(S) Research on new agents has tended to concentrate on viral and rickettsial diseases. A whole range of exotic virus diseases prevalent in tropical areas came within the screening program in FY 1961 - 62, with major effort directed at increased first-hand knowledge of these so-called arbor (i.e., arthropod-borne) viruses. The importance of epidemiological studies in connection with this area of endeavor was being emphasized. A major step forward was achieved in the development of a better known agent, the virus of psittacosis, when stabilization of the dry agent through addition of a small amount of monosodium glutamate was successfully demonstrated. This accomplishment eliminated one of the principal difficulties in the path of future development of this agent.[25]

(S) In the realm of bacterial and fungal agents, the causative organisms of histoplasmosis, leptospirosis, and cryptococcosis reached the laboratory screening stage. Work on Bacillus anthracis, an agent which has been the subject of more or less concern to the Corps for many years, went forward in the area of process research, particularly in the evaluation of drying methods. But the crucial problem of providing adequate assessment of human susceptibility to this agent remains to be solved.[26]

(U) One of the most striking lines of inquiry in the Corps program was the basic research being done by the Biological Laboratories on the genetic factors underlying the infectivity of micro-organisms. Nucleic acids carrying infectivity factors were isolated from viruses. First attempts at inducing new

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25 Goodlow interv, 16 Feb 62.

26 (1) Ibid. (2) Technical Program Review & Analysis, Bio Labs, Jan - Mar 62, p 24.

combinations of genetic factors through the mixture of infectious nucleic acids from different sources were undertaken in FY 1962. Studies of bacterial genetics were also in progress with the aim of transferring genetic determinants from one type of organism to another.[27]

Alarms

(C) A landmark in the long development of a practical automatic field alarm for G and V agents was reached early in the third quarter of FY 1962, when the E41R3 point detection alarm was accepted by the Army for limited production, thereby fulfilling at least a portion of the existing Qualitative Military Requirement for automatic alarms. The E41R3, which operates through a color reaction on a treated wet tape and a color-actuated audio signal, is a modified version of the E41R1 discussed in the FY 1960 Annual Summary.[28] The modifications were those suggested by deficiencies revealed during Arctic Test Board tests of the earlier model in FY 1961. Approval of the alarm for limited procurement (to satisfy an immediate operational requirement for 400 alarms) came in January of 1962.[29]

(C) An active program toward the development of a long path infra-red (LOPAIR) system for area scanning alarms reached the contracting stage before the end of FY 1962. The E49 LOPAIR system, selected for development, was the

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27 (1) Goodlow interv, 16 Feb 62. (2) Technical Program Review & Analysis, Bio Labs, Oct - Dec 61, pp 17 - 18.

28 Summary of Major Events and Problems, FY 60, pp 117 - 18.

29 CCTC Items 3934, 26 Dec 61, and 3950, 23 Jan 62.

subject of bids by twelve manufacturers. The development contract, in the amount of $2,000,000, was ultimately awarded to General Electric late in June 1962.[30]

(U) BW alarm development centered on the ratio alarm-partichrome analyzer combination described in a previous Annual Summary[31] and being developed under contract by Douglas Aircraft Company. The work done in this area in FY 1961 tended to show that the basic concept was not useful without more precise knowledge of normal background particle distribution in the air. Accordingly, the contractor undertook a substantial investigation of this problem in FY 1962; it was not until after the first quarter of the fiscal year that adequate instrumentation was available to enable the field work to begin. Research continued on the protein pyrolysis method of detection, with emphasis on increasing the sensitivity of the procedure. Meanwhile, other contractors were at work on new concepts, though it was not yet possible to judge their significance.[32]

Protection

(U) The Civil Defense requirement for a modern low-cost protective mask for large-scale civilian use was met by the type classification of the E52R27

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30 (1) Minutes, Joint Mtg of Diss & Protective Committees, CmlC Adv Council, 18 - 19 May 61, p 46, in Quart Hist Rpt, CmlC Adv Council, Jul - Sep 61. (2) Quart Hist Rpt, CRDL, Apr - Jun 62.

31 Summary of Major Events & Problems, FY 60, p 118.

32 (1) Ash interv, 27 Dec 61. (2) Housewright interv, 16 Feb 62. (3) Technical Program Review & Analysis, Bio Labs, Jan - Mar 62, pp 24 - 25.

mask as Standard A on 30 September 1960. The new designation was Mask, Protective, Civilian, M22. The M22 brought to the civil defense field for the first time a canisterless mask utilizing the filter element principle of the M17 service mask. It consists of a muzzle-shaped facepiece of vinyl plastic, with a large single plastic eyelens, an outlet valve, and a single filter element filling the muzzle area from eyepiece to outlet valve. The filter material is built up with fiberglass and plastic around a core of ASC charcoal -- the Whetlerite which formed the major part of canister fillings on older masks. Laboratory tests demonstrated that the mask gave satisfactory short-term protection against all probable CW-BW challenges and would provide an adequate fit, when produced in six standard sizes, for nearly all persons over the age of four.[33]

(U) The E3R5 infant protector was type classified as a Standard A Civil Defense item at the same time as the M22 mask, being redesignated Protector, Infant, M2. The first replacement for the supplied-air M1 protector of the World War II period, the M2 was developed to utilize the diffusion principle, eliminating the need for an operator or a power supply to pump air in. Three filter panels, made of much the same material as the gas mask filter described in the preceding paragraph, were used to form an air-permeable tent-like covering for the hammock-like base. A fourth panel of clear plastic provided a viewing window. The whole assembly, with its vinyl plastic cover, weighed about eight pounds, and could be folded flat for storage in a cardboard box. Tests indicated that the M2 protector gave more than adequate shielding from

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33 CCTC Item 3755, 15 Jul 60.

a single attack by gases or particulates, whether CW or BW in type.[34]

(U) A helicopter pilot mask under development, the E75R3, proved unacceptable to the Army Aviation Board, whose objections included requirements for better visual accommodation and microphone performance, as well as less troublesome head tabs. Subsequent modifications to the E75 enabled it to gain USCONARC approval at the end of FY 1962, and early type classification was expected.[35]

Anticrop Research

(C) During FY 1961 research on anticrop agents proceeded at the pace dictated by the limited resources available. Field tests for stem rust of wheat and rice blast disease were begun at several sites in the midwest and south and in Okinawa with partial success in the accumulation of useful data. Stripe rust of wheat was also under investigation, and the usual screening program for chemical anticrop agents was continued.[36] At the outset of FY 1962 an important increase in emphasis in this field resulted from the request of the Defense Department for technical advice on the conduct of defoliation and anticrop activities in southeast Asia. In addition to work done in that theater, the screening program for chemical defoliants was greatly accelerated. By the end of FY 1962 contracts for synthesis and testing of a thousand chemical defoliants were in the process of negotiation.

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34 CCTC Item 3754, 15 Jul 60.

35 (1) Interv, Hist Off with Lt Col Jose A. Andino, Hq, ENCOM, 4 Apr 62. (2) Review & Evaluation, CmlC Weapons & Defensive Systems, Apr-Jun 62.

36 Technical Program Review & Analysis, Bio Labs, Apr - Jun 61, pp 42 - 43.

A gradual increase in the scope of the rest of the anticrop program accompanied this development. Large scale greenhouse experiments on stripe rust of wheat yielded considerable information on the degree of crop injury in relation to the time and number of inoculations. Both field tests and process research were maintained for the agent of rice blast disease. A new investigation to find pathogens suitable for use against the opium poppy was begun in the third quarter of FY 1962.[37]

Radiological Warfare

(U) Through FY 1961 all programs in this field were funded by the Defense Atomic Support Agency (DASA), which tended to emphasize its own areas of interest -- particularly nuclear weapons effects -- at the expense of programs for defensive equipment, decontamination, and RW agents. As of FY 1962 the Department of the Army took over funding of the more strictly military items.[38]

(U) The Radiological Test Facility constructed at Dugway Proving Ground in FY 1960 was closed down in the middle of FY 1962. After studies begun in the spring of 1961 indicated that some test programs scheduled for the facility, such as shielding methods for military vehicles, could be accomplished more simply in other ways, a determination was made that existing requirements were insufficient to warrant its continuance.[39] It should,

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37 (1) Technical Program Review & Analysis, Bio Labs, Jul - Sep 61, p 30; Jan - Mar 62, pp 29 & 34; Apr - Jun 62, p 46. (2) Housewright interv, 16 Feb 62.

38 Interv, Hist Off with Maj E.G. Wohlford, Hq RDCOM, 5 Feb 62.

39 Ibid.

perhaps, be noted that the test facility was a product of the period of nuclear test moratorium, a period which was brought to a sudden end in FY 1962.

(U) The Nuclear Defense Laboratory drew on the capabilities of Engineering Command to help carry out a major project for the Navy in the field of large-scale radiological decontamination problems in cold weather environments. The tests were run at Camp McCoy, Wisconsin, in the winters of 1960 - 61 and 1961 - 62. A simulated fallout was created by tagging sand with radioactive lanthanum and coating it with sodium silicate. This simulant was made available by constructing a plant to turn it out. Army and Navy engineer personnel as well as civilian contractor support were involved in the conduct of the tests. Data obtained from the project were destined to be used for a new cold weather section in TM 3-225, "Radiological Recovery of Fixed Military Installations." Further tests at the site after the spring thaws of 1962 were planned to support a Civil Defense study of simple manual decontamination methods.[40]

(U) The E5 tactical gamma-neutron dosimeter, a field protective device to measure the individual soldier's exposure to radiation, was discontinued as a development item when failures in field tests were attributed to basic gaps in knowledge in radiation chemistry. Studies subsequently performed under contract indicated that the basis of the system, aqueous trichloroethylene, constituted a feasible approach to tactical dosimetry. In consequence, NDL continued work on the system in FY 1962 as a research project.[41]

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40 (1)Andino interv, 4 Apr 62. (2) NDL Review & Analysis, Jan - Mar 62, pp 3 - 4, 16.

41 (1) Wohlford interv, 5 Feb 62. (2) RDT&E Project Report 4X12-01-001-10, Radiation Chemistry Studies, 1 Nov 61. (3) NDL Review & Analysis, Jan - Mar 62, pp 13 - 14.

(S) The possibility of developing a ray gun weapon employing a linear electron accelerator came under consideration, and plans for feasibility studies were completed. Contract negotiation for a feasibility study began in the second quarter of FY 1962. A $50,000 contract with General Electric was being completed at the close of the year. Meanwhile, a subsidiary study covering radiation changes in organic structures was already under way through a contract with Melpar.[42]

(S) The resumption of nuclear testing by the United States late in FY 1962 led to several radiological survey and measurement projects within NDL, to be carried out at the test sites. Planning and execution of these projects constituted a major part of the RW program in the latter part of the fiscal year.[43]

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42 NDL Review & Analysis, Apr - Jun 62, Secret Supplement, pp 3 - 4.

43 Ibid., pp 7 - 20.

MATERIEL

Management and Organization

Procurement and Production Capability

(U) Funding in the Chemical Corps Procurement of Equipment and Missiles, Army (PEMA) area improved for the second and third consecutive years in FY 1961 and FY 1962. New approvals in FY 1961 totalled $53.2 million, and the total PEMA program, including carryovers and adjustments, was $57.3 million. The FY 1962 program included $82.1 million in new approvals for a total program of $91.8 million. PEMA funds obligated and available for expenditure rose to $99.1 million as of 30 June 1961 and to $152.2 million by the end of FY 1962.[1]

(S) The significant point which the increase in funds demonstrated was that, contrary to the experience of the several years prior to FY 1961, the Chemical Corps was improving its production capability. The new V-agent plant initiated production in April 1961, and by August was producing at scheduled capacity. The M55 VX gas rocket filling line commenced operation in October 1961 and was in full production in November. The ABC-M23 persistent gas land mine filling and assembly lines produced 1,500 items in March 1962 and scheduled production resumed, after a halt for the resolution of several problems, in the final quarter of FY 1962. Production of the M-17 protective mask began in FY 1961 and was approaching full schedule in the plants of two

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1 (1) Quart Hist Rpts, Log Div, OCCmlO, Apr - Jun, Jul - Sep 61. (2) Information from Mrs Eulah Lee, Log Div, OCCmlO, 13 Jul 62. (Program fund data is taken from Log Div working documents. For Comptroller data, stated in slightly different terms, and for expenditure information, see R&E, CmlC Program, FY 61, pp 31 - 37, and R&E, CBR Program, FY 62, pp 38 - 45.)

of the three contractors by the end of FY 1962.[2] These were examples of production programs planned prior to FY 1961; the funds allotted in FY 1961 and FY 1962 also reflected new planning schedules which were the result of regular materiel programs and of the important Department of Defense Project 112 which was designed to improve United States CBR capability.[3]

(S) Among the projects emphasized under Project 112 was an early increase in biological agent and munitions production. Work on biological agent production facilities and filling lines started in the last quarter of FY 1962. One drone disseminator and one missile warhead for biological agents were scheduled for production. Another drone disseminator was under development. Project 112 and associated requirements likewise call for strengthening of the chemical lethal weapons system by the production of two drones, two projectiles, and three missile warheads for Army use. The Navy and the Air Force further tentatively require, in the same system, three spray tanks, four bombs, and one missile warhead. While the Navy and Air Force requirements for biological munitions were in question at the end of FY 1962, the Air Force reinstated the anti-crop agents and munitions projects which had been suspended in FY 1959. The Chemical Corps initiated a crash project for the production of agent TX under Rocky Mountain Arsenal supervision late in FY 1962. By the

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2 (1) CBR Weapons System, Program Objectives, Review and Evaluation, Jul - Sep, Oct - Dec 1961, Jan - Mar 1962. (2) Hqs, USA Cml Center and CmlC MATCOM, Quart Hist Rpts, Apr - Jun, Jul - Sep, Oct - Dec 1961, Jan - Mar, Apr - Jun 1962.

3 See above, pp 9 - 16 for information on Project 112.

end of the year substantial progress had been made at activating and equipping sites and contracting for planting and harvesting.[4] Although the logistical estimate within the 1962 CBR Situation report indicated neither offensive or defensive materiel levels, current or projected, were adequate to support extended employment of chemical and biological munitions,[5] the prospects were brighter at the end of FY 1962 than they had been for a number of years.

(S) Prospects were also brighter on the provision of facilities and production equipment. Although the Department of Defense and Department of the Army had not yet announced a long-range, comprehensive plan for the arsenals,[6] the three Chemical Corps arsenals, Rocky Mountain, Pine Bluff, and Edgewood, all added to their ability to produce. The total arsenal production plants and lines in existence or under construction rose in FY 1961 to 88 from 39 in FY 1960.[7] The number of Government-Owned-Contractor-Operated (GOCO) plants remained at five in FY 1961 and FY 1962 as it had been in FY 1959 and FY 1960, but the Newport Chemical Plant went into full production in FY 1962 and the Department of the Army just at the end of 1962 approved the rehabilitation and conversion of the Muscle Shoals Phosphate Development Works with the

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4 (1) CBR Weapons System, R&E, Jan - Mar 62. (2) Interv, Hist Off with Mr Owen R. Mullen and Maj John P. Byrne, OCCml0, 27 Jun 62. (3) Class Sup, Quart Hist Rpt, Rocky Mountain Arsenal, Apr - Jun 62.

5 The CBR Situation 1962, OCCml0, 1 Jan 62, p 7, and Annex 4, p 5.

6 See Summary of Major Events and Problems, FY 60, p 138.

7 (1) Ibid., p 133. (2) FY 1961 information from Mr Thomas J. Abbott, Operations Control Office, Hqs, USA CBR Agency, 15 Aug 62. (The FY 1962 total of arsenal plants and lines ~~SECRET~~ remained at 88.)

view of resuming production of GB in FY 1965.[8] Brig. Gen. Lloyd E. Fellenz, Materiel Command Commander, conducted a personal survey of GOCO plants and arsenals in FY 1962, and decided as a result to plan for arsenal supervision of GOCO plants. Each arsenal was to supervise the plants in its area of functional interest. For example, the Muscle Shoals plant which produces an intermediate agent for the final production of agent GB at Rocky Mountain Arsenal was to be supervised by that arsenal. Actual conversion to arsenal supervision was withheld because of the Army reorganization.[9]

(U) Chemical Corps production facilities in reserve and commercial facilities under Chemical Corps mobilization planning agreements were as follows:

Table - 5 Production Base[10]

	FY 1961	FY 1962
Package Plants	71	71
Items of Inspection Equipment and Gages in Reserve	34,647	33,000
CmlC ASPPO (Armed Services Procurement Planning) responsibilities for commercial facilities	290	308
Percentage of ASPPO Facilities with CmlC Planning Schedules	65	62

8 Review and Evaluation [Presentation, PEO for CCmlO], CmlC Weapons & Defensive Systems, 4th Qtr, FY 1962.

9 (1) Interv, Hist Off with Brig Gen Lloyd E. Fellenz, Commanding General, Col Frank M. Arthur, Deputy Commander, and Col Emory A. Lewis, Dir for Quality Assurance, USACC and MATCOM, 11 Jun 62. (2) Interv, Hist Off with Mr Asher Z. Cohen, USA CBR Agency, 22 Oct 62.

