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REPORT ON METALWORKING INDUSTRIES IN GHANA[1/]

by

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METAL WORKING INDUSTRY IN THE NATIONAL ECONOMY

All Modern Industries use metal either in the form of Tools, Machinery, Containers or Raw Materials. Hence the importance of the Industry in the National Economy. Even the modest development of the Industry in the Country has made the following achievements — Savings in Foreign Exchange from substituting local metal products for imported ones, emergency production of spares for certain industries to keep them running, foreign Exchange earnings from metal products exports, creation of job openings, and proper utilisation of the country's hydro-electric power.

The market prices of these metal products compare favourably with imported ones. They would be cheaper if the country is producing her own steel requirements. The Government has however, set up an Iron and Steel Commission for development of iron and steel works from deposit of iron ore found at Opon-Mansu.

FACTORS THAT HAVE INFLUENCED METAL WORKING INDUSTRY IN THE COUNTRY:

(a) VILLAGE BLACKSMITHING AND GOLDSMITHING:

Axes, hoes, and outlasses for farmers, arrows and spears for hunters, wood carving tools, knives, state swords, jewelry were in production in the country before the early Colonialists. How the trades were acqu red is not known but these tradesmen might have flourished in the Old Ghana Empire.

(b) MINING INDUSTRY:

Big workshops were established in the mining villages to service the mining equipments when prospecting for minerals by expatriate companies began. This was very important in view of lack of communications among the mining villages and the distance from the country of origin of the equipments. This gave essential training to predominantly agricultural personnel who were trained to man the shops.

Later, skilled workers left the mine workshops for newly created Workshops. A typical mining workshop comprises: Machine Shop, Blacksmith shops, Foundry Shop, Heavy Plating Section, Welding Shop, Electrical Shop and Millwright Shop.

(c) RAILWAY WORKSHOPS:

A railway workshop was built to maintain the railway equipments when

the rail lines were opened in 1902 to facilitate exports of minerals and agricultural produce. About 50% of the steam locomotive parts could be produced in the Shops. Other parts were also produced for Coaches, Trucks, and Wagons. Government Departments also requested the manufacture of emergency spare parts for their equipments. The Railway was made responsible for repair and examination of all the country's boiler and pressure tanks. There are facilities for practical training to Mechanical and Marine Engineers, Polytechnic Students, Technical Students and Metal Workers of other Establishments. Training given in the Railway workshops are recog - nised by Institution of Mechanical Engineers, London, City and Guilds Institute, London, British Board of Trade and many International Institutions. The steam locomotives are giving place to Diesel Locomotives, so the Workshops are undergoing extensive changes for possible manufacture of diesel parts.

These are the separate Shops under the Management of the Chief Mechanical Engineer:-

ERECTING SHOP:- For dismantling and erection of steam locomotives.

BOILER SHOP:- For boiler repairs, heavy plating work, straightening and forming of metals.

MACHINE SHOP:- For all types of mechanical removal of metals.

TENDER SHOP:- For repairs to tanks and bunkers.

TOOLS ROOM:- For manufacture of tools and jigs.

FOUNDRY SHOP:- For casting of locomotive and other components in cast iron and non ferrous metals.

MILLWRIGHT SHOP:- For installation, Commissioning, Maintenance and repair of plants.

ELECTRICAL SHOP:- For electrical machines installation, maintenance and repairs.

DIESEL SHOP:- For diesel Locomotive Maintenance and re airs.

BLACKSMITH SHOP:- For forging of metal parts and straightening of Shafts.

COPPER SHOP:- For metalling of bearing, Pipe work on Locomotives and light sheet metal work.

WELDING SHOP:- For electric and gas welding and cutting of metals.

CARRIAGE and WAGON SHOP:- For Carriage and Wagon repairs.

(d) ROAD TRANSPORT VEHICLES:-

The need to repair and maintain road transport vehicles resulted in the establishment of garages by motor dealers, transport owners, government transport departments and private mechanics. Metal work normally done in these garages are:- Brackets and hinges used in the construction of wooden

bodies put on the chassis of motor vehicles, Formation of leave springs, welding, metal body straightening, bench fitting, lathe work, drilling, cylinder block reboring, regrinding of crankshafts, valve grinding etc.

