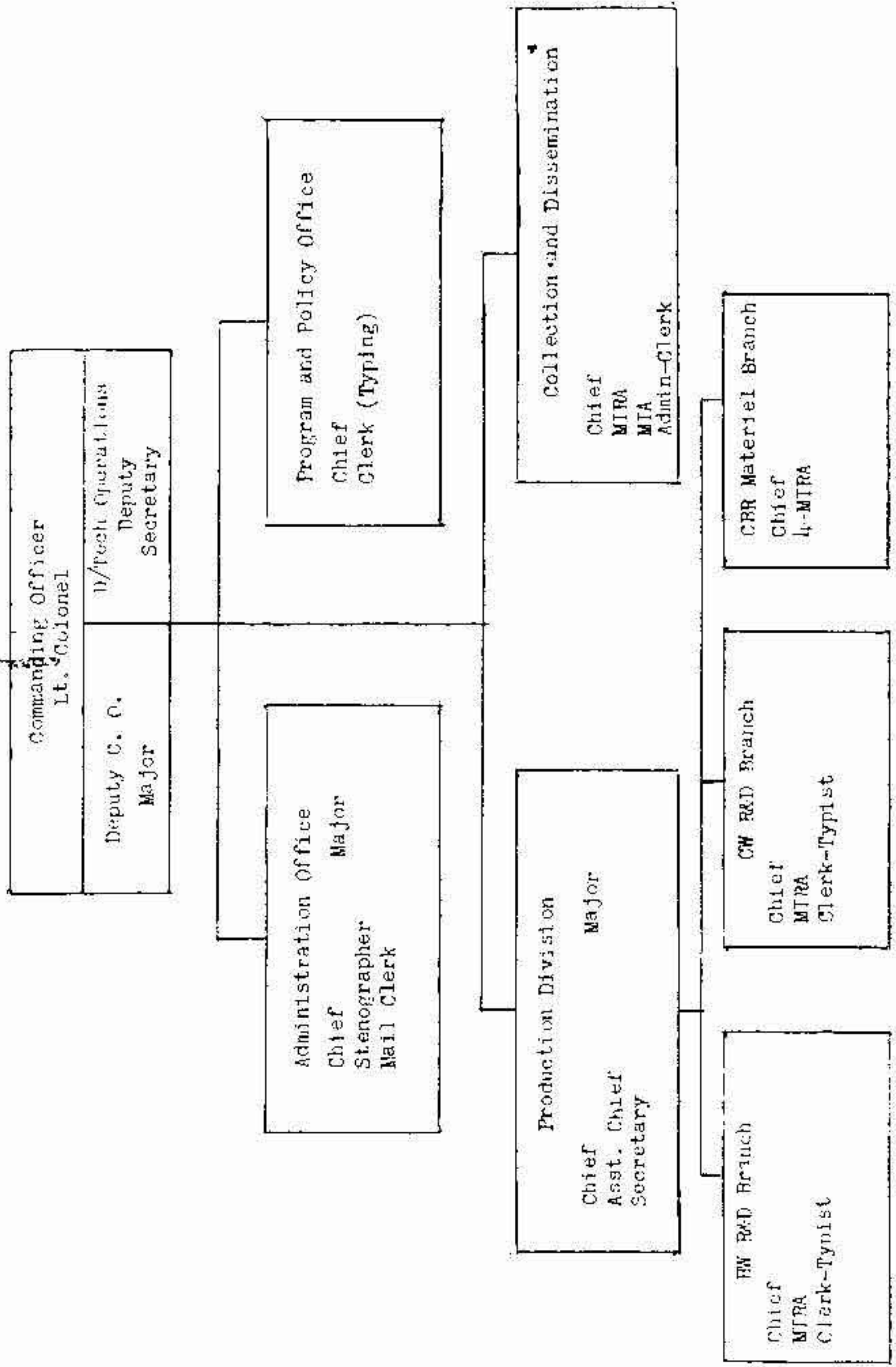
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Chart 7 -- CHEMICAL CORPS INTELLIGENCE AGENCY



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and trained research personnel of Chemical Corps Research and Engineering Command. However, both the Assistant Chief of Staff, G - 2, and the Deputy Chief of Staff for Logistics expressed strong preference for the location of the intelligence agency in the Washington area. These higher headquarters desired to have the Chemical Corps Intelligence Agency where quicker communication was possible than at Army Chemical Center. They pointed out that if located in MDW, the new agency would be in closer touch with other intelligence agencies such as G - 2 itself, Office of Naval Intelligence, Central Intelligence Agency, and with the United States Air Force, United States Public Health Service, Department of Agriculture, as well as other technical service intelligence agencies. G - 2 considered that the problem of securing and maintaining key personnel would be easier in metropolitan Washington than at the semi-isolated Army Chemical Center. (~~CONFIDENTIAL~~)

The establishment of the Chemical Corps Intelligence Agency as a Class II field activity of the Office of the Chief Chemical Officer in April 1955 removed this type activity from the restrictions imposed by Department of the Army manning levels, and thereby enabled the new unit to obtain increased personnel authorizations.¹⁸¹ Such an increase would eventually match spaces to the heavy workload formerly imposed on Intelligence Branch. As initially set up, Intelligence Agency was authorized four officers and twenty civilians.

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(1) DA GO 27, 15 Apr 55, and OCCm10 GO 3, 24 Apr 55, established the Chemical Corps Intelligence Agency. (2) The new agency was physically located in the same building as the Office of the Chief Chemical Officer and received some administrative support, such as mail and records and personnel, from that office. Military District of Washington provided logistical support. (3) CCR 10-21, 2 May 55, gives mission and functions. (4) See Chart 7.

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Two officers and eleven civilians were transferred from the defunct Intelligence Branch, but the remaining personnel had to be recruited. The problem of obtaining, training, and keeping competent personnel provided the most serious problems confronting the new unit. (UNCLASSIFIED)

A major problem in staffing Intelligence Agency with military officers was due to the lack of professional intelligence officers in the Chemical Corps. In the past, career Army officers had too often regarded intelligence work as a specialized activity detrimental to their advancement, and not without some justification. As a result, very, very few had been properly trained to perform intelligence work. By way of a long-range solution, Intelligence Agency advanced the idea of training intelligence officers within the Chemical Corps by means of a school course. Such a course would be aimed at young, career officers with the thought of interesting them in an intelligence career. This proposal, however, did not get beyond the discussion stage during FY 1955. (UNCLASSIFIED)

A request by Chemical Corps Intelligence Agency for the assignment of six enlisted scientific and professional personnel (ESPP) for duty in the Production Division in such fields as meteorology, bacteriology, nuclear physics, biochemistry, chemical engineering, and chemical equipment repair was disapproved by Military Personnel Branch, Comptroller, and Executive Officer, OCOmIC.¹³² Disapproval was largely based on DA policy of keeping

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Quart Hist Rpt, CmIC Intel Ag, Apr - Jun 55.

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enlisted assignments to DA headquarters at a minimum.¹⁸³ (~~CONFIDENTIAL~~)

Aside from a general problem of obtaining competent civilians to handle collection, production, and dissemination, a specific problem was that of recruiting properly trained and experienced personnel to do the art-work involved in several major intelligence productions. As a make-shift the Agency utilized an ESPP from the 42d Chemical Laboratory to do the work at the photographic laboratory of Army Chemical Center. (UNCLASSIFIED)

A further personnel problem was the perennial one of proper utilization of Chemical Corps intelligence personnel in overseas areas, particularly enlisted personnel trained for service with chemical intelligence detachments. Army regulations provided that enlisted men shipped to overseas theaters would be reported only by MOS and serial number. Unfortunately, these men far too often received assignments to smoke generator or chemical depot companies, thereby seriously hindering chemical intelligence work. At the end of FY 1955 no satisfactory solution had been evolved nor was any foreseen. Temporarily the Chemical Corps used technical channels to inform the theater chemical officer that such-and-such individuals were on the way. This theater chemical officer could then take up the question with G - 1. (~~CONFIDENTIAL~~)

During FY 1954 a major problem in CBR intelligence had been the lack of training and/or interest on the part of collectors in the field.¹⁸⁴

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Interv, Hist Off with Lt Col D G McNamara, Cml C Intel Ay, 25 Aug 55.

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See Summary of Major Events and Problems, FY 1954, p. 87.

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By September 1954 the amount of intelligence reports dealing with items of foreign chemical warfare materiel, research and development (particularly in the Soviet bloc of nations), and other matters of vital concern had diminished alarmingly. Intelligence Branch and its successor, Intelligence Agency, made strenuous efforts to brief all collectors in considerable detail, not only as to what information was desired but also as to the best place in which to obtain it. The Specific Requests for Information (SRI's), for example, contained pinpoint guidance for the collector. In an effort to end the cicatory between the research man in the laboratory and the collector in the field who lacked knowledge of each other's problems, the Intelligence Agency briefed other collection agencies as well as the research analyst personnel at key Chemical Corps research installations. The 17th Chemical Detachment (Technical Intelligence) was moved from Fort McClellan to Camp Detrick for training in an attempt to improve the biological warfare collection field, because notable weaknesses existed in field collection. After completing their training, the members of the team were to be transferred to other chemical intelligence detachments to provide at least one experienced man in each. As a result of all these measures and of the handbook program, a more vigorous collection program was under way by the end of FY 1955. (S)

The Collection Guide Handbook Program, approved and financed by G - 2, began to bear fruit in FY 1955. During the early part of the year G - 2 had allocated \$20,000 to be used by the 42d (formerly 390th) Chemical Laboratory in the preparation of collection guides and handbooks for use in the collection of foreign materiel and weapons as well as other intelligence work of direct interest to G - 2. By December 1954 the first of the

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series of collection guides, entitled "Flame Throwers," was published for use by field collection personnel. The Chemical Corps had planned to publish eight additional guides covering such subjects as individual CBR protective equipment, chemical and biological warfare research, and production, but G - 2 directed that those plans be changed and all guides published as a single Department of the Army Pamphlet, 30-103. The target of nine chapters due by the end of FY 1955 was not met due to the inability of CCIA to complete 121 pieces of artwork.¹⁸⁵ G - 2 extended the due date to 31 August. The handbook entitled "Foreign Military Weapons and Equipment, Chemical, USSR," a vitally needed handbook, was nearly completed by the end of the fiscal year.¹⁸⁶ A second handbook on the Soviet satellites was delayed by inability to produce the necessary artwork. ~~_____~~

When a survey of available bibliography on Soviet CBR tactics, doctrine, training, and organization revealed a serious dearth of information, Intelligence Agency established a project in June 1955 (Bingham Project) for such a collection. As initially completed in August, the basic work emphasized Soviet doctrine and training. The Intelligence Agency planned to continue this project as personnel and funds permitted. ~~_____~~

The Chemical Corps met the National Intelligence Survey (NIS) program for FY 1955 with 100 percent performance. Contributions included Norway, Syria, Indonesia, Ceylon, Japan, India (2), and the Soviet Union (3). One problem cropped up in the field because the Chemical Corps submitted negative reports on certain countries which could not reasonably be expected

¹⁸⁵

(1) Program Presentation, 23 Aug 55. (2) See above, p. 110 for reason for delay on artwork.

