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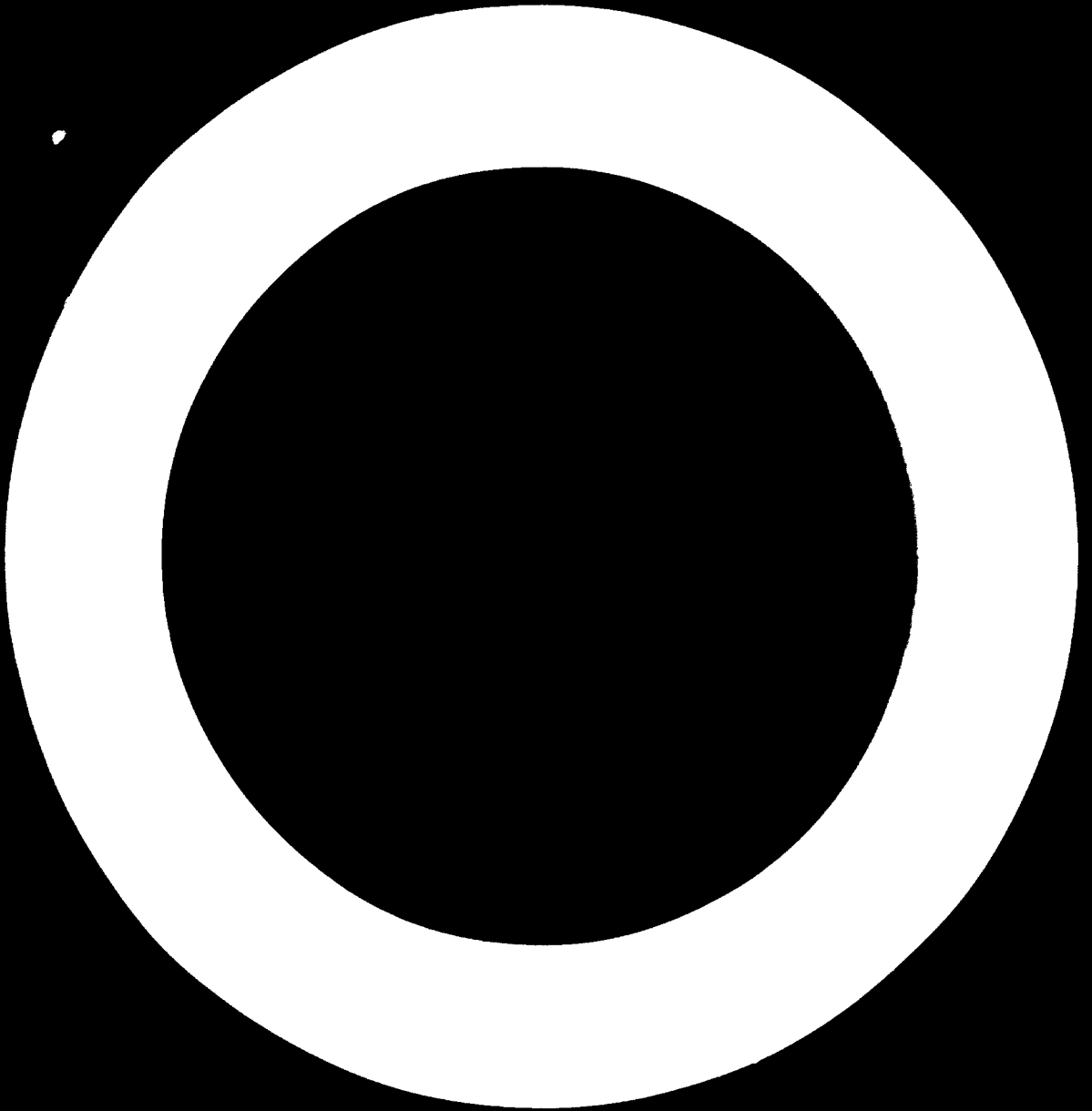
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A GENERAL SURVEY OF THE USED TEXTILE MACHINERY MARKET
IN THE UNITED STATES

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10.0 GENERAL INFORMATION

The used machinery market is an important and flourishing section of the textile industry in the United States. By its very nature this market is complex. It varies from year to year; even within a given year. It fluctuates widely both in supply and demand, and the price structure of the market fluctuates in response to these factors. Although the market as a whole is largely unpredictable, the basic pattern of its operation can be detailed in many respects.

