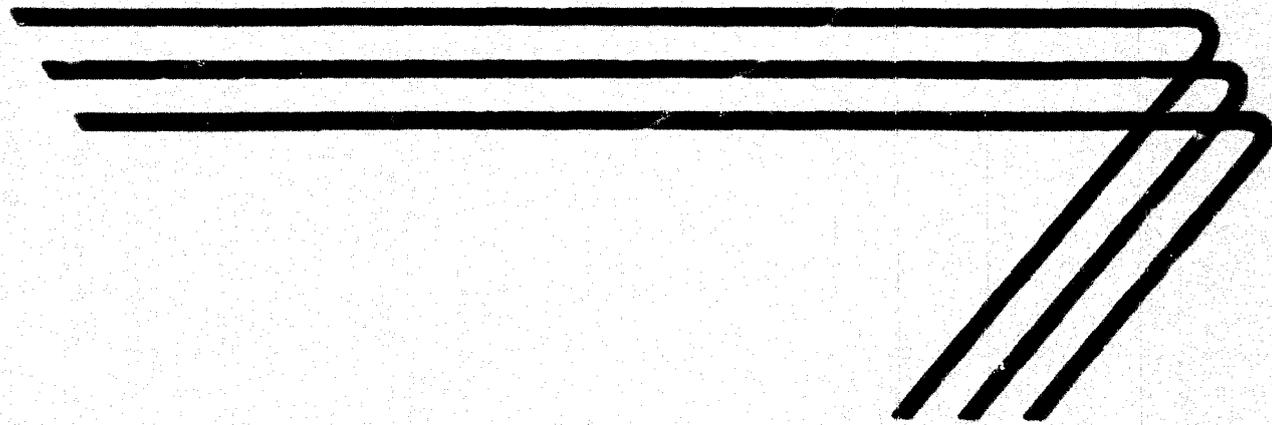
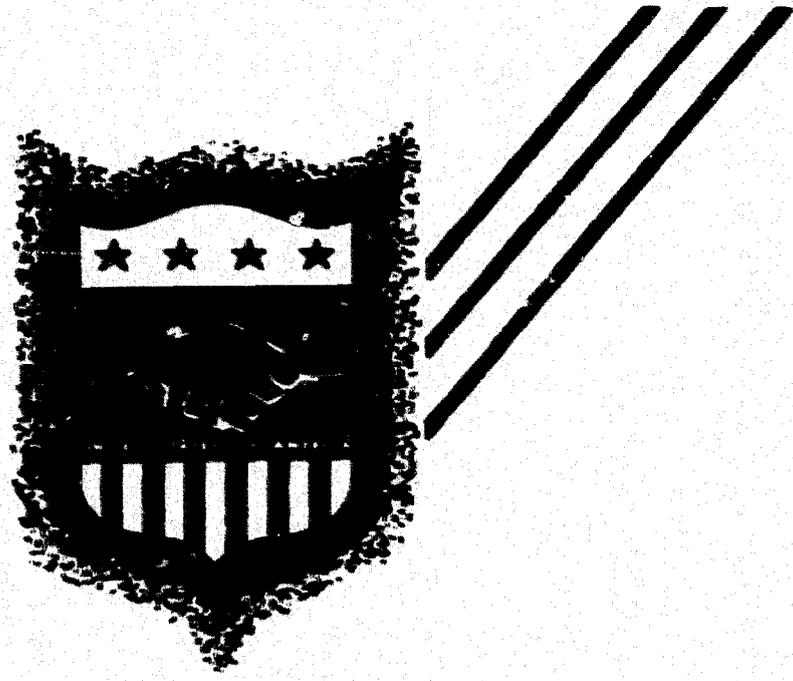


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PLANT REQUIREMENTS FOR MANUFACTURE OF CROCHET AND KNITTING YARNS



**TECHNICAL AIDS BRANCH
INTERNATIONAL COOPERATION
ADMINISTRATION
Washington, D. C.**



FOREWORD

This brochure is one of a series of reports resulting from overseas technical inquiries on factory or commercial establishments, operation, management, and engineering. The report is designed to provide only a general picture of the factors that must be considered in establishing and operating a factory of this type. In most cases, plans for actual installations will require expert engineering and financial advice in order to meet specific local conditions.

