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ASSISTANCE TO A GARMENT FACTORY . SI/MOT/84/801

MONTSERRAT

Technical report: Assistance to the garment unit of the Social League of Women, Plymouth *

Prepared for the Social League of Women by the United Nations Industrial Development Organization, acting as executing agency for the United Nations Development Programme

> Based on the work of Kay Davitian Garment Technologist

> > 3695

United Nations Industrial Development Organization Vienna

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- 1 Summary of assistance given to existing garment manufacturers, educational projects and craft development at the request of Hon. Mrs. Dyer Howe.
- Present location layout of social league II garment project.
- III Project proposal for expanding the Social League Garment Industry prepared by A. Greenaway.

ABSTRACT

The assistance provided during three months had considerable impact on the Garment Unit of the Social League of Women in Montserrat. Modelling, patterning and seaming were improved, resulting in an improved look and fit of finished products.

Similar assistance was provided to two more garment units and to the Board of Education (details are described in Annex I).

Although requested, as long as inadequate buildings hamper further development of the unit's capabilities, additional technical assistance could not be considered.

It is suggested that a long term solution may be found in combining the production facilities of the Women's Social League with those of Emerald Garments, which is 60% Government owned. The objectives would be to allow both production units to become economically vaible, mainly by producing school uniforms for Montserrat, Dominica and Antigua, and Barbados. In view of this a project proposal for Expanding the Social League Garment Industry, prepared by A. Greenaway, is attached as Annex III.

BACKGROUND INFORMATION

The Social League of Women in Plymouth, Montserrat, hopes to have a garment manufacturing factory capable of producing school uniforms and all clothing used for sport for the local and export market. It is their aim, upon reaching expert quality and full garment production, to ask the Government of Montserrat to ban the importation of school wear into Montserrat.

It is to achieve this aim that a Garment Technologist was requested.

OBJECTIVES OF THE PROJECT

To assist the Social League of Women's garment project in Plymouth, Montserrat, in improving its production organization and quality level in order to effectively meet the demand for overseas customers.

PROJECT OUTPUTS

- Improved production organization;
- Practical methods of garment construction and manufacturing;
- Improved level of know-how of the local Production Manager.

PROJECT ACTIVITIES

In close co-operation with the Production Manager of the garment unit of the Social League, the expert will

- reorganize the present production line:
- instruct cutting room personnel in appropriate technology for the construction of garments ensuring a smooth material flow in the sewing room and an improved level of final quality.
- train the supervisory staff:
- establish quality control systems:
- establish a cost control system.

ACTIVITIES CARRIED OUT FOR SOCIAL LEAGUE

For reorganizing the production line, proper handling and feeding of cut material into sewing machine, the three sewers were taught faster methods of garment sewing, neatness and precision by respecting notches and precise seam allowances.

Faster, neater placket pocket insertion - collar preparation and finish.

Instruct cutter in the proper method of marking and preparation of marker on dotted market paper, paying attention as to grain and less material waste. Laying, stapling, and cutting of raw material to ensure maintaining the grain.

Cutting techniques to prevent the material shifting while cutting. Importance of notching to help the sewers in improving accuracy, speed and quality workmanship of garments.

Techniques to prevent color mixup. Sorting and bundling to prevent size mixups, thus ensuring a smoother production flow.

Training the two girls who did the ironing how to properly prepare pockets and collars for accurate placing and sewing. Also the proper method of pressing pants and shirts.

With the supervisor, developed better methods of finishing to insure better quality of finished garment and time and motion study to establish cost.

Making and grading complete line of master patterns of boys shirts size 4 to 16, boys long pants 20 to 28 waist, boys short pants 18 to 24 waist.

OUTPUTS PRODUCED FOR SOCIAL LEAGUE GARMENT PROJECT

Developed a more perfect fitting shirt pattern and pants pattern.

To improve production, it was recommended that the part-time cutter cut the entire garment; he had been cutting only the main body parts of the garments, leaving the linings, pockets, and trimming pieces which are more time-consuming to be cut by the most important and productive of the three sewers.

Instructed three sewers practical and faster methods of inserting pockets and pocket welting thereby insuring a larger daily output of school pants as well as ensuring a more practical and improved level of final quality of garments. Instruction also included improved collar preparation and lining positioning of the school shirts to produce a finer, more professional looking shirt.

