

CHEMICAL CORPS  
CHEMICAL AND RADIOLOGICAL LABORATORIES  
Army Chemical Center  
Maryland

FORM 37

Date inventoried

*E. L. KADLEC*  
(Questionnaire Signature & Printed Name)

QUARTERLY HISTORICAL REPORT  
PERIOD 1 APRIL - 30 JUNE 1954

*[Signature]*  
Disinterested Witness (Signature & Printed Name)

August 1954

Reports Control Symbol  
CHLD-194

**INVENTORY**

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DATE

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*R. C. DUCKWORTH*

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TABLE OF CONTENTS

	<u>Page</u>
I. ADMINISTRATION . . . . .	1
A. Changes in Mission and Responsibilities .....	1
B. Acquisition and/or Disposal of Physical Facilities . . . .	1
C. Major Organizational Revisions .....	1
D. Significant Developments in Administrative Procedure . . .	1
II. FISCAL .....	3
A. Funds Available and Committed. . . . .	3
B. Tabulation Showing Land and Other Facilities Leased, Lessees, and Returns to Government .....	4
C. Commitments by Type Operation. . . . .	4
III. PERSONNEL .....	5
A. Changes in Key Personnel . . . . .	5
B. Personnel Strength .....	5
IV. PLANS . . . . .	11
A. Plans for Permanent Peacetime Establishment .....	11
B. Mobilisation Plans . . . . .	11
C. Current Planning .....	11
V. OPERATIONS . . . . .	12
A. Operations or Activities Accomplished .....	12
B. Major Developments in Operating Technique. . . . .	19
C. Performance .....	20

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Quarterly Historical Report Apr. 1 → Jun. 30 1954

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	<u>Page</u>
VI. GENERAL . . . . .	21
A. Unusual Activities . . . . .	21
B. Inspections . . . . .	23

APPENDICES

- A. Photograph of Building 330A (Annex to Building 330)
- B. Organization Chart
- C. Check Sheet for Administrative Inspections
- D. Symposium VI (Brochure)
- E. CRL Policy File

<u>Series</u>	<u>Subject</u>
1	Policy File
10	Personnel
30	Buildings and Facilities
40	Training
50	Supply
80	Safety
90	Security
120	Travel and Visits
130	Organization and Functions
150	Research and Development Procedures
200	Miscellaneous

F. CRL Memorandums

<u>Series</u>	<u>Subject</u>
30	Maintenance, Transportation, Services
40	Training
50	Supply
60	Reports and Publications
110	Research Contracts
120	Travel and Visits
130	Organization and Management
140	Budgets and Accounts
150	Research and Development Procedure

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I. ADMINISTRATION.

A. Changes in Mission and Responsibilities.

During the report period the research and development effort on offensive radiological warfare was curtailed because of a lack of funds. This effort is now limited to monitoring the program.

B. Acquisition and/or Disposal of Physical Facilities.

1. On 17 June, building 380A was accepted from the contractor, and was completely occupied by 25 June. This building will serve as office space for Plants, Engineering, and Munitions Divisions ( see appendix A).

2. The following buildings were released during the report periods

<u>Bldg. No.</u>	<u>Division</u>	<u>Use</u>
715	Special Projects	Offices
2000	Radiological	Storage
2002	Radiological	Storage.
2004	Radiological	Storage
2006	Radiological	Storage
2008	Radiological	Storage
2010	Radiological	Storage
2037	Radiological	Storage
2345 D	Plants	Guard hut
3104	Test	Guard hut

C. Major Organizational Revisions ( see appendix B).

Due to the curtailment of offensive radiological warfare work (see IA above), Special Projects Division was redesignated Special Projects Office and was attached to the Office of the Chief, Munitions Division, on 30 June. Personnel and facilities were transferred to Munitions Division on that date.

D. Significant Developments in Administrative Procedure.

1. Administrative inspections were continued during the report period with emphasis placed on correction of the discrepancies discovered in previous inspections. The check sheet used in this series of inspections is included as appendix C.