10 Abbott information, 16 Aug 62.

(U) A significant indication of the Chemical Corps ability to procure materiel appeared in the vastly increased procurement workload in FY 1961 and FY 1962. The New York Chemical Procurement District handled approximately $48.7 million in 1962. The FY 1961 total was more than two and one-half times the FY 1960 figure while that for FY 1962 was almost four times the FY 1960 figure. This workload was accomplished with an average increase of only nine civilian employees during FY 1961 and only 55 additional by the end of FY 1962.[11] There were no unusual problems in handling procurement except one of finding a sufficient number of experienced quality surety engineers.[12] Army Chemical Center Procurement Agency handled $18,133,922 in procurement in FY 1961 and $18,584,466 in FY 1962. About two-thirds of the total in both years was obligated on research and development contracts. Such contracts also accounted for a large portion of the $8.3 million in FY 1961 and the $9.4 million in FY 1962 obligated by the Fort Detrick procurement office. Research and development support and installation support activities also accounted for $6.2 million in FY 1961 and $7.5 million in FY 1962 by Dugway Proving Ground, Pine Bluff Arsenal and Rocky Mountain Arsenal. The San Francisco Chemical District procurement load nearly doubled from $848,000 in 1960 to $1,517,930 in 1961 and more than tripled from that figure to $5,247,036 in 1962. The San Francisco district accomplished the increased workload with

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11 (1) Quart Hist Rpts, USA Cml Procurement Dist, New York, Apr - Jun 61, Apr - Jun 62. (2) Information from Mr Eugene W. Welsh, Jr., Opns Control Off, CBR Agency, 4 Sep 62.

12 Fellenz, Arthur, Lewis interv, 11 Jun 62.

the addition of seventeen permanent employees (including materials inspectors) over the two year period.[13]

Organization

(U) Brig. Gen. Graydon C. Essman, who had assumed command of U.S. Army Chemical Center and Chemical Corps Materiel Command early in 1960, remained in command until 31 August 1961 when he retired.[14] Brig. Gen. Lloyd E. Fellenz, who had been Director for Military Operations, OCCmlO, assumed command on 1 September 1961.[15] General Fellenz remained in command until the end of FY 1962. Col. Gilbert P. Gibbons served as Deputy Commander, U.S. Army Chemical Center and Chemical Corps Materiel Command until the appointment of Col. Frank M. Arthur to that post on 12 December 1961.[16]

(U) Col. Charles H. McNary, who had served as Chief, Logistics Division, OCCmlO since January 1960, was appointed to command Rocky Mountain Arsenal in October 1961, and Col. Vincent F. LaPiana assumed the Logistics Division post.[17]

(U) General Essman altered the organization of the Headquarters, Chemical

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13 (1) Welsh information, 2 Sep 62. (2) Quart Hist Rpts, USA Cml District, San Francisco, Jul - Sep 60, Apr - Jun 62.

14 OCCmlO GO 51, 18 Aug 61.

15 USA CmlC and CmlC MATCOM GO 55, 1 Sep 61.

16 USACC and CmlC MATCOM GO 77, 18 Dec 61.

17 (1) OCCmlO GO 62, 16 Oct 61. (2) Logistics Planning Div was redesignated Logistics Div early in FY 1961 (OCCmlO GO 45, 6 Oct 60).

Headquarters

U. S. Army Chemical Center and Chemical Corps Materiel Command

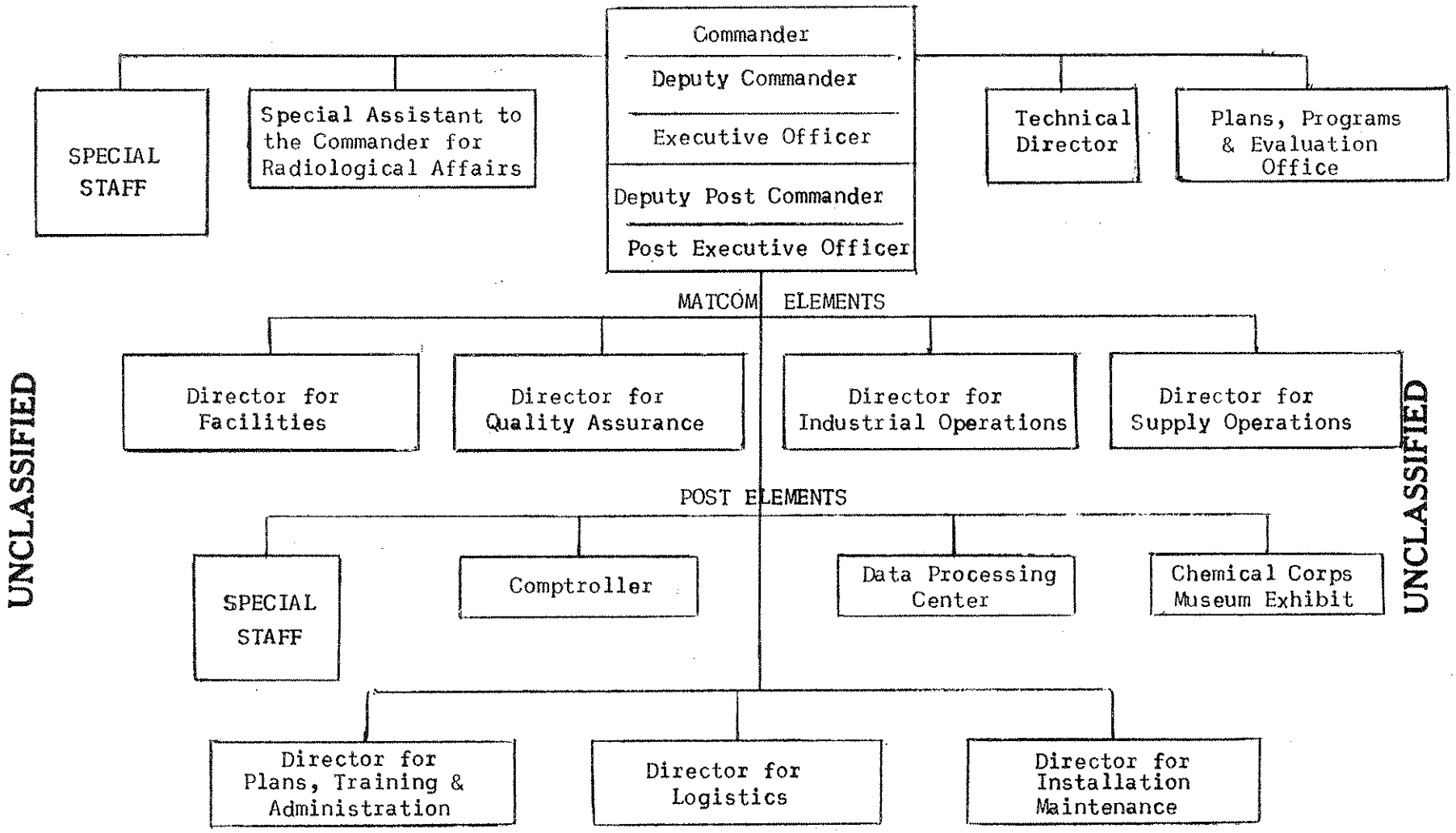

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Chart No. 15

As of 1 July 1962

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Corps Materiel Command (Chart 15) as a result of the studies carried on in FY 1960.[18] The greatest headquarters problem, from General Essman's point of view, was in providing adequate planning services adequately coordinated. The various kinds of planning operations, industrial mobilization, facilities, installations, project and program, and the like, were apportioned among the directorates while long range planning and planning coordination were the function of the Logistics Management Board. The Board found it difficult to coordinate because of the diffusion of operation and a lack of precise authority lines; furthermore, the Board had acquired a number of service responsibilities essentially unconnected with its planning, programming, review and analysis mission.[19] The Logistics Management Board was accordingly discontinued in November 1960. In its place, a Plans, Programs and Evaluation Office was established. The staff and functions, except for those functions relating to facilities and industrial equipment, of the discontinued Directorate for Industrial Mobilization Planning were transferred to the new office along with planning elements of other directorates. The service functions of the Logistics Management Board were reallotted to service elements and staff activities. Many of the Board's high-level review, advising and coordinating activities were transferred to Mr. John L. Traub, formerly senior Board member, in a new position as command Technical Director. Mr. Traub was physically located in the immediate Office of the Commanding General, and the

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18 Summary of Major Events and Problems, FY 60, pp 142 - 43.

19 Interv, Hist Off with Brig Gen Graydon C. Essman, CG, USA CmlC and CmlC MATCOM, 2 Aug 61.

capability of that office closely to review all command projects and programs was further enhanced by adding a position of Assistant Deputy Commander.[20] General Essman felt, after eight months' experience of the revised organization, that the concentration of planning, programming, review and analysis functions in the Plans, Programs and Evaluation Office had been a successful move. He believed, however, that there were still many organizational and management problems upon which there had not been an opportunity to work.[21]

(U) Internal management problems, in General Essman's view, involved a further realignment of functions which would transfer production and procurement experts from the headquarters to strengthen operating agencies. Externally, General Essman was not satisfied with the relationships among the Chemical Corps field commands; he believed that measures should be taken to improve the cooperation and coordination between commands and to realign quality assurance and engineering functions between the Engineering and Materiel Commands. These external relationships, General Essman felt, were beyond his province and required action by the Chief Chemical Officer.[22] The Chief Chemical Officer took one step in the direction of improving external relationships in July 1961 with the appointment of a cross-command project manager for the CW Point Source Alarm. The project manager was in a position to coordinate the activities of all commands on his project through advice to the

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20 ACC and CmlC MATCOM GO 46, 21 Nov 60.

21 Essman interv, 2 Aug 61.

22 Ibid.

commanders and to the Chief Chemical Officer to whom he reported.[23] General Essman strongly believed that the Corps project manager system, as a logical outgrowth of the weapons system review activity set up in OCCmlO in FY 1960 and FY 1961,[24] presented the best means of inter-command coordination short of a wholesale Corps reorganization. In furtherance of this concept, he set up project managers within Materiel Command for the M55 rocket and the M17 mask, who, although they were not designated by the Chief Chemical Officer, in practice worked with all commands on research, production engineering, and testing problems.[25] General Fellenz continued to employ and extended the project manager system after his assumption of command. The project manager system, based on the project engineer system which continued to function, was more effective than the project engineer system in handling especially knotty development and production problems, high priority items, and difficult coordination actions because the project manager could be given the authority to concentrate time and attention on his particular items. It was neither feasible nor necessary to assign project managers for items which could be handled through the project engineer system.

(U) General Fellenz's assessment of the management problems was similar to that of General Essman, but he adopted a different approach to the external

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23 Ltr, CMLRE, CCmlO to Dist, 24 Jul 61, sub: Project Manager and Assistant Project Managers - CW Point Source Alarm.

24 (1) See Summary of Major Events and Problems, FY 1960, p 145. (2) See above, pp 21 - 26 on weapons system review and analysis.

25 Essman interv, 2 Aug 61.

problems. Proceeding from the conclusion that the greatest problems lay in the area of Materiel Command-Engineering Command relationships and functions, General Fellenz worked out an agreement with Col. James H. Batte, Commander, Engineering Command, as to relationship procedures and realignment of functions. The two commanders jointly recommended to the Chief Chemical Officer that their conclusions be made a matter of official policy. At the same time, the two commanders agreed on a temporary exchange of selected key civilians between their headquarters to promote mutual understanding of procedural problems. General Fellenz was impressed with the good will and energy manifested by the personnel of both commands in attacking their mutual problems. By the end of FY 1962 the working relationships between the two commands were on an excellent footing and significant improvement was noted in the handling of a considerably increased workload.[26] The Chief Chemical Officer transferred management of facilities functions (minor construction, real property, repairs and utilities, and communications and photographic services sub-programs) from Materiel Command to Engineering Command. The functions for design and development of inspection aids, gages, and equipment were also transferred from Materiel Command to Engineering Command.[27] These transfers were consistent with existing Engineering Command responsibilities for construction, design engineering, and specifications as was the later transfer of materials requirements lists and distribution of drawing and specifications function

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26 Fellenz, Arthur, Lewis interv, 11 Jun 62.

27 OCCm10 GO 70, 21 Dec 61.

from Edgewood Arsenal, a Materiel Command activity, to Engineering Command.[28] The transfers were also consistent with General Fellenz's concept of internal management -- he wished to concentrate the efforts of his command on the operating procurement, production, supply, and materiel planning programs. Service and support functions not immediately and essentially connected with these principal programs he wished to transfer to elements already handling such functions. A detailed study of Materiel Command management was initiated during 1962 with a view to streamlining the headquarters and to suggesting further functional changes to the Chief Chemical Officer, but the study and further implementation were discontinued pending information and action on the reorganization of the Army.[29]

(U) Some reorganization in the Materiel Command field was accomplished when it was apparent that measures taken would be consistent with Army reorganization plans. The Field Liaison Representatives' Office in Boston, Atlanta, and Dallas were closed. Boston and Atlanta duties were transferred to the New York Chemical Procurement District while Dallas functions were transferred to the Chicago Field Liaison Representative (FLR). The plan, which was in the process of implementation at the end of FY 1962, was to enlarge the Chicago FLR office to the point at which it could handle all mobilization planning and contract administration activities for the central states. Also, Chicago would be prepared to handle limited procurement in the

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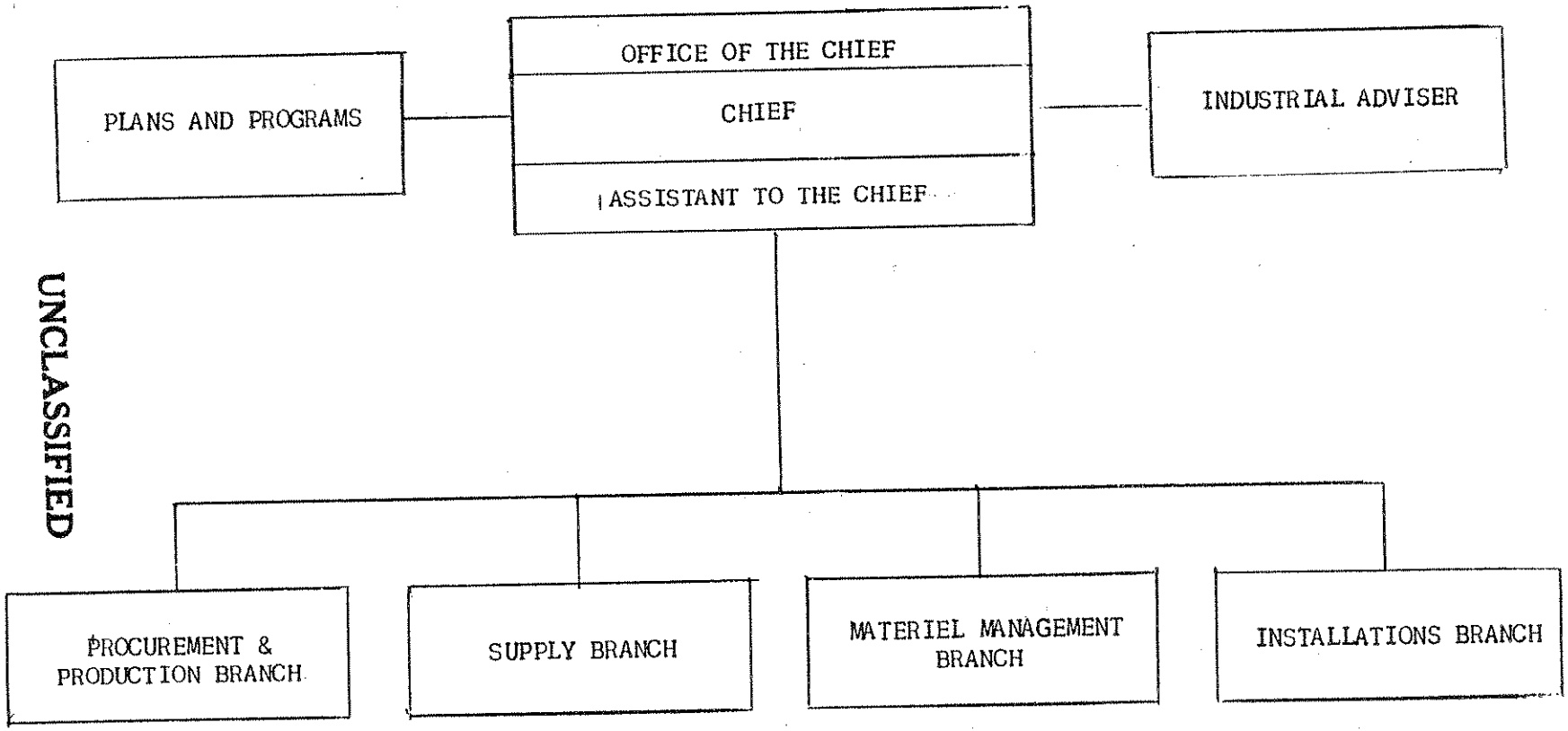
28 OCCm10 GO 12, 27 Mar 62.

29 Fellenz, Arthur, Lewis interv, 11 Jun 62.

LOGISTICS DIVISION
OFFICE OF THE CHIEF CHEMICAL OFFICER



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1 September 1961

Chart No.16

event the procurement load became greater than the New York and San Francisco districts could handle.[30]

(U) Logistics Division, OCCmlO was reorganized on 1 June 1961 (Chart 16). This reorganization eliminated the advisory staff, except for the Industrial Advisor.[31] It created a Plans and Programs Office within the Office of the Division Chief and established the civilian position of Assistant to the Chief, Logistics Division. A military chief was assigned to the Materiel Management Branch (prior to FY 1958, Requirements Branch). Production Planning Branch was redesignated Procurement and Production Branch; Installations Branch was not changed; and a new Supply Branch was created to absorb most of the advisory staff. The division reorganization rendered the division more responsive to the information and liaison requirements of the Deputy Chief of Staff for Logistics, reduced the number of individuals reporting directly to the division chief, provided a staff channel for matters formerly handled by the advisory staff, and permitted greater flexibility of work assignments among the former members of the advisory staff.[32]

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(1) Ibid. (2) OCCmlO GO 15, 16 Apr 62. (3) 2d Ind, CCmlO to CG, USA CmlC and MATCOM, 17 Jan 62, sub: Deactivation of Field Liaison Representative Offices (FLR's) Atlanta, Boston and Dallas on Ltr, [CCmlO to CG, USA CmlC and MATCOM], 11 Dec 61, sub: Same with incl, sub: Proposed Plan for Deactivation of Field Liaison Representative Offices (FLR's) Atlanta, Boston and Dallas. File OCCmlO CMLLD-P.4 (11 Dec 61).