The government trade policy granted tax concessions to vehicles assembled in the country with imported spares. Assembly lines were then built by large motor dealers. Government directives also discourage the use of vehicles with wooden bodies for passenger traffic, so workshops were started for building metal buses the engines and chassis of which are imported. Other companies also build Tipper truck bodies, timber trucks for log traffic, low loaders, trailers, petroleum tankers and water tankers. The assembly of road vehicles includes tractors, motor cycles and bicycles. Some of these garages and assembly lines are under European control although Ghanaians hold part of the shares, some by asians, and others by Ghanaians. Government also has garages for fleet of government vehicles.

(e) HOME MARKET CONDITIONS:

Building constructon requirements resulted in the building of factories to produce iron rods, louvre window frames, nails, shovels, concrete pans wheel barrows, wire gauze, iron gates etc. Domestic requirement also caused the production of the following metal products:- Enamelled utensils, aluminum utensils, galvanized iron products, cast cooking pots, Steel trunk boxes, knives, corn mills etc. Requirements for offices, hotels and hospitals are met by the manufacture of steel filling cabinets, tubular chairs, steel chairs and tables, office pins and clips etc.

(f) THE PRESENT STRUCTURE OF THE METAL WORKING INDUSTRY:

There are state, private, and state/private sectors. The output of these sectors depends upon (a) type of management (b) availability of iron and steel as a raw material (c) the size of the market and (d) the size of the factory. Firms in the state sector employs arge number of workers but the output per worker is low. Output per worker in the private sector is rather high. The management of the state/private sector is done by private individuals but the state holds shares.

At the moment greater percentage of the metal products is for home market but the government is encouraging more exports to the neighboring African countries. Export bonus of 30% of the exports

can be earned.

PROBLEMS OF THE DEVELOPMENT OF METAL WORKING INDUSTRY:

(a) The size of the market is very small but there is a regional economic grouping of the West African States to extend the market. Human resources is not a major problem. There are highly skilled mechanics in the country. The training of technician both low and high is in progress. The number of engineers turned out every year is rather low as compared to opportunities in the country. Therefore there is little research in the metal industry. Other skills cannot be acquired locally because technical schools and the university of technology do not cover them. Still training in the developed countries is a necessity. For the material inputs the government is doing every thing in its ability to produce local iron and steel by 1979-80.

Capital Investment Decree 1973(N.R.C.D. 141) gives concessions on newly established manufacturing companies to help them overcome their initial teething problems. These concessions cover excise duties, sales tax, special tax and company tax.

National Investment Bank gives advice in the financing of new factories. Modern factories built in the country are fully mechanized. Small firms have not much capital to mechanise their factories and some of these factories have no machines at all except hand tools and welding equipments. Planning of factories in the country made provision for maintenance and repair of machines and equipments by a special staff trained locally and overseas for this purpose. There is virtually no maintenance firms in the country except Tema Shipyard and Drydocks Corporation which was established for repairs to ships and floating vessels. Other firms undertake maintenance and repairs as a back up service for technical sales. Some firms in developed countries often send technicians for installation of their equipments and repair of broken down ones. It is a best policy to contract for the installation and commissioning of plants when ordering them. There is no standardization of mechinery and plant in the country. However the government is making attempts to standardise road transport vehicles.

Ghana Standard Board is charged with the duty of ensuring that all manufactured products in the country conform to certain specifications before full production is permitted and the products normally bear the board's marking.

ECONOMIC POLICY:

These are covered sufficiently in the above points.

TYPE AND VOLUME OF TECHNICAL ASSISTANCE REQUIRED FROM UNIDO:

I. Technical aid to set up a central laboratory for making (a) Physical tests (b) Chemical tests (c) spectrographic tests of metals. The laboratory can be equipped to test finished products by means of X-rays or gamma-rays.

II. Technical aid should be given to small scale metal factories to increase production and raise quality of production. Short trips to similar factories in developing countries will be beneficial.

III. Training is required in the construction of forging dies and tools, heavy forging, rolling mill technique, and heavy castings.