Mention of the name of any firm, product, or process in this report is not to be considered a recommendation or an endorsement by the International Cooperation Administration, but merely a citation that is typical in its field.

The original report was prepared by Barnes Textile Associates, Inc., Boston, Massachusetts.

Technical information, as well as review, was provided by R. Poliakoff, Industrial Consultant, 126 Eleventh Avenue, New York 11, New York.

* * * * *

This report has been revised and rewritten by
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* * * * *

For further information and assistance, contact should be made with the local Productivity Center, Industrial Institute, Servicio, or United States Operations Mission.

Code Number
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C R O C H E T A N D K N I T T I N G Y A R N S

INTRODUCTION

The purpose of this report is to present basic information for establishing a manufacturing plant, in a foreign country, to produce crochet and knitting yarns.

GENERAL ASSUMPTIONS

In order to make realistic estimates in this report, certain assumptions are made. These are:

1. The costs of the building and general facilities are based on United States prices.
2. Material costs are based on sizes and specifications of materials used in the United States.
3. Labor costs are based on the average for the industry as recently published by the United States Bureau of Labor Statistics.
4. Adequate power and water are available at the plant site.
5. Adequate transportation facilities are available at the plant site.
6. The plant operates three eight-hour shifts a day, six days a week, fifty weeks a year.

7. No special provision is made for the training of new personnel. It is assumed that learner's rates are paid in such cases.
8. The following items cannot be estimated realistically:
 - A. Land value.
 - B. Distribution and selling costs.
 - C. In-freight and out-freight.
 - D. Administrative costs.
 - E. Taxes.

While general estimates will be made of each of these items, for the purpose of completing cost estimates, adjustment should be made in accordance with actual local costs.

In fact, all cost estimates contained in this report should be adjusted to conform to local conditions.

9. Columns are provided in the tables included in this report to facilitate the conversion of cost figures to conform with local costs.

PRODUCT SPECIFICATIONS

The product specifications for this plant are as follows:

Cotton - All yarns S. M. - 1-1/8 inch staple - Combed.
Twist - 10/1s - 3.90 M; 24/1s - 3.25 M.
Ply - 10/1s Single/Two; 24/1s Single, Two, Three.
Plain grey yarns.

PRODUCTION CAPACITY

The annual production capacity of this plant is as follows:

10/1s crochet grey yarn - 360,000 pounds
24/1s knitting grey yarn - 576,000 pounds
Total annual production 936,000 pounds

MANUFACTURING UNIT

The manufacturing unit for this plant is one pound of cotton yarn.

MANUFACTURING OPERATIONS

The cotton is received in bales. The first operation is opening and picking. This is done on a one-process picker.

The second operation is carding. This operation is done on revolving flat cards.

The third operation is drawing. This operation is done with a breaker and finisher.

The fourth operation is combing. This is done with one sliver lap machine and three double head combers.

The fifth operation is roving. One 84-spindle slubber is used for this operation.

The sixth operation is spinning. Ten spinning frames of 240 spindles each, one frame blower unit and 10 under frame cleaners are used.

The seventh operation is winding. One cone winder of 70 spindles, one tube or spring winder of 80 spindles and nine skein winders of 16 spindles each are used.

The last operation is packaging and shipping.

Since the entire product is sold as grey yarn, there are no dyeing operations.

DIRECT MATERIALS

Baled cotton and packaging materials are the only direct materials required. Based on operating three shifts per day, six days per week and fifty weeks per year, the cotton consumption would be as follows:

<u>Yarn on Cones, Tubes or Skeins</u>	<u>Pounds Cotton per 144-Hour Week</u>	
10/1 - 7,200 pounds	9,859)	including 36.92%
24/1 - <u>11,520</u> pounds	<u>15,773</u>)	waste
Total 18,720 pounds	25,632	

Since the plant operates fifty weeks per year, the annual consumption of cotton would be 50 x 25,632 pounds. This amounts to about 1,281,500 pounds or 640.75 tons.

