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~~ATOMIC ENERGY ACT 1946~~

SUMMARY OF MAJOR EVENTS AND PROBLEMS
(Reports Control Symbol CSHIS-6)

Fiscal Year 1954

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SUMMARY OF MAJOR EVENTS AND PROBLEMS (Reports Control Symbol CSHIS-6)

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INTRODUCTION

Fiscal year 1954 saw a continuation of the Army emphasis on economy and efficiency and all Chemical Corps activities were geared to that policy. Of particular significance were steps taken in the Corps to implement the Army Primary Programs. These included the issuance of regulations formalizing procedures for administering the programming system,¹ the initiation of quarterly program conferences in the Chief's Office, and the printing and distribution of quarterly booklets on program review and analysis.² (UNCLASSIFIED)

A third Chemical Corps installation came under Army Industrial Fund Operation during the fiscal year.³ That was Dugway Proving Ground, which on 30 June 1954 completed a full year under the Fund. In initiating and operating the Fund at Dugway the Corps profited by previous experience at the other two Corps installations. It was decided, for example, that prior to the inauguration of the Fund the

¹
CCR-110 Series

²
The Review and Analysis of Chemical Corps Program for the 4th Quarter FY 54 is Appendix A of this paper.

³
Previously Rocky Mountain Arsenal and Pine Bluff Arsenal were under the Fund. See Summary of Major Events and Problems, 4 Sep 53, pp. 65-67.

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employees at Dugway should be oriented in the objectives and procedures of the new system. To accomplish this the team from the Comptroller's Office⁴ that went to Dugway to install the Fund spent considerable time conditioning the Dugway employees for the change-over. Members of the team emphasized that the new organization and system offered a fertile field for employing sound principles of management at all operational levels. In setting up the accounting system the team eliminated, as far as possible, all local reports which would not be of benefit to supervisory or operating personnel. One member of the team conducted night courses in accounting, six hours a week, for a period of ten weeks prior to the initiation of the Army Industrial Fund. These courses were open to all interested personnel.⁵ (UNCLASSIFIED)

Another indication of the emphasis on efficiency was the Corps' safety record. Two outstanding safety awards were received during the fiscal year. Camp Detrick was presented the National Safety Council Award of Honor for outstanding performance during 1953, an award based on a reduction of 48 per cent in the installation's accident frequency rate in 1953 as compared to the previous two years. The Army Chemical Center received the Department of Army

⁴ This team was made up of representatives from the offices of the Comptroller, Cml C, and the Comptroller, R. & E. Command, Cml C.

⁵ This data is based on intervs. Hist Office with key members of the team from the Comptroller's Office.

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Award of Merit for Safety on the basis of a 34 per cent accident reduction rate from that of the previous two years. (UNCLASSIFIED)

Fiscal Data

Table 1 lists the funds obligated under the Army Primary Programs by the Chemical Corps for the Fiscal Year 1954. Table 2 lists the source of the funds obligated. (UNCLASSIFIED)

Table 1 - Fiscal Year 1954 Funds Obligated by the Chemical Corps under Army Primary Programs. (Dollars in Thousands).

<u>Primary Programs</u>	<u>Amounts Obligated</u>
<u>Total</u>	<u>\$118,052</u>
Command and Management (Travel and Departmental Salaries)	1,722
Training	947
CW, EW - Research and Development	21,610
BW - Research and Development	21,966
Industrial Mobilization	14,078
Materiel	49,286
Supply, Distribution and Maintenance	5,745
Services	2,693
Army Reserves and ROTC	5

6

These tables are based on data in Appendix A, p. 18.

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Table 2 - Sources of Chemical Corps Funds Obligated Fiscal Year 1954
(Dollars in Thousands)

<u>Source</u>	<u>Amounts</u>
<u>Total</u>	<u>\$118,052</u>
DA (Cml C)	70,767
Air Force	24,151
Navy	8,663
DA Ordnance	5,098
Other (Other DA Tech Services, MDAP, etc.)	9,464

The total obligation figure of \$118,052,000 represented a tremendous decrease from that of the previous fiscal year, when \$423,692,758 was obligated.⁷ This decrease was almost entirely due to the great drop in procurement activities. Research and development obligations, in fact, showed no decline but a slight increase.
(UNCLASSIFIED)

Efforts to Improve BW Management

In May 1953 General Bullene, Chief Chemical Officer, made a presentation to the reconvened Killian Committee, at which he outlined the steps taken in the Chemical Corps to implement the recommendations of the committee on the management of the Corps' chemical and biological warfare programs.⁸ This implementation consisted of organizational changes in the Office of the Chief Chemical Officer and in the headquarters of the Chemical Corps Research and Engineering

⁷ Cml C
See Summary of Major Events and Problems, 4 Sep 53, p. 8.

⁸
For details in Killian Committee recommendations see Summary History of Chemical Corps Activities, Feb 53, pp. 9-10.

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9
Command. While outlining these developments to the committee,
General Bullene noted that it had not been possible to carry out
the recommendation on appointing civilian assistants for BW and CW
chiefly because qualified men who would accept the posts could not
10
be found. This situation was well known and appreciated by all
concerned, for the search for the new assistants had apparently been
carried on not only by the Chief Chemical Officer but by members of
the Killian Committee itself, by the Secretary and Under Secretary
of the Army and by Major General K. D. Nichols, Chairman of the
11
Army Research and Development Board. (~~CONFIDENTIAL~~)

As the hope for securing the services of civilian assistant
chiefs dimmed, another prospect loomed for improving the management
at least of the BW program. That was to award a contract to an
industrial firm for the entire BW program; in that way the techno-
logical talent of American industry could be put to good use by the
Army. In mid-June 1953, the offices of the Secretary of the Army
and of the Assistant Chief of Staff, (G-4) first broached this

9
Ibid, pp. 13-14.

10
Intervs, Hist O with Maj Gen E. F. Bullene, USA, Rtd, 21 Jun 54
and with Brig Gen Charles E. Loucks, Deputy CCmlO, 21 Jun 54.

11
This information is contained in a file on Management of Army
BW Program after April 53.

~~CONFIDENTIAL~~

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12

subject with the Chief Chemical Officer. On 21 July 1953 the Assistant Chief of Staff, (G-4), directed the Chief Chemical Officer to examine the capabilities of qualified industrial concerns and

13

recommend a suitable contractor. To carry out the G-4 directive the Chief Chemical Officer assigned an officer with special background and training, Colonel John J. Hayes, Commanding Officer of Pine Bluff Arsenal, to temporary duty in Washington. Colonel Hayes made an intensive study and on the basis of his findings the Chief Chemical Officer recommended to G-4 on 28 August 1953, that the Mathieson Chemical Corporation be approved as the best qualified industrial concern for contractor operation of the entire Army BW pro-

14

gram. Both G-4 and the Secretary of the Army reviewed the recommendation and on 8 October 1953 G-4 authorized the Chief Chemical Officer to negotiate as soon as possible with the Mathieson

12

This section is based on a Rpt compiled by Hq, Camp Detrick, 28 Apr 54, entitled, "Summary of Chemical Corps Negotiations with the Mathieson Chemical Corporation for Contractor Operation of the Army BW Program" and on correspondence in files of Camp Detrick.

13

DF, ACoS, G-4, to CCm10, 21 Jul 53, sub: Management of Army BW Program.

14

DF, CCm10 to ACoS, G-4, 28 Aug 53, sub: Management of Army BW Program.

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15

Chemical Corporation. Negotiations were commenced the very next day.

~~(CONFIDENTIAL)~~

Meanwhile to facilitate the assumption of responsibility by the contractor, the Chief Chemical Officer established the Office of the Assistant to the Chief Chemical Officer for BW and appointed Colonel Hayes to this post. Under Colonel Hayes' jurisdiction were placed the Chemical Corps Biological Laboratories at Camp Detrick, the X-201 Plant at Pine Bluff Arsenal, Fort Terry and the BW facilities at Dugway Proving Ground. These installations had previously been under the jurisdiction of the commanding general, Chemical Corps Research and Engineering Command.

16

17

~~(CONFIDENTIAL)~~

The negotiations between the Chemical Corps and the Mathieson Chemical Corporation were carried on at Camp Detrick as the central headquarters, at Pine Bluff Arsenal and Dugway Proving Ground. It is not the purpose of this report to discuss the details of those negotiations. Here it is only necessary to state that on 5 January 1954, when the Chemical Corps was looking toward an early and

18

¹⁵
Comment No. 2 to DF, CCmlO to ACoS, (G-4), 28 Aug 53, sub: Management of Army BW Program.

¹⁶
OCCmlO, GO 21, 22 Sep 53.

¹⁷
See Chart 3 in Summary of Major Events and Problems for FY 53.

¹⁸
It is planned to write a detailed monograph on these negotiations for historical purposes.

~~CONFIDENTIAL~~

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successful conclusion to the negotiations, the Chief Chemical Officer, General Bullene, received a letter from Mr. Thomas S. Nichols, the president of the Mathieson Chemical Corporation, stating that he (Mr. Nichols) was no longer interested in undertaking the contract. Upon receipt of that letter, General Bullene phoned Mr. Nichols immediately and arranged a personal conference. At that conference it was disclosed that the fundamental reasons for Mathieson's withdrawal from negotiations centered on matters that could only be resolved by the Secretary of the Army and/or the Secretary of Defense. Arrangements were therefore made to have Mr. Nichols discuss the situation with each of the Secretaries. Those discussions did not alter the corporation's decision: Mathieson was definitely out of the running on the contract to operate the Army BW Program.

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On 7 January 1954, within two days of the receipt of the letter from Mr. Nichols, the Chief Chemical Officer recommended to G-4 that the Army BW program be continued as a Chemical Corps operation with government personnel. This recommendation was favorably acted upon by G-4 on 9 February when the Chief Chemical Officer was directed to continue operation of the Army BW program under a vertical type organizational structure. Pursuant to the G-4 directive

19
DF, CCm10 for ACofS, (G-4), 7 Jan 54, sub: Management of the Army BW Program.

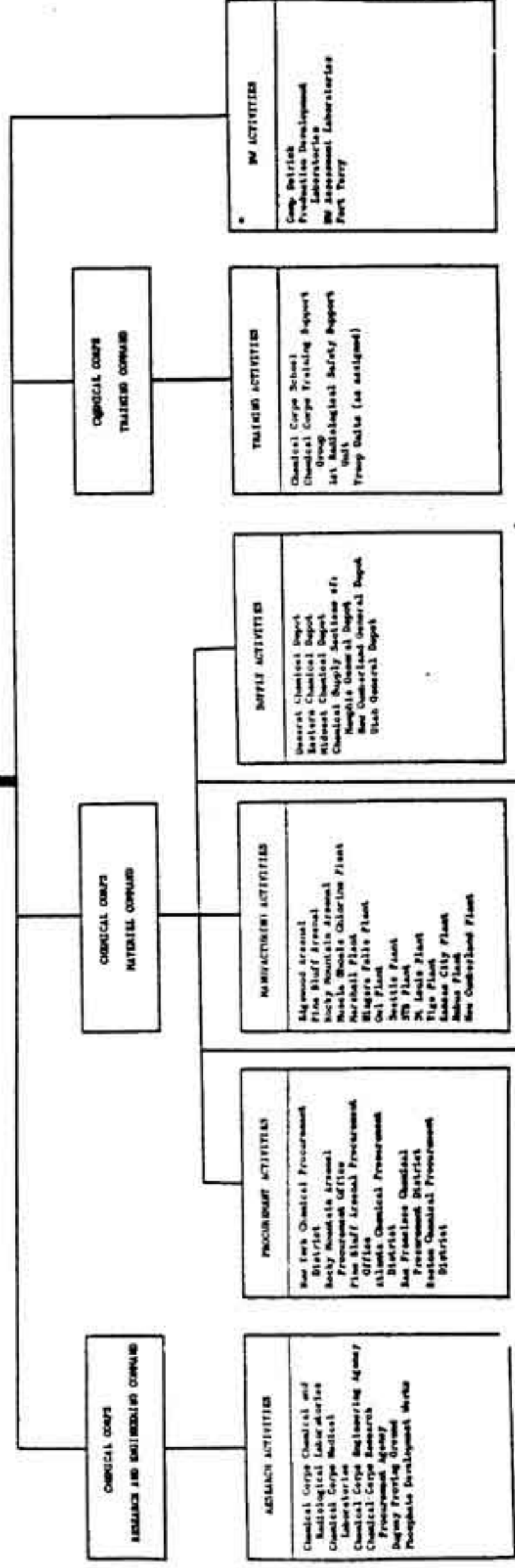
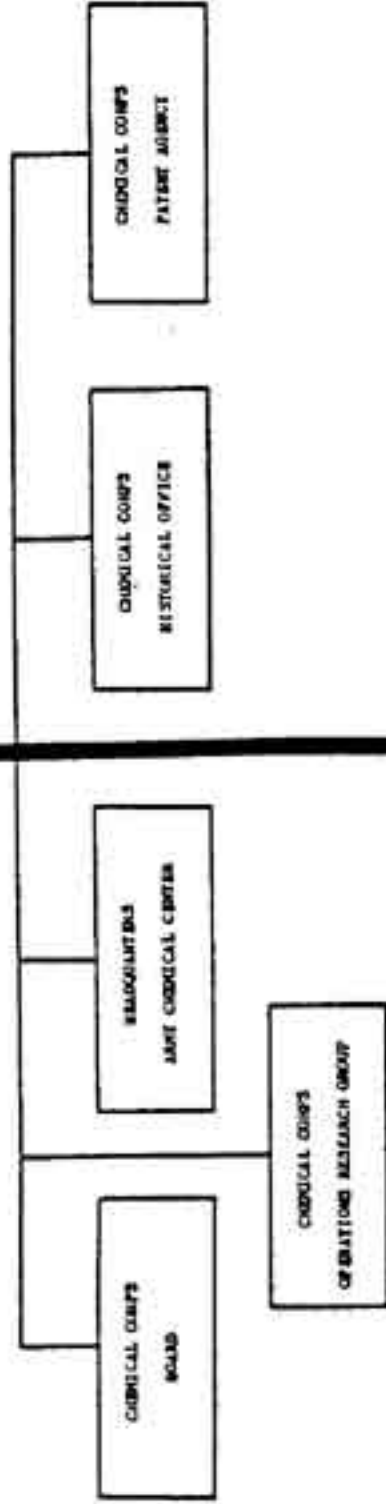
20
DF, ACofS, (G-4), for CCm10, 9 Feb 54, sub: Management of the Army BW Program.

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U. S. ARMY
CHEMICAL CORPS

OFFICE OF THE
CINCP CHEMICAL OFFICER

FIELD ACTIVITIES



DATE: 1 May 1978
PREPARED BY: Management Branch
Office of the
CinCP Chem Off

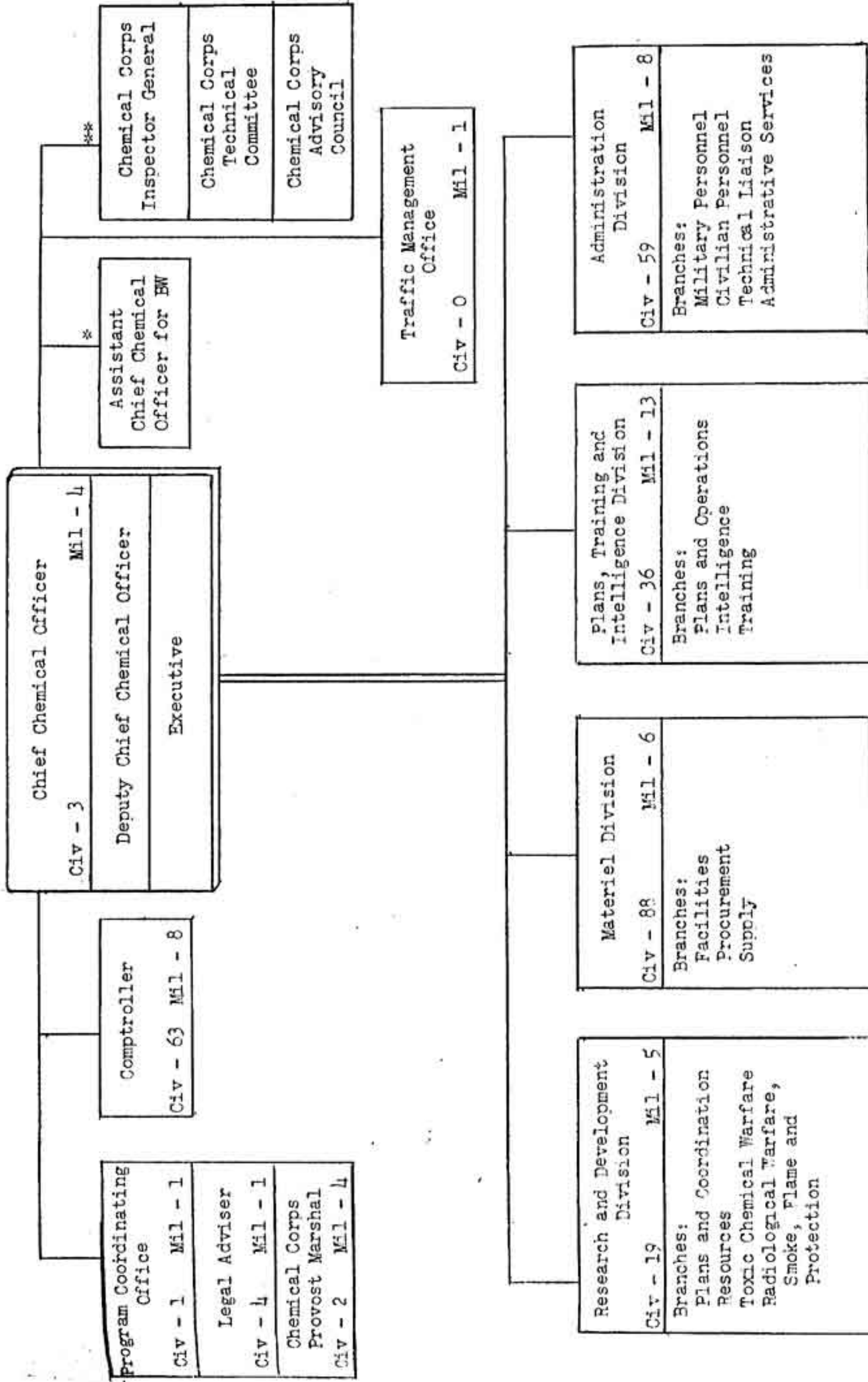
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* Under the supervision and direction of the Assistant Chief Chemical Officer for IV

Chart 1

OFFICE OF THE CHIEF CHEMICAL OFFICER



*Location at Camp Detrick, Maryland

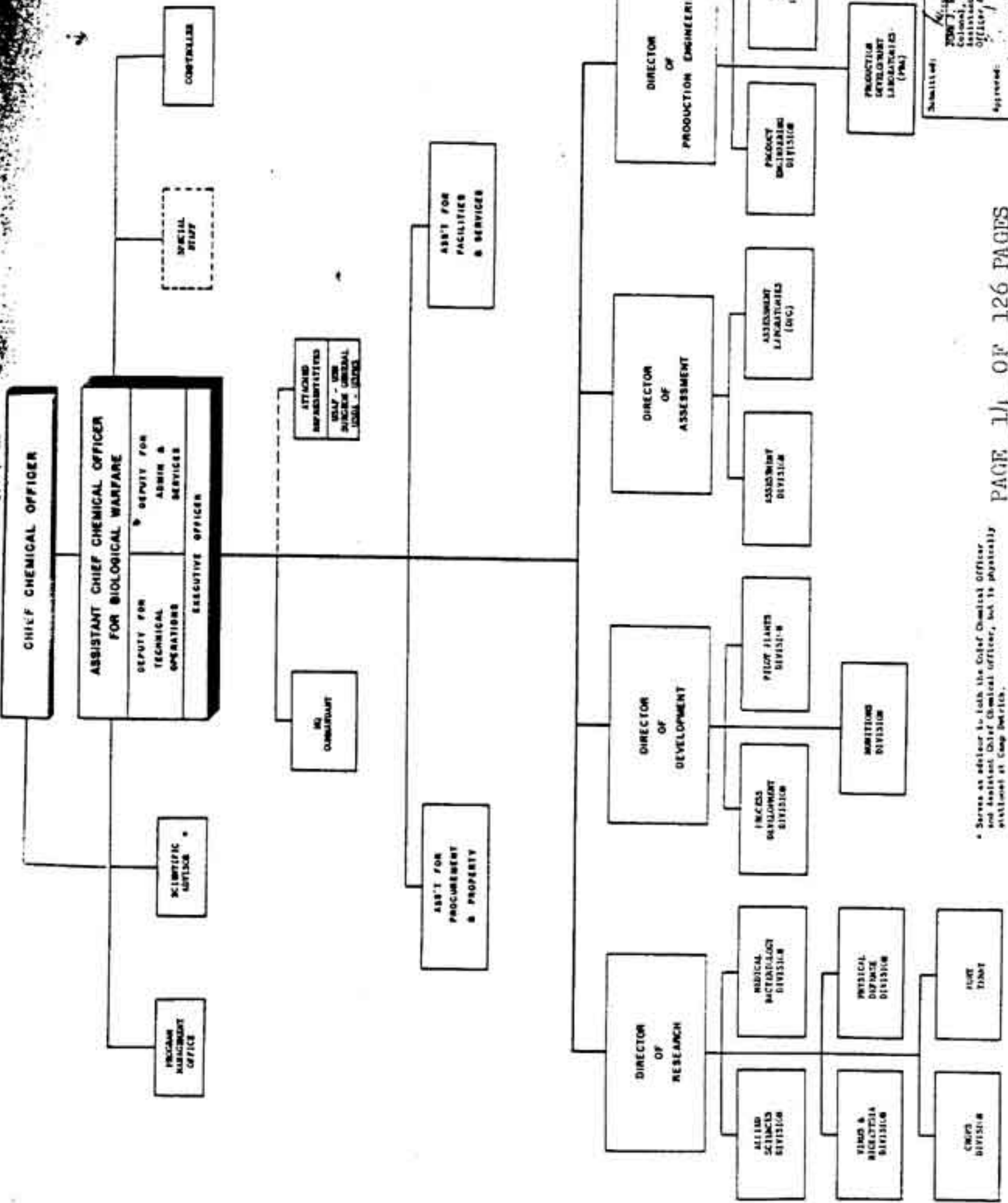
**Temporary Location at Army Chemical Center, Md.

