

LEAD INDUSTRIES ASSOCIATION

480 LEXINGTON AVENUE

NEW YORK 17, N. Y.

June 5, 1956

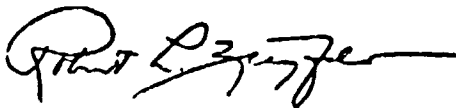
SUBJECT: TENTH ANNUAL BATTERY
RESEARCH AND DEVELOPMENT CONFERENCE

To Members of the Lead Industries Association:

As they have for the past ten years, the Signal Corps Engineering Laboratories sponsored their annual Battery Research and Development Conference, May 23-24, 1956, at the Berkeley-Carter Hotel, Asbury Park, N. J. This being an anniversary year a special program was presented, consisting of reviews of the accomplishments and progress in the battery field during the past 10 years, in addition to presentation of the results of the past year's battery research and development activities. A list of the papers presented, their authors and affiliations is attached, with some additional notes on the lead-acid battery paper presented by Dr. Willihngans.

In the past, abstracts of all the papers were made available to members of the Lead Industries Association. Complete papers were unobtainable because of security complications. This year, however, the Signal Corps intends to publish the full proceedings of the Conference, since all papers have been declassified. Inasmuch as copies in quantity are available at a lower cost, \$5.00 each as compared with \$10.00 for single copies, it is suggested that members interested in obtaining a copy of the proceedings of this Conference write to the Lead Industries Association to this effect. Copies are expected to be available within two months.

Very truly yours,



Secretary.



June 4, 1956

TENTH ANNUAL BATTERY
RESEARCH AND DEVELOPMENT CONFERENCE

PROGRAM

Tenth Annual Battery Research and Development Conference

May 23, 1956

LECLANCHE BATTERIES	General Dry Batteries, Inc., Mr. C. G. Birdsall
LOW TEMPERATURE BATTERIES	Ohio State University Dr. A. B. Garrett
MAGNESIUM BATTERIES	Signal Corps Engineering Labs., Mr. J. H. Hovenden
ALKALINE DRY BATTERIES	P. R. Mallory & Co., Inc., Mr. J. L. Dalfonso
AIR DEPOLARIZED BATTERIES	National Carbon Co., Inc., Mr. E. A. Schumacher
ZINC-SILVER OXIDE BATTERIES	Signal Corps Engineering Labs., Mr. N. T. Wilburn
WATER-ACTIVATED BATTERIES	The Engle-Pichor Co., Mr. E. Morse
THERMAL CELLS	Catalyst Research Corp., Dr. E. McKee
CHLORINE DEPOLARIZED BATTERY	Lucarjet-General Corp., Dr. K. Randolph
ORGANIC DEPOLARIZERS	RCA Research Labs., Dr. C. K. Morehouse

May 24, 1956

LEAD-ACID BATTERIES	Goold National Batteries, Inc., Dr. E. Willingham
NICKEL-CADMIUM BATTERIES	Nickel-Cadmium Battery Corp., Dr. A. Fleischer
ZINC-SILVER OXIDE BATTERIES	Yardway Electric Corp., Dr. P. Howard
ENGLISH DEVELOPMENTS	Signals Research & Development Establishment, Admiralty Engineering Labs., Mr. D. H. Collins
CANADIAN DEVELOPMENTS	Defence Research Lab., Dr. E. J. Casey

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June 4, 1956

TENTH ANNUAL BATTERY
RESEARCH AND DEVELOPMENT CONFERENCE

SOLID ELECTROLYTE BATTERIES

Sprague Electric Co.,
Dr. K. Lohovis

FUEL CELLS

Pittsburgh Consolidation Coal Co.,
Dr. S. Goren

NUCLEAR BATTERIES

Radiation Research Corp.,
Dr. J. Coleman

SOLAR BATTERIES

RCI Laboratories Div.,
Dr. E. G. Lindor

THE NEXT TEN YEARS

Signal Corps Engineering Labs.,
Mr. D. Lindon

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TENTH ANNUAL BATTERY
RESEARCH AND DEVELOPMENT CONFERENCE

LEAD ACID BATTERIES

Dr. Willihngans
Gould National Batteries, Inc

Dr. Willihngans pointed out that since 1946 the replacement battery market has remained more or less constant, while the number of cars in use has increased markedly. He concludes that this offers proof that lead-acid batteries are better than ever.

Specifically he reviewed developments over the ten year period in expanding acid gravity which is now maintained below 13.00 Sp.Gr.; separators which now include synthetic and phenolic resin impregnated paper; boxes which are now often made of polystyrene or rubber; grid metals which constitute the major improvement in battery life in reducing grid corrosion; manufacturing methods which have recognized the importance of controlling barium contamination; dry charge which has resulted in shelf life longer than 6 months.

Discussing alloys in detail, he pointed out that the lead-antimony alloy commonly used resulted in a porous structure on cooling due to segregation, and that this condition is being overcome with improvements in casting methods and better alloys. He also discussed calcium-lead alloys for float service, pointing out that battery life was increased in the order of 20 times by reducing the self-discharge rate. However, batteries constructed from calcium-lead alloys have not proven suitable for automotive-type service.