In recent years the average annual volume of sales of used machinery in the United States is estimated to be between \$12 and \$15 million. The estimated annual volume of sales of new machinery is about \$700 million. Both of these figures include sales of all textile machinery for cotton, woollen, worsted, synthetics and blends as well as knitting, dyeing and finishing, etc.

By far the largest portion of the available used machinery is sold to mills within the United States. Precise figures for the volume of domestic sales are unavailable, as they are for all aspects of the used machinery market. However, it is estimated that domestic sales range from 75 per cent to 85 per cent of total sales. Domestic customers include some of the largest and most profitable United States mills which buy such machinery as fits into their processing and production requirements. Frequently such machinery is bought for development purposes and for the processing of experimental fabrics and yarns in small lots. Used machinery is purchased also by domestic mills when the industry is prospering, demand high, and increased production cannot wait for the long delivery times of new machines.

It is of interest that there is a considerable trade in used machinery from mill to mill directly without the intermediary services of dealers. In addition, United States mills which set up subsidiary operations abroad frequently supply their foreign mills with machinery from the parent company, as was recently the case when Indian Head Mills set up its Nigerian subsidiary.

20.0 SOURCES OF AVAILABLE USED MACHINERY

21.0 Changes in Market Demand

It is generally agreed that the single most important reason for used machinery becoming available is change in market demand. There are a number of different facets to this cause.

Raw Materials

The advent of the various synthetic fibres as well as the increased consumer acceptance of and demand for fabrics of all-synthetics or blends of natural and synthetic fibres made it necessary for mills making all-cotton yarn and fabric to dispose of some of their equipment and replace it with new machines capable of producing the increasingly popular synthetic and blended fabrics.

Fabric Widths

The demand by manufacturers of cut and sewn products for 50" wide fabrics which permitted considerably lower manufacturing costs (compared with the cutting and sewing of 36" wide fabrics, for example) caused a significant amount of loom obsolescence. Numerous 36" and 44" looms were sold to the machinery dealers and replaced by 50" looms. The trend to wider fabrics is continuing in the United States. In some segments of the industry 4 to 6 year old looms are being replaced, increasing the flow to the used machinery market.

Fabric Types

There has been a reduction in the demand for all-wool garments and accordingly a cut-back in production of worsted type fabrics. (Increasing importation of such fabrics has expanded the cut-back.) This has caused large amounts of woollen and worsted processing machinery to become available to the used machinery market. Many mills have disposed of excess machinery resulting from reduced production schedules. In certain cases entire plants have been liquidated.

Consumer demand for knitted apparel, on the other hand, has sharply increased and has created a short supply of knitting machinery to this market which is expected to continue.

New Processes

Consumer demand for carpeting manufactured by the tufting process (introduced in 1951) has risen steadily because its lower price has made such carpeting available to a much wider market. The dollar volume of tufted carpet production has grown from a total of \$19 million in 1951 to \$564 million in 1962. During the same period the value of woven carpet production decreased from \$430 million to \$231 million. Accordingly, Axminster and Wilton carpet looms have become available in the used machinery market. Noteworthy is the fact that this increased demand for tufted carpeting at the expense of woven continues steadily.

22.0 Economic Considerations in Domestic Production

Although, as stated, there is general agreement that the largest single cause of availability of used machinery is change in market demand, there are other considerations whose relative importance cannot be so readily assessed. One of these is the economics of domestic production.

Relocation of large segments of the textile industry from the New England area to the Southern region of the United States has been taking place for many years. It has been due primarily to lower labour costs and higher productivity obtainable in the South. As competition from Southern operations increased, many of those mills which remained in the North became unprofitable enterprises. Numerous completely integrated cotton mills were liquidated as a result. This relocation has been a continuing one. Mills comprising 100,000 spindles and 3,500 looms have come into the used machinery market within the past 18 months.

