Shuttle Cock

QUALITY AND STANDARDS	:	IS 415:1963
PRODUCTION CAPACITY	:	Qty : 1,20,000 Shuttle Cocks (per annum) Value: Rs. 45,00,000
MONTH AND YEAR OF PREPARATION	:	December, 2011.
PREPARED BY	:	Small Industries Service Institute 111/112, B.T. Road, Kolkata-35.

Introduction

Badminton is played almost throughout the world by both men and women and also by the Children. This game is also very popular in our country and is being patronised by the Government and Non-Government agencies and clubs etc. With the increase in popularity of the badminton, the demand for good quality shuttle cocks is also increasing. The life of each shuttle cock is generally short after it is used in the game. Hence, the consumption pattern is quite frequent. The shuttle cock is one of the simplest items of sports goods manufacture with lesser investment of capital and can be produced in tiny and small-scale sector.

Market Potential

There exists a very good market potential for shuttle cock in the country and abroad. However, most of the shuttle cocks manufactured are used internally with the exports being very negligible due to poor quality and high per unit cost of production compared to the international standards. There exists a huge demand for shuttle cocks in Kerala, Karnataka, Tamilnadu, Andhra Pradesh, Maharashtra, MP, Delhi, Haryana, Punjab, UP, North-Eastern States and also in other States. The demand for the shuttle cocks in West Bengal is also quite good during the winter season.

Besides Jaduberia, Midnapore (West Bengal), the other major concentration of the shuttle cock manufacturing units are in the Northern part of India specially in Jalandhar, Meerut and Delhi. Some units in Kolkata are also manufacturing this item. The shuttle cocks with the duck feathers is in greater demand than that of the hen feathers.

Basis and Presumptions

This project profile is prepared on the basis of the following presumptions :-

1. Working Hours per day — 8 hours
2. No. of shifts per day — 1 shift

3.	No. of working days per month	25 days
4.	Total working days	300 days
5.	Total working hours per year	2400 hours
6.	Working efficiency	75% to 80%
7.	Time period for achieving the max Capacity utilisation	3 years after commencement of commercial run
8.	Labour charge	As per the rates existing in the locality
9.	Margin Money	25% of capital investment
10.	Rate of interest on Capital	15%

11. All the rates and estimates have been provided on the basis of the prevailing market price.
12. It is envisaged that very good quality shuttle cocks of high standard would be produced
13. Pay back period 2½ year (approx.)

IMPLEMENTATION SCHEDULE

The implementation schedule of the project has been taken to be around one year. The tentative break up of activities with approximate time required for each activity is shown below:

Sl. No.	*Activities*	*Period (in months)*
1.	Preparation of Project Report Trade licence etc.	1
2.	SSI provisional registration, clearance from pollution Control Board etc.	1
3.	Taking loans from Banks/Financial Institutions	2 to 4
4.	Procurement of land/Building, Plant and machinery and its installation and electrification etc.	1 to 2
5.	Trial run, sampling, securing orders from customers etc.	2 to 3
6.	Recruitment, Commencement of commercial Production etc.	1

TECHNICAL ASPECTS

Process of Manufacture

The process of manufacture of the shuttle cock is very simple. The white duck feathers are generally used for the production of the shuttle cock. Sometimes hen feathers are also used for the cheaper variety of shuttle cocks.

The feathers are first of all sorted out for selection of good variety of feathers. Then the feathers are washed with detergent for 30 to 60 minutes. Then, they are treated with the ultramarine blue like robin blue or Ujala for giving the brightening effect. The washed feathers are then properly dried and cut to 3" size with the help of the scissors. The feathers are then rounded off and pruned at the top.

Then good quality cork bottom are taken. Altogether 16 nos. of bores are

made on the flat surface of the wood cork with the help of cork boring machine. The feathers are then inserted into such bore and fixed with glue. Then 16 feathers thus inserted into the cork are knought with the Cotton thread. Gelatine is then smeared round over the knoughted thread. Then silk or cotton ribbon is attached at the Junction of the cork and feathers at the base of the shuttle cock. A brand sticker is also put round the cork and attached with the glue at base middle of the cork of the shuttle cock.

Finally, the shuttle cocks are weighed on a balance and the weight is adjusted with the help of the small steel pins. The shuttle cocks used for indoor games should have a weight range of 70 or 72 or 74 grains and those for the outdoor games 82 or 84 or 86 grains.

The shuttle cocks are then packed into the cylindrical card boxes fitted with the card board or metal lids with ten shuttle cocks in each box generally called in the trade as one roll. The shuttle cocks are then despatched for marketing.

Quality Control and Standards

The BIS has recommended standard for manufacturing the shuttle cock. It is quite desirable that one should study this standard specification before venturing into this project. Besides the BIS specification, the customers also lay down their own quality standards regarding the quality of feathers, cork, adhesives etc. and the quality standard of the ultimate product.

Production Capacity

Production Volume (per month):

1000 Rolls (Each roll contains ten pieces of shuttle cocks).

Production Volume (per annum).

12000 rolls.

Turnover (per annum).

12000 x 375 = 4500000

Motive Power 1 HP.

Pollution Control

There is no pollution hazard from this type of industry either in air or in water. Hence, there is no need of taking any pollution control measures.

Energy Conservation

The scope for energy conservation in the shuttle cock manufacturing industry is very little, since most of the operations are carried out manually except few operations like boring etc. However, the workers and staff members should be trained properly to make optimum use of power like fuel, electricity etc. to save energy.