31

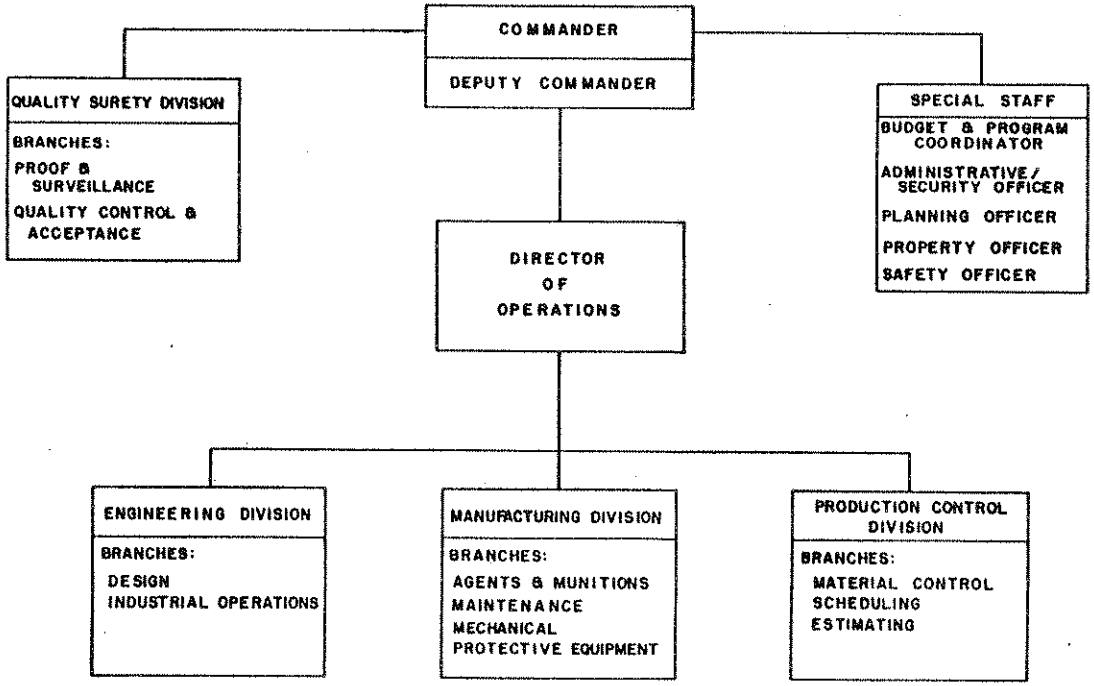
See Summary of Major Events and Problems, FY 55, pp 116 - 18; FY 56, pp 152 - 53 for earlier reorganization.

32

(1) OCCmlO GO 23, 15 May 1961. (2) Quart Hist Rpt, Log Div, OCCmlO, Apr - Jun 61. (3) Interv, Hist Off with Mr Glen I. Rhorer, Log Div, OCCmlO, 30 Jan 62.

U.S. ARMY CHEMICAL CORPS MATERIEL COMMAND

U.S. ARMY CHEMICAL ARSENAL, EDGEWOOD



SUBMITTED:
R.A. HISCOX
MAJOR, CML C
COMMANDING

APPROVED:
LLOYD E. FELLENZ
BRIGADIER GENERAL, U.S.A.
COMMANDING
HQ. USACC & CML C MATCOM

DATE: 1 APRIL 1962

PREPARED BY:
U.S. ARMY CHEMICAL ARSENAL
EDGEWOOD

Chart No. 17

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U.S. ARMY CHEMICAL CORPS MATERIEL COMMAND
U.S. ARMY CHEMICAL ARSENAL
PINE BLUFF ARSENAL, ARKANSAS

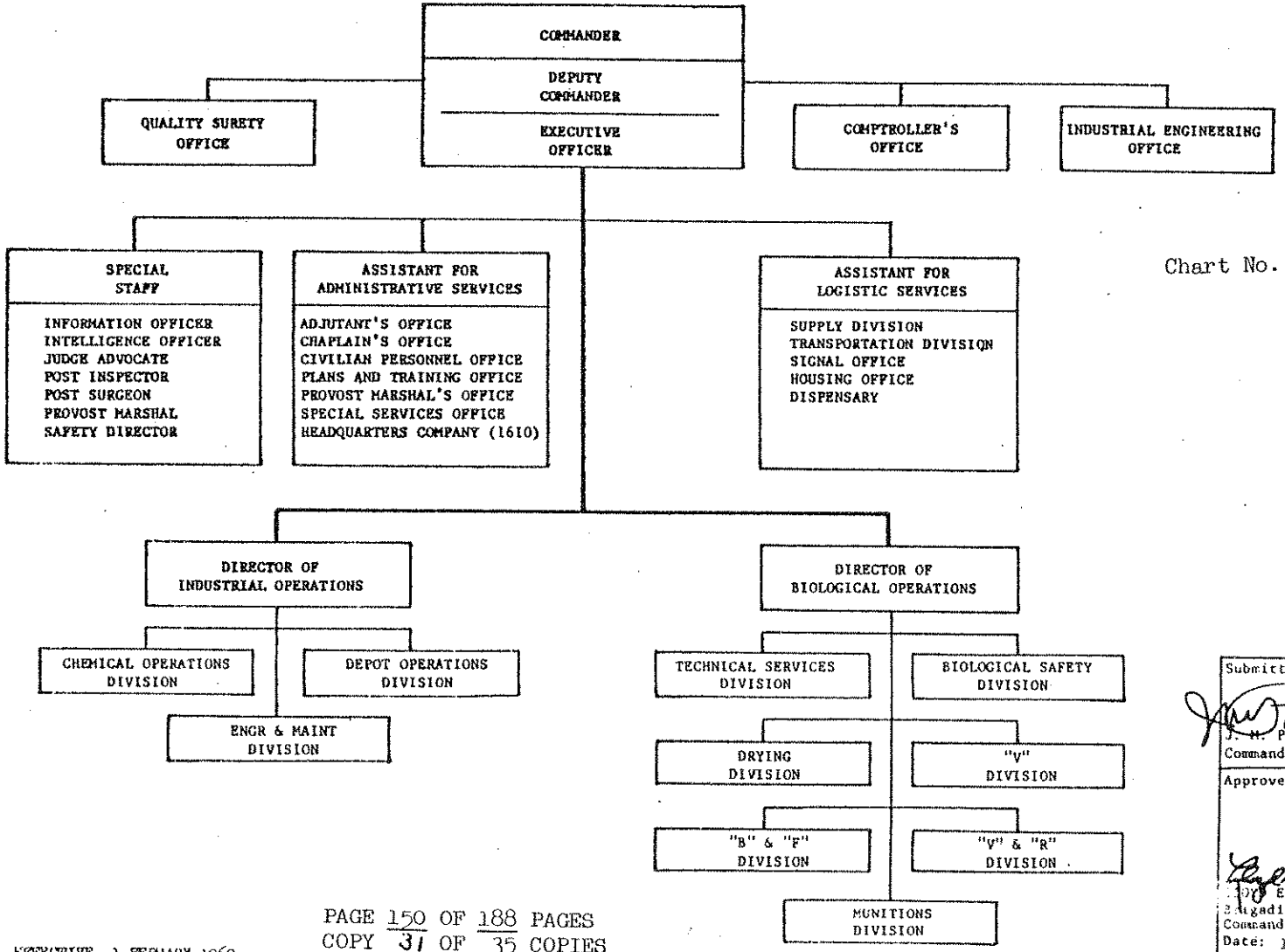

Chart No. 18

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Submitted:

J. N. PALMER, Col, CmlC
Commanding

Approved:

LOYD E. FELLENZ
Brigadier General, USA
Commanding, CmlC MATCOM
Date: 16 January 1962
Prepared By: Mgt Engr Br, PBA

EFFECTIVE 1 FEBRUARY 1962

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US ARMY CHEMICAL CORPS MATERIEL COMMAND
US ARMY CHEMICAL ARSENAL
ROCKY MOUNTAIN ARSENAL