In addition it has become unprofitable for United States manufacturers, with a very few exceptions, to produce what can be classified as specialty fabrics. The worsted fabrics previously mentioned are a case in point. Another is corduroy, which can often be imported as finished fabric for less than the domestic manufacturing cost. As a result, integrated corduroy plants have been disposed of in their entirety. One such plant was recently acquired by a well-known used machinery dealer.

23.0 Replacement of Machinery

Modernization programmes of existing mills are another important source of used machinery. Technically, this machinery replacement takes two forms. By far the more important is the substitution of new equipment by developments permitting higher speeds, larger packages and greater productivity for older and less efficient machinery. Of course, there are instances of replacing so-called "worn out" equipment. However, the decisions to replace rather than rebuild almost always take into account practical business consideration of comparative productive capability. In essence this category can be considered as one separate and distinct from change-over for such reasons as demand for fabrics with increased width, etc., which are much more important.

30.0 TYPES OF MACHINERY AVAILABLE

In spite of the unpredictable nature of the market which causes machinery of one type to be in short supply and another in oversupply at varying times, it can safely be said that as a rule there is always a wide variety and large selection of basic cotton processing machinery available, from cotton opening through spinning, yarn preparation, weaving, dyeing and finishing. Laboratory instruments and auxiliary equipment are not so generally available, but can usually be obtained.

Very often entire mills are sold as units together with their spare parts and auxiliary equipment. Recently a cotton mill of 15,000 spindles was liquidated, sold as a unit and shipped intact to the Philippines.

The machinery list of another mill recently liquidated is as follows (year of manufacture indicated when available):

Opening, cleaning and picking: 3 lines, consisting of Saco-Lowell Models 15 and 17 openers (1957 and 1958), F5 and F7 hopper and blending feeders (1950); Whitin Axi-Feeds (1958) and Axi-Flows (1957); Saco-Lowell conveyors, condensers (1952) and filters (1951); Davidson-Kennedy SRRL opener-blender-cleaner (1960); H & B bale breaker; Toledo picker lap scale and conveyor.

Carding: Saco-Lowell revolving flat cards with metallic clothing; Parks-Cramer overhead cleaning system.

Drawings: Whitin M7 drawing frames (1961).

Laboratory equipment: Suter yarn and roving scales, Scott tensile strength tester; Uster evenness tester; Spectrograph, etc.

Roving: Saco-Lowell 10x5 roving frames (1961); Termaco roving bobbin stripper; large supply of roving cans and roving bobbins.

Spinning: Saco-Lowell and Saco-Pettee spinning frames with Duo Roth (1960); Parks-Cramer Turbo cleaning system; cot buffing and assembling machines.

Spooling and Winding: Barber Colman spoolers; tailing machines, warpers and creels, together with a supply of section beams and bakelite cheese cores.

Slashing: Saco-Lowell slashers; mixing and storage kettles and auxiliary machinery.

Weaving: Draper X and E looms, 40", 42" and 36" wide; Terrell bobbin stripper; Barber Colman tying-in machine; Lewis haul truck (1950).

Cloth Room: Curtis & Marble inspection, re-roll and folding machines and selvage trimmers; Singer sewing machines.

Bleaching, dyeing and finishing: Rodney Hunt stainless steel Tensitrol washers; Butterworth open width dye range and soaper; DuPont continuous dye ranges; Morrison stainless steel wash and dry range (1956); Proctor & Schwartz loop dryer (1953); Van Vlaanderen tenter frames; Butterworth finishing range; Rice Barton & Fales colour print machines in

a range from 40" through 52" widths, printing in from 6 to 14 colours.

Since such complete plants have been operating up to the time of their liquidation, all of the machinery and equipment is in running condition.