¹⁸⁶

Published in FY 1956 as DAP 30-12-1. ~~_____~~

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to have any chemical industry, i.e., Nepal. Nevertheless, Intelligence Agency planned in the future to explore all media prior to submission of NIS chapters, including SRI's at least six months before the estimated completion date of a chapter. This raised a further, unresolved problem, because G - 2 strictly limited the number of SRI's which could be sent to the field in any one year. (~~SECRET~~)

Security

When the positive side of intelligence was assigned to Chemical Corps Intelligence Agency and the old Intelligence Branch dissolved, the Counterintelligence Section remained in PT&I Division with a new name and branch status as Security Branch. With regard to its mission of staff supervision over internal security in the Chemical Corps, Security Branch faced a continuing problem of lack of personnel to accomplish scheduled programs, particularly inspection visits to installations. On 29 September 1954 the former Counterintelligence Section had submitted a staff study to PT&I Division which pointed out that existing conditions prevented the adequate accomplishment of the section's mission. The principal reason given was the lack of trained personnel. The study recommended (1) that two company grade officer positions be added to the section; (2) that two civilian positions, GS-4, be added; (3) that necessary trained personnel be recruited to fill these spaces; (4) that the section be redesignated Security Branch because the preponderance of functions and workload was of a security nature. The study remained just that; nothing resulted from it during FY 1955 save the change of name. (UNCLASSIFIED)

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As in the case of training of personnel in positive intelligence, a strong need was felt for training of Chemical Corps personnel in security aspects. In FY 1955 the Chemical Corps initiated a project to establish a course of instruction for training security personnel. While the Corps planned to prepare and submit to G - 2 for approval a proposal for activation of a general course of instruction open to all technical service personnel, an occasion arose to advise G - 2 of this project before it was completed and to state the Chemical Corps viewpoint as well as make appropriate recommendations. At the close of FY 1955 word was received that G - 2 had also been considering the problem and was conducting a study to ascertain the feasibility of such training.¹⁸⁷ (UNCLASSIFIED)

The branch handled routine security matters during the year including preparation of regulations on internal security, visitor control, visit of foreign nationals, managing the PAPERCLIP program, reviewing articles for publication or public release, and providing staff guidance to security elements of the Chemical Corps. (UNCLASSIFIED)

One special need of the Chemical Corps, which was partially filled during FY 1955, was that for detailed security classification guides for both chemical and biological warfare. This need stemmed from the fact that AR 380-86 was too vague and too general in nature. In the second quarter of FY 1955 Intelligence Branch initiated action to have a chemical warfare guide prepared by RECCM and a biological warfare guide by the Assistant Chief Chemical Officer for BW. Representatives of all commands met at the

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Interv, Hist Off with Dr Michael J Filippi, 19 Sep 55.

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Office of the Chief on 21 March 1955 to discuss the former guide. After concurrence within the Chemical Corps, sample copies were furnished to the Air Force, Navy, Canada, and the United Kingdom for comment. A similar meeting in April discussed the BW guide. Although the British and Canadians objected to certain security provisions of the guides, their publication was planned.¹⁸⁸ ~~(CONFIDENTIAL)~~

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The BW guide was published as CCR 30-18, 2 Aug 55, while the CW guide was scheduled for speedy completion.

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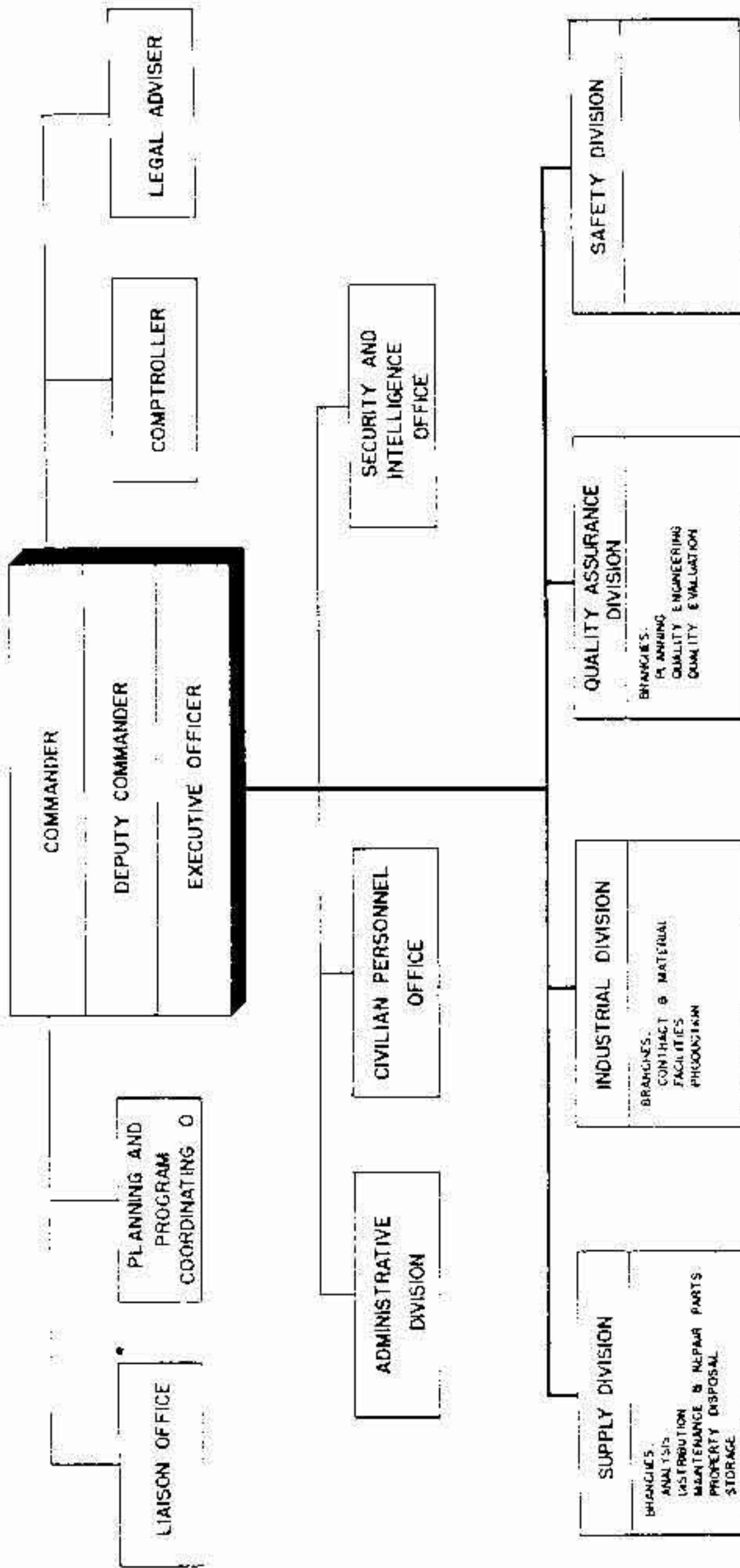
PRODUCTS

Material Management

Fundamental management accomplishment characterized fiscal year 1955 in the material area. Many of the improved management concepts introduced in previous years bore fruit and new concepts and additional refinements were planned or placed in operation. While advances required only minor adjustments in the organization of the Chemical Corps Materiel Command, it was necessary to effect extensive organizational changes in Materiel Division, OCCmlO, during the course of the year. (UNCLASSIFIED)

Effective 2 May 1955 Materiel Division, OCCmlO, was reorganized to align the functions and responsibilities of the division with the Army Primary Program structure as set out in Logistics Directive No. 122, 7 March 1955. The most important part of this reorganization was the removal of requirements activities from the Supply Branch. Requirements and allied activities were placed in a new Materiel Control Branch; the activation of this new branch solved many procedural problems which had inevitably arisen when requirements responsibilities were divided between the Procurement and Supply Branches. Staff supervision of cataloging, standardization, and packing and packaging activities was transferred from the Supply Branch to the Procurement Branch since these activities more logically fall in the procurement and production field. The executive group in the immediate office of the division chief was designated the Plans and Evaluation Office, and specific responsibilities for development, execution, review and analysis within Primary Program fields were

CHEMICAL CORPS
HEADQUARTERS CHEMICAL CORPS MATERIEL COMMAND



| | |
|---|--------------------------|
| SUBMITTED | <i>William M. Greasy</i> |
| MARSHALL STUBBS BRIG GENERAL, USA COMMANDING | |
| APPROVED: | <i>William M. Greasy</i> |
| WILLIAM M. GREASY ALJOP GENERAL, USA CHIEF CHEMICAL OFFICER | |
| DATE | DEC 1 1954 |
| PREPARED BY: OFFICE, COMPT. MANAGEMENT BR | |

* LOCATED, ARMY CHEMICAL CENTER, MARYLAND

assigned within the group.¹⁸⁹ (UNCLASSIFIED)

One of the chief administrative developments in the Headquarters, Materiel Command,¹⁹⁰ during fiscal year 1954 was the appointment of an executive officer. This appointment had the desired effect, during fiscal year 1955, of releasing the deputy commander from many routine administrative tasks.¹⁹¹ Plans were underway at the end of fiscal year 1955 to extend the responsibilities and duties of the executive officer in order to give the deputy commander still more time for overall command management problems.¹⁹² (UNCLASSIFIED)

One of the command management problems which Brig. Gen. Marshall Stubbs, Commanding General, Chemical Corps Materiel Command, felt to be particularly difficult was the provision of sufficient interchange of ideas and problems between field commanders and his headquarters. In an attempt to solve this problem General Stubbs instituted a system of command conferences in February 1955. Attendance at these conferences was strictly limited to field commanders and principal members of the headquarters staff. The agenda was informal, consisting of specific command and field problems which could be resolved among

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(1) OCGMLO GO 6, 6 May 55. (2) Interv, Hist Off with Major Walter L. Flanigan, Mat Div, CCCMLO, 31 Aug 55. (3) Quart Hist Rpt, Mat Div, Apr - Jun 55.

190

Minor developments are discussed in connection with operational activities below.

191

See Summary of Major Events and Problems, FY 1954, p. 97.

192

Interv, Hist Off with Col C J Merrill, Cml C MATCCM, 23 Aug 55.

those present without reference to higher authority. A result of the February and May conferences was a much improved command operational relationship. Additional conferences were planned for fiscal year 1956.¹⁹³ (UNCLASSIFIED)

A command problem, the elements of which have been discussed in the command conferences, was the tendency of field installations to refer purely operational matters to the headquarters. As a result, staff personnel had acquired responsibilities for or had become deeply involved in field operations. General Stubbs and his deputy took vigorous steps in personal visits to field installations, in the command conferences, and in the daily work of the headquarters to clarify operational responsibilities and to delineate specific areas of staff action. A continuous but informal training process was the aim of this action. General Stubbs' deputy, Colonel Merrill, believes that the training was successful, and he states that the staff came to have a greater amount of time to devote to management and policy activities while, at the same time, the authority of the field commander in his own sphere was reemphasized. The rewards of smoother operation were visible by the end of the fiscal year.¹⁹⁴ (UNCLASSIFIED)

In implementation of the Department of the Army and the Chemical Corps program plan, a separate position of Program Coordinator was established in Headquarters, Materiel Command during FY 1955.¹⁹⁵ The Command interpretation

¹⁹³

Merrill interv.

