

BUSINESS OPPORTUNITY PROFILE

Prepared for the

Inward Investment Facility

Linden Economic Advancement Programme

JEWELRY MANUFACTURING

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INTRODUCTION

There are numerous exciting business opportunities in Region 10 for investors who wish to invest in agriculture, agro-processing, small-scale mining, manufacturing, logging, sawmilling, tourism, transportation industry, or services to name a few.

LEAP Inward Investment Facility (IIF) recognizes that potential investors need information on business opportunities. This series of Business Opportunity Profiles is intended to help investors identify viable opportunities in the various sectors.

These profiles address generic issues such as the appropriate technology involved and where possible, potential markets, estimated investment and production costs. However they are not intended to be replacements for project feasibility studies.

Selection of technology, financing plans, feasibility studies and other related issues remain the responsibility of the investor.

REGION 10

Region 10 is the logical hub for Guyana's development. With an area of over 16,835sq.km (6,500sq.miles), it is centrally located and contiguous to most other administrative regions. It has abundant land and natural resources, and is the natural gateway into the hinterland's forest and mineral reserves. Boasting excellent river and road transport links out to the coast, it is also the natural choice for Atlantic-bound South American trade. Besides the town of Linden there are significant communities in Coomacka, Old England, Great Falls, Rockstone, Anarika, Mabura, Ituni, Aroima and Kwakwani.

At present, the main economic activities are mining, logging, agriculture, fishing, transportation and distribution along with manufacturing and construction.

THE TOWN OF LINDEN

Linden, with a population of approximately 30,000¹ is the Region's main population centre and is located inland from the coast, 107km (66miles) from the capital city Georgetown.

Spread over an area of 107km (66miles) the town is situated on the two banks of the Demerara River. Originally a mining town, whose economy had been based on the bauxite industry, the town is redefining itself as a key port of call in and out of the hinterland. Aware that the time of the "Bauxite economy" is over, the population is increasingly involved in small business activities like merchandising, furniture manufacture, and construction, thereby transforming the town into a centre for industrial

¹ Census 2000 – Statistical Bureau

and service activities. Linden is also a supply centre for hinterland communities and itinerant miners.

Some of its specific strengths are:

- The size and layout of the town lends itself to easy manageability of its resources.
- There is a well developed network of utility services including stable electric power, water supply and telecommunication services.
- The town itself possesses abundant natural potential in mineral and forest resources in its immediate environs, and land is available for potential development.
- The location of the town on both banks of the Demerara River provides for easy transportation arrangements and lends itself to development of an *entrepôt* facility for Atlantic-bound Brazilian goods.
- Linden has an essentially young population with 85% of its residents under 45 yrs.
- Linden-based Industries are less prone to natural disasters than those along the coastal areas.

BUSINESS ENVIRONMENT

The Government of Guyana has approved various general and sectoral incentives as part of its comprehensive strategy aimed at reviving the economic fortunes of Region 10.

These incentives can be found in:

- Customs (Amendment) Act No. 6 of 1999,
- Investment Act No. 1 of 2004
- Customs Duties (Amendment) (No.1) Order 2004.

Special Incentives for Region 10 and specifically for Linden, Ituni and Kwakwani are:

- Waiver of Customs duties and Consumption taxes on all imported items of plant, machinery, equipment and spare parts.
- For manufacturing and agricultural investments, waiver of Customs duties and Consumption taxes on vehicles imported exclusively for use in the business.

EXECUTIVE SUMMARY

Personal jewelry continues to entice buyers for purposes of cosmetic improvement as well as a means of securing wealth in an easily convertible form. Jewelers design and sell jewelry from a wide variety of materials ranging from precious metals set with valuable stones to lower cost fashion accessories. The products include rings, brooches, and pendants as well as chains, necklaces and bracelets, and cut, shaped and polished stones and metals. Because of their high value, diamond and gold jewelry pieces are the items of choice for most buyers, but other lesser ornamentation are quite popular and constitute the bulk of the market by volume, if not by value.

Like people everywhere, Lindeners value and acquire jewelry but it is all bought from outside the region. The town itself has only four jewelry retailers, located in quite seedy and inauspicious surroundings that do not attract the majority of potential customers. And even their products are made in Georgetown and brought in to Linden on a weekly basis, totaling an estimated \$350,000 week. These products are mostly of the Creole handmade variety of jewelry with little of the high standards available at the more established outfits in Georgetown. Serious buyers invariably make their purchases from the larger dealers in the capital city.

