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# ANNUAL CONSOLIDATED REPORT

## OF CHEMICAL CORPS RESEARCH AND DEVELOPMENT PROJECTS WHICH ARE THE RESPONSIBILITY OF CHEMICAL CORPS RESEARCH AND ENGINEERING COMMAND

*DECLAS - PCT*

For Calendar Year <sup>1953</sup> 1954 Including Cumulative  
Progress Up To 31 December 1953



EXCLUDED FROM AUTOMATIC REGRADING;  
DOD DIR 5200.10 DOES NOT  
APPLY

**RESTRICTED DATA**  
ATOMIC ENERGY ACT OF 1954

*Excerpt declassified  
by CBDCOM Security  
Classification Review  
Board, 24 Aug 95*

Excluded from General Declassification Schedule

*H033-87-S*

*E0717 710098  
EA SRD 717(4)*

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*Declas*  
*Richard O. Real*  
**RICHARD O. REAL**  
Colonel, CM  
Chemical Corps

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CHEMICAL CORPS RESEARCH AND DEVELOPMENT PROJECTS  
WHICH ARE THE RESPONSIBILITY OF  
CHEMICAL CORPS RESEARCH AND ENGINEERING COMMAND

31 December 1953

TECHNICAL OBJECTIVE AW-4

<u>PROJECT NO</u>	<u>TITLE</u>	<u>RESP OPER AGENCY</u>	<u>D/A PRIOR</u>	<u>SEC CLASS</u>	<u>RESP R&amp;E DIV</u>
4-12-30-002	Large Area RW Munitions	CRL	1-B	S-RD NRFN	RW
4-12-30-003	Handling & Filling Equipment for RW Munitions	CRL	2	S-RD NRFN	RW
4-12-30-004	Ground Delivery of RW Agents	CRL	1-B	S-RD NRFN	RW
4-98-05-023	RW Field Testing, DPG	DPG	1-C	S-RD NRFN	PG

TECHNICAL OBJECTIVE AW-5a

4-12-80-005	Tactical Dosimeter	CRL	1-C	C	RW
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TECHNICAL OBJECTIVE AW-5b

4-12-01-005	Thermal Radiation Attenuating Cloud Study	CRL	1-A	C	RW
4-12-75-001	Protection Against Residual Radiological Hazards	CRL	1-C	S-RD NRFN	RW
4-12-90-001	Health Physics	ML	1-C	U	RW

TECHNICAL OBJECTIVE BW-5

4-04-14-010	750-lb Cluster Adapter for 1/2-lb Biological Bomb	CRL	1-B	S	TCW
4-16-16-004	Biological Warhead for CORPORAL Missile	CRL	1-A	S	RW

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EA-SRD-717(71)

TECHNICAL OBJECTIVE BW-5 (Cont'd)

<u>PROJECT NO</u>	<u>TITLE</u>	<u>RESP OPER AGENCY</u>	<u>D/A PRIOR</u>	<u>SEC CLASS</u>	<u>RESP R&amp;E DIV</u>
4-16-16-005	Biological Warhead for MX-776 Missile (RASCAL)	CRL	1-A	S	RW
4-16-16-006	Biological Warhead for MX-775 Missile (SNARK)	CRL	1-A	S	RW
4-16-16-007	Biological Warhead for MX-771 Missile (MATADOR)	CRL	1-A	S	RW

TECHNICAL OBJECTIVE CW-1a

4-08-03-001	New Compounds	CRL	1-B	S	TCW
4-08-03-005	G-Agents	CRL	1-B	S	TCW
4-08-03-006	Special Problems, Chemical Division	CRL	2	C	TCW
4-72-06-003	Special Problems, Plants Division	CRL	2	C	ENG
4-72-06-014	Review & Design of CBR Unit Plants	EA	1-B	S	ENG
4-92-03-012	CW Agent Pilot Plants	CRL	1-B	S	TCW
4-98-01-003	Environmental Field Trials, DPG	DPG	1-B	U	PG

TECHNICAL OBJECTIVE CW-1b

4-09-04-001	Incendiary Agents, Solid & Viscous	CRL	1-C	C	RW
4-09-05-001	Incendiary Oil Field Test Kit	CRL	1-C	U	RW
4-30-07-001	Gasoline Contaminant	CRL	1-C	S	RW
4-30-07-004	Diesel Fuel Contaminant	CRL	1-C	S	RW
4-30-07-005	Radar Screening Agents	CRL	1-A	S	RW

