

A Life of Experimentation: An insight into Cheong Soo Pieng's painting materials and techniques

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Introduction

Mr Cheong was a very daring artist, he would try anything! [...] He was very open-minded, the only one with this mind set; other artists of his time were more conservative.

(Tay N S, pers. comm., 20 July 2010)

This is how Mr Tay Nam Seng, owner of Straits Commercial Art Co¹ - the first and sole supplier of Western art materials in Singapore from 1947 until the early 1980s - remembers Cheong Soo Pieng. When going into Mr Tay's shop, Soo Pieng would always ask '*Anything new?*'².

Cheong Soo Pieng was a very versatile and daring artist indeed. He did not only go through major stylistic changes throughout his career, but he also continuously experimented with different materials, which go hand in hand with the evolution of his style and technique.

Art materials are the building blocks that give shape to an artwork and therefore their study is fundamental to the understanding of an artist's oeuvre. Soo Pieng went beyond the use of art materials to incorporate all kinds of unconventional objects in his art.

This essay presents the findings from preliminary research into Soo Pieng's materials and painting practice, carried out at the Heritage Conservation Centre (HCC) during the preparation for the exhibition *Cheong Soo Pieng: Bridging Worlds* at The National Art Gallery of Singapore. The identification of materials used by Soo Pieng was undertaken through (1) material evidence from the technical examination of the 49 paintings by Cheong Soo Pieng in the National Heritage Board (NHB) collection, including oil, mixed media and metal reliefs, compiled in the form of a database³; and (2) documentary and anecdotal evidence from interviews with Ms Cheong Leng Guat, Cheong Soo Pieng's daughter; and with Mr Tay Nam Seng, owner of Straits Commercial. Due to its subjective nature, the latter information has been used with care and always corroborated with visual evidence before reaching any conclusions. It should be noted that Cheong Soo Pieng's large body of work comprising his works on paper and sculptures is not included in this study, as it requires a different field of expertise.

Since the evolution of Soo Pieng's painting materials has been linked to his stylistic changes, the findings from this study have been presented in a chronological way.

1950s: The early years

The late 1940s and 1950s were years when materials were scarce, but also of early experimentation. Cheong Soo Pieng arrived in Singapore in 1946 and started teaching at Nanyang Academy of Fine Arts as a lecturer in Western art in 1947. With World War Two having just come to an end, his early years in Singapore would have corresponded with a downturn in the economy, which impacted on the availability of art materials, especially those imported from the West. However, 1947 was also

the year when Straits Commercial, the first supplier of Western art materials in Singapore, was established, and therefore oil paints would have become more readily available. Thus, as highlighted by the Singapore Art Society back in 1956, it was in Singapore that Soo Pieng plunged into painting with oil and he acquired mastery of this medium⁴.

During this period Cheong Soo Pieng went onto two of his most influential trips: Bali and Sarawak. Although these trips would greatly influence the themes in his paintings, there is no evidence in the NHB collection of any local materials brought from his travels such as paints or fabrics that he would use in his paintings. His use of materials appears to be limited to those available in Singapore, mainly those imported from the West by Straits Commercial, but also incorporating some locally available materials from non-art suppliers.

Painting Supports

Previous research has shown that 'prepared stretchers and canvas were rare in the 1950s, as well as extremely expensive and limited to certain numbers of sizes [...]'⁵. In the 1950s Cheong Soo Pieng adopted Masonite⁶ as a new support for his paintings. Masonite was a cheap alternative to canvas and wood, hence many artists and art students used it as a painting support. However, anecdotal evidence suggests that Soo Pieng 'did not like to use Masonite because the paintings could not easily be framed'⁷.

In his oil paintings from the 1950s, a large degree of experimentation can already be observed in his use of Masonite as a painting support. Some works are painted on the smooth side of Masonite, giving the work a flat surface similar to that of paintings on wooden panel, while others are painted on the coarse side of the Masonite board, creating an appearance similar to the texture of a woven canvas. In other works, such as *Harbour* (1956) *Still Life* (1957), and *Untitled (3 Malay Women and Boy)*(1959), instead of painting directly on the Masonite board, Soo Pieng glued a piece of thick paper or a piece of cardboard onto the Masonite and painted over it (Fig. 1). Furthermore, many other works such as *Three Goats* (1959) and *Landscape* (1960) are painted on canvas laid on Masonite. When these latter works were initially examined, it was presumed that the canvas had been glued to a Masonite board in a later restoration. This process, known as *marouflage*⁸, was a common procedure in early restorations. However, upon closer examination, some traces of original paint were found on the sides of the Masonite board, meaning that the work was painted while already mounted on it, and therefore the Masonite board was applied by the artist. This finding has important implications for future conservation treatments, as sometimes deteriorated marouflaged supports are removed if they are believed to be not original to the work; while if the support was applied by the artist, efforts would be made to retain it.

Although not as frequently, Cheong Soo Pieng also used canvas supports during this period. *Chinese Girl* (1955) is painted on a linen canvas, while *Untitled (Boat and House)*(1955) is painted on cotton canvas.

Painting techniques

Cheong Soo Pieng's works from the early 1950s are characterized by the use of bright colours in pure unmixed form with various degrees of impasto. He used a technique of direct application of thick

paint in islands or patches of paint applied over white priming, leaving some areas unpainted, thus making use of the priming as a white background colour. He also used the technique of scrapping off paint while still wet to reveal white underneath for marking contours and thinner lines such as those in *Malay Woman* (Fig. 2).



Fig 1: Corner of *Untitled (3 Malay Women and Boy)* showing paper pasted on Masonite board and thick layers of paint



Fig 2: Scrapping of wet paint to create outlines in *Malay Woman*

In the second half of the 1950s his works become much more textured and an increase in the layers of paint can be noticed. Paint is applied in many successive layers of paint, with a combination of brush and palette knife application. From paint samples taken from *Three Goats* (1959) and *Landscape* (1960) the large number of paint layers can be seen in cross sections⁹ (Figs. 3 & 4). These samples show many layers of different thickness, while some of the thicker layers appear to be built up by application of many thinner layers.



Fig 3: Cross section of pink sample of paint from *Landscape*, showing succession of many layers of paint underneath



Fig. 4: Cross section of white sample of paint from *Three goats*, showing another 3 layers of paint underