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

Fiscal Year 1954

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DAMO-SWC*

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Plans and Operations

In August 1953 the Chief of Army Field Forces notified the Chief Chemical Officer that a requirement existed for a tactical BW weapons system.¹ Commanders of CONUS Armies subsequently received instructions from OC AFF to include this concept in maneuvers and CPX's, and to submit appropriate comments and recommendations so that firm doctrine might be established.² ~~(S)~~

Chemical annexes to the Engineer Barrier Plans for Western Europe (fourth edition) were 90 per cent complete at the end of the fiscal year. These annexes dealt with the tactical use of agents and logistic considerations in a withdrawal before advancing Soviet forces in Germany. This information was not communicated to other North Atlantic Treaty Organization (NATO) nations, because severe political complications might result from premature disclosure of American plans.³ ~~(TOP SECRET)~~
~~(S)~~

¹
Ltr, C,AFF to CCmlO, 5 Aug 53, sub: AFF Initial Position on Tactical BW.

²
See ~~SECRET~~ part of this Summary for reports on Exercise FLASH BURN and SPEAR HEAD, held in April and May 1954, for some results of this directive.

³
Interv, Hist O, OCCmlO with Lt Col Samuel E. Baker, C, P&O Br, OCCmlO, 3 Jun 54.

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In FY 1954 the Joint Chiefs of Staff approved, in principle, the shipment of toxics to United States Army Forces in the Far East (USAFFE). This approval carried with it the implied approval of shipments to American forces in Europe, (USAREUR). As of 1 July 1954 no toxics had been shipped to either area.⁴

~~SECRET~~

⁴

Intervs, Hist O, OCCm10 with Lt Col. Martin L. Denlinger, Asst C, PT&I Div, CCCm10 and Lt Col. Charles A. Morgan, Jr, Mat Div, OCCm10, 17 Sep 54.

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Supply⁵

During the period 7-20 November 1953, a joint Chemical Corps-Air Force logistic exercise, EXERCISE BROWN DERBY, was conducted to determine the capabilities and limitations of the planned support system for supply of biological munitions to an overseas Air Force. A secondary objective was to evaluate personnel, equipment, training procedures, and command responsibilities. ~~(TOP SECRET)~~

Production Development Laboratory, Pine Bluff Arsenal, manufactured a simulated agent, filled and clustered bombs with the administrative and logistical support of Pine Bluff Arsenal. Midwest Chemical Depot shipped the munitions to the Air Force under the supervision of Chemical Corps Technical Escort Detachment. Air Materiel Command, in operational control of the exercise, provided special equipment for moving the munitions to Barksdale Field, Shreveport, Louisiana, where they were loaded into two Military Air Transport Service cargo aircraft for shipment to the Air Proving Ground Command, Eglin Air

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This section taken from:

- (1) DF, CMEWE, Brig Gen C.E.Loucks, DepC Cm10, to Hist O, OCCm10, 24 Nov 53, sub: Summary List for Historical Report.
- (2) ~~TOP SECRET~~ supplement to Quart Hist Rpt, Materiel Div, OCCm10, Jan-Mar 54, dtd 4 May 1954.

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Air Force Base, the exercise forward air base. ~~(TOP SECRET)~~

Upon the arrival of the munitions Air Proving Ground and Air Research Development Command assessed the condition of the munitions, using a Chemical Corps procedure. ~~(TOP SECRET)~~

Exercise BROWN DERBY conclusively demonstrated that Chemical Corps-Air Force logistic plans are workable. Since Production Development Laboratories is able to supply munitions on a four-day notice,⁶ the exercise proved the logistic capability of the Chemical Corps and the Air Force to make an antipersonnel biological attack within a few days, in case of necessity. ~~(TOP SECRET)~~

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See below p.8

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Biological Warfare Research and Development

For the first time since the Chemical Corps embarked on a BW program, ~~permission~~ permission has been granted for the use of human volunteers in the evaluation of agents. A plan, drawn up at Camp Detrick, for the quantitative assessment of BW agents and vaccines has been approved by the Surgeon General and the Secretary of the Army. It is being planned to have the work carried on under contract in a medical school.⁴⁷ ~~(CONFIDENTIAL)~~

The funds available for BW during the fiscal year amounted to \$25,440,000. By 30 June, \$21,966,000 (86%) ~~were~~ were obligated. The failure to fully obligate the funds were due to delays caused by earlier attempts to place the entire BW program under contract. Approval was obtained from higher authority to continue obligation of 1954 funds through 30 September 1954.⁴⁸ ~~(CONFIDENTIAL)~~

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Unless otherwise noted, the section on BW is based on an interview with Dr. Charles Phillips, Camp Detrick, 28 Jul 54. The Eighth Annual Report, Cml C Biol Labs, was not scheduled for publication until 16 Sep 54, and was therefore not available for this Summary History.

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DF, DC CmlO to Hist O, OCCmlO, 3 Jun 54, sub: Summary List for Historical Report.

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Review and Analysis of Chemical Corps Program, 4th Qtr FY 1954.

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In April 1953, the Chief Chemical Officer gave an over-riding priority to the development of a liquid suspension of the agent, B. anthracis. This agent had entered the Chemical Corps EW program in World War II when extensive laboratory research and pilot plant development were carried on, and a production plant erected at Vigo, Indiana. In the post war period practically all investigations on the offensive use of the agent ceased, but attempts were continued to prepare a vaccine for the protection of human beings. In September 1951, the agent was placed seventh on the priority list of antipersonnel agents drawn up by the Joint Chiefs of Staff, and major emphasis was directed toward the first five agents. Later the potentiality of B. anthracis was reappraised with the result mentioned above. In June 1953 pilot plant production began and during the fiscal year considerable progress was made.

B. anthracis is to be used in combination with the $\frac{1}{2}$ -pound E61 bomb now being developed. The bomb, designed for clustering in

⁴⁹
Seventh Annual Rpt, Cml C Biol Lab, 1 Jul 53.

⁵⁰
The bomb is described in:
(1) Technical Progress FY 1954, Summary Report of Technical Progress in the US Army Chemical Corps EW Program, pp.115-117.
(2) Annual Chemical Corps Research and Development EW Project Program, 31 Dec 53, Project 4-04-14-006.

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an aimable adapter, is the tail-ejection type and utilizes combustion gases of a fast propellant powder to form an aerosol from agents in a liquid suspension. A series of drop tests were conducted at Holloman Air Force Base from June 1953 to January 1954 as part of the fuze development. A surveillance program of the agent container was begun early in 1954 and in April the first series of tests using lethal-type agent in the bomb were held at Dugway under field conditions. The bomb produced aerosol in sufficient quantity to kill up to 50 per cent of the exposed animals and seventy to eight-eight per cent of the bombs functioned when they were dropped in clusters. The second series of tests were in progress at the close of the fiscal year. ⁵¹ ~~TOP SECRET~~

The Production Development Laboratories, Pine Bluff Arsenal (formerly X-~~501 Plant~~) were placed on an operational ready standby basis on March 15. At this plant significant quantities of filled bombs can be produced four days after receipt of order. ⁵² ~~TOP SECRET~~

Among the BW antipersonnel agents in the pilot plant state of development are Bacterium tularensis, Venezuelan equine encephalomyelitis, Brucella melitensis, and Botulinum toxin. In the laboratory phase are Pasteurella pestis, and Psittacosis virus. A number of

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Ibid.

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potential agents are also being screened. ⁵³ ~~(TOP SECRET)~~

By order of G-4 of the Army all research in antianimal BW, with the exception of the studies on rinderpest in Kenya, British East Africa, and the completion of the foot and mouth disease research facilities at Plum Island, was terminated as of ⁵⁴ 30 September 1953. This action brought to an end, in the Chemical Corps, the projects on the diseases of poultry, swine, horses and ruminants. The defense phases of the projects in Kenya and at Plum Island (Fort Terry) were continued until 30 June 1954 to permit the Department of Agriculture to budget for and continue this work. The Chemical Corps will maintain a detail of officers with appropriate technical background at Fort Terry to keep the Corps informed of developments. Because of the directive to terminate the research in this area of the BW program, very little ⁵⁵ progress can be reported during the past year. ~~(TOP SECRET)~~

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- (1) Technical Progress FY 1954, pp.3-55.
- (2) Annual BW Project Report.

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Ltr, OCCm10 to CG, Cml C R&E Comd, 18 Sep 53, sub: Antianimal Biological Warfare, Defensive Program, w/Incl (Cmt#3, G-4/Fl-53879, 16 Sep 53, sub: Antianimal and Anticrop Biological Warfare R & D Program, w/3 Incls).

55

- A summary of the progress in antianimal research may be found in:
- (1) Technical Progress FY 1954, pp.67-72.
 - (2) Annual BW Project Report.
 - (3) Eighth Annual Report of Camp Detrick. (In preparation)

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Considerable progress, on the other hand, was made in the development of anticrop agents. Research resulted in improved field evaluation of potential agents, addition of 4-fluorophenoxyacetic acid as a standard-type agent, and demonstration of the high efficiency of the Aero 14A Airborne Spray Tank. ~~_____~~

Whereas the previous chemical anticrop agents, butyl 2,4-dichlorophenoxyacetic acid and butyl 2,4,5-trichlorophenoxyacetate were useful for curtailing the growth of broadleaf plants, the new standard-type agent, 4-fluorophenoxyacetic acid, reduces the yields of wheat and rice materially when applied in militarily feasible quantities. The agent is produced industrially by chemical companies and is available on the open market. ~~_____~~

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An important advance in field evaluation was the development of a miniature spraying system for disseminating liquid agents from an L-19 airplane. This system makes practicable the testing of undiluted agents on field grown crops. An effort is being made to mount the system on a truck, which can then be used at Camp Detrick. ~~(CONFIDENTIAL)~~

In conjunction with the Navy, tests were made of the Aero 14A

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Chemical anticrop agents are discussed in:

- (1) Technical Progress FY 1954, pp.56-58.
- (2) Annual BW Project Report.

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Airborne Spray Tank mounted on a F3D-1 jet fighter aircraft at Avon Park Air Force Base. The Spray Tank proved to be well adapted to the dissemination of the liquid chemical agents standardized by the Chemical Corps, and in several trials produced much more efficient spray patterns than has been produced by any dissemination system tested previously. ⁵⁷ [REDACTED]

Research at Camp Detrick has uncovered a high potential race of late blight of potatoes (Phytophthora infestans) that appears to be promising as an agent. Testing of the race is being continued. ⁵⁸ The stem rust of rye (Puccinia graminis secale) has been adopted as a standard type anticrop agent. Production during the year brought the quantity of material on hand up to the USAF requirement. ⁵⁹ [REDACTED]

On 8 April 1954, the CCTC standardized the Dispenser, Simulant Agent, BGI, 12 oz, AN-MI (EL4). ⁶⁰ This dispenser, based on commercial insecticide generator, holds 2 grams of B.Globigii spores suspended in 300 grams of Freon 12. It will be used for training purposes in the sampling, detection, identification and decontamination of EW agents. ⁶¹ [REDACTED]

⁵⁷
Technical Progress FY 1954, p.56

⁵⁸
Ibid., p.58-60.

⁵⁹
Ibid., p.63.

⁶⁰
CCTC Item 2816.

⁶¹
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