

**AMERICAN INSTITUTE
OF
ELECTRICAL ENGINEERS**

**MATERIALS HANDLING
CONFERENCE**

Program



PICK-CARTER HOTEL

Cleveland, Ohio

April 24-25, 1962

Sponsored by

AIEE Materials Handling Sub-Committee

W. J. Kutcher, Chairman

R. C. Tench, Vice-Chairman

with

AIEE Cleveland Section as Host

L. S. Shaffer, Chairman

C. A. Schurr, Secretary

PROGRAM

Tuesday—April 24

8:30 A.M. Registration—Mezzanine

9:30 A.M. Morning Session—Grand Ballroom

Chairman: H. A. Zollinger

Materials Handling Engineer
Westinghouse Electric Corporation
Pittsburgh, Pa.

I. "APPLICATION OF ELECTRONIC WEIGHING SYSTEMS FOR MATERIAL HANDLING"

H. NORMAN JELINEK, Regional Manager, Gilmore Industries, Cleveland, Ohio
V. CHARLES DOVERSBERGER, President, American Scale & Control Co., Cleveland, Ohio

Weighing of materials in a process plant is an important unit operation. Static weight and weighing of materials in flow, both liquid and solid, are equally important. Both methods have specific area of application as well as limitations. The factors which must be considered to obtain desired accuracy from electronic scales are discussed. Conveyor scales are dependent on belt tension, erratic material flow, overloading and vibration. Hopper scales are dependent on stabilization of the hopper, transmission of weight from hopper to load cell sensing element, temperature and connecting attachments. Representative examples of weighing systems are discussed.

II. "BULK MATERIALS LEVEL CONTROL"

DR. JOHN R. STOCK, Staff Engineer, Stock Equipment Co., Cleveland, Ohio

Following a review of commercially available coal level and coal flow sensing devices, including both well known and recently developed types, the proper application of each is discussed. Case histories of unexpected failures are described. Emphasis is laid upon factors involved in evaluating equipment and in analyzing operating difficulties.

III. "ASPECTS OF DESIGN AND OPERATING OF A NEW SINTER PLANT."

EARL J. DVORAK, Superintendent of Maintenance, Chicago Plant, Interlake Iron Corp.

This paper describes the equipment and operation of a recently built plant to produce lime-bearing sinter for beneficiated blast furnace burdens. The material handling system flow diagram and outline of engineering features are covered. Electrical equipment and a different approach to grouping of Motor starters are described. A section of the paper is devoted to electrical and mechanical maintenance and operating experiences.

12:15 P.M. LUNCHEON—Lorenzo Carter Room

Speaker: ISAIAH HARTLEY, Complaints Manager
Halle's Department Stores

Title: "Customer is Almost Always Right"

2:00 P.M. AFTERNOON SESSION—Grand Ballroom

Chairman: R. P. ANDERSON, District Manager
Cleveland Crane & Engineering Co.
Wickliffe, Ohio

IV. "EXPERIENCE WITH A. C. CRANE CONTROLS"

D. J. ROSE, Plant Electrical Engineer, Boiler Division, The Babcock & Wilcox Company, Barberton, Ohio

Experience dates back to the early 1940's, involving use of drum switch controls with mechanical load brakes, a-c dynamic lowering, a-c reactor type and a-c eddy-current brake type of controls. Experience to date favors a-c dynamic lowering for general purpose cranes, and a-c eddy-current brake type for those cranes involving necessity for high speeds and handling precision.

V. "THE GARY STEEL WORKS BUCK-BOOST ORE BRIDGE"

J. S. RICHARDSON, Chief Electrical Engineer, American Bridge Div., U.S. Steel Corporation, Ambridge, Penna.

S. RIFKIN, Supervising Engineer, Materials Handling, Industrial Sales Operation, General Electric Co., Schenectady, New York

By utilizing the basic principles of buck-boost drives, it was possible to supply a new Gary Works ore bridge with electric equipment providing the advantages of ad-

justable voltage operation at only a slight premium over the price of conventional constant potential equipment. Since this successful installation may set the pattern for replacement or upgrading bridges at many locations, bridge users and manufacturers will be interested in this description of the features provided.

VI. "DESIGNING SAFETY INTO CRANES"

W. T. McLEAN, General Supervisor Safety, U. S. Steel Corp., Youngstown, Ohio

Since cranes are relatively expensive investments with an expected life of twenty years or more, it becomes increasingly important to design them in a manner which will facilitate maintenance and prevent injuries to personnel. The routine greasing, inspection, changing of cables, and day to day maintenance all require men to board and leave various parts of the crane. The designer must consider their safety while getting to and from their work area. Clearances around control equipment and the use of ladders must be closely examined.

