

## STATEMENT OF CASE

### Nachiarkoil lamps popularly known as "Nachiarkoil Kuthuvilakku"

The lamps made for temples are artistically used in South India and are of many different kinds, the most characteristic being those is **Nachiarkoil Kuthuvilakku** in the form of a branching tree each branch ending in a small tray or bowl for the oil and the wick, or the simple upright stems support shallow bowls to take many wicks, the central pillar often terminating in a bird or "Prabhai", generally a picture of Hamsa or Swan, Lamps may also be made to be suspended by chains from the ceiling, the chains often being richly decorated and always excellent in workmanship and design. The common form of the temple lamp is in the form of a standing woman holding in her hands a shallow bowl to contain the oil and the wick.

The brass and bell- metal ware industry is one of the oldest surviving handicrafts of this Tanjore district. The most noted centres for this work are Kumbakonam and Nachiarkoil situated in Kumbakonam taluk of Tanjore district. The latter village is especially celebrated for its bell – metal koojas and its native lamp stands which are made hardly anywhere else.

#### Specification :

- **Kuthuvilakku** (lamp) usually consists of four parts, viz base (Keezh- bagam), stem (kandam), oil container (Thanguli ) and the apex or Prabai. The Thanguli or oil container consists of V shaped spouts to hold the wicks.
- These four parts are joined together with the help of screw threads.
- The central pillar often terminating in a bird or "Prabhai", generally a picture of Hamsa or Swan.
- Lamps may also be made to be suspended by chains from the ceiling, the chains often being richly decorated and always excellent in workmanship and design.
- Lamps also in the form of a branching tree each branch ending in a small tray or bowl for the oil and the wick.
- Kuthuvilakkus are manufactured in various sizes and also in the form of a standing woman holding in her hands a shallow bowl to contain the oil and the wick.
- They are used on religious and ceremonial occasions and are fashioned out of brass.

#### Description of Goods :

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Even to this day, we hear of Pathers of Nagercoil moving into Nachiarkoil to carry on their traditional craft, thanks to the miraculous properties of this vandal sand available on the river bed of the Cauvery.

An interesting legend regarding the origin of this village according to some of the aged villagers of Nachiarkoil is that 'Thirunaraiyur' was the ancient name for Nachiarkoil. During the reign of the Chola King Kochenganan, a famous temple was built in honour of the Goddess Vanchulavalli who blessed him and presented him with a sword to conduct his campaign against his enemies. This sword brought him victory after victory and his campaign was a complete success. The original temple was a Shiva temple and adjacent to this temple there was another temple where the presiding deity was Vishnu known locally as Srinivasaperumal. When Lord Srinivasaperumal fell in love with Vanchulavalli, Shiva who was the presiding deity of the temple gladly vacated his place and yielded it to Perumal who fulfilled his cherished desire of marrying the Goddess. Shiva in turn occupied the place originally held by Perumal, a few miles away from Nachiarkoil. After Her marriage the Goddess Vanchulavalli became the main deity of the temple and as she had the name of Nachiar, the temple came to be called as Nachiarkoil. The village accordingly got the name of this temple and henceforth was known as "Nachiarkoil".

A more popular legend regarding the etymology of the village is as follows :