Instructed part-time cutter in the proper methods of marking and preparing patterns on dotted pattern paper prior to the laying up and cutting of shirts and pants.

Instructed cutter in the spreading and use of stapling to help prevent material shifting during cutting with an electric cutting machine.

Instructed cutter as to the importance of notching and hole punching for assisting sewers in the accurate placing of pockets and in piecing together accurately each garment with the guidance of notches. Cutter now follows proper procedure for cutting by first making a marker on the dotted paper to ensure grain and to cut down waste of raw materials and insuring no mixup of styles by bundling with marker pattern attached.

Proper pressing and quality control. With the part-time supervisor, established details to ensure a finer more professional finish to garments.

Spent one week with Angela Greenaway helping in the preparation of a Project Proposal for expanding the Social League Garment Industry.

ACHIEVEMENT OF IMMEDIATE OBJECTIVES

The Social League garment project now has a complete set of well-fitting and graded school shirts, pants and shorts. Prior to this, their patterns were in disorder, no one size relating to the other. Complaints of narrow shoulders from wholesale and retail sources, ill-fitted collars, too wide pants legs, ill-fitting crotch seams are not acceptable for export.

The look and fit of the finished product (shirts and pants) was much improved. Not only are the sewers more productive, but a finer and more professional looking garment has been achieved and can now be exported.

New project proposal for expanding the Social League has been submitted to various funding agencies.

ADDITIONAL ACTIVITIES

On the request of the Honorable Mrs Dyer Howe assistance was given to

- Emerald Garments;
- Sea Island Cotton Manufacturing;
- Board of Education.

· Activities and achievements are attached in Annex I.

FINDINGS

- 1. Building configuration inadequate.
- 2. Distractions elements, school, traffic, passersby.
- 3. Machinery buttonholes being hand out; sewing on buttons done with home-type zig-zag sewing machine; sew sergers old and malfunctioning parts missing.
- 4. Short and narrow cutting table.
- 5. Cramped quarters.
- 6. Part-time supervisors.
- 7. Part-time schoolboy doing cutting and sewing of buttonholes.
- 8. Three sewers.
- 9. Mechanic not readily available.

The Social League of Women is situated on George Street, Plymouth, Montserrat. It occupies the top floor of a two-story building which has one large room, 30° x 18° , and two small rooms. One is used to store raw materials, the other, 12° x 12° , is unused. Upon entering the building, there is a long narrow, louvered veranda 30° x 4° $1/2^{\circ}$.

The workroom has windows on three sides and are 3' from the floor. Therefore, they are the same height as the sewing machines and cutting table. Montserrat is a very windy island, so the sewing and cutting is constantly interrupted by winds blowing fabrics and work about. This wind also causes threads to knot.

The building is situated on a main street directly across from a primary school and at each sound of a child's squeal or a car braking (some sewers have children at the school), work stops.

The kitchen and lunchroom for the school is situated in the room under the workroom - there is one toilet downstairs and no washbasin or convenience available for keeping hands clean.

In an area 30' x 18', there are six industrial straight stitch sewing machines, one Singer home type zig-zag machine (used to sew on bottons), one sew serge machine, one overlock and one buttonhole machine. There is a home type ironing board and iron, a desk 5' x 2.5' and a cutting table 12' x 3.8' with not enough space to afford a cutter circulating the cutting table.

The six industrial sewing machines are in fair to good condition. They need an air compressor cleaning system to daily blow out lint from the machines. One of the sergers was brought secondhand and parts are very worn. These do not finish seams properly. The sew serger lacks an important tension part so it does not function properly. The Singer buttonhole machine is very old and worn; the buttonholes, therefore, are of poor quality. The device to cut the buttonholes after stitching is worn and is not in working order so the buttonholes must be cut afterwards by hand. With at least 500 buttons to be sewn on shirts daily, a home-type zig-zag machine is not adequate. Fressing, quality control and packaging is completely inadequate due to lack of equipment and space.

TO JUMMARIZE

- 1. Building configuration inadequate.
- 2. Distractions (elements, school, traffic, passersby).
- 3. Machinery (buttonholes being hand cut, sewing on buttons with a home zig-zag sewing machine, sergers old and malfunctioning).

- 4. Short and narrow cutting table.
- 5. Cramped quarters with limited sanitary facilities.