Organization Strength Figures as of 30 June 1954

Total Civilian: 275

Total Military: 51

ORGANIZATION FOR THE ARMY BW PROGRAM



Submitted: *[Signature]*
 YOUNG, BATES
 Colonel, GSC
 Assistant Chief Chemical
 Officer for Biological Warfare

Approved: *[Signature]*
 K. J. WILSON
 Major General, USA
 Chief Chemical Officer

Date: 8 March 1954
 Prepared by: Comptroller, GSC/GSC/76

Chart 2

* Serves as advisor to both the Chief Chemical Officer and Assistant Chief Chemical Officer, but is physically stationed at Camp Detrick.

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the Chief Chemical Officer directed an organization as shown in Chart 3 be activated under an Assistant Chief Chemical Officer for ²¹ BW. Colonel Hayes, who had previously been the Assistant to the Chief Chemical Officer, became the Assistant Chief Chemical Officer, ²² a significant change echelon-wise. ~~(S)~~

Organizational Developments

Chart 1 shows the Organization of the Chemical Corps on 1 May 1954 and Chart 2 the organization of the Chief's Office as of 5 May 1954. In addition to the activation of Office of the Assistant Chief Chemical Officer for BW, mentioned above, several other organizational changes were effected in the Office of the Chief. On 21 January 1954 the Chemical Corps Provost Marshal was withdrawn from assignment to the Administration Division and put directly under ²³ supervision of the Chief Chemical Officer. On 1 March 1954 the Technical Safety Branch, Administration Division, was inactivated, the Administration Division continuing to record the safety activities

²¹
OCCm10 GO 5, 5 Mar 54.

²²
The CCm10 made this change on the basis of a memo from the SA, 22 Oct 53, referred to in OCCm10 GO 5, 5 Mar 54.

²³
OCCm10 GO 1, 21 Jan 54.

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24
of the Corps. On 5 May a Traffic Management Office was activated
to assist the Chief Chemical Officer on all traffic and transporta-
25
tion matters. This office was set up as the result of a survey in
the Chemical Corps made by G-4 in the fall of 1953. Among the chief
recommendations of that survey was the transfer of commercial traffic
functions and responsibilities from the continental armies and the
26
Military District of Washington to the technical services.

(UNCLASSIFIED)

Several important organizational changes occurred within the
divisions of the Chief's Office. In the Office of the Comptroller
the Industrial Fund Group was merged with the Accounting and Fi-
nancial Policy Branch (less the Accounts and Reports Section) to
form the Accounting Systems and Procedure Branch. This led to a
better integration of responsibility for accounting and financial
policy and procedures within the Chemical Corps and to a closer im-
plementation of AR 37-5, "Financial Management." The Accounts and
Reports section was transferred to the Budget and Fiscal Branch,
which led to better review and analysis of accounting operations.
Within the Office of the Comptroller also the Manpower Section,

24
OCCm10 GO 2, 29 Jan 54.

25
OCCm10 GO 8, 5 May 54.

26
OAC/S, G-4, Traffic Management Survey, Vol I, Chemical Corps,
U.S. Army, Oct-Nov 53.

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Budget Branch, was transferred to the Management Branch, to place all manpower control and accounting in one organizational element. Organizational changes were effected in another division of the Chief's Office, the Materiel Division, the details of which will be discussed below.²⁷ (UNCLASSIFIED)

²⁷
p. 96.

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Personnel Administration

25

Major General E.F. Bullene retired as Chief Chemical Officer on 31 March 1954 and was succeeded by Major General William M. Creasy who was sworn in on 8 May 1954. In addition to General Bullene a number of other key officers retired during the fiscal year. These included Brigadier General Henry M. Black, Colonel Siegfried Coblentz, Colonel Robert C. Mottley, Colonel Leonard M. Johnson, Colonel Hans Bendixen, Lieutenant Colonel John W. Fitzpatrick and Lieutenant Colonel Ralph B. Cummings. (UNCLASSIFIED)

The following changes in assignment of senior officers of the Corps occurred during the fiscal year:

Colonel John J. Hayes, from Commanding Officer, Pine Bluff Arsenal, to Assistant Chief for BW, Camp Detrick, 5 October 1953.

Colonel Robert W. Breaks, from Assistant for Programs, CC Cml O to Commanding Officer, Pine Bluff Arsenal, 15 October 1953.

Colonel Donald H. Hale from Commanding Officer, Dugway Proving Ground, to Chief, Research & Development Division, CC Cml O, 8 February 1954.

28

This section is based on information from quarterly reports of Military and Civilian Personnel Branches, OCCmlO, to Cml C Hist O, interviews, Hist O, OCCmlO, with Mr. F. C. Hall, Military Personnel Br, Mr. D. H. Roepke and Mr. E. Studebaker, Civilian Personnel Br, and on correspondence files of those branches.

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Colonel Nelson I. Decker, from Personnel Office, OCCm10 to Commanding Officer, Deseret Chemical Depot, 13 April 1954.

Colonel Ragnar E. Johnson, from Chemical Officer, EUCOM, to Chemical Officer, Hq, 2d Army, Fort George G. Meade, 27 June 1954.

Colonel Ralph B. Strader, from Chief, PT&I Division, OCCm10, to Chemical Officer, EUCOM, 1 April 1954.

Colonel Emory A. Lewis, from AFFE, to Chief, Training Division, Chemical Corps Training Command, Fort McClellan, 25 February 1954.

Colonel Jacquard H. Rothschild, from Chemical Officer, AFFE, to President, Chemical Corps Board, Army Chemical Center, 22 June 1954.

Colonel Marshall Stubbs, from Chief, R & D Div, OCCm10 to Commanding Officer, Materiel Command, 4 January 1954.

Colonel Claude J. Merrill, from Chief, Materiel Div., OCCm10 to Deputy Commander, Materiel Command, 25 January 1954.

Colonel Joseph F. Escude, from Commanding Officer, New York Chemical Procurement District, to Chief, Materiel Division, OCCm10, 25 January 1954. (UNCLASSIFIED)

Table 3 lists the Corps personnel figures by quarters.

Table 3 - Personnel Strength Figures*
(Continental United States)

	Officers	Enlisted Men	Civilians
30 Sep 53	887	2,627	13,466
31 Dec 53	861	2,773	13,701
31 Mar 54	788	2,881	13,487
30 Jun 54	769	2,518	12,567

*Figures taken from Quarterly Review and Analysis of Chemical Corps Program, FY 54.

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It will be noted that as of 30 June 1954 there was a definite decrease in the number of both military and civilian personnel in the Corps. The decrease was felt particularly in procurement and supply activities, the result of greatly reduced appropriations for those activities. The number of civilians engaged by Materiel Command, Chemical Corps, was reduced from 7,861 as of 30 September 1953 to 6,523 as of 30 June 1954. On the other hand increased emphasis on research and development resulted in an increase in civilian personnel engaged in that mission from 4,531 on 30 September 1953 to 5,031 on 30 June 1954. (UNCLASSIFIED)

While officer strength in the continental United States decreased steadily during the fiscal year, enlisted personnel strength increased up till May 1954 and then declined in June. The increase up till May was due to two factors. First, the cessation of hostilities in Korea led to an increase in the number of returnees, which when added to the number coming into the Army under Selective Service made for overstrength in the zone of interior. Secondly, the Chemical Corps had an unusually large number of enlisted personnel in the scientific and professional category, which came to be overstrength in the Army as a whole by May 1954. This overstrength of scientific and professional personnel was particularly prevalent in the fields of chemistry and chemical engineering and on 28 May the Department of Army raised the standards for assignment to those categories.²⁹ (UNCLASSIFIED)

29

DA Message 519422, 28 May 54.

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Civilian Personnel

There were several significant developments in civilian personnel administration during the fiscal year. Twice within the year personnel ceilings were reduced and thirty-day notices of separation had to be issued to civilian employees. Since the ceiling figures on Continental Army area employees were not received in sufficient time to determine the employees who would be separated, notices had to be issued to practically all employees at the Army Chemical Center and Camp Detrick and the determination made later. Obviously this was not good for employee morale. (UNCLASSIFIED)

Another morale problem arose among employees of Camp Detrick, Dugway Proving Ground and Pine Bluff Arsenal, whose future status was in an indefinite state pending the outcome of the Mathieson contract discussed above.³⁰ (UNCLASSIFIED)

Two significant steps were taken to make civilian personnel administration in the Corps more economical. These were (1) the elimination of staff personnel officers at the headquarters of Materiel Command and Research and Engineering Command, and (2) the satelliting of civilian personnel services at several Chemical Corps installations. Each of these developments will be briefly discussed. (UNCLASSIFIED)

³⁰
pp. 7-15.

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When the Chemical Corps field commands were activated in November 1951³¹ a staff civilian personnel office was set up in each command under the provisions of Administrative Order No. 34 of the Office of the Chief Chemical Officer.³² These command personnel offices were given jurisdiction over the personnel activities of their respective installations; for example, Materiel Command had jurisdiction over the procurement districts. Unfortunately Administrative Order 34 did not define the relationship between the personnel office in the commands and the personnel office in the Chief's Office, with the result that there was, in the words of the Director of Civilian Personnel, Department of the Army, "much duplication, confusion, and misunderstanding in all phases of the civilian personnel program."³³ The DA Civilian Personnel Director made a detailed survey of civilian personnel administration in the Chemical Corps in the latter part

³¹

DA GO 38, 12 Oct 51. For details on the establishment of the commands see Summary History of Chemical Corps Activities, Feb 53, pp. 2-3.

³²

This order was dated 1 Nov 51.

³³

Quoted in Civilian Personnel Branch, OCCmlO, Chemical Corps Headquarters Personnel Office Staffing, 9 Nov 53, p. 5.

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of 1952, which resulted in a number of other comments and suggestions in connection with this particular situation.³⁴ As a result of the Department of Army survey the Civilian Personnel Branch of the Chief's Office conducted an extensive staff study of all phases of civilian personnel administration in the commands.³⁵ On the basis of this staff study, the Chief Chemical Officer, in December 1953, directed the commanding generals of Materiel Command and Research and Engineering Command to eliminate their staff civilian personnel offices. In their stead, one staff representative of the Chief's Office was assigned to each command and supervision of civilian personnel activities in the installations was transferred to the Civilian Personnel Branch of the Chief's Office. (UNCLASSIFIED)

The satelliting of civilian personnel services at several Chemical Corps installations came in the wake of DA Circular No. 86, 23 September 1953, which provided that separate personnel offices would not be maintained for activities employing 300 or less persons. The following Chemical Corps installations were affected by this directive: the Dallas, Atlanta and Chicago procurement districts. Pursuant to receipt

³⁴

DA, Office of Personnel, Survey of Civilian Personnel Administration in Chemical Corps, Sep-Dec 52.

³⁵

This study is referred to in footnote 33 above.

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of Circular 86, the Chief Chemical Officer directed the commanding general, Materiel Command, under whose command these district offices operated, to initiate action in conformity with the circular. Since several of these installations were already satellited on other Chemical Corps installations it was felt by the Commanding General, Materiel Command, and eventually by the Chief Chemical Officer, that exception should be made in those instances.³⁶ To this recommendation neither the Director of Civilian Personnel, Department of the Army, nor the Assistant Chief of Staff (G-4), acceded³⁷ and in the spring of 1954 these procurement district offices were satellited in the following manner: Dallas and Atlanta on Engineers, and Chicago on the Fifth Army.³⁸ (UNCLASSIFIED)

³⁶

Ltr, C Adm Div, OCCmIO, for SA, attn, Director, Civilian Personnel, 16 Nov 53, sub: Consolidation of Civilian Personnel Services.

³⁷

Ibid, 1st and 2nd incorsements, 30 Dec 53, and 6 Jan 54, respectively.

³⁸

San Francisco had been satellited on Ordnance in the summer of '52.

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FACILITIES³⁹

The Chemical Corps construction program initiated in Fiscal Year 1953 was near completion at the end of the Fiscal Year 1954. Almost two-thirds of the Military Construction Army (MCA) projects under this program were completed by the end of the period and approximately ninety million dollars of the total \$117,726,165 MCA authorization and appropriation was expended. The FY 1954 MCA Execution Program included 17 projects valued at \$3,992,000 out of the above totals. In the construction of Chemical Corps production facilities area, the Corps of Engineers had expended approximately 223 million of the approximately 250 million authorized and appropriated from Expediting Production Facilities Funds, Provision of Production Facilities Funds, Industrial Mobilization Funds, Military Construction Army Funds and contingency funds, Office of the Secretary of Defense and Office of

39

Unless otherwise noted, material for this section is drawn from:

- (1) DF, Brig Gen C.E. Loucks, Dep C, Cml O to Hist O, OCCmlO, 24 Nov 53, sub: Summary List for Historical Report.
- (2) Review and Analysis of Cml C Program, Off Comptroller, OCCmlO, 4th Qtr, FY 1954, pp.106-107.
- (3) Quart Hist Rpts, Materiel Div, OCCmlO, Oct-Dec 53, Apr-Jun 54.
- (4) Status of Programs, Facilities Br, Materiel Div, OCCmlO, 15 Apr 54.
- (5) DF, Brig Gen C.E. Loucks, Dep C Cml O, to Hist O, OCCmlO, 3 Jun 54, sub: Summary List for Historical Report.
- (6) Ltrs, Capt J.G. Brunt, Materiel Div, OCCmlO to Hist O, OCCmlO, 26 Feb 54 and 29 Apr 54, sub: Items Presented by Materiel Div. at Cml C Production Meeting, OCCmlO.

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the Secretary of the Army. Only five production facilities projects remained uncompleted, and one of these, the Muscle Shoals Phosphate Development Works, had been turned over to the Chemical Corps from the contractor and the Corps of Engineers.⁴⁰ (UNCLASSIFIED)

A re-evaluation of the Chemical Corps construction program was made as the end of the present program appeared in sight. The result was the institution in February 1954 of an annual Chemical Corps Master Planning priority list to effect an overall, comprehensive facilities planning schedule and to coordinate existing long-range planning. The present master priority list, intended for execution in Fiscal Years 1955 through 1960, is comprised of 264 projects for which it is estimated that appropriations of \$92,791,700 will be requested. (UNCLASSIFIED)

Accomplishments during Fiscal Year 1954 in addition to the execution program and the delivery to the Chemical Corps of the Muscle Shoals Phosphate Development Works, mentioned above, included virtual completion of the Chemical Corps School at Fort McClellan, Alabama, completion of the Production Development Laboratories (formerly the X-201 Plant) at Pine Bluff Arsenal and the completion of a number of major construction projects at Camp Detrick, Army Chemical Center, Dugway Proving Ground, Rocky Mountain Arsenal, Midwest and Desert Chemical Depots. A measure of the accomplishment is that there were no Military Construction Army projects in

⁴⁰

See below, pp. 106-110.

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process at any of the Chemical Corps Materiel Command installations at the end of the Fiscal Year.⁴¹ (UNCLASSIFIED)

Other facilities actions included declaring excess the \$29,000,000 Vigo Plant, a plant in Industrial Reserve Standby, and the declaring excess four small buildings at Pine Bluff Arsenal and a storage building at the Marshall Plant. (~~SECRET~~)

RESEARCH AND DEVELOPMENT IN THE CHEMICAL CORPS

Administration

The research and development program was generally directed toward the completion of short-term development, rather than toward basic research. In the field of chemical warfare the development of end items was stressed, with emphasis on the production, dissemination and detection of the G-agents. In biological warfare the production and dissemination of agent N was given top priority. Radiological warfare assumed a very minor position, with the Chemical Corps continuing research on a small scale. (~~SECRET~~)

During the fiscal year 1954 the total funds obligated for research and development was, as indicated above, \$43,576,000.⁴²

⁴¹

Review and Analysis of Cml C Materiel Command Program, Hqs, MATCOM, 4th Qtr, FY 1954.

⁴²

See above pp. 6-7.

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Of this total, 53 per cent was obligated for biological warfare and the remainder for chemical and radiological warfare. The number of personnel engaged in research activities increased approximately five hundred.⁴³ (~~CONFIDENTIAL~~)

Chemical Research and Development

As in FY 1953, the most urgent research and development problems were associated with the large scale production of GB by the Dimethyl Hydrogen Phosphite (DMHP) process and the two alternative processes, High Temperature Methane (HTM) and Salt.⁴⁴ Continuous production of DMHP was carried on successfully in a pilot plant without the aid of internal coolant. The results of this small scale production will be of value to Site A (Muscle Shoals, Alabama) if the problem of stripping under vacuum cannot be solved. The Salt process was carried out on the pilot plant stage, steps I to III by a contractor and steps IV to V at CRL. Pilot plant development is expected to be completed in late 1954 or early 1955. The first

⁴³

See above pp. 19-20.

⁴⁴

Unless noted otherwise, the material in chemical research is based on: C. L. Butler, F. W. Lane, G. A. Miller, E.H. Schwanke, Significant Accomplishments, Fiscal Year 1954, Chemical Corps Chemical and Radiological Laboratories. The manuscript of this report is being prepared for publication in late September or early October.

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step in the HTM process, the direct union of methane and phosphorus trichloride, was successfully piloted under contract. The second step, the oxidation of the step I product to methyl phosphonyldichloride, is under study in the pilot plant.⁴⁵ ~~(S)~~

In searching for a material which will enhance the toxicity of GB, e.g., by reducing the volatility, increasing its ability to penetrate clothing, enhancing its percutaneous toxicity, it was found that methyl methacrylate polymer thickened the agent. The thickening time, however, is excessive and studies are being continued. ~~(S)~~

During the year the search for new agents resulted in the submission of 117 compounds for toxicity tests. Twenty-four of these were found to be sufficiently toxic to warrant further study. The most important candidate agent uncovered is cyclohexyl methylphosphonofluoridate (GF) which the Advisory Committee on New Agents recommended as a quick-acting persistent agent. The laboratory method of synthesizing the compound was investigated, and several hundred pounds will be prepared for field trials as soon as personnel become available for the work. The Advisory Committee on New Agents placed increased emphasis on naturally occurring toxic substances, and on synthetic compounds with structures related to natural toxics. ~~(S)~~

⁴⁵

See pp.106-114, for additional information.