According to the Sthalapurana of the temple, this village was originally called Thirunaraiyur. In this village which was formerly surrounded by dense forests, a hermit named Medhavi observed strict austerities and did penance in order to get Goddess Mahalakshmi as his daughter. His boon was granted when Mahalakshmi, the consort of Lord Vishnu was born in this world under a Vanchula tree adjacent to the ashram of the hermit. Because she was found under a Vanchula tree, the girl came to be known as Vanchulavalli, she grew up to be a beautiful maiden and Medhavi looked after her well. Lord Vishnu, finding a bachelor's life intolerable, came to the earth from his heavenly abode. He assumed the mortal form of a Brahmin, named himself as Vasudevan and accompanied by four other Brahmins started wandering on the earth. One day the disciples of the sage Medhavi met these Brahmins on the banks of the river Manimutharu. The former took the latter to the ashram of the hermit where they were entertained by Medhavi in grand style. Vasudevan happened to meet Vanchulavalli and fell in love with her. After a hearty meal, the hermit asked Vanchulavalli to fetch water for Vasudevan to wash his hands. While she was pouring water from a vessel, Vasudevan caught hold of her hands whereupon she called out to her father. Medhavi, seeing Vasudevan holding the hands of his daughter got angry and was about to curse Vasudevan. At this critical juncture, Vasudevan assumed his original form with a conch in the right hand and a chakra in the left. On seeing this, Medhavi blessed Vasudevan and gave his daughter in marriage to the latter. However, before the marriage could be consummated, Medhavi laid down three conditions which Vasudevan had to fulfil. First of it was that Vasudevan should not have another birth in future; secondly all creatures- men and beasts living in the village- should attain Moksha (salvation) after death; thirdly predominance should be given in all matters to his daughter Vanchulavalli Nachiar. Lord Vishnu in the human form of Vasudevan had no option but to agree to these conditions and after marriage, the village was named Nachiarkoil instead of Tirunaraiyur. From that day, in the temple, precedence is given only to Vanchulavalli Nachiar and not to Srinivasaperumal. This is clearly borne out by the fact that Srinivasaperumal is worshipped after her and even during various festivals the deity Nachiar is taken in the temple car preceding Lord Perumal.

**lamps (deepams), tumblers, bells (mani) etc.** are manufactured in bulk. Bell metal wares are still produced, but only in small quantities and on order, by a few expert craftsmen.

### Raw materials

#### • Metals:

The metals used are non- ferruginous as they do not have any admixture of iron.

**Copper:** The ore contains cuprous sulphide and copper pyrites. The principal characteristic of copper is its conducting capacity and its malleability. It is also ductile. It is rust-resistant and can be forged when hot or cold; but it cannot be welded. It is unsuitable for casting.

**Tin:** The ore exists as stannic oxide. It is mixed with coal and is heated in a reverberatory furnace using lime as flux. The molten metal is then run into a pig mould. It is a white and lustrous metal, soft, malleable and ductile capable of being beaten into very fine thin sheets of 1/1000, it is not affected by atmosphere and is acid – resistant which is what makes it important in the manufacture of household utensils used in daily life. It is a costly metal, a poor conductor of heat and electricity. In Nachiarkoil, in addition to bell-metal, it is used for making alloys such as solders. For easy flow of the liquid metal during box moulding some aluminium is also added to the tin.

**Zinc:** The ore exists in the form of carbonate or sulphide of zinc; it is roasted, vapourised and collected in a special vessel by means of distillation. It is a greyish white metal used primarily to prepare alloys.

**Aluminium:** The ore of aluminium is aluminium oxide. When mixed with other substances like clay, it is known as bauxite. The metal is extracted from its ore by electrolysis and then cast into ingots.

**Lead:** The ore exists in the form of galena or lead sulphide or lead carbonate. The ore is roasted, mixed with iron in a blast furnace. The resultant lead oxide is mixed with coke and lime and melted in a furnace. The molten metal is then drawn out. It is a bluish grey metal, malleable and ductile, pure lead is not used for casting.

Regarding other metals, merchants unable to get ingots purchase scrap and melt them as per their requirements. Craftsmen of Nachiarkoil purchase old brass ware from other merchants and hawkers who move from town to town and collect old and broken vessels in exchange for new ones and in turn sell to merchants in Nachiarkoil for cash. These merchants thus entirely depend on the street hawkers and so the supply position of these raw materials is unceasing

#### • Sand:

The next important raw material is sand. The different types of sand found around Nachiarkoil are considered to be the best in the whole of South India It grips the article firmly while moulding and casting. There is the Karuman sand which is ideally suited for wax moulding. This

the effects of heat and stickiness. In this process the wax turns into a yellowish white mass which is known as prepared wax.

- **Cowdung Cakes:**

Cowdung cakes are used in almost all the workshops as fuel while melting the wax out of the moulds and to heat the latter preparatory to pouring the molten metal into them. These cowdung cakes are prepared locally and are available in every household.