TECHNICAL OBJECTIVE CW-3

4-04-06-004	Basic Studies for Development and Improvement of CW Aerial Munitions	CRL	2	C	TCW
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TECHNICAL OBJECTIVE CW-3 (Cont'd)

PROJECT NO	TITLE	RESP OPER AGENCY	D/A PRIOR	SEC CLASS	RESP R&E DIV
4-04-15-007	Dissemination and Exploitation of CW Agents	CRL	1-C	S	TCW
4-04-15-009	Special Problems, Munitions Division	CRL	2	G	RW
4-04-15-013	CW Warheads for Guided Missiles	CRL	1-B	S	RW
4-04-15-014	GB Mortar Shell, 4.2-inch	CRL	1-B	C	TCW
4-04-15-016	750-lb Cluster of GB Bombs	CRL	1-B	S	TCW
4-04-15-017	Kit for Conversion of Fire Bombs to Spray Tanks	CRL	1-C	C	TCW
4-04-15-018	HD Mortar Shell, 4.2-inch	CRL	1-C	C	TCW
4-04-15-021	Spray Tank for Jet Aircraft	CRL	1-A	S	TCW
4-04-15-022	1000-lb Cluster of GB Bombs	EA	1-B	S	ENG
4-04-15-024	5, 6, & 8-inch Gas Projectiles	CRL	1-C	S	TCW
4-04-16-002	Incendiary Artillery Shell, 155-mm	CRL	1-C	C	RW
4-04-16-006	Fire Bomb for Jet Aircraft	CRL	1-C	C	RW
4-04-16-013	750-lb Cluster of 4-lb Magnesium Incendiary Bombs	CRL	1-C	C	RW
4-04-16-014	750-lb Cluster of 10-lb Incendiary Bombs M74	CRL	1-C	C	RW
4-04-16-015	750-lb Cluster of High Penetration Incendiary Bombs	CRL	1-C	C	RW
4-04-16-019	Incendiary Munitions	CRL	1-C	C	RW
4-04-17-009	Smoke Canister, 155-mm Artillery Shell	CRL	2	U	RW
4-04-17-011	750-lb Cluster of Smoke Bombs	CRL	1-C	C	RW
4-04-17-013	Smoke Canister, 105-mm Artillery Shell	CRL	2	U	RW

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TECHNICAL OBJECTIVE CW-3 (Cont'd)

PROJECT NO	TITLE	RESP	D/A	SEC	RESP
		OPER			R&E
		AGENCY	PRIOR	CLASS	DIV
4-04-17-014	Hand and Rifle Smoke Grenade	CRL	1-C	U	RW
4-04-17-015	5 & 6-inch Smoke Projectiles	CRL	1-C	U	RW
4-04-17-016	Remote-Controlled Smoke Generator	CRL	1-C	C	RW
4-08-04-005	Devices, Methods & Techniques for Field Evaluation of CW Agents & Munitions	CRL	2	C	PG
4-08-04-006	Maintenance and Purchase of Field & Test Equipment, CCCRL	CRL	2	U	PG
4-08-05-003	Mechanical Irritant Gas Dispenser	CRL	1-C	U	TCW
4-09-06-002	Long Range Incendiary Oil Projection	CRL	1-B	C	RW
4-16-16-008	GB Warhead for CORPORAL Missiles	CRL	1-A	S	RW
4-16-16-011	GB Warhead for MX-771 Missile (MATADOR)	CRL	1-A	S	RW
4-16-16-012	GB Warhead for MX-776 Missile (RASCAL)	CRL	1-A	S	RW
4-16-16-013	Incendiary Warhead for MX-771 Missile (MATADOR)	CRL	1-A	S	RW
4-16-16-017	GB Warhead for MX-775 Missile (SNARK)	CRL	1-A	S	RW
4-17-04-002	GB Warhead for HONEST JOHN Rocket	CRL	1-A	S	RW
4-17-07-005	5-inch Smoke Rocket	CRL	1-C	U	RW
4-17-07-006	5-inch GB HVAR Rocket	CRL	1-C	S	TCW
4-17-07-008	Gas Rockets	CRL	1-B	S	TCW
4-23-04-006	Dissemination of Infrared Screening Agents	CRL	1-B	S	RW
4-72-03-003	Product Design, Inspection Gages & Equipment	EA	2	U	ENG