The current price of baled cotton 1-1/8 inch staple is 33 cents per pound, or \$660 per ton. Based on these figures the annual cost of cotton would amount to 640.75 x \$660 or \$422,895.

The annual cost of packaging materials is estimated at about \$3,105. On this basis the annual cost of materials amounts to about \$426,000.

SUPPLIES

<u>Item</u>	Annual Cost	
	<u>Estimated</u>	<u>Actual</u>
Lubrication and hand tools	\$ 200	_____
Maintenance and spare parts	2,500	_____
Office supplies	<u>300</u>	_____
Total	\$ 3,000	_____

DIRECT LABOR

<u>Occupation</u>	<u>Number Required</u>	<u>Hourly Rate</u>	Annual Cost	
			<u>Estimated</u>	<u>Actual</u>
Opener and picker	2	\$1.50	\$ 6,000	_____
Carder and stripper	3	1.75	10,500	_____
Card grinder - fixer	1	2.25	4,500	_____
Drawing, lap, comber tender	3	2.00	12,000	_____
Roving tender	3	2.00	12,000	_____
Spinner and doffer	6	2.00	24,000	_____
Spinning and winding fixer	3	2.25	13,500	_____
Winder and reeler	3	1.60	9,600	_____
Packer and shipper	1	1.75	3,500	_____
Laborer	<u>2</u>	1.50	<u>6,000</u>	_____
Total	27		\$ 101,600	_____

INDIRECT LABOR

<u>Occupation</u>	<u>Number Required</u>	<u>Unit Cost</u>	<u>Annual Cost</u>	
			<u>Estimated</u>	<u>Actual</u>
Manager	1	\$12,000	\$ 12,000	_____
Superintendent	1	8,000	8,000	_____
Foremen	2	6,000	12,000	_____
Laboratory	1	7,000	7,000	_____
Maintenance	1	5,000	5,000	_____
Office	<u>2</u>	4,000	<u>8,000</u>	_____
Total	8		\$ 52,000	_____

PLANT LAYOUT

A plant layout showing the location of the machinery, equipment, and operations is shown on the last page of this report.

PLANT SITE

In order to provide for future expansion, a plant site of about two acres will be required. The plant site should be as advantageously located as possible with respect to transportation, power, water, fuel, sources of labor and markets.

The estimated cost of the plant site is \$2,000.

BUILDING

A one-story building, 100 feet by 190 feet, or 19,000 square feet, will be required. Modern textile buildings are usually designed to omit windows and include fluorescent lighting, humidity control, air changing and heat.

The cost of the building including these features, and a boiler as well as wiring and plumbing is estimated at about \$150,000.

POWER

The connected load requirements amount to about 120 horsepower. Based on a ninety percent load factor the annual cost of power is estimated at about \$4,000.

WATER

The annual water requirements for humidification, fire protection, and sanitary purposes are estimated at a cost of \$200.

FUEL

Fuel is required for heating the building and sanitation purposes. The annual cost of fuel is estimated at \$500.

PRODUCTION TOOLS AND EQUIPMENT

<u>Item</u>	<u>Units Required</u>	<u>Unit Cost</u>	<u>Cost</u>	
			<u>Estimated</u>	<u>Actual</u>
<u>Opening</u>				
Blending feeders	2	\$ 4,000	\$ 8,000	_____
Dust fan	1	400	400	_____
Mixing feed table	1	2,000	2,000	_____
Magnetic trap	1	600	600	_____
Axi-flow	1	2,900	2,900	_____
Cage section	1	1,600	1,600	_____
Overhead condenser with fan	1	2,000	2,000	_____
Waste feeder	1	1,500	1,500	_____
<u>Picking</u>				
One-process picker	1	15,000	15,000	_____
Return air condenser	1	1,800	1,800	_____
<u>Carding</u>				
Revolving flat cards	26	4,700	122,200	_____
Traverse grinder	2	200	400	_____
Solid grinder	1	400	400	_____
Cylinder grinder	1	400	400	_____
<u>Drawing</u>				
Deliveries (breaker and finisher)	20	550	11,000	_____

