

1969

LEAD RESEARCH AND DEVELOPMENT

SUMMARY

OF

AUTHORIZATION AND BUDGET

	<u>AUTHORIZATION</u>	<u>ESTIMATED BUDGET</u>
I Chemical Innovations	\$ 73,200	\$ 74,700
II Architectural	108,194	96,944
III Lead Shot	URA As Required	URA As Required
IV Cable Sheathing	74,000	74,000
V Batteries	67,500	34,000
VI Paints & Pigments	32,000	35,250
VII Corrosion Protection	10,000	13,000
VIII Fellowships	32,030	44,570
IX Environmental Health	266,361*	228,138
X Abstracting	10,000	10,000
XI Undesignated Research Authorization	50,000	----
	<u>\$ 723,285</u>	<u>\$ 660,502</u>

* Includes \$25,000 Special Undesignated Research Authorization

**1969
LEAD RESEARCH
AUTHORIZATION & BUDGET**

	1969 EXPENDITURES REMAINING ON AUTHORIZED PROJECTS		1969 PROJECTS		1970 PROJECT CONTINUING ANTICIPATE
	1968 OR PRIOR AUTHORIZATION (1)	REMAINING EXPENDITURES IN 1969 (2)	AUTHORIZATION (3)	IN 1969 (4)	IN 1970 (5)
					(6)

NOTES

I CHEMICAL INNOVATIONS

A. ORGANOLEAD APPLICATIONS

LC 154 Organoleads for Tropical Disease Control
LC 49 Organolead Lubricant Additives
LC 89 Lead Compounds As Wood Impregnants Against Marine Borers

B. ORGANOLEAD SYNTHESIS

LC 18 Organolead Chemistry
LC 28 Synthesis of Organolead Compounds

COMPLETION OF PREVIOUSLY AUTHORIZED PROJECTS

LC 133 Evaluation of Organolead Polymers (1)
LC 146 Organolead Polymers for Optical Use (1)

TOTAL CHEMICAL INNOVATIONS

(1) Terminated during year
URA= Undesignated Research Authorization

A. PRODUCTS

B. METHODS & PROCEDURES

C. FINISHES

COMPLETION OF PREVIOUSLY AUTHORIZED PROJECTS

1969 EXPENDITURES REMAINING ON	1969 AUTHORIZED PROJECTS		1969 PROJECTS		1969 PROJECTS	1969 PROJECTS
	1968 OR PRIOR AUTHORIZATION (1)	REMAINING EXPENDITURES IN 1969 (2)	1969 AUTHORIZATION (3)	EXPENDITURES IN 1969 (4)	IN 1970 (5)	CONFIRMATION ANTICIPATED (6)
26,750	-	-	28,694	28,694	-	At Reduce Level Yes
20,000	-	-	10,000	5,000	5,000	Yes
2,000 }	-	-	22,000	22,000	-	No
-	2,500	-	10,000	7,500	2,500	No
-	-	-	25,000	18,750	6,250	Yes
10,000	-	-		URA As Required		No
15,000	1,000	1,000	12,500	11,500	1,000	At Reduce Level
-	-	-	-	-	-	No
-	-	-	-	-	-	No
	3,500		108,194	93,444	14,750	

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III. LEAD SHOT

LM 145 Non-Toxic Lead Shot

IV. CABLE SHEATHING

LM 55 Lead Composite Cable Sheathing
LM 142 Extrusion of High Strength Lead
Cable Sheathing Alloys

TOTAL CABLE SHEATHING

V. BATTERIES

A. S. L. I.

LE 84 Pastes and Grids for the Lead-Acid
Battery
LE 128 Support of Battery Research at NRL

B. PROPULSION & PORTABLE

ULE 50 Lead-Air Battery
LE 143 Battery Powered Vehicle

COMPLETION OF PREVIOUSLY AUTHORIZED PROJECTS

LE 130 Influence of Cast Structure on the
Electrochemical Corrosion of Lead Alloys (7)