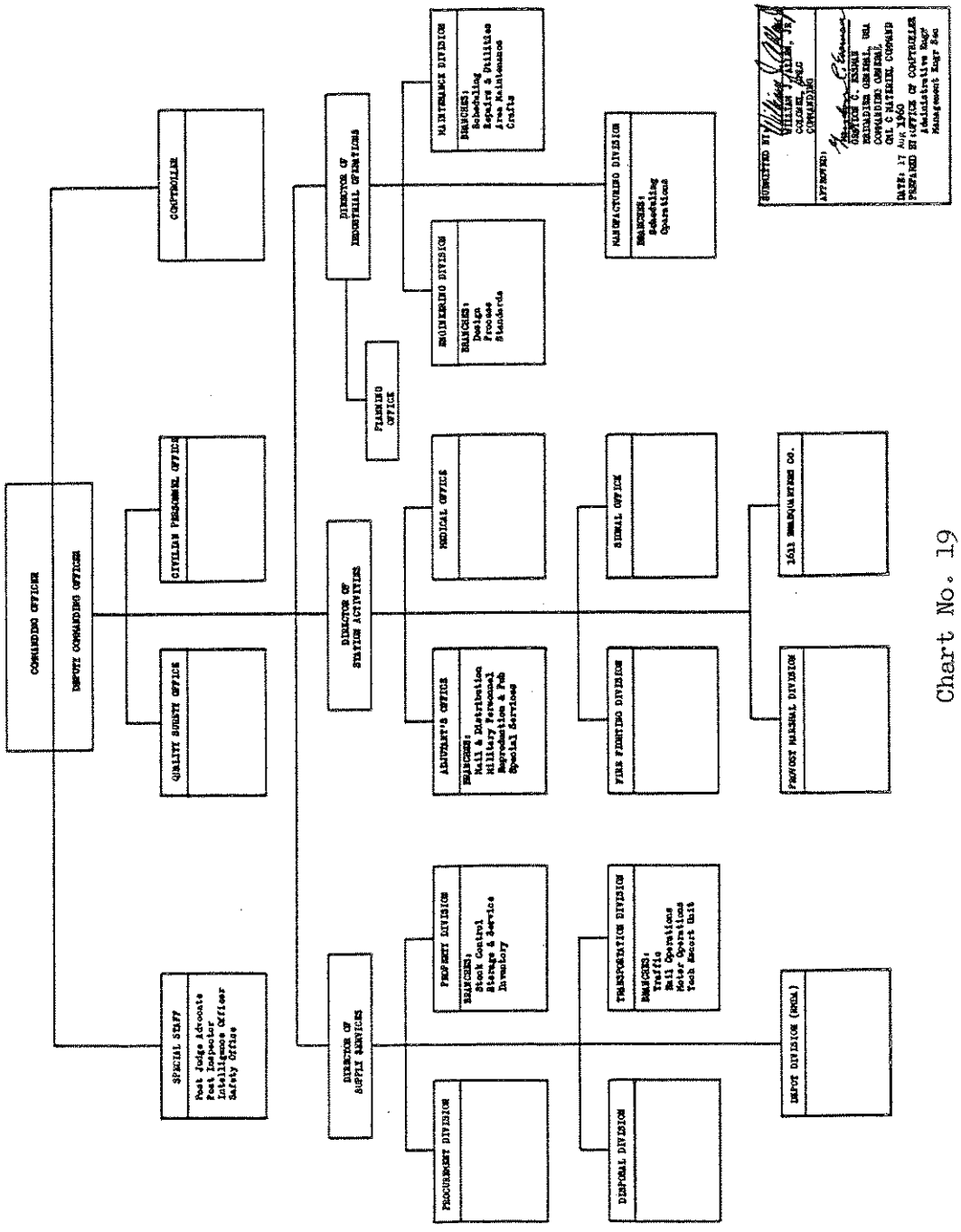

Chart No. 19

UNITED STATES ARMY CHEMICAL CORPS MATERIEL COMMAND

UNITED STATES ARMY CHEMICAL PROCUREMENT DISTRICT, NEW YORK

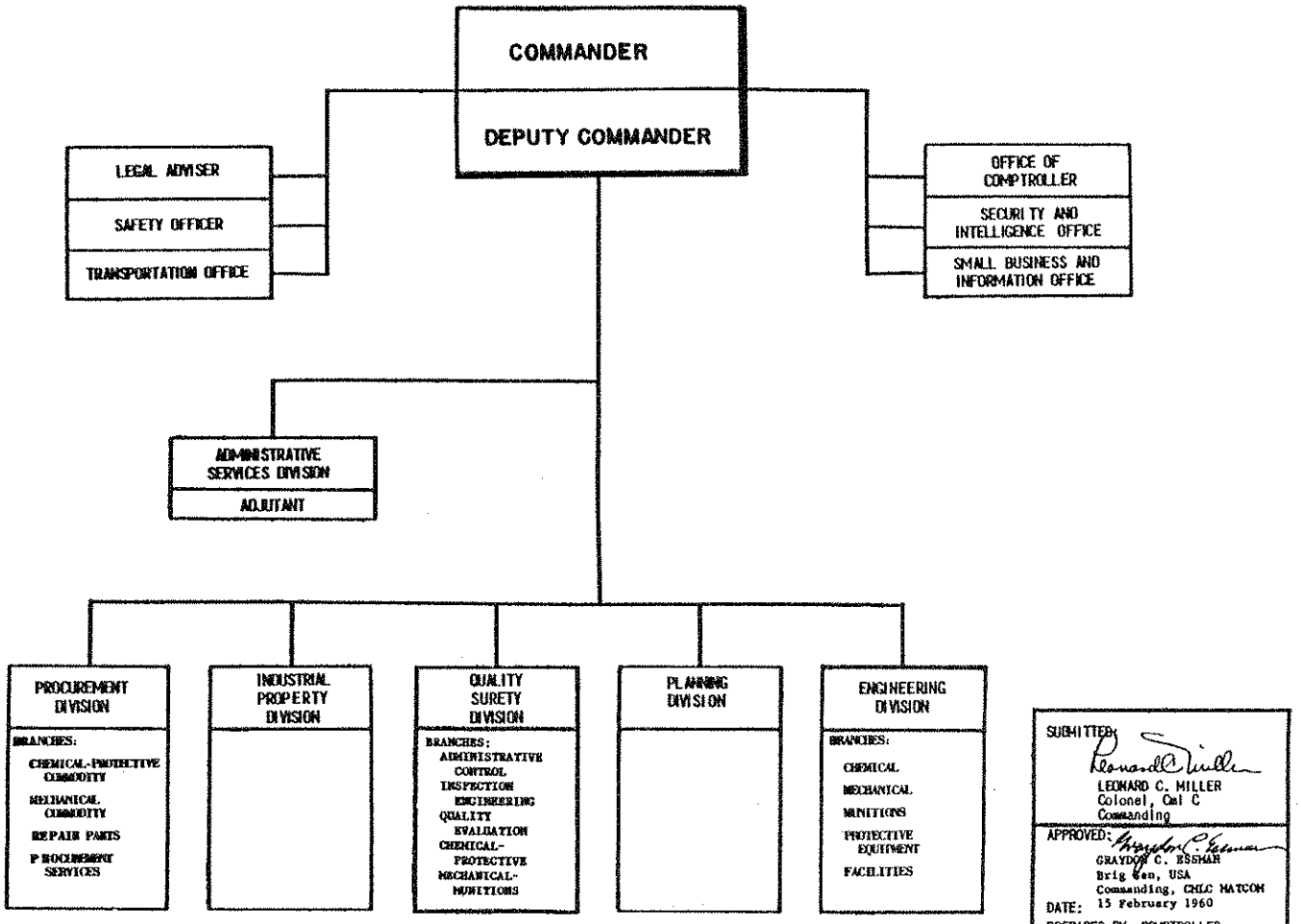

Chart No. 20

U. S. Army Chemical Corps Materiel Command
U. S. Army Chemical Corps District, San Francisco

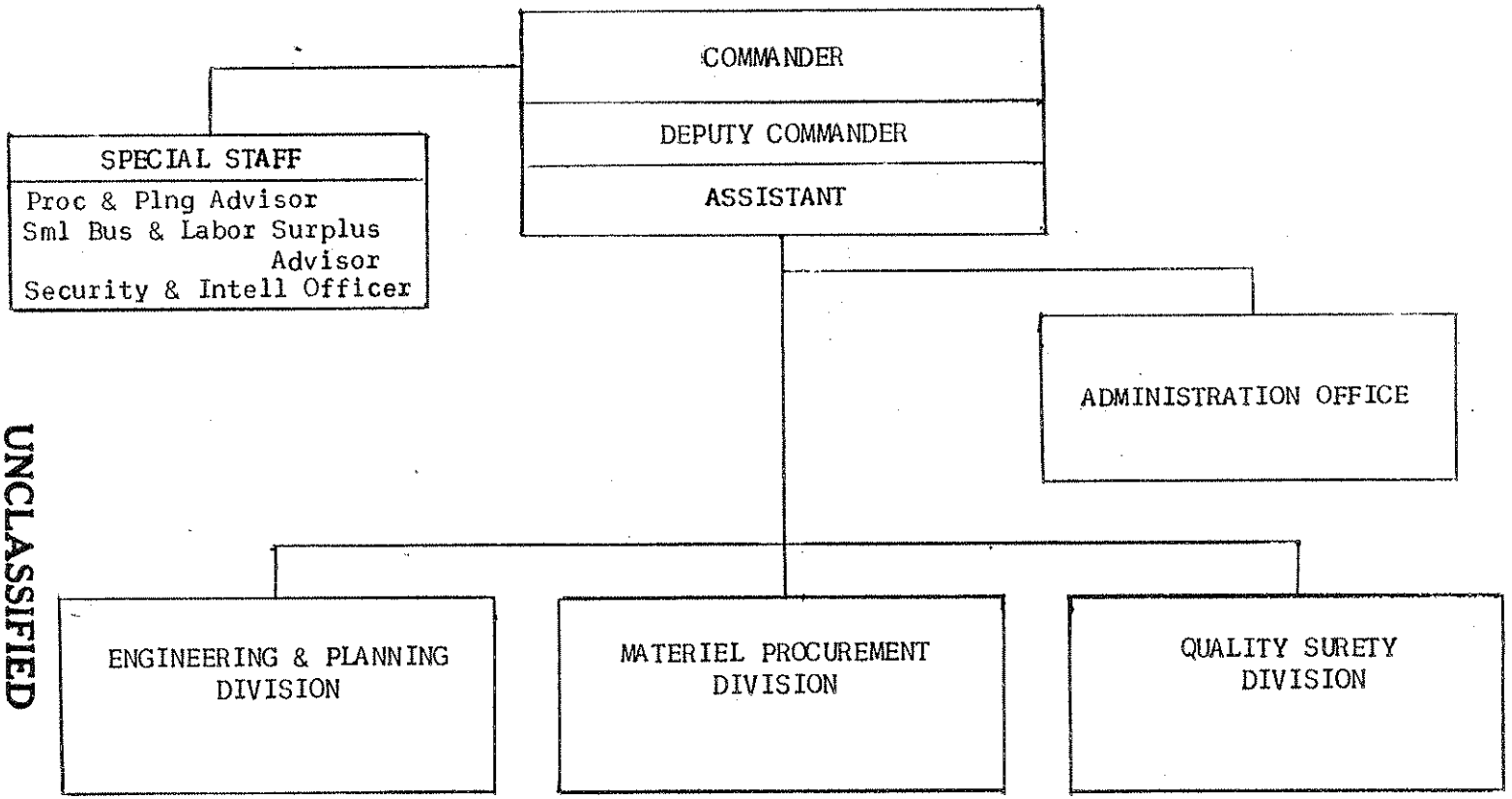

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Chart No. 21

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SUBMITTED:
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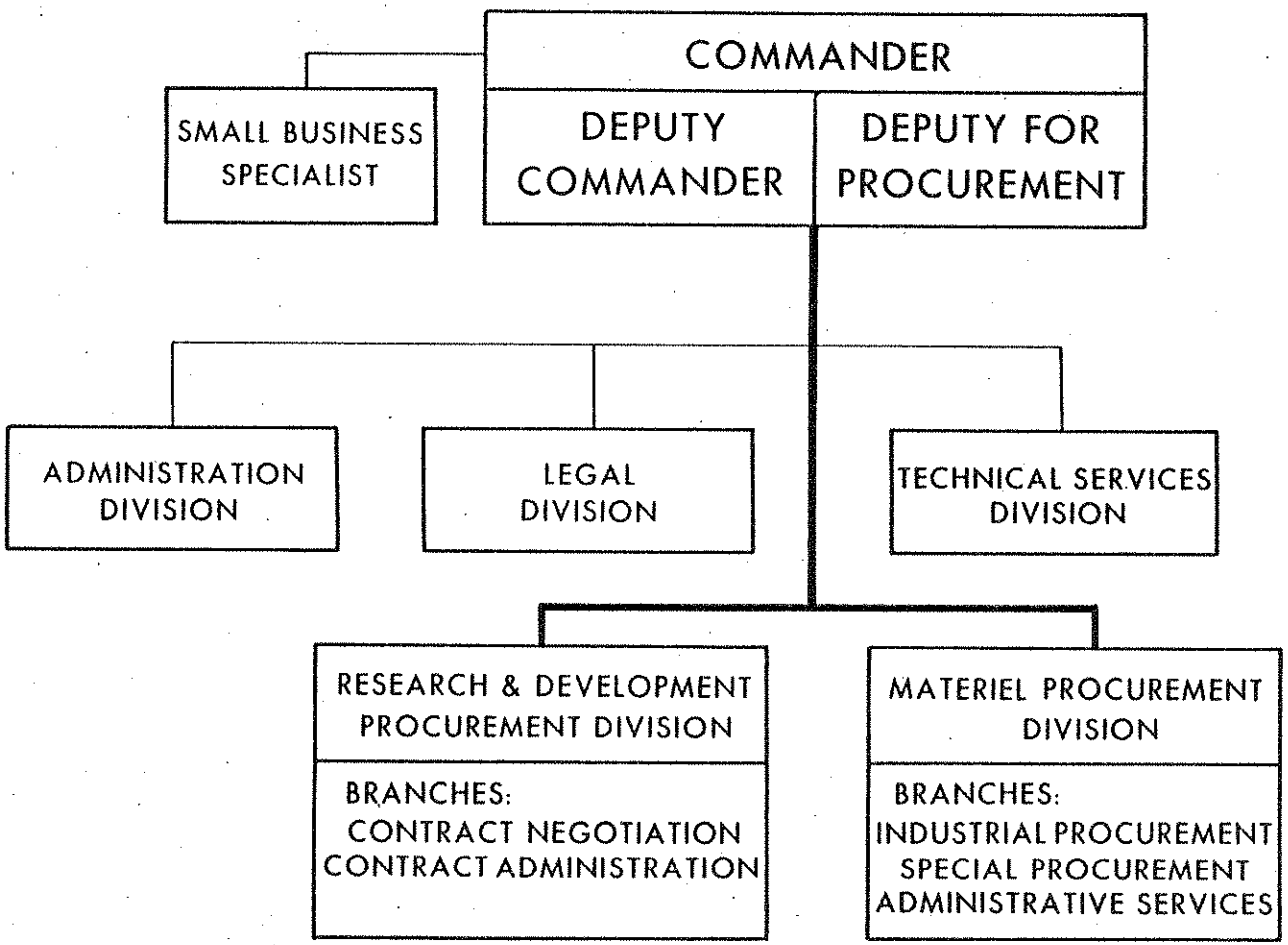
DATE: 19 February 1962

U.S. ARMY CHEMICAL CORPS MATERIEL COMMAND

U. S. ARMY CHEMICAL CENTER PROCUREMENT AGENCY

Chart No. 22



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Submitted:
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GRAYDON C. ESSMAN
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Date: 28 August 1961

TABLE 6

CHEMICAL CORPS ACCEPTED ITEM PRODUCTION AND PROCUREMENT

ITEM (units: ea. unless otherwise designated)	Cumulative to 30 Jun 60	1st Half FY 1961	2d Half FY 1961	1st Half FY 1962	2d Half FY 1962	Cumulative to 30 Jun 62
Ballistic Bomblets[a]	28,236	2,864	7,188	1,800	1,700	41,788
Burster, Incendiary, M4	977	0	10,240	12,049	8,400	31,666
Conversion Kit, Flame Thrower, Irr Gas[a]	50	10	0	0	0	60
Crypto Eqpt, Destroyer, Incen, TH4, M1A2	9,397	1,600	0	200	1,947	13,144
Crypto Eqpt, Destroyer, Incen, TH4, M2A1	7,159	0	0	0	1,040	8,199
Disperser, Riot Control Agent, Port, M3	0	15	231	44	121	411
Disperser, Riot Control Agent, Helicopter or Vehicle Mtd, M5	14[a]	0	56	0	0	70
File Destroyer, Incendiary, ABC-M4	760	67	386	0	0	1,213
Flame Thrower, Port One-Shot, M8	213	67	0	0	0	280
Fuze, Hand Grenade, M201A1	2,010,672	231,795	0	0	131,340	2,364,807
Fuze Set (FMU-7/B)	0	0	0	0	2,391	2,391
Grenade, Hand & Rifle WP, M34 (E16)	3,936	109,356	47,892	0	0	161,184
Grenade Hand Riot, CN1, ABC-M2A2	0	0	0	5,000	22,600	27,600
Grenade, Hand, Smoke, Green, M18	789,468	54,044	7,000	11,000	108,562	970,074
Grenade, Hand, Smoke, Red, M18	910,005	63,340	60,884	0	134,000	1,168,229
Grenade, Hand, Smoke, Violet, M18	222,407	82,701	0	0	7,299	312,407
Grenade, Hand, Smoke, Yellow, M18	908,418	0	65,565	0	94,554	1,068,537
Grenade, Hand, Smoke, White HC, AN-M8	1,575,312	0	88,745	93,859	0	1,757,916
Grenade, Hand, Tear, CS, M7A1	33,778	989	0	0	0	34,767
Grenade, Hand, Tear, CS, M7A2	0	8,000	23,012	115,446	129,246	275,704
(C) Mine, Gas Persistent, VX, 2-Gal, ABC-M23	0	0	0	0	5,951	5,951
(C) Projectile Gas Persistent, VX, 155mm. M121A1	0	0	0	0	274	274
(C) Rocket, Gas, GB, 115mm. M55 (T238)[b]	1,070	0	5,994	25,445	36,485	68,994
(C) Rocket, Gas Persistent, VX, 115mm. M55	0	0	0	11,200	42,042	53,242
Shell, Cml, 155mm. 121 (T77)[c]	75,622	45	0	0	0	75,667
Shell, Smoke, WP, 4.2", M328	282,364	77,361	0	84,217	0	443,942
Smoke, Pot, HC, 30 lb., M5	439,270	28,664	0	0	0	467,934
Adapter, Compressed Air, Breathing App, M4[a]	0	120	230	0	0	350
Alarm, G-Agents, Automatic, Fixed Installation, M5	13	0	3	0	0	16
Bag, Waterproofing, Protective Mask, M1[a]	10,800	15,290	0	120,090	192,700	338,880
Chute, Contaminated Clothing, M1 (E6R2)[a]	18	8	0	0	6	32
Closure, Protective Shelter, Anti-Blast, M1 (E4)	1	0	4	0	0	5
Collection Prot Eqpt, Guided Missile Van, Nike Hercules, TM, E1 (Filter Unit S45R1)	0	0	0	1	92	93
Collective Prot Eqpt, Guided Missile Van, Hawk, E2[d]	3	0	45	73	0	121
Compressor, Reciprocating, CED, 50 CFM, E39R1[a]	1	0	4	0	0	5
Crayon Vesicant, Detector, M7A1, (can of 3)	463,464	110,820	0	0	0	574,284
Decon App, PD, Trailer-Mtd, 200-Gal, M8A2	152	0	0	0	10	162
Decon App, PD, TM, 400-Gal, M9 (E9)	0	0	0	0	1	1
Detector Kit, Carbon Monoxide, Colorimetric, M23[d]	800	116	0	0	0	916
Detector Kit, Chemical Agent, M18	60,635	5,490	0	0	0	66,125
Door, Permeable Membrane, Prot. Shelter, (E12R3) ABC-M1[d]	6	0	4	0	7	17
Filter, Gas, 75 CFM, E36R1 and E37	0	0	0	0	12	12
Filter Gas-Part, 1200 CFM, M15 (E26)	11	2	0	0	2	15
Filter Gas-Part, 2500 CFM, M16 (E27)	19	0	0	0	4	23
Filter Gas-Part, 5000 CFM, M17	45	0	0	0	9	54
Filter Gas-Part, 5000 CFM, C20	8	2	0	0	7	17
Filter Gas-Part, 5000 CFM, C23	4	2	0	0	0	6
Filter Unit, Gas-Part, Tank (3 man) 12 CFM, M8A2	3,564	2,200	2,610	2,560	1,380	12,314
Filter Unit, Gas-Part, EMD, 600 CFM, M9 and M9A1	15	14	0	67	13	109
Filter Unit, Gas-Part, EMD, 1200 CFM, M10 and M10A1	0	0	9	80	0	89
Filter Unit, Gas-Part, EMD, 5000 CFM, M12	20	1	0	0	3	24
Food Testing and Screening Kit, Chem Agent, ABC, M3	8,147	1,008	0	0	1,776	10,931
Indicator, Outlet Valve, Leakage, M4A1[d]	0	0	0	0	5	5
Mask, Gas, ND, MK, V	313,719	0	0	0	23,228	336,947
Mask, Protective, Field, M17	4,605	500	18,490	151,368	301,340	476,303
Mask, Prot, Headwound, ABC-M18 (E5R3)[d]	0	0	22	330	1,198	1,550
Mask, Prot, Helicopter Pilots (E75R2) w/Hood, E34[a]	108	0	36	0	0	144
Mask, Prot, Tank, M14, ABC-M14A1 and M14A2	0	0	633	10,084	8,252	18,969
Paper, Chemical Agent Detector, M6A1	22,300	5,175	9,125	0	33,450	70,050
Protective Clothing (Impregnated) (Unit: Garments)	19,558	40,388	18,844	42,668	35,522	156,980
Radioactive Source Set (M3)	269	0	0	119	0	388
Respirator, Air Filter Paint Spray, M5	53,171	365	0	0	0	53,536
Safety Equip Set, Respiratory, Gasoline Tank Cleaning #1[d]	0	5	14	0	14	33
Sample Kit, Chem Agent, M12[d]	257	0	6	0	0	263
Valve, Antiback Draft, Prot Shelter, M2[d]	0	73	43	0	0	116
Water Test Kit, Poisons, M4A1	211	0	38	0	0	249
Winterizing Kit, Prot, Mask, M1[d]	16,794	1,120	0	0	0	17,914
(C) Agent VX (Unit: tons)	0	0	0	575	0	575
Bulk Agent, CS (Unit: lbs)	0	5,952	24,000	0	0	29,952
Bulk Agent, CS1 (Unit: lbs)	0	4,409	15,266	15,772	205,380	240,827
Capsules, CS (Unit: lbs)	26,500	0	40,000	90,000	75,000	231,500
Thickener, Incendiary Oil, M2 (Unit: lbs)	32,425,600	40,000	0	82,900	0	32,548,500

[a] Engineer Test/User Test Item
[b] Rocket, Gas, GB, 115mm. M55 (T238) ETUT - 1,964, 40 simulant filled
[c] Filling only
[d] Army stock fund item

Source: Information furnished by Mrs Florence Eckert, Assistant for Technical Operations, Operations Control Office (MUCOM).

Procurement and Production, Current and Planned

(U) While the total Chemical Corps procurement and production program, as indicated above, increased several fold in fiscal years 1961 and 1962, the low FY 1959 and FY 1960 obligations were still being reflected in deliveries in FY 1961. Total deliveries more than four times the value of the FY 1961 total were made in FY 1962. Table 6 indicates deliveries by items. These delivered items reflected a PEMA dollar value of $5.4 million in FY 1961 and $24.1 million in FY 1962. The initial FY 1961 delivery program was $13.2 million, but reductions were necessary because of engineering, manufacturing, contracting, components and materials problems with respect to a number of major items, especially the M17 and M14A1 masks, the M8A2 filter unit, the M4 disperser, and VX agent and munitions. The FY 1962 initial program was $41.1 million; the reduction in FY 1962 were brought about for the same reasons as in FY 1961, and some of the same items were involved. But some of the 1962 reductions also came about because of reductions in procurement costs, primarily for the M55 rocket and agent VX.[33]

(U) An index of expected deliveries in future years as well as of the volume procurement and production workload in the Materiel Command may be derived from the following tabulation of procurement and production documents and dollar values assigned to actions processed by the Directorate for Industrial Operations:[34]

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33 (1) R&E, CmlC Program, FY 61, pp 96 - 97. (2) Review and Analysis of Materiel Command Operating Program, Jul - Sep, Oct - Dec 61.

34 Quart Hist Rpts, MATCOM, FY 1961, FY 1962.

	FY 1961 Number	FY 1961 Value	FY 1962 Number	FY 1962 Value
Service Orders and Amendments	33	$ 1,929,274	31	$ 2,139,420
Procurement Orders	50	18,690,324	63	36,963,513
Project Orders for Arsenals	54	19,400,290	54	22,914,011

Thus, the amount of business given to arsenals was, in FY 1961, slightly greater than procurement from industry, but, in FY 1962, industrial procurement was considerably greater. In FY 1961 41 percent of total procurement went to small business while in FY 1962 the small business share fell to 35 percent. These percentages in both cases represent a good record particularly in view of the large amount of procurement which because of the items, such as agents, rockets, and protective masks, involved can be contracted only with large industry.[35]

(U) The FY 1961 Production Base program (4200 Funds) at $17.4 million nearly tripled FY 1960. A further increase to $23.7 million came in FY 1962. More than half of the 1961 program was allotted to Production Engineering Measures while nearly two-thirds of the FY 1962 program provided for Government-owned industrial facilities. With one exception of a lay-away project in 1961, all Production Base projects in both fiscal years were devoted to the two types of projects mentioned above.[36]

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35 R&E, CmlC Program, FY 61, pp 13 - 14; CBR Program FY 62, p 14.