¹⁹⁴

(1) Interv, Hist Off, with Brig Gen Marshall Stubbs, CG MATCOM, 31 May 55.
(2) Merrill interv.

¹⁹⁵

(1) DEP LOG Dir 122, 15 Mar 55. (2) CCR 110-1, 20 Oct 53, and CCR 110-2, 16 Nov 53.

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of this officer's duties included co-ordination of Materiel Command planning, implementation and documentation of Army Primary and Chemical Corps Programs, formerly a comptroller responsibility, and supervision of long-range, non-program planning for the entire command. The latter function was a direct outgrowth of the Chief Chemical Officer's desire to maintain and pursue a policy of vital and imaginative planning throughout the Chemical Corps. It was General Stubbs' feeling that the Program Coordinator, in his strictly advisory capacity, could assure Materiel Command the benefits of quality program management and sound, integrated, long range planning without reorganizing the command along program planning, execution, and review and analysis lines as in Materiel Division.¹⁹⁶ (UNCLASSIFIED)

Personnel Problems

While the increased emphasis on program coordination and planning the removal of operational problems from the headquarters clarified responsibilities and simplified control procedures within Headquarters, Materiel Command, the actual headquarters workload increased because of the introduction of new programs and new management mechanisms such as the Army Stock Fund and Engineered Standards. With this increase of workload, the size of certain units in the headquarters tended to increase, but an overall personnel increase was avoided

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(1) Stubbs interv. (2) Interv, Hist Off with Lt Col J R Chapman, Program Coordinator, MATCOM, 25 Aug 55. (3) Interv, Hist Off with Maj J W Hepburn, O Prog Coord, MATCOM, 31 May 55. (4) Ltr, Maj Gen W M Creasy, C Cml O. to CG's and CO's, Cml C Commands, and ACCm10/3W, 23 Jul 54, ~~sub~~ Imaginative Planning.

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by redistributing personnel in minor reorganizations among divisions.¹⁹⁷
(UNCLASSIFIED)

A more serious personnel management problem, unsolved at the year's end, was the adequate supply and retention of experienced civilian employees. Probably the largest factor giving rise to this problem was uncertainty concerning the future location of Materiel Command headquarters. The facilities now in use in the Butler Building in Baltimore were judged to be inadequate; however, in view of the economy measures imposed or contemplated throughout the Department of Defense, no additional space was acquired, and the movement of the headquarters became virtually certain with the Department of the Army effort to abandon the leasing of commercial facilities.¹⁹⁸ No definite instructions to move the headquarters had been received by the end of the year, but many civilians in management positions resigned in anticipation of such instructions. Although replacements were secured in most positions, the loss of experienced personnel familiar with the work of the command was a severe drain on efficiency. There were more resignations in the headquarters than in any other year of its existence. In a reversal of the usual trend, resignations above grade GS-9 were 40 percent higher than normal. If the year end rate continues there will be a complete management personnel turnover in

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Stubbs interv.

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Department of the Army Installations Program, FY 1955 to FY 1959 with Target Year FY 1957, w/cover ltr signed General M B Ridgway, CofS USA, 9 May 55, Section II, Policies, Pt I, par. 5.

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seventeen months.¹⁹⁹ ~~(L)~~

Another personnel problem in the materiel field resulted from the curtailment of production schedules at the arsenals. Pine Bluff Arsenal was particularly affected. Some of the furloughed workers at that installation resigned to take positions elsewhere. These resignations greatly decreased the pool of skills and experience available to the arsenal in the event of new production programs or mobilization. Even more important, however, was the fact that many of the furloughed workers had been specially trained in the highly technical operation of the Production Development Laboratories, a biological warfare production facility located at Pine Bluff Arsenal. The losses before the end of the fiscal year lowered the early mobilization capacity of this special facility, and any further loss would mean a drastic setback in mobilization capability.²⁰⁰ ~~(CONFIDENTIAL)~~

Personnel and mobilization planning problems were not confined to the headquarters and arsenals but extended to the procurement districts as well. For example, Dallas Procurement District experienced a 20 percent increase in resignations during the third quarter, FY 1955. This ascending resignation rate was directly attributable to the downgrading of civilian positions which

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(1) Stubbs interv. (2) Interv, Hist Off with Mr F L Nickle, Indus Div, MATCOM, 31 May 55. (3) 4th Quart FY 55 Review and Analysis of Materiel Command Programs, Egs, MATCOM, pp. 52 - 53. (4) Summary of Staff Conference, OCCm10, 25 Feb 55.

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Stubbs interv.

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followed curtailment of the district's responsibilities in the procurement reorganization of 1 July 1955.²⁰¹ Cumulative experience lost by these resignations was about 127 man years. Replacements in these positions had, in contrast, only twenty-three man years of procurement experience. The loss of experienced personnel is equivalent to the reduction of mobilization capability.²⁰² ~~(CONFIDENTIAL)~~

Engineered Standards

As General Stubbs had predicted, the Engineered Standards Program became a most promising management tool.²⁰³ Early in the year a contract was let to the industrial engineering firm of Ernst and Ernst for a feasibility survey of Rocky Mountain and Pine Bluff Arsenals. The purpose of this contract was to measure all measurable work areas, to assign standards for work, and to assign standards for materials usage. The plan also included setting up full standard cost accounting systems for Army Industrial Fund installations into which category both arsenals fall. It soon became apparent that engineered standards were practical in production activities, and therefore the study was

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(1) See Summary of Major Events and Problems, FY 1954, pp. 97 - 100 for details of this reorganization. (2) The procurement reorganization of 1 July 1955 was not comprehensively studied during FY 1955. Interim evaluations indicated that considerable economy and efficiency of operation resulted, but the mobilization potential of this organization was questionable. A study will be made in FY 1956, and it will be reported at the close of that year.

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(1) Stubbs interv. (2) Nickle interv.

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See Summary of Major Events and Problems, FY 1954, pp. 100 - 101.

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extended to include all phases of Chemical Corps materiel activity. In production areas time study of operations was the method employed. Since maintenance and storage operations are not easily measurable in a step by step process, and since study of every job would be uneconomical, a combination of time study and statistical standards methods were employed in these areas. For example, in the maintenance area jobs were categorized by time required for completion, estimated on the basis of experience. Experience data were then gathered to determine the actual average completion time for all jobs in each category. Then each job requiring more than the average was time-studied to determine inefficiencies. This "sampling" method of study permits investigation of working techniques and provides further data for the revision of standards.²⁰⁴
(UNCLASSIFIED)

Engineered standards development was continuing at the end of the fiscal year. At Pine Bluff Arsenal about 90 percent of manufacturing operations, 50 percent of depot operations, and 85 percent of maintenance operations had been covered, while at Rocky Mountain Arsenal the coverage of storage and maintenance operations was slightly behind the Pine Bluff schedule. Chemical Corps personnel trained by the contractor at Pine Bluff Arsenal extended the system to over half the activities at Edgewood Arsenal, nearly three-quarters of Eastern Chemical Depot operations, and initiated development at the Inspection Equipment Agency and in the procurement districts. A supplemental agreement was negotiated with Ernst and Ernst to put engineered standards in operation at the

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(1) Stubbs interv. (2) Merrill interv. (3) Interv, Hist Off with Mr L R Secrest, Comptroller's Off, MACCOM, 25 Aug 56.

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two principal arsenals during FY 1956. The full application of standards at other locations would not be possible until these installations were covered by the Army Industrial Fund. (UNCLASSIFIED)

The benefit of engineered standards to management were great. For the first time it was possible to determine exactly and to control the cost of idle production lines. Exact arsenal capacity for current and mobilization purposes could be computed without resorting to estimates. Direct labor per item, individual worker capacity, and production line capacity were determined. Shifts in manning schedules were made on the spot as studies showed more efficient and economical means of operation. A data sheet reflecting all the above information and all the findings for each arsenal was drawn up. Production experience that hitherto would have required weeks for compilation and evaluation, and then only on an estimated basis, could now be assembled in a few minutes on an exact basis. General Stubbs stated, however, that the management use of the program was only a part, and perhaps ultimately a small part, of the story. The real "pay-off" of the Engineered Standards Program would appear in operations, the general thought, when exact control of factors would produce a better product at lower cost. An auspicious beginning in the operations area was the gain in efficiency, not entirely anticipated, which resulted from improved worker morale and heightened competition among crews and gangs informed of their engineered standards performance ratings. Under the new system the worker "knows where he is going" and knows what he has

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accomplished when he gets there.²⁰⁵ (UNCLASSIFIED)

Expected gains from the cost accounting phase of the Engineered Standards Program again pointed up the value of the Army Industrial Fund as a management tool. Since its inception in the Corps in 1951, this system has proved its worth in many fields of management.²⁰⁶ During fiscal year 1955 continued strides were made in refining and modifying the Industrial Fund system for optimum use. A new accounting manual putting costing procedures on a new basis was produced and will go into operation on the first day of FY 1956. The new manual embodies four years of Chemical Corps Industrial Fund experience. Some problem areas still remained in the Army Industrial Fund system. One of these is the lack of a base upon which to compute depreciation. Computing depreciation is a more complicated problem in a military production facility where both current need and mobilization capabilities must be considered than it is in a comparable commercial facility. Another problem, again complicated by mobilization necessities, is the difficulty of accounting costs of maintaining plants in standby. Under present accounting procedure, all costs are levied against the end product; this method greatly increases peacetime end-product total cost since relatively few items bear the expense of a wartime capacity plant. A possible solution is the acceptance of the theory of capacity

205

(1) Stubbs interv. (2) Secrest interv. (3) Management Improvement Program Report (RCS: CSCAM-10 (R2)). 4th Quarter FY 55. Ecs, JATCOM, 13 Jul 55. (4) Supplemental Agreement to Contract No. DA-41-040-CML-252, Chicago Chemical Procurement District to Ernst and Ernst, Items: Management Engineering Services for the Chemical Corps. 9 Jun 55.

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See Summary Report 1951 - 1952, pp. 39 - 43.