TOTAL BATTERIES

(13) Not initiated, miscellaneous expenditures only. (2) Deferred

(7) Authorized and initiated in 1967, \$5,000

(14) It is the strong recommendation of the Lead Program Review Committee that the industry should be encouraged to move ahead toward the production of an electric vehicle. No specific funds are recommended at present, but at an appropriate time substantial funding should be made available, possibly by special assessment, on an urgent basis to further this project at the maximum possible rate of effort

NOTES	1969 EXPENDITURES REMAINING ON		1969 PROJECTS		1970 PROJECT
	AUTHORIZED PROJECTS 1968 OR PRIOR AUTHORIZATION (1)	REMAINING EXPENDITURES IN 1969 (2)	1969 AUTHORIZATION (3)	EXPENDITURES IN 1969 (4)	IN 1970 (5)
(13)	10,000	-	-	URA As Required	No
-	24,000	2,000	24,000	22,000	2,000
(2)	10,000	-	50,000	50,000	-
		2,000	74,000	72,000	2,000
-	35,000	3,000	35,000	32,000	3,000
-	15,000	-	12,500	12,500	-
-	-	-	20,000	15,000	5,000
URA	35,000 6,000	20,500	67,500 (14)	59,500	8,000
		24,500	67,500	59,500	8,000
		-	-	-	-
		1,000	-	-	-
		24,500	67,500	59,500	8,000

VI. PAINTS & PIGMENTS

LC 111 Antifouling Paint Formulations
LC 117 Lead Pigments in Paints

COMPLETION OF PREVIOUSLY AUTHORIZED PROJECTS

LC 101 Flame Spraying of Low Temperature Lead Enamels

LC 116 Handbook on Inorganic Lead Chemicals

LC 114 Control of PbO Loss in Manufacturing Leaded Glasses

TOTAL PAINTS & PIGMENTS

VII. CORROSION PROTECTION

LC 113 Explosive Cladding of Lead to Steel
IM 115 Hot Dip Lead Alloy Coating of Steel
IM 118 Soldering Lead Coated Surfaces

COMPLETION OF PREVIOUSLY AUTHORIZED PROJECTS

LE 36 High Speed Plating of Lead
LE 65 Corrosion of Lead in Various Media (Handbook)

TOTAL CORROSION PROTECTION

(7) Deferred
(8) Authorized and initiated in 1967, \$29,500
(9) Completing previously authorized project
(10) Authorized and initiated in 1967, \$10,000
(11) Authorized and initiated in 1967

1969 EXPENDITURES REMAINING; ON		1969 PROJECTS		1970 PROJECTS	
AUTHORIZED PROJECTS 1968		1969		1970	
PRIOR AUTHORIZATION (1)	REMAINING EXPENDITURES IN 1969 (2)	AUTHORIZATION (3)	EXPENDITURES IN 1969 (4)	IN 1970 (5)	CONFIDENTIAL ANTICIPATED (6)
27,500	2,000	12,000	12,000	1,500	No
20,000	1,500	20,000	18,500	-	At Re- view
-)	-	-	-	-	No
3,150)	-	-	-	-	No
-)	-	-	-	-	No
1,400)	-	-	-	-	No
5,000	1,250	-	-	-	No
	<u>4,750</u>	<u>32,000</u>	<u>30,500</u>	<u>1,500</u>	
-	-	10,000	10,000	-	?
-	2,500	-	-	-	No
10,000	-	-	-	-	No
18,000	500	-	URA As Required	-	No
-)	-	-	-	-	No
2,855)	-	-	-	-	
	<u>3,000</u>	<u>10,000</u>	<u>10,000</u>	<u>-</u>	

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VIII. FELLOWSHIPSNOTES

LM 141	Industrial Applications of Lead (Art Center College Fellowship)	URA
LM 155	Cryogenic Properties of Lead and Lead Alloys	-
LC 134	Electrochemistry of Organolead Compounds	-
LC 137	Opacification of Leaded Porcelain Enamels	-
LC 139	Oriented High Lead Ferrites	-
LC 150	Photochemical Reactions of Lead Oxide	URA
LC 108	Study on Colored Lead Bearing Aluminum Porcelain Enamels	-