RECOMMENDATIONS FOR THE DEVELOPMENT AND IMPROVEMENTS OF METAL WORKING INDUSTRIES ETC:

I. Practical training in the construction of machine and hand tools.

II. Training in the construction of production machinery for mills eg. Oil mills, sugar mills etc.

III. Training in the constructon of light and heavy electrical machinery.

IV. Technical and Financial help to set up factories to produce machine tools, production machinery and electrical machinery.

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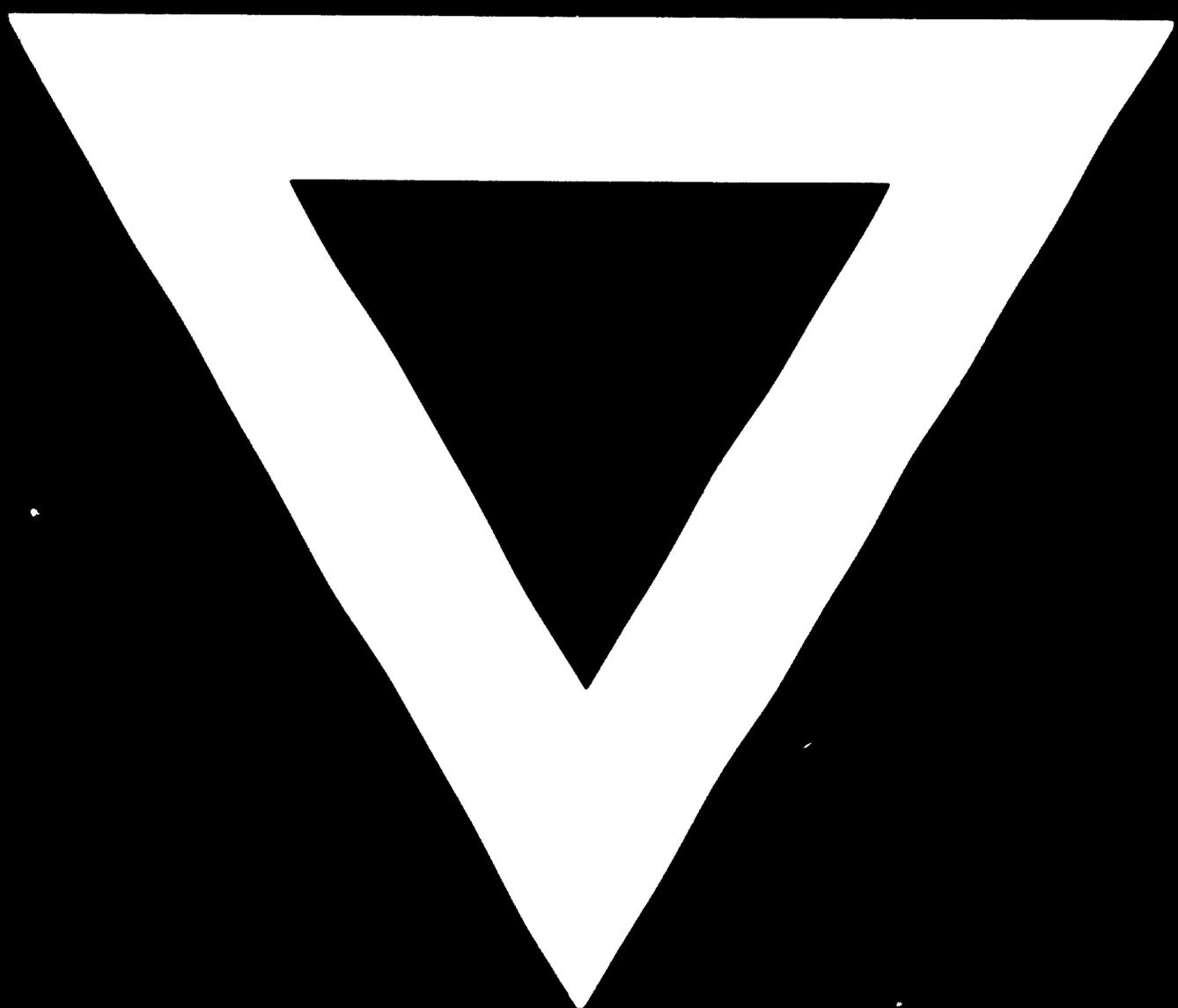

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