40.0 MAJOR USED MACHINERY DEALERS
AND THEIR METHOD OF OPERATION

41.0 Sources

There are about 40-odd dealers in used machinery in the United States, consisting of both large and small operators. Some of these specialize in machinery for particular processes, such as dyeing and finishing, knitting, supplies and parts. Others handle a general line of machinery or specialize in purchasing and rebuilding machinery. The following are the largest and most important dealers:

Alliance Textile Machinery Corp., Allentown, Penn.
Comer Machinery Co., Atlanta, Ga. & Charlotte, NC.
Crescent Corp., Fall River, Mass.
George D. Flynn, Jr., Providence, RI.
Hall's Textile Machinery Co., Charlotte, NC
Industrial Products of America, Fair Lawn, NJ.
and IPA Southern, Greenville, SC.
McDowell Associates, New York, NY.
Frank G.W. McKittrick Co., Lowell, Mass.
Republic Textile Equipment Co., New York, NY.
Standard Mill Supply Co., Providence, RI.
Wilson Lewith Machinery Co., Charlotte, NC.

42.0 Scope of Operations

It is estimated that some 10 - 15 per cent of the dealers account for 50 per cent of the entire market in used machinery. One of these, Comer Machinery Company, had a volume of \$5 million in sales in 1964,

68 per cent of which was in domestic sales and the remainder to foreign clients. Republic Textile Machinery Co., one of the largest dealers and the acknowledged leader in sales for export, states that its business is about 40 per cent to foreign clients. The percentage of export sales of the other dealers is estimated at 10 per cent of their total sales volume.

The market operates out of two main centres -- One in the Southern textile areas (Georgia, North Carolina, South Carolina) and the other in the New York-New England area.

43.0 Method of Operation

There is no association of dealers. They operate quite independently while maintaining a relationship of friendly business competition with each other. With a very few exceptions the dealers are simply merchants of used machinery. Frequently they buy complete plants outright, often including land and buildings which they attempt to sell as units. In other cases they may be given the exclusive right for a specified period of time for the sale or auction of a plant, or to act as brokers or liquidating agents.

It is estimated that the facilities of about 70 per cent of the dealers are only office space. Sometimes such dealers will buy from other dealers

who have warehouses of purchased machinery and who are glad to give the other dealer a commission to dispose of their stock. About 28 per cent of the dealers maintain warehouses and only about 2 per cent, in addition to the foregoing activities, also buy and rebuild used machinery which they sell reconditioned, frequently with a guarantee against mechanical defects. Machinery is sold "as is", together with the spare parts on hand. Any additional spare parts which may be required for present or future operations must be obtained from the machinery manufacturer.

It is customary for the prospective purchaser, whether foreign or domestic, to inspect the machinery personally and to buy on his own responsibility as to condition and suitability. It is the policy of many prominent dealers to urge prospective customers to have the machinery inspected and evaluated by qualified persons for one or more of the following:

- (1) to check for worn parts and gears as well as general mechanical condition,
- (2) to determine the equipment's compatibility with the production line of an existing mill,
- (3) to assess the equipment's suitability for the production and end product desired for a new mill or diversification programme.

The dealer guarantees the machinery to be "as stated" (as to make, model and year of manufacture) and will supervise its dismantling, packing, crating and shipping.

Worn parts or gears observed in dismantling are brought to the purchaser's attention and the estimated extent and cost of any necessary rebuilding stated. (Generally plain looms require less rebuilding while spinning and roving frames and cards may require considerably more work.)

Dealers who purchase machinery are usually given a definite time limit for its removal from the mill floor. If they have been unable to sell it within the time limit, it is warehoused. Some dealers keep machinery "indefinitely" in the belief that a buyer will ultimately be found. Others keep it for about a year and then sell it for the salvage value of the metal. At present the estimated value of scrap steel is approximately \$8 per ton, and copper 35¢ to 40¢ per pound. Some sources estimate that about 10 per cent of the used machinery sold by mills has only salvage value.

The dealers maintain extensive mailing lists to which they keep adding the names of those from whom they receive inquiries or who they believe may be interested in their offerings. Those on the mailing lists periodically receive information on the dealer's available machinery. Each dealer has his clientele, both buyer and seller, with whom personal relationships have been developed and mutual confidence established. Mill management desiring to liquidate generally will contact a dealer it knows and request his evaluation of the plant and equipment, usually offering him the

option to purchase or sell within a given time. Purchasing agents for mills requiring used machinery of a particular type, unless they are themselves aware of another mill selling such equipment, will request their dealer to locate it for them. If a dealer has a call for specific machinery which he does not have, he will check with other dealers in an effort to locate it.

