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# MACHINERY FOR WINNING AND LOADING OF BITUMINOUS COAL UNDERGROUND

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COMBINED INTELLIGENCE OBJECTIVES  
SUB-COMMITTEE

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MACHINERY FOR WINNING AND LOADING  
OF BITUMINOUS COAL UNDERGROUND  
GEBRUDER EICKHOFF MASCHINENFABRIK,  
BOCHUM

Reported by:

John W. Buch, TIIC

On Behalf Of

U.S. TECHNICAL INDUSTRIAL INTELLIGENCE COMMITTEE

CIOS Target No. 30/237

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~~RESUME~~

MACHINERY FOR WINNING AND LOADING  
OF BITUMINOUS COAL UNDERGROUND  
GEBRUDER EICKHOFF MACHINENFABRIK,  
BOCHUM.

Dates of Trip: June 27, 28 and July 4, 1945

Person Making Trip: John W. Buch

Location of Plant: Bochum-Ruhr

Object of Trip: To learn of new developments in underground coal winning and loading machines with particular reference to shearing machines.

Conclusions: No new developments which had been accepted by the German coal industry were in evidence. The "Schrämlader", a combination cutting and loading machine, has not been accepted by the coal mining industry. The "Pfeilerlader", a direct copy of the American "Joy", was manufactured - to what extent is not known. Shearing machines are said to have been out of production by Eickhoff for 5 years, the manufacture of these having been allocated to Korffman, Witten-Ruhr. Eickhoff's activities were centered primarily on shaker conveyors, belt conveyors, and chain-cutting machines (conventional type).

Suggested Sources of Further Information:

- (a) Production - Alfred Eickhoff, Jr.
- (b) Technical Developments - Herr Fritz Vorthmerrn, Chief Draftsman (although in an apparently minor position, Vorthmerrn's general knowledge was considered the most valuable and authentic).

The Schrämlader:

This machine was in production as early as 1939.

It consists of three separate units, (1) a chain-cutter, (2) a chain-flight loader, and (3) a rotating bar and disk hewer. Loading is by means of the chain to a conveyor, which in turn delivers the coal from the long face to cars, or to a conveyor transport system. According to the best information, none are in operation at present. Disadvantages are: (1) it can be used only in limited conditions - thin, relatively flat seams, good roof, and seams with uniform floor, (2) labor (hand) to lift bottom coal left by this machine too arduous for miners to keep pace with machine, (3) labor (hand) required to break down top coal left by this machine too arduous for miners to keep pace with machine and (4) timbering costs excessive because roof exposed by machines travel must be temporarily propped, and later permanently cross-barred.

#### Shearing Machines:

Although shearing machines (20 HP maximum) have been designed and widely advertised for pitch mining, there is no evidence to support the fact that these machines are used on pitches above 15°. It appears that in war time allocation of machine manufacture, Eickhoff lost this type of unit to Korfmann, Witten-Ruhr, which leads to the conclusion that Korfmann developments were ahead of Eickhoff, at least in the minds of mine operators. It was stated by Alfred Eickhoff, Jr., that no shearing machines had been manufactured by Eickhoff during the past 5 years because there was "no demand for this type of machine". Other sources of information disclosed later that such machines were manufactured by Korfmann during war time.

#### General:

An extremely heavy and cumbersome steel apron conveyor was developed to compete with chain-flight conveyors. These did not find favor and none are in operation underground.

The manufacture of Widia faced coal cutter bits was taken over by Krupp about 2 years ago. (Krupp supplied the hard-facing material, and Eickhoff manufactured the special bits in years past). Plant capacity was stated to be 600 tons of finished products per month.

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Publications:

Eickhoff-Mitteilungen, a bi-monthly bulletin which was widely distributed in pre-war years, was published until late in 1944.

Drafting room and files of drawings were not destroyed by bombing, and prints of equipment and proposed mining layouts for the use thereof are available through the plants duplicating system.

Documents Removed:

Operating data relating to the "Schrämlader"; photographs and other illustrative material relating to the "Phielerlader"; and detail drawings of the DVS and DVK Models, Shearing Machines are filed in Bag 1481.

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