1

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2. New office space made available by the acquisition of building 330A resulted in the alleviation of crowded conditions in these Laboratories. Some of the office space vacated in building 330 was converted into laboratories. Thus, the additional space resulted not only in a more workable administrative arrangement of the divisions, but also in increased operating facilities.

3. Considerable progress has been made on the Supply Reorganization Program during the fiscal year just completed. A property inventory, which formerly required 20 mo. to complete, was accomplished in 45 da. under a new procedure. In the effort to reduce inventories in these Laboratories, a target of 3,500 line-items to be returned to supply channels was set for the fiscal year, but this target was exceeded by 400 line-items. The preventive maintenance phase of this program is now in full operation, and schedules have been established so that all installed equipment is checked at intervals frequent enough to prevent a large number of major breakdowns.

4. During the fiscal year, a study was made and a procedure established to dispose of government-owned material in the possession of contractors in the most economical and appropriate manner. This procedure encourages disposal of the material from the contractor's premises, in accordance with applicable regulations, in those cases where no need for the material at this post can be established. This procedure is expected to aid the over-all supply program by discouraging the return to these Laboratories of government-owned property used on contracts where no need for the property exists at Army Chemical Center.

5. Since no uniformity existed in requesting research and development contracts, a procedure was developed during the fiscal year to standardize these requests. This has resulted in a sizeable savings in man-hours in initiating a contract.

2

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II. PISCAL.

A. Funds Available and Committed (in units of thousand dollars).

<u>Source</u>	<u>Available</u>	<u>Committed</u>	<u>Balance</u>
Army R&D	8,562	8,391	171
Air Force	3,847	2,047	1,800
Navy	315	170	145
Ordnance	14	9	5
Marine Corps	86	56	30
CD	38	37	1
AFSWP	415	197	218
TRNGCMD	14	13	1
Maint. & Oper.	16	13	3
Corps of Engineers	12	6	6
G-4	38	17	18
JTF	10	2	8
Proc. & Prod.	5	5	0
Dugway P.G.	20	11	9
MATCOM	200	97	103
RLA	<u>4</u>	<u>3</u>	<u>1</u>
TOTAL	13,591	11,074	2,517

3

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B. Tabulation Showing Land and Other Facilities Leased, Lessen, and Returns to Government.

Not applicable.

C. Commitments by Type Operation (in units of thousand dollars).

<u>Type Operation</u>	<u>Available</u>	<u>Committed</u>	<u>Balance</u>
Atomic Warfare	459	432	27
Biological Warfare	26	26	0
Chemical Warfare	7,468	7,337	131
Land Combat	390	379	11
Supporting Research	<u>219</u>	<u>217</u>	<u>2</u>
TOTAL	8,562	8,391	171

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II. PERSONNEL.

A. Changes in Key Personnel.

1. OCO.

WOJG Edward H. Droeseid was assigned duty as Assistant Security Officer on 4 May.

2. Munitions Division.

Col. Clarence B. Drennon, Jr., Chief, was transferred to Fort McClellan, Ala., on 16 May.

Lt. Col. Walter L. Miller was appointed Chief on 17 May.

Capt. John J. Lally, Jr., Chief, Ground Munitions Branch, was transferred to Camp Kilmer, N. J., on 23 June.

1st Lt. Harold W. Shear was appointed Chief, Ground Munitions Branch, on 23 June.

3. Radiological Division.

Lt. Col. R. R. Entwistle, Chief, Weapons Effects Branch, was transferred to Picatinny Arsenal, N. J., on 14 June.

Capt. William M. Hone was appointed Chief, Weapons Effects Branch, on 14 June.