44.0 Terms of Payment

Sales of used machinery to domestic mills which, as stated, constitute the overwhelming majority, are on a strictly cash basis. Export sales are on the basis of an irrevocable letter of credit in most cases. For foreign sales, however, there are credit possibilities. Republic has been able to arrange with the Export-Import Bank to extend credit to foreign purchasers. Comer has in some cases itself extended credit up to a maximum of \$150,000 and in others arranged with an Atlanta bank to extend credit on the basis of 25 per cent of the purchase price in cash and the balance over three to five years.

50.0 COST FACTORS IN CONSIDERATIONS OF USED EQUIPMENT

It is impractical to attempt to categorize specially the advantages and disadvantages of used machinery purchases and their relationship to product costs. Basic reasons for a decision to purchase used machinery vary greatly. They include the following:

- Cost of labour
- Cost of machinery
- Availability of used machinery
- Delivery time for new machinery
- Import restrictions
- Comparative quality needs and respective advantages of new vs. used
- Comparative productive capabilities in terms of needs, etc.
- Quality, cost, etc., of raw material available (e.g., possible use of lower grade cotton).

51.0 Machinery Costs

Many domestic mills are purchasing old cotton cards at bargain prices with a full realization that after rebuilding the card at a cost of approximately \$3,000, it will then be at least the equivalent of a new unit. Such rebuilding of used machinery can be done in the United States and the rebuilt card installed in the foreign mill. Other mills purchase used roving and spinning frames in small lots, selecting those units with characteristics similar to the machines already in their production line. This would be to

increase the overall capacity by a moderate amount or to balance out a workload or job assignment. Such equipment would be selected also for its good mechanical condition, if the price were anywhere near 50 per cent of new value (as in the case of cards to be purchased at a very low price with plans to overhaul or rebuild.)

52.0 Labour Costs/Productivity

A classic comparison of labour assignments on new versus used equipment within one mill is impossible to detail because so many other factors are involved. Increased productivity per man hour on new equipment and installations has been achieved through a variety of sources such as: better operating methods, higher machine speeds, larger supply and delivery packages, better engineered equipment resulting in greater machine reliability and better quality of the product at each stage of processing, higher drafts, improved air conditioning systems, better handling techniques, more widespread usage of mechanical cleaning, and semi-automation and "linking" of groups of processes.

Reduction in labour costs has resulted from the interaction of some or all of these sources. As indicated, machine speeds (see Section 53.0) are only one factor in increasing productivity. Others, such as those listed above, are also important. Some of these sources, such as better methods, handling,

training, air conditioning and overhead cleaning, can be "engineered" into a mill which does or would consist of used machinery.

Developments in automatic processing in the United States, doffing for example, have been dictated by possible shortages of suitable manpower as much as by cost considerations. Incidentally, the use of the various automatic doffing devices is still very far from general in the United States.

53.0 Machine Productivity

In the "average" United States mill, production speeds have not been dramatically increased during the last 10 years, in the high direct labour cost areas such as spinning, winding and weaving. Production speeds have been increased on the following order:

Spinning (medium counts) spindle rpm: 10 - 15%

Winding: approximately 40%

Weaving: approximately 20%

Examples of typical used and new equipment production capabilities can be expected in the following ranges:

<u>SPEEDS</u>	<u>NEW</u>	<u>USED</u>
Drawing frames - feet per minute	800	400
Roving frame package size	14x7	10x5
Spinning frame spindle speeds	12,000	10,000
Warper - yards per minute	900	600
Winder - yards per minute	900	600
Loom picks per minute	215	100

54.0 Parts

Other elements of operating costs, such as replacement parts and maintenance repairs, are directly associated with mechanical condition. For example, it is reasonable to expect shuttle life to be 2000 hours of operation on a well maintained used loom as well as on a new loom. Ring and traveller life on new vs. used spinning frames should show no drastic differences.