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In the field of flame warfare, efforts were made to improve thickening agents. Thickener M3 (Octal), already standardized for use in fire bombs, was modified for use in flame throwers by the addition of surface-active agents. Final engineering tests of the modified thickener (E9) are expected in late 1954. The study of latex thickeners, begun last year, uncovered a gelling agent, Thickener E7, which showed considerable promise. The latex thickeners are dispersions of natural or synthetic rubber, and are therefore not affected by water in the gasoline. If the search is successful, the latex thickener may replace the aluminum soaps. ~~_____~~)

Applied research on ground and air munitions showed progress along certain lines. In filling a requirement for practical counter-measures against radar, the Corps developed a nickel coated glass fiber (Agent, Radar Screening, E10) which is approximately 400 times more effective, weight for weight, than chaff. Investigation is being continued to find the most efficient way of disseminating the coated fibers. ~~_____~~

During the year continuous effort was made to obtain basic information on the dissemination of agents to improve munitions or develop new techniques or devices. Major emphasis was placed on dissemination by thermal generators. The modified M3 smoke generator (Kit, Smoke Generator, Agent Dispersing, E10) gave very promising results in Operation ARMBREAKER at Dugway Proving Ground, and provided useful information to guide further research. ~~_____~~)

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In flame warfare, the most significant accomplishment was the E32 flame gun, which completed final engineering tests. The gun is 2.5 pounds lighter and 8 inches shorter than the M2A1 gun. The outstanding features are its light weight, ease of trigger pull, ignition safety, and the ease of handling and firing by an operator wearing arctic mittens. ~~CONFIDENTIAL~~

In smoke screening, the remote controlled smoke generator, operated by radio, successfully passed the final engineering test. The Signal Corps evaluated the radio control system and reported that it is not particularly susceptible to deliberate or accidental jamming. (~~CONFIDENTIAL~~)

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Biological Warfare Research and Development

For this section see:

~~_____~~ Annex pp. 6 - 11

(Footnotes 46 - 56)

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Radiological Research and Development

In World War II appreciable quantities of radioactive isotopes became available for use as toxicological weapons. Differences of opinion arose among those who believed that this type of warfare would be effective and those who were convinced it did not deserve consideration. In 1948 the Joint National Military Establishment-Atomic Energy Commission Panel on Radiological Warfare (Noyes Panel) met to consider the available information and to recommend a program designed to establish the feasibility of RW. The Noyes Panel continued to meet until 20 November 1950. Their published reports and recommendations formed the basis of the program effort during those years. In March 1950 the WSEG issued a memo outlining the requirements for an operational evaluation of RW. This involved munitions development (CMLC), agents (AEC and CMLC), decontamination (CMLC), biological effectiveness (AEC), and logistics (USAF and CMLC). The Chemical Corps research and development was to be completed through a service level test by the end of FY 1954. During the five fiscal years from 1949 through 1953 the Chemical Corps investment was approximately \$10,000,000 of which \$2,000,000 was for facilities. Of the \$6,861,000 available for technical operations, \$3,561,000 (or more than 50 per cent) was spent by contract. The achievements during

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this five year period include the following:

- (1) A variety of agent formulations were developed.
- (2) An explosive system was developed which combined the features of high aimability and large area contamination.
- (3) A large area system was developed utilizing the principle of self-dispersion of surface modified spheres.
- (4) A facility was designed, constructed and placed in operation to handle, process, load and fill munitions with megacurie quantities of radioactive material.
- (5) Some decontamination work was accomplished.⁶² (~~SECRET~~)

Since the first of July 1953 the RW program has come to almost a complete halt. All tests were canceled, all development work was discontinued, all contract proposals canceled, personnel reduced from 360 to a few key men, facilities were closed down,⁶³ and support by

62

Lt Col T. F. Cook, Summary and Status of the RW Program, file No. REC-RDS-335 (53).

63

The QMC is using the Dugway Able Area Facility to conduct a portion of its food irradiation program.

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USAF and AEC was withdrawn. The Chemical Corps asked for \$850,000 to phase out the program in an orderly manner, but only \$100,000, later increased to \$325,000, was offered by the DA Senior Review Board. ⁶⁴

On 30 June 1954 word was received from Assistant Chief of Staff (G-4), ⁶⁵ that the Chemical Corps would continue research and development on RW ground delivery systems (for the purpose of contaminating roads and for other retarding operations) to furnish ORO with data, and that the Corps would devote a minimum effort toward planning a tactical guided missile delivery system. ~~_____~~

Defensive Measures

In the field of detection, greatest emphasis was placed on the development of field alarms for G-agents. ⁶⁶ The E21 type, which utilizes

64

- (1) Lt Col T. F. Cook, Summary and Status of the RW Program.
- (2) Quart Hist Rpt, R&E Comd, Jan-Mar 54. Summary, pp. 3-4.

65

DF, ACoFS (G-4) to C Cml O, 30 June 54, sub: Radiological Warfare, file G-4/F25805 (SF). File No. REC-54-S-2935.

66

Except where noted, the material in this section is based upon Significant Accomplishments, Fiscal Year 1954, Chemical Corps Chemical and Radiological Laboratories.

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dianisidine-peroxide solution, responds to both GA and GB, and appears to be the choice for a field alarm. The E22 type, which utilizes a dry paper indicator, detects GB only. Because the E22 will operate successfully at low temperatures the Air Force is interested in it as an alarm for detecting leaking GB munitions carried in aircraft. The E25 alarm (indole-perborate principle) detects all G-agents. It is expected to replace the E17, the most reliable device yet developed for detecting low concentrations of G-compounds, in fixed installations. ~~SECRET~~

The problem of detecting GB took a step forward with the discovery of a new detection reagent, diisonitrosoacetone (DIA). This compound changes color in the presence of GB, and shows promise of application in crayons, detector papers and automatic alarms. ~~SECRET~~

Development of protective devices for the individual soldier was concerned with improvement of existing items rather than with new discoveries. On 29 March the AAF development and test personnel agreed to conduct comparative tests on six candidate protective masks for the purpose of determining the features most desirable to the user.⁶⁷ Among the candidate masks are the M9 type (E73) made from rubber by a dipping process, a molded mask (E72) of similar design, a helmet mounted mask (E10), and a canisterless mask (E13). ~~SECRET~~

The development of impregnates for clothing has resulted in the E12R3 carbon impregnating kit, which has passed final engineering tests and is being processed for standardization. Carbon treated garments

⁶⁷
DF, DCCm10 to Hist O, OCCm10, 3 Jun 54: sub: Summary List for Hist Rpt.

[REDACTED]

are highly absorbent and non-specific, and should provide protection against the vapors of almost any agent any enemy might use. [REDACTED]

The most important advance in CW decontamination was the development, through final engineering test, of an essentially noncorrosive decontaminating system (E8R2), which is effective against all the G-agents and mustard. It is less corrosive than DANC, and contains no toxic solvent. The presence of water, however, prevents it from being used at low temperature (below 15°F.). [REDACTED]

The detection of atom bomb radiation also received consideration during the year. CRL brought the ELR3 tactical dosimeter to a reasonably high degree of effectiveness. On 14 May, plans were formulated for user test procurement of 100,000 of the dosimeters. The test will be made overseas, and is competitive with the Polaroid Film Badge Dosimeter DT-65/PD. The adoption of a tactical dosimeter by the Army hinges on the results of the user test.⁶⁸ [REDACTED]

It has been shown that thermal radiation from the atom bomb is decreased by passage through smoke. During the year a theoretical analysis was carried out under contract to furnish the data required to calculate the thermal energy received beneath a fog oil smoke screen. Field tests were carried out to confirm the analysis and to furnish data on the logistics of smoke cloud protection. A study is being made to ascertain the number of smoke generators required to screen St. Louis, which was chosen as a representative urban target. [REDACTED]

68

(1) DF, DCCm10 to Hist 3, CCCm10, 3 Jun-54, sub: Summary List for Historical Report.

(2) Quart Hist Rpt, R&E Cond, Apr-Jun 54.

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PLANS, TRAINING, AND INTELLIGENCE

Plans and Operations⁶⁹

In FY 1954 Plans and Operations Branch (P&O), Plans, Training, and Intelligence Division, OC Cml O, was charged with such duties as preparation and review of mobilization plans, special studies, troop basis, review of military characteristics of Chemical Corps material, T/A's, T/D's, and T/O&E's. (UNCLASSIFIED)

Mobilization Plans

In the course of FY 1954, P&O Branch did considerable work on mobilization planning. This work revolved principally around Army Mobilization Plan III (AMP-III) and Chemical Corps contributions to it. On an overall basis the branch directed initiation of a program for revision of Cml C MP-II to bring it into line with AMP-III.⁷⁰ Inasmuch as publication of AMP-IV was expected near the end of the fiscal year, the branch planned to publish the Chemical Corps Mobilization Plan as Cml C MP-IV.⁷¹ In connection with the mobilization planning the branch reviewed Maneuver Area Development Plans submitted by the

69

Except where otherwise noted, material for this section was taken from Quarterly Historical Reports, Plans, Training, and Intelligence Div, OCCmlO, for FY 1954.

70

DF, P&O Br OCCmlO to Staff Elements, 26 Feb 54, sub: Cml C MP-III, Submission of Annexes.

71

Interv, Hist O, OCCmlO, with Lt Col Samuel E. Baker and Mr. Max Bost, P&O Br., OCCmlO, 11 Aug 54.

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Continental Armies and Department of the Army Reserve Components Mobilization Preparedness Objectives.⁷² Plans Section prepared a breakdown of MOS requirements for a Chemical Corps Replacement Training Center as well as a graph for each course to be presented by the Chemical Corps School during mobilization.⁷³ ~~CONFIDENTIAL~~

Other mobilization planning included certain recommendations to Assistant Chief of Staff (ACofS) (G-4) on proposed changes in the AMP. The Chemical Corps suggested continuance of the primary program system during mobilization, retention of the same general format of the plan, and inclusion of mobilization planning policies in a single document to facilitate preparation and maintenance of mobilization plans.⁷⁴ The AMP called for an Industrial Mobilization Plan (IMP) which was to be provided for in technical service mobilization plans.⁷⁵ P&O Branch was not given responsibility for the

72

- (1) DF, Cmt #2, OCCmLO to ACofS (G-4), 14 Jul 53 (16 Jun 53).
- (2) DF, OCCmLO to ACofS (G-4), 27 Jul 53.

73

- (1) DF, OCCmLO to ACofS (G-4), 5 Mar 54, sub: MOS Breakout [sic] of RTC in AMP-III (Cml C 3970-C).
- (2) DF, OCCmLO to ACofS (G-4), 13 Jan 54, sub: Plots of Mobilization School Courses for AMP-III.

74

- (1) DF, ACofS (G-4) to C Cml O, 27 Oct 53, sub: Army Mobilization Plan.
- (2) DF, C Cml O to ACofS (G-4), 3 Nov 53, sub: Army Mobilization Plan.

75

- 1st Ind, 5 Feb 54, on Basic Ltr, CO MATCOM to C Cml O, 8 Dec 53, sub: Request for Policy Instructions.

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actual preparation nor supervision of the IMP. The IMP was to develop schedules and provide administrative procedure in the event of mobilization.⁷⁶ (~~CONFIDENTIAL~~)

Each proponent agency such as the Chemical Corps was to have its own segment of the troop basis under AMP-IV. In answer to a query from G-4 the Chemical Corps recommended the AMP continue to provide for operation of technical service Replacement Training Centers during mobilization.⁷⁷ (~~CONFIDENTIAL~~)

The possibility of sudden enemy attack on Washington which might wipe out Department of the Army headquarters led, in 1950, to preparation of a Department of the Army Alternate Headquarters Plan (DARAH), and each technical service prepared a plan to cover its own activities so that the operation of the Army might not be interrupted by disaster. In March 1954 the Chemical Corps, upon recommendation of the General Staff, made a change in CmlC-DARAH by eliminating the chemical liaison group planned for operation at DA alternate headquarters, Fort Monroe, Virginia.⁷⁸ Instead, the

76

Mat Div OCCmlO prepared the IMP. P&O came into the picture as the staff agency charged with insuring execution of AMP by an Industrial Mobilization Plan. ~~CONFIDENTIAL~~

77

DF, Cmt #2, OCCml O to ACofS (G-4), 28 May 54, sub: Responsibility for Operating Replacement Training Centers.

78

DF, Cmt #2, OCCmlO to ACofS (G-3), 5 Mar 54, sub: Proposed Changes to DARAH. The General Staff had recommended elimination of the Chemical Corps and other liaison groups because of a shortage of available personnel at Fort Monroe.

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Alternate Chief Chemical Officer was directed to be prepared to dispatch such a liaison group from Army Chemical Center in the event of implementation of DARAH. Work was also done by P&O Branch on brochures containing data on the operations of the divisions and separate offices of the Office of the Chief Chemical Officer in order to acquaint personnel of alternate headquarters with the necessary working details. The branch prepared a T/D for the alternate headquarters together with a revised list of key alternate personnel.⁷⁹ It was planned to lay down specific policies for alternate headquarters plans for other Chemical Corps commands in CmlC-MP-IV.⁸⁰ Since AMP-III required alternate locations for logistical installations such as Chemical Corps Materiel Command (MATCOM), the latter proposed Rocky Mountain Arsenal in Denver, Colorado, as its alternate headquarters. The proposal was favorably received in OC Cml O, one argument in its favor being that RMA was already designated as office of record for IMP duplicate copies. ~~SECRET~~

79

Ltr, OCCmlO to CG ACC, 1 Apr 54, sub: Revised T/D for Chemical Corps Alternate Headquarters.

80

1st Ind, 13 Mar 54, on Basic Ltr, CO RMA to C Cml O, sub: Addition to Current Mission of RMA.

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Special Studies

Perhaps the most important single study prepared in the branch during FY 1954 was one comprising three annexes to Weapons System Evaluation Group (WSEG) Study #14. The five volumes of the WSEG study dealt with various tactical situations involving the defense of Western Germany, and the three CBR annexes covered CBR capabilities through 1954, through 1956, and the use of smoke. The Chemical Corps completed all three annexes and sent them to G-3 with a request for permission to distribute them to interested parties.⁸¹ [REDACTED]

In addition, various logistical studies and chemical troop units to support possible operations and a type field army were prepared during the year. These studies aided in keeping the Chemical Corps prepared for sudden action anywhere in the world. The "Annual Estimate of the CBR Situation" was prepared as of 1 October 1953 and distributed early in 1954 after approval by the General Staff. This document informed key commanders and staff officers on the latest CBR developments including state of enemy preparedness and probable intentions. [REDACTED]

⁸¹

Interv, Hist O, OCCalO, with Lt Col Samuel E. Baker, Actg C, PT&I Div, 3 Jun 54.

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Troops and Equipment

In October 1953 the Department of the Army authorized the Chief Chemical Officer to reorganize and redesignate all Chemical Corps General Reserve units to full T/O&E strength, and the commanding officer of Chemical Corps Training Command was directed to carry out this order for units stationed at Fort McClellan or otherwise under his jurisdiction.⁸² In addition, the Chemical Corps planned activation of the following four units: the 74th Chemical Company (Smoke Generator) and 30th Chemical Company (Decontamination) at Fort McClellan; and the 61st Chemical Company (Depot) and 11th Chemical Company (Maintenance) at Fort Bragg.⁸³ (~~CONFIDENTIAL~~)

In order to provide a well-rounded chemical group for army combat units stationed at Fort Bragg, the 466th Chemical Battalion (Service) (HHD) moved to Bragg in June 1954.⁸⁴ A proposal to move the 2d Chemical Weapons Battalion (a T/D unit) from Dugway Proving Ground to the Ogden General Depot for morale reasons was

82

(1) Ltr, AGAO-I(M) 322 Gen Res (2 Oct 53) G1, TAG to OCCm10, 22 Oct 53, sub: Redesignation and Reorganization of Certain General Reserve Units at Fort McClellan.
(2) Ltr, OCCm10 to CO Cml C Tng Cmd, 2 Nov 53, sub: as above.

83

Baker Interv, 3 Jun 54.

84

Ltr, OCCm10 to CO Cml C Tng Cmd, 11 Jun 54.

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rejected by the ACoFS (G-3).⁸⁵ Several proposals by members of the General Staff for reduction in size of the 2d Chemical Weapons Battalion were made during the year. In April the ACoFS (G-4) proposed to reduce the battalion from 521 spaces to 250 and the OC Cml O sought to justify the current strength.⁸⁶ Again in June 1954 the ACoFS (G-3) asked the Chemical Corps for justification of personnel in the battalion as it was proposed to reduce its strength to about 350 men. The Chemical Corps expressed the opinion that the irreducible minimum strength of the battalion would be twenty-six (26) officers and four hundred and two (402) enlisted men.⁸⁷ The mission of the battalion continued to be the operational testing of Chemical Corps weapons, munitions, and techniques. ~~(S)~~

Plans and Operations Branch also prepared and submitted to General Staff recommendations for chemical troop units for inclusion in the General Reserve Troop Basis for fiscal years 1954 through 1956.⁸⁸ This was required as a result of the planned reduction in

⁸⁵

- (1) DF, C Cml O to ACoFS (G-3) thru ACoFS (G-4), 24 Feb 54.
- (2) Baker Interv, 3 Jun 54.

⁸⁶

Ltr, ACoFS (G-4) to C Cml O, 13 Apr 54.

⁸⁷

- (1) DF, ACoFS (G-3) to C Cml O, 12 Jun 54, sub: Reorganization of 2d Cml Wpns Br, and Cmt #2, 9 Jul 54.
- (2) Baker Interv, 11 Aug 54.

⁸⁸

DF, OCCmLO to ACoFS (G-3) thru ACoFS (G-4), 16 Feb 54, sub: Chemical Units in General Reserve Troop Basis...

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overall Army strength from 1,407,000 to 1,164,000. The Chemical Corps General Reserve ceiling dropped from 3,850 to about 3,250 but the Chemical Corps share of the total strength remained about the same. Under rulings imposed by ACoFS (G-3) the recommended units represented minimum support for combat forces in the General Reserve. In accordance with an informal request by G-4, the Chemical Corps submitted a recommended troop basis for Chemical Corps units to support a permanent peacetime army. (~~CONFIDENTIAL~~)

When the ACoFS (G-4) proposed to transfer proponent responsibility for preparation and development of all T/O&E's of units utilized in a theater of operations to OCAFF, the Chemical Corps countered by a recommendation that the proposal be rejected and that consideration be given to reassignment of five (5) tables from OCAFF to the C Cml O. These five tables were for units primarily engaged in logistical support of administration.⁸⁹ This question was unresolved at the end of the fiscal year. (UNCLASSIFIED)

During FY 1954 the Tables and Allowances Section of P&O Branch reviewed some 150 T/A's, T/O&E's or changes thereto which had been prepared by proponent agencies. The problem of delays in the review of T/A's and T/O&E's became so acute by January 1954 that G-4 called a conference of technical service representatives in an attempt to

⁸⁹

OCCmLO to ACoFS (G-4), 15 Apr 54, sub: Proponent Responsibility for T/O&E's.

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resolve the question. The Chemical Corps representative proposed the declaration of a thirty to sixty day moratorium on all table submissions in order to reduce the review backlog. He also recommended that every table be rescheduled to eliminate the peak workloads and provide the same number of tables for review each month. ACofS (G-4) accepted these ideas and incorporated them in a comment to G-3 in which this remedial action was outlined. (UNCLASSIFIED)

In February the Chemical Corps proposed changes which would convert certain enlisted positions in grades E-4 and E-5, in those T/O&E's for which the Chief Chemical Officer was proponent, to Chemical Parts Specialist, MOS 3732.⁹⁰ A similar recommendation was made to OCAFF for those chemical type T/O&E's for which AFF was the proponent agency.⁹¹ The ACofS (G-3) approved the Chemical Corps recommendation and courses to train this MOS began at the Chemical Corps School in May 1954.⁹² (UNCLASSIFIED)

During 1953 there had been controversy as to the exact relationship of the Chemical Corps Board to other activities and staffs of

⁹⁰

DF, OCCmLO to ACofS (G-4), 15 Feb 54, sub: Proposed Changes in Chemical T/O&E's.

⁹¹

Ltr, OCCmLO to OCAFF, 17 Feb 54.

⁹²

(1) DA Cir 25, 9 Mar 54.

(2) Quart Act Rpt, Chemical Corps School, Apr-Jun 54.

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the Chemical Corps. In the last half of the year the Chief Chemical Officer took action in order to straighten out the considerable confusion which had existed relative to the amount of control to be exercised by PT&I Division of the OC Cml O over functions and activities of the Board. The independence of the Chemical Corps Board was reasserted, although General Bullene pointed out that he expected PT&I Division would perform duties normal to any staff section of his office with respect to Board activities.⁹³ The Board was reorganized with increased responsibility and functions. Board membership was expanded to include the heads of CBR doctrine and operations research elements.⁹⁴ (~~CONFIDENTIAL~~)

93

Cy, pers ltr, Maj Gen E. F. Bullene to Col Leonard M. Johnson (President, Cml C Bd), 11 Dec 53.

94

DF, DC Cml O to Hist O, 3 Jun 54, sub: Summary List... CCR 10-11, 1 Sep 53, Orgn & Functions, and C1, 27 Nov 53. C1 to CCR 110-1, 4 Dec 53.