TECHNICAL OBJECTIVE CW-3 (Cont'd)

RESP R&E DIV	PROJECT NO	TITLE	RESP OPER AGENCY	D/A PRIOR	SEC CLASS	RESP R&E DIV
RW	4-72-05-013	Specifications, Drawings & Directives, EA	EA	2	U	ENG
RW	4-72-08-001	Design Criteria for Technical Facilities	EA	2	U	ENG
RW	4-89-19-002	Field Filling, Mixing & Transfer Equipment for Incendiary Oils	CRL	1-C	C	RW
PG	4-89-19-003	Field Filling Equipment for Spray Tanks	CRL	1-C	C	TCW
PG	4-90-20-005	Maintenance of Technical Equipment, CCCRL	CRL	2	U	ENG
TCW	4-90-40-005	Editorial, Patents, Technical Library & Museum, CCCRL	CRL	2	U	TCW
RW	4-90-50-003	General Engineering, CCCRL	CRL	2	U	ENG
RW	4-98-05-021	CW Field Test Technology, DPG	DPG	1-B	S	PG
RW	4-98-05-022 (67%)	CW Field Testing, DPG	DPG	1-B	S	PG
RW	4-98-09-002	Engineering Design & Testing	EA	2	C	ENG
RW	<u>TECHNICAL OBJECTIVE CW-4a</u>					
RW	4-08-04-008	Chemical Agent Detector Kit	CRL	1-C	S	TCW
RW	4-08-04-009	Improved Chemical Agent Analyser Kit	CRL	1-C	S	TCW
TCW	4-08-06-006	Field Alarm for G Agents	CRL	1-A	C	TCW
TCW	4-08-06-014	Carbon Monoxide Alarm	CRL	2	U	TCW
RW	4-08-06-015	Detection Methods & Materials for Toxic Agents	CRL	1-A	S	TCW
ENG	4-90-10-001	Mobile Chemical Laboratory	CRL	2	C	TCW

TECHNICAL OBJECTIVE CW-4a (Cont'd)

<u>PROJECT NO</u>	<u>TITLE</u>	<u>RESP OPER AGENCY</u>	<u>D/A PRIOR</u>	<u>SEC CLASS</u>	<u>RESP R&amp;E DIV</u>
4-90-10-002	Theater Chemical Laboratory	CRL	2	C	TCW

TECHNICAL OBJECTIVE CW-4b

4-08-06-020	Pharmaceuticals for Protection Against G Agents	ML	1-C	S	TCW
4-08-06-021	Devices and Procedures for Clothing Impregnation	CRL	1-C	C	RW
4-80-01-002	Special Problems, Protective Division	CRL	2	C	RW
4-80-01-004	Toxicological Assessment of Protective Items	ML	1-C	S	TCW
4-80-02-012	Noncombat Protective Mask	CRL	1-C	C	RW
4-80-02-018	Regimental Protective Mask Repair Kit	CRL	2	U	RW
4-80-02-019	Headwound Protective Mask	CRL	2	C	RW
4-80-02-021	Civilian Protective Mask	CRL	1-B	C	RW
4-80-02-022	Infant Protector	CRL	1-C	C	RW
4-80-02-024	Protective Mask Components	CRL	1-C	C	RW
4-80-02-025	Filter Materials	CRL	2	C	RW
4-80-02-027	Field Protective Mask	CRL	1-C	C	RW
4-80-02-028	Collective Protector for Fixed Installations	CRL	1-C	C	RW
4-80-02-029	Supplied-Air Tank Protective Mask	CRL	1-C	C	RW
4-80-04-004	Supplied-Air Protective Unit	CRL	2	C	RW
4-80-04-005	Improved Materials for Protective Clothing	CRL	2	C	RW

TECHNICAL OBJECTIVE CW-4b (Cont'd)

<u>PROJECT NO</u>	<u>TITLE</u>	<u>RESP OPER AGENCY</u>	<u>D/A PRIOR</u>	<u>SEC CLASS</u>	<u>RESP R&amp;E DIV</u>
4-80-04-008	Individual Protective Cover	CRL	1-C	C	RW
4-80-12-005	Equipment & Methods for Collective Protection	CRL	1-C	C	RW
4-80-12-006	Collective Protection for Military Transport Vehicles	CRL	2	C	RW
4-98-05-022 (33%)	CW Field Testing, DPG (613 Card under CW-3)	DPG	1-B	S	PG