With the above prevailing conditions, instilling and maintaining a smooth work flow will be almost impossible. The setting up of continuing proper cutting techniques will be very difficult to maintain. Due to this fact, there will also be a large percentage of waste in raw materials due to the short and narrow cutting table.

On hand, there is approximately 1,500 yards of shirt material at the League. This is not even enough for the 9,000 shirts needed. The raw material source is local for pants fabric and Puerto Rico and Miami for shirt materials. The Hon. Mrs. Dyer Howe envisions a well set up and run garment factory in Montserrat producing school uniforms for local consumption. Upon achieving this garment production in uniforms, the League will ask the Covernment to restrict importation of school uniforms into Montserrat. Antigua and Dominica show interest in buying school pants made by the League. Between these two islands and Montserrat, some 20,000 pairs of pants will be needed. In order to supply this amount of garments, the League will need:

- Factory space; industrial site with proper ventilation, lighting and wiring.
- 2. Manager.
- 3. Full-time supervisor.
- 4. Marker cutter.
- 5. Operators.
- 6. Pressers.
- 7. Salesman or sales representatives.
- 3. Additional sewing machinery.
- 9. Financing for raw materials.
- 10. Cash flow in order to maintain a constant staff of workers.

ANNEX I

The following summarizes additional time and help given to existing garment manufacturers, educational projects and craft development in Montserrat. This request for design and technical assistance came from the Hon. Mrs. Dyer Howe and was in addition to the Social League project.

A major development that resulted from this was my recommending to Mrs. Dyer Howe the further development of crafts within Montserrat as a means of offering employment as well as using available raw materials.

Activities carried out for Emerald Garments, Blue Jeans Factory

- Teaching fast and accurate methods of master pattern making to produce a pair of regulation blue jeans.
- Teaching pattern grading of blue jeans and other garments.
- Teaching and demonstrating faster zipper insertion.
- Advising and answering questions of a proper factory layout,
 work assignment, flow and supervising.
- Advising and suggesting on other fill-in lines which could be made.

Activities carried out for Sea Island Cotton

With Mrs. Clara Davidson, went over garments being produced suggesting ways to achieve proper fit and quality. I also introduced a garment which I had designed both the fabric and style for the "Things Jamaican" weaving project in Jamaica, demonstrating the importance of method for utilizing hand woven fabric.

Additional activities carried out included:

- Worked with garment section helping with new patterns and designs.
- Submitted six ideas for fabric design.

Activities carried out for the Board of Education with Hon. Mrs. Dyer Howe

Developed ideas to expand the local craft industry, to include the following:

- Starting a group of five girls doing tapestry and needpoint work.
- Starting a group of school teachers and other young women, teaching them techniques in making their own crochet blouse designs.
- Introducing and demonstrating ideas in craft as a business with school teachers from the secondary and primary schools, in order that they may stimulate the importance and need for craft as a business for school leavers not going on to further academic or trade schools.
- Visiting craft sessions in the primary school to observe craft and sewing in process to help, where possible, to stimulate and give ideas on better techniques and design.

Achievements

Emerald Garment is now capable of making and grading own patterns.

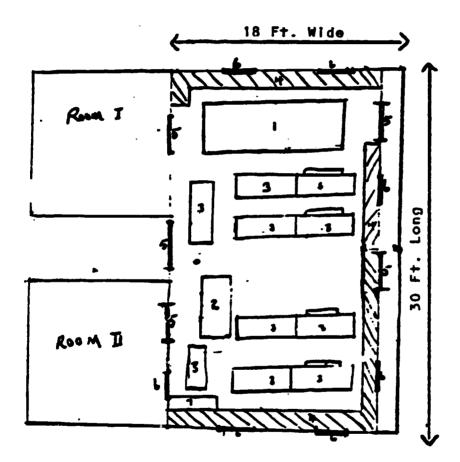
Sea Island Cotton introducing new line of designed fabrics and styles.

Hon. Mrs. Dyer Howe convinced that crafts can be an alternate to more employment in Montserrat.

ANNEX II

PRESENT LAYOUT OF SOCIAL LEAGUE

GARMENT PROJECT



Veranda: 30 Ft Long 6 Ft Wide

Key 1 - Cutting Table

2 - Desk

3 - Machines, seat and bins

- Benches

5 - Doors 6 - Windows

7 - Ironing Board 8 - Veranda

Scale: 1/8 in. = 1 ft.