There is a clear opportunity for enterprising outfits to begin manufacture here, and through effective marketing, tap into the existing market and extend it significantly. Lindeners will welcome an alternative to the insecurities of traveling to Georgetown to make significant purchases. The economies of lower production costs deriving from mechanized operations will allow for better jewelry values and lower pricing when coupled with the other advantages of a Linden base. In particular, a key expense, electricity, is less than $\frac{1}{4}$ the cost in Georgetown, allowing for greatly reduced production costs. Similarly, lower rents and labour rates will make for direct and effective competition with Georgetown-based manufacturers.

The new enterprise should offer both manufacturing and retail capabilities and will compete for the local (regional), and international markets by offering better prices deriving from its inherently lower production costs. Retail outlets catering to local sales can be modeled after the Georgetown outfits selling jewelry, watches, clocks and quality silverware. It is essential to offer both the conventional and unusual in the display line, allowing the designers to choose the perfect display for their creations.

Advantages to investing in this industry:

- Extremely good returns on investment in a relatively short period are possible once the operation is managed efficiently with appropriate security arrangements, coupled with aggressive marketing.
- The initial start-up costs are quickly recoverable.
- With the use of appropriate machinery, the labour involved is trainable and mostly semi-skilled. At any rate, numerous young persons trained through Guyana Geology and Mines Commission initiatives are available to work at fairly high levels of skill.

- There are numerous opportunities for training courses and seminars run by international agencies and equipment makers, for keeping producers in touch with new techniques etc to ensure that the output remains in vogue with international trends.

An effective jewelry manufacturing operation may be set up for as little as \$4 million, while an elaborate enterprise can be completely outfitted for \$5 million. A full feasibility study will be required prior to startup to determine actual startup costs, working capital and financing requirements etc.

THE OPPORTUNITY: JEWELRY MANUFACTURING

Jewelry crafting and retailing is among the oldest known professions but in the last 30 to 40 years a new international trend has come into evidence, altering the structure of the business considerably. The traditional jeweler a craftsman both manufacturing and retailing, is nowadays only a retailer. The few remaining craftsmen with their own workshops do mainly repairs and renovation, rather than undertaking much creative work. Competitiveness has increased, as new technologies are adapted from other industries, including Computer Aided Design (CAD), lasers and powder metallurgy processing. These allow for Rapid Prototyping, which enables new designs of technically better products to reach the market faster and at lower cost. These technologies drastically reduce material scrap compared to traditional methods, meaning lower inventory and therefore lower financing costs, and more competitive pricing.

Locally as well, there have been similar changes in retailing with larger outfits dominating and taking an ever-increasing market share, at the expense of the independents. All of the large local manufacturers employ modern methods but still offer their produce through their own retail outfits. They are all located in Georgetown, the capital and traditional business centre, where operational and manufacturing expenses are far higher than elsewhere.

Much of the jewelry produced locally and worldwide is primarily golden, but other metals and materials and precious stones are also popular, silver in particular enjoying a resurgence amongst younger clientele. The influence of the *Guyana Gold Board* makes for a level playing field insofar as raw materials costs go and the *Bureau of Standards'* controls apply similar stipulations on the quality of output. As all types of jewelry offer very high returns on investment providing that the designs can be priced and marketed effectively, profits are assured. But the margins depend more on the efficiencies of production and the control of costs than anything else, and here, Linden offers significant advantages. Being located away from the expensive commercial districts of Georgetown means that the usual costs like leases, rents, labour, and most significantly, power, are much lower than in the capital, providing any Linden outfit with an immediate edge. There are besides, other advantages: Region 10 has been given extensive incentives such as tax breaks and customs waivers to welcome and encourage investments, and other special incentives exist for export-generating entities. And, within the context of new and emerging global geological realities, Linden, in Region 10, situated in a geographically stable environment, is a haven safely removed from the threats of natural disasters that haunt the coastlands.

The vast majority of pieces are made of gold though silver jewelry is resurging in popularity. Gemstones are also integral to many jewelry designs, the most widely used being diamonds, emeralds, rubies and sapphires, but escalating prices of these jewels over the last decade has led to more use of semi-precious stones and more economical use of the precious stones.