TECHNICAL OBJECTIVE CW-4c

4-08-06-004	Decontamination Methods & Materials for Toxic Agents	CRL	1-C	C	RW
4-08-06-018	Improved Decontaminating Agent, Non-Corrosive	CRL	2	C	RW
4-08-06-019	Improved Decontaminating Apparatus, Power-Driven, Truck-Mounted	CRL	2	U	RW

TECHNICAL OBJECTIVE CW-5

4-08-02-005	Physiological Aspects of CW	ML	1-C	C	TCW
4-08-02-006	Biological Studies of CW Particulates	ML	1-C	S	TCW
4-08-02-007	Toxicology of CW Agent Vapors	ML	1-C	S	TCW
4-08-02-009	Biochemical Action of CW Agents	ML	1-C	S	TCW
4-08-02-010	Neurological Action of CW Agents	ML	1-C	S	TCW
4-08-02-012	Toxicological Action of CW Agents	ML	1-C	S	TCW
4-08-02-013	Pathological Action of CW Agents	ML	1-C	S	TCW



TECHNICAL OBJECTIVE CW-5 (Cont'd)

<u>PROJECT NO</u>	<u>TITLE</u>	<u>RESP OPER AGENCY</u>	<u>D/A PRIOR</u>	<u>SEC CLASS</u>	<u>RESP R&amp;E DIV</u>
4-08-02-014	Biophysical Mechanisms in CW Wounds	ML	1-B	S	TCW
4-08-02-015	Pharmacology of Toxic Compounds	ML	1-C	S	TCW
4-08-06-023	Therapeutic Material for Prevention & Treatment of CW Casualties	ML	1-C	S	TCW
4-08-06-024	CW and RW Aspects of Food and Water	ML	1-C	S	TCW
4-59-12-007	Clinical Investigation & Treatment of CW Casualties in Man	ML	1-C	U	TCW

TECHNICAL OBJECTIVE LC-5

4-09-02-011	Lightweight Air Compressor	EA	2	C	ENG
4-09-02-013	Nonintegral Flame Thrower	CRL	1-C	C	RW
4-09-02-015	Service Equipment for Mechanized Flame Throwers	CRL	1-C	C	RW
4-09-02-016	Integral Flame Thrower for the T48 Medium Tank	CRL	1-C	C	RW
4-09-02-017	Flame Throwers for AUV/APC Class Vehicles	CRL	1-C	C	RW
4-09-02-018	Portable Flame Throwers	CRL	1-C	C	RW

TECHNICAL OBJECTIVE SR-2a

4-12-10-003	Atomic Weapons Tests	CRL	1-A	S-ED NRFN	RW
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TECHNICAL OBJECTIVE SR-5

4-85-09-001	In-Service Training, CCCRL	CRL	3	U	ADM
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TECHNICAL OBJECTIVE SR-8z

PROJECT NO	TITLE	RESP	D/A	SEC	RESP
		OPER			R&E
		AGENCY	PRIOR	CLASS	DIV
4-17-06-001	Storage & Handling of Liquid Propellants for Rockets & Guided Missiles	CRL	1-C	C	ENG

TECHNICAL OBJECTIVE SR-12

4-91-06-002	Packaging & Materials Development	CRL	2	U	ENG
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TECHNICAL OBJECTIVE IO-12

4-30-01-002	Incendiary Destroyer Device	CRL	1-C	C	RW
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TECHNICAL OBJECTIVE IO-14

4-36-07-001	Climatological & Meteorological Factors Affecting Field Test Operations	DPG	2	S	PG
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TECHNICAL OBJECTIVE PO-14

4-61-14-002	Health Hazards of Military Chemicals	ML	1-B	U	TCW
4-65-20-001	Mechanism of Entry & Action of Insecticidal Compounds and Insect Repellents	ML	1-C	U	TCW

TECHNICAL OBJECTIVE PO-16

4-99-02-001	Wound Ballistics	ML	1-C	C	TCW
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TECHNICAL OBJECTIVE PC-2

4-64-11-001	Psychological Factors in CW, BW & RW	ML	2	C	TCW
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