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THE MACHINE TOOL INDUSTRY IN VENEZUELA 1/

by

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MACHINE TOOLS IN VENEZUELA

Part I. POLICY AND GENERAL ASPECTS

1. National Trends

Since there are no restrictions on the import of machine tools into Venezuela and import licences are not required, it is rather difficult to estimate existing stocks because of the lack of official statistics or direct information from dealers or manufacturers in this field. Nevertheless, it can be established that the types of machine tools available in the country are those used by the machine shops and maintenance sections of various industrial enterprises, both small and medium-sized.

The machines most widely used in Venezuelan industry are: lathes, weighing machines, smoothing and shaping machines, drills, presses, shearing machines, guillotines, cutting machines, planing machines, surface grinding machines, folding machines, boring machines, saws, slotting machines, threading machines, wire drawing machines, and profiling machines.

In this group can be included machines for various types of soldering, oxyacetylene cutting equipment, equipment for chemical processes such as zinc plating, nickel plating, chrome plating, etc.

Demand for machinery is a corollary of industrial growth which in recent years has maintained a steady tempo, but the relation between the two is not direct because on the average machine tools are used at approximately 50 per cent of their capacity. Machine tools are not manufactured in the country apart from some simple models in a few cases.

Practically all machine tools are imported.

Since there is no national production, it is clear that machine tools are not exported.

In recent years, as a result of the Government's policy of granting incentives and protection to industry, a large number of new enterprises have been developed while existing ones have been considerably expanded.

The automobile industry is perhaps the one that makes the most heavy demand on the machine tool market because of the number of machine, stamping and spare parts shops to which it gives rise. At present, the import of assembled vehicles is prohibited and approximately 40 per cent of them are manufactured in Venezuela.

This industry is to a large extent the decisive factor in the selection of machine tools, and steady growth in this sector is forecast in view of the establishment of a programme for the gradual incorporation of additional locally produced parts year by year until the vehicles are entirely manufactured in the country.

The following industries also influence the selection of equipment: the "white line" industry, the refrigeration, electrical fittings and construction industries and, of course, metalworking and engineering. The petroleum, petrochemical, iron and steel and mining industries are less decisive, since in view of the enormous investments and output in these sectors, sophisticated equipment is required and this virtually always has to be imported.

At the present level of production, the equipment required to cover the demand of the above-mentioned sectors is in principle not very different from that already available. Nevertheless, new machinery of course always incorporates technical improvements which lead to higher output and better product quality; therefore, the cost of a piece of equipment must be carefully weighed against its output and its useful life.

In order to determine accurately which machine tools could be manufactured in Venezuela, it would be essential to carry out an in-depth market study reflecting real demand per type, current stocks, degree of use, state of repair, useful life and other details which would make it possible to establish a relation between the production capacity of such equipment and the growth of industry's requirements in accordance with national plans.

It would also be necessary to ascertain the Government's official position on hemispheric integration plans or regional agreements between the countries of the area, in order to avoid manufacturing equipment already successfully produced in a given country of the group. This may prove rather tricky since it is to be assumed that an industry without experience will begin by manufacturing the most simple types of machinery. On the other hand, such simple machinery is in all probability already being manufactured in one of the countries of the group; thus, once agreement had been reached, the alternative would be to manufacture more sophisticated machines in order to meet the demand of the more developed countries, and this undoubtedly would present considerable problems.

It would also be necessary to sound out the opinions of industries already established or those about to set up business, in order to determine their willingness to invest or co-operate in the manufacture of machine tools along with other enterprises specializing in this field. Alternatively, if this proved difficult, a foreign firm could assume direct responsibility for all stages of manufacture.

Once these points had been cleared up, it would be possible to determine which machine tools should be produced and which imported.

The development of certain enterprises closely concerned with the manufacture of machine tools is only just beginning in Venezuela. For example, heavy casting is non-existent and steel casting is extremely limited. Electric motors are still imported (although it is planned to manufacture them in the country itself), and axle bearings and tools are not manufactured. The majority of gears are produced on universal milling machines, since mass production on special gear cutters has not been developed.

Since to date no machine tools are manufactured in the country, they can be imported without any restrictions and tariff legislation is minimal. Furthermore, there is no policy of priorities, in other words, any type of machinery can be imported without restrictions. Incentives can be provided if a programme for the manufacture of machinery exists; basically, these may take the form of increased duties or bans on the import of models produced in the country, together with concessions (to be agreed) in order to boost exports.

2. External technical assistance for the development of the national machine tool industry

At present, machine tools are not designed in Venezuela, since before a decision was made to manufacture them it would be essential to have technical advice and/or the services of experienced consultants. In the case of patented models or types, an agreement would have to be drawn up on licences or royalties.

The best means of putting into effect a programme for the manufacture of specific types of machinery would be through joint (in terms of both capital and technical co-operation) enterprises. Foreign and domestic, public and private collaboration could be established.

3. Technical assistance and co-operation required

The co-operation of foreign firms is essential for the manufacture of machine tools in Venezuela. Firstly, the country has no experience in design, quality control, marketing, etc., and secondly certain components would necessarily have to be provided by the main firm.

UNIDO could co-operate by interesting experienced foreign firms in developing, or co-operating in the production of, certain types of machines. At the same time, it could induce the public sector to finance the establishment of the industry, at least in part. It could also help in market studies and negotiate agreements between different countries so as to see if projects could be executed in conjunction with one another and if prototypes could be produced in one or another country.