<u>Item</u>	<u>Units Required</u>	<u>Unit Cost</u>	<u>Cost</u>	
			<u>Estimated</u>	<u>Actual</u>
<u>Combing</u>				
Sliver lap machine	1	\$ 4,000	\$ 4,000	_____
Double head combers	3	12,100	36,300	_____
<u>Roving</u>				
Slubber - 12x6½ - 84 spindles	1	11,000	11,000	_____
<u>Spinning</u>				
Spinning frames - 240 spindles 3½ inch gauge, 2 inch rings, Pneumafil	10	10,000	100,000	_____
Frame blower unit	1	5,000	5,000	_____
Under frame cleaner	10	350	3,500	_____
<u>Winding</u>				
Cone winder - 70 spindles	1	7,000	7,000	_____
Tube or spring winder - 20 spindles	1	7,800	7,800	_____
Skein winders - 16 spindles	9	800	<u>7,200</u>	_____
Total cost equipment			\$ 352,000	_____
Installation cost			<u>48,000</u>	_____
Total cost installed			400,000	_____

Mergerizing and Dyeing Data

As previously stated, this plant is equipped to produce grey yarns only. However, in case mergerizing and dyeing are necessary as a part of the annual production, the following information is submitted.

The majority of crochet yarns selected for mergerization and dyeing are processed in skein form. In a few instances dyeing of these types of yarn is processed in tubes on springs. The skein winding equipment required is listed in the foregoing.

Only a small percentage of knitting yarn is mergerized and the majority of knitting yarn dyeing is done on spring cones in vacuum dye kettles.

The great majority of knitting production is with grey yarns. The knitted products, stockings or piece goods, are dyed in the knitted state. Because both mergerizing and dyeing of yarns are not considered a fixed part of the project of producing the indicated types of yarns, the detail of building floor space and the small amount of equipment generally needed is not being made a part of this report. In order to logically include this process equipment in the report it would be necessary to establish the approximate poundage of yarns to be mergerized and dyed.

Single units of mergerizing and dyeing capable of handling approximately one-third the budgeted production would add in the neighborhood of \$16,000 to the indicated summary of costs for buildings and machinery. This amount is not included in the above figures.

OTHER TOOLS AND EQUIPMENT

<u>Item</u>	<u>Number Required</u>	<u>Cost</u>	
		<u>Estimated</u>	<u>Actual</u>
Lap meter	1	\$ 1,200	_____
Lap scale	1	600	_____
Platform scale - 800 pounds	1	3,000	_____
Lap rods	68	100	_____
Card sliver cans	52	800	_____
Comber and drawing sliver cans	144	2,000	_____
Vacuum stripping system	1	12,600	_____
Roving cans	158	1,600	_____
12 inch paper tubes for spinning	7200	1,300	_____
Doffing trucks, roving trucks, lining and leveling equip- ment, tapes, travelers		<u>3,000</u>	_____
Total		\$ 26,200	_____

FURNITURE AND FIXTURES

<u>Item</u>	<u>Number Required</u>	<u>Unit Cost</u>	<u>Cost</u>	
			<u>Estimated</u>	<u>Actual</u>
Desks and chairs	5	\$150	\$ 750	_____
File cabinets	6	75	450	_____
Typewriter	1	150	150	_____
Adding machine	1	150	<u>150</u>	_____
Total			\$ 1,500	_____

DEPRECIATION

<u>Item</u>	<u>Estimated Cost</u>	<u>Years Life</u>	<u>Cost</u>	
			<u>Estimated</u>	<u>Actual</u>
Building	\$ 150,000	20	\$ 7,500	_____
Production tools and equipment	400,000	10	40,000	_____
Other tools and equip- ment	26,200	10	2,620	_____
Furniture and fixtures	1,500	10	<u>150</u>	_____
Total			\$ 50,270	

MANUFACTURING OVERHEAD

<u>Item</u>	<u>Annual Cost</u>	
	<u>Estimated</u>	<u>Actual</u>
Depreciation	\$ 50,270	_____
Indirect labor	52,000	_____
Power	4,000	_____
Water	200	_____
Fuel	500	_____
Supplies	<u>3,000</u>	_____
Total	\$ 109,970	_____