- **Parting Sand:**

Parting sand is made by powdering the bricks and sieving the powder on to a cloth to make it smooth. It is filled in a cloth bag and shaken over the pattern moulds to prevent the sand from adhering to it when the top and bottom bores are eventually separated. Sometimes ash is also used instead of parting sand,

- **Preparation of Shellac**

Beeswax and white dammar are mixed in equal proportions until it reaches a dough like consistency. A small quantity of red brick powder and shellac, i.e. a mixture of lac and liquor ammonia is poured on it and mixed well with both hands, formed into circular balls and attached to the face of the burnishing lathe.

- **Tools:**

The following are the tools used in all workshops engaged in the production of brass and bell- metal works.

1. Files
2. Hacksaws
3. Drills
4. Tapes
5. Dies
6. Pliers
7. Calipers
8. Vices
9. Hammers
10. Tongs
11. Chisels
12. Burnishing lathes

A brief description and their functions are as follows:

ground and tempered. These hammers have a wooden handle. They are used for hammering the chisels, punches etc,

**Tongs:** They are made of mild tempered steel and are used to lift the heated crucibles from the furnace and to pour the liquid metal into the mould.

**Chisels:** They are used for chipping metals. They are made of cast steel with octagonal shape, the length of each chisel varying from 4' to 6'. The cutting edge is hardened and tempered.

## MANUFACTURING PROCESS

### Stage -I

Vandal sand is dug out of the Cauvery river bed and brought by cart loads to the workshop. This sand is of light yellow colour and contains a certain percent age of moisture and so it has to be dried to drive out moisture and sieved well to remove small stones, pebbles and other impurities. This cleaning and drying takes two days after which water is added to the sand and it is kneaded with both hands. This breaks up any clots and the sand turns out soft and smooth. After the vandal sand is thus treated, the moulds have to be prepared. Patterns of round and irregular shapes of articles are made out of brass. If the articles are very large, the patterns are made in aluminium. If circular shaped articles are to be prepared by wax moulding, they are done by turning on electrically operated metal turning lathes. With the help of these patterns, the articles are cast in vandal sand by the process of box moulding. In the case of articles like Kuthuvilakku (pedestal oil lamp), three different moulds are utilised and three different parts are separately cast before they are joined together. In the case of small articles like Kuthuvilakku (pedestal oil lamp), three different moulds are utilised and three different parts are separately cast before they are joined together. In the case of small articles which are simple in design, loam moulding and casting is utilised. The surface of this mould has to be smooth and pinholes and depressions, if any are visible, should be filled up. The moulds have to be handled with great care. If the articles are hollow, the wax moulding process is adopted. The pattern is turned on electrically operated metal turning lathes. Then it is cut into two equal and vertically hollow pieces. With the help of this mould and an inner core the hollow articles are manufactured. The inner core is made out of 50% clay and 50% river sand and then pressed with the prepared mud into two halves of the mould along with an iron rod wrapped in cloth and fixed down the centre in order to provide reinforcement for the inner clay core. That will be required when the two sand- filled halves are pressed together to form one solid block that will then be referred to as the inner clay core.

### Stage-II

#### Preparation of mould for casting

Before describing the process in detail, a brief description of intricacies of the sand box method, lost wax (cire perdue) and loam moulding process is to be understood. Vandal sand thoroughly sieved to remove impurities is mixed with a small quantity of water, kneaded and filled into the appropriate box before casting. For bell-metal articles, manufactured according to the lost wax hollow casting method, a mixture of vandal sand, savuttu sand of light grey colour and clay sand in the proportion of 4:4:1 is prepared. Liquid cowdung, generously diluted with water, is added to this sand mixture and the resultant product used for the wax mould. The addition of cowdung facilitates the application of heat and prevents the wax mould from cracking. In the case of loam moulding, vandal sand and jute fibre are mixed in the ration of 9:1.

The following table indicates the temperature required to melt the different metals.

Name of the metal	Required temperature to melt	Time to melt (Minutes)
Copper	1996°F	120
Tin	442°F	30
Zinc	773°F	45
Brass	1700°F to 1900°F	105

#### Stage - V

##### Joining the Parts of the articles

If two or three casting have been made corresponding to the parts of article to be manufacture, these parts are connected together by either providing grooves on the connecting surfaces or by soldering. Superfluous appendages are removed and the edges to be joined are smoothed with steel files. The solder is prepared by mixing 50% lead. And 50% tin. The two parts to be connected are subjected to slight heat and are joined together with the help of the solder.