Part II. TECHNICAL ASPECTS

1. Problems connected with the development and use of machine tools

As has been noted, Venezuela has no experience in machine tool design and at the same time the variety of types imported is considerable; thus, the most widely used types would have to be identified by means of a market study.

Prototypes would have to be tested and approved by the enterprise providing technical assistance and it would have to be established which parts would need to be imported because of the difficulty of manufacturing them or for other reasons.

In view of its importance, quality control would have to be carried out in strict conformity with the relevant international standards.

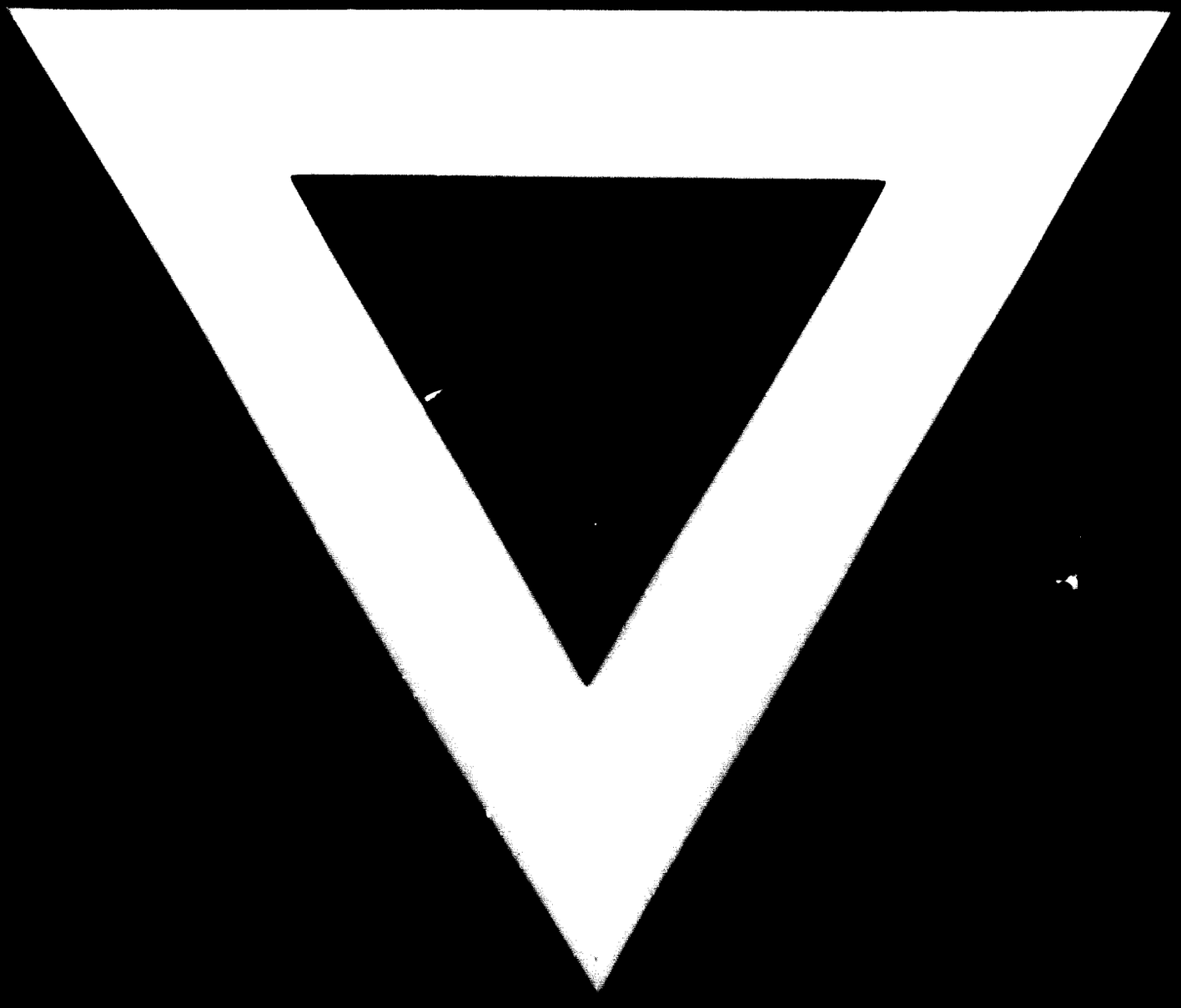
In Venezuela, machine tools are used at approximately 50 per cent of their capacity due to the fact that there is a considerable stock available and that the country is only just beginning to export certain metallurgical products. Production is basically intended for the domestic market, which is small, taking into account the national population - 10 million,

It would be possible to make more efficient use of equipment by increasing exports as well as by beginning to manufacture certain types of machinery and equipment which up till now have been imported.

With a few exceptions, the rebuilding, maintenance and repair of machine tools is done in the country.

At present, a medium-level labour force is available which is capable of producing a large number of the components required for each machine tool. Other delicate and precision parts would have to be produced by specialized staff which are very expensive in Venezuela.

2. Numerically controlled machine tools have not yet been introduced (except perhaps in one or two cases) because of the limits of the existing market and the cost of the equipment and personnel required.



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