Wednesday, April 25, 1962

8:45 A.M. MORNING SESSION

Chairman: R. C. RICE, Manager Crane Department
Whiting Corporation
Harvey, Illinois

VII. "LOADING AND UNLOADING 60,000 POUND CONTAINERS BY TRAVELING DOCK CRANES"

S. G. SMITH, Principal Electrical Engineer, Dravo Corporation, Neville Island, Pittsburgh, Penna.

To meet the growing demand of handling and shipping products by containers, Dravo Corporation put into operation two "Dockmaster" container cranes to handle on a 2-1/2 minute cycle, 8' x 8' x 30', 60,000 pounds loaded containers for a chemical plant to transport from Texas to the East Coast a product for further processing. For smooth and rapid response, saturable reactor control was selected for all main drives.

VIII. MOVIE—"COAL BIN OF THE WORLD"

EMIL SZAKS, C & O Railroad.

SYNOPSIS—This is a movie showing methods of loading coal at the mine, cartage to Hampton Roads for lading into ships for export. It shows many of the modern material handling facilities which are erected at Newport News, Virginia.

IX. "SELECTION OF ELECTRIC DRIVES FOR DOCK UNLOADING CRANES"

E. W. TAYLOR, Vice-President, Industrial Brownhoist Corp., Bay City, Michigan.

This paper is a comparison of the electric drives of three grab bucket unloaders of the same capacity. It compares a-c counter torque control with adjustable voltage d-c control and adjustable voltage control with hoist counter-weighted. The three types are adjusted to a common basis to show the flexibility and power consumption of each type.

INSPECTION TRIPS — WEDNESDAY, APRIL 25

A choice of two trips are available and bus transportation will be provided. Buses will leave the Pick-Carter Hotel at 1:30 P.M. and return to the Hotel by 4:30 P.M.

Inspection trip ticket sales deadlines will be posted at the Registration Desk. Tickets should be purchased *as early as possible* to facilitate the arrangement for buses.

Ticket Fares are as follows:

Jones & Laughlin Steel Corp.	\$2.50
American Steel & Wire Division	\$2.50

AMERICAN STEEL AND WIRE DIVISION

Raw Material Handling System at Central Furnaces and Docks

The new raw material handling system is a combination of rubber tired mobile equipment, transfer bins, belt conveyors, and trippers. This system replaced a conventional method of delivering raw materials to a blast furnace. The conventional method used an ore bridge to load railroad hopper cars from storage piles. These cars then were switched to the blast furnace trestle and manually unloaded into the stock bins.

Rubber tired mobile equipment now transports the raw materials in the new system from the storage area to fourteen bins. The materials from the bins are conveyed to the twenty-six trestle stock bins by an operator who controls the conveyor system through a mimic panel.

JONES AND LAUGHLIN STEEL CORPORATION

Basic Oxygen Steelmaking

The recently completed "Basic Oxygen Furnaces, at the Cleveland Works, are the first of their type in the Cleveland area. The two furnaces refine iron into steel through the use of a jet of high purity oxygen.

The Cleveland Work's furnaces, more than twice the size of any of this type in the world, have produced heats of 240 tons in 59 minutes, while good open hearth furnaces in this country produce steel at the rate of 40 tons per hour, tap to tap time.

Specially designed material handling equipment enables scrap to be charged in less than a minute. The slag forming raw materials are charged by means of conveyor belts and a chute leading from the storage bins above the furnace.

The addition of the basic oxygen process enables the Cleveland Works to produce steel by three of the most modern methods. The other steelmaking facilities consist of two electric furnaces and three oxygen-lance-equipped open hearths.

GENERAL INFORMATION

HEADQUARTERS AND TECHNICAL SESSIONS:

Hotel Pick-Carter
1012-32 Prospect Avenue
Cleveland 15, Ohio
Telephone: PROspect 1-7200

REGISTRATION FEE:

	Pre-Registration	Conference Registration
AIEE Members	\$6.00	\$7.00
Non-Members	7.00	7.00
Students	Free	Free
Single Session Registration		\$3.00*

*Less Conference Proceedings

CONFERENCE PROCEEDINGS:

Conference proceedings which will include all papers and written discussions will be distributed free at the Conference to those in attendance. Additional copies of the proceedings may be purchased at a price of \$3.00. Copies of the 1960 and 1961 Proceedings may also be purchased at the Registration Desk.

HOTEL ACCOMMODATIONS:

A block of rooms has been set aside at the Hotel Pick-Carter for those attending the Conference. Daily rates are as follows:

Single Room.....	\$7.50 - \$12.00
Double Room.....	\$10.00 - \$16.00
Twin Bedroom.....	\$12.00 - \$18.00

Please make reservations directly with the hotel and refer specifically to the AIEE Materials Handling Conference.

FUTURE MAILING LIST:

Those not attending the Conference who, nevertheless, wish to remain on the mailing list are asked to return the registration card marked accordingly.

Make checks payable to:

1962 AIEE Materials Handling Conference

Address correspondence to:

C. Chermely
Clark Controller Company
1146 East 152nd Street
Cleveland 10, Ohio

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- *H. A. Zollinger.....Industrial Engineering Dept.
- 10-L, Westinghouse, Electric Corp.,
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