B. Personnel Strength.

1. Total Military Personnel.

The following three tables show the total military personnel assigned to Chemical and Radiological Laboratories:

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Officer Personnel Strength, 30 June 1954  
Assigned

Division	Military Occupation Specialty										Total		
	2025	2162	2170	2201	5580	7300	7310	7312	7318	7320		7360	7422
OCO	2	1	-	1	-	-	-	-	-	-	-	-	-
Chemical	-	-	-	-	-	-	-	-	-	-	-	-	1
Munitions	2	-	-	-	-	-	-	-	2	-	-	-	-
Plants	-	-	-	-	-	-	-	-	-	-	1	-	-
Protective	-	-	-	-	5	-	-	-	-	-	-	-	-
Radiological	-	-	-	-	-	1	-	-	1	-	-	-	-
Tech. Services	1	-	-	-	-	-	2	1	-	1	-	-	-
Test	-	-	1	-	1	-	-	-	-	-	-	1	-
Total	5	1	1	1	1	6	2	1	3	1	1	1	1

Attached\*

Division	Military Occupation Specialty			Total
	7310	7318	7360	
Munitions	-	-	1	1
Protective	1	1	-	2
Test	-	-	-	-
Total	1	1	1	4

\*USAF officers attached under Policy 100 OJT for 1-yr. on-the-job training.

- 2025 - Chief of Director, Major Departmental Unit
- 2162 - Operations and Training Staff Officer (S-3)
- 2170 - Technical Operations Officer
- 2201 - Personnel Assignment Officer
- 5580 - Librarian (WAC)
- 7300 - Chemical Engineer
- 7310 - Chemical Research Engineer
- 7312 - Physicist
- 7318 - Organic Chemist
- 7330 - Radiological Defense Engineer
- 7360 - Chemical Munitions Development Officer
- 7422 - Safety Officer
- 7539 - Ordnance Proof Officer
- 9311 - Intelligence and Security Officer

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## Enlisted Personnel Strength, 30 June 1954

Division	Military Occupation Specialty										Total
	1065	1391	1392	1393	1394	1395	1397	4065			
OCO	-	2	3	-	-	-	-	-	-	-	6
Chemical	-	1	-	-	-	66	-	-	-	-	67
Engineering	-	5	7	7	-	10	-	-	-	-	22
Munitions	-	30	5	9	6	25	-	-	-	-	75
Plants	-	11	-	60	3	6	-	-	-	-	80
Protective	-	7	-	18	2	26	-	-	-	-	53
Radiological	-	-	-	2	-	34	-	-	-	-	37
Tech. Services	-	1	-	7	-	7	-	-	-	-	15
Test	2	6	-	3	-	7	-	-	-	-	23
Total	2	69	8	107	11	191	1	5	5		378

1065 - Harbor Craft Supervisor  
 1391 - Civil-Mechanical Engineering Research Asst.  
 1392 - Mathematical-Statistical Research Asst.  
 1393 - Chemical Engineering Research Asst.  
 1394 - Electro-Electronic Research Asst.  
 1395 - Physical Science Research Asst.  
 1397 - Social Science Research Asst.  
 4065 - Harbor Craft Crewmen

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2. Total Civilian Personnel.

The following three tables show the total civilian personnel employed at Chemical and Radiological Laboratories;

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Per Annum Civilian Personnel Strength, 30 June 1954

Division	GS Grade																Total
	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	
OCO	1	1	3	-	1	-	-	-	-	7	6	5	4	3	2	1	
Chemical	-	1	4	9	7	11	-	3	1	2	1	4	6	13	1	-	
Engineering	-	-	1	3	3	7	-	11	3	13	2	5	3	2	-	-	
Inspections	-	1	3	13	19	21	-	9	4	4	6	9	14	9	4	2	
Plants	-	1	4	4	6	8	-	10	3	12	18	11	10	9	4	2	
Protective	-	1	5	7	8	19	-	14	5	5	3	5	8	9	-	-	
Radiological	-	1	1	5	7	8	1	14	3	19	15	17	24	9	1	-	
Tech. Services	-	-	-	-	4	6	-	9	2	8	2	3	4	4	1	-	
Test	-	1	2	4	3	2	-	3	-	1	5	12	11	17	4	-	
Total	1	7	23	45	56	84	3	82	24	84	71	74	76	72	11	2	735

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 Quarterly Historical Report Apr. 1 → Jun. 30 1954