36 R&E, CBR Program, FY 62, p 124.

(U) The two other principal elements of the Production Base Program were the Industrial Readiness Planning Program and a special studies series. The Industrial Readiness Planning Program was little changed from previous years -- its principal aim remained the effort to persuade industrial concerns to make definite plans for the production of critical items in event of mobilization. Early in FY 1961 new guidance reflecting instructions received in FY 1960 was disseminated to the field procurement offices where contacts with industry were made.[37] As was expected, the new instructions permitted more flexibility in planning and allowed for the issuance of a comprehensive listing of industrial readiness items, plans and forecasts in FY 1961. This listing was extensively revised, updated and improved in the last quarter of FY 1962.[38] This administrative arrangement, in addition to the data processing and monthly review of all production base projects,[39] provided a firm background of management information for the entire Production Base Program. Special studies provided additional information on nine especially important end-items to give the Secretary of Defense full information for the establishment of a sound FY 1963 procurement program.[40] An offshoot of the Production Base Program for a number of years has been the Production Equipment Inventory.

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37 Summary of Major Events and Problems, FY 60, p 150.

38 Quart Hist Rpts, MATCOM, FY 1961 - 1962.

39 Summary of Major Events and Problems, FY 60, p 151.

40 (1) Quart Hist Rpts, MATCOM, Apr - Jun 1962. (2) Interv, Hist Off with Mr Sidney Katz and Mr Hosmer L. Farr, Logistics Div, OCCmlO, 30 Jun 62.

During fiscal years 1961 and 1962 the Chemical Corps Production Equipment Inventory was complete at more than 38,000 items, and actions with respect to the inventory were routine. The cost of inventory by the Production Equipment Agency at Rock Island Arsenal was such that the Chemical Corps studied the possibility and decided to withdraw approximately 11,000 items of special equipment under the provisions of existing Army regulations. The withdrawn equipment was to form a special Chemical Corps inventory and part of the equipment was to be replaced under a production base project. These plans were held in abeyance pending Army reorganization.[41]

Procurement, Production, and Planning Items

(U) The following are some items, current and planned, of particular interest:

(S) Emergency Procurement of Chemicals. In November 1961, higher authority requested the Chemical Corps to provide a defoliant and other chemicals for emergency use in the southeast Asia crisis. The New York Procurement District procured and shipped 15,000 pounds of cacyodylic acid and 228,000 gallons of a defoliant mixture in time for use in southeast Asia. Total cost of these materials was $1,695,407.[42]

(S) BW Production Facilities.[43] Production Base projects for the

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41 (1) Interv, Hist Off with Mr Edward H. Roush, Log Div, OCCmlO, 30 Jan 62. (2) Quart Hist Rpts, MATCOM, FY 1961 - 1962.

42 (1) Fellenz, Arthur, Lewis interv, 9 Jun 62. (2) Cohen interv, 22 Oct 62. (3) Information from Miss Mary Walsh, Opns Control Off, CBR Agency, 22 Oct 62.

43 Summary of Major Events and [redacted] Problems, FY 60, p 152.

construction or modification of facilities at Pine Bluff Arsenal to provide pilot plants for the production of dry agent UL, an etomological agent, and dry and wet viral/richettsial agents were resubmitted by the Chief Chemical Officer to higher authority in FY 1961. All the projects, dubbed X1001, X1002, and X1009, were approved in June 1961 for a total initial cost of $6.8 million and target completion dates were set for FY 1964.[44] During FY 1962 contracts were let for design, equipment, and construction, and work started on all projects between 7 August and 6 September 1961. Funding was subsequently increased by $3.3 million. No major problems were encountered by the end of FY 1962. Such problems as did arise stemmed largely from the necessity for designing and producing highly technical and extremely complicated equipment. Also in FY 1962 a project was approved and funded in the amount of $6.6 million to modify the existing AB-1 and UL-1 agent production and filling facility at Pine Bluff Arsenal to provide for munitions systems other than the designated M33 cluster which the Air Force no longer considered compatible with high-performance aircraft. This work, initiated under the provisions of Project 112, was only 1 percent complete by the end of FY 1962, but a readiness date of FY 1964 had been set.[45]

(S) VX Agent and Munitions.[46] Test operation of the Newport Chemical

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44 Review and Evaluation, Chemical Corps Operating Program, FY 1961, pp 99 - 100.

45 (1) R&E, CBR Program, FY 62, pp 125 - 26. (2) Quart Hist Rpt, USA CmlC ENCOM, Apr - Jun 62.

46 Summary of Major Events and Problems, FY 60, pp 152 - 54.

Plant for the production of agent VX commenced on schedule in the 3d Quarter of FY 1961. By the time the test operation was complete in July 1961, the overall progress on the plant represented about 90 percent completion with construction at 86 percent.[47] Meanwhile, the Newport Plant had been activated as a Class II industrial activity of the Chief Chemical Officer,[48] and $339,296 was transferred to the Corps of Engineers to provide storage facilities at the plant.[49] Full scale production of agent commenced early in FY 1962, and munitions filling began in the second half of the fiscal year. A number of problems were encountered in the preparation and production phases. The preparation problems involved the overlapping of the building and operating contracts even though both were held by the Food Machinery and Chemicals Corporation, details concerning M23 land mine assembly and design, and the disposition of excess construction and operating equipment. Except for the land-mine problem, these problems were essentially solved by 30 June 1961.[50] The land-mine problem persisted into the final quarter of FY 1962 when redesign of components and alterations in the production line solved them.[51] Filling operations commenced

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47 Rpt, Resident Project Engineer, Food Machinery and Chemicals Corporation to C.L. Sayre, et al., 30 June 1961, sub: Monthly Progress Report #24. In Newport Plant file, Installations Br, Log Div, OCCml0.

48 DA GO 33, 20 Sep 61, eff 26 Apr 61.

49 DF, CCml0 to CofE, 17 Jan 61, sub: Contract No DA 11-032-ENG-7295, Newport Chemical Facility. In Newport Plant file.

50 Resident Project Engineer, Monthly Progress Reports, 21, 24 Mar 61; #22, 21 Apr 61; #23, 26 May 61; #24, 30 Jun 61.

51 Quart Hist Rpt, MATCOM, [redacted] Apr - Jun 62.

on the M55 rocket. The M55 rocket was also filled with agent GB on a new line at Rocky Mountain Arsenal.[52]

(C) MC-1 Massive Bomb. The Air Force authorized production of the MC-1 Massive Bomb, a 750-pound bomb compatible with high performance aircraft. Bomb bodies formerly filled with high explosives were washed out and modified for GB filling, and a new filling and assembly line was erected at Rocky Mountain Arsenal. The arsenal received a project order for 10,000 bombs (15 simulant filled) in September 1961. Initial delivery on this schedule, the estimated cost of which was $2.6 million was expected in FY 1963.[53]

(C) Riot Control Agent and Munitions.[54] As predicted in FY 1960, commercial production of riot control agent CS and CS1 proved feasible in FY 1961. Edgewood Arsenal continued to produce until commercial sources could solve the micro-pulverizing and safety problems connected with production. Commercial producers then assumed the load although some equipment problems continued to be experienced. Edgewood Arsenal also attempted to handle the filling of M7A2 and M25A2 grenades,[55] but the workload was too great. Pine

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52 (1) Quart Hist Rpts, MATCOM, FY 1962. (2) Quart Hist Rpts, Rocky Mountain Arsenal, FY 1962.

53 (1) Cohen interv, 22 Oct 62. (2) Walsh information, 22 Oct 62.

54 Summary of Major Events and Problems, FY 60, pp 155 - 56.

55 The M7A2 was an improved grenade developed during production of the M7A1.

Bluff Arsenal accordingly undertook to manufacture the M7A2 and the M25A2 on makeshift lines pending the construction of a permanent filling and assembly facility. Orders were met by using both arsenals. During the first quarter of FY 1962, Edgewood completed its schedule and the permanent facility was accepted at Pine Bluff Arsenal. Many production line design problems came to light when the new facility assumed the full burden of production, but orders were met by three-shift operation while design modification was carried out. By the end of FY 1962 the problems had been solved and production was on a firm basis.[56]

(C) Incapacitating Agent BZ and Munitions.[57] An incapacitating agent designated BZ was chosen and standardized during the period under consideration. While agent production was still in the development contract stage, Materiel Command appointed a project manager who, by the end of FY 1962, had assumed Chemical Corps project managership in anticipation of production in FY 1964. A Production Base project in the initial amount of $1,070,000 was granted in April 1962, and design and architectural engineering work was proceeding on schedule at the end of FY 1962.[58]

(C) Masks.[59] FY 1960 problems in the production of the M17 Field

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56 Quart Hist Rpts, MATCOM, FY 1961 - 1962.

57 Summary of Major Events and Problems, FY 60, p 158.

58 (1) Quart Hist Rpts, MATCOM, Oct - Dec 61, Jan - Mar, Apr - Jun 62. (2) R&E, CBR Program, FY 62, p 125.

59 Summary of Major Events and Problems, FY 60, pp 156 - 57.

Protective Mask continued in FY 1961. The filter problem was finally solved and filter material was furnished to Mine Safety Appliances Company and General Tire and Rubber Company to initiate production. During first quarter FY 1961, a contract for 474,000 masks was awarded to the Firestone Tire and Rubber Company. General Tire produced 500 masks in second quarter FY 1961 but further production was prevented by filter element, rubber, and head-harness problems. Mine Safety Appliances Company commenced production on a limited basis in third quarter FY 1961, but retooling of the filter element line was necessary before full production could commence. Firestone had difficulty with faceblank molding throughout FY 1961 and first half of FY 1962 and did not initiate production. General Fellenz personally visited the contractors to point out that production schedules were so far in arears that it would soon be necessary to declare the contractors in default. Production for the second half of FY 1962 was double that for the first half, but the program was still off schedule because of continuing rubber and filter element problems.[60] General Tire also had the contract for production engineering on the E52R27 Civilian Protective Mask which was type-classified in the first quarter of FY 1961 as the M22. At the time of type classification, the Office of Civil Defense authorized the production of 25,000 masks as part of the production engineering task. Test masks were produced in the first quarter of FY 1962, and the first phase of the engineering study was completed in the second quarter. At the end of FY 1962, General Tire had requested and

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(1) Fellenz, Arthur, Lewis interv, 11 Jun 62. (2) Quart Hist Rpts, MATCOM, FY 1961 - 1962.

received an extension of the engineering study second phase (test production of the 25,000 quantity reduced to 20,000) to the end of August 1962, and had set the production engineering study completion target at the end of first quarter, FY 1963. Thus, during FY 1961 and 1962 the Chemical Corps was manufacturing or preparing for the manufacture of the M17 mask for the Army and the Marine Corps, and the M22 for Civil Defense. In the same period, the Navy placed a new requirement for 50,000 of its Gas Mask, Mark V. A contract was awarded to the Acushnet Process Company during fourth quarter, FY 1961. Production was initiated in February 1962, and after one resolved production problem, nearly reached the 10,000 mask per month target by the end of FY 1962.[61]

(S) Mechanized Main Armament Flame Thrower, M10-8. The M10-8 (E31R1-36R1) mechanized flame thrower was type classified on 10 March 1962.[62] This flame thrower, designed for mounting in the M113 Armored Personnel Carrier, is a major weapon, and with the portable flame thrower, ABC-M9-7 constitutes the ground flame potential of United States Forces. No contractor was selected in FY 1962, but it was expected that procurement would commence and the first unit would be delivered by the end of FY 1963. Full production deliveries (187 units) were scheduled for FY 1964. The cost was expected to run in excess of $32 million for each of the first two years and about $23

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61 Quart Hist Rpts, MATCOM, FY 1961 - 1962.

62 CCTC Item 3977, 10 Mar 62.

million for each of the succeeding four years.[63]

Quality Assurance

Acceptance Inspection

(U) Contractor operated in-process inspection which has applied to Chemical Corps contracts since FY 1958 continued to operate with increasingly satisfactory results in fiscal years 1961 and 1962.[64] Two problem areas in connection with contractor inspection were attacked in the year covered by this report. The first was the provision of adequate orientation in Government methods for contractors and their inspectors, and the second was the provision of adequate calibration services for gages. The second problem also affected the Arsenals. In connection with the first problem, the two motion picture films initiated in FY 1960 were both completed and distributed world-wide through the Signal Corps in FY 1962. Both films were extensively used for their original purpose as well as for general orientation and information on the Chemical Corps. The preparation of quality surety manuals also provided specific orientation.[65] Many contractors, such as the Food Machinery and Chemicals Corporation, were writing their own in-process quality surety manuals and submitting them to the Chemical Corps for verification and comment.

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63 (1) Cohen interv, 22 Oct 62. (2) USA CmlC, "The Army Materiel Control Program, FY 1961 - 1967," 21 Jun 62, pp 17 - 18.

64 Summary of Major Events and Problems, FY 60, p 158.

65 Ibid., pp 159 - 60.

The Chemical Corps intention was to include complete inspection criteria and procedures either in Government or contractor's manuals so that field inspections can be entirely covered by manual authorized procedures. That portion of the Chemical Corps manual which became DOD Handbook H-109 was supplemented by the Chemical Corps with an explanation of the mathematical computations employed as this handbook is in wide use throughout the Department of Defense.[66]

(U) In connection with the calibration problem, the Chemical Corps has long had good calibration services as provided by the U.S. Army Chemical Corps Quality Assurance Technical Agency, the metrology laboratories at Rocky Mountain Arsenal and the New York Procurement District, and, from time to time, by contractors. Among the military services in general, the difficulty came in the lack of calibration standards and lack of knowledge and available facilities among commercial contractors. As a result, in the past, each new quality surety project required a new calibration standard and much of this detailed calibration work was thrown into the National Bureau of Standards. The volume of work strained the facilities of that agency. The Army Inspection and Quality Control Council became interested in standardizing calibration in FY 1961. The Chemical Corps suggestion was that all existing metrology laboratories be made available to the Army as a whole and that their activities be coordinated. The coordination work began

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(1) Interv, Hist Off with Mr Edward J. Van Arnhem, Log Div, OCCmlO, 30 Jan 62. (2) Quart Hist Rpts, MATCOM, FY 61 - 62. (3) Statement, Dir QA, MATCOM to Hist Off, 5 Feb 62.

at once, and, at the end of FY 1962, the Chemical Corps was cooperating with the other technical services, now with Department of Defense interest, to develop standards and common procedures. The forecast was for increased contractor and service metrology laboratory responsibility in this area, lesser costs, and faster action since the National Bureau of Standards would be called upon only for general standards applicable in a variety of instances.[67]

(U) A larger volume of procurement brought a larger acceptance inspection workload. Most of the increase could be handled through contractor's inspection under the manuals and procedures mentioned above, but there was still the problem of getting enough quality surety engineers in field installations to oversee inspection operations. In a few cases increased supervision was supplied directly from Chemical Corps Materiel Command Headquarters, and in one case, the production of the E41 Automatic Field Alarm, a quality assurance project engineer operated directly in the contractor's plant. The nature of this item made it impossible to manufacture inspection aids; field expedients were therefore adopted pending final item design determination which had not been made by the end of FY 1962. In other cases, it was necessary to assist in the installation of a quality control facility in the contractor's plant. For example, a model facility was constructed in the Mine Safety Appliances Company plant in Esmond, Rhode

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67 (1) Van Arnhem interv, 30 Jan 62. (2) Quart Hist Rpts, MATCOM, Jan - Mar 61, Jan - Mar, Apr - Jun 62.

Island, to serve as a basis for quality surety work in all M17 mask production.[68]

Surveillance Inspection

(U) With more materials being delivered to stocks, the surveillance workload increased. One example of problems in this field arose in connection with the necessity for storing VX agent munitions. Since these munitions were new, new procedures and equipment were required. A surveillance facility was installed at the storage site. Special surveillance procedures were also necessary for materials about to enter the supply system or for stored materials to be used in munitions manufacture. An example of materials to be used in current manufacturing and filling operations was agent GB. Since none of this agent has been manufactured for several years, special surveillance was required to determine that stored agent met the specifications for filling new munitions. In a project which proceeded during both fiscal years, it was found that some GB agent would require reworking because acid content or storage pressures were too high to be compatible with materials used in the new munitions.[69]

(U) The Chemical Corps was also called upon to supply surveillance procedures for chemical materials owned and stored by other agencies such as the Office of Civil Defense. Procedures were worked out in conference with these agencies, and an orientation course was developed to present to any agency

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68 Quart Hist Rpts, MATCOM, FY 61 - 62.

69 (1) Ibid. (2) Statement, Dir QA MATCOM to Hist Off, 5 Feb 62.