ANNEX III

Project Proposal for Expanding the Social League Garment Industry prepared by A. Greenaway

Section 1 - Background

The Social League of Women is a registered charitable organization which has been involved in community projects since its inception in 1961. In 1980 the League began a small operation with a hand operated machine to meet the requirement of shirts for school children in Montserrat. At the time six women had been trained on the machine and the need was seen for expansion as the demand for those garments was quite large. A proposal was made to the Voluntary Fund for the United Nations Decade for Women, requesting US\$ 34,000 to expand the operation and set up a small industry. The funds were granted and were used to purchase machinery and raw material for the expanded operation.

The garment project has now been in operation for four years and has provided training for a number of young women and employs three (3) persons permanently.

However, this project is not without any difficulties. The whole operation has become somewhat stagnant and is now showing a deficit. It is thought that the operation was not properly set up and the facilities are inadequate. For example the cutting table is too short therefore causing wastage of materials. Over the years, also, the project has concentrated mainly on training and has succeeded in training quite a number of young women who are now unemployed. Revitalizing the project would give jobs to some of these young women and also help to alleviate the general unemployment situation.

The League would therefore like to launch out into full scale production of school shirts for the local market and boys school pants for the local and regional market.

In June 1984, a request was made to UNIDO for a Garment Specialist to help the League with organizing their work flow, setting up of proper cutting techniques and establishing a cost control system as the League expects to receive a large order from overseas.

Mrs. Davitian arrived in Montserrat on the 22nd November for this purpose. Her preliminary investigation has shown that the League cannot expand their operations under the present conditions. Firstly the project needs to be housed in a proper building approximately 3,500 square feet in area, with some additional machinery and updated equipment. This will be dealt with in detail in Section 2.

This proposal therefore seeks to identify the key aspects of change that are necessary for the Social League Garment Project to be upgraded so that it can handle a full production line.

Section 2 - Proposal

The proposal is for the Project to produce:

- (a) School shirts local market;
- (b) Boys short and long pants (local and regional market).

Building

To produce the items mentioned above the League Project would have to be housed in an area of no less that 3,500 square feet. For suggested factory layout see page 27.

The factory should have a cutting area suitably equipped with a cutting table of 10-15 yards by 2 yards. This area should be properly wired so that overhead lighting is adequate and an electric cutting machine can be utilized. The cutting table should be equipped with the necessary attachment, however simple, for spreading the fabric before cutting.

The sewing area should have all the necessary sewing machines relative to the type of product. There should be proper chairs available for the operators, also work bins and work horses. In this project it is envisaged that 16 sewing machines will be necessary. Nine machines are already in place but three are not in good working condition therefore ten additional machines need to be purchased. Additionally there should be a compressor to keep the machines clean and dust free.

There also should be adequate space for ironing facilities. This includes a suction steam table, at least three irons and two normal ironing boards.

Additionally there must be tables available for assorting, packaging and shipping. These tables should be at least 5 yards in length.

The factory should be well equipped with lighting fixtures and outlets. The area should also be well ventilated.

Location

The location of the factory is very important. It should not be located in a noisy area which will distract workers. If possible it should be located in such a way that the wind had minimum effects.

Products

Without the availability of a market study, one can only estimate how many units per year this project can produce. One has to examine each product to see the likely demand and try to estimate the average costs of production.

(a) School shirts

It is estimated that there is a demand for 9,000 school shirts per year in Montserrat. If import restrictions are introduced on school shirts coming into the island then the project could produce and sell 9,000 shirts per year.

On an average an operator should be able to use 15 yards of material each day. This therefore means that she should be able to make 10 shirts per day, (assuming one shirt taken 1.5 yards) or she should be producing a shirt every 48 minutes based on a 40 hour work week.

Therefore if the factory is to employ 15 operators it would take 60 work days to complete 9,000 shirts.

(b) Boys short and long pants

It is estimated that there will be a similar demand in Montserrat for boys pants to that of school shirts. Additionally Dominica and Antigua are expected to order 6,000 pairs and 5,000 pairs of pants per year respectively. This means that the project would have a demand of 20,000 pairs of pants per year.

Assuming an operator uses 5 yards of material per day at peak production and using the largest size pant which takes 1/2 yard of 60" wide material, an operator should average 10 pairs of pants per day. Therefore if the factory is to employ 15 operators it would take approximately 134 days to produce the boys pants.