Gold & Silver Jewelry

Caratage is an indication of gold content, for example 18 carat or 18K. The common local description is in pennyweights (dwt), where 20 dwt = 1 oz of burnt raw (pure) 24K gold. Lower carats are achieved by the addition of alloys in varying ratios with 12K gold being 50% gold and correspondingly, 1oz raw gold will provide 40dwt of 12K gold. The margins are much higher in silver manufacturer as the raw material cost is less than 3% of the cost of gold. While a piece of silver jewelry will sell for only one-tenth the price of a corresponding piece in gold, its material cost is only one-fortieth, offering a much higher production margin. There is no typical ring or chain, the choice of pieces being completely whimsical. But for practical reasons of fashion and comfort, most rings are sold in the 3 to 4 dwt range for men and 1½ to 2 dwt for women. Based on the caratage these may retail for as much as \$100,000.

A note on the labour resources required:

The current state of the industry requires that operatives have a good standard of secondary education though formal academic qualifications are not required. More important is demonstrable ability in craft-related subjects, preferably with art, design or technology qualifications, some experience of woodworking or metalworking also being useful. While Linden has never been a significant player in the local jewelry trade, it has a trainable work force with a heritage of craft and industrial skills. And the absence of a pre-existing jewelry environment makes it easy to set up a new enterprise and establish a fresh atmosphere along modern mechanized lines.

Manufacturing Jewelers

A manufacturing jeweler should have artistic and creative abilities, good practical skills, and be good at craft subjects. Here, opportunities for adults are limited as a relevant full-time course is usually required before entering the trade, covering history of jewelry design, sales techniques, customer service and management.

Retail Jewelers

A retail jeweler should be confident, tactful and polite, be interested in jewelry and fashion, able to carry out financial transactions and handle change. Here adult entrants are valued for their maturity and can compete well with younger applicants.

Market Strategy

Several strategies could be implemented to establish a credible presence in the market for any new outfit. These may include:

- Selling from the factory location at retail / wholesale prices.
- Selling to retailers at wholesale prices.
- Seeking to establish export markets while competing on price.
- Establishing retail standards to the level of at least the standards in Georgetown.
- Offering other functional products like watches, clocks and silverware.

Worldwide, the typical sales analysis of a retailer selling a range of goods is as follows:

Item	% Sales	Item	% Sales
Rings	30%	Clocks & Watches	23%
Other Jewelry	25%	Silver and Silver plate	3 %
Repairs	9%	Crafts and Valuations	10 %

Most customers' concerns are usually about quality, value for money, reliability of supply and timely deliveries, it is important that the marketing effort assures the public that the business addresses these issues. Appropriate advertising and general marketing efforts will establish awareness in the entire Region 10 area.

PRODUCTION PROCESS AND TECHNOLOGY

Traditionally skilled goldsmiths employing craft skills and simple hand tools have made jewelry and even nowadays, worldwide, much is still made in basic workshops using manual metalworking skills and only limited use of machines. Increasingly, however, new mass production methods are being adopted incorporating precision engineering techniques like CAD (Computer Aided Design) and lasers capable of producing high-quality jewelry indistinguishable from traditionally hand made pieces. Any outfit should be built around a core of skilled craftsmen using modern equipment.

Good design is essential, and is especially crucial and significant as a basis for manufacturing mass-produced jewelry, since any design mistakes are very costly, both in terms of labour and tooling costs. Most good designers are craftsmen jewelers, who understand the materials and their limitations, and appreciate the functional problems. Necklaces, for example, must fall right and be comfortable to wear; earrings must not be too heavy; brooches must not tear flesh; and rings must not snag on material, and so on. A good designer must be aware of fashion trends and be able to predict what will be in vogue, for up to 2 years ahead.

There are three basic methods of making jewelry: (i) hand made, (ii) die stamping and jib assembly manufacture or (iii) casting, either whole or in components. Once a piece is made up, by whatever method, it is passed to a finisher for smoothing and polishing and finally, if required, to a setter to complete gem settings.

Jewelers do not restrict themselves to one particular method, and, depending on what is to be made, will use, for maximum efficiency, any of the three methods, in combination, to achieve desired quality within a price range.

Hand made jewelry

The raw material is first made up to the design by mounters using ready formed metals, in the form of sheets, wires, tubes and findings (ready made joints, catches and settings). The tools used are the traditional smith's: hammers, drills, punches, gravers and files and a heat source, nowadays a blowtorch. With these, mounters fashion and assemble the pieces of jewelry, which are then passed on to the finisher and setter.