MANUFACTURING COSTS

<u>Item</u>	Annual Cost	
	<u>Estimated</u>	<u>Actual</u>
Direct materials	\$ 426,000	_____
Direct labor	101,600	_____
Manufacturing overhead	<u>109,970</u>	_____
Total	\$ 637,570	_____

FIXED ASSETS

<u>Item</u>	Annual Cost	
	<u>Estimated</u>	<u>Actual</u>
Land	\$ 2,000	_____
Building	150,000	_____
Production tools and equipment	400,000	_____
Other tools and equipment	26,200	_____
Furniture and fixtures	<u>1,500</u>	_____
Total	\$ 579,700	_____

WORKING CAPITAL

<u>Item</u>		Cost	
		<u>Estimated</u>	<u>Actual</u>
Direct materials	30 days	\$ 35,500	_____
Direct labor	30 days	8,400	_____
Manufacturing overhead	30 days	9,200	_____
Reserve for sales collections	30 days	<u>73,000</u>	_____
Total		\$ 126,100	_____

CAPITAL REQUIREMENTS

<u>Item</u>	Cost	
	<u>Estimated</u>	<u>Actual</u>
Fixed assets	\$ 579,700	_____
Working capital	<u>126,100</u>	_____
Total	\$ 705,800	_____

RECAPITULATION OF COSTS, SALES AND PROFITS

<u>Item</u>	<u>Estimated Cost</u>	<u>Actual Cost</u>
Direct materials	\$ 426,000	_____
Direct labor	101,600	_____
Manufacturing overhead	<u>109,970</u>	_____
Total manufacturing cost		\$637,570
Interest on loans	\$ 16,000	_____
Insurance	1,000	_____
Legal	800	_____
Auditing	1,600	_____
Unforeseen expense	<u>12,350</u>	_____
Total administrative costs		\$ 31,750
Sales commissions		12,000
Travel, bad debts, discounts and allowances, freight-out		6,000
Profit before taxes		<u>190,000</u>
Total annual gross sales		\$877,320

BUDGET CONTROL:

A requisition form designed to provide accurate records of procurement and indicate the purpose of procurement with the least amount of time and effort is shown on the following page.

This form has an account number for each type of the various expenditures which the manager will review in detail, monthly or oftener, in order to control his expenses. Some items, such as power and water, are usually under contract and are easily checked by reference to monthly bills. For simplification, items (marked with an asterisk below) are omitted from the purchase requisition. Variations in the labor costs are easily reviewed by examination of the payroll vouchers. The simplified type of control thus provided makes certain that the manager can control expenditures promptly.

Following the requisition form, a sample voucher check is shown. Voucher checks should be used for the payment of all expenditures and the appropriate book account number placed on each voucher.

At the end of each month the manager will receive a statement of all expenditures broken down by budget accounts. If the expenditures exceed the budgeted monthly allowances of any of the accounts, the bookkeeper will furnish the manager with a break-down of all expenditures relative to the budgeted accounts exceeded. All these supporting data can be secured by reference to the purchase requisitions and the check vouchers. This reference will enable the manager to determine what caused the over-expenditure and take corrective action.

If at any time during each month it becomes apparent that expenditures will exceed any of the budget accounts, the bookkeeper will bring this to the attention of the manager for his information and action.

BUDGET CONTROL ACCOUNTS:

Account Number	Monthly Expense	Monthly Budget	Annual Budget	Actual
10 Administrative	\$ _____	\$ 1,616	\$ 19,400	\$ _____
20 Sales	_____	1,500	18,000	_____
30 Direct Materials	_____	35,500	426,000	_____
40 Supplies	_____	250	3,000	_____
51 Power*	_____	333	4,000	_____
52 Water*	_____	16	200	_____
53 Fuel	_____	41	500	_____
60 Unforeseen Expense (Reserve Account)	_____	1,029	12,350	_____
71 Direct Labor*	_____	8,466	101,600	_____
72 Indirect Labor*	_____	4,333	52,000	_____
80 Depreciation (Reserve Account)	_____	4,189	50,270	_____

R. W. MITCHELL MANUFACTURING COMPANY

1422 BOSWORTH STREET, S. E.

65-22
514

ANYWHERE, U. S. A. _____ 19____ No. **10000**

PAY _____ DOLLARS \$ _____

TO THE ORDER OF

R. W. MITCHELL MANUFACTURING COMPANY

TO **FIRST NATIONAL BANK**
ANYWHERE, U. S. A.