Assuming that the demand levels are correct the project will be actively engaged in production for 194 days of the work year leaving 46 days for side line products. However in all this one is assuming that the factory will be operating at peak production. The 46 days might very well be necessary to complete the main production lines.

Section 3 - Financial Analysis

Critical Assumptions

The analysis of this Project is based on the following assumptions:

- (i) A grant of EC\$ 71,719.5 or US\$ 26,562.7 will be donated by an Aid Agency to purchase machinery and equipment.
- (ii) The project will sell a minimum of 9,000 school shirts per year at a minimum of EC\$ 8.40, and 20,000 pairs of school pants per year at a minimum of EC\$ 9.60.
- (iii) Technical assistance be given to this project for at least one year to ensure that the factory operates at full capacity.
- (iv) Present prices of garments to be increased by 20%.

Total Capital Cost

The total capital cost is envisaged as EC\$ 71,719.50 or US\$ 26,562.7. This capital cost is basically for machinery and equipment.

This capital cost can be divided into local and foreign costs:

| Total foreign cost | Total local cost |
|--------------------|------------------|
| FC\$ 63.888.5 | EC\$ 7,831 |

With respect to the foreign cost 20% has been allowed for freight and insurance. An additional 10% has been added to the total cost of machinery for installation.

The breakdown of Capital Cost is shown in Table 3.1.

TABLE 3.1

Capital Costs

| | | | EC\$ |
|----|-----------------------|--------|-----------|
| 1. | Machinery | | 35,815.50 |
| 2. | Equipment | • | 17,061.00 |
| 3. | Spare parts | • | 500.00 |
| 4. | Contingencies 10% | | 5,337.00 |
| 5. | Freight and Insurance | | 9,425.00 |
| 6. | Installation costs | | 3,581.00 |
| | | Total: | 71,719.50 |

Working Capital

The total working capital for each month is envisaged at approximately EC\$ 12,987. A three month stock of raw material is envisaged to cost approximately \$ 60,000,000.

This means that the project would require a total of approximately EC\$ 100,000 as working capital for a three month period.

The breakdown of working capital is shown in Table 3.2.

Operating Costs and Revenue

The annual operating cost of this project is approximately EC\$ 325.844. This breakdown is shown in Table 3.3.

An analysis of the operating cost shows that wages and salaries constitutes 39.9% of the total figure. Overheads on a whole constitute 47.8% of the figure. It is interesting to note the wages and salaries is 83% of the total overhead cost. It would be in the best interest of the project to try and cut down on this cost. This can only be done by reducing the level of employment. This is examined in Section 4, page 23, where wages and salaries could possibly be reduced to EC\$ 86,844. This would represent 30% of the new annual operating cost of EC\$ 282,644.

Raw material costs is envisaged to be 52% of the total cost. It does not seem possible that this figure could be reduced as the raw material is required to maintain the level of output.

It is estimated that the project could average an annual revenue of EC\$ 469,080. This is based on critical assumption (iv) and is fully explained in Chapter B., page 24.

TABLE 3.2

Working Capital

| | | | EC\$/mon | <u>th</u> |
|------------------------------|--------|------|----------|-----------|
| Rental and Insurance | | | 1,050 | |
| Postage and Office supplies | | | 150 | |
| Maintenance and Repairs | - | | 50 | |
| Utilities | | | 500 | |
| Wages and Salaries | | | 10,837 | |
| Transport expenses | | | 200 | - |
| Miscellaneous | • | | 200 | |
| | Total | : | 12,987 | |
| Raw material | | | | |
| Working capital for 3 months | | EC\$ | 39,000 | approx. |
| Raw material | | EC\$ | 61,000 | |
| | Total: | EC\$ | 100,000 | |

TABLE 3.3

Operating Costs and Revenue

| | | EC\$ |
|-------------------------------|------------|-------------------|
| Rental and Insurance | | 12,600 |
| Postage and Office supplies | | 1,800 |
| Maintenance and Repairs | | 600 |
| Utilities | | 6,000 |
| Wages and Salaries | | 130,044 |
| Transport expenses | | 2,400 |
| Miscellaneous | | 2,400 |
| | Sub-total: | 155,844 |
| Raw material | | 170,000 |
| | Total: | 325,844 ====== |
| Revenue from sale of garments | | 469,080 |
| Estimated profit | | 143,236 |

Section 4 - Cost Implications

Various cost implications can be examined on this project.