Machine production

The basic method of mechanized production is for components to be cut and stamped with individual steel dies, which are manufactured for each component of each individual item of jewelry. As die manufacturing is an expensive operation it is cost-effective only where high numbers of the same item are being produced. Once the individual components are made, they are fitted on jigs for the final assembly process, which can be completed by semi-skilled operators. In high end/high volume operations, complex 'progression' die sets are used in which a strip of work-in-progress passes in stages through a single die and emerges in the final shape.

Casting

The process of "lost wax" casting (using wax replicas of an original piece and also known as investment casting) in use since 4000 B.C. lends itself easily to mass production, with the advantage of much lower capital costs. Sometimes, if making a complicated design or intricate piece of jewelry, it becomes necessary to solder up from a number of cast components. Even the solder needs to be in gold, silver or platinum alloy and must conform to assay requirements. Casting is resurging in popularity.

Techniques involved in production include:

Casting - making items from pre-shaped moulds

Die sinking and stamping - making a patterned die from which stampings can be made

Wire working - preparing twisted or coiled wire to produce a broken line or to give delicacy to an edge

Electro-plating - depositing a layer of precious metal on a base metal

Enameling - using molten enamels to form a glazed decorative surface

Chasing - creating a raised pattern on a metal surface

Engraving or carving - creating decorative patterns by cutting away metal from a surface

Assembly - soldering parts together, and in chain making, linking up chains for bracelets, necklaces and link fastenings.

Cleaning, polishing and colouring - removing stains caused by firing processes, excess solder, scratches and oil using acid baths.

Stone cutting - working with a gemstone to bring out its natural beauty

Mounting - making the mount of a piece of jewelry by drilling, doming and opening out holes so that the gems will fit securely

Stone setting - setting gems in the pre-shaped mount using small hand tools

The main categories of jewelry in common manufacture are:

Category	Demand/Production Ratio by Weight	Category	Demand/Production Ratio by Weight
Rings	35%	Earrings	30%
Bangles/Bracelets	5%	Pendants	5%
Necklaces/Chains	25%		

Jewelry Standards

Since gold is by far the most significant material used, it is useful to understand some of the issues of its usage. As stated earlier Caratage (K) is an indication of gold content, 24K being pure gold but unworkable (as sold by the Gold Board the gold is actually slightly less than 24K), 18 K is the upper practical limit of purity, 14K and 12K being more usual. Alternatively, the gold content can be described in terms of 'fineness', which is the gold content expressed in parts per thousand. The more usual description is in terms of pennyweights (dwt), where 20 dwt = 1 oz of burnt raw (pure) gold. The lower caratages are achieved by the addition of various alloys in straight ratios, according to the legal standards below:

22 carat - 22 parts gold to 2 parts alloy 91.67 % pure
18 carat - 18 parts gold to 6 parts alloy 75 % pure
14 carat - 14 parts gold to 10 parts alloy 58.3 % pure
12 carat - 12 parts gold to 12 parts alloy 50 % pure

Correspondingly, 1oz raw gold will provide 40dwt of 12K gold.

For comparison, the normal standards for alloy silver are:

Standard or Sterling Silver	92.5 % pure
Britannia Silver	95.84 % pure
800 Silver	80 % pure

Production of special items

Hollow bangles and earrings can be produced by forming carat gold strip into plain or textured tubes with twists, spirals and other shapes. These can then be shaped into circles and other shapes by wrapping it around dies. Often a base metal core is used around which the tube is formed and supported.

Generally end-fittings or findings may be soldered on to finish a piece of jewelry. Final decoration consists of polishing or texturing (e.g. by sand blasting) and may include diamond faceting to produce a decorative pattern of bright facets.

Electroforming

Electroforming of complex 3-dimensional shapes is a technique that is growing in popularity and offers jewelers unique design possibilities. Some companies specialize in electroformed designs. Controlling consistency and thickness as well as caratage is very important in a mass production situation where 50-75 pieces may be electroformed simultaneously and can be achieved by computer control of the plating bath. Generally electroformed articles will be around 100-150 microns thick or even up to 250 microns for large items. These processes are reserved for high volume production of several ounces per day.

Losses in manufacture and processing are inevitable and expensive and close checks must be kept on both metal and liquid materials and consumables. Typically, losses may be:

Polishing	3 %
Alloying	4 %
Casting	5 %
Sundry Losses	2 %

These losses are not absolute and may be minimized by various processes used to recover, as near as possible, every minute particle of scrap. A "skin" is normally hung below the work bench to catch fragments produced by hand processing and even the floor of the processing shop is carefully swept and all dust or particles retained for re-processing.