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Training⁹⁵

Training of Chemical Corps troops is a responsibility of Chemical Corps Training Command, located at Fort McClellan, Alabama, while staff supervision is provided by Training Branch, Plans, Training, and Intelligence Division of the Office of the Chief Chemical Officer. The Chemical Corps trains instructors for CBR training throughout the Army. (UNCLASSIFIED)

CBR Training in the Army

The problem of maintaining a sufficient number of trained unit gas or CBR officers and noncommissioned officers plagued the Army in World War I, World War II, and the Korean War. Since this was an additional duty which did not carry a MOS, these trained men were all too often lost in the replacement shuffle. (UNCLASSIFIED)

Study and planning to alleviate this situation began in April 1952 when the Chief of Army Field Forces (CAFF) requested the Chief Chemical Officer to study the Department of the Army plan for Radiological Defense and submit recommended changes.

95

Except where otherwise cited, material in this section is taken from Quarterly Activity Reports of Training Br, OCCm10, Cml C Tng Cmd, Cml C School, Cml C Tng Support Gp, and 100th Cml Gp (ComZ).

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General Bullene proposed that noncommissioned officers with MOS 1870, Chemical Staff Specialist, be permanently assigned to the S-3 section of battalions, regiments, groups, and brigades. He also proposed the elimination of the CBR structure as an additional duty at the lower levels. The Chief Chemical Officer argued that, although this would mean an increase of about 800 men in the present army, it would stop up the rat hole down which millions of man-hours of training had been lost. For example, the Far East Command CBR School at Gifu and later at Eta Jima, Japan, trained thousands of soldiers, yet at no time did the units in the Far East have their authorized CBR strength. The proposed change had the advantages of limiting the number of men who would require training and of insuring that the trained men would not be lost in the replacement system. Eventual savings in manpower and money would follow in the long run.⁹⁶
(several)

The Assistant Chief of Staff (G-3) referred the proposal to CAFF who concurred in the elimination of the CBR structure as an additional duty but rejected the idea of assigning enlisted chemical staff specialists to staffs below division level. As

⁹⁶

Interv, Hist O, OCCm10 with Lt Col Martin L. Denlinger, C, Tng Br, CCCm10, 14 Oct 53.

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the Chief Chemical Officer maintained his position on the matter, the question was referred to the Chief of Staff, General Matthew B. Ridgway, who disapproved the Chemical Corps suggestion.

As a result, a new regulation, SR 220-180-5, "Organization and Training - Chemical, Biological, and Radiological Warfare," eliminated the requirement for unit CBR officers and NCO's and placed responsibility for CBR operations and training upon commanders at all echelons although such responsibility had really always been theirs.⁹⁷ The General Staff considered several factors in abolishing the unit CBR officers and NCO's. One factor was the over-reliance placed by commanders upon unit CBR officers and NCO's when these were available. In spite of army directives, commanders were not gaining an appreciation of the proficiency required by individuals and units in the event of CBR warfare. Staffing the centralized Army CBR Schools had required a considerable overhead. It was estimated that a 21-division army would require about 16,000 unit CBR officers and NCO's including

⁹⁷
SR 220-180-5, 19 Apr 54.

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principals and alternates, yet the total number trained each year had exceeded that number without correcting the shortage. Department of the Army concluded that the CBR additional duty structure would not stand the test of CBR warfare.⁹⁸ The new regulation therefore required that all commanders, leaders, staff personnel, and specialists be sufficiently trained in CBR warfare commensurate with grades, duties, and responsibilities. If satisfactorily carried out, the new regulation would actually provide the Army with more CBR training than the old system and bring the potentialities of CBR warfare closer to the minds of men charged with carrying out battle operations. (~~CONFIDENTIAL~~)

Meanwhile the Chemical Corps and Department of the Army had taken certain actions to improve CBR readiness. OC AFF made CBR refresher training, of not less than two hours duration, a standard requirement for all military personnel moving overseas. The requirement was waived only in the case of personnel who had received CBR training within the previous year.⁹⁹ The General Staff instructed C AFF to include CBR training in all Army Training Programs (ATP) in terms as specific as those in ATP 21-114, "Basic Combat Training Programs (8 weeks), "which required ten hours on individual protective

⁹⁸

Ltr, CCmlO to Cml O's USAFFE, USAREUR, et al., 5 Mar 54, sub: Changes Policy for CBR Organization, Training and Operations.

⁹⁹

C 3, SR 600-175-20, 13 Oct 53.
DA Cir 2, 5 Feb 54.

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measures against CBR attack." ¹⁰⁰ This ATP governed all recruit training. In addition, it was directed that all Army Training Tests (ATT's) include CBR situations, and CBR readiness was made a mandatory item of investigation by Army Field Forces inspectors. ¹⁰¹
(UNCLASSIFIED)

During March and April 1954 Department of the Army published official Army Training Programs for each type chemical unit which were developed by Training Command. Publication of Army Training Tests was programmed for FY 1955 to assist in the standardization of training of chemical units. ¹⁰²
(UNCLASSIFIED)

As a result of these actions Army CBR Schools were discontinued as such as of 1 July 1954. This action did not prevent Army commanders from maintaining CBR Schools from their own spaces and material in order to carry out the provisions of SR 220-18-05. In effect, it merely placed the responsibility on the Army commander rather than Department of the Army for insuring CBR readiness in his command. Finally, as a means of testing the readiness, OCAFF conducted a CBR warfare test of Continental Armies in January and February 1954. (UNCLASSIFIED)

100

ATP 21-114, OC AFF, 24 Sep 53, calls for four hours instruction the first week, two hours the third week, and four in the final week.

101

Ltr, CCm10 to Cm10's USAFFE, USAREUR, et al., 5 Mar 54, sub: Changes in Policy..., Incl #1, "Actions to Improve CBR Preparedness Throughout the Army"

102

For a composite training index to indicate state of training of T/O&E units see Appendix A.

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By direction of CAFF, the Chemical Corps Training Command prepared the CBR Proficiency Test to be given to selected individuals and units throughout the United States. An earlier test, given in October 1952, had revealed glaring deficiencies in training. In January and February 1954 six teams composed of a field grade officer, a lieutenant, and an enlisted man tested the six continental armies. The Chemical Corps supplied six junior officers and six enlisted men to assist in administering the tests. ~~CONFIDENTIAL~~

In the tests 21,750 individuals were examined as compared with 6,200 tested in 1952. Several important changes were made which improved test technique over the earlier exams. Fifty men were tested in each unit instead of twenty. The team played plastic records rather than giving written and oral tests. These records gave the CBR situation, a time limit in which the appropriate action was to be taken, and finally the approved solution. Part of the value of the test appeared to be in thus serving as a training aid as well as selling CBR training. Another change was the testing of company, battalion, regimental, and division staffs, usually by command post exercises (CPX's); in 1952 only company staffs were checked. These staff tests consisted of map, overlay, and written

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103

situation which called for a written solution. (UNCLASSIFIED)

The main conclusions reached from this second CBR Proficiency

104

Test of CONUS Armies were:

1. The CBR proficiency had improved significantly since the test conducted in September-October 1952.
2. The overall status was SATISFACTORY.
3. Sudden or intensive attack might still impose casualties on U.S. forces which would seriously impede our mission.
4. The maximum number of deaths was estimated to be 10 per cent.
5. The proficiency rating of individual soldiers, battalion, regimental, and division staffs was SATISFACTORY.
6. The proficiency rating of company staffs was UNSATISFACTORY.

Exercise FLASH BURN

One of the ways by which the CBR readiness of the army as well as that of selected Chemical Corps units was improved was by CBR play in maneuvers. The largest of these maneuvers in FY 1954 was Exercise FLASH BURN held at Fort Bragg, North Carolina, from 19 April through 7 May 1954. This maneuver, one of the largest field maneuvers since World War II, was one of the first to give significant attention to CBR warfare. The Chief Chemical Officer provided chemical units

103

Interv, Hist O, OCCmLO with Capt H.H. Freeman, Tng Div, CmlC Tng Cmd, 7 Jun 54.

104

- (1) Ltr, OCAFF, 28 May 54, sub: Rpt of 1954 CBR Proficiency Tests of CONUS Armies (file ATTIC-24 353.01/8(S): (28 May 54), w/1 incl: sub rpt.
- (2) Memo, C PT&I Div for CCmLO, 11 Aug 54, sub: as above, summarizes the OCAFF report.

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and support for the maneuver director. A total of eight chemical service-type units and three combat type units participated with both U.S. and AGGRESSOR forces. ¹⁰⁵ (UNCLASSIFIED)

In preparation for the CBR play, a chemical section was activated in Headquarters, Maneuver Director (HMD) at Fort Bragg on 9 November 1953. During the planning phase the section consisted of a chemical officer (Lt. Col. Jack F. Lane), operations officer, assistant operations officer, supply officer, and two enlisted men. In the maneuver itself an additional officer was added to provide for twenty-four hour operation and close supervision, but no chemical officer was provided for the office of the Chief Umpire which proved unfortunate. The mission of the chemical section was determination of logistical and troop unit requirements, planning CBR play and premaneuver training, and advising the maneuver director on all CBR warfare matters. The opposing forces did not receive chemical sections until just before the maneuver began. (UNCLASSIFIED)

The overall action of the maneuver consisted of a retrograde movement by the 145th Regimental Combat Team (RCT), seizure of an airhead by the 82d Airborne Division and 37th Infantry Division,

105

These units were: US - 5th Cml Smoke Generator Bn, 84th Cml Co (Smoke Generator), 1st Plat, 24th Cml Co (Decontamination), 2d Plat, 9th Cml Co (Depot), 66th Cml Co (Depot) (ComZ), 59th Cml Co (Maintenance) (-), 476th Cml Svc Bn, and 18th Chemical Technical Intelligence Detachment; AGGRESSOR - 85th Cml Co (SG), 24th Cml Co (Decon) (-), 9th Cml Co (Depot) (-), and Detachment, 59th Cml Co (Maint).

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an armored force linkup with the airhead, and finally a general attack by the XVIII Airborne Corps. Chemical warfare play included use of chemical land mines, artillery fire, airplane spray, and smoke. While the maneuver G-3 originally indorsed fifteen chemical actions by AGGRESSOR, maneuver chief of staff and deputy maneuver director considered this excessive and cut the number to eight plus small scale use of land mines. Chemical action by US forces was limited, for it was not preplanned except for the use of chemical land mines in barrier plans. Fortunately, US and AGGRESSOR staffs enthusiastically received the chemical play. (UNCLASSIFIED)

The first use of chemicals in the retreat of the 145th RCT occurred on the fifth day. As part of the mine barrier plan, US troops laid 890 chemical land mines in two 300 x 100 yard fields and one field along 1,000 yards of crucial road. These mines employed a mixture of CWB and molasses residium to simulate distilled mustard. Apparently the mine-laying unit lacked prior training in this type of operation, for assistance in wiring had to be requested from the HMD chemical officer, and mines were neither buried nor camouflaged. Following the US withdrawal some mines were detonated and others overrun by AGGRESSOR troops, but no casualties were assessed. The fact that umpires with AGGRESSOR units made no report of any protective measures taken by units passing through gassed areas suggested that the umpires needed CBR training and that both umpires and troops might have completely ignored such contaminated areas. (UNCLASSIFIED)

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Each side had two chemical warfare artillery shoots, using simulated GB (nerve gas) and HD (mustard gas) ammunition which were provided in quantities equal to 20 per cent of the day of supply for the 105-mm. howitzer and the 155-mm. gun. This short supply proved a limiting factor, although high casualties were generally assessed. In one action, AGGRESSOR employed counter-battery fire with 155-mm. HD-filled shells, and the unit umpire informed each receiving battery that the area was contaminated with a persistent agent. Many battery crews removed masks prematurely or did not mask at all. For three of four batteries casualties were assessed at 90 per cent.

~~(CONFIDENTIAL)~~

L-19A observation planes used unmodified M-10 spray tanks for simulated chemical and biological strikes, and the attacks were generally successful. Unmodified tanks had to be used because of the long (7-9 min.) discharge time of the modified type. Each plane carried two M-10 tanks with twenty gallons in each tank. As the pilots lacked experience in spray attacks, at times they alerted target troops by making reconnaissance runs before the attack.

~~(CONFIDENTIAL)~~

AGGRESSOR conducted most of the smoke operations although both sides had smoke capability. Some smoke screens were maintained as long as eighty minutes. Colored smoke grenades saw extensive use for signaling and for fire marking. (UNCLASSIFIED)

Only the AGGRESSOR forces had offensive biological warfare capabilities, and they planned and carried out six BW attacks, three

~~CONFIDENTIAL~~

clandestine and three aerial spray. In two missions distances involved made it unfeasible to sample sprayed areas, and by the time the troops were reached they were free of contamination. In a third attack, four CDP 800 generators using bacillus globigii as a simulant were parachuted with considerable damage to the generators only one of which functioned. Nonetheless, reports clearly indicated that BW could be effectively integrated into maneuvers. (~~CONFIDENTIAL~~)

Radiological warfare play was limited to hazards incidental to the use of nuclear weapons. One ground burst of an AGGRESSOR Atomic weapon took place, and personnel using simulated radiac instruments were informed by the umpires of readings they should be getting. (UNCLASSIFIED)

The CBR intelligence exercise, most of which was in the BW field, was successfully integrated into the over-all Intelligence Injection Plan. Prisoners of war and deserters carried information or were told what to say when captured, and material for capture was often included. (UNCLASSIFIED)

While the maneuver paid no special attention to chemical logistics, chemical service type units provided support and issued chemical material at the beginning of the maneuver. The 66th Chemical Company (Depot) (ComZ) operated the 3d ASCOM Chemical Depot in support of about one hundred thousand troops and received excellent if sporadic training. Actually the unit operated more as a field depot company than as a rear area unit. As for individual equipment in the maneuver, the troops brought their own protective masks and simulated the use of protective clothing. (UNCLASSIFIED)

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The chemical section of HMD considered the chemical troop list for FLASH BURN to be adequate and well chosen. Reports indicated, however, a serious need for more thorough training and particularly for integrated CBR actions in unit training. Deficiencies most commonly noted were improper use of the protective mask and failure to decontaminate or destroy equipment and food following the use of persistent agents. In respect to training aids, a need was felt for more chemical simulants which would produce some physiological effect upon the individual. Such simulants would heighten realism and increase training effectiveness. (CONFIDENTIAL)

Chemical officer, HMD, and other observers emphasized the need for participation by chemical officers in all premaneuver planning. Most unit umpire problems stemmed from a lack of basic understanding of CBR Warfare, and it was recommended that much more emphasis on CBR umpire procedures be given in umpire schools. Umpires not only lacked adequate training in umpiring techniques but instruction to the troops and adequate assessment of CBR action were frequently found wanting. ¹⁰⁶ (UNCLASSIFIED)

106

- (1) Technical Rpt on CBR Activities in Exercise FLASH BURN, Hq, Maneuver Director, n.d.
- (2) Ltr, Lt Col Charles S. Brice to CO CmlC Tng Cmd, 12 May 54, sub: Report of TDX.
- (3) Intervs, Hist O, OCCmlO with Maj William R. Wiseman and Capt Elmore Browne, 100th Chemical Group (ComZ).

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Exercise SPEAR HEAD

SPEAR HEAD was a smaller maneuver played by the 1st Armored Division at Fort Hood, Texas, from 3-19 May 1954. In addition to the 1st Armored there were two paper divisions participating, the 39th and 95th Infantry Divisions. Three chemical units came from Fort McClellan and a fourth came down from Rocky Mountain Arsenal at Denver, Colorado. ¹⁰⁷ The maneuver was fairly successful, but CBR warfare did not play as important a role as in FLASH BURN. The CBR objectives were (1) to test standards of proficiency, (2) to subject units and individuals to conditions of CBR warfare, and (3) to determine whether individuals and units could continue normal missions with a minimum loss of effectiveness. The maneuver included armored combat command problems with emphasis on night operations and close tactical air support. A special feature of the maneuver from the Chemical Corps point of view was the use of high performance aircraft to fly spray missions with simulated agents. F86F fighters with M-10 modified spray tanks came in over the troop targets at about three hundred miles an hour, sprayed them with

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The Chemical Corps units from Fort McClellan were the 477th Cml Bn, 62d Cml Co (SG), and 17th Cml Tech Intel Det, while the 216th Cml Svc Plat (Prov) came from RMA. Lt Col Charles A Cain served as chemical officer on the maneuver director's staff.

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simulated toxic agents, and then returned to strafe the troops while
the latter busied themselves seeking protection from the chemical
108
spray. ()

Exercise TOP HAT

Chemical Corps Training Command conducted Exercise TOP HAT at Fort McClellan from 15-29 September 1953. This was an all-Chemical Corps exercise with the exception of an Engineer unit. Originally scheduled for Dugway Proving Ground in April 1953, the exercise was rescheduled because of personnel shortages in participating units. The postponement and move to McClellan led to a cut in funds from \$370,000 to \$92,000, and safety limitations as well as restricted terrain further reduced the scope of the exercises. Initially the objectives of the exercise had been to provide training for units and individuals in decontamination following chemical or biological attack and to develop and test decontamination doctrine. So much money and time had been expended by the Chemical Corps that it was decided to continue the exercise on the assumption that training benefits alone would justify it. As a result, instead of developing and testing doctrine, the exercise was considered as primarily a local field exercise. TOP HAT included exercises in BW decontamination, mustard gas decontamination, and nerve gas decontamination. (UNCLASSIFIED)

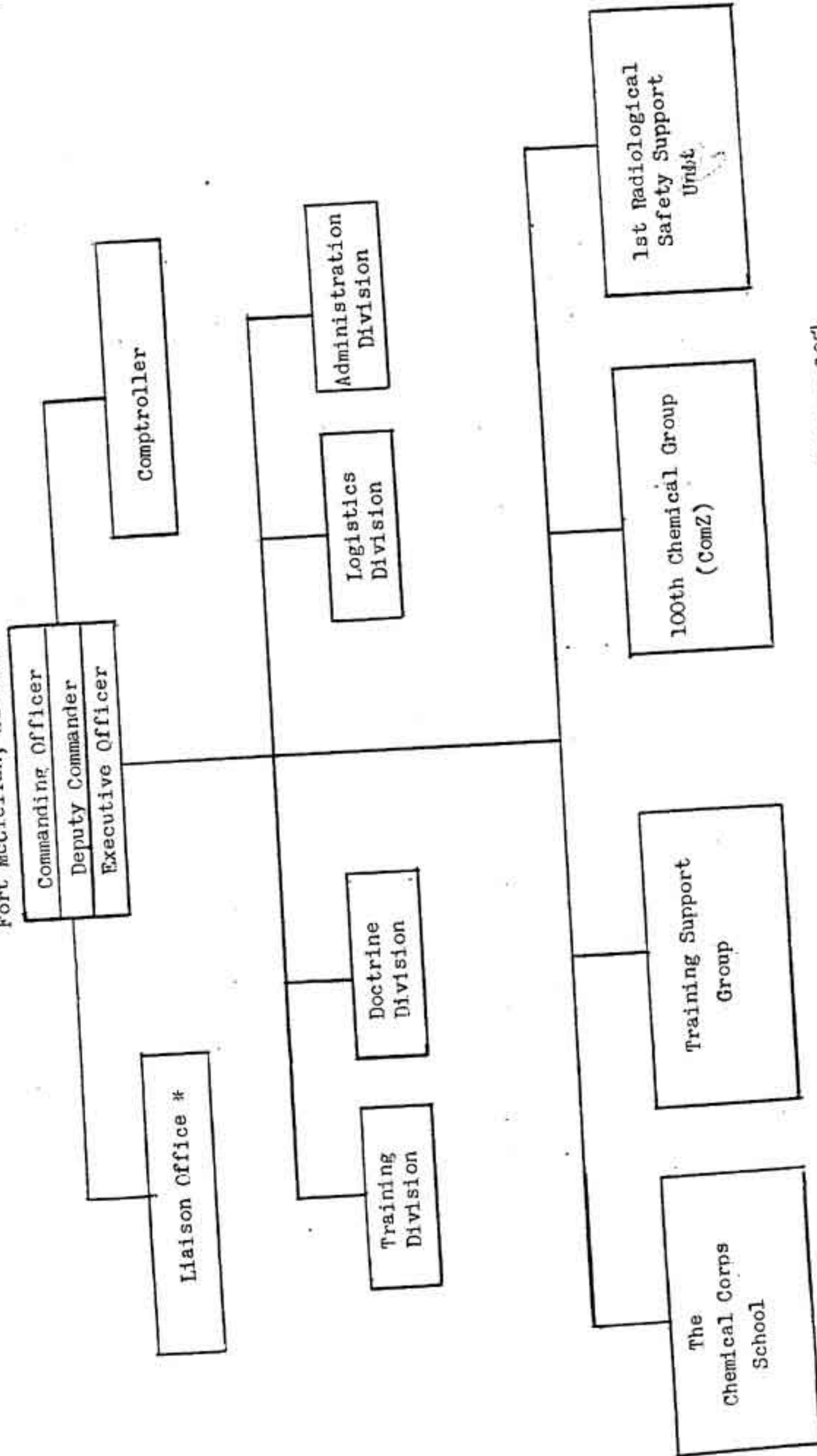
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108
Rpt, Exercise SPEAR HEAD, Fort Hood Texas, 3-19 May 1954.