U. S. ARMY CHEMICAL CORPS MATERIEL COMMAND

U. S. ARMY CHEMICAL CORPS
QUALITY ASSURANCE TECHNICAL AGENCY

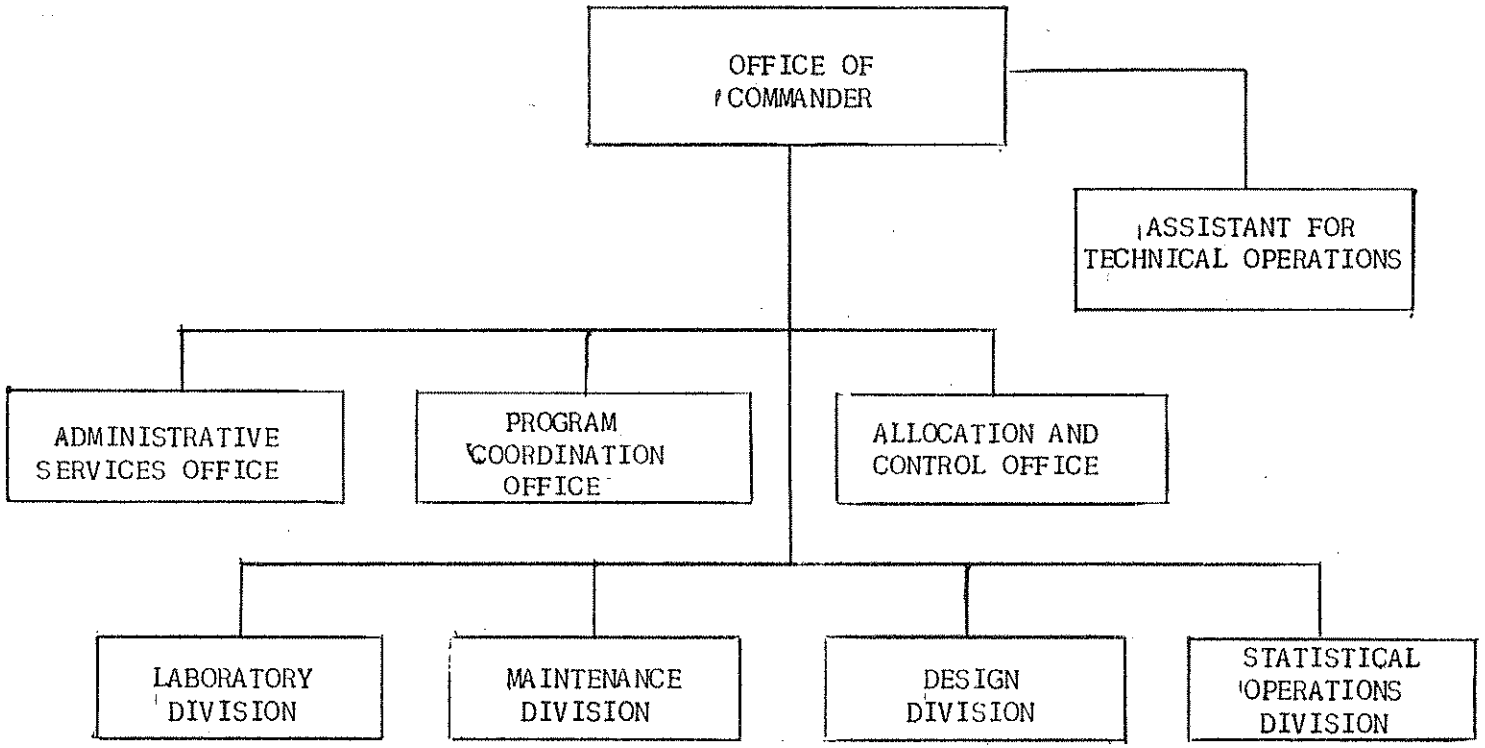

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Chart No. 23

FY 1962

manifesting an interest.[70]

Quality Assurance Functions

(U) As the result of a management study conducted in the Materiel Command headquarters in FY 1962, it was decided to transfer the function of supply for quality assurance inspection aids from the Directorate for Supply Operations to the Quality Assurance Technical Agency (Chart 23). The transfer was made in April 1962, and the entire responsibility for inspection aids was thus placed in one agency. The Quality Assurance Technical Agency was at the same time reorganized to accommodate the new functions and to transfer the statistical operations division, which was performing work more closely allied to that of the Materiel Command headquarters, into the Directorate for Quality Assurance.[71]

Supply[72]

(U) In fiscal years 1961 and 1962 as in the several previous years Chemical Corps supply service to customers was highly efficient: issue shipments in the continental United States were on time in 93.4 percent of the

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70 Quart Hist Rpts, MATCOM, Jul - Sep, Oct - Dec 60, Jan - Mar 61.

71 (1) ACC and MATCOM GO 25, 16 Apr 62. (2) Quart Hist Rpt, MATCOM, Jan - Mar 62.

72 "Chemical Corps Storage and Maintenance Performance" table previously included in this report (Summary of Major Events and Problems, FY 60, Table 6, p 165) is omitted for FY 1961 and FY 1962 because comparable information is tabulated in: Review and Evaluation, Chemical Corps Operation Program, FY 1961, pp 21 - 25, 28 - 29, and Review and Evaluation, CBR Program FY 1962, pp 20 - 27, 34 - 37.

FY 1961 cases and 95.8 percent of FY 1962 cases; shipments overseas were on time in 93.3 percent of 1961 cases and 93.6 percent of 1962 cases.[73] There were no major problems in the supply area during either fiscal year despite several crash issue programs, the recomputation of world-wide inventory objectives, the transfer of the repair parts National Inventory Control Point (NICP) from Memphis General Depot to Army Chemical Center, and the transfer of maintenance operating responsibilities[74] to other technical services.[75]

(C) The two outstanding emergency issue situations arose in connection with Laos and southeast Asia actions in December 1960 and March 1961. The Chemical Corps responded promptely in all cases, and in March 1961 filled 1,458 requisition line items with 99 percent effectiveness although the movement of the repair parts NICP was taking place at the same time.[76]

(S) The world-wide inventory objective was revised by the Office of the Secretary of Defense in the second quarter, FY 1962. The new computation was based on the support of a twenty-two Army division force for six months of war with an average of two-thirds of the force engaged (88 combat division

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73 R&E, CmlC Program, FY 61, p 22; CBR Program, FY 62, p 27.

74 Transfer of the NICP is discussed under Storage and Distribution and maintenance responsibilities under Maintenance, below.

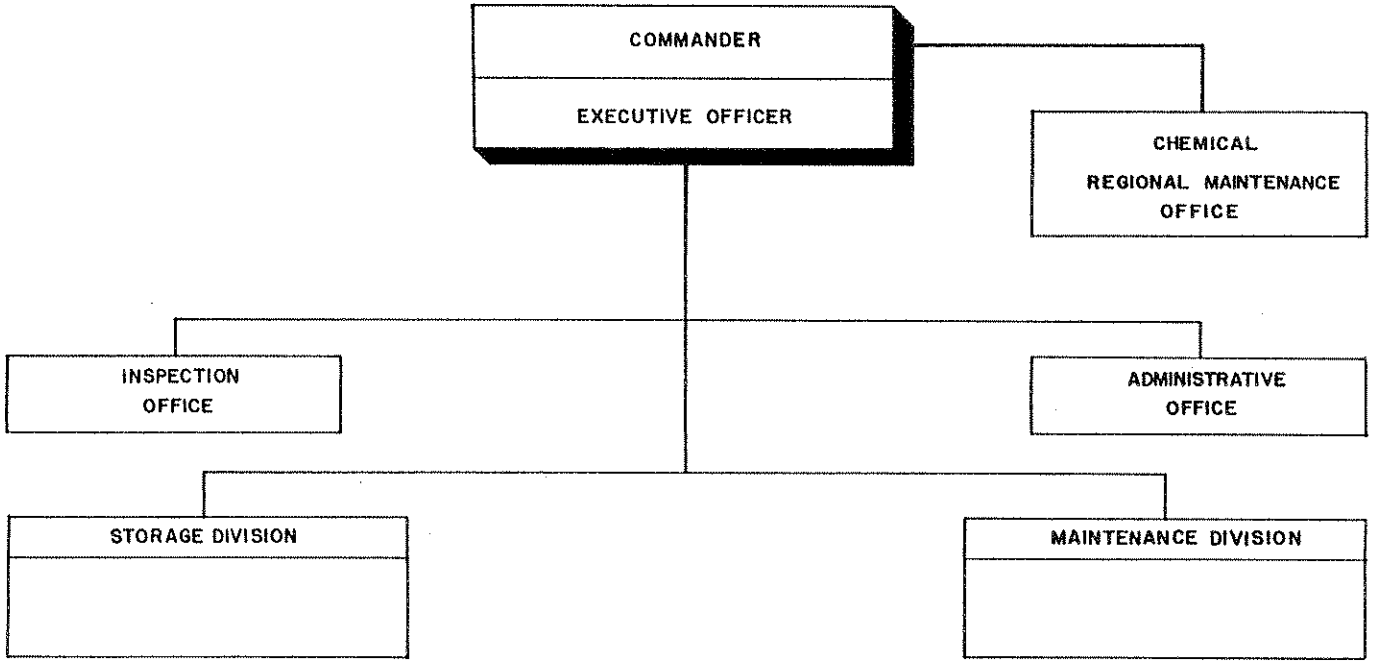
75 Fellenz, Arthur, Lewis interv, 11 Jun 62.

76 (1) Statement, Dir Sup Opns, MATCOM to Hist Off, 5 Feb 62. (2) Interv, Hist Off with Miss Eva Misler, Dir Sup Opns, MATCOM, 5 Feb 62.

U.S. ARMY

CHEMICAL CORPS MATERIEL COMMAND

U.S. ARMY CHEMCAL DEPOT, EASTERN



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SUBMITTED:
Stoessel S Barksdale
STOESSEL S BARKSDALE
COLONEL, CMLC.
COMMANDING

APPROVED
H. Walmsley
H. WALMSLEY
BRIGADIER GENERAL, U.S.A.
COMMANDING

DATE 29 MAY 1959
PREPARED BY ADMIN. OFFICE
U.S. ARMY CML DEPOT, EASTERN

Chart No. 24

PAGE 173 OF 188 PAGES
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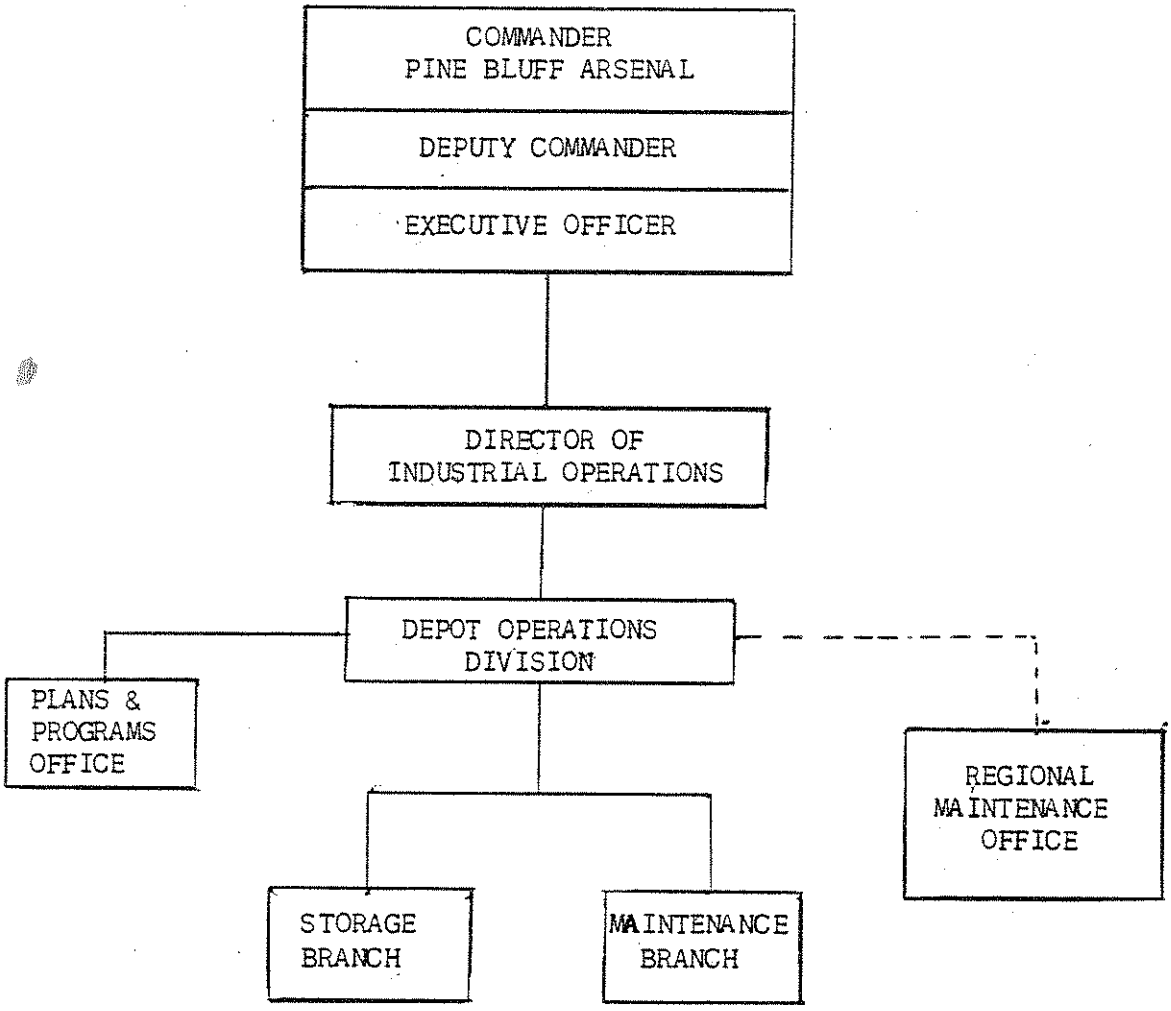
U. S. Army Chemical Depot, Midwest
U. S. Army Chemical Arsenal
Pine Bluff Arsenal, Arsenal, Arkansas



1 March 1962

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Chart No. 25

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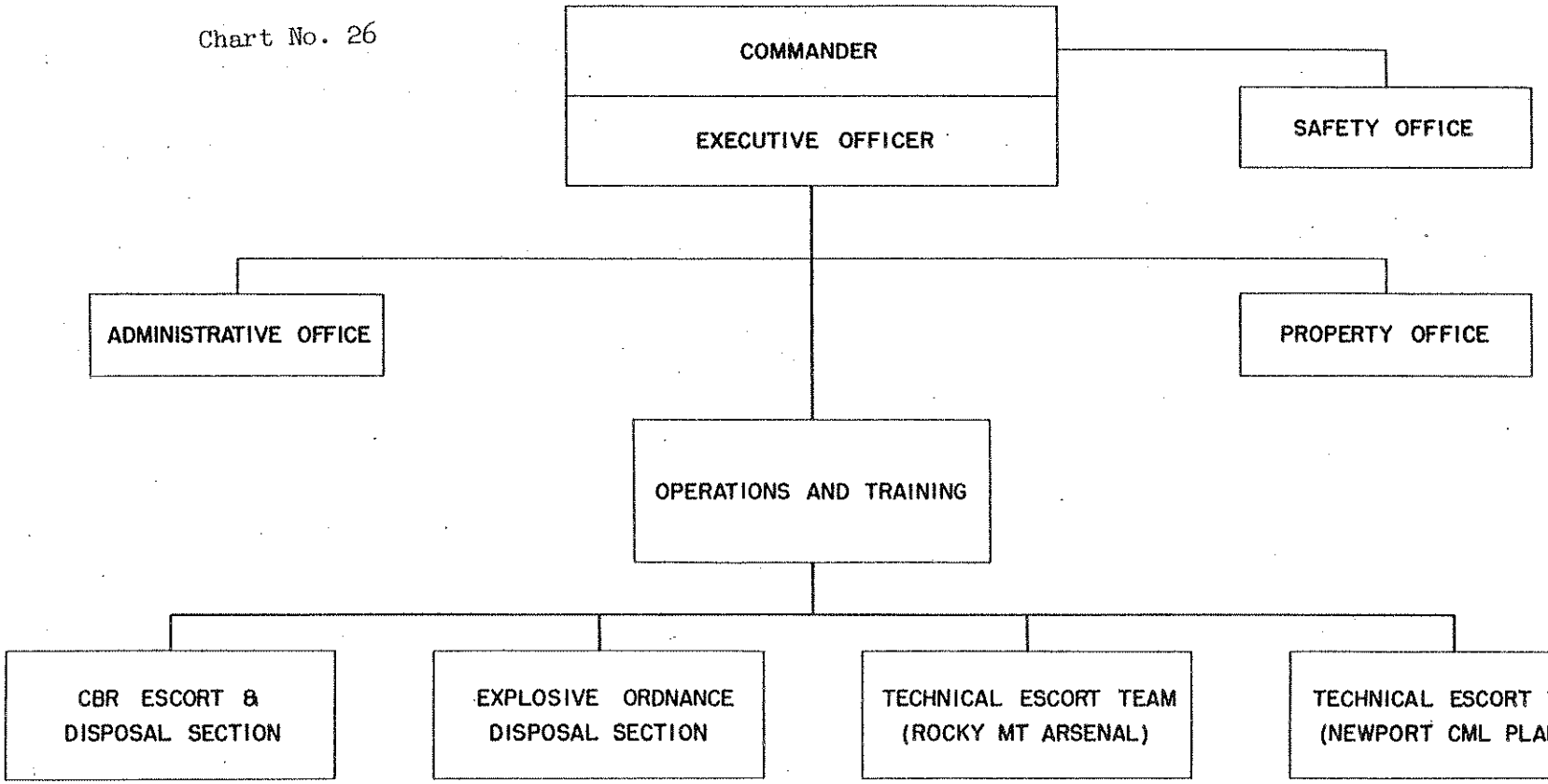
U. S. ARMY CHEMICAL CORPS MATERIEL COMMAND

U. S. ARMY CHEMICAL CORPS TECHNICAL ESCORT UNIT

Chart No. 26



UNCLASSIFIED

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SUBMITTED: Raymond O. Manker
RAYMOND O. MANKER
LT COL, CML C
COMMANDING

APPROVED: Graydon C. Essman
GRAYDON C. ESSMAN
BRIG GEN, USA
COMMANDING

DATE: 24 AUGUST 1961

PREPARED BY: OFFICE, COMPTROLLER
MANAGEMENT ENGR BR

months). Intense combat activity rates were computed for not more than sixteen combat division months. This revision substantially reduced the acquisition and inventory objective and placed it under the following limitations:

a. No support was provided for twenty-nine reserve divisions.

b. No peacetime or mobilization "pipeline" was authorized.

c. No training consumption rate for forces not engaged in combat was authorized.

d. The computation of limited-war requirements for thirty-six months "pipeline" and thirty-six months of combat support was eliminated.