BY **SAMPLE CHECK**

VICE PRESIDENT

ACCOUNT NUMBER

Sample voucher check to be used for the payment of
all expenditures in connection with Budget Control.

R. W. MITCHELL MANUFACTURING COMPANY

ENGINEERS:

The services of professional engineers are desirable in the design of this plant, even though the proposed plant is small.

A correct design is one which provides the greatest economy in the investment of funds and establishes the basis of operation that will be most profitable in the beginning and will also be capable of expansion without expensive alteration.

The addresses of professional engineers who specialize in industrial design, some of whom may be willing to undertake such work on low cost projects overseas, can be secured by reference to the published cards in various engineering magazines. They may also be reached through their national organizations, one of which is the

National Society of Professional Engineers
2029 K Street, Northwest,
Washington 6, D. C.

Manufacturers of industrial equipment employ engineers familiar with the design and installation of their specialized products. These manufacturers are usually willing to give prospective customers the benefit of technical advice by those engineers in determining the suitability of their equipment in any proposed project.

The equipment manufacturers also know, and can recommend, professional engineers in private practice, who are willing and able to provide appropriate consulting services.

TRAINING:

Manufacturing an inferior quality of product during the training period could create sales resistance that might be difficult to cope with later. To avoid such possibilities, the quality of the product should be maintained at all times, including the training period.

In some areas skilled operators may be available locally. In other areas all the operators may have to be trained.

If skilled operators are not available, adequate training would be assured by using one or more of the following methods:

- A. If the plant is designed and installed by a competent engineering firm, the contract should be negotiated, if possible, on a turn-key basis. On this basis the contractor agrees to operate the plant and produce the quality and quantity of the product stated in the contract for an agreed period of time. Such a contract would assure adequate personnel training, since full quantity and quality could not be produced with an untrained organization.
- B. The engineering firm that designs and installs the plant can usually make training arrangements to have key personnel placed, for training purposes, in a foreign industry that produces the same type of product. This would provide training for the key personnel while the plant is being installed.
- C. If neither of the above methods is possible, then qualified and experienced individuals should be employed for the key positions, either permanently or temporarily, to perform the key operations and assist in training the organization, even if they must be secured outside the country.
- D. The manager should have years of successful experience in this type of business and be fully qualified in all phases of management, including the training of employees.

SAFETY:

There is always danger of accident and injury in any industrial plant. Because of this, the manager should take specific action to bring to the attention of each employee the importance of safety precautions and intelligent first aid.

Practically all machines have safety appliances, and the manager should see that these are in good working condition and that the operators are making full use of them.

In addition to constant watchfulness to make sure that all practicable safety precautions are taken, first aid supplies should be readily available. One complete first aid kit should be maintained near the manager's office, and others at appropriate places throughout the plant. Some of the employees should be trained to provide first aid service.

The use of accident posters in the plant have proved to be of value in reducing accidents. It is recommended that such posters be used, and that some direct special action be taken by the manager, at least once each month, to bring to the attention of all personnel the importance of safety precautions.

A fire brigade should be established and each member trained as to his responsibility in case of fire. Fire drills should be conducted periodically.

It is recommended that the employees be encouraged to offer suggestions or recommendations relative to prevention of accidents, removal of fire hazards and maintaining general interest in all safety factors.

OTHER CONSIDERATIONS

There are other important subjects, shown below, that should be fully investigated and considered. Information on these subjects is usually available from such sources as banks, government agencies, exporters and importers, wholesalers, retailers, transportation companies and manufacturers.

MATERIALS AND SUPPLIES

1. Are all materials and supplies available locally?
2. Is the local material market competitive?
3. Is satisfactory delivery of local materials assured at reasonable prices?
4. What materials and supplies must be imported?
5. Are they available in world markets at competitive prices?
6. Would prompt delivery of imported materials and supplies be assured so that large inventories would not be required?