#### Stage - VI

##### Shaping and Casting

Earlier days the local artisans of Nachiarkoil used manually operated wooden cart wheels to turn brass and bell- metal articles. However, now artisans have now substituted the archaic wooden wheel with an electrically operated burnishing lathe. This improved contrivance permits speed, ease of movement and better turnover besides cutting down the number of persons required for the operation by one.

Although castings are thoroughly examined and any defects notice, such as holes etc. are rectified, many of these defects are not visible till the articles are turned on the lathe. These defects, such as pin holes which come to light are rectified by gently nicking the metal. The surrounding parts of the pin holes which come to light are rectified by gently nicking the metal. The surrounding parts of the pin holes which come to light are rectified by gently beating the metal with a small stretching hammer until the hole disappears.

#### Stage - VII

##### Engraving

Engraving is done with the help of engraving tools. This depends upon the specific design is to be intagliated on the article. At the outset, the required design is carefully drawn on a sheet of paper. The master craftsman- he has to be one of this work-minutely studies the design which is sometimes kept by his side and then marks its outline on the surface of the article with a sharp steel needle. For ornamental sheet work the design is drawn on the brass sheet by placing the carbon paper over it and tracing it with a pencil. Then the outlines are firmly stroked on the brass sheet with a pencil and finally tapped with various chisels. He now proceeds to do the engraving work. The design to be engraved is pressed on a shellac plaster prepared on a wooden plank. The engraving tool is held in position with the help of three fingers of the hand, the thumb, the first and index fingers and guided over the surface to conform to the design. Pressure on the ornamenting chisel is regulated with a small hammer according to whether the cuts have to be on the surface or have to go deeper as per the design or the desire of the

use to remove the sand from the mouth of the runner in the lower box to allow the molten metal to be poured into it more expeditiously when casting takes place. The runner is now

slowly and carefully pulled out with the help of pliers and the surrounding edges are levelled. The plank and the bottom box is then turned over, the plank removed and the upper or top moulding box is placed over it: parting sand is again strewn and the box packed with the moulding sand and leveled.

The most difficult process where the artisan has to display all his skill. The two boxes have to be separated very carefully in order to remove the pattern mould. The artisan holds the lower box firmly between his feet and bending, lifts the top box gently and carefully so that the packed sand is not disturbed. After the removal of the top box, he directs his attention to the lower sand box where the metal pattern mould was placed and he now removes it by tapping through a small light ruler over it. Needless to say this also a difficult process calling for a great deal of patience and skill. Now it is examined carefully to see whether the passage way created by the runner for carrying the molten metal has been blocked or is clear. After satisfying himself as to this the artisan again places the top box over the bottom box and presses it down firmly. The molten brass metal which has been heated in crucibles is ladled into these boxes through their runner within eight hours of the preparation of the moulds. After the metal has been allowed to cool for five to ten minutes the boxes are separated and the rough casting of the base of the pedestal oil lamp is removed for further operations. It is to be explained that the molten metal must be poured into these boxes within eight hours of the preparation of these impression made by the pattern, as otherwise the sand will become dry; the moulded area will expand as a result and instead of a perfectly cast brass object a monstrosity of ore may emerge.

#### **Stem (Kandam):**

The box moulds having been prepared for the base of the Kuthuvilakku, the artisan now turns his attention to the preparation of its vertical stem. The two hollow halves of the metal pattern moulds used for producing it being made up of a long slender pattern of curvilinear shapes, the moulding box for registering its impression will automatically be rectangular in shape. As before, the bottom box is placed over a plank. Now as has just been intimated, the pattern mould stem consists of two halves, but before the sand box casting can proceed further, a number of processes connected with the production of an inner clay core by means of these two halves of the pattern mould must first be undertaken by the craftsmen.