FINANCIAL ASPECTS

A. Fixed Capital

(i) Land and Building	
Rented Factory Building for office and Factory shed (1500sq.ft.) (per month)	4000

(ii) Machinery and Equipments

Sl. No.	Description	Quantity	Amount (Rs.)
1.	Drill machine for boring the cork size: ¼ with 0.5 HP motor	1 no.	7,500
2.	Hand Press Double scissors feather cutting machine	2 nos.	10,000
3.	Weighing balance	1 no.	10,000
4.	Tools and equipment	L.S.	3,000
5.	Furniture		20,000
	Total		50,500

(iii) Pre-operative Expenses Rs. 10,000

Total Fixed Capital
(ii + iii) (50,500+10,000) = Rs. 60,500

B. Working Capital (per month)

(i) Personnel (per month)

Sl. No.	Designation	Nos.	Salary (Rs.)	Total (Rs.)
	a) Administration			
1.	Manager-cum-supervisor	1	10000	10000
2.	Accountant-cum-clerical Staff	1	6000	6000
3.	Store Keeper	1	5000	5000
4.	Peon	1	3500	3500
5.	Watchman	1	3500	3500
		Total		28000
	Add: perquisites @ 20%			5600
		Total		33600
	b) Technical			
1.	Skilled Workers	10	5500	55000
2.	Unskilled Workers	4	3500	14000
		Total		69,000
	Add perquisites @ 20%			13,800
		Total		82,800
	Total Salary and wages (a+b)			116400
	Total No. of staff = 5 + 14 = 19 Nos.			

(ii) Raw Material (per month)

(For 1000 nos. of shuttle cocks)

Sl. No.	Raw Materials	Qty.	Rate (Rs.)	Total (Rs.) Approx.
1.	White Duck Feathers	16000 feathers	500 per 1000 feathers	8,000
2.	Cork Bottom 1"x1"	1000 corks	450 per gross	3200
3.	White sheep skins crust for bottom cap	8 sq.ft.	100 per sq.ft.	800
4.	Glue, Gelatin, Cotton thread, robin blue, detergent etc.	L.S.	-	600
5.	Cylindrical packing box	1000 Nos.	6.00 per box	6,000
			Total	18,600
	So, total monthly raw-material cost for 10000 shuttle Cocks equivalent to 1000 Roll 10 x 18600			1,86,000

(iii) Utilities (per month)	(Rs.)
Power	1000
Water	300
Total	1300

(iv) Other Contingent Expenses (per month)		(Rs.)
a.	Rent	4,000
b.	Stationery and postage	1,000
c.	Telephone	1,000
d.	Repairs and maintenance	500
e.	Consumable stores	500
f.	Selling expenses	2,000
g.	Insurance	1,000
h.	Taxes	1,000
i.	Miscellaneous expenses	2,500
	Total	13,500

(v) Total Working Capital (per month)
(i+ii+iii+iv) Rs. 3,17,200

(vi) Total Working Capital (for 3 month)

3,17,200 x 3 = Rs. 9,51,600

C. Total Capital Investment

Fixed Capital		Rs. 6 0,500
Working capital for	3 months	Rs. 9,51,600
	Total	Rs. 10,12,100

MACHINERY UTILISATION

It is envisaged that the working efficiency of the Machinery would be around 75% to 80%.

FINANCIAL ANALYSIS

(1) Cost of Production (per annum)	(Rs.)
1. Total recurring cost	3,80,6400
2. Depreciation on Machinery and equipment @ 10%	3050
3. Depreciation on furniture @ 20%	4000
4. Interest on Capital Investment @ 15%	15,1815
Total	39,61,265

(2) Turnover (per annum)	(Rs.)
Sale of 12000 rolls of shuttle cocks i.e. 12000x10 = 1,20,000 shuttle cocks (per year) @ Rs.375 per roll	45,00000

(3) Net Profit (per annum)= (2) - (1) 5,38,735

(4) Net Profit on Sales

$$= \frac{5,38,735 \times 100}{4500000}$$

$$= 11.97\%$$

(5) Rate of Return

$$= \frac{\text{Net profit} \times 100}{\text{Total Investment}}$$

$$= \frac{5,38,735 \times 100}{10,12,100}$$

$$= 53.23\%$$

(6) Break-even Point

(i) Fixed Cost (per year)	Amount (Rs.)
1. Depreciation	7050
2. Rent	48000
3. Interest on capital investment	151815
4. 40% of salary, wages and other contingent expenses	604320
5. Insurance	3,000
Total	814185

(ii) Net profit (per year) Rs.5,38,735

B.E.P.

$$= \frac{\text{Fixed Cost} \times 100}{\text{Net profit + Fixed Cost}} \qquad \frac{814185 \times 100}{538735 + 814185}$$

$$= 60.18\%$$

Addresses of Machinery and Equipment Suppliers

1. M/s. Turnwell Machine Tools
   15, Ganesh Ch. Avenue,
   Kolkata-700 013.
2. M/s. Turner and Tools,
   16, Ganesh C. Avenue,
   Kolkata-700 013.
3. M/s. Nandi and Co.
   125, Belilious Road,
   Howrah-1.
4. M/s. K.C. Verma
   Bastinov,
   Jalandhar-2.
5. M/s. Autar Engg. Works
   Bastinov,
   Jalandhar – 2.

Raw Material Suppliers

1. M/s. Ananda Shuttle Cock
   Bastinov,
   Jalandhar-2.
2. M/s. Charan Singh Mistri
   Behind Sansar Ashram,
   Basti Sheikh,
   Jalandhar.