

PLAINTIFF'S EXHIBIT

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AUTOMOTIVE & MACHINE SHOP



POWER PRESS & FORGING



NATIONAL SAFETY COUNCIL
433 NO. MICHIGAN AVENUE • CHICAGO 11, ILLINOIS

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**CEMENT, QUARRY and
MINERAL AGGREGATES**



NATIONAL SAFETY COUNCIL
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**CHEMICAL and
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**GLASS and CERAMICS;
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**INDUSTRIAL
SAFETY**



NATIONAL SAFETY COUNCIL
425 NO. MICHIGAN AVENUE • CHICAGO 11, ILLINOIS

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PURCHASE AND DESIGN OF SAFE ELECTRICAL TEST EQUIPMENT

By F. C. PEREGOY

Supervisor of Safety, Air-Arm Div.,
Westinghouse Electric Corp., East Pittsburgh, Pa.

The theme of the 1959 Congress' "Safety in the Sixties" means looking ahead. This looking ahead is the essence of purchase and design for safety. The first step is to anticipate potential dangers and secondly, to specify on the purchase order or engineering drawing the safeguards to prevent an accident from ever happening.

At Westinghouse Air Arm plant, the purchase and design of electrical test equipment is a function of the "Test Facilities" department. This group states its objective as:

1. Achieve maximum production rates.
2. Provide for economical repair, maintenance and calibration.
3. Build in safety.

In striving to achieve their objectives, they find as have others that what sometimes starts out to be a matter of safety also turns out to be an improvement in the production rate.

In the purchase and design of electrical test equipment, their test facilities group program has followed the approach laid down for design engineers in Section 4, N.S.C. Accident Prevention Manual. This section discusses purchasing for safety and contains a safety check list for design engineers. Application of some of the points is shown in the following slides:

Points from Safety Check List:—"Locate machine controls so that the operator will not be in the vicinity of the point of operation while actuating the controls."

"Combine various details of the job to reduce hazards and unnecessary transporta-

tion, storage, delays, handling, and inspections between operations."

"Design the machine so that it is impossible for the operator to get at the point of operation or any other hazard point while the machine is operating."

"Design mechanical instead of manual holding devices."

"Provide fail-safe interlocks so that the machine cannot be started when it is being loaded, unloaded, or being worked on."

"Place the controls so that the operator will not have to reach excessively nor move his body off balance in order to operate the machine."

"Design the machine so that where possible, all corners are rounded and no sharp corners exist."

Briefly, some of the action that can be taken in order to get the job of purchase and design of electrical test equipment done with safety includes:

1. Utilize top management's support. Their interests get attention and priority.
2. Establish a working agreement with the design engineers and purchasing agent to be consulted on purchase and design where safety is a factor. Explain why it is important, what it means to the employee, the supervisor, the Company.
3. Consult the best codes, standards, engineering data, and NSC reference material. Develop your own check list from these sources.
4. If you have an established policy, line and staff cooperation, and design for safety, you can be sure.

HOW IMPORTANT IS SAFE HANDLING IN THE HEAVY ELECTRICAL INDUSTRY?

By MYRON L. MILLER

Supervising Safety Engineer, Westinghouse, East Pittsburgh Works
East Pittsburgh, Pa.

Twenty years ago, the National Safety Council reported 26 per cent of all occupational accidents resulted from handling objects. There was a period during the past 20 years when this figure dropped to 22 per cent. Last year's report set the national figure of accidents from handling objects at 24.4 per cent. One quarter of all occupational accidents in this country stems from material handling.

How important is safe handling in the heavy electrical industry?

In answering this question, May I use our own experience? Westinghouse, East Pittsburgh Works is the home of our large waterwheel generator and turbo-generator building operations. Each unit is capable of producing enough electrical energy to supply the power needs of a large city.

In addition we build large steel mill motors, and some of the largest industrial motors known. To handle these gigantic equipments we require crane facilities upwards to 400 tons capacity and specially designed "super-sized" freight cars to transport the units to their destinations.

As we approach the "60's," our engineers plan in terms of generators two to three times the capacity of machines now being built which are already five to eight times the capacity of the present apparatus, generally in use.

Already we are out-growing our handling facilities in many locations. Crane runways have had to be re-enforced. Heavier duty hoist and handling equipment is being installed. New facilities are being built to meet the manufacturing demands of the "60's."

Handling techniques must keep pace with handling facilities. More alert foremen, better trained workmen, with improved safety performance is the challenge of the "60's." A brief look at our disabling accident experience in the "50's" may shed light on our problem and help us to answer the question,

"How important is safe handling in the heavy electrical industry?"

In the 10 year period 1949-1958 we experienced 932 disabling accidents. Two hundred twelve cases, or twenty-three per cent of the total, involved workmen whose occupations were confined primarily to handling material.

A very interesting observation became apparent, in studying the 720 so-called non-material handling occupation accidents. Forty-six per cent of these accidents involved some handling or manual manipulation of objects. If you were to include these as material handling accidents, the total no longer would be 23 per cent, but an alarming 58 per cent.

Time will not permit us here to explore the so-called non-material handling occupation accident experience. Sufficient to say, an analysis of the facts presents a strong argument for mechanical feeds on power presses, machine tools, metal joining operations, and processing.

Let's take a closer look at the 212 material handling accidents, to see what occupations were involved, and to what extent. There were 14 different material handling occupations. The distribution was as follows:

Occupation	Cases
Hook-on-Crane	61
Supplyman	36
Truckers	24
Storeroom Attendant	14
Stockman	11
Material Checker	11
Moveman	10
Common Labor	10
Material Handler	9
Shipper	6
Rigger	6
Handyman	5
Craneman	5
Packer	4

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NATIONAL SAFETY COUNCIL
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1939 National Safety Congress

Riegel Textile Corp., Industrial Gloves Div., New York, N. Y.

Industrial work gloves.

Rockwood Sprinkler Co., Worcester, Mass.

Automatic Fire protection systems; sprinklers, waterfog, fogfoam and foam.

Rose Mfg. Co., Denver 4, Colo.

Industrial safety equipment.

Safeguard Mfg. Co., Woodbury, Conn.

Modern press guards.

Safety Box Toe Co., Boston, Mass.

Safety steel toes.

Safety Clothing & Equipment Co., Cleveland, Ohio

Safety clothing and equipment for every type of industrial worker.

Safety First Products Corp., Elmsford, N. Y.

Fire extinguishers.

Safety First Shoe Co., Inc., Holliston, Mass.

Safety steel toe shoes for men.

Safety Tower Ladder Co., Burbank, Calif.

Safety equipment for fixed ladders and scaffolds.

Saf-T-Boom Sales & Service Corp., Dallas, Texas

Crane attachment for worker protection from energized electric lines.

Salisbury, W. H. & Co., Chicago, Ill.

Linemen's rubber protective equipment.

Sarole, Inc., Linden, N. J.

Non-traumatic carrier.

Schrader's, A. Son, Brooklyn, N. Y.

Pneumatic press controls, valves, cylinders and associated products.

Scott Aviation Corp., Lancaster, N. Y.

Scott air-pak demand inhalator, demand respirator, hydro-pak.

Searjeant Metal Products, Inc., Mendon, N. J.

Punch press safety guards, controls and accessories.

Sellstrom Mfg. Co., Palatine, Ill.

Face and eye protection equipment.