MARKET FACTORS

1. Is there already a demand for the product?
 - A. Who are the principal consumers?
 - B. Who are possible new consumers?
2. How is demand for the product now satisfied?
 - A. By local production? If so, what is the volume of annual production?
 - B. What percentage of consumption is filled by local production?
 - C. By imports? If so, what is the volume of annual imports?
 - D. What percentage of consumption is met by imports?
 - E. From what areas are imports derived?
3. What is the estimated annual increase in local consumption over the next five years?
 - A. How were such estimates made?
 - B. By reference to official figures on population growth, family budgets, imports, etc.?
 - C. By consultation with trade or industry, ministries, associations, bankers, commercial houses, wholesalers, retailers, industrial consumers, etc.?

4. If the product is already being manufactured, can the existing and estimated future local market absorb production of the new plant without price-cutting or other dislocations?
5. Would the estimated sales price and quality of the new product make it competitive with an imported equivalent?
 - A. After adjusting cost to local conditions, is the estimated sales price of the product so high that tariff protection is necessary to protect it from imports?

EXPORT MARKETS:

1. Could the product compete in export markets on the basis of price, quality and dependability of supply?
2. Can export markets for the product be developed?
3. If so, in what areas and in what annual volume?
4. What procedures would be necessary to develop export markets?
5. What would it cost?

MARKETING PROBLEMS:

1. In calculating costs of the product, has adequate allowance been made for the expense of a sales department, advertising and promotion that might be required?
2. Do consumer prejudices against locally manufactured products exist?
 - A. If so, why?
 - B. Would they apply to the new product?
 - C. If so, how could they be overcome and what would it cost to do so?
3. Do marketing and distribution facilities for the product exist?
 - A. If not, can they be set up?
 - B. What would it cost to do so?
4. Will the product be sold to:
 - A. Wholesalers?
 - B. Retailers?
 - C. Direct to consumer?
 - D. Other industries?
 - E. Government?

ECONOMIC FACTORS:

1. How much foreign exchange (and in what currency) is required to import machinery, equipment and supplies:
 - A. How much foreign exchange (and in what currency) is required for annual interest payments and amortization of any loans contracted to import machinery and equipment, or for payment of royalties and technical services?
 - B. How much foreign exchange (and in what currency) is required for annual import of raw materials and supplies?
 - C. What are estimated annual foreign exchange earnings and in what currencies?
 - D. Has careful consideration been given to the possibility of depreciation in the foreign exchange value of the local currency?
 - E. Has careful consideration been given to the possibility of import controls, or restrictions on availabilities of foreign exchange necessary to operate the business?
 - F. What benefits would the new business bring to the economy in the use of local raw materials: in employment and in technology?
 - G. Do dependable facilities exist for transportation, power, fuel, water and sewage?
 - (1) If not, can existing deficiencies be eliminated satisfactorily?
 - (2) What would be the cost to do so?

PERSONNEL:

1. Is there an adequate labor supply near the plant location?
 - A. If not, how can the problem be solved?
2. Can the problem of training competent management and supervisory personnel be solved?
 - A. Also, the training of skilled labor?
 - B. Is technical advice available in the locality?
 - C. If not, where can it be obtained and what will it cost?

LAWS AND REGULATIONS:

1. Do existing labor laws, government regulations, laws and taxes favor establishment of new business?
 - A. If not, can existing obstacles be removed?
 - B. If so, how and when?

FINANCIAL FACTORS:

1. Technical advice on selection of machinery and equipment.
 - A. In selecting the machinery and equipment for the new plant, have reputable and competent engineers and technicians been consulted?
 - B. Have they been asked for advice on the most suitable types of machinery and equipment for the process and locality?
 - C. Have they carefully compared costs of various suppliers?
 - D. Credit terms offered purchasers?

FINANCIAL REQUIREMENTS OF THE PROJECT:

1. In estimating the cost of the project, has careful consideration been given to:
 - A. The effect on costs of delays in construction schedules?
 - B. In delivery and installation of machinery and equipment?
 - C. In import of essential raw materials and supplies?
2. In calculating cash flow and working capital requirements, has careful consideration been given to:
 - A. Maintaining adequate inventories of raw materials?
 - B. Supplies and spare parts?
 - C. Seasonal fluctuations in the business?
 - D. The time required to liquidate credit sales to customers and bad debts?
 - E. The period necessary to get the plant into production?
 - F. Cash required to amortize its principle loans?
3. If the economy is in a period of inflation, has full allowance been made for the influence of rising prices and wages on the cost of the project and on working capital requirements?