REQUIREMENTS FOR FACTORY SETUP

Some of the critical factors to be taken into account prior to setting up a factory are:

A. Location

For security reasons, production is best done in a well inhabited area that is neither remote nor isolated. Since much of the equipment is electrical, it is important also to locate where electrification is already in place. It may be necessary to rent a premises but a land lease may be required in order to set up operation. Appropriate fencing and security surveillance and security grillwork must be implemented. Besides these infrastructural arrangements, guard services must be contracted.

B. Building

A very simple building may suffice for an initial startup, the main consideration being the security of the equipment and secure connections to electrical supply. A space housing the production area, storage bond for raw materials, supplies and finished products and curing area will occupy approximately 37sq.m. (400sq.ft.) though 19sq.m. (200sq.ft.) is adequate as a minimum.

C. Ventilation

The location will need to be properly ventilated to avoid inhalation of dust and fumes from the processes. The design of the workspace should make provision for eliminating this condition.

D. Equipment

At the most basic level the Equipment required is:

1. A milling machine for preparing strips and wire from the raw gold
2. Moulding machines
3. Moulds in various sizes, shapes and designs. These are widely available for rings at \$140 each and for chains at \$140 each.
4. Torches and Gas sets for providing heat sources and soldering.
5. A wide variety of files for shaping and polishing
6. Bellows devices for use in the heating processes
7. Digital scales for determining weights and value of pieces of jewelry and raw material.
8. Solutions and acids for electroplating, alloying etc

As business grows a full complement of machinery and equipment may include most of the items appearing in Appendix 1.

ANNUAL FINANCIAL PROJECTIONS

Output: Gold jewelry: 10oz per week (cost \$800,000) 400dwt of 12K gold
 Silver jewelry: 15 oz per week (cost \$30,000) 300dwt

Selling Price: Gold: 12K - \$4,800 per dwt. 14K - \$5,800 per dwt.
 Silver: \$1,200 (min) per dwt.

Workweek: 5 days (unskilled labour typically works 8 hr/day, 6 day/week)

Work year: 40 weeks, assuming down time due to material shortage, etc.

These computations are realistic for a startup entity. The value of the material is never lost and can easily be converted back into liquid cash. It is generally accepted that profit margins for manufacturing jewelers are high, reflecting the costs of design and manufacture and net margins of 25% are normal. The precise rate of gross profit depends upon the product mix of goods but some typical gross profit rates are:

Low quality jewelry	23% to 33%
Medium quality jewelry	33% to 43%
High quality jewelry	43% plus

Revenues are essentially computable at standard rates by weight with minimal variations for workmanship. The sales figures are projected for the standard 12K gold retail values and 800 standard silver constant by dwt.

Significant raw material costs:

Gold	\$80,000 / oz. (troy weight)
Silver	\$ 2,000 / oz.
Alloy	\$ 1,000 / oz.

Investment		\$ 4,000,000
Year 1		
<i>Revenues less 15% processing losses</i>		\$77,504,000
<i>Expenditure</i>		\$42,747,720
Net Profit		\$34,756,000
<i>Breakeven Point</i>	<i>Period</i>	2.1 months
<i>Breakeven Point</i>	<i>Percentage</i>	17.29%
<i>Breakeven Point</i>	<i>Sales</i>	\$13,399,558

The major capital and operational items associated with this level of operations are:

Investment items

Land and Building initial site modifications	500,000
Plant and Machinery	3,000,000
Working capital for 2 months	500,000
Total capital investment	4,000,000
Receipts per annum	77,504,000
Cost of production per annum	35,482,720
Annual Fixed Cost	7,265,000
Profit per annum	34,756,000
Break Even point	17.29%
Net Annual Margin	44.84%

Machinery & Equipment

- 1 Digital scale
- 1 Milling machine
- Moulds for lost wax casting
- 1 Polishing machine
- 1 Electroplating machine
- 2 Torches and gas (for heating)
- 2 Bellows
- Assorted files, hammers, drills, punches, and gavels

Production Items

Raw Gold \$80,000 per oz. (troy weight)
Minimum level per week 10 oz
Material Investment in Raw Gold: \$800,000 per week.