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utilization cost under which the end product would be charged with only so much of the plant as is used in its production. Acceptance of this theory involves setting up special funds for the maintenance of standby plants, and these funds can be authorized only by higher echelon agencies.²⁰⁷
(UNCLASSIFIED)

The Army Industrial Fund's complementary program in the supply field, the Army Stock Fund, functioned in the Chemical Corps throughout the fiscal year.²⁰⁸ During the year it was extended to all Chemical Sections of General Depots, into selected posts, camps, and stations, and into overseas areas. Its benefits to material management were many. The Army Stock Fund and its principal vehicle, Financial Inventory Accounting, gave the command a picture of material activity in terms of storage inventory receipts and issues. A review of inventory and issue statements indicated deficiencies at the operating level which were remedied. Moreover, the system permitted a continued check on the remedies applied. The Stock Fund had not yet decreased the storage workload, but it was expected that workload would decrease with more experience. The Stock Fund pointed up the necessity of better stock balances. For instance, during the first year of operation sales exceeded six million dollars. Over half the material represented by this amount was supplied from storage, reducing the inventory and putting the Chemical Corps in a better stock position in that stocks stood more nearly at the level reflected by demand experience.

207

(1) Merrill interv. (2) Interv, Hist Off with Mr Joseph Mandy, Comptroller's Off, MATCOM, 25 Aug 55.

208

(1) See Summary of Major Events and Problems, FY 1954, pp. 117 - 119.
(2) See above pp. 37- 38 for Corps-wide details of Stock Fund management.

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The Stock Fund, being a reimbursement-type operation, provided a simple means of financing procurement of operational stocks. It also provided easily available statistical information for the use of operating agencies. The principal problem area in the system was that of the inability to furnish pricing data to using elements within a reasonable time after new prices were determined. The development of new and more rapid methods of publication and dissemination is not within the province of the Chemical Corps.²⁰⁹

(UNCLASSIFIED)

Other lesser management accomplishments will be discussed under the appropriate activities within the procurement, supply, and inspection fields.

Procurement and Production

Fiscal year 1955 again saw a decline in funds available to the Chemical Corps for materiel.²¹⁰ Approximately 41 1/4 million dollars were available in FY 1955 as opposed to more than 52 million in FY 1954. The 1955 sum was about one-fifth of the amount available in the peak post-war year, FY 1951. A number of program and funding adjustments were required during the fiscal year, but the adjustment burden was small compared to the previous year, since the forecast availability at the beginning of FY 1955 was only about one-half million more than the actual year-end total. Major program adjustments

209

(1) Merrill interv. (2) Mundy interv. (3) Interv, Hist Off with Mr David Bourque, Supply Div, MATCOM, 23 Aug 55. (4) Quart Hist Rpts, Hqs, MATCOM, Jul - Sep, Oct - Dec 54, Jan - Mar, Apr - Jun, 55.

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(1) See Summary of Major Events and Problems, FY 1954, p. 102. (2) See Appendix A, Review and Analysis of Chemical Corps Programs, 4th Quarter, FY 55, pp. 76 - 77.

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Table 8 - Accepted Item Production of Principal Items - FY 1955¹

| Item | Unit | FY 1955 Cumulative | Item | Unit | FY 1955 Cumulative |
|--|------|-----------------------|--|------|-----------------------|
| Mask, Gas, MD, M7 | ea. | 34,238 | Shell, Cal, HD, 105mm, M60 (Filling Only) | ea. | 87,744 |
| Valve, Outlet, CL5, w/cover | ea. | 57,954 | Shell, Cal, HD, 155mm, M104, (Filling Only) | ea. | 36,430 |
| Inspirator, Paint Spray, M5 | ea. | 5,000* | Shell, Cal, HD, 155mm, M110, (Filling Only) | ea. | 245,528 |
| Protector, Collective, Hospital, 6-man | ea. | 357 | Shell, Smoke, WP, 76mm, M14G, (Filling Only) | ea. | 90,000 |
| Protector, Collective, Field, M6 | ea. | 557 | Shell, Smoke, WP, 105mm, MDC, (Filling Only) | ea. | 371,162 |
| Filter, Gas & Particulate, 1100 CFM, E26 | ea. | 2 | Shell, Smoke, WP, 4.2", M328, (Filling Only) | ea. | 24,355* |
| Filter, Gas & Particulate, 600 CFM, E25 | ea. | 76 | Shell, Smoke, WP, 155mm, M104, (Filling Only) | ea. | 93,332 |
| Filter, Gas & Particulate, 2500 CFM, E27 | ea. | 2 | Shell, Smoke, WP, 155mm, M110, (Filling Only) | ea. | 304,320 |
| Kit, Cal Agent Detector, M9A2 | ea. | 12,118 | Canister, Smoke, Yellow, 105mm, Shell, M2 | ea. | 150,360* |
| Kit, SW, Field Sampling, E25 | ea. | 410 | Canister, Smoke, Red, 105mm, Shell, M2 | ea. | 115,127* |
| Dosimeter, Radiation, Tactical M13 | ea. | 100,016* | Grenade, Rifle, Smoke, Green, Streamer, M23 (Filling Only) | ea. | 45,000* |
| Alarm, Field, Automatic, E21 | ea. | 200 | Grenade, Rifle, Smoke, Red, Streamer, M23, (Filling Only) | ea. | 46,000* |
| Decontaminating Apparatus, Portable, 3 Gal., M1 | ea. | 6,430 | Grenade, Smoke, White, HD, AN-M2 | ea. | 90,561 |
| Decontaminating Apparatus, P.D., Back Mounted, M3 | ea. | 5 | Grenade, Smoke, Green, M13 | ea. | 117,094 |
| Decontaminating Apparatus, P.D., Truck Mounted, M3A3 | ea. | 218 | Grenade, Smoke, Red, M13 | ea. | 323,809 |
| Outfit Protective Impermeable, M3 | ea. | 12,307 | Grenade, Smoke, Yellow, M13 | ea. | 132,090 |
| Compressor, Reciprocating, P.D. Gasoline Engine, 100 CFM, E15 | ea. | 14* | Grenade, Hand, Tear, CN, M7A1 | ea. | 113,241* |
| Compressor, Air, Portable, 3 1/2 CFM, E12 | ea. | 125* | Rocket, Cal, L.S., T154, (Filling Only) | ea. | 347 |
| Regulator, Air Pressure, M1 | ea. | 7,708 | Rocket, Cal, HD, L.S., T165 (Filling Only) | ea. | 591 |
| Starter, Fire, M2 | ea. | 26,050* | Rocket, Smoke, WP, 3.5", T12783 (Filling Only) | ea. | 321,500 |
| Mixing & Transfer Unit, Incendiary Oil, AN-M3A1 (E1F2) | ea. | 63 | Rocket Heads, P.P. 7" M1, M01 L (Filling Only) | ea. | 40,000 |
| Mixing & Transfer Unit, Incendiary Oil, E3H | ea. | 37 | Igniter, Fire Bomb, WP, AN-M23A1 | ea. | 271,700 |
| Incendiary, Film Destroyer, M1 | ea. | 306 | Fuse, Igniter, Fire Bomb, AN-M173A1 | ea. | 100 |
| Incendiary, Emergency Document Destroyer, E12H | ea. | 100 | Bomb, Fire, 750 Lb., M13A1 (Less Igniter & Filler) | ea. | 19,613 |
| Thickener, Incendiary Oil, M2 | lbs. | 2,447,980* | Bomb, Incendiary Oil, WP, 5 Lb., AN-M69A1 | ea. | 108,290* |
| Pot, Smoke, HC, 30-Lb., M5 | ea. | 193,365 | Cluster, Incendiary Bomb, M12 (Renovation) | ea. | 3,904 |
| Pot, Smoke, Floating, HC, M1A2 | ea. | 9,000 | Cluster, Nonpersistent Gas Bomb, 1000-Lb. M14 & M3A1, (E1M13 & E1M15) | ea. | 9,133* |
| Pot, Smoke, Floating, SGP2, AN-M7 | ea. | 110,755 | Valve, Antibackflow, M1 | ea. | 21,000 |
| Shell, Cal, 155mm, T77, (Filling Only) | ea. | 14,084 | Antiset, M1 | 159. | 42,397 |
| | | | Pellet, CN, M2 | ea. | 235,000* |
| | | | Refrigerant, R-12, 5, Unground | lbs. | 360,001 |

*Completed programs

¹Compiled from Chemical Corps Procurement Status Reports (VCS, CCMC-2P-1) (Form 3), 7th edition, as of 30 June 1955.

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occurred, however, with relation to the estimated procurement for all claimants except the Air Force. The Chemical Corps allotment for the Army declined by more than six million dollars from the estimate, while the procurement for Ordnance rose slightly less than eight million above the estimate. The actual total for the Navy was slightly more than five million below the estimate, while the total for foreign aid, other technical services, and other minor claimants exceeded the estimate by more than nineteen times. It is notable that the Air Force allocation, previously a major source of Chemical Corps materiel funds, dropped to less than two million, but this figure was \$259,000 more than the first quarter estimate. At the end of fiscal year 1955 sufficient funds were available for Chemical Corps materiel programs for another year of marginal operations.²¹¹ ~~(CONFIDENTIAL)~~

An accomplishment of the year was an obligation rate of 97 percent on materiel funds. This exceeds the previous year's obligation rate by almost one quarter.²¹² A high obligation rate is indicative of high efficiency in the management of materiel funds. (UNCLASSIFIED)

Actual receipts from procurement were more than 20,000 tons less in FY 1955 than in FY 1954. Receipts fell below forecasts in both years, but the degree of variation was much smaller in 1955. Nearly half of forecast deliveries were not received in 1954 whereas all but 9,000 tons forecast were

²¹¹

(1) Stubbs interv. (2) Review and Analysis of Chemical Corps Programs, 4th Quarter FY 54 and 1st Quarter FY 55, Office of the Comptroller, CCCMIQ.

²¹²

(1) See Appendix A, p. 76.

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received during 1955. The difference in the latter year was almost entirely attributable to difficulties experienced in getting two Air Force bomb cluster programs into production and production problems in the manufacture of another cluster.²¹³ Table 6 is a list of principal items of accepted production with quantities for the year. (~~CONFIDENTIAL~~)

Major procurement and production accomplishments and problems were experienced with respect to certain items such as the Navy Mark V gas mask, the civilian protective mask, various Air Force clusters, the tactical radiation dosimeter, and the M3A2 mechanical smoke generator. Toxic production continued to be a problem during this fiscal year. These items will be discussed briefly. (~~CONFIDENTIAL~~)

ELR3 Tactical Radiation Dosimeter

In response to a request of the Deputy Chief of Staff for Logistics, the Chemical Corps early in fiscal year 1955 contracted with Technical Associates of Berkeley, California, and Consolidated Vacuum Corporation of Rochester, New York, to produce the Chemical Corps-developed tactical radiation dosimeter. This dosimeter, a pocket-sized packet of ampoules filled with a fluid which changes color according to the amount of radioactive contamination in the vicinity of the wearer, had proved in Chemical Corps tests, to be more exact

213

(1) 4th Quart, FY 54, pp. 114 - 115, and 4th Quart, FY 55, Part I, pp. 62 - 63, Review and Analysis of Materiel Command Programs, Hqs, CmlC MATCOM. (2) See below pp. 135 - 36 for discussion of cluster problems.