109
Memo, Actg C P&I Div for CCm10, 21 May 54, sub: Report of Exercise TOP HAT.

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CHEMICAL CORPS TRAINING COMMAND
Fort McClellan, Alabama



30 June 1954

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Chart 4

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*Located at Army Chemical Center, Md.

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Commanders' CW-BW Orientation Team

Under Department of the Army auspices a team organized and trained by the Chemical Corps Training Command made presentations of information on chemical and biological warfare to the U.S. commanders all over the world. After a presentation to Army Field Forces and Norfolk-Navy the Team toured European Command, returned to the United States to make presentations to CONUS Armies, Army and Navy schools, and then to the Far East. Presentations in the Caribbean area in early June 1954 wound up the Team's activities under DA sponsorship, but Training Command was directed to maintain a capability of making such presentations in the United States. ¹¹⁰
(UNCLASSIFIED)

Chemical Corps Training Command

Headquarters, Chemical Corps Training Command, supervised and coordinated the activities of the Chemical Corps School, 100th Chemical Group (ComZ), 1st Radiological Safety Support Unit, and Training Support Group during FY 1954. The last-named organization was created in FY 1954 after Brig. Gen. (then Colonel) John R. Burns, the commanding officer of Chemical Corps Training Command, suggested the formation of a support group which would have the mission of rendering administrative and logistical support to all elements of Training Command except T/O&E units. As originally

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For further details see Final Rpt, Joint Army-Navy Commanders' CW-BW Orientation Team (TS), Feb 52 - Jul 54.

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planned, the new organization was to have required inactivation of the 1st Radiological Safety Support Unit (1st RSSU) and Composite Troop Unit as separate T/D organizations. Since the 1st RSSU had been organized to meet requirements outside the Chemical Corps, and since its T/D had been carefully coordinated with AFSWP, Joint Task Force 7, and the General Staff, it was agreed to maintain its integrity. The proposed organization had the strong personal support of the commanding officer of Training Command, and it was felt by the OC Cml O that it would be more effective than the earlier setup. In addition, the new plan was considered to follow sound management principles and to save personnel spaces. Plans, Training, and Intelligence Division, OC Cml O, did fear numerous administrative difficulties might arise from placing the Chemical Corps School and a support group in the same echelon but suggested that the difficulties might be lessened if the commanding officer of Training Command were also made Commandant of the School. ¹¹¹ (UNCLASSIFIED)

With the approval of General Bullene, Special Troops (Provisional) was organized on 14 August 1953 and officially designated ¹¹² as the Chemical Corps Training Support Group in October. The new

¹¹¹
Ltr, C PT&I Div to CCmlO, 12 Aug 53, sub: Report of Official Travel.

¹¹²
OCCmlO CO 22, 16 Oct 53.

UNCLASSIFIED

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organization consisted of a Headquarters and Headquarters Company, Companies A, B, C, and D, a Leadership Company, and a Demonstration Company. Companies A through D were holding companies for overhead personnel and student officers and enlisted men. The Group provided logistical and service support for all elements except T/O&E units and training support for all units of the Command. (UNCLASSIFIED)

Most of the support (about 90 per cent) went to the Chemical Corps School. As anticipated, administrative difficulties developed in connection with relations of Training Support Group to other elements of Chemical Corps Training Command, but this was considered normal to any new organization.¹¹³ Aside from these administrative difficulties, regarded by the commanding officer as small and local, the main problem of TSG was felt to be personnel. Whereas enlisted personnel assigned to the Chemical Corps School were stabilized in their assignments for six months, those in TSG had no such assurance. As a result, the great turnover of enlisted personnel was considered to have affected the training support provided the School.¹¹⁴ TSG therefore requested a stabilization plan. (UNCLASSIFIED)

113

Interv, Hist O, OCCm10 with Col John R. Burns, CO Cml C Tng Cmd, 29 Jun 54.

114

Interv, Hist O, OCCm10 with Col Thomas H. James, CO Cml C TSG, 30 Jun 54.

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The personnel problem was not confined to TSG but was characteristic of all Training Command activities. While the Command lacked only 13 percent of authorized officer strength and hence was better off than such commands as Research and Engineering, which was 43 percent understrength, much of this strength was in junior grades due to circumstances beyond control of the Chemical Corps - early release program for non-regular officers, early retirement of senior officers, expiration of categories, etc., plus the fact that there was practically no replacement programs except OCS and ROTC graduates in grade of 2d lieutenant.¹¹⁵ The combination of a shortage of officer personnel in appropriate grades with a large turnover was felt in most activities under Chemical Corps Training Command. Training Support Group perhaps suffered the most from the shortage, of seven authorized field grade officers, there was only one. The 100th Chemical Group was authorized 19 field grade officers and had but seven or 36.3 per cent. The Chemical Corps School, while it had a total shortage of only 11 officers out of 125, was short 36 officers of field grade. The entire problem was a reflection of the officer personnel problem of the Chemical Corps and Department of the Army. (L)

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(1) See Appendix A.

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An attempt by Chemical Corps Training Command to assume full responsibility for the training of Chemical Corps USAR unit summer training failed in FY 1954. In October 1953 the Chief Chemical Officer recommended to OC AFF that necessary provisions be inserted in the directive for USAR training to permit the commanding general of Third Army to delegate full responsibility for summer field training to the commanding officer of Training Command and provide for normal logistical support by the commanding officer of Fort McClellan. In 1953 Training Command had supported the training of Chemical Corps USAR units but did not consider the arrangement satisfactory from a command standpoint. On one hand, the commanding officer of Fort McClellan had the responsibility but lacked technical capability and facilities to perform the training; on the other hand, Chemical Corps Training Command lacked authority to supervise the program and coordinate it with its own training mission to insure that it did not exceed the support capability of the Command.¹¹⁶ While the C AFF approved the Chemical Corps proposal and authorized the commanding general of Third Army to delegate full responsibility, the latter preferred to retain responsibility and informed the Chemical Corps that it should furnish training support only.¹¹⁷ ~~CONFIDENTIAL~~

¹¹⁶

Ltr, C Cml O to OC AFF, 16 Oct 53, sub: Summer Training of USAR Units.

¹¹⁷

(1) 1st Ind, C AFF to C Cml O, 6 Nov 53, and 2d Ind to CG Third Army, 18 Nov 53.
(2) Ltr, OCCmIO to CO Cml C Tng Comd, 29 Dec 53, sub: Summer Training of USAR Units.

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In order to capitalize on experience gained by Chemical Corps staff officers, it was proposed by the President of the Chemical Corps Board to hold a series of conferences of officers who served in such capacities during World War II or the Korean campaigns under the sponsorship of Training Command. It was hoped that during such conferences the common problems of these officers would emerge to provide a basis for recommendations which would serve as guide lines for the future.¹¹⁸ (UNCLASSIFIED)

Liaison with friendly nations was maintained in several different ways during FY 1954 by Chemical Corps Training Command. Officers of such foreign nations as Denmark, Brazil, Egypt, Thailand, and Argentina attended courses at the Chemical Corps School. The Chief Chemical Officer directed that certain publications should be exchanged by the Chemical Corps School with the British Joint School of Chemical Warfare on the grounds that such exchange would be beneficial to both and could possibly lead to standardization of important doctrine and procedures.¹¹⁹

In May 1954 the OC Cml O informed Training Command that the Secretary of Defense, Mr. Charles E. Wilson, had approved a Canadian request for assistance in radiological defense training and that the State Department

118

1st Ind, OCCmlO to CO Cml C Tng Comd, 22 Jun 54, sub: The Chemical Staff Officer.

119

Ltr, OCCmlO to CO Cml C Tng Comd, 30 Dec 53, sub: Exchange of Information, U.S. and U.K.

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and Atomic Energy Commission concurred. Department of the Army directed the Chemical Corps to monitor the training which consisted of two phases. One part included training in the Chemical Corps School and/or the 1st RSSU. The second phase consisted of field training at Nevada Proving Ground utilizing areas of high radiation levels and was scheduled to take place during the next atomic test series.¹²⁰ ()

An important step by the Chemical Corps in FY 1954 was that of securing approval for the concept of a new symbol and marking system for CBR agents from Department of the Army.¹²¹ The OC Cml O directed Chemical Corps Technical Committee action to formalize its approval by all interested agencies. It was anticipated that adoption of the new system would create such publications requirements as a training circular for initial dissemination, revision of GTA 3-6, "Markings of U.S. Chemical Munitions," and revision of all appropriate manuals. Only preparation of the Training Circular was planned for FY 1954, pending DA approval. ()

By 1 July 1954 construction of the new Chemical Corps Training Command facilities at Fort McClellan was approximately 89 per cent

120

Ltr, OCCmlO to CO Cml C Tng Comd, 27 May 54, sub: Radiological Defense Training in Canada.

121

Ltr, OCCmlO to CO Cml C Tng Comd, 24 Nov 53, sub: Training Circular on Revision of Nomenclature and Symbols for CBR Agents.

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complete, and it was planned that the School would move into its splendid new quarters in August 1954, with movement of Headquarters, Training Command, and the Training Support Group following that of the School. This new construction consisted of twenty-seven buildings including the Chemical Corps School, Chemical Corps Training Command, two 500-man barracks, a Radiological Defense Laboratory, and Field Instruction Classrooms. Total cost was estimated to be about seven million dollars. (UNCLASSIFIED)

A ground-breaking ceremony was held on 15 June 1954 at the site of a Wherry Housing Project to be known as the Quintard Terrace Apartments. Construction of this housing was to relieve the serious shortage of adequate housing at Fort McClellan. Training Command anticipated that the first unit would be ready for occupancy by 1 November 1954. (UNCLASSIFIED)

Doctrine

Prior to August 1952 the Doctrine Board of the Chemical Corps operated on an ad hoc basis and was largely composed of personnel of the Chemical Corps School. In 1952 the Chief Chemical Officer, Maj. Gen. E.F. Bullene, realizing that difficulties were being met in the establishment of doctrine, directed Chemical Corps Training Command to establish the Doctrine Board on a permanent basis. The new Board had a staff and functioned on an operational basis. As such, it gained the power to make decisions for and in the name of the commanding officer of Training Command. The Board then branched

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out and made contacts with outside agencies, and from August 1952 to June 1954 held 122 meetings. (UNCLASSIFIED)

As the structure and mission of Doctrine Board crystallized, its status in relation to the approval of doctrine came to require redefinition. From 1 November 1953 to 13 January 1954 it was known as the Office of CBR Doctrine and thereafter as Doctrine Division of Chemical Corps Training Command. Under the new arrangement Doctrine Division operated as a staff agency of Training Command and as such approved doctrine for the commanding officer of Training Command, but it did not finally approve Chemical Corps doctrine. After January 1954 doctrine approved by Doctrine Division went to the Chemical Corps Board (of which the Chief of Doctrine Division was made a permanent member) which was given the basic responsibility for doctrine. After study the Chemical Corps Board submitted the doctrine to the Chief Chemical Officer for final approval. If accepted by the Chief Chemical Officer the doctrine was then published as a report or study by the Chemical Corps Board. The processing procedures and responsibilities of Doctrine Division for training literature were left unchanged except for provision that final drafts should be submitted through the Chemical Corps Board. Training Command was to continue to review, evaluate, and disseminate technical reports, and items of doctrinal interest were to be forwarded to the Board for further action. (UNCLASSIFIED)

When first organized, the Doctrine Board concentrated on the field and technical manual program and held yearly conferences to

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draw up a publications schedule. At the conference held in January 1954, the participants examined all published Chemical Corps manuals and areas of Chemical Corps activity to determine if the coverage was adequate and up to date. The conference then recommended a publications program for FY 1955 and considered one for FY 1956.¹²²
(UNCLASSIFIED)

During the latter part of FY 1954 Doctrine Division began to increase its efforts in other programs. One of these was guidance to Chemical Corps Research and Engineering Command on end items, and an aspect of this guidance was participation in the Tripartite Conferences. Recently the Division established a program of doctrinal guidance for the Chemical Corps School. In this the Division and the Staff and Faculty of the School held monthly meetings at which they discussed technical items, resolved procedures based on new technical data, and attempted to bring all phases of instruction into agreement.
(UNCLASSIFIED)

One of the most worthwhile projects of Doctrine Division in FY 1954 was considered to be initiation of a new classified periodical designed to acquaint Chemical Corps officers in the field with information which might be of assistance to them.¹²³ This was the Quarterly CBR Digest, the first issue of which appeared on 30 March 1954. The

¹²²

Interv, Hist O, OCC-10 with Col Donald Yanka, C Doct Div.,
30 Jun 54.

¹²³

Yanka interv.

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Digest included valuable gleanings from technical publications, together with an interpretation by Doctrine Division, new doctrine, information of doctrinal implications, new training procedures, and information on recently published manuals. The Chemical Corps provided the Digest to Chemical Corps staff officers at other service schools, chemical sections of CONUS Armies, and chemical officers overseas. Before publication a draft copy of the Digest was forwarded through the Chemical Corps Board to the Chief Chemical Officer for approval.¹²⁴ (UNCLASSIFIED)

The principal problem facing Doctrine Division was that of attracting qualified civilian scientists. Requirements demand that the employees be scientists in specialized fields and have had some military experience.¹²⁵ (UNCLASSIFIED)

124

2d Ind, OCCm10 to CO Cml C Tng Comd, thru Pres Cml C Bd, 14 Apr 54, on Basic Ltr, 5 Jan 54. Copy of Digest attached as Appendix C.

125

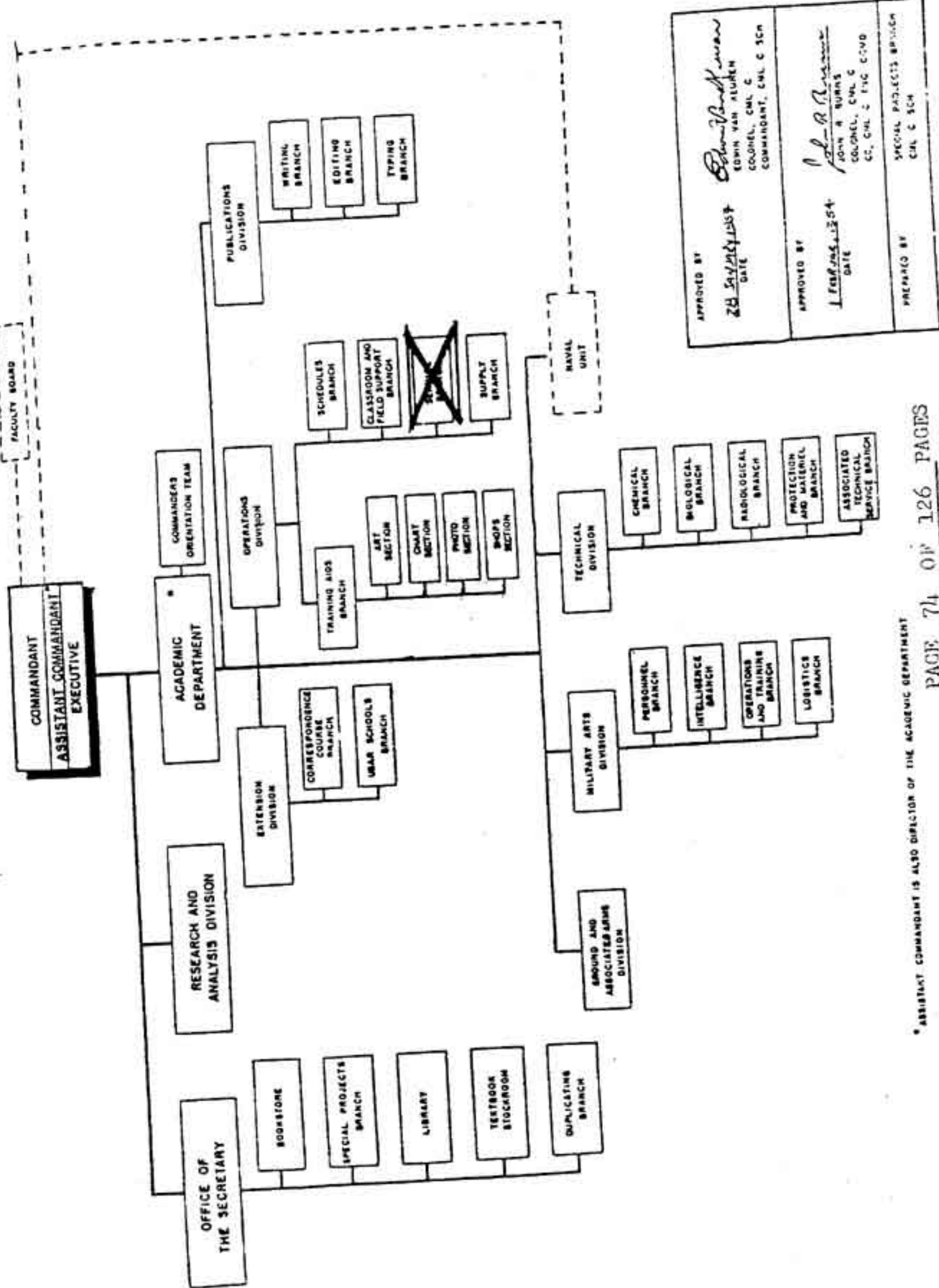
Yanka interv.

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The Chemical Corps School

The fountainhead of knowledge in the Chemical Corps might be considered to be the Chemical Corps School. Here officers from all branches of service received CBR training as required. The School constituted the major activity operating under Chemical Corps Training Command and had a staff and faculty of 111 officers, 63 enlisted men, and 118 civilians at the close of the fiscal year. While these figures were close to the authorized strength of the School there was a dearth of experienced, field grade officers, and an abundance of second lieutenants which was out of line with the approved T/D. This imbalance was not thought by Training Command to have affected the School's performance adversely, for the School was considered to have done a fine job.¹²⁶ (UNCLASSIFIED)

A reorganization of the Chemical Corps School in July 1953 resulted in redesignation of divisions as departments and branches as divisions. Research and Analysis Division was placed directly under the commandant so that suggested improvements might be brought to his attention immediately without passing through other echelons. During the year Research and Analysis Division became responsible for review and approval of non-resident lesson plans and examinations as well as the resident courses. This change eliminated conflicting instruction in the two types of courses. A further reorganization of the School in January 1954 saw Publications Department become a

¹²⁶

Burns interview.

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division under the Academic Department, while Extension Course Branch became a division, and an Operations Division, consisting of Training Aids, Schedules, Classroom and Field Support, Service and Supply Branches, was created. Service Branch was deleted later as a result of a manpower survey. (UNCLASSIFIED)

In FY 1954 the Chemical Corps School ran nineteen courses for a total of 89 classes and graduated 1,022 officers and 1,687 enlisted men. Training of enlisted men resulted in 95.6 per cent of planned output but officer training reached only 67.1 per cent of planned output. The poorer showing in officer training resulted in large measures from low inputs to the CBR Officer Course, Atomic Defense Officer Course, and Navy ABCD (Shore) Officer Course in the 1st and 2d quarter. During the 3d and 4th quarters the courses were re-adjusted with 12 classes being canceled. Actual over-all performance was 454.6 student year equivalents or 80.6 per cent of the planned goal of 523. ¹²⁷ ~~CONFIDENTIAL~~

Inasmuch as Department of the Army planned to abolish technical service replacement training centers, in July 1953 the Chief Chemical Officer placed responsibility for training Replacement Stream Input (RSI) personnel upon the Chemical Corps School and training began on 20 August 1953. Meanwhile, the Chemical Corps Replacement

¹²⁷ Review and Analysis of Chemical Corps Program, 4th Qtr, FY 1954, Review and Analysis Br., OCCm10. Attached as Appendix A.

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Center was phased out and officially discontinued on 1 November 1953.¹²⁸ The discontinuance of the RTC did not have a drastic effect upon Training Command. It simply meant that replacements took eight weeks' basic training elsewhere and then attended the School for CBR instruction. (UNCLASSIFIED)

In September 1953 General Bullene directed the commanding officer of Chemical Corps Training Command to study courses at the School with a view toward making them more responsive to needs of the field. Salient points of this reorientation of training included:

1. Revision of the Advanced Course to include more realistic training. The revised purposes of the course to be:
 - a. Preparation of officers for attendance at C&GSC.
 - b. Qualification of officers as division, corps, and army chemical staff officers (MOS 7314).
2. Initiation of short technical courses in the fields of supply, procurement, and maintenance.
3. Revision of other courses as required by the above.