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Per Diem Civilian Personnel Strength, 30 June 1954

Wage Board Supervisor

Division	WBS Grade										Total
	15	13	11	10	9	8	7	6	2	1	
Engineering	1	1	2	1	1	-	-	-	-	1	6
Munitions	-	1	-	-	1	-	-	-	-	-	3
Plants	-	-	-	-	2	1	-	-	-	-	3
Radiological	-	-	-	-	-	-	-	-	1	-	1
Tech. Services	-	-	-	1	-	-	-	1	2	-	4
Test	-	-	-	1	-	-	-	-	-	-	2
Total	1	2	2	3	4	1	1	1	2	2	19

Wage Board

Division	WB Grade																						Total
	23	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2		
Chemical	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	
Engineering	2	2	-	7	7	6	-	7	2	2	-	-	-	-	-	-	-	-	-	-	-	2	
Munitions	-	-	-	-	1	3	2	4	5	-	1	7	3	1	2	-	-	-	-	-	-	68	
Plants	-	-	-	-	-	-	-	3	3	3	-	-	-	-	-	-	-	-	-	-	-	10	
Protective	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	57	
Radiological	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	
Tech. Services	-	-	1	-	-	6	-	1	11	1	4	-	3	2	1	-	-	-	-	-	-	4	
Test	-	-	4	-	2	3	-	9	-	12	1	-	4	1	8	-	-	-	-	-	-	74	
Total	2	2	5	7	10	20	2	28	48	18	6	9	6	7	6	17	9	16	10	7	20	287	

Total WBS 19  
 Total WB 289  
 Total Per Diem Personnel 308

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 Quarterly Historical Report Apr. 1 - Jun. 30 1954

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IV. PLANS.

A. Plans for Permanent Peacetime Establishment.

As this organization reaches a stabilized personnel basis, it is expected to maintain a maximum staff of 1,500 technical and non-technical personnel. Any research problems beyond the scope of these personnel will be let out on a contract basis to private industry.

B. Mobilisation Plans.

No change from previous report.

C. Current Planning.

No changes have been made in current planning during the report period.

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Quarterly Historical Report Apr. 1 → Jun. 30 1954

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V. OPERATIONS.

A. Operations or Activities Accomplished.

1. Chemical Division.

a. A conference "Specifications for GB and Intermediates," was held on 26 May. Representatives from Dugway Proving Ground, Cml C Materiel Command, Medical Laboratories, Muscle Shoals, and Engineering Agency attended. Some pertinent details of the specifications were discussed, and information was presented to the other agencies by Chemical Division.

b. A report was published on the determination of the chlorination end point, step III, DMHP process. The work reported has been applied directly to plant monitoring of the chlorination process at Site A, Muscle Shoals, Ala., and was a significant contribution to the success in preliminary runs.

2. Munitions Division.

a. The following tests were initiated during the report period:

(1) Tests on attenuation of infrared with E32 smoke pot (carbon) and J-31 engine (fog oil).

(2) Test of M3 smoke generator to produce carbon smoke.

(3) Test of floating colored-smoke distress signal for Navy Bu Ord.

(4) Preliminary engineering test of Navy E110 low-drag 500-lb. nonpersistent bomb.

(5) Comparative evaluation of bomblets for 750-lb. nonpersistent cluster.

(6) Preliminary test of E30 one-shot flame thrower.

b. The following tests were continued during the report period.

(1) Tests on the thiodol-designed fuel blocks for thermal generation.

(2) Tests of improved CN-DM grenade.