Two areas of cost will be examined here:

- A. Employment
- B. Raw material and pricing

A. Employment

In any properly run establishment there has to be a person who is charged with the overall administrative and technical responsibilities. Such is the job of a General Manager and it seems necessary that this factory should employ such a person. A garment company should also have the services of a sales person or someone responsible for marketing so that there can be some continuity in orders and delivery of goods. The functions of these two persons are mainly administrative and general. Specifically the factory will need a patternmaker who can also be a supervisor. This person will be responsible for making the patterns, grading the patterns and marking for cutting, combined with the general supervision of the machine operators and the rest of staff. Additionally a cutter would be needed.

It is envisaged that 15 machine operators will be needed to have a good production line. To maintain any factory unit there needs to be a certain level of output per day. This factory should be able to maintain a reasonable level of output with 15 operators. It is estimated that output will be 150 school shirts per day and also in the case of pants, 150 pairs. This means that each operator should use at least 15 yards per day in the case of shirts and 5 yards per day in the case of pants.

Additionally it will be necessary to employ 5 unskilled persons for pressing, cleaning, turning collars, general assortment of work etc.

One cannot afford to have any discontinuity of work flow hence it would not be reasonable to have the machine operators perform these tasks as well.

This level of employment is estimated to cost the project 10,857 (approx.) each month. This seems to be a sizeable figure for a small operation but it is necessary to ensure the smooth running of the factory.

One variation to this proposal would be for the Factory Supervisor to be in charge administratively and technically but an Accounts Clerk/Book-keeper would then have to be employed. This would lessen the cost some \$ 1,000 per month. Also the number of unskilled workers could be cut down to about 2 therefore subtracting another \$ 850 per month. The new total would therefore be \$ 7,237 per month.

Additionally one could reduce the number of machine operators but this would have implications for the output per day of the factory. This new total would be \$ 7,237.

Cost variations would therefore be:

| Option 1 | EC\$/month | Option 2 | EC\$/month |
|----------------------|------------|----------------------|------------|
| l General Manager | 1,687 | l Factory Supervisor | 1,000 |
| l Sales person | 1,000 | 1 Sales person | 900 |
| l Factory Supervisor | 870 | 1 Cutter | 650 |
| 1 Cutter | 650 | l Accounts Clerk | 687 |
| 15 Operators | 5,400 | 10 Operators | 3,600 |
| 5 Unskilled | 1,250 | 2 Unskilled | 400 |
| Total: | 10,857 | Total: | 7,237 |

Whatever option is chosen the level of output each month would have to be sufficient to maintain the factory overhead costs.

B. Raw Material and Pricing of Goods

It is estimated that 13,500 yards of material will be needed to make the required amount of school shirts. On an average the materials plus the trimmings for these shirts cost US\$ 2.00 i.e. EC\$ 5.40. This means that the total cost of materials and trimmings for shirts will cost approximately US\$ 37,000 or approximately EC\$ 100,000.

In the case of boys pants it is estimated that approximately 10,000 yards of material will be necessary. This means that materials plus trimmings should cost approximately EC\$ 70,000 (assuming EC\$ 7.00 per yard for material and trimmings).

Therefore EC\$ 170,000 approximately will be required to purchase materials and trimmings for total estimated production.

| Presently, | goods | are | priced | as | follows: |
|---------------|-------|-----|--------|----|----------|
| 1 1 0000001 9 | 20043 | | PLICE | | |

| Shirts | EC\$ | Pants | EC\$ |
|--------|-------|--------|-------|
| size 4 | 7.00 | Long | |
| 6 | 8.00 | 20-22 | 20.00 |
| 8-10 | 10.00 | 24-26 | 25.00 |
| 12-14 | 12.00 | short | |
| 16 | 13.50 | small | 8.00 |
| | | medium | 10.00 |
| | | large | 12.00 |

Based on the above prices the minimum estimated revenue from the sale of garments would be EC\$ 223,000. The maximum estimated revenue would be EC\$ 621,500. These figures are based on selling only the smallest size garments in the first instance (i.e. for the minimum figure) and selling only the largest size garments (i.e. for maximum figure). The average revenue would be approximately \$ 390,000. These figures indicate that if the project is to be economically viable some increase in prices is necessary. A 20% increase is recommended. The new prices would therefore be as follows:

| Shirts | EC\$ | | Pants | EC\$ |
|--------|-------|---|-------------|-------|
| size | | | Long | |
| 4 | 8.40 | | 20-23 | 24.00 |
| 6 | 9.60 | | 24-26 | 30.00 |
| 8-10 | 12.00 | • | short small | 9.60 |
| 12-14 | 14.40 | | medium | 12.00 |
| 16 | 16.20 | | large | 14.40 |