The impact on the Chemical Corps was not immediately drastic, but the long-range impact will be the virtual elimination of a large part of chemical mobilization stock. It was not apparent during FY 1962 whether stocks to meet current requirements and long-range materiel procurement plans would be sufficient to permit the Chemical Corps or its successor to respond promptly to mobilization. The mid-year forecast in FY 1962 projected an unfavorable situation for 1 July 1964.[77]

Storage and Distribution

(U) During fiscal years 1961 and 1962, the Chemical Corps continued to operate its two branch depots, Eastern and Midwest, and one depot activity at

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77 (1) Quart Hist Rpt, MATCOM, Oct - Dec 61. (2) Interv, Hist Off with Mr Paul G. Bihlman, Mr Donald Grant, and Miss Eleanor G. Shaw, Log Div, OCCml0, 30 Jan 62. (3) OCCml0, The CBR Situation 1962, 1 Jan 62, Annex 4, p 5.

Rocky Mountain Arsenal. The continental United States (CONUS) Depot Supply Plan[78] was put into effect in FY 1961 except for transfer of general supplies from Eastern Chemical Depot to New Cumberland General Depot. This final transfer was effected early in FY 1962. Table reflects the storage, dispersal, and distribution pattern under the CONUS plan. The reorganization of the Army plan followed so closely upon the adoption of the CONUS depot plan that the Chemical Corps was unable to evaluate the effectiveness of the CONUS depot operation.[79]

(U) The transfer of the Memphis repair parts NICP which was planned in FY 1960[80] became effective on 31 March 1961. From the operating point of view the consolidation of the repair parts NICP with the end-items NICP at Army Chemical Center produced a number of benefits. The repair parts stock accounting could be transferred to automatic data processing, and all accounting functions could be handled on a commodity basis for both end-items and repair parts. The location of stock and requirements operations for repair parts at the same installation where catalogs and technical publications are prepared made easier and more rapid the resolution of problems between the two activities. Supply actions could be more rapidly completed because repair parts requisition line items need not be extracted to another installation.

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78 Summary of Major Events and Problems, FY 60, p 174.

79 Statement, Mr Ralph M. Burnett, Materiel Requirements Gp, CBR Agency, 10 Oct 62.

80 Summary of Major Events and Problems, FY 60, pp 174 - 75.

Table 7 - Storage, Dispersal, and Distribution Pattern,
Chemical Corps General Supplies and Ammunition

REGION	GENERAL SUPPLIES	AMMUNITION	DISTRIBUTION
	Depot	Depot	
I	New Cumberland General	Eastern Chemical	First, Second, and Fifth Army Areas; Overseas Supply Agency, New York
	Richmond Quartermaster	Blue Grass Ordnance	Reserve
		Black Hills Ordnance	Reserve
		Rocky Mountain Arsenal Depot Activity	Reserve
II	Memphis General	Midwest Chemical	Third and Fourth Army Areas, Overseas Supply Agency, New Orleans
	Atlanta General	Anniston Ordnance	Reserve
III	Utah General	Deseret Depot Activity, Tooele Ordnance	Sixth Army Area and Overseas Supply Agency, San Francisco
	Sharpe General	Umatilla Ordnance	Reserve
		Navajo Ordnance	Reserve

Source: Misler interv, 5 Feb 62.

Approximately $45,000 was saved in the first year of the consolidated operation by the elimination of six personnel spaces and other economies.[81]

(U) From the mobilization management point of view, however, the NICP transfer was not wholely beneficial. The NICP at Memphis was a compact and efficient organization which competently handled the demands upon it and operated particularly well when repair parts were stored at Memphis.[82] The transfer to Army Chemical Center eliminated a good alternative location for inventory control activities and concentrated all the experience in Chemical Corps materiel requirements activities at one possible vulnerable location.[83]

(U) The program for transferring stock accountability records to automatic data processing continued throughout fiscal years 1961 and 1962. All records which had previously been set up on some form of machine accounting were converted to automatic data processing during FY 1961. Eleven projects which had not previously been on machine records were started during FY 1962, but the target date for completion was set in FY 1963.[84]

(U) The Chemical Corps Materiel Command devoted a considerable amount of time in FY 1962 to preparations for the inauguration of MILSTRIP (Military Standard Requisitioning and Issue Procedures). MILSTRIP, a development of

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81 Statement, Dir Sup Opns, MATCOM to Hist Off, 5 Feb 62.

82 Repair parts were to be dispersed according to the CONUS Depot Plan.

83 Conference, Hist Off with MATCOM Staff Officers, 23 Jan 62.

84 Interv, Hist Off with Mr Walter J. Patro, Dir Sup Opns, MATCOM, 5 Feb 62.

the Defense Supply Agency, standardizes and simlifies documentation for requisition and supply throughout the Armed Forces. It provides standard coding patterns adaptable either to transceiver or manual processing, and it insures the uniformity of issue priorities and processing times.[85] The Chemical Corps Materiel Command participated in drafting the basic MILSTRIP regulation and in defining procedures. The command then conducted training and orientation. By the end of the third quarter, FY 1962, all Chemical Corps elements were prepared for the 1 July 1962 inauguration of MILSTRIP.[86]

Maintenance

(U) A transfer of depot maintenance functions for general supplies from Midwest Chemical Depot to the Corps of Engineers Maintenance shop at Memphis General Depot took place on the first day of FY 1961.[87] Deseret Depot Activity of Tooele Ordnance Depot relinquished its general supplies depot maintenance function to the Engineer Shop at Utah General Depot during the second quarter of FY 1961. The shift of the same function from Eastern Chemical Depot to the Quartermaster Shop at New Cumberland General Depot was made on the first day of FY 1962. The transitional period was not smooth. Chemical priorities and Engineer priorities did not coincide. Requisitions for repair parts were late in arriving with the result that rebuild schedules were held up. All but one of four major general supply item schedules on the FY 1962 overhaul

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85 Donald A. Roache, "MILSTRIP Unifies Requisition Procedures," Armed Forces Management, VIII, 9 (June 62), 24 - 28.

86 Quart Hist Rpts, MATCOM, Oct - Dec 61, Jan - Mar 62.

87 Summary of Major Events and Problem, FY 60, pp 177 - 78.

and maintenance program were extended into FY 1963, and both major ammunition items were so extended.[88] Since the reorganization of the Army with expected retransfer of functions was pending in FY 1962, there was no opportunity to re-evaluate these problems for long-range solutions. Short-range solutions were arrived at without excessively extending schedules.[89]

Property Disposal

(U) Although total disposal in FY 1960 was little short of phenomenal -- the largest disposal since FY 1956 -- the balance on hand at the beginning of FY 1961 was still large.[90] Consequently, the disposal program for FY 1961 was large and $43.7 million worth (acquisition cost), more than three times the amount generated, was actually disposed of. The FY 1962 disposal program was the smallest in many years, but the generation of disposable material was also the smallest in many years with the result that the end of the year on hand balance stood at only $5,023,000.[91] This small on-hand total indicated that the Chemical Corps had conquered a problem which has been outstanding since the end of World War II.

(U) The mustard disposal program, for which the Ordnance Corps began to make preparations in FY 1958, was finally completed in FY 1962. The operation

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88 (1) Statement, Dir Sup Opns, MATCOM to Hist Off, 5 Feb 62. (2) R&E, CBR Program FY 62, pp 36 - 37.

89 Burnett statement, 10 Oct 62.

90 Summary of Major Events and Problems, FY 60, pp 179 - 80.

91 R&E Program, FY 62, pp 34 - 35.

proceeded during FY 1961 but frequent break-downs of the special rotary kiln restricted the disposal to 3,000,000 of the 11,000,000 pounds on hand. New techniques were discovered which permitted the disposal of the remaining 8,000,000 pounds by April 1962.

(U) Approximately 41 tons of radioactive wastes were disposed of in FY 1961 before the transfer of the disposal responsibility from the Materiel Command's Directorate for Supply Operations to the Eastern Chemical Depot and the Special Assistant to the Commanding General for Radiological Affairs. During the remainder of FY 1961, 361 tons previously prepared were disposed of by land and sea burial. By the end of FY 1961, 210 tons of solid wastes and 8,000 gallons of liquid wastes were on hand. During FY 1962, 255 tons of solid wastes were generated and 198 tons disposed of. A new evaporation process permitted the disposition of 9,600 gallons of liquid wastes, but, since generations amounted to 29,024 gallons, the end of the year on hand was a sizeable quantity of 27,424 gallons. The Chemical Corps Materiel Command working with the Chemical Corps Nuclear Development Laboratories continued to search for new methods of quantity disposal, and continued to develop new techniques.[92]

Cataloging and Standardization[93]

(U) At the beginning of FY 1961, the Chemical Corps had been assigned

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92 (1) Fellenz, Arthur, Lewis interv, 11 Jun 62. (2) Quart Hist Rpts, MATCOM, FY 61. (3) R&E, CmlC Program FY 61, p 29; CBR Program, FY 62, p 35.

93 See Summary of Major Events and Problems, FY 60, pp 167 - 70.

Army logistic responsibility for fourteen federal supply classes. On 1 January 1961 assignments were reduced to thirteen when precious metals (class 9545) were transferred to the Corps of Engineers.[94] The Chemical Corps managed between 10,000 and 10,500 individual items during FY 1961 and FY 1962. As of 31 December 1961 the Chemical Corps total was 10,479 items divided as follows:[95]

Category	Nr Items	Value of Chemical Corps and Claimant Stocks
Major End-items	325	$217,000,000
Repair Parts	8,234	6,000,000
Minor End-items	1,920	15,500,000
TOTAL	10,479	$238,500,000

(U) Chemical Corps cataloging and standardization responsibilities remained with the U.S. Army Chemical Corps Engineering Command during fiscal years 1961 and 1962. In October 1960 the command's cataloging and standardization element was raised from divisional to directorate status, and at this time Col. Sam Efnor, Jr., ENCOM commander, proposed to close out the contract with Royer and Roger, Inc. under which a considerable portion of the work in this area had been done. Colonel Efnor believed that a savings in money and an increase in efficiency could be realized by converting the entire operation to civil

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94 AR 701-9545, 22 Dec 60.

95 (1) Information from Mr William Levitt and Mrs Evelyn Johnson, Dir Sup Opns, MATCOM, 11 and 12 Apr 62. (2) Total active Federal Catalog System items managed by the Army, 31 Dec 61: 1,041,377. No break-down by kind or value of items given. (Rpt, Thomas D. Morris, Asst Sec Def, (Installations and Logistics) (I&L) to Hon Richard B. Russell and Hon Carl Vinson, Chmn, Congressional Committees on Armed Services, 31 Jan 62, sub: Nineteenth Semi-Annual Report on the Defense Cataloging Program, Defense Standardization Program.) (Hereafter cited as Rpt, ASD (I&L), 31 Jan 62.)

service. There was no opportunity to test the commander's concept since sufficient civil service personnel spaces could not be obtained after the termination of the contract in February 1961. The command consequently, in order to meet schedules, entered into a new contract with the M and T Company of Philadelphia for short-term work in the standardization area, only.[96] At the close of FY 1961 this contract was extended. Since, by the end of the second quarter FY 1962, increasing workload and continuing unavailability of civil service spaces had made it necessary to abandon the short-term contract concept, it was planned further to extend the contract for FY 1963 and to enlarge contract operations to include some cataloging necessary to accomplish standardization actions.[97]

(U) Prior to 1 October 1961, the Chemical Corps cataloging and standardization activity operated under the guidance of the Armed Forces Supply Support Center (AFSSC) which reported directly to the Assistant Secretary of Defense (Installations and Logistics). On that date, AFSSC became a part of the newly established Defense Supply Agency (DSA) and was redesignated, on 1 January 1962, Defense Logistics Services Center. The Chemical Corps channel then was established through the Army Deputy Chief of Staff for Logistics (DCSLOG) to DSA. DCSLOG, because of a cut in headquarters strength, decentralized supervision to a field agency located in the Overseas Supply Agency,

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96 The corporate name of the M and T Company is given in initials.

97 (1) Quart Rev, Dir for Cataloging and Standardization, ENCOM, Oct - Dec 60, Jan - Mar 61, Apr - Jun 61, Jul - Sep 61, Oct - Dec 61, Jan - Mar 62. (2) Interv, Hist Off with Mr David A. Rosenfeld, Dir Cataloging and Standardization, ENCOM, 5 Apr 62.

New York. The change in channels and agencies had no impact upon the Chemical Corps cataloging and standardization activities because there was no change in the Chemical Corps workload.[98]

(U) In March 1962, DSA initiated a study on the management of chemical materiel within the Department of Defense. The purpose of this study, in progress at the end of FY 1962, was to determine the feasibility of placing chemical materiel under integrated DSA management. The DSA study team, headed by Col. Richard D. Lee, USAF, was surveying thirteen military-managed federal supply classes comprising more than 10,000 commercial or common use military items. The Chemical Corps manages 2,590 of these items in nine classes for the Army. DSA might assume the wholesale management of some or all of these classes and items after the team report is rendered in FY 1962, and the effect upon the retail management of the Chemical Corps or its successor in this field will be known at that time.[99]

(U) In cataloging the most significant event of the FY 1961 - 62 period was the conversion to the use of an automatic data processing system for publishing supply manuals. The data processing system can print out any stock-list type manual quickly and accurately. The first such manual was produced by the end of FY 1962. The use of data processing is an estimated 90 percent freer of error than manual handling. While the advantages of

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(1) Rpt, ASD (I&L), 31 Jan 62. (2) Rosenfeld interv, 5 Apr 62. (3) Interv, Hist Off with Mr Leo J. Arico, Log Div, OCCmlO, 30 Jan 62.

99

(1) Rosenfeld interv, 5 Apr 62. (2) Defense Supply Agency, Study Plan -- Management of Chemical Materiel within the Department of Defense, February 1962. Cy in files Dir Cataloging and Standardization, ENCOM.

accuracy will be realized immediately, a period of adjustment to the system will be required before the advantages of economy, speedier operation, and the elimination of manual cataloging files can be realized.[100]

(U) Cataloging performance in FY 1961 slightly exceeded the schedule in all major categories but two in which the deficiency was insignificant. In FY 1962, all schedules were met. The following is a recapitulation of performance data:[101]

Performance Factor	FY 61 Schedule	FY 61 Actual	FY 62 Schedule	FY 62 Actual
Nr. Description Pattern	520	519	465	472
Nr. Item Identifications	6,300	6,370	5,900	5,935
Nr. Master Cards	300M	310M	305M	305M
Nr. Line Items Completed	6,200	6,400	4,700	4,670

* * * * * * *

Performance Factor: Supply Manuals	Required and Under Preparation FY 1961			Required and Under Preparation FY 1962		
	New	Revised	Changes	New	Revised	Changes
TOTAL	1	5	5	5	4	7

(U) As anticipated in FY 1960, the Accelerated Item Reduction (AIR) Program was extended by the Assistant Secretary of Defense (I&L) to 30 June 1962. The Chemical Corps completed its portion of the program by that date.

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100 (1) Rosenfeld interv, 5 Apr 62. (2) Quart Rev, Dir Cataloging and Standardization, ENCOM, Oct - Dec 61, Jan - Mar 62.

101 Quart Revs, ENCOM, Apr - Jun 61, Jan - Mar 62. Further performance data appears in R&E, CBR Program, FY 62, pp 16 - 17, 29 - 30.

The following is a selective recapitulation of the Chemical Corps program:[102]

Federal Supply Class	Total Items	Total Reduction	Percent Reduction
1365	129	15	11.6
1380	1	1	100
3650	0	0	0
4230	837	96	11.4
4240	1,453	480	32.3
6630	1,007	288	28.6
6640	3,670	1,637	41.4
6810	2,378	322	13.5
6820	96	11	11.4
6850	929	369	39.7
TOTAL	10,500	3,219	30

(U) The accomplishment of the AIR program was to insure that those items remaining in the supply system were preferred military items and that the system was free from duplicate or obsolete items. The AIR program opened the way for the next step -- evaluation of preferred military supply items against the most technologically advanced industrial or commercial items. AIR has already resulted in significant savings to the Government, and standardization with commercial or industrial items promises further benefits.[103]

(U) In standardization FY 1961 performance exceeded schedules in all categories, such as technical analysis studies, engineering practices studies, studies and specifications reviewed, and consultations. Examples of results were the elimination of volatile herbicides from the supply system, the recommendation that the Government procure four rather than fourteen types of

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102 Information from Mr W. Norment Kelly, Dir Cataloging and Standardization, ENCOM, 6 Apr 62.

103 Rosenfeld interv, 5 Apr 62.

industrial gas masks, and the substitution of available commercial chemicals for all but one of the electroplating compounds and solutions used in the Department of Defense. The FY 1962 standardization program was likewise met or slightly exceeded. Items studies in this year included breathing apparatus, both oxygen generating and compressed air, various types of laboratory equipment, and safety equipment such as belts, straps, harnesses, goggles, visors, and face shields.[104]

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104 Quart Revs, ENCOM, Apr - Jun 61, Jan - Mar 62 (4th Quart, FY 62 estimated).

OFFICE OF THE CHIEF CHEMICAL OFFICER

Chief Chemical Officer - Maj Gen Marshall Stubbs
Deputy Chief Chemical Officer - Col Donald G. Grothaus
Executive Director - Edgar A. Crumb
Executive Officer - Lt Col Woodford T. Moseley
Assistant Executive Officer - Lt Col Bernard F. Allen

Chief Scientist - Dr. M. J. Murray

Director for Military Operations - Brig Gen Adam W. Meetze

Chief, Personnel Div - Col Carl V. Burke (Feb '62)

Chief, Logistics Div - Col Vincent F. LaPiana

Comptroller - Col Harry C. Gilbert

Chief, Scientific Info & Lsn Div - Lt Col John Moran

General Counsel - Col Frank J. Buldain

Chief, Program & Evaluation Office - Col Michael R. DeCarlo

Chief, Research & Engineering Div - Col John G. Hoffman, Jr.