~~SECRET~~

12 UNCLASSIFIED

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Quarterly Historical Report Apr. 1 → Jun. 30 1954

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- (3) Tests of E15 colored-smoke grenade.
- (4) Test of E34 SO<sub>2</sub> candle.
- (5) Tests of incendiary burster.
- (6) Tests on exploitation of AP-3.
- (7) Tests of intimate-mixture and two-compartment thermal generators for toxic agents. (pot and bomb prototypes).
- (8) Tests of toxic agent dissemination from M39 ADV.
- (9) Tests to determine penetration of toxic aerosols through gas mask canisters.
- (10) Tests on E14 pouch destroyer incendiary.
- (11) Tests on E14 and E15 contaminants.
- (12) Laboratory tests of infrared attenuation of smokes.
- (13) Tests on the application of infrared methods to analyze toxic aerosols.
- (14) Tests on storage stability of E1OR2 attenuation agent.
- (15) Preliminary tests with spray tank for dispersion of agent-filled capsules.
- (16) Tests of E4OR3 colored-smoke rocket.
- (17) Test of E11 projector.
- (18) Test of pocket-size incendiary (halogen fluoride).
- (19) Preliminary test of E17 field-filling unit for spray tanks.
- (20) Engineering tests on E26R1 spray tank.
- (21) Vibration and rough-handling tests of E50 plastic cluster adapter.

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15

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Edgewood Arsenal Historian's Office; Edgewood, MD  
Chem. Corps, Chem. and Radiological Laboratories,  
Quarterly Historical Report Apr. 1 → Jun. 30 1954



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- (22) Comparative evaluation of E71, E74, and E89 bombs on prototype targets.
- (23) Experimental engineering tests of ESR4 mixer.
- (24) Drop tests of E118 cluster.
- (25) Flight tests of E135 and E136 750-lb. clusters with inert E104 and E105 bombs.
- (26) Flight tests of E9 warhead at White Sands Proving Ground.
- (27) Preliminary engineering tests simulating VT fuzes for rockets.
- (28) Tests of closures for gas rockets - press-fit ball, silver-solder press-fit bursters, riv nut, deforming plugs and tube expander, etc.
- (29) Ripple firing of E42 rocket.
- (30) Tests of several launcher designs for E42 rocket.
- (31) Test firing of E42 rocket using fiber glass-plastic motors.
- (32) Engineering tests of E71 bombs - primarily, penetration of reinforced concrete.
- (33) Ballistics tests of various bomblets.
- (34) Engineering and flight tests at Edwards Air Force Base of E101R3 cluster modified for external storage with E5 kit.
- (35) Flight test of E60 750-lb. plastic cluster adapter modified for external storage on F-84E aircraft at 450 m.p.h.
- (36) Flight test of E10 warhead (CORPORAL) at White Sands Proving Ground.
- (37) Flight test of warhead for HONEST JOHN at White Sands Proving Ground.
- (38) Flight test of warhead for MATADOR at White Sands Proving Ground.

~~SECRET~~  
14

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Edgewood Arsenal Historian's Office; Edgewood, MD  
Chem. Corps, Chem. and Radiological Laboratories,  
Quarterly Historical Report Apr. 1 → Jun. 30 1954

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- (39) Critical loading tests of warhead for RASCAL.
- (40) Centrifuge tests on warheads.
- (41) Final engineering test on E24-29 nonintegral flame thrower.
- (42) Preliminary test of E34 continuous fuel mixer.
- (43) Preliminary tests of pressure regulators for portable flame thrower.
- (44) Preliminary engineering tests of Navy 5-in. gas rocket.
- (45) Preliminary engineering tests of Navy 5-in. smoke rocket.
- (46) Preliminary tests of two T68 mechanized flame throwers.
- (47) Final engineering test of E35 compressor.
- (48) Surveillance tests of modified M3 smoke generator.
- (49) Evaluation and cyclic tests of plastic pressure vessels for portable flame throwers.
- (50) Final engineering test of remote-controlled smoke generator.
- (51) Final engineering test of 6"/47 Navy smoke shell.

c. The following tests were held in abeyance during the report period:

- (1) Tests of E109 incendiary bombs.
- (2) Tests of E120R1 750-lb cluster.
- (3) Test firing of 10- and 30-gal. long-range rockets.
- (4) Test firing of E42 rocket using eutectic WP for ignition (requiring no fuse).
- (5) Preliminary engineering tests of T76 155-mm. incendiary shell.

d. The following tests were completed during the report period:

[REDACTED] UNCLASSIFIED

15

Edgewood Arsenal Historian's Office; Edgewood, MD  
Chem. Corps, Chem. and Radiological Laboratories,  
Quarterly Historical Report Apr. 1 → Jun. 30 1954

~~SECRET~~

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- (1) Tests at Suffield on E29R1 bomb prototype and Mk. 5 Mod 2 pot charge.
- (2) Tests of modified M3 pulsejet generator and J-31 engine for dissemination of liquid toxic agents.
- (3) Tests on modified Southwind heater for toxic agent dissemination.
- (4) Tests on M3 pulsejet generator for toxic agent.
- (5) Tests of toxic agent dissemination from Mk.5 Mod 2 smoke pot.
- (6) Final engineering test of E115 cluster.
- (7) Final engineering test of T67 integral flame thrower.
- (8) Surveillance tests of Shevlin fog-oil pump for smoke generator.

3. Protective Division.

a. Arrangements are in progress for the conduct of desert tests at Yuma, Arizona, on the following items:

- (1) E51R15 noncombat protective mask.
- (2) E52 civilian protective mask.
- (3) E10, E12, E13, and E73 service protective masks.
- (4) E26 3-man tank collective protector.
- (5) Gas-diffusion aerosol board.

b. The following items are being assembled for shipment to Big Delta, Alaska, for forthcoming winter tests:

- (1) E26 3-man tank collective protector.
- (2) E14R10 winterizing kit for field protective mask.

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Chem. Corps, Chem. and Radiological Laboratories,  
Quarterly Historical Report Apr. 1 → Jun. 30 1954

~~SECRET~~

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c. E10, E12, and E13 service protective masks are being made available to Army Field Forces Board No. 3, Fort Benning, Georgia, for tests. As a result, these Laboratories will receive comments from the potential user concerning the relative suitability of the several candidate masks.

4. Radiological Division.

a. Planning and instrumentation work for fall-out and TRAC programs at Operation TEAPOT are continuing.

b. Test plan and instrumentation have been completed for tests on attenuation of sunlight. These tests will probably be carried out in July and August at Dugway Proving Ground.

c. Victoreen contract - All instruments have been received and approved, and the contract has been closed.

d. Michigan contract - The experimental contract has been extended to 1 September to permit completion of the work. A new theoretical contract was let to consider the effects of ground reflection when the burst is above the attenuating cloud and when the burst is on the surface of the ground.

e. Approximately 24 people participated in the recent test at the Pacific Proving Ground (Operation CASTLE). All operations were completed by 15 May; preliminary reports have been submitted to AFSWP, and one has been approved. Analyses of CASTLE samples are continuing.

5. Special Projects Division.

Work continued on preparation of final reports on the various projects. During the report period, successful tests of the E98R4 bomb were conducted. Development of the solar aspect telemeter was carried out to the point of proving the feasibility of gathering ballistic data with this device.

6. Test Division.

a. The following nonagent-type items were tested during the report period:

(1) E86, E115, E116, E117, and experimental radio clusters to determine over-all functioning and dispersion.

~~SECRET~~

17

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Edgewood Arsenal Historian's Office; Edgewood, MD  
Chem. Corps, Chem. and Radiological Laboratories,  
Quarterly Historical Report Apr. 1 → Jun. 30 1954

~~SECRET~~

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(2) E63 cluster adapter to determine ground dispersion pattern.

(3) E50, E54, E71, E89, E91, E98, E110, M50, and M74 bombs to determine individual functioning, ballistics, velocity, and penetration.

(4) SNARK, MATADOR, WAC CORPORAL, and special warheads to determine separations and effect.

(5) E74 napalm and latex fire bombs to evaluate fuel.

(6) Smoke canister rockets to determine separation characteristics of subcluster smoke rockets.

(7) Spheres to determine smoke spotting characteristics.

(8) Mechanized and portable flame throwers to determine effectiveness and functioning of various fuels.

(9) E19 dispenser to determine operational ability.