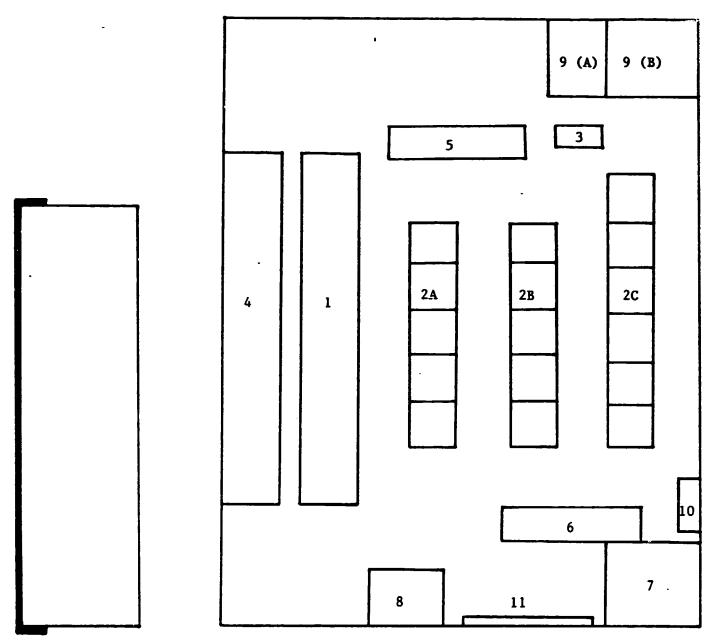
This would increase the average revenue to \$ 469,080 which offers much more leeway in relation to the operating costs.

There is, however, an alternative to increasing the prices of the garments. As mentioned in Section 2 page 16, there could possibly be 46 free days if the factory operated at peak production. If this is the case, the factory could utilize the existing patterns and produce boys casual shirts and pants utilizing different materials. If they could say produce an extra 3,500 shirts and 5,000 pairs of pants, average revenue could possibly increase to EC\$ 601,250. The additional expenditure would be approximately \$ 46,000. This would only be for raw material as all other operating expenses have been calculated for a full year of production.

Based on the preliminary findings it appears that this project could realize a profit in the region of EC\$ 143,236.

| A. | List of Machinery and Costs | | EC\$ |
|----|---------------------------------|--------|-----------|
| | 2 Industrial Straight Stitchers | | 2,673.00 |
| | 1 Hemmer | | 2,902.50 |
| | 1 Button tacker | | 3,375.00 |
| | l Three phase bar tacker | | 6,075.00 |
| | l Two needle machine | | 3,375.00 |
| | l Four thread sew serger | | 3,240.00 |
| | 1 Four thread mock safety | | 4,050.00 |
| | l Button-holer | • | 10,125.00 |
| | | Total: | 35,815.50 |
| в. | List of Equipment and Costs | | EC\$ |
| | Boiler with steam irons | | 2,025.00 |
| | l suction steam table | | 783.00 |
| | 1 compressor | | 264.00 |
| | l Hot hole puncher | | 1,755.00 |
| | Cutting room accessories | | 1,000.00 |
| | Sewing room accessories | | 1,000.00 |
| | Pattern room accessories | | 1,000.00 |
| | Finishing room accessories | | 1,000.00 |
| | 15 chairs for machines | | 885.00 |
| | 3 Office chairs | | 250.00 |
| | Cutting table | | 2,000.00 |
| | Assorting and finishing tables | | 2,000.00 |
| | Feed rail | | 3,099.00 |
| | | Total: | 17,061.00 |

Suggested Layout for the Social League Garment Industry



Scale: 1/8 in. = 1 ft.

Key:

- 1. Cutting table
- 2. A,B, + C are machinery space
- 3. Ironing space for unfinished work
- 4. Shelves for raw materials
- 5. Assorting table
- 6. Finished work (table)
- 7. Storage for finished work
- 8. Office space
- 9. Ladies room (A), Lunch room (B)
- 10. Pressing area for finished goods
- 11. Door