A new Program of Instruction (POI) for the Advanced Course was prepared by the School and scheduled for use by the Ninth Advanced Class..

¹²⁸

- (1) DA GO 69, 18 Sep 53.
- (2) OCCm10 GO 23, 4 Nov 53.
- (3) C 1, CCR 10-5, 4 Nov 53.

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This POI was in line with several significant letters sent from the OC Cml O during the year. The new POI was not so much a case of new material as of altered emphasis and re-emphasis of material in the earlier POI.¹²⁹ A POI for a Supply and Maintenance Course was developed, and in January 1954 the School was instructed to develop a POI for a course tailored to Chemical Corps needs to train selected officers as chemical procurement officers.¹³⁰ Supply training continued to be of importance, for the Assistant Chief of Staff (G-4) requested a review of officer courses for adequacy, and was informed that basic and advanced courses contained adequate instruction in parts and maintenance.¹³¹ At the same time, however, steps were taken to set up an officer course entitled "Supply and Maintenance" which would entail approximately two weeks on supply procedure and five on maintenance. Reports received by the Chief Chemical Officer from inspectors in the field indicated that a major cause of

¹²⁹ Interv, Hist O, OCCmLO with Mr. Delbert Flint, PT&I Div, 11 Aug 54.

¹³⁰ Ltr, OCCmLO to CO Cml C Tng Cmd, 7 Jan 54, sub: Reorientation of Training at the Chemical Corps School.

¹³¹ DF, Cmt #2, OCCmLO to ACoFS (G-4), 4 Feb 54, sub: Repair Parts and Maintenance Program.

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inadequate maintenance was lack of proper command supervision.¹³²
Students attending the course would be those assigned to supply
and maintenance positions or whose contemplated assignments were
to such positions. (UNCLASSIFIED)

A major activity of the Chemical Corps School, in conjunction
with Doctrine Division of Training Command, and under staff super-
vision of Training Branch, Plans, Training and Intelligence Division,
OC Cml O, was the writing and preparation of such publications as
field manuals, technical manuals, and graphic training aids. In
FY 1954 Publications Division turned out its program for the year
in the allotted time, a program including twelve field manuals,
four technical manuals, and seven graphic training aids. By December
1954 it was expected that all manuals would be of at least as recent
date as 1952. Including equipment manuals, which were the responsi-
bility of Chemical Corps Engineering Agency, completion of some
fifty manuals was expected by December 1954. In addition to the
scheduled program, Publications Division handled some sixty extra
items ranging from supply manuals to review of work of either tech-
nical services.¹³³ (UNCLASSIFIED)

¹³²

General Bullene therefore sent letters to the field commands of
the Chemical Corps and to chemical officers of major commands,
here and abroad, emphasizing the need for continuing supervision
and training in the maintenance of equipment.

¹³³

Interv, Hist O, OCCmLO with Lt Col Edmundo Escudero, AC Pub Div,
28 Jun 54.

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All such Chemical Corps publications were under staff supervision of Training Branch, OC Cml O, which forwarded completed items to OC AFF for approval and to The Adjutant General for publication. Publication of the very important FM 21-40, "Defense Against CBR Attack," was held up for some time by differences with OC AFF. The principal problems involved conflicting instructions on the use of atropine as an antidote for nerve gases and the decision on the CBR structure of the Army.¹³⁴ The Chief of Staff settled the latter question and a conference at Fort Monroe in February 1954 resolved the final problems on instructions to be contained in all manuals dealing with the use of atropine. A total of eight field manuals, three technical manuals, nine graphic training aids, and one training film were published in FY 1954 by TAG. These included FM 3-5, "Tactics and Techniques of Chemical, Biological, and Radiological Warfare," FM 21-41, "Soldiers Manual for Defense Against CBR Attack", TM 3-350, "CBR Protective Shelter," GTA 3-2, "Things to do in a CBR Attack," GTA 3-6, "Markings for Chemical Munitions," and TF 3-1755, "Chemical Decontamination Company."¹³⁵ (UNCLASSIFIED)

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See above, pp. 46-51.

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Interv, Hist O, OCCmlO with Mr. Seymour Waxman, Tng Br, OCCmlO, 11 Aug 54.

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During FY 1954 several manuals were downgraded to UNCLASSIFIED at the request of the Office of Civilian Defense. These included FM 21-40, FM 21-41, and TM 3-320, "Decontamination". The question of classification also arose in connection with FM 3-5, where the inclusion of CONFIDENTIAL information on radiological warfare was questioned because of the existing controversy as to ability to employ such agents effectively and economically. The Chemical Corps recommended inclusion as the basic principles of CBR would thus be in one volume, comparable information on RW was unavailable in other manuals, and the principles of employment were still applicable. The manual was eventually published under the classification, "FOR OFFICIAL USE ONLY."¹³⁶ ~~CONFIDENTIAL~~)

An annual activity of the Chemical Corps School is participation in LOGEX, a logistical map exercise conducted for the purpose of providing training for students of Branch Advanced Courses of Technical and Administrative Service Schools. About 1,500 officers participate annually. (UNCLASSIFIED)

LOGEX-54 was sponsored by the Signal Corps and conducted at Camp Pickett, Virginia, from 3-8 May 1954. Students from the Eighth Advanced Class at the Chemical Corps School traveled to Camp Pickett from Fort McClellan in order to take part in the exercise. It was felt by the Chemical Corps School that the purpose of LOGEX-54 was accomplished in an outstanding manner and that many lessons were learned through coordination with other services. No major deficiencies in doctrine were

¹³⁶
(1) Memo, Tng Br to C Cml O, 3 Nov 53.
(2) Ltr, OCCmlG to TAG thru OC AFF, 26 Feb 54, sub: Transmittal of Manuscript of FM 3-5...for Publication.

~~CONFIDENTIAL~~

UNCLASSIFIED

noted and the basic situation was considered sound and realistic. LOGEX-54 dealt with an American army in an invasion of southern France against AGGRESSOR forces, to take place in conjunction with a breakout in northern France. The whole situation resembled that in August 1944 when the U. S. Seventh Army landed in southern France while the Allied troops under General Eisenhower were breaking out of Normandy. However, the capabilities given to AGGRESSOR in LOGEX-54 were much higher than those possessed by the Germans in 1944. (UNCLASSIFIED)

The Chemical Corps School recommended that employment of both persistent and non-persistent casualty gases be included in future scenarios, that the Maneuver Director's Planning Staff study the feasibility of injecting more realistic maintenance play into future exercises, the orientation of control umpires be specific and be presented by the Planning Staff who also would be familiar both with its content and intended use. The School suggested that procedures for area damage control as taught at Command and General Staff College and published in TC 5, 5 March 1953, be adopted as doctrine for all LOGEX participants. 137
(UNCLASSIFIED)

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- (1) LOGEX-54, five volumes.
- (2) Ltr, Comdt, Cml C School to Maneuver Director LOGEX-54, 14 May 54, sub: The Cml C Sch Rpt on LOGEX-54.

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The Medical Corps is to be sponsor of LOGEX-55 and in 1956 the Chemical Corps will be sponsor. Funds will be allotted by OC AFF and planning done at Fort McClellan, but the site of the maneuver is undetermined.¹³⁸ In April 1954 the commanding officer of Training Command was notified of his appointment as Maneuver Director for LOGEX-56.¹³⁹ (UNCLASSIFIED)

100th Chemical Group (Communications Zone)

The largest T/O&E organization under the control of the Chief Chemical Officer, the 100th Chemical Group (ComZ) was located at Fort McClellan, during FY 1954. This organization was activated in August 1952 in order to control chemical T/O&E units at Fort McClellan, and is now a General Reserve unit concerned primarily with training of subordinate units. The Group also assisted the School in handling peak training loads as well as providing support for training Army Reserve and ROTC units.¹⁴⁰ (UNCLASSIFIED)

¹³⁸
Ltr, OC AFF to C Cml O, 10 Feb 54, sub: LOGEX-56.

¹³⁹
Ltr, OCCmLO to CO Cml C Tng Comd, 15 Apr 54, sub: LOGEX-56.

¹⁴⁰
Interv, Hist O, OCCmLO with Col David C. Hester, CO 100th Cml Gp (ComZ), 30 Jun and 2 Jul 54. The Hq & Hq Det, 100th Cml Gp has the battle honors and lineage of the 100th Cml Mortar Bn.

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During FY 1954 the 100th Chemical Group included sixteen units: three chemical service battalions, one smoke generator battalion, two smoke generator companies, three depot companies, two maintenance companies, two processing companies, one decontamination company, and two technical intelligence detachments. All these units underwent post-cycle training and, in addition, a number of them participated in Exercises FLASH BURN and SPEAR HEAD. The size of the 100th Chemical Group was further increased by a directive in June 1954 which ordered activation of the 74th Chemical Company (Smoke Generator) and 30th Chemical Company (Decontamination), effective 1 July 1954.¹⁴¹ (UNCLASSIFIED)

One of the biggest problems of the 100th Chemical Group in FY 1954 was that of obtaining and maintaining a nucleus of competent NCO's. However, by the end of the fiscal year a better caliber of enlisted men was being assigned, including some fine soldiers from overseas.¹⁴² (UNCLASSIFIED)

1st Radiological Safety Support Unit

The 1st RSSU is a T/D unit organized 1 July 1954 to provide radiological safety support to Nevada Proving Ground (NPG) of AFSWP during both testing and non-testing periods and to Joint Task Force 7

¹⁴¹

GO 24, Hq Cml C Tng Comd, 22 Jun 54, effective 1 Jul 54.

¹⁴²

Interv, Hist O, OCCmLO with Col David C. Hester, CO 100th Cml Gp (ComZ), 30 Jun and 2 Jul 54.

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during testing periods at Pacific Proving Ground.¹⁴³ The unit was divided into an operations platoon and a logistics platoon, and at the close of FY 1954 had a strength of 10 officers and 78 enlisted men out of an authorized strength of 15 officers and 100 enlisted men. (UNCLASSIFIED)

During FY 1954 three officers and twenty-six enlisted men went on Operation CASTLE at Pacific Proving Ground (PPG) and took part in the testing of the hydrogen bombs. Another group of one officer and a dozen enlisted men were on TDY at NPG supporting AFSWP interim operations. The remainder of the unit continued at Fort McClellan, completed Chemical Corps Training Command Program No. 1, and went into post-cycle training. (UNCLASSIFIED)

¹⁴³

- (1) GO 14, OCCm10, 1 Jul 53.
- (2) T/D 03-9778-07, 1 Jan 54.

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Intelligence ¹⁴⁴

In addition to providing staff advice to the Chief Chemical Officer on intelligence matters, Intelligence Branch, Plans, Training and Intelligence Division of the OC Cml O evaluated and disseminated intelligence to other elements of the Chemical Corps, Department of the Army, and through the Assistant Chief of Staff (G-2) to other branches of the government. Counter-Intelligence Section of Intelligence Branch had responsibility for personnel clearances, review of articles, speeches, and scientific papers for publication, processing of visits here and abroad, and supervision of security measures throughout the Chemical Corps. (UNCLASSIFIED)

Production and Dissemination

The positive side of the intelligence picture during FY 1954 dealt with evaluation of raw intelligence and the eventual filing or dissemination to interested agencies. One or more representatives sat on the G-2 Reading Panel which screened all intelligence material received by G-2. Intelligence information also came from chemical staff officers and chemical technical intelligence detachments overseas. (UNCLASSIFIED)

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Except where otherwise cited, information in this section is taken from Intelligence Branch, Quarterly Activity Reports for FY 1954 and from interviews, Hist O, OCCmlO, with Lt Col Frank L. Schaf, Jr., Branch Chief, Maj Joseph Hiett, Maj Roy E. Branson, Maj Paul J. Walsh, Maj Ralph F. Lounsberry, and Mr. Ektar Arico.

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A major problem in the collection of CBR intelligence was lack of training and/or interest on the part of those engaged in collection. Few posts as military attache go to Chemical Corps officers, but during the year the branch briefed military attaches departing for such countries as Egypt, Libya, Turkey, Iraq, and French Morocco on CBR intelligence needs. In order to ease this collection problem the ACoFS (G-2) made \$8,400 available to the Chemical Corps for preparation and publication of nine Chemical Corps Collection Guide Handbooks which were to describe and illustrate CBR weapons and equipment of interest to the Corps. The 390th Chemical Laboratory and the 51st and 52d Chemical Technical Intelligence Detachments were assigned the task of preparation of these guides in addition to their work in exploitation of enemy materiel. Intelligence Branch furnished the units with outlines for the guides. The intention was not to picture the weapons of any one country but rather to have illustrations which would reveal the basic concepts of the weapon, in other words, a composite picture. Upon completion the guides were to be distributed by G-2. ~~(CONFIDENTIAL)~~

Reports received during FY 1954 of a new Soviet mobile flame thrower led the branch to initiate a determined collection effort in order to obtain complete physical and operational data. Little new Soviet chemical warfare material has been reported since World War II, and successful collection of information on this flame thrower would be a valuable contribution. ~~(CONFIDENTIAL)~~

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During May and June of 1954 reports of drastic changes in Soviet basic tactical doctrine reached Intelligence Branch. The new doctrine called for use of the extended line of attack rather than the mass attack because of the introduction of nuclear weapons. It was reported that for this reason a Soviet requirement existed for equipping each soldier with a gas mask and protective clothing against radiation. (██████████)

The discovery by an Allied intelligence agency that Soviet school children were receiving training in the use and care of protective masks and clothing spurred a specific request for information and samples of gas protective overalls and rubber boots. (██████████)

Among the duties of Intelligence Branch was the production of the necessary intelligence for preparation of National Intelligence Surveys (NIS) as the Chemical Corps was responsible for those sections of the NIS dealing with CBR warfare. In FY 1954 appropriate sections of the NIS on the countries of Afghanistan, Albania, British Indonesia, Bulgaria, Egypt, Indo-China, Hungary, Poland, the United Kingdom, and Yugoslavia were forwarded to G-2. (██████████)

At the same time a compilation of three estimates on the Soviet Union was completed, including studies of Soviet military doctrine dealing with offensive employment of chemical warfare, defense against chemical and biological warfare, and the employment of smoke. The Chemical Corps Board was given the task of enlarging

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upon these studies from further intelligence supplied by the branch. The studies were made in order to discover any vulnerability in enemy doctrine which could be exploited by American research, training, or doctrine. ~~(CONFIDENTIAL)~~

Intelligence Branch also initiated a series of special studies of which the first, entitled "Soviet Protective Shelters," was published and distributed in February 1954.¹⁴⁵ Other publications included the Annual CBR Estimate, Intelligence Review, and Foreign Materiel Evaluation Reports. ~~(CONFIDENTIAL)~~

From the technical intelligence point of view a most important proposal was made during the year in the draft of SR 11-10-50 entitled "Army Programs, Execution and Review and Analysis of the Intelligence Program (Army Program No.5)" This proposed regulation spelled out, for the first time, the detailed responsibilities of the technical services in the field of intelligence. In effect, it would place greater and wider responsibilities upon the respective services. ~~(CONFIDENTIAL)~~

According to the regulation, the chief of each technical service would be charged with the production and maintenance of intelligence such as all logistical intelligence in consonance with his own technical service assignments, intelligence on the use of all material

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Intell Br Study No. 1, "Soviet Protective Shelters," 1 Feb 54.

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or tactics corresponding to his own functions, order of battle and training of type units including civilian organizations, and personal history and capabilities of individuals outstanding in the same field as his departmental mission.¹⁴⁶ Allocation of the necessary funds for execution of this program was to be arranged by G-2. Such action would relieve Intelligence Branch of its previous dependence on Research and Development Division, OC Cml O, on matters properly belonging to intelligence. (UNCLASSIFIED)

The SR did not have an easy time in winning approval. The principal problem with the publication of SR 11-10-50 was the struggle between G-2 and the technical services for responsibility for collection. The technical services have a lion's share in the production of information and wanted the same in the collection field, but ACofS (G-2) did not express any high regard for the technical service intelligence detachments which would perform much of the work. In February 1954 conferences held between personnel from the office of G-2 and intelligence personnel of the technical services discussed the scope of the mission of technical service intelligence detachments deployed overseas. Commenting upon a second draft of SR 11-10-50 in April 1954, the Chemical Corps emphasized the necessity for integrating these detachments into peacetime collection efforts as a part of the planned intelligence program. It was argued that since intelligence requirements were so highly specialized, only specially trained

¹⁴⁶
Draft, SR 11-10-50, 30 Oct 53.

~~CONFIDENTIAL~~

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technical service personnel, working as teams, could satisfy them. The proposal to assign individual technical service personnel to theater ACoFS (G-2) was considered unsatisfactory because of the probability that requirements not germane to the technical services would be imposed. At the end of the fiscal year the matter remained unsettled. ()

On 10 March 1954 the Chemical Corps held a conference at Chemical and Radiological Laboratories to discuss the feasibility of securing reliable intelligence on foreign chemical warfare agents from materials obtained in and around research and development areas, proving grounds, or production centers in foreign countries.¹⁴⁷ Another conference was held in the OC Cml O on 30 March 1954 to determine requirements of the biological warfare intelligence program and to outline measures to be taken by Intelligence Branch to fulfill the requirements. The discussions revealed that present BW information was so meagre that only the broadest estimates could be made. The conference therefore agreed that there existed a great need of detailed information concerning Soviet Union and satellite BW activities.

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It was decided that the Chemical Corps would divide its BW intelligence interests, needs, and responsibilities into three categories as a

¹⁴⁷

DF, DCCmlO to Hist Off, 3 Jun 54, sub: Summary List...

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basis for future organization of the BW intelligence effort. These were:

1. Information on which to make estimates of foreign BW capabilities.
2. Area vulnerability information to be used as a guide for the Chemical Corps BW research and development program.
3. Foreign scientific biological information to be used by Chemical Corps scientists to save research time and money, and for use of intelligence personnel to discover trends of research in foreign BW programs.

It was planned to make a joint effort in these categories by military, scientific, and technical personnel of Chemical Corps BW activities and Intelligence Branch. The closely knit effort was aimed at providing G-2 with better estimates and providing the research and development program with guidance. ~~CONFIDENTIAL~~

The first orientation of all intelligence analysts was held at Camp Detrick, Maryland, on 31 March - 1 April 1954. Analysts from CIA, Navy, Air Force, and MSA attended. Arrangements were made for furnishing a requesting agency with expert evaluation by the most expeditious means. (UNCLASSIFIED)

Counter-Intelligence

Counter-Intelligence Section of Intelligence Branch dealt with negative intelligence or the prevention of enemy collection of information about the American CBR program. Throughout FY 1954 national

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policy was that of tightening security checks, a policy which increased the section's work-load considerably. (UNCLASSIFIED)

A new standard for removal from government services was established by Executive Order No. 10450 and implemented by means of SR 620-220-1, "Civilian personnel - Security Investigations and Adjudications."¹⁴⁸ This order defined the scope of investigations for positions classified as "sensitive-critical", "sensitive-non-critical," and for non-sensitive positions. All positions GS-14 and above, including experts and consultants of equivalent standing, fell in the "sensitive-critical" category. Since the order called for reinvestigation of cases not meeting minimum standards, Intelligence Branch reviewed the files of all military and civilian personnel in OC Cml O. In view of additional requirements in the security field imposed by this order, and because of the acute shortage of trained security personnel available within the Technical Service, G-2 provided a limited number of trained officers as security support. These officers were placed under the operational control of the Chemical Corps but were not charged to its strength allotment.¹⁴⁹ The six officers furnished were assigned to security offices of Research and

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(1) EO No. 10450, 27 Apr 53.

(2) SR 620-220-1, 13 Dec 53.

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Interv Hist O, OCCmlO with Maj Ralph F. Lounsberry, 11 Aug 54.

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Engineering Command activities at Army Chemical Center, Maryland,
and to Intelligence Branch, OC Cml O. (~~CONFIDENTIAL~~)

Executive Order No. 10501 eliminated the RESTRICTED category
of classified information as well as the words SECURITY INFORMATION
on documents.¹⁵⁰ Intelligence Branch kept busy answering questions
on proper security classification of documents previously classified
RESTRICTED which, under the modified criteria, might qualify for
CONFIDENTIAL. The Branch estimated that this work took over 1100
man-hours. (UNCLASSIFIED)

In the execution of the various executive orders it was dis-
covered that accountability for certain documents within the Chemi-
cal Corps could not readily be established. The Chief Chemical
Officer directed that all installations take a complete inventory
of SECRET and TOP SECRET documents. Each activity was directed to
compile a list of overages as well as shortages, with a view to locating
misplaced documents.¹⁵¹ (UNCLASSIFIED)

Publication of Chemical Corps Regulation 30-7, largely relieved
Intelligence Branch of responsibility for industrial security and
placed responsibility for maintenance of an effective industrial
security program for all elements of the Corps in the hands of the

¹⁵⁰
EO No. 10501, 5 Nov 53 and DA Cir 127, 23 Dec 53.