(10) Disk launcher to determine munition dispersion.

(11) FS spray tanks to determine effectiveness of FS for smoke screening.

b. The following agent-type items were tested during the report period:

(1) E54, E82R1, and E91 bombs (toxic-filled).

(2) Chemical land mine (CN-filled).

(3) E42 rocket (toxic-filled).

(4) E23, E100, and E111 grenades (toxic-filled).

(5) 5-in. Navy chemical shell (toxic-filled).

(6) M3 pulsejet smoke generator for determination of agent breakdown in the generator.

c. Final engineering tests were completed on the following items during the report period:

~~SECRET~~

18

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Edgewood Arsenal Historian's Office; Edgewood, MD  
Chem. Corps, Chem. and Radiological Laboratories,  
Quarterly Historical Report Apr. 1 → Jun. 30 1954

~~SECRET~~

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- (1) E14 liquid fuel contaminant.
- (2) E28-30R1 integral combat vehicle flame thrower.
- (3) E5R2 gasoline thickener.
- (4) E19R4 pulsejet smoke generator.
- (5) E117 750-lb. incendiary bomb cluster.
- (6) E5R1 aerosol filter.
- (7) E8R2 3-gal. decontaminating solution unit.
- (8) E12R3 clothing impregnation chemical set.
- (9) E14R4 individual protective cover.
- (10) E28 chemical agent detector kit.

d. The following special studies were conducted during the report period:

- (1) Study of area effectiveness variation by bombs filled with 1 to 10 lb. of GB.
- (2) Estimation of the area-dosage curve for the T238 GB-filled rocket.
- (3) Estimation of the area-dosage curves for 2.75-in. rockets filled with 1 and 4 lb. of GB.
- (4) Continuing study on the effect of meteorological parameters on area effectiveness of GB-filled munitions.
- (5) Initiation of re-evaluation study on downwind hazard from chemical-filled munitions.

B. Major Developments in Operating Technique.

1. During the fiscal year, an extensive study was made to determine the cause for extensive delays between the time a requirement was established for an item and the time that item was ready for issue. The recommendations resulting from this study were forwarded to Col C Research and Engineering Command.

~~SECRET~~

19

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Chem. Corps, Chem. and Radiological Laboratories,  
Quarterly Historical Report Apr. 1 → Jun. 30 1954

~~SECRET~~  
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C. Performance.

A review of nonresident research and development contracts was included in the previous report. Progress of all research and development undertaken by these Laboratories is reported in detail in the Chemical Corps Research and Development Project Report published annually and is highlighted at the end of the fiscal year. A copy of this report (Significant Accomplishments, Fiscal Year 1954) will be included in the next historical report.

~~SECRET~~

20

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Chem. Corps, Chem. and Radiological Laboratories,  
Quarterly Historical Report Apr. 1 → Jun. 30 1954

~~SECRET~~

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VI. GENERAL.

A. Unusual Activities.

1. Visits to Installation.

a. On 7 April, Dr. Ormand Solandt, Chairman, Canadian Defence Research Board, visited these Laboratories for a general orientation on research and development activities.

b. During the period 12 through 16 April, Mr. A. H. Ford-Moore of the Chemical Defence Experimental Establishment, British Ministry of Supply, visited in order to exchange information on new compounds.

c. On 13 April, Dr. John C. Arnell, Superintendent, Defence Research Chemical Laboratories, Canadian Defence Research Board, visited for the purpose of familiarization with U.S. development program for dissemination of toxics.

d. On 13 April, Mr. D. C. Evans, Dr. W. Caswood, and Mr. E. E. Haddon (accompanied by Mr. Ford-Moore), British Ministry of Supply, visited for familiarization with research and development in the field of munitions.

e. Dr. John E. Vance, Deputy Chief, R&D, Office of Deputy Chief of Staff for Plans and Research, accompanied by Col. A. W. Betts, visited on 21 April for orientation.

f. Dr. Jack H. Schulman, British Ministry of Supply, visited on 11 May to inquire about formulations, test performance, and chemistry of thickened fuels.