Spare parts often can be a decided advantage in purchasing used machinery. Usually, although not necessarily, the purchase of several machines will also include spare parts which can be acquired at a fraction of new value. Buying used looms will frequently offer the opportunity to purchase loom beams, harnesses and shuttles from the same lot at 25 per cent of new cost.

55.0 Power Consumption

The effect on power costs which can be an important factor in many geographical areas cannot be judged solely on the basis of whether machines are new or used. Capability and mechanical condition of the used units must be taken into account. Nevertheless, speeds of new machines do require increased horsepower. Particularly in the case of very large package sizes of the new equipment, power consumption has risen very sharply. This is an especially important consideration in the developing countries where power costs are very high.

56.0 "Double Process" Equipment

All elements of labour, maintenance and repair costs are drastically increased when a choice of used machinery results in a larger number of processes than is prevalent in the industry. Machines so limited in capability as to require double processing (industrywide practice in the '30s and '40s) have been almost entirely scrapped in the United States. Accordingly, there is only a remote possibility of such equipment being offered, e.g., used pickers requiring two-process picking and roving production requiring intermediate processes.

57.0 Useful Life

Within the United States textile industry there is a great deal of equipment that is old by today's standards yet is economical for the individual mill.

Late 1940 and early 1950 spinning frames, looms, warpers, slashers, etc., in reasonable repair are operated by competitive mills. The same situation could be expected by the buyer of such equipment. Dyeing equipment is unique in that stainless steel units are economical regardless of age.

The real economic productive life of textile machines from the standpoint of mechanical condition or obsolescence cannot be determined from the tables of useful life established by the United States government for tax depreciation purposes. One machinery dealer has told us, much to our amazement, of the experience of one large and profitable United States mill which in 1934 bought used spinning frames that have since been in continuous operation and are still in sufficiently good condition to warrant their being sent to the original manufacturer for rebuilding. The present United States regulations specifying that 15 years is the average useful life of yarn and fabric making machinery, and 12 years that of dyeing and finishing equipment does not indicate the remaining years the equipment can be satisfactorily operated. Technological change, rather than mechanical condition, is the prime element in the obsolescence of textile equipment. Depreciation costs are not an important consideration in the purchase of used machinery, as the purchaser can select a basis within the limitations of regulations that will provide the greatest benefits for his particular financial structure.

60.0 BASIS FOR DECISION TO PURCHASE EQUIPMENT

61.0 Special Considerations in Developing Countries

61.1 Maintenance Requirements

For new mills in developing countries, careful consideration should be given also to the operating requirements of the most modern textile machinery. These machines, which represent the most highly sophisticated application of the latest technological developments, frequently require precise settings of many gears as well as the most meticulous maintenance. For that reason, highly skilled technicians are becoming much more important for the maintenance of semi-automated machines which include sophisticated electrical systems and controls such as micro-switches.

61.2 Labour Availability

Modern machines have been designed to provide maximum production at minimum labour cost. This is of great importance in countries where there is a shortage of labour, and/or where labour cost is high. The opposite of either or both of these circumstances may permit significant purchase advantages.

61.3 Operating Requirements

Proper processing on the newest machinery in many cases necessitates for best results such prerequisites as air conditioning to maintain the necessary moisture content of yarns, properly prepared stock from previous operations, and other exacting preconditions for the best utilization of the machines. The lack of any of these necessary conditions may easily result in products of inferior quality being produced on ultra-modern machinery.