Chief, Administration Division - Lt Col George H. Roberts

OCCMLO ACTIVITIES LOCATED AT ARMY CHEMICAL CENTER, MD.

Cml Corps Inspector General - Col Gervaise S. Chittick

Cml Corps Provost Marshal - Col Alanson T. Leland

Traffic Consultant - Col R. H. Fillmore

Cml Corps Advisory Council - Executive Director, Dr. C. B. Marquand

Cml Corps Technical Committee - Executive Secretary, Dr. T. S. Eckert

CMLC FIELD ACTIVITIES

U.S. Army Chemical Corps Board, Army Chemical Center, Md.
President - Brig Gen William E. R. Sullivan

U.S. Army Chemical Corps Field Requirements Agency, Fort McClellan, Ala.
Comdr - Col Jack E. Babcock

U.S. Army Chemical Corps Operation Research Group, Army Chemical Center, Md.
Director - Lt Col William W. Stone, Jr.

CMLC FIELD ACTIVITIES (CONT'D)

U.S. Army Chemical Corps Intelligence Agency, Arlington Hall Station, Arl 12, Va.
CO - Col Samuel E. Baker

MATERIEL COMMAND

U.S. Army Chemical Center and Chemical Corps Materiel Command, Army Chemical Center, Md.
CG - Brig Gen Lloyd E. Fellenz
Deputy Comdr (MATCOM) - Col Gilbert P. Gibbons
Deputy Post Comdr - Col Charles A. Cain

U.S. Army Chemical Center Procurement Agency, Army Chemical Center, Md.
CO - Lt Col Martin J. Burke, Jr.

U.S. Army Chemical Corps Technical Escort Detachment, Army Chemical Center, Md.
CO - Lt Col Raymond O. Manker

U.S. Army Chemical Corps Quality Assurance Technical Agency, Army Chemical Center, Md.
CO - Lt Col Adelbert E. Miller

Districts

U.S. Army Chemical Procurement District, New York, N. Y.
CO - Col Leonard C. Miller

U.S. Army Chemical Corps District, San Francisco, Oakland, Calif.
CO - Lt Col Paul H. McConnell

Arsenals

U.S. Army Chemical Arsenal, Pine Bluff, Arsenal, Ark.
CO - Col John M. Palmer

U.S. Army Chemical Arsenal, Rocky Mountain, Denver, Colo.
CO - Col Charles H. McNary

U.S. Army Chemical Arsenal, Edgewood, Army Chemical Center, Md.
CO - Major Richard A. Hiscox

Depots

U.S. Army General Depot, Memphis General Depot, Memphis, Tenn.
Chemical Supply Officer - Capt Thomas J. Dilbeck

U.S. Army General Depot, APO 122, New York, N.Y. (3974)
Deputy for Supply Operations - Lt Col Patrick H. Donahue

U.S. Army Chemical Depot, Eastern, Army Chemical Center, Md.
CO - Capt Earle W. Murphy

Depots (Cont'd)

U.S. Army Chemical Depot (Midwest) (Field), Pine Bluff Arsenal, Arsenal, Ark.
ATTN: Director of Depot Operations - Major William B. Owens

U.S. Army General Depot, New Cumberland General Depot, Pa.
Asst Storage Officer - Capt Ellsworth C. Henry

U.S. Army General Depot, Utah General Depot, Ogden, Utah
Chemical Supply Officer - Capt John B. Zinn

R&D COMMAND

U.S. Army Chemical Corps Research and Development Command, Washington, D.C.
CG - Brig Gen Fred J. Delmore
Deputy Comdr - Col John J. Hayes

U.S. Army Chemical Corps Proving Ground, Dugway Proving Ground, Dugway, Utah
CO - Col David Armitage

U.S. Army Chemical R&D Laboratories, Army Chemical Center, Md.
CO - Col Donald E. Yanka

U.S. Army CmlC Biological Laboratories, Fort Detrick, Frederick, Md.
CO - Col Carl S. Casto

U.S. Army CBR Weapons Orientation Course, Dugway Proving Ground, Dugway, Utah
Director - Col Paul R. Cerar

R&D Coordinator, White Sands Proving Ground, Las Cruces, New Mexico
R&D Coordinator - Lt Col Theodore L. Enteles

TRAINING COMMAND

U.S. Army Chemical Corps Training Command, Fort McClellan, Alabama
CO - Col William H. Greene
Deputy Comdr - Col Marvin A. Middlebrooks

U.S. Army Chemical Corps School
Comdt - Col Laverne A. Parks

U.S. Army Chemical Corps School Support Bn
CO - Major Geoffrey Marshall, Jr.

ENGINEERING COMMAND

U.S. Army Chemical Corps Engineering Command, Army Chemical Center, Md.
CO - Col James H. Batte

CONTINENTAL ARMY COMMAND

Hq., CONARC (8200), Fort Monroe, Virginia
Chemical Officer - Col Edward V. R. Needels

Major Harold E. Shaw (w/sta Ft Bliss, Tex.)

U.S. Army Armor Board (8202), Fort Knox, Ky.
Major Hyman R. Gittes

U.S. Army Infantry Board (8203), Fort Benning, Ga.
Lt Col Marshall L. Mott, III

LOGISTICAL COMMANDS

Hq, 1st Logistical Command, APO 44, New York, N.Y.
Chemical Officer - Col James R. Chapman

Hq, 2nd Logistical Command, Ft Lee, Va.
Chemical Officer - Lt Col Jack R. Whitley

Hq, 3rd Logistical Command, APO 58, New York, N.Y.
Chemical Officer - Col Jack F. Lane

Hq, 4th Logistical Command, APO 122, New York, N.Y.
Chemical Officer - Major Walter J. McDowell

Hq, 7th Logistical Command, APO 612, San Francisco, Calif.
Chemical Officer - Lt Col Roy Olson

Hq, 9th Logistical Command, APO 331, San Francisco, Calif.
Chemical Officer - Major Charles Forsthoff

FIELD COMMAND, DA SUPPORT AGENCY

Hq, U.S. Army Element, Defense Atomic Support Agency (9200), Wash., D.C.
Nuclear Wpns Effects Officer - Major Fort A. Verser

USA Elm, Fld Comd, DASA (9210) Sandia Base, Albuquerque, New Mexico
Lt Col Gordon L. Jacks

USA Elm, Fld Comd, DASA (9210) Sandia Base, New Mexico, w/sta Las Vegas, Nev.
Lt Col Edward G. Halligan

ROTC INSTRUCTORS

Massachusetts Institute of Technology (1371), Cambridge, Mass.
Major Charles H. Shadle

ROTC INSTRUCTORS (CONT'D)

Ohio State University (2156), Columbus, Ohio
Capt Cyrus V. Brocato

Georgia Institute of Technology (3200), Atlanta, Ga.
Lt Col Charles W. Carnes

University of Alabama (3300), University, Ala.
Capt Charles C. Grissom

Texas A&M College (4365), College Station, Texas
Major Albert E. Vernon

Purdue University (5301), Lafayette, Indiana
Lt Col Grant R. Brickell

University of California (6052), Davis, Calif.
Capt Carl L. Cunningham

University of California (6052), Los Angeles, Calif.
Capt William E. Dismore

NON-CHEMICAL SERVICE SCHOOL STAFF & FACULTY

Army War College (9819), Carlisle Barracks, Penn.
Col Vincent L. Ruwet

Armor School, Armor Ctr (2168), Ft Knox, Ky.
Major Bruno J. Jankowicz
Major Delbert E. Rice

The Engineer School (2420), Ft Belvoir, Va.
Lt Col Howard G. Schade

The Infantry School, Infantry Ctr (3151), Ft Benning, Ga.
Lt Col Clinton D. Harvey
Lt Col Norman I. Shapira
Major Roy M. Hirano

U.S. Army Arty & Msl School, Arty GM Ctr (4050), Ft Sill, Okla.
Lt Col Louis C. Irving

U.S. Army Air Defense School (4054), Box 9390, Ft Bliss, Texas
CmlC Liaison Officer - Lt Col Gerald B. Hoover

Command and General Staff College (5025), Ft Leavenworth, Kansas
Lt Col Martin F. Massoglia
Lt Col Louis Ruiz
Lt Col Frank V. P. Williams
Major Robert E. Pardee

NON-CHEMICAL SERVICE SCHOOL STAFF & FACULTY CONT'D)

U.S. Army QM School (5435), Fort Lee, Va.
Major Michael J. McCague

U.S. Army Logistics Management Center (5438), Fort Lee, Va.
Col Carl E. Grant
Lt Col William E. Gill
Lt Col Zim E. Lawhon
Lt Col Gilbert V. Newby
Major Robert E. Bundy
Major John A. McCurdy

Air University (7100), Maxwell AFB, Ala.
Major James J. Zidar

U.S. Army Transportation School (7601), Ft Eustis, Va.
Major George C. Jacobsen

Naval Damage Control School (8709), Treasure Island, San Francisco, Calif.
Major Americo W. Spigarelli

United States Military Academy (9822), West Point, New York
Col Cecil H. Wood
Major David W. Einsel, Jr.
Major William I. Fox
Major Robert A. Shade
Capt Wilford J. Hoff, Jr.
Capt Philip A. Stynes

Industrial College of the Armed Forces (9828), Ft Lesley J. McNair, Wash., D.C.
Col Arent O. Wiken

Armed Forces Staff College (9829), Norfolk, Va.
Lt Col Edwin Dalton

U.S. Army Intelligence School (9833), Fort Holabird, Md.
Capt John A. Mojecki

UK Jt School Nuclear & Cml Ground Defense, Navy 100, FPO New York, N.Y.
Lt Col John A. Pierce, Jr.

OVERSEAS THEATER CHEMICAL OFFICERS

Hq, USAREUR, APO 403, New York, N. Y. (3700)
Chemical Officer - Col Robert W. Breaks

Hq, USARPAC, APO 958, San Francisco, Calif. (4700)
Chemical Officer - Col Carl E. Grant

OVERSEAS THEATER CHEMICAL OFFICERS(CONT'D)

Hq, USARCARIB, APO 834, New York, N.Y. (2700)
Chemical Officer - Col Walter W. Kuehler

Hq, USARAL, APO 949, Seattle, Wash. (1700)
Chemical Officer - Col Martin L. Denlinger

USARYIS, U.S. Army Ordnance Group, APO 331, San Francisco, Calif. (6710)
Chemical Officer - Major Joseph W. Searcy

Hq, U.S. Army Southern European Task Force, APO 168, New York, N. Y. (3790)
Chemical Officer - Lt Col Jacob G. Hellmann

USA Ordnance/Chemical Agency (5918), APO 343, San Francisco, Calif.
Chemical Officer - Major William B. Strough

Hq, USARHAW, APO 957, San Francisco, Calif.
Chemical Officer - Major David E. Bogan

ARMY CHEMICAL OFFICERS

Hq, FIRST U. S. ARMY, Governors Island, New York
Chemical Officer - Col Evan H. Lewis

Hq, SECOND U. S. ARMY, Fort George G. Meade, Md.
Chemical Officer - Col Robert E. Stoever

Hq, THIRD U. S. ARMY, Fort McPherson, Ga.
Chemical Officer - Col S. Julian Boyles

Hq, FOURTH U. S. ARMY, Fort Sam Houston, Texas
Chemical Officer - Col Timothy C. Williams

Hq, FIFTH U.S. ARMY, Chicago, Illinois
Chemical Officer - Col Nelson I. Decker

Hq, SIXTH U.S. ARMY, Presidio of San Francisco, Calif.
Chemical Officer - Col Joseph C. Prentice

Hq, SEVENTH U.S. ARMY, APO 46, New York, N. Y.
Chemical Officer - Col Rupert D. Chapman

Hq, EIGHTH U. S. ARMY, USAFFE, APO 301, San Francisco, Calif.
Chemical Officer - Col Joseph S. Terrell

Hq, MILITARY DISTRICT OF WASHINGTON, U. S. ARMY
Chemical Officer - Col Donald D. Limoncelli

CORPS CHEMICAL OFFICERS

Hq, I Corps, USARPAC, APO 358, San Francisco, Calif.
Chemical Officer - Lt Col Roy H. Berger

Hq, V Corps, USAREUR, APO 79, New York, N. Y.
Chemical Officer - Col James A. Hebbeler

Hq, VII Corps, USAREUR, APO 107, New York, N.Y.
Chemical Officer - Col John L. Carson

Hq, XVIII Airborne Corps, Fort Bragg, N.C.
Chemical Officer - Col Charles G. Micheau

DIVISION CHEMICAL OFFICERS

1st Cavalry Division, USARPAC, APO 24, San Francisco, Calif.
Chemical Officer - Lt Col Kermit J. Wilson

1st Infantry Division, Ft Riley, Kansas
Chemical Officer - Major Stanley A. Rising

2d Armored Division, Ft Hood, Texas
Chemical Officer - Lt Col Robert C. Arbuckle

2d Infantry Division, Fort Benning, Ga.
Chemical Officer - Lt Col James W. Talley

3d Armored Division, USAREUR, APO 39, New York, N. Y.
Chemical Officer - Lt Col Roger W. Kemp

3d Infantry Division, USAREUR, APO 36, New York, N. Y.
Chemical Officer - Lt Col Sidney L. Wells

4th Armored Division, USAREUR, APO 326, New York, N.Y.
Chemical Officer - Lt Col Russell M. Tegnell

4th Infantry Division, Ft Lewis, Washington
Chemical Officer - Lt Col David I. Saunders

7th Infantry Division, USARPAC, APO 7, San Francisco, Calif.
Chemical Officer - Lt Col John A. Cassidy

8th Infantry Division, USAREUR, APO 111, New York, N. Y.
Chemical Officer - Lt Col Grover C. Kirtley

24th Infantry Division, USAREUR, APO 112, New York, N. Y.
Chemical Officer - Lt Col Thomas R. Isaacs

DIVISION CHEMICAL OFFICERS (CONT'D)

25th Infantry Division, USARHAW, APO 25, San Francisco, Calif.
Chemical Officer - Lt Col Stanton C. Hutson

82d Airborne Division, Fort Bragg, N. C.
Chemical Officer - Lt Col Joseph J. Fraser, Jr.

101st Airborne Division, Fort Campbell, Ky.
Chemical Officer - Major Owen O. Osburn

CHEMICAL CORPS UNITS

Groups

81st Chemical Group, Fort Bragg, N.C.
CO - Lt Col Lowell E. Thompson

100th Chemical Group (ComZ) Fort McClellan, Ala.
CO - Col William T. Dozier

15th Cml Group APO 28, New York, N. Y.
CO - Col James A. Richardson

Battalions

1st Chemical Battalion (Svc) Fort McClellan, Alabama
CO - Major Charles B. Otto

2d Chemical Battalion (SG), Dugway Proving Ground, Dugway, Utah
CO - Major Robert J. Nell

83d Chemical Battalion (Svc) Fort McClellan, Alabama
CO - Major John H. Eller

218th Chemical Battalion (SG) Fort McClellan, Alabama
CO - Lt Col Robert W. Cornell

OTHER ACTIVITIES OVERSEAS

USA Elm, MAAG, Japan (9777), APO 900, San Francisco, Calif.
Lt Col James O. Quimby, Jr.

Army Sec, MAAG, Republic of China (9785), APO 63, San Francisco, Calif.
Lt Col Joseph N. Klein

USA Elm, MAAG, Vietnam (9787), APO 143, San Francisco, Calif.
Major John F. Tunberg

USA Elm, JUSMMAT, (9811), APO 254, New York, N. Y.
Chemical Staff Officer - Major William J. Cribb, Jr.

OTHER ACTIVITIES OVERSEAS CONT'D)

Hq KMAG, (5700), APO 102, San Francisco, Calif. (USA Mil Adv Grp, Korea)
Lt Col Robert N. Ladson

U.S. Army Standardization Group (9849), Canada, Ottawa, Canada
Col LaMonte A. Tucker

U.S. Army Standardization Group, UK Box 65, USN, FPO 100 (9850)
New York, N. Y.
Lt Col James H. Watts

USA Elm Allied Forces, Southern Europe (9883), APO 168, New York, N. Y.
Col Cornelius M. Schmelzle

U.S. Army Element SHAPE (9883), APO 55, New York, N. Y.
Chemical Staff Officer - Col Charles S. Brice, Jr.

U.S. Army Elm, Hq, CENTAG, APO 403, New York, N. Y.
Lt Col Jaime L. Cabassa

OTHER ACTIVITIES - ZI

USA Tech Intel Fld Agency (9839), OACSI, DA, Wash, D. C.
Major Allen L. Brewer

QM Food & Container Institute for the Armed Forces (5411),
1819 W. Pershing Road, Chicago 9, Ill.
Capt Robert N. Habermehl

U.S. Army Logistics IG Field Office (5459), 226 W. Jackson Blvd,
Chicago 6, Ill.
Major Eugene H. Bishop

USA Electronic Proving Ground (6470), Ft Huachuca, Ariz.
Lt Col Joe Fishback

USA Combat Surveillance Agency (6590), 1124 N. Highland St., Arlington,
Va.
Lt Col Alois L. Steinbach

USA Air Defense Command (7800), Ent AFB, Colorado Springs, Colo.
Major Robert B. Barnett

Office of the Comptroller of the Army (8528), Washington, D.C.
Lt Col Robert D. George

Office, Deputy Chief of Staff for Military Operations (8534), Washington,
D.C.
Lt Col George W. Connell
Lt Col Gregg Henry