COMPLETION OF PREVIOUSLY AUTHORIZED PROJECTS

LM 120	Sticking Probability of Oxygen on Lead Surfaces	-
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TOTAL FELLOWSHIPSIX. ENVIRONMENTAL HEALTHA. AIR POLLUTION

LH-75	Human Exposure to Particulate Lead Compounds in the Air Under Experi- mental Conditions	(12) URA
LH-151	Study of Atmospheric Concentrations in Animals and Man	(12)

(12) Co-sponsored by TEL Producers

1969 EXPENDITURES REMAINING ON	1969 PROJECTS			1970 PROJECT	
	AUTHORIZED PROJECTS 1968		EXPENDITURES IN 1970 (5)		
	PRIOR AUTHORIZATION (1)	1969 AUTHORIZATION (3)			
OR EXPENDITURES IN 1969 (2)					
	2,500	-	2,500	-	Yes
	-	-	2,500	-	No
	5,126	-	5,340	-	Yes
	5,800	5,800	5,800	-	No
	7,500	-	7,500	-	Yes
	3,500	2,500	5,200	-	At Inci Level
	4,000	2,000	3,190	-	No
	4,500	2,240	-	-	No
		<u>12,540</u>	<u>32,030</u>	<u>-</u>	
	37,500	14,125	58,000	43,500	Yes
19,000					
	-	-	34,385	34,385	Yes

NOVEMBER 1, 1968

	NOTES	1969 EXPENDITURES REMAINING ON		1969 PROJECTS			1970 PROJECTS	CONTINGENT ANTICIPATED	
		AUTHORIZED PROJECTS		1969 AUTHORIZATION	EXPENDITURES				
		1968 OR PRIOR AUTHORIZATION (1)	REMAINING EXPENDITURES IN 1969 (2)		IN 1969 (4)	IN 1970 (5)			
B. OCCUPATIONAL HEALTH									
LH 79A&B	Toxicity Testing for Organo-Lead Compounds	8,200	-	10,000	2,500	-	Yes		
C. PUBLIC HEALTH									
LH 94	Biol. Basis for Lead Intoxication	52,853	-	51,976	51,976	-	Yes		
LH 106	Kettering Lead Abstracts	2,500	-	2,500	2,500	-	Yes		
LH 138	Lead Release from P.V.C. Piping	-	-	10,000	5,000	5,000	No		
LH 115	Six Cities Survey	35,000	17,352	35,000	8,750	26,250	No		
LH 114	Neurophysiological Effects from Lead Exposure	15,000	13,296	20,000	5,000	15,000	No		
LH 109	Relationship between Lead in Motor Vehicle Exhaust and Consumer Crops	20,000	10,254	7,000	7,000	-	?		
ULH 15	Health Study of Lead Workers	-	-	12,500	12,500	-	Yes		
COMPLETION OF PREVIOUSLY AUTHORIZED PROJECTS									
LH 86	Lead Glazes for Dinnerware	2,500	-	-	-	-	No		
D. UNDESIGNATED RESEARCH AUTHORIZATION	(12)	25,000	-	25,000	As Required	-	Yes		
TOTAL ENVIRONMENTAL HEALTH			55,027	266,361	173,111	60,750			

(12) Co-sponsored by TEL Producers

NOVEMBER 4, 1968

	1969 EXPENDITURES REMAINING ON		1969 PROJECTS		1971 CHARGE
	1968 OR PRIOR AUTHORIZATION (1)	1969 EXPENDITURES IN 1969 (2)	1969 AUTHORIZATION (3)	EXPENDITURES IN 1969 (4)	IN 1970 (5)
<u>NOTES</u>					
X. <u>ABSTRACTING</u>					
LP 52 Lead Abstracting Service	-	-	10,000	10,000	-
TOTAL ABSTRACTING		-	10,000	10,000	-
XI. <u>UNDESIGNATED RESEARCH AUTHORIZATION</u>					
TOTAL 1969 AUTHORIZATION			50,000	As Required	-
			723,285		
			117,317		
TOTAL 1969 ESTIMATED BUDGET			543,285		
PROJECTED EXPENDITURES INTO 1970			117,317		
			660,602		
					97,500