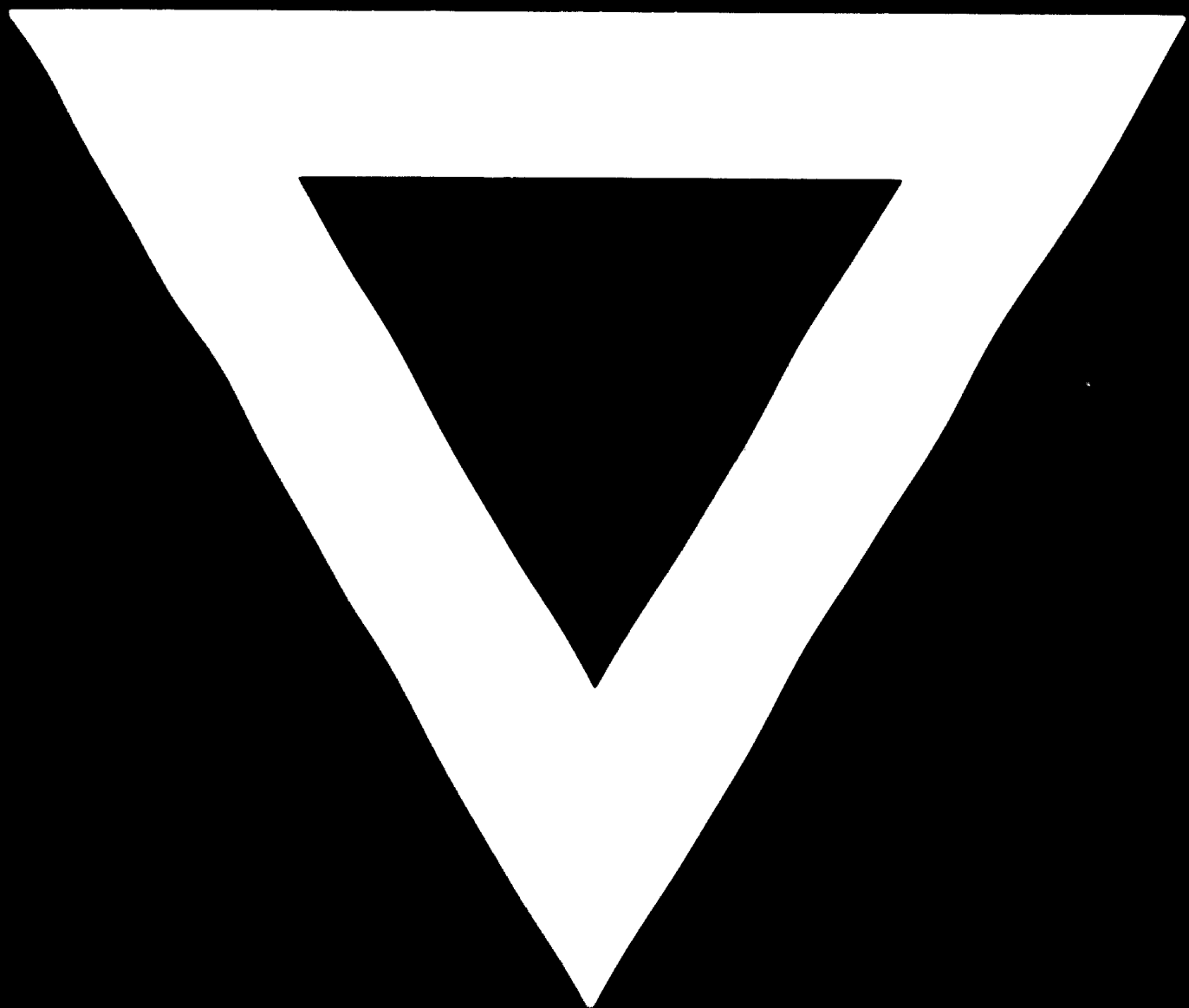
62.0 General

Decisions on the purchase of equipment whether new or used, should be based on a most careful consideration of local conditions now existing or likely to exist in the immediate future. For used equipment qualified machinery appraisal must be made, taking into account any necessary rebuilding. It is important that any equipment, new or used, be purchased on the basis of a specific mill balance previously worked out. No purchase, however low the price, is a bargain if it is not suited to the production programme of an existing mill.

To summarize, when any equipment is to be purchased, prior decisions should be made with regard to the following:

1. Specific end use products to be processed, with particular reference to local market conditions.
2. Approximate quantity of initial production and estimated future expansion.
3. Production programme as basis for establishing mill balance.
4. Preparation of complete mill balance, including:
 - . Raw material utilization
 - . Machine productivity
 - . Estimated jobloads
5. Detailed list of machinery required for intended production and quantity, including auxiliary equipment and supplies.





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