g. On 9 June, 5 foreign officers (from Argentina, Brazil, Egypt, and Thailand) visited the Cal C Museum for general orientation.

h. Dr. D. W. Adamson, Wellcome Foundation, London England, visited on 21 June to exchange information concerning the isolation of toxics from nature.

i. On 22 June, Dr. O. H. Wansborough-Jones and Mr. D. C. Evans, British Ministry of Supply, visited for the purpose of general orientation on research and development activities.

j. Mr. L. V. Thomas, Dr. Harry Sheffer, Mr. J. T. Flynn, and Mr. J. E. Roberts, British Joint Service Mission, visited on 23 June for orientation on flame warfare.

~~SECRET~~

21

UNCLASSIFIED

Edgewood Arsenal Historian's Office; Edgewood, MD  
Chem. Corps, Chem. and Radiological Laboratories,  
Quarterly Historical Report Apr. 1 → Jun. 30 1954



~~SECRET~~  
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2. Seminars.

a. The following meetings were conducted in the chemical seminar program during the report period:

- 14 April - Mr. A. H. Ford-Moore, Chemical Defence  
Experimental Establishment  
Porton, Wilts, England  
Subject: "New Candidate Chemical Warfare Agents"
- 28 April - Pvt. R. T. Stiehl, Jr., Organic Branch  
Chemical Division,  
Chemical and Radiological Laboratories  
Subject: "An Introduction to Polymer Chemistry"
- 12 May - Mr. Erik G. Linden, Signal Corps Engineering Laboratories  
Subject: "Electrets"
- 2 June - Cpl. L. J. Bailin, Physical Branch  
Chemical Division  
Chemical and Radiological Laboratories  
Subject: "Fundamental and Recent Developments in X-Ray  
Diffraction and Spectrography"
- 9 June - Dr. W. C. Koehler, Physics Division  
Oak Ridge National Laboratory,  
Oak Ridge, Tenn.  
Subject: "Neutron Diffraction"

b. A physics seminar was reactivated on 21 May, and the following meetings were held:

- 21 May - Pfc. H. I. West, Jr., Electronics Section,  
Nucleonics Branch  
Radiological Division  
Subject: "Scintillation Counters"
- 4 June - Pvt. Paul Grant, Radiophysics Section,  
Nucleonics Branch,  
Radiological Division  
Subject: "Ultrasonic Phenomena"
- 30 June - Pvt. Daniel Smith, Electronics Section  
Nucleonics Branch  
Radiological Division  
Subject: "Approximate Atomic Wave Functions"

~~SECRET~~  
22

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Edgewood Arsenal Historian's Office; Edgewood, MD  
Chem. Corps, Chem. and Radiological Laboratories,  
Quarterly Historical Report Apr. 1 → Jun. 30 1954

~~SECRET~~  
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3. Operations Other Than Normal Military Functions.

None.

4. Special Events.

a. On 15 and 16 May, these Laboratories presented a smoke and flame demonstration at Bolling Air Force Base in celebration of Armed Forces Day.

b. On 21 and 22 June, a symposium, "Incendiary Gels and their Instrumentation," was given by this organization at the Post Theatre (see appendix D).

c. On the night of 24 June, a trial test for calibrating instrumentation was carried out on "M" field, using a 5-billion candlepower photoflash bomb.

d. Three enlisted personnel of Radiological Division, Corporals Stenerson, Crawford, and Hamilton, were presented medals of commendation for the outstanding work which they performed during Operation CASTLE at the Pacific Proving Ground.

B. Inspections.

On 18 and 20 May, the Security Inspection Team of Research and Engineering Command conducted their annual security inspection of these Laboratories. As a result of this inspection, a rating of SUPERIOR was received.

~~SECRET~~

23 UNCLASSIFIED

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Edgewood Arsenal Historian's Office; Edgewood, MD  
Chem. Corps, Chem. and Radiological Laboratories,  
Quarterly Historical Report Apr. 1 → Jun. 30 1954