SHORT TERM BANK CREDITS:

1. Has it been possible to make arrangements with local banks to finance short-time working capital requirements of the business?

FINANCIAL PLAN:

1. Has a definite plan to finance the project been worked out?
 - A. Is sufficient capital available locally?
 - B. If not, what is the plan to obtain the required capital?

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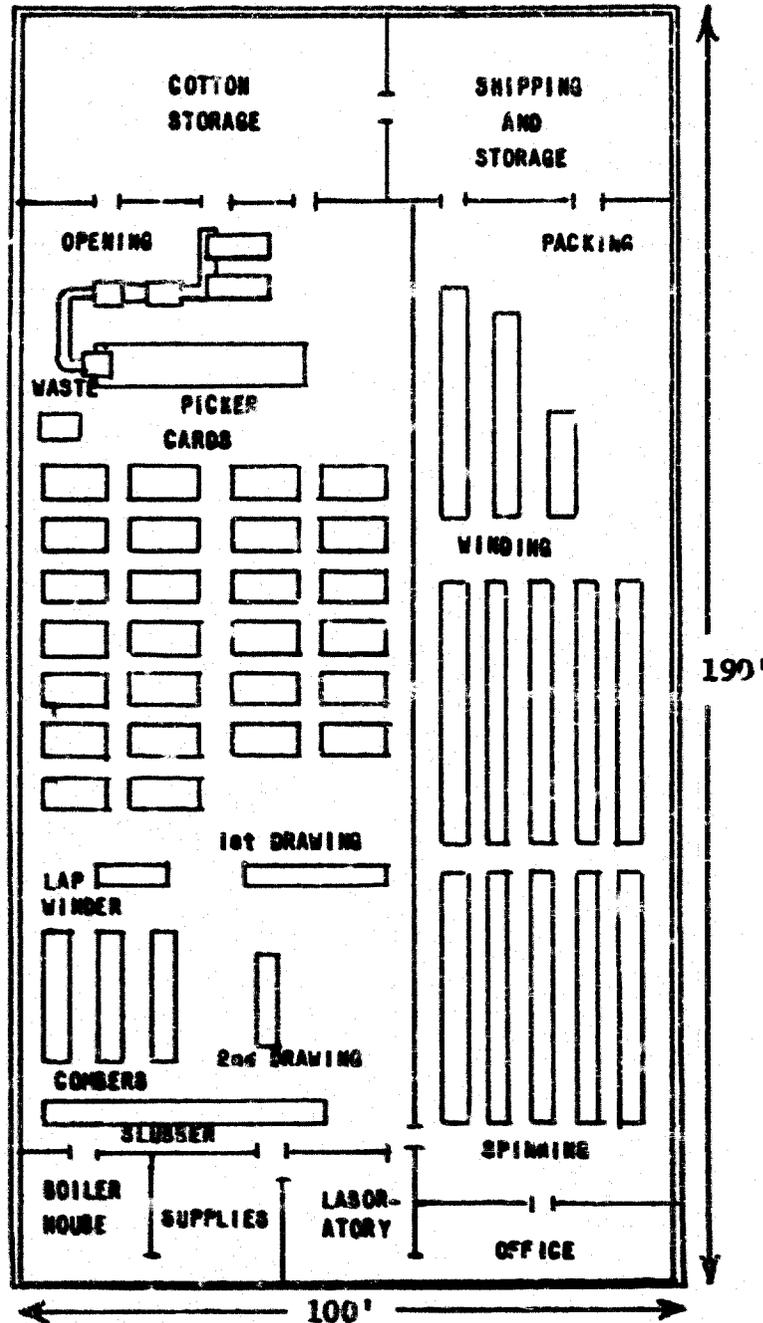
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MACHINERY LAYOUT FOR COTTON SPINNING MILL
 (CROCHET AND KNITTING YARNS)



Scale 1" = 32'