¹⁵¹
Ltr, C Cml O to CG MATCOM et al, 20 Nov 53, sub: Safeguarding
Security Information.

~~CONFIDENTIAL~~

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commanding general of Chemical Corps Research and Engineering Command. The commanding officer of the Chemical Corps Research Procurement Agency (CCRPA) was charged with the execution.¹⁵² All requests for clearance of private contractor employees and/or industrial facilities go to CCRPA for processing, although Intelligence Branch retained liaison functions at Department of the Army and Department of Defense levels.
(UNCLASSIFIED)

390th Chemical Laboratory

In September 1953, the 390th Chemical Laboratory, a unit of the General Reserve stationed at Army Chemical Center, was placed under the direct supervision of the Chemical Corps Board for certain specific research problems relating to the employment of chemical agents. The work of the laboratory relative to the exploitation of foreign material continued under supervision of Intelligence Branch. An important acquisition during FY 1954 was a complete Chinese communist uniform including shoes, leggings, quilted trousers and jackets, underwear, and hats.¹⁵³ ~~_____~~

¹⁵²
CCR, 30-7, 30 Jul 53.

¹⁵³
These items were acquired at the request of Medical Laboratories for nerve gas penetration tests.
DF DCCm10 to Hist Off, 3 Jun 53, sub: Summary List...

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PROCUREMENT AND SUPPLY

Administration

Brigadier General Henry M. Black, Commanding General of Chemical Corps Materiel Command since its inception and previously Assistant Chief Chemical Officer for Materiel, retired in January 1954. Colonel Marshall Stubbs was placed in command of Materiel Command and Colonel Claude J. Merrill succeeded Colonel Harold Walmsley as Deputy Commander. Colonel Joseph F. Escude replaced Colonel Merrill as Chief, Materiel Division, OC Cml O.¹⁵⁴
(UNCLASSIFIED)

Organizational changes were made both in Materiel Division, OC Cml O, and Chemical Corps Materiel Command during the year. Materials and Inspection Branches, Materiel Division, in the Chief's Office, were abolished early in the fiscal year, and their functions transferred to Procurement and Supply Branches, respectively. This was done to avoid certain duplication of effort between those branches. This change resulted in improved efficiency and a small reduction in personnel.¹⁵⁵
(UNCLASSIFIED)

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See above, p.19.

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- (1) OCCm10 GO 16, 29 Jul 53.
- (2) Memo for Record, CMLWX-T, 14 May 54, Incl #5 to DF, Mr. O.R. Mullen, Mat Div, OCCm10 to Hist O, OCCm10, 11 Jun 54, sub: Annual Historical Report.
- (3) Interv, Hist O, OCCm10 with Mr. O.R. Mullen, Mat Div, OCCm10, 30 Apr 54.

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In Chemical Corps Materiel Command, Colonel Dominic J. Chiminello was appointed to the newly created position of Executive Officer in May. This position was created to relieve the Deputy Commander of routine administrative matters, and it was expected that approval will be given early in the next fiscal year for an organizational adjustment under which all administrative subordinates will report to the Commander through the Executive Officer. ¹⁵⁶ (UNCLASSIFIED)

The Chemical Corps Procurement District reorganization planned during FY 1953 went into effect on the first day of FY 1954. ¹⁵⁷ This reorganization, which made the Chicago Chemical Procurement District a sub-activity of Rocky Mountain Arsenal, the Dallas District a sub-activity of Pine Bluff Arsenal, and gave the New York District a mission as purchasing agent for Edgewood Arsenal, accomplished its major purpose. It gave the arsenal commanders control over all phases of procurement, production, planning and mobilization activities relating to their areas of responsibility, or, in other words, the re-organization consolidated operating responsibility for pertinent Chemical Corps portions of Army Primary Programs

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(1) Cml C MATCOM-SC 67, 3 May 54.

(2) Interv, Hist O, OCCm10 with Col Claude J. Merrill, Cml C MATCOM, 10 Mar 54.

(3) Interv, Hist O, OCCm10 with Lt Thomas L. Abrahams, Cml C MATCOM, 16 Jun 54.

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See Summary Report, FY 1953, pp. 57-58.

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Eight (Industrial Mobilization) and Nine (Current Procurement). Although no extensive study of this system was made, it appeared to be working well. (UNCLASSIFIED)

G-4 objected, however, to a triplicate procedural organization inherent in this procurement system. The Chicago Office existed for the support of Rocky Mountain Arsenal, and this office employed the same procedures that the Dallas office employed in support of Pine Bluff Arsenal and the New York District used, to a lesser extent, in support of Edgewood Arsenal. G-4 asked that the system be studied to see if greater economy could not be obtained by consolidating all procurement support of arsenals into one office. A study was made and a new Chemical Corps procurement organization was devised. ¹⁵⁸ (UNCLASSIFIED)

The reorganization of Chemical Corps procurement districts was scheduled to become effective 1 July 1954. Under the new plan there will be two major districts, three minor districts and a sub-office. No change in geographic area responsibilities will be made. Rocky Mountain Arsenal Procurement Office will again become

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This paragraph and the four following are derived from:

- (1) Interv, Hist O, OCCm10 with Colonel Marshall Stubbs, Cml C MATCOM, 10 Mar 54.
- (2) Interv, Hist O, OCCm10 with Maj Alvin H. Bowles and Mr. F.L. Nickle, Indus Div, Cml C MATCOM, 22 Jun 54.
- (3) Ltr, CMLMC-Z, Col Marshall Stubbs, CO, Cml C MATCOM to CO's Arsenals and Districts and Cml Supply O, Memphis Gnl Depot, 27 May 54, sub: Reorganization at Materiel Command Procurement Facilities.
- (4) OCCm10 GO 10, 24 June 1954.

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Chicago Chemical Procurement District. This office will be responsible for the procurement of all production materials and components to be used by the three arsenals. The Chicago office will also handle industrial mobilization, inspection, security and other administrative matters pertaining to its principal mission. New York Chemical Procurement District will retain its designation and its mission of procuring end items and commercial chemicals, but all responsibilities with respect to Edgewood Arsenal will be transferred to Chicago, and all but concurrent spare parts procurement will be handled by a newly activated agency, a Spare Parts Procurement Division in the Chemical Supply section, Memphis General Depot. 159
New York and Chicago districts and the Spare Parts Procurement Division will handle most of the active procurement in the Chemical Corps.

(UNCLASSIFIED)

Under the new organization, Pine Bluff Arsenal Procurement Office will revert to the designation Dallas Chemical Procurement District, and, like the San Francisco and Atlanta Districts, its activities will be confined to industrial mobilization planning, services such as pre-award surveys, security and inspection for contracts let by the active districts within their areas, and selected item procurement assigned by Chemical Corps Materiel Command for training purposes. Boston sub-office of New York Chemical

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- (1) "Concurrent" spare parts procurement is that handled concurrently with the purchase of end items new to the supply system.
- (2) See below, pp. 115-117 for further discussion of spare parts.

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Procurement District will continue to furnish similar services for the New England area. (UNCLASSIFIED)

The centralization of responsibility for arsenal support for the procurement of end items, and for the procurement of spare parts under the new plan is expected to bring about efficiency and economy in current procurement activities. There will be an overall procurement system personnel reduction of approximately 15 per cent, as the organization of the major districts is standardized in so far as their differing missions will permit and the minor districts are standardized at a strength of two officers and twelve civilians. There is a danger, however, of this current economy being achieved at the expense of industrial mobilization activities. The new system tends to remove the unitary responsibility for industrial mobilization and to divert mobilization efforts and funds into current activities. (UNCLASSIFIED)

In the opinion of Colonel Stubbs, two developments in Fiscal Year 1954 will have a profound effect upon the materiel management techniques in years to come. The first of these developments is the Department of the Army imposition of expenditure ceilings on materials programs in January 1954. The total Procurement and Production Appropriation for Fiscal Year 1955 was reduced from \$35,499,229 to \$21,700,000. The savings of \$13,798,829 was made by deferring planned deliveries of grenades, smoke pots, smoke generators, power driven decontaminating apparatus, and by the cancellation of the

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protective mask program. The concept of providing expenditure ceilings might lead to a reversal of the current process of converting materials requirements into funding requests. It is felt that stating requirements in terms of available funds would be a throwback to the methods of the period between the World Wars.

(CONFIDENTIAL)

The second development was the beginning of the investigation of engineered standards within the Chemical Corps. Engineered standards are performance standards derived by a complete engineering analysis of time, layout, equipment and motion used in any particular job to determine the best and most feasible method of operation. The set standard provides a basis of cost analysis and management control of operation. At the end of the fiscal year, negotiations were in process with a management consulting firm to train Chemical Corps personnel in standards development and to monitor two test engineered standards control operations at Rocky Mountain and Pine Bluff arsenals. The development of engineered standards would provide materials management with an invaluable control and analysis tool to bring about optimum efficiency and economy in the procurement and supply system.

161

(UNCLASSIFIED)

160

- (1) Stubbs Interview
- (2) Memo, CMLWX-T, 13 May 54, Incl #3 to DF, CMLWX-T, Mr O.R. Mullen, Materiel Div, OCCm10 to Hist O, OCCm10, 11 Jun 54, sub: Annual Historical Report

161

- (1) Stubbs Interview
- (2) Management Improvement Program Report (CSCAM-10(R1)), Hqs, Cml O MATCOM, FY 1954.

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Procurement and Production

Procurement and Production in FY 1954 were marked by considerable adjustment in programs. The most obvious reflection of the adjustment necessary appears in a summary of material funds available during the fiscal year. Total funds available for the Chemical Corps Materiel program dropped from a post-war high of over \$209,000,000 in fiscal year 1951 to slightly below 57 million in fiscal year 1954. This sum for 1954 further represents less than half of the amount available in 1953. All of the adjustment implied in the reduction of funds was made during the fiscal year since the first quarter 1954 estimate for the year's program stood at 155½ million dollars. Analyzing reduction by source of funds it readily appears that although the Department of Army citation for the Chemical Corps was reduced by half of the 1953 level the decisive factor was the lowering of Air Force citations by nearly two-thirds from 89½ millions to 29½ million dollars. The funds used in the Chemical Corps Materiel program for the Navy were only slightly less than those of fiscal year 1953; the Ordnance program, on the other hand, was reduced by over twelve million dollars, an amount by no means offset by the nearly eight million dollars increase in citations from other Technical Services, Military Defense Assistance programs, and other minor sources.

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See Appendix A, pp. 70-71.

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Three major procurement and production developments took place during Fiscal Year 1954: the determination of requirements and proving of components for the E115 and E117 750 pound incendiary bomb clusters;¹⁶³ the determination of requirements and a continued mobilization base for production of the M9A1 gas mask; and the establishment of effective production methods for toxics. Each of these developments gave rise to certain problems, the details of which will be briefly discussed. (~~CONFIDENTIAL~~)

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E115 and E117 Incendiary Bomb Clusters

During the months July to September 1953 representatives of the Chemical Corps and the Air Force had program meetings to determine production programs for the E115 and E117 bomb clusters for which the requirements had tentatively been stated in Fiscal Year 1953. It was decided that a total of 139,000 clusters having a value of \$82,000,000 would be programmed, and production programs were accordingly set up. In December, however, the Air Force requested that the Chemical Corps defer the initiation of production pending

163

See Summary History, FY 53, p.64.

164

Material for this section is from:

(1) Memo, CMLWX-T, 9 Jun 54, Incl. #1 to DF, CMLWX-T, Mr. O.R. Mullen, Mat Div, OCCm10 to Hist O, OCCm10, 11 Jun 54, sub: Annual Historical Report.

(2) Interv. Hist O, OCCm10 with Mr. Asher Z. Cohen, Industrial Div, Cml C MATCOM, 26 Aug 54.

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type classification of the clusters and proofing of components. Since funds were unavailable as a result of this deferment, procurement of components in anticipation of production was stopped. In January the Air Force authorized preparations of some components at a reduced rate, and in May forwarded drawings of two important components to the Chemical Corps. At the same time, the Air Force notified the Chemical Corps that firm production requirements existed. By the end of the Fiscal Year the production suspension had not been lifted, but the problems caused by the uncertainty of requirements and the unavailability of funds for procurement preliminary to production were on the way to solution. Authorized component production will start early in Fiscal Year 1955, and the cluster production ban will probably be lifted soon thereafter.

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M9A1 Protective Mask Production

Work on the Fiscal Year 1954 procurement budget for the M9A1 Protective Mask began in 1952. At that time, it was assumed that two production facilities would be operated at a minimum rate during 1954, and so 1,200,000 masks were budgeted to support a

165

Material for this section is from:

- (1) Memo for Record, Mat Div, OCCm10, 20 May 54, Incl #4 to DF, Mr. O.R. Mullen, Mat Div, OCCm10 to Hist O, OCCm10, 11 Jun 54, sub: Annual Historical Report.
- (2) Interv. Hist O, OCCm10 with Mr. William Carpenter, Indus Div, Cml C MATCOM, 26 Aug 54.
- (3) DF, Brig Gen C.E. Loucks, DC Cml O to Hist O, OCCm10, 3 Jun 54, sub: Summary List for Historical Report.

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minimum economical rate of 50,000 masks per month from two facilities. This initial quantity was disapproved by G-4, and on 31 January 1953; the basis was changed to one facility at an approximate rate of 25,000 masks per month. Contract negotiations were accordingly carried on with the Firestone Rubber Company and the General Tire and Rubber Company, both manufacturers under previous contract to the Chemical Corps. (CONFIDENTIAL)

A contract was awarded to Firestone in consideration of the fact that their Fall River mask plant was in a Group IV labor surplus area, Subsequent to the award, Fall River was placed in Group III, also the classification in which the General Tire and Rubber Company's Jeanette, Pennsylvania, plant fell. The contract was sent to the Comptroller General for review, and on 5 August 1953, a decision was rendered that a valid contract did not exist with Firestone. In the same month the Chief Chemical Officer indicated his willingness to reopen negotiations with both companies, but the contract with Firestone was again referred to the Comptroller General for study and all negotiations were suspended pending his decision. On 22 January 1954, the Comptroller General reversed the August decision. (CONFIDENTIAL)

Now having a valid contract with Firestone, the Chief Chemical Officer was anxious to proceed with production on this most vital item of protective equipment since the last existing contract was

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due to expire in three months, but he was orally informed by General Lanahan, Office of G-4, that no requirement for protective masks existed. On 4 February 1954 G-4 officially directed cancellation of the Firestone contract. The last delivery of M9A1 masks under previous contracts was made in April 1954 and no requirement was authorized for Fiscal Year 1954 or 1955. As of 1 July 1954 government-owned mask production machinery from all plants was being placed in industrial equipment reserve lay-away. The Chief Chemical Officer placed an embargo on issue of M9A1 protective masks pending formulation of a new distribution policy since shortage of masks could seriously interfere with continental CBR training. ()

Problems in Toxic Production

Production capability for the newest and most effective toxic agents, the nerve gases, has been a major Chemical Corps problem since World War II. The principal emphasis in chemical warfare logistic capability has been placed on the production of GB and means of disseminating that agent. ¹⁶⁶ During Fiscal Year 1954 an intensive, top priority, effort was made to solve the problems of

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(1) See Summary History, Sep. 1951-Dec 1952, p.1, and Summary History, FY 1953, pp. 19, 23, 24, 64.

(2) A nerve gas, cyanogen chloride, was known in World War I, and was produced in World War II, but concentration since the later war has been on agents of the "G" series.

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GB production. (~~SECRET~~)

Plans for significant production of GB were laid in 1947 when it was decided to develop the five step DMHP process once used in Germany. In this process as well as in the aluminum chloride process first used by the British, an intermediate product, dichlor, is obtained for manufacture into the final agent. It was therefore proposed to produce the intermediate product in a plant which could be commercially designed, constructed and operated. A site selection board determined that the Wilson Dam Area at Muscle Shoals, Alabama, would be a good location for the intermediate product plant which comprises three steps of the five step process. This site offered the advantages of a location dispersed from other Chemical Corps facilities, adequate space, adequate transportation, ample water, a ready source of power and the use of government-owned property. Rocky Mountain Arsenal was chosen as the location of the final two steps. ¹⁶⁷ (~~SECRET~~)

The Muscle Shoals plant was designed by the Vitro Corporation, and in November 1950, the Vitro Corporation and Southern Constructors, the principal construction sub-contractor, initiated construction under the overall management of the Corps of Engineers. The

¹⁶⁷
 Interv, Hist O, OCCm10 with Mr. I.B. Morgan, Engr. Div., Chi C RECOM, 18-19 Aug 54.

~~SECRET~~ Security Information

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Chief Chemical Officer maintained a staff under Colonel Graydon C. Essman, Special Assistant to the Chief Chemical Officer, at the site for coordination of technical matters. The Tennessee Valley Authority assisted at the project in many ways and the Authority designed and built a bench model aluminum chloride process plant which, although the process differs from the five step process, assisted greatly in the presentation and understanding of many little known technical problems. The Tennessee Valley Authority also offered its services in operating the DMHP plant when construction was completed. A memorandum of agreement for plant operation was signed between the Authority and the Army on 25 January 1951. The Chemical Corps Materiel Command assumed responsibility for the plant, now called the Muscle Shoals Phosphate Development Works, upon completion of construction, 1 September 1953.

Soon after the Chemical Corps acceptance of the Muscle Shoals plant, unforeseen technical production difficulties were encountered. Step "0", the preliminary production of phosphorus trichloride, the basic raw material, presented no problems, and there was no difficulty in producing the primary product of Step I. The removal of

168

(1) Ibid.

(2) Pers Ltr, Maj Gen E.F. Bullene, C Cml O, to Mr. Charles H. Young, Mgr, Cml Engineering, TVA, 10 Feb 54, no sub.

(3) Ltr, CMLWX, Maj Gen E.F. Bullene, C Cml O to CG, Cml C MATCOM, CG, Cml C RECOM, and Spec Asst to the C Cml O, 28 Jul 53, sub:

Status of GB Program.

(4) Interv, Hist O, OCCmlO with Mr. Joseph G. Schaffner, Indus Div, Cml C MATCOM, 26 Aug 54.

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by-product gases in Step I, however, proved to be a major problem. Step II again presented no problems, and Chemical Corps Materiel Command operated this step at capacity in addition to producing 261 tons of Step I product. Phillips Petroleum Company had operated Step III during the construction period to prove that the plant designed was capable of producing the intermediate product, Dichlor, but a number of necessary equipment modifications prevented Materiel Command from operating that step. An additional serious problem in connection with Step III operation was the disposal of a byproduct, phosphorus oxychloride, which is produced at three times the quantity of Dichlor. The Tennessee Valley Authority developed and built a bench model plant to reduce the phosphorus oxychloride into useful phosphorus trichloride, but the full-scale plant has been kept out of operation pending technical modifications. The accumulation of these technical production problems convinced a special committee of the Chemical Corps Advisory Council, investigating at the request of General Bullene, Chief Chemical Officer, that a strong engineering team was required to put the whole Muscle Shoals operation into production. General Bullene therefore decided to turn the project over to Brigadier General William M. Creasy, Commanding General, Chemical Corps Research and Engineering Command, for formation of a

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team to solve the technical problems. The transfer from Chemical Corps Materiel Command to Research and Engineering Command was accomplished 1 March 1954. ¹⁶⁹ (~~SECRET~~)

Colonel Adam W. Meetze, Commanding Officer, Rocky Mountain Arsenal, was placed on temporary duty as project officer at the Muscle Shoals Phosphate Development Works under Research and Engineering Command management. Lt. Colonel Harvey E. Sheppard was given permanent assignment as project deputy commander. Generals Bullene and Creasy assigned top priority to the project over all other research and engineering programs. General Bullene assigned

169

- (1) Ltr, CMLRE-E 322 Muscle Shoals, Maj H.A. Treleven, Eng Div., Cml C RECOM to Hist O, OCCm10, 16 Aug 54, sub: DMHP Plant at Muscle Shoals Phosphate Development Works.
- (2) Quart Hist Rpt, Hqs, Cml C MATCOM, Jan-Mar 54.
- (3) Memo for Record, 7 Dec 53, sub: Technical Difficulties at Site A and Production of E101 Clusters.
- (4) Notes for Meeting with Gen Bullene, 8 Dec 53.
- (5) Ltr, Maj Gen E.F. Bullene, C Cml O, to Dr. Allen P. Colburn, Chairman, Cml C Advisory Council, 11 Dec 53, no sub.
- (6) Rpt of the Ad Hoc Committee of the Cml C Advisory Council Meeting of 10-12 Jan 54.
- (7) Recommendations of the Ad Hoc Committee of the Cml C Advisory Council, 10-11 Jan 54.
- (8) Ltr, CMLWR, Maj Gen E.F. Bullene, C Cml O, to CG, Cml C RECOM and CO, Cml C MATCOM, 16 Feb 54, sub: Classified Plant at Muscle Shoals.
- (9) OCCm10 GO 4, 23 Feb 54.