Silver \$2,000 per oz. (troy weight)
Minimum level per week 15oz.
Material Investment in Silver: \$30,000 per week.

Alloy \$1,000 per oz. (troy weight)
Minimum level per week 25oz.
Material Investment in Alloy: \$25,000 per week.

Labour

- 1 Manager (Owner/Manager)
- 1 supervising goldsmith
- 4 semi-skilled jewelers-goldsmiths in training

Jewelers usually work 40 hours a week but overtime or part-time work is not unusual. Pay is based on the amount of production of finished material. Jewelers typically earn \$40,000 to \$60,000 per month.

Other Considerations

Rent or Lease of location may be required, Rent being an easier startup option.

Water supply requirements are minimal

The cost of commercial electricity supply is likely to be held constant at \$12 per kw/h

Transportation (in town) is by private enterprise mini-bus and taxi services.

Insurance for risk and fire etc is easily available from several companies.

Licenses and permits to operate as a jeweler require registering with the Guyana Gold Board and buying a minimum quantity of gold from the Board.

FINANCING SOURCES

The following are some of the funding sources from which a borrower may access financing for an operation of this nature, either singly or in combination.

- The Linden Economic Advancement Fund (LEAF) provides financing for Region 10 projects.
- Small Business Development Trust
- Institute of Private Enterprise Development
- National Bank of Industry and Commerce
- Citizens Bank

Appendix 1 – Additional Equipment and Supplies for Upscale Production and Retailing

Vision Aids

Eye Loupes
Eye Loupe Kits
Gem Instruments
Flexible Arm Magnifiers
Light Magnifiers
Microscopes

Bench Tools

Abrasives
Anvils
Bench Lamps
Bead Stringing Tools
Burrs
Castings
Drill Bits
Files
Flexible Shaft Machines
Stone Gauges & Measures
Gem Instruments
Glues and Solvents
Wire Wrapping Tools
Tweezers
Wax Supplies
Ring Cutters
Ring and Bangle Sizing
Ring Stretchers
Rolling Mills
Saw Blades/Frames
Counter Scales
Screwdrivers

Display Items

Carrying Cases
Cases
Chain Hooks
Display Sets
Earring Cards
Earring Card Racks
Earring Displays
Cast Pewter Displays
Gift Wrap Paper
Hands
Jewelry Rolls
Jewelry Organizers
Mirrors
Necklace Boards
Necklace Bust
Pendant Boards
Plastic Zip Bags
Price Tags (Arch Crown Tags)
Signs & Pricing Blocks
“Sold” Tags
Ring Clips
Ring Displays
Ring Inserts
Shopping Bags
T-Bars (chains, bangles)
Toe Ring Displays
Utility Tray Liners
Bracelet/Watch Pads
Earring Inserts
Flocked Compartments
Plastic & Gem Jars
U-Pins

Jewelry Cleaning

Ultrasonic Cleaners
Ionic Cleaners
Steamers
Ultrasonic Baskets
Cleaning Solutions
Cleaning Dips & Cloths

Jewelry Production

Detailed Analysis

	Fixed Costs	Variable Costs
Production costs:		
Direct materials		\$1,186.00
Direct labor		\$68.57
Indirect production costs electricity, fuel	\$150,000	\$5.35
Other expenses:		
Sales and Advertising expenses etc	\$600,000	\$3.57
Insurance of Equipment, Workers	\$1,200,000	
Rent or Lease of land or building	\$720,000	
Security Provisions	\$3,600,000	
General expenses:		
Office salaries	\$840,000	
Supplies	\$105,000	\$3.75
Miscellaneous	\$50,000	
Totals	\$7,265,000	\$1,267.24

Sales and Income data:		
Selling price per unit		\$2,768.00
Expected unit sales		28,000
Target operating income for the period		5,000,000
Cost of Production per annum Variable & Total	35,482,720	42,747,720

Results

Contribution margin per unit		\$1,500.76
Unit sales at break-even point		4,841
Dollar sales at break-even point		\$13,399,558
Dollar sales at expected level		\$77,504,000
Gross Annual Profit at expected level		\$34,756,280
Unit sales at target operating income		8,173
Dollar sales at target operating income		\$22,621,552
Break Even Percentage		17.29
Gross Annual Margin at expected level as a Percentage		44.84
Break Even Period in months		2.1

Yields, Costs etc

Wages / Salary 1x 12000/wk + 4x 9000 wk + Mgr 70k/mth