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and more reliable than any other small warning device. The contracts awarded called for 100,000 dosimeters for world-wide distribution in a field user test.²¹⁴ (~~CONFIDENTIAL~~)

Research and Engineering and Materiel Commands worked together and with the manufacturers on the production of the dosimeter, since procurement had been initiated before full production engineering studies could be run. Approximately fifty changes in specifications were made during production. Some of the more important were: increased tolerances of both metal and glass parts; changed method of attaching the clip; changed the acceptance number in radiation and heat stability; and changed heat stability test. Despite these and other production problems, the contracted amount was completely delivered in February 1955. Overseas distribution was made of 56,000 dosimeters. A number of those remaining in the United States were distributed for surveillance and environmental surveillance testing. Chemical Corps testing of 2,500 dosimeters indicated that the products of one of the manufacturers may not meet climate and ageing standards. Further testing and new test procedures were indicated.²¹⁵ (~~CONFIDENTIAL~~)

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(1) Summary of Staff Conference, OCCm10, 14 Jul 54. (2) Quart Hist Rpt, Jul - Sep 54, Materiel Div, OCCm10. (3) Interv, Hist Off with Captain R J Schram and Mr Joseph Marcus, Indus Div, MATCOM, 2 Sep 55.

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(1) Schram - Marcus interv. (2) Rpt. User Test Procurement Committee, E1R3 Dosimeter, Radiation, Tactical, Mr J G Schaffner, MATCOM, Chairman, 13 Jul 55. (3) Quart Hist Rpts, Eqs, RECCOM. Jul - Sep, Oct - Dec, 54, Jan - Mar, Apr - Jun, 55. (4) Summary of Staff Conference, OCCm10, 25 Feb 55.

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E21 Automatic Field Alarm

An achievement during FY 1955 which has far-reaching implications was the first production of an automatic electronic alarm for the detection of G agents. This is the first electronic device developed by the Chemical Corps for field use. Procurement was instituted by Navy request, and, since this was again an item still in the development stages, a contract was let to the Radio Corporation of America for a part of the design and specification work as well as production. Production began in March 1955 and the order of 200 items for the Navy was complete by the end of the fiscal year. Further user test procurement for the Chemical Corps was planned for the next fiscal year.²¹⁶ (~~CONFIDENTIAL~~)

Commercial Chemicals

The transfer of commercial chemicals from other services to the Chemical Corps under the single-service procurement concept expounded in SR's of the 700-51-100 series was completed with a few minor exceptions during FY 1955.²¹⁷ While the actual purchase of these commercial items has presented few problems, difficulties arose in connection with procurement and distribution because of the great variety of packing and packaging and the different specifications on similar items which were employed in the Armed Forces. It was originally intended that much of the procurement in this field would be under open-end

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(1) Schram - Marcus interv. (2) Monthly Summary of Procurement Performance (RCS: CMLMC-ZP-23) (CMLC-10), Hqs, MATCOM, 31 Mar 55, 31 Jul 55.

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See Summary of Major Events and Problems, FY 1954, pp. 121 - 122 for initiation of this program.

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contract. But it was discovered that producers could not profitably handle the retail-type business which developed under open-end contract when posts, camps, and stations throughout the United States placed small orders specifying various packagings. A study of open-end contracts resulted in a curtailment of this purchase method in favor of local-purchase agreements. Packing and packaging were standardized and standard specifications were written which eliminated a number of items duplicated under other specifications. Major progress had been made by the end of the year in adopting standard nomenclature, catalog references, and local purchase information.²¹⁸ (UNCLASSIFIED)

Navy Mark V Gas Mask²¹⁹

During FY 1954 production of 102,000 Mark V gas masks was requested by the Navy. A contract was let to the General Tire and Rubber Company, and early in FY 1955 the installation of necessary Chemical Corps production equipment was completed in their Wabash, Indiana, plant. It was planned to complete the order within the fiscal year, but two major production difficulties were encountered. Materiel Command was authorized direct contact with the Navy Department in the solution of these problems. The first was obtaining a proper seal between the plastic lens and the facepieces; the solution lay in the development of a new sealing technique. The second problem was the high

²¹⁸

(1) Stubbs interv. (2) Merrill interv. (3) Bourque interv. (4) Schram-Marcus interv. (5) See below pp.

²¹⁹

There was no program for the MSA1 protective mask during the fiscal year. See Summary of Major Events and Problems, FY 1954, pp. 104 - 106.

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moisture content of the Navy-supplied charcoal filter material. No commercial drying facilities were available, but charcoal experts of the Chemical Corps Chemical and Radiological Laboratories improvised and operated a drying process to provide sufficient charcoal to sustain production until specification charcoal could be obtained. By the end of FY 1955 production was flowing smoothly, and it was expected that Navy requirements would be met in FY 1956.²²⁰

M35 and M36 (E115 and E117) Incendiary Bomb Clusters.²²¹

Fiscal year 1955 saw a continuation of the difficulties in production of the M35 and M36 (E115 and E117) incendiary bomb clusters. Overall design problems were solved early in the year, and standardization action was taken on 9 December 1954.²²² Soon thereafter it became clear that quantity production should be scheduled at Rocky Mountain and Pine Bluff Arsenals as soon as possible in view of available labor force and facilities. User test procurement, which had been instituted on the M35 cluster, was stopped and major production was scheduled in March 1955. This schedule underestimated the

220

(1) Interv, Hist Off with Mr P P Meadow-Croft and Lt A G Williams, Indus Div, MATCOM, 2 Sep 55. (2) Summary of Staff Conference, OCCm10, 14 Jul 54, 16 Nov 54, 13 Dec 54. (3) Hist Off, Notes on Conference of Commanding Officers held in OCCm10, 20 Jul 55.

221

See Summary Report, FY 54, pp. 103 - 104.

222

CCTC Item 2351, Classification of the Cluster, Incendiary Bomb, PT1, 750-lb., M35 (E115R5) & Cluster, Incendiary Bomb, TE3, 750-lb., M36 (E117R2) as Standard Types; Reclassification of the M31 & M32 500-lb. Clusters to Substitute Standard, 9 Dec 54.

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lead-time required for components production, however, and the lead-time was further extended in the face of unexpected production design, contractual, and materials problems. Lead-time on arsenal production also proved to be too short, and the Air Force found it necessary to cut commitments and mobilization requirements. The program was then rescheduled, setting back arsenal production to January 1956.²²³ ~~CONFIDENTIAL~~

M116A1 (E74R3) Fire Bomb

Quantity production of the M116A1 (E74R3) fire bomb was scheduled during FY 1954, and contracts were let to the Aircraftsman Corporation, Diamond Building Products Company, and Evans Reamer Company. The first two companies initiated production in fiscal year 1955, but their early products did not meet Air Force specifications. Lengthy delays were encountered while new engineering and production techniques were being evolved, proved, and put into operation. Problems in purchasing, tooling, changes in specifications, and difficulties in production engineering prevented Evans Reamer Company from producing during the entire year. By the end of the year all production problems had been solved at the Aircraftsman Corporation, but a financial problem had beset this producer and the Diamond Building Products Company. The Aircraftsman Corporation would, it was estimated, be able to rise above financial difficulties if a greater position of the program could be assigned. Despite extensive pre-award surveys, it appeared that Diamond Building Products

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Interv, Hist Off with Pfc W C Mansfield, Indus Div, MATCOM, 2 Sep 55.

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Company was not financially sound and could not continue in production. A solution was being sought at year's end in the possible subcontracting of the Diamond quota to the Aircraftsman Corporation; this arrangement would have the benefit of increasing the quantity to be produced by Aircraftsman and of relieving Diamond of production which became a financial burden.²²⁴

~~(CONFIDENTIAL)~~

M3A2 Mechanical Smoke Generator

In July 1954 a contract was signed with the Air-A-Plane Corporation, Norfolk, Virginia, for the production of 1,157 mechanical smoke generators, M3A2. The M3A2 is a refinement and modification of the M3A1 designed on the basis of extensive tests, combat operations, and recommendations of the Chemical Corps Board. The February schedule for production was not met, and no generators had been produced at year's end because of the multitude of engineering and production difficulties which arose from the changes made. The principal change, the exchange of a magneto ignition system for a battery-coil system, had been successfully accomplished, but the largest production problem, precision machining of the engine head to insure positive indexing at the valve, had yet to be solved.²²⁵

~~(CONFIDENTIAL)~~

224

(1) Interv, Hist Off with Pfc W C Mansfield and Pvt R E Westlund, Indus Div, MATCCM, 2 Sep 55. (2) Nickle interv.

225

(1) Interv, Hist Off, CCCm10 with Mr M J Reuwer, Indus Div, 2 Sep 55. (2) Summary of Staff Conference, CCCm10, 14 Jul 54, 5 Jan 55, 22 Jun 55.

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Accomplishments and Problems in Toxic Production²²⁶

The production of GB nerve gas remained as the top priority Chemical Corps project throughout the fiscal year. Research and Engineering Command continued its effort to operate the Muscle Shoals Phosphate Development Works at Wilson Dam, Alabama, for the full production of the intermediate product, dichlor, and was successful. Materiel Command produced the finished product in quantity at Rocky Mountain Arsenal. All production problems were not satisfactorily solved, however, and questions of a better process and desirable mobilization capacity were still to be answered. (UNCLASSIFIED)

In October 1954 Materiel Command notified Research and Engineering Command that 470 tons per month of dichlor, the intermediate product, would satisfy current production requirements at Rocky Mountain Arsenal. Planning at the Muscle Shoals plant for the rest of the year was based on this figure.²²⁷ ~~(CONFIDENTIAL)~~

Operation of the Muscle Shoals plant had recommenced in July 1954 with sights set on the target figure of 525 tons of dichlor per month, after a shutdown for engineering modifications and installation of new equipment.²²⁸ Step "O", the production of the basic raw material, phosphorus trichloride,

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See Summary of Major Events and Problems, FY 1954, pp. 106 - 114.

227

(1) Quart Hist Rpt, RECOM, Oct - Dec 54. (2) Ltr, CMLMC-XP-42, CG MATCOM to CG RECOM, 27 Oct 54, sub: Scheduling of Dichlor from Site A.

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See Summary of Major Events and Problems, FY 1954, p. 112.

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continued to operate smoothly, and 1,400 tons of this material were furnished under contract to the Shell Chemical Company's APC process plant at Rocky Mountain Arsenal during the first half of the fiscal year.²²⁹ Step I, the production of dimethyl hydrogen phosphite which gives the process its name (DMHP), operated well with the new equipment which, in addition to new techniques evolved for its use, solved the off-gas problem. It was also found feasible to eliminate the product still from this portion of the process, resulting in a 15 percent increase in yield.²³⁰ ~~(CONFIDENTIAL)~~

Step II, the "pyromix" step, a high temperature pyrolysis of the Step I product, presented no problems, and new techniques produced a slightly increased yield.²³¹ Equipment modifications solved the operating problems of Step III, the production of methyldichloro phosphine oxide (dichlor). The greatest problem continued to be the reduction of phosphorus oxychloride, Step III byproduct, to the useful principal raw material, phosphorus trichloride. Numerous setbacks were experienced in putting the TVA-designed reduction plant into operation. All three furnaces were operated for varying lengths of time throughout the year. Frequent system breakdowns were most often caused by failure of the furnace heating electrodes and continual plugging of the primary scrubber condenser systems by solids carried over from the furnace. New

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(1) See Summary of Major Events and Problems, FY 1954, p. 113. (2) Summary of Staff Conference, OCCmIO, 14 Jul 54. (3) Abstract of Site A Weekly Rpt, Incl 1 to Quart Hist Rpt, RECOM, Oct - Dec 54.