This inner core is prepared out of clay and rivers and mixed in equal proportions and mud formed into a paste by the addition of some water. The craftsman now takes a long thin iron rod, 1/8" in diameter and winds a thin piece of cloth around it, so that when the rod is removed after casting. It should be easy to pull out. The two half portions of the brass pattern mould of the oil lamp's stem are now laid side by side and parting sand is sprinkled over their cavities. The clay and river sand mixture is pressed into these cavities which are then leveled even to their rim by means of an iron leveler. The iron rod covered with cloth, having first been rubbed with clay, is then laid down the centre of one of the half portions of the pattern mould of the stem, filled earlier with clay and pressed down into it. The other half of the stem's pattern mould is now placed over the first half and fixed into position by tapping it gently with a wooden hammer. Two hours later the stems' pattern mould is once again tapped with a wooden hammer and the

### Top or Apex Flag (Prabai):

A rectangular plank is placed on the ground. The bottom box is placed over it and parting sand contained in a loosely meshed white cotton bag is shaken over the plank. The box is filled with vandal sand, rammed and leveled with an iron ruler. The box is now turned over and the pattern

mould of the Prabai (decorative handle of the pedestal oil lamp referred to as the flag) is thrust into this sand upto half of its length by slowly tapping it in with a hammer. The sand is once again leveled. The upper box is now placed over the bottom box and parting sand shaken over it. The runner is fixed in position, the vandal sand is filled and leveled in the upper box, the runner is removed and the upper box carefully separated from the lower box. The pattern mould is pulled out with great care and again the upper box is removed from the bottom box. The main difference between the moulding of this part of the Kuthuvilakku as contrasted with its other part is that here the pattern mould is put into the bottom box so that half of its length protrudes out and the placing of the upper box over it allows the other half of the pattern mould to be formed in the latter. The casting is done as described before.

The brass castings are filed to remove casting blemishes and then turned on the turning lathe to acquire a more refined shape. These parts are screwed together by means of screw threads cut at the ends after which they are cleaned and polished and the Kuthuvilakku is now ready to be sent to the bazaar.

An additional part known as the Cupasam, is produced by the sand box moulding process. This is a small, round cup shaped form which is fitted between and swelling gracefully up from the stem to the Thaguli (wick holder) and thus enhancing the pleasing effect of the Kuthuvilakku as a whole. In short, it serves as a decorative base of the Thaguli.

Ref. The proof of origin details provided herewith are obtained from the Census of India 1961 publication of the Govt. of Madras, Part VII - A(ix), Brass and Bell Metal ware of Nachiarkoil by M/s. P. K. Nambiar, P. Murari, and Ruth Reeves published in 1966.

### Uniqueness :

- a) Raw material: The different types of sandy soil found around Nachiarkoil are considered to be the best in the whole of South India. It grips the article firmly while moulding and casting. There is the Karuman sand which is ideally suited for wax moulding. This sand is light red in colour and is found to the east of the village. Moulds for manufacturing big vessels are prepared out of this sand. The multi - purpose sand called vandal sand fetched from the Cauvery river-bed, one mile from Nachiarkoil, of light brown colour is the chief attraction. To prepare moulds out of this Vandal sand, clay powder is added and the mixture used for box moulds. Another type of sand called Savuttu sand is of light grey colour and is used in wax moulding. This sand is found in the tanks to the south and east of the village.



Tamil Nadu Handicrafts Development Corporation a state govt. undertaking chiefly constituted as the apex body in charge of the handicrafts sector in the state of Tamil Nadu was setup in 1973 and registered under (S.25) the Companies Act, 1956 on 26.07.1973 with the share capital participation from the Government of Tamil Nadu and the Govt. of India. The

Corporation is running its business activities under the trade name 'Poompuhar' having its regd. Office at No.759, Anna Salai, Chennai - 600002.

The objectives and functions of Poompuhar are:

- A. To undertake the marketing of handicrafts produced by the artisans of Tamil Nadu
- B. To impart training to artisans to upgrade their skills
- C. To improve the productivity and the quality of the products; at the same time to reduce drudgery and remove occupational hazards
- D. To encourage new innovative designs
- E. To provide socio-economic security for craftsmen.

Accordingly Poompuhar has ever since been supporting the artisans involved in various handicrafts and in assisting them with their livelihood, business and trade.