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a threefold mission to General Creasy with respect to the plant:

- (1) "Run the plant as much as possible to produce product, and, on the highest priority, make every effort to expedite operation of the plant with the objective of placing the facility on a sustained production basis...."
- (2) Second in priority, effect the necessary modifications in the plant to the end of sustained operation at full design capacity.
- (3) Concurrently with the above, but on the third priority, prepare plans, final designs, and cost estimates to increase the capacity of the intermediate product plant to support the final product plant on the basis of three complete production units operating at capacity.¹⁷⁰

Chemical Corps Research and Engineering Command operated Step "0" and Step I continuously until the latter part of June. A sufficient quantity of phosphorus trichloride was produced to provide for future operation of Steps II and III and to ship a substantial amount to the facilities at Rocky Mountain Arsenal. During this operation, design modifications were prepared for an enlarged off-gas system for Step I. New equipment to complete the work on Step I is on order, and installation should begin late in the fall. Late in June the production facility was voluntarily shut down to allow for engineering changes wherever needed in preparation for a production run of all three

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Ltr, CMLWR, Maj Gen E.F. Bullene, C Cml O, to CG, Cml-C-RECOM and CO, Cml-C-ATCOM, 16 Feb 54, sub: Classified Plant at Muscle Shoals.

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steps which is scheduled to begin about 15 July 1954. During this scheduled run an analysis will be made of equipment and operation to determine plant capacity, to evaluate modifications already made, and to assess the requirements for future modifications. It is expected that another production run will be necessary before maximum plant capacity can be determined. Data on maximum capacity must be obtained before the optimum rate of sustained operation can be calculated. Cost estimates and final determination of the effectiveness of the process will also be produced during these production runs. It is planned to install new equipment and to make modifications indicated by the production runs after the completion of the second run and preparatory to full proof-testing of the entire facility. Proof-testing is scheduled for the winter and spring of 1954-1955. Following proof-testing, the entire project will be returned to Chemical Corps Materiel Command for production of intermediate. ¹⁷¹ ~~(SECRET)~~

While the Muscle Shoals site was being prepared for operation, the final process steps at Rocky Mountain Arsenal continued the operation begun in the last fiscal year. Continuous improvement

170

- (1) Quart Hist Rpts, Hqs, Cml C MATCOM, Jan-Mar and Apr-Jun 54.
- (2) Statement, Col William J. Allen, Jr, Cml C Engineering Agency, 16 Aug 54, before Informational Meeting prior to August Cml C Development Conference.
- (3) Morgan Interview.

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has been made in equipment and methods at the Rocky Mountain Site throughout the year, and by the end of the year, it was reported that a cumulative total of 456,655 gallons of agent had been produced. Dichlor for this operation has been prepared by the Shell Chemical Company in a plant at Rocky Mountain Arsenal. The Shell Company designed this plant, employing mustard gas production equipment on hand, to use the aluminum chloride process. 172
(S)

The over-all "round-out" program on Chemical Corps GB production facilities will begin after proof-testing has demonstrated the capacity of both intermediate product and final product facilities. Performance to date indicates that the design production figure of 30 tons of agent per day will be exceeded, and maximum capacity will probably be greater than the "round-out" optimum production figure. Concurrently with the proof-testing, production facilities and methods will be subject to intensive analysis to determine relative merits of the existing processes and other

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- (1) Quart Hist Rpts, Rocky Mountain Arsenal, App. I, Oct-Dec 1953, Jan-Mar, and Apr-Jun 1954.
(2) Morgan Interview.
(3) Schaffner Interview.

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processes which include the "salt" and HTM or high temperature methane processes. Meanwhile, research will continue on new processes, and considerable attention will be given to possible modifications of the DMHP process in attempt to eliminate the enormous quantities of by-product phosphorus oxychloride which at present constitute a major problem. ¹⁷³

Production and Procurement Performance

Appendix B gives the quantity of accepted production for principal Chemical Corps items during Fiscal Year 1954. Appendix A, pages 78 and 79 presents the aggregate dollar value of deliveries. It is noteworthy that the delivery performance for 1954 was high relative to the over-all materiel program because of the large quantities of material being delivered from contracts and production programs of previous fiscal years. (UNCLASSIFIED)

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- (1) Col Allen Statement.
- (2) Morgan Interview.
- (3) Schaffner Interview.

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Supply

Funds available for supply distribution and maintenance declined in Fiscal Year 1954 as did total materiel funds. There was, however, one notable exception in the supply field, the funding program for demilitarization was more than nine times the amount obligated in the previous fiscal year. Total supply operating costs and total supply personnel declined during the year, but the total workload did not decline proportionately. This of course indicates increased efficiency and economy in the Chemical Corps supply system, the details of which will be discussed below.

(UNCLASSIFIED)

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Spare Parts

The Committee assembled by the Chief Chemical Officer in Fiscal Year 1953 studied Chemical Corps spare parts problems throughout Fiscal Year 1954, and the chairman, Colonel Harold Walmsley, drafted

174

Appendix A, pp. 86-95.

175

Unless otherwise noted material for this section drawn from:

- (1) Draft Final Rpt, Col Harold Walmsley, Chrmn, Ad Hoc Comm on Spare Parts, 26 Mar 54.
- (2) Interv, Hist O, OCCm10 with Col G.J. Merrill, Cml C MATCOM, 10 Mar 54.
- (3) Intervs, Hist O, OCCm10 with Mr. Ritchie Buckingham, Supply Div, Cml C MATCOM, 11 Mar 54 and 5 Aug 54.
- (4) Ltr, CMLMC-SMP, Lt Col R.C. Morris, Supply Div, Cml C MATCOM to CCm10, 29 Jun 54, sub: Status of Transfers of Spare Parts from Cml C under SR 700-51-100 series.

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his final report at the close of the year.¹⁷⁶ Improvement in the spare parts situation did not await the final report, however, since the Committee forwarded suggestions to responsible agencies as their analysis revealed defects. (UNCLASSIFIED)

An example of progress made in areas of the Committee's interest is the development of a "Chemical Corps Spare Parts Center" in the Chemical Supply Section of Memphis General Depot. This agency began in February 1954 to function not only as a spare parts storage and issue facility, but also as an information center where requirements and experience data were kept.¹⁷⁷ (UNCLASSIFIED)

Definite progress was also made in weeding out common hardware items from the spare parts supply. Logistic responsibility for 2,865 of 3,156 such items originally segregated was being transferred to other services. A project was established in the Chemical supply section to eliminate from stocks other items non-essential to the system, and to segregate items into categories of fast-moving, slow-moving, and insurance parts.¹⁷⁸ (UNCLASSIFIED)

Work was done at Memphis and elsewhere in the Chemical Corps to improve spare parts item development and description, to develop

¹⁷⁶ See Summary Report for FY 1953, pp. 70-71.

¹⁷⁷ (1) Cml C Materiel Instructions No. 3.2-4, OCCml10, 17 Feb 54.
(2) Cml C Form 5.

¹⁷⁸ Quart Hist Rpt, Hqs, Cml C MATCOM, Apr-Jun 54.

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more economical methods of packing and packaging, to provide standardized policy guidance to overseas personnel, and to improve logistic training throughout the Chemical Corps. All these items represent a definite stride toward the solution of problems of nearly fifteen years' standing. (UNCLASSIFIED)

179
Financial Property Accounting and the Army Stock Fund

Financial Property Accounting, which is an installation level record system for stating the status of stocks and all materials transactions in dollar values, was installed in all Chemical Corps Branch Depots and all Chemical Sections of General Depots by 1 January 180
1954. Plans were underway at the end of the year to extend this system to all posts, camps, and stations, and to the world-wide supply system. Personnel from the Office of the Chief Chemical Officer visited all theaters to assist in the overseas installation relative to chemical supply. (UNCLASSIFIED)

179

This section taken from:

- (1) Interv, Hist O, OCCmLO with Mr. L.P. Lyon, Comptroller's Off, OCCmLO, 9-10 Jun 54.
- (2) Interv, Hist O, OCCmLO with Mr. B.H. Daniel, Materiel Div., OCCmLO, 10 Jun 54.
- (3) DF, CMLMC-CF, Mr. E.R. Laverdiere, Comptroller's O, Cml C MATCOM to Dep Compt, Cml C MATCOM, 14 Jun 54, sub: Historical Report.
- (4) Memo, Col J.H. Batte, Comptroller, OCCmLO to Brig Gen C.E. Loucks, DCCmLO, 12 Jan 54, sub: Financial Property Accounting.
- (5) Army Stock Fund, Presentation made to CCmLO, 13 Jul 53, by Comptroller, OCCmLO.
- (6) Project Memoranda, Cml Div, Army Stock Fund Team, to Comptroller, OCCmLO, Nos. 1-9, 9 Apr 54 to 4 Jun 54.
- (7) Quart Hist Rpt, Cml Sec, New Cumberland General Depot, Apr-Jun 54.

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See Summary Report for FY 1953, pp. 72-73.

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The reporting and analysis which is a part of Financial Property Accounting has proved to be a valuable source of supply management information but, perhaps of greater short-range importance, the system serves as the basis for the introduction of the Army Stock Fund. (UNCLASSIFIED)

The Army Stock Fund, a revolving fund of the Army Industrial Fund type, was set up Army-wide to cover all common use items. Divisions of the fund were being established in each technical service, and the Chemical Division was scheduled to begin operation 1 July 1954. The home office for the Chemical Division of the Army Stock Fund will be Chemical Corps Materiel Command. In order to organize properly the branch offices located in Chemical Sections of General Depots, a pilot operation of the Fund was undertaken on 1 April 1954 in the Chemical Section of New Cumberland General Depot under the supervision of personnel from the Office of the Chief Chemical Officer, Chemical Corps Materiel Command, and the accounting firm of Touche, Niven, Bailey and Smart. During the pilot operation a draft Chemical Division Army Stock Fund operating manual was written, and much was learned concerning the problems which would be encountered. As of the end of the year, project personnel were moving into the other Chemical Sections of General Depots for the complete installation of the fund. It was planned that only chemicals, commercial type end items and spare parts would be carried under Stock Fund ownership accounts. For purposes of simplified accounting and better stock control, responsibility for all such items in Branch

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depots was being transferred to Chemical Sections of General Depots. No physical transfer of property was planned. (UNCLASSIFIED)

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Property Disposal

Property disposal has been an Army problem since World War II. The Chemical Corps has been particularly beset with difficulties because so many items of chemical supply have little or no commercial value and little or no salvage value. For the past several years, therefore, only a low-volume disposal program has been maintained, and stocks of disposable property have accumulated. Early in Fiscal Year 1954 the Chief Chemical Officer, General Bullene, decided, upon recommendation of Brigadier General H.M. Black, Commanding General, Materiel Command, to rectify this situation. The result has been outstanding accomplishment during the 1954 fiscal year and a firm program for future years. (UNCLASSIFIED)

General Bullene assigned the responsibility for property disposal to General Black on 14 August 1953, and he directed General Black to appoint a Chemical Corps Property Disposal Officer to supervise this activity on a worldwide basis. (UNCLASSIFIED)

181

This section taken from:

- (1) Merrill interview.
- (2) Interv, Hist O, OCCm10 with Major Dick E. Coburn, Supply Div., Cml C MATCOM, 10 Mar 54.
- (3) Intervs, Hist O, OCCm10 with Major William T. Carney, Supply Div., Cml C MATCOM, 11 Mar 54 and 26 Aug 54.
- (4) CCR 90-5, 14 Aug 53 and C 1, 22 Sep 53.
- (5) Ltr, CMLWX-SP, Col D.R. King, OCCm10, to CG, Cml C MATCOM, 21 Oct 53, sub: Determination and Disposal of Excess Supplies and Equipment.

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By the end of the fiscal year, the Chemical Corps Property Disposal Officer, Materiel Command, had supervised the disposal of \$83,000,000 worth of property, more than two and one half times the total excess and surplus generated in the Chemical Corps in 1953. The Property Disposal Officer was also made responsible for processing an additional \$68,000,000 worth of property which is still in stocks awaiting further disposition, type redesignation or use as components in future production programs; this property is not excess or surplus according to the usual definition of the terms. (UNCLASSIFIED)

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Distribution

The Army Simplified Supply System, the first of the three major advances, of which the others are Financial Property Accounting and the Army Stock Fund, in military supply control was installed in Chemical Corps supply installations during Fiscal Year 1954. The Simplified Supply System provides a flexible line item requisition so that each line item reflects complete requisition, action and

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This section taken from:

- (1) Stubbs interview.
- (2) Merrill interview.
- (3) Coburn interview.
- (4) Interv, Hist O, OCCmLO with Mr. Walter J. Patro, Supply Div., Cml C MATCOM, 10 Mar 54.
- (5) Interv, Hist O, OCCmLO with Mr. Walter J. Patro, and Mr. Martin Howard, Supply Div., Cml C MATCOM, 22 Jun 54.
- (6) Memo, 24 Jun 54, Incl #2 to DF, CMLWX-SP 3, Mr. B.H. Daniel, Materiel Div., OCCmLO to Hist O, OCCmLO, 25 Jun 54, sub: FY 1954 Historical Data.
- (7) "Simplified Supply System, How it Works at Eastern Chemical Depot", pamphlet by Capt Eugene J. Cronin, Eastern Chemical Depot, Army Chemical Center, Md.

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shipment data. Each line item can be extracted for photo-duplication which creates, in one process, material identification tag, shipping document, purchase request and commitment form, delayed item report, shortage report and any one of several notices, as required, for the requisitioning agency. The single advantage of one reproducible line item is the keystone of the simplified supply system, and through the use of this procedure the Chemical Corps has realized specific gains in better recording, more rapid handling of requisitions, better use of personnel, reduction in operating costs and improved management control. A central locator card system has been proved feasible, and was being adopted at the end of the year.

(UNCLASSIFIED)

An adjunctive procedure has been adopted by Supply Division, Chemical Corps Materiel Command, to improve handling of line items extracted from one supply installation to another. Under the old procedure, extracts were redistributed by Supply Division according to availability of stocks recorded in a bi-monthly machine-record stock status volume. As of the last quarter of FY 1954, the Machine Records Unit processed changes in status of stocks as changes occurred and forwarded item status cards to Supply Division daily. By this method, no stock information is ever more than four days old, and redistribution of extracts is made quickly and efficiently. (UNCLASSIFIED)

Other developments of importance in chemical material distribution are summarized as follows:

1. During the year the Chemical Corps accepted logistic responsibility for 493 commercial chemical items transferred from other services under SR's of the 700-51-100

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series. It is anticipated that from 100 to 150 additional items will be transferred in the first half of Fiscal Year 1955. (UNCLASSIFIED)

2. An agreement was reached between the Army and the Air Force providing that the Chemical Corps assume responsibility for technical escort of all Air Force BW and CW munitions within the continental United States. (UNCLASSIFIED)
3. Special Regulation 715-8-3 covering local purchase was drafted by the Chemical Corps, and was approved. Considerable improvement and simplification in local purchase procedures is expected upon publication and distribution. (UNCLASSIFIED)
4. The assignment of Federal Catalog numbers to a series of Chemical Corps items was accomplished by the end of the Fiscal Year. The resulting standardization will promote supply control efficiency. (UNCLASSIFIED)

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Storage

Quantitative information on Chemical Corps storage performance in space occupancy, tonnage handled, and line items processed is

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This section taken from:

- (1) Stubbs interview.
- (2) Coburn interview.
- (3) Intervs, Hist O, OCCmlO with Mr. James F. Taylor, Supply Div., Cml C MATCOM, 10 Mar 54 and 22 Jun 54.
- (4) Quart Hist Rpts, Hqs, Cml C MATCOM, Jul-Sep, Oct-Dec, 1953 and Jan-Mar, Apr-Jun, 1954.
- (5) Quart Hist Rpt, Cml Sec, New Cumberland Gen Depot, Apr-Jun 1954.

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presented in Appendix A, pages 92 to 97. In order to accomplish the workload, which was greater than that scheduled, a number of improvements were made in storage operations. (UNCLASSIFIED)

Studies made by Supply Division, Chemical Corps Materiel Command, indicated that improved storage practices would result in better space utilization. Suggestions were accordingly made to Chemical Corps storage installations which resulted in space requirements per ton of general supplies being reduced from 20 square feet to a year end average of 15 square feet, and requirements for ammunition and toxics being reduced from 15 square feet to 10 square feet. (UNCLASSIFIED)

Work was also done on the development of cost performance standards obtained by careful analysis of common operations while in progress. Criteria for many typical operations were set up and standards coordinated among all supply installations. These standards made possible a closer supervision of employees and a more positive check on economy and efficiency. This program was to continue in the next fiscal year. Its results in the supply field are comparable to engineered standards in the production field.¹⁸⁴ (UNCLASSIFIED)

Considerable economy was also realized by a careful scrutiny of packing and packaging specifications. Directives in this area were amplified and implemented to provide different levels of preservation according to the conditions to which stored material is

¹⁸⁴
See above p.101.

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subjected. Waivers of some specifications were recommended to G-4 to allow reduction of preservation standards from levels required for severe storage conditions. (UNCLASSIFIED)

Still another step toward greater economy was being taken at the end of the fiscal year through the installation of efficient preservation equipment in Chemical Corps storage installations. (UNCLASSIFIED)

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Maintenance

The large backlog of Chemical Corps maintenance was substantially reduced during Fiscal Year 1954. The value of stock rebuilt exceeded the schedule set during most of the year,¹⁸⁶ a performance made possible by the improved organization and procedures introduced¹⁸⁷ during the previous fiscal year. (UNCLASSIFIED)

A visit to the United States Army Forces in Europe was made during the year to inspect maintenance and supply control of chemical materiel, and the Chemical Corps continued its program of assistance to Continental Army commanders in the establishment of chemical maintenance facilities.¹⁸⁸ (UNCLASSIFIED)

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This section taken from:

- (1) Intervs, Hist O, OCCm10 with Mr. George M. Dingee, Materiel Div., OCCm10, 8 Feb 54 and 10 Jun 54.
- (2) Coburn interview.

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See Appendix A, pp. 98-99.

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See Summary Report for FY 1953, pp. 74-75.

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See Summary Report for FY 1953, pp. 75 and 77.

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Inspection

In recognition of Chemical Corps experience in statistical control of surveillance inspection, three members of the Inspection Management Staff, Materiel Command, were named to a Department of the Army-Department of Defense Task Group on Surveillance Inspection of Army Supplies and Equipment. It was determined that the Chemical Corps would be custodian¹⁸⁹ of the military standard for surveillance developed from the Task Group work. The program of this Task Group is the first move towards the adoption of common, scientifically controlled inspection standards throughout the military establishment.¹⁹⁰ (UNCLASSIFIED)

The Chemical Corps Environmental Surveillance and Test program, a part of the Army ENVANAL project to determine function of standard equipment under severe climatic conditions, was carried on during the fiscal year at Yuma, Arizona and Army Chemical Center, in the Panama Canal Zone and Alaska. Analysis of surveillance tests

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Duties as custodian will be to maintain and revise the standard as required, and to furnish new statistical tables.

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- (1) Interv, Hist O, OCCmLO with Mr. G.P. Titcomb, Inspection Div., Cml C MATCOM, 4 Mar 54.
- (2) Interv, Hist O, OCCmLO with Mr. G.P. Titcomb, Mr. Norman C. Krause, and Mr. Joseph Mandelson, Inspection Div., Cml C MATCOM, 15 Jun 54.
- (3) Quart Hist Rpts, Hqs, Cml C MATCOM, Jan-Mar and Apr-Jun, 1954.

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under the program greatly increased the ability of the Chemical Corps to prescribe world-wide surveillance standards and item-¹⁹¹ life cycles. (~~CONFIDENTIAL~~)

An inquiry was received from G-4 and a study was made during the fiscal year concerning the effectiveness of inspection interchange, the Army procedure by which material acceptance inspections are performed for all technical services by the service making the first contract with a commercial concern. The study revealed two Chemical Corps problems which were unresolved at the end of the fiscal year: (1) The lack of information on procurement plans of other technical services frequently places an unexpectedly heavy workload on Chemical Corps field personnel; (2) the handling of small amounts of procurement under the system is uneconomical.¹⁹²
(UNCLASSIFIED)

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- (1) Titcomb, Krause, Mandelson interview.
- (2) Cml C Technical Committee, Minutes of Meeting, 16 Jul 53, Item 2652.

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Titcomb, Krause, Mandelson interview.

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