230

(1) See Summary of Major Events and Problems, FY 1954, pp. 108 - 109. (2) Quart Hist Rpts, RECOM, Jul - Sep, Oct - Dec 54. (3) C Y 1954 Annual Report, Chemical Corps Phosphate Development Works (Misole Shoals Project), pp. 3 - 5, 27. (Hereafter cited as "54 Rpt, Cml C PDW,").

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54 Rpt, Cml C PDW, pp. 27 - 28.

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settling processes devised reduced the plugging, but did not solve the problem. Yield did not reach design capacity, and one furnace was modified to vapor feed in an effort to improve yield. Although vapor feed offered certain operating advantages, the yield was not appreciably better than by conventional feed. By the end of the year the reduction plant system had been improved to the point at which all the by-product produced in current operations could be reduced. Before the current capacity was reached, however, an interim measure of phosphorus oxychloride sales to commercial firms had to be adopted. The reduction plant was judged incapable of supporting the roundout DMHP process capacity which had been demonstrated to be at least 120 tons per day in the operation of the major steps.²³² ~~(CONFIDENTIAL)~~

The production capacity of the Muscle Shoals facility to meet current requirements was proved in fiscal year 1955,²³³ but the total capacity of the facility had not been proved, and the relative merits of processes alternative to the DMHP process had not been conclusively demonstrated. The retransfer of Muscle Shoals operations to Materiel Command was accordingly postponed to

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(1) See Summary of Major Events and Problems, FY 1954, pp. 109, 114. (2) 54 Rpt, CmlC PDW, pp. 13 - 16, 28. (3) Quart Hist Rpts, RECOM, Jul - Sep, Oct - Dec 54, Jan - Mar, Apr - Jun, 55. (4) Summary of Staff Conference, CCCm10, 18 Aug 54 and 22 Sep 54. (5) 3rd Quart Rev, FY 55, and 4th Quart Rev FY 55, R&D Div, CCCm10.

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Many of the production accomplishments of the past year are directly attributable to the work of the Enlisted Scientific and Professional Personnel who were assigned positions of importance, in keeping with regulations, at the Muscle Shoals facility.

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approximately 1 January 1956 to allow Research and Engineering Command personnel additional time for proving, evaluating, and determining the maximum capacity of the facility. Following the directive of the Secretary of Defense on toxic policy²³⁴ an intensive effort was made in FY 1955 to pilot all alternative processes. In February, Research and Engineering Command recommended a process which involves the high temperature methylation of phosphorus trichloride (HTM process) to the Chief Chemical Officer as the best of the processes piloted up to that time. The contractors who are setting up pilot plants on this and other processes asked more time for evaluation, however, and the contract for piloting a combination of the DMEP and HTM processes had just been negotiated at the end of the fiscal year. The combined DMEP-HTM process was the most promising in the field and it had the added advantages of using present facilities, thus reducing cost of installation to about one-sixth that of any other process. It was decided, therefore, that final process evaluation would be made in fiscal year 1956 or 1957.²³⁵ ~~SECRET~~

Meanwhile, as the search for a new process was proceeding, the final two steps of the DMEP process in the Rocky Mountain Arsenal facility were producing the agent GB, and munitions were being filled at the arsenal. Total agent production for the fiscal year was approximately 898,600 gallons. Ton

234

DCD Dir, Chemical (Toxic) and BW Readiness, 6 Mar 54, reproduced as CGTC Item 2823.

235

(1) Quart Hist Rpts, RECOM, Jul - Sep, Oct - Dec, 54, Jan - Mar, Apr - Jun 55. (2) Rpt, CG RECOM to CCmlO, 21 Feb 55, sub: Evaluation of Alternate Processes for Manufacture of GB. (3) 4th Quart Rev FY55, R&D Div, CCCmlO.

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cylinders numbering 4,467 were filled, and sufficient bombs were filled to manufacture more than 9,000 1,000-lb. clusters completing a program of nearly 24,000 M34 and M34A1 (E10LR3 and E10LR5) clusters for the Air Force. A considerable accomplishment was the filling of more than 14,000 155 mm. shells. This program required the adaptation of bomb filling lines to shells and numerous inspections and revisions of technique attendant upon the first production of a new item. An atmosphere of helium was used to test the shells for leakers, but none was found. A part of the production was sent to Dugway Proving Ground for exhaustive climatic and rough handling tests.²³⁶ ~~(S)~~

During actual operation of Steps IV and V of the DMFP process no insurmountable problems were encountered. Continual testing and experimentation was carried on to determine better ways of operation which would produce higher yields. Progress was made in this respect as it was in perfecting equipment, but no outstanding developments were produced. Chief problems were the production of agent lots which did not meet specifications and the accumulation of solids which caused excessive pressure in the Step IV off-gas system. The first problem was on the way to solution at year's end with improved production techniques and new methods of reprocessing off-specification lots. The problem of solids accumulation seemed to arise only when using dichlor produced at Muscle Shoals where the intermediate product was not redistilled as it was in the Shell APC plant at Rocky Mountain Arsenal. Since redistillation equipment

 236

(1) Quart Hist Rpts, Rocky Mountain Arsenal, Appendix I, Jul - Sep, Oct - Dec, 54, Jan - Mar, Apr - Jun 55. (2) Interv, Hist Off with Mr W J Hewitt and Mr Albert Waschler, Indus Div, MATCCM, 2 Sep 55.

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for Missile Shoals would be prohibitively expensive, other methods of coping with solids, such as larger settling tanks and longer settling periods, were being tried at both Missile Shoals and at Rocky Mountain Arsenal.²³⁷

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Industrial Mobilization Planning

Late in fiscal year 1954 the Department of Defense issued instructions for FY 1955 which changed the industrial mobilization planning concept and clarified planning procedures.²³⁸ The new concept had as its central theme the planned procurement of Mobilization Reserve Materiel Requirements (stockpile) items, and all other items in the mobilization schedule were to be evaluated in terms of their relationship to the end-item stockpiling concept. In other words, items were to be given priorities for both planning and procurement according to their mobilization importance, the availability of materials, the availability of end-item producers, and the manufacturing lead-time involved. The Department of Defense set up a preferential planning list of items at the top of each of these categories. The Chemical Corps recommended the inclusion of forty-one items on the list, and thirty-eight of these were approved. Approval was expected on the other three on the assumption

²³⁷

(1) Quart Hist Rpts, Rocky Mountain Arsenal, Appendix I, Jul - Sep, Oct - Dec, 54, Jan - Mar, Apr - Jun 55. (2) Quart Hist Rpt, RECOM, Jan - Mar 55. (3) The Shell Company APC plant had served its purpose, and, since Missile Shoals could meet current dichlor requirements, the APC was to be placed in reserve.

²³⁸

(1) DCD Dir 4005.6, Production Allocation Program Planning, Office of the Asst Sec of Defense for Supply and Logistics, 25 Jan 54 (distributed in the field in Jun 54). (2) See above, p. 14

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that major components carry the same priority as related end-items. Planning was nearly complete on the Chemical Corps portion of the Department of Defense list at the end of the year, and all items had been reviewed and forecasts drawn for requirements and production.²³⁹ (~~CONFIDENTIAL~~)

Following the Department of Defense lead, the Department of the Army set up a list of important items of lower priority. Seventy-five Chemical Corps items were recommended and accepted for the Army list. All of these items were reviewed and requirements and production forecast, but detailed planning has proceeded only on selected items such as the canister program (twelve items) and the mustard gas program.²⁴⁰ (~~CONFIDENTIAL~~)

The two planning lists and the changed concept made new instructions for the Chemical Corps field installations essential. A manual covering procedures was written in Materiel Command, and it was published in February 1955.²⁴¹ Subsequently, Chemical Corps guidance for the Corps' portion of Army Primary Program No. 8 (Industrial Mobilization) for fiscal year 1956 was published. In February Materiel Command sponsored a conference attended by representatives of the Department of Defense, the Deputy Chief of Staff for Logistics, Office of the Chief Chemical Officer, Materiel Command, and all Chemical Corps field commanders. The new manual was reviewed and policy

239

(1) Nickle interv. (2) Interv, Hist Off with Mr J J Leonard, Indus Div, MATCOM, 2 Sep 55.

240

Leonard interv.

241

Industrial Mobilization Planning Procedures, MATCOM, 1 Feb 55.

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and planning details were discussed. By the end of the year a great improvement in planning was apparent.²⁴² (UNCLASSIFIED)

Nearly fifteen million dollars were allocated to Chemical Corps industrial mobilization in fiscal year 1955. The largest part of this allocation, almost eight and one half million, was assigned to industrial preparedness measures. Twenty-two projects were submitted; eight were approved, and four were completed. A notable example of an industrial preparedness project was the piloting of the ETM-DMEP toxic production process.²⁴³ Approximately three and one half millions were allotted to the rehabilitation, conversion, expansion, lay-away, and maintenance of reserve plants. Nearly all lay-away and maintenance were complete at the end of the year, but only about one third of the rehabilitation and expansion funds were obligated. Funds in this category for round-out of DMEP facilities at Rocky Mountain Arsenal were held pending the adjustments to be made upon selection of a final manufacturing process.²⁴⁴ The lay-away of production equipment progressed very slowly although the obligation rate in this area was 83 percent.²⁴⁵ ~~CONFIDENTIAL~~

In contrast to the low performance of industrial equipment layaway was the outstanding performance in the production equipment inventory. Fewer

242

(1) Stubbs interv. (2) Nickle interv. (3) Leonard interv.

243

See above p. 141.

244

See above pp. 141 - 143.

245

(1) See Appendix A, pp. 65 - 73. (2) Interv, Hist Off with Mr F G DeAngelis, Mat Div, OCCmIO, 1 Sep 55. (3) Leonard interv.

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than three hundred items had been inventoried at the beginning of the fiscal year, but by the end of the year 16,000 items had been inventoried and the program was ahead of schedule and nearly two-thirds complete. The program had the benefits in addition to classification and indexing of serviceable equipment that obsolete items were marked for disposal and the reserve list was placed on a firm basis with every item of equipment assigned to a specific mobilization program.²⁴⁶ (UNCLASSIFIED)

Cataloging, Standardizations, Packing and Packaging.

Noteworthy progress was made in the cataloging field during fiscal year 1955. Conversions of items to federal catalog nomenclature and description amounted to 3,953 (including 1,388 inspection gages) during the year. Twenty-two new technical bulletins, technical manuals, modification work orders and lubrication orders were produced while twenty new and nine revised supply manuals were published.²⁴⁷ (UNCLASSIFIED)

In the standardization field, 515 items of supply were eliminated from stocks as non-essential or duplicate at an annual savings of \$197,936, and 327 items were consolidated into seventy-nine kits at an annual saving of \$36,000. A further accomplishment was the standardization of 100 commercial

246

(1) Stubbs interv. (2) DeAngelis interv. (3) See Appendix A, pp. 70 - 71.

247

(1) Interv, Hist Off with Mr O R Mullen and Mr E A Flinn, Mat Div, OCCmLO, 1 Sep 55. (2) Quart Hist Rpts, Mat Div, OCCmLO, Jul - Sep, Oct - Dec, 54, Jan - Mar, Apr - Jun, 55.

chemicals by grade and container size for an annual saving of \$22,462. This progress is the result of two contracts on packaging and packing with Foster D. Snell, Inc., covering 128 items. Another contract had just been let at the end of the fiscal year to Container Laboratories for the standardization of packaging for another 107 Chemicals.²⁴⁸ (UNCLASSIFIED)

248

(1) Miller - Flinn interv. (2) Memo, Mr E A Flinn, Mat Div, OCCmlO to Hist Off, 1 Sep 55. (3) See above pp. 133 - 134.

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Supply

Funds available for supply, distribution, and maintenance totaled approximately one half million more in fiscal year 1955 than in fiscal year 1954. Most of the gain was applied in the maintenance and repair parts area although the allotment for demilitarization again rose.²⁴⁹ The following discussion sets forth the reasons for increased expenditure in maintenance and repair parts fields, and other accomplishments in the supply area are noted. (UNCLASSIFIED)

Overseas Supply and Maintenance

Following the program established in previous years,²⁵⁰ Lt. Col. Raymond C. Morris, Materiel Command, made an inspection of chemical supply and maintenance in U.S. Army European Command. Colonel Morris found that results of last year's inspection had been a considerable improvement in care and preservation, storage and maintenance of chemical stocks. Further improvements suggested on this visit were to be installed by October 1955 according to information received from the inspected installations. However, the problem of storage and maintenance overseas had not been solved. On Colonel Morris' recommendation, General Stubbs decided to increase the Chemical Corps technical assistance program to insure the regular provision of the most recent

249

(1) See Summary of Major Events and Problems, FY 1954, p. 115. (2) See Appendix A, pp. 82 - 83.

250

(1) See Summary of Major Events and Problems, FY 1953, pp. 75 - 77. (2) See Summary of Major Events and Problems, FY 1954, p. 124.

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information and personal aid to overseas commanders and their supply officers. The allowance for overseas inspections by the Chemical Corps was to be increased fourfold for FY 1956.²⁵¹ (UNCLASSIFIED)

Repair Parts

A repair parts procurement division was activated in the chemical section of Memphis General Depot on 15 August 1954.²⁵² At the same time minor readjustments were made in the supply and issue sections of the organization.²⁵³ While the workload did not immediately develop to the anticipated extent, this reorganization provided for a smoother functioning of the Chemical Corps repair parts system. When the workload increased in the latter half of the fiscal year, the management benefits of having all repair parts functions in one organization became apparent.²⁵⁴ (UNCLASSIFIED)

A program of ten main objectives for the control of repair parts inventories was set up in September 1954. These objectives were largely the

251

(1) Rpt, CMLMC-3, Lt Col R C Morris, Supply Div, MATCOM thru CG, US Army Europe and C Cal O to DEPLOY, sub: Report of Staff Visit of Lt Col Raymond C Morris, Cml C, to US Army Europe, 3 Jun 55. (2) Stubbs interv. (3) Interv, Hist Off with Lt Col R C Morris, CmlC MATCOM, 23 Aug 55. (4) See below pp. 153 & 154 for an example of one of the improvements expected from increased assistance.

252

(1) See Summary of Major Events and Problems, FY 1954, pp. 98 - 99. (2) Quart Hist Rpt, Hqs, MATCOM, Jul - Sep 54. (3) CCCmlC CO 10, 24 Jun 54.

253

See Summary of Major Events and Problems, FY 1954, pp. 115 - 117.

254

(1) Stubbs interv. (2) Nickle interv. (3) Interv, Hist Off with Mr Ritchie Buckingham, Supply Div, MATCOM, 2 Sep 55.

result of recommendations of the Ad Hoc Committee on Spare Parts which met during fiscal year 1954.²⁵⁵ Objective number one, the improvement of existing Army Supply status reporting to obtain complete and accurate end item inventories, was virtually accomplished by the end of the fiscal year. Tables of allowances were published and the reporting system improved to include items of installed property at Class II installations and items accounted for on unit station property books not previously reported. As a corollary to this improvement, requirements data more accurate than any previously available were assembled, and repair parts depot retention levels were computed by the Office of the Chief Chemical Officer. This signal achievement provided firm requirements and a completely accurate stockage basis for the first time in Chemical Corps repair parts history.²⁵⁶

(UNCLASSIFIED)

Objective number two, the installation of a Chemical Corps field stock control system, was being tested at a pilot installation at the end of the year. The completion of the system, both overseas and in the continental United States, was expected to take place by the beginning of fiscal year 1957. The purifying of the stock accounting system (objective number three) at the Memphis facility to provide accurate stock status information was accomplished during the fiscal year. Fiscal year 1954 developments in stock

²⁵⁵

See Summary of Major Events and Problems, FY 1954, pp. 115 - 116.

²⁵⁶

(1) "Chemical Corps Program for the Control of Repair Parts Inventories" MATCOM, 1 Sep 54 (revised 1 Mar and 1 Jul 55). (Hereafter cited as "Repair Parts Program"). (2) Interv, Hist Off with Mr P G Bihlman, Mat Div, OCCmLO, 1 Sep 55.

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control forms were brought up to date, and a test run was made using electronic recording machinery to speed up tabulation and supply of information. The test run was successful, and it was presumed that recording machinery would be installed during fiscal year 1956.²⁵⁷ (UNCLASSIFIED)

The reduction in order and shipping time, objective number four, was also virtually accomplished during the fiscal year through better records keeping, improvement in depot operating techniques, segregation of repair parts into such categories as local purchase items, non-stocked, and heavily requisitioned items, improved packaging and planned shipments. Needed cataloging was accomplished, and publication of the necessary supply manual revisions, which was the fifth objective, was projected for fiscal year 1956. The final major objective to be accomplished during the fiscal year was the review of stocks to eliminate non-essential and duplicate items. A review was completed on 6,000 parts, and 980 parts were eliminated or consolidated. In addition, the stock inventory was reduced by the completion of the transfer of 3,200 repair parts' items to other technical services. Substantial portions of other objectives, such as the determination of end-item usage data and the review of supply training, were completed during the fiscal year, but the final accomplishment of these objectives was not expected until fiscal years 1956 and 1957.²⁵⁸ (UNCLASSIFIED)

²⁵⁷

(1) Repair Parts Program. (2) Buckingham interv. (3) Bihlman interv.

²⁵⁸

(1) Repair Parts Program. (2) Buckingham interv.

In summation, the beginning of fiscal year 1955 found the Chemical Corps on the way to a solution of repair parts problems of fifteen years' standing, and the end of the year disclosed a well-planned solution installed in all major particulars but awaiting the resolution of certain procedural difficulties. (UNCLASSIFIED)

Storage and Distribution

The details of storage operations appear in Appendix A and the classified supplement to Appendix A of this report.²⁵⁹ It should be noted that each phase of tonnage handling performance except receipts met or exceeded the schedule, thus reflecting the same high level of planning and performance noticeable in fiscal year 1954.²⁶⁰ (UNCLASSIFIED)

The Simplified Supply System, installed during fiscal year 1954,²⁶¹ proved its worth during fiscal year 1955. There were refinements in record procedures calling for the revision of two phases, stock records and stock status reporting, of the Simplified Supply System Manuals, but no major alteration was required in any part of the system.²⁶² (UNCLASSIFIED)

The principal innovation in storage activities during the year was the

259

See Appendix A, pp. 82 - 85 and classified supplement, pp. 14 - 17.

260

Compare Summary of Major Events and Problems, FY 1954, pp. 122 - 123.

261

See Summary of Major Events and Problems, FY 1954, pp. 120 - 121.

262

Quart Hist Rpt, MATCOM, Apr - Jun 55.

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establishment of depot retention levels on all commercial-type and military-type end items. The purpose of this establishment was to provide a means of better stock management on the installation level on the basis of known objectives, but a concomitant effect was to earmark stocks which are of retention value against forecast requirements. This was the first time for the computation of a national Chemical Corps stock retention system, and the resulting rewards of better knowledge of stock position both at operating and staff levels were apparent in improved stocks and requirements controls. An additional supply control tool was added to this retention information with the provision of a manual on the supply control of secondary items within the Chemical Corps.²⁶³ (UNCLASSIFIED)

A major storage problem during the fiscal year was the receipt, mostly during the final quarter, of approximately 5,000 tons of supplies from the roll-up program in the Far East Command. A preliminary survey indicated that much of this material was unserviceable and at least 30 percent of more than 100,000 M4 protective masks were economically unreparable. The burden on the storage system of segregating and disposing of these stocks was expected to be great. Materiel Command was initiating a study of means to prevent the return of economically unreparable stocks. It was thought that

263

(1) Quart Hist Rpt, MATCOM, Oct - Dec 54. (2) Bihlman interv. (3) Manual, The Supply Control System-Chemical Corps Secondary Items. Mat Div, CCCM10, 1 May 55.

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increased technical assistance to the theaters would aid in solving this problem.²⁶⁴ ~~(CONFIDENTIAL)~~

On 1 May 1955 the Deseret Chemical Depot was redesignated the Deseret Depot Activity of the Tooele Ordnance Depot. This change was made in the interest of overall Department of the Army economy. Accountability for Chemical Corps stocks was transferred to the commanding officer, Chemical Section, Utah General Depot. A small Chemical Corps force remained to supervise Chemical Corps stock operations.²⁶⁵ (UNCLASSIFIED)

Maintenance²⁶⁶

While both value and cost of rebuild under maintenance projects were only about half that of fiscal year 1954, the cost of rebuild declined sharply in comparison to the value of rebuilt stocks, demonstrating significantly increased efficiency in both management and operation.²⁶⁷
(UNCLASSIFIED)

Maintenance is a real problem which received considerable Chemical Corps attention during the past year. The Materiel Command maintenance

²⁶⁴

(1) Quart Hist Rpt, MATCOM, Apr - Jun 55. (2) Morris interv. (3) See above pp. 148 - 49.

²⁶⁵

(1) DA SO 29, 29 Apr 55. (2) CCCm10 GO 5, 5 May 55. (3) Quart Hist Rpt, MATCOM, Apr - Jun 55. (4) Bourque interv.

²⁶⁶

Quantitative data on performance in the maintenance field is given in the classified supplement to Appendix A, pp. 18 - 19.

²⁶⁷

See Summary of Major Events and Problems, FY 1954, p. 124.

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management was considerably strengthened by adding to the staff and by delineating responsibilities. More frequent staff visits were made to field army installations to provide technical assistance. The combined experience gained in these visits, overseas visits, and in informal conferences resulted in the formulation of a technical assistance plan. A suggested Army regulation was prepared in Materiel Command outlining this plan. A proposed innovation was the appointment of regional maintenance representatives operating out of Chemical Corps depots to assist in chemical maintenance problems wherever they should arise.²⁶⁸ (UNCLASSIFIED)

Field maintenance procedures and depot maintenance procedures were regularized and standardized in manuals published during the year. The field maintenance manual was distributed on a worldwide basis during the year, and distribution of the depot manual was planned for early in the next fiscal year. These manuals were supplemented by a number of Standard Operating Procedures covering specific maintenance operations.²⁶⁹ (UNCLASSIFIED)

Some item accomplishments in the field of maintenance are of particular interest. An example was the considerable progress made on modernizing the M3A1, M3A2, and M4 power-driven decontaminating apparatus. Problems of mounting and maintaining these items had beset the Chemical Corps since their initial production in World War II. With the current mounting

268

(1) Stubbs interv. (2) Buckingham interv.

269

(1) Buckingham interv. (2) Quart Hist Rpts, MATCOM, Jul - Sep, Oct - Dec, 54, Jan - Mar, Apr - Jun, 55.

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Table 7 — Chemical Corps Major Items Declared Excess During Fiscal Years
1954 & 1955

| Items | Quantity | Acquisition Cost |
|--|---------------|------------------|
| Total | | \$144,399,421 |
| M47 Series Bombs | 762,589 | 11,539,717 |
| M47 Bomb Bodies | 250,000 | 1,000,000 |
| M12 Cluster | 50,000 | 2,440,000 |
| M14 Cluster | 60,394 | 20,309,232 |
| E21 Cluster | 5,488 | 509,384 |
| M17 and M17A1 Clusters | 100,954 | 64,000,000 |
| M7 Cluster | 5,873 | 1,092,378 |
| Air Force Components | | |
| Burster, M4 | 561,056 | 1,570,956 |
| Burster, M10 | 973,801 | 1,460,701 |
| Burster, M12 | 739,700 | 2,588,950 |
| Burster, M13 | 937,766 | 825,234 |
| Burster, M13 | 751,848 | 671,815 |
| Fin Assy, M102 | 196,861 | 334,664 |
| Fuse, Bomb Nose, M126A1 | 3,854,102 | 25,437,073 |
| Igniter, WP, M9 | 299,784 | 989,289 |
| Lewisite | 7,802,392 lbs | 3,355,028 |
| Chemicals (commercial type) | | 1,500,000 |
| Repair Parts | | 1,500,000 |
| Textiles | | 1,225,000 |
| Laboratory Equipment | | 125,000 |
| Metal Bars, Sheets and Shapes | | 750,000 |
| Packaging and Packing Supplies | | 250,000 |
| Safety Equipment | | 250,000 |
| Hardware and Abrasives | | 125,000 |
| Plumbing and Heating | | 100,000 |
| Material Handling Equipment | | 250,000 |

Source: Data furnished by Property Disposal Branch, Supply Div, MATCOM.
Overlapping actions made the strict chronological separation
of data for FY 1954 and FY 1955 impractical.

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on modern truck chassis, the improvement in repair parts designations and the rebuilding of the decontaminating equipment, an end to the problem was in sight. Another example of accomplishment was the return to serviceability of 225,000 grenades and 88,000 105-mm. toxic shells. A program was instituted for the conversion of approximately 120,000 M2 series protective masks to the M4-10A1-6 series lightweight mask to support the Department of Army continental training program. This conversion, it was expected, would be considerably more economical than the use of new masks.²⁷⁰

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Property Disposal

Outstanding progress continued to be made in Chemical Corps property disposal during fiscal year 1955.²⁷¹ Table 7 shows significant accomplishment in the declaration of excess property during fiscal years 1954 and 1955. It should be noted that this list includes indirect and direct production materials which were declared excess at Chemical Corps arsenals. The clean up of arsenal storage and production areas represented by these disposals is a significant contribution to production management.²⁷² (UNCLASSIFIED)

Actual disposal actions did not meet schedules. This was because disposal instructions from other government agencies interested in the material

270

(1) Buckingham Interv. (2) See above pp. 73 - 77.

271

See Summary of Major Events and Problems, FY 1954, pp. 119 - 120 for details of the FY 1954 program.

272

(1) Stubbs Interv. (2) Merrill Interv. (3) Interv, Hist Off with Mr H V Eutton, Supply Div, MATCOM, 23 Aug 55.

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were not received, and because there was delay in developing disposal procedures for certain items such as lewisite.²⁷³ (UNCLASSIFIED)

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(1) See Appendix A, pp. 82 - 83. (2) Interv, Hist Off with Mr E R
McDaniel, Mat Div, OCCmLO, 31 Aug 55.

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Quality Assurance

Effective 1 December 1954, Inspection Division, Material Command, was redesignated Quality Assurance Division and the division was reorganized to reflect the three major functions, planning, engineering, and evaluation.²⁷⁴ The redesignation was made in order to reflect more closely the nature of the work of the division which includes all phases of materiel quality control from pre-award survey through surveillance to the actual item usage or expenditure. The division was the most notable and tangible example of General Stubbs' emphasis on the distinction between staff and operating functions.²⁷⁵ The staff aspects of each functional area were accentuated in the adjustment to the new organization. According to Lt. Col. Harry C. Gilbert, the division chief, the dividends of better staff work were received throughout the remainder of the year.²⁷⁶

(UNCLASSIFIED)

The principal development in the quality assurance field during the fiscal year was the provision of procedures for co-ordinating effort in design, development, and standardization of inspection equipment between

274

Hq, MATCOM GO 11, 15 Dec 54.

275

See above p. 119.

276

(1) Stubbs interv. (2) Interv, Hist Cif with Lt Col H C Gilbert, Mr G P Titcomb, and Mrs E L Coates, Quality Assurance Div, 31 May 55. (3) Speech by Lt Col H C Gilbert before the Commanding Officers' Quality Assurance Conference, Hq MATCOM, 19 - 20 Jul 55. (4) Quart Hist Rpt, MATCOM, Oct - Dec 54.

Materiel Command and Research and Engineering Command. A series of conferences on this knotty problem led to an agreement on objectives and procedures which was incorporated into a Chemical Corps Regulation. This regulation includes a listing of all inspection gages together with priorities for development and standardization. A similar listing was to be made in fiscal year 1956 for all inspection equipment. Procedures formulated by the agreement worked to the satisfaction of both commands and the improvement in information interchange stimulated the arrangement of a like agreement with the office of the Assistant Chief Chemical Officer for Biological Warfare which was to become official in fiscal year 1956. These agreements form the basis of a three year program of determining inspection gage and equipment requirements for current and mobilization purposes.²⁷⁷

(UNCLASSIFIED)

Work with the Department of the Army Inspection Council continued in fiscal year 1955.²⁷⁸ The task group on Surveillance Inspection of Army Equipment, of which three representatives from Quality Assurance Division, Materiel Command, were members, rendered its final report on 9 May 1955. A thorough review of surveillance procedures in the various technical services had convinced the task group that all services were conducting surveillance with the definition of regulations, and that no common standard

²⁷⁷

(1) Gilbert - Titcomb - Coates interv. (2) Interv, Hist Off with Lt Col H C Gilbert, 23 Aug 55. (3) Interv, Hist Off with Mr E S Graves, Quality Assurance Div, MATCOM, 23 Aug 55. (4) CCR 85-6, 15 Nov 54.

²⁷⁸

See Summary Report FY 54, pp. 125 - 126.

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or surveillance should be adopted, since the variations in practice between services logically arose from variations in munitions surveyed and organizations conducting surveillance.²⁷⁹ (UNCLASSIFIED)

The Chemical Corps Environmental Surveillance and Test Program, a part of the Army ENVANOL project to determine the functions of standard equipment under severe climatic conditions, was continued as a co-operative program under the administration of Research and Engineering Command, Materiel Command, and the Chemical Corps Board during fiscal year 1955. Quality Assurance Division, Materiel Command, as previously, was in charge of evaluating all data from tests. The principal development during the year was the recommendation of the Chemical Corps Board and Materiel Command that the entire responsibility for this program be turned over to Quality Assurance Division. This recommendation was bolstered by the opinion of representatives of the Quartermaster Corps Research and Development Command that the Chemical Corps program was the most comprehensive of the technical services' programs, and that the statistical treatment of data by Materiel Command merited special recognition. Conversations were in progress at year's end between Materiel Command and Research and Engineering Command to resolve this problem of administrative responsibility.²⁸⁰

(UNCLASSIFIED)

279

(1) Gilbert - Titcomb - Coates interv. (2) Quart Hist Rpt, MATCOM, Apr - Jun 55. (3) Ltr, Mr G P Titcomb, CmlC MATCOM Chairman Task Group, to members of task group, 9 May 55, sub: Minutes of Meeting of 3 Jun 54 - Surveillance Inspection of Army Supplies and Equipment Task Group.

280

(1) Quart Hist Rpts, MATCOM, Jul - Sep, Oct - Dec, 54, Jan - Mar, Apr - Jun 55. (2) Ltr, w/2 incls, Pres CmlC Bd thru CG, MATCOM, to C Cml O, 28 Jan 55, sub: Transfer of Responsibility for ENVANOL (Cml C). (3) Ltr, Pres Cml C Bd to CG, MATCOM and RECOM, 19 Apr 55, sub: Environmental Test Program.

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The Army Inspection Council²⁸¹ and the Department of Defense adopted a positive program for the reduction of inspection costs during the year. An outcome of the program was the publication of AR 715-20 which eliminated duplication of inspection services in contractors' plants and reorganized the inspection interchange system among Department of Defense agencies. The Chemical Corps vigorously adhered to the provisions of this regulation, and at year's end approximately 99 percent of Chemical Corps contractors' plants were serviced by one inspection agency. As a part of the interchange system, and as a part of the economy program, many inspection reports were simplified and standardized. It was expected that further standardization would take place on the Army level during the next fiscal year.

Other economy steps were planned for completion within the next fiscal year. One such improvement was the publication of a Chemical Corps inspection manual which would save inspection time by consolidating all inspection procedures. Another was an arrangement for the interchange of gage calibration services between the Chemical Corps and the Ordnance Corps. This arrangement, which was about to be put into effect at the close of the year, would permit calibration of gages at the nearest point where such assistance was available. This would result in a considerable savings of time and shipping expense.²⁸² (UNCLASSIFIED)

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Mr E J Van Arnhem, Mat Div, OCCm10, is the Chemical Corps member.

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(1) Gilbert - Titcomb - Coates interv. (2) Interv, Hist Off with Mr E J Van Arnhem, Mat Div, OCCm10, 31 Aug 55. (3) Memo, Mr E J Van Arnhem (no addressee), sub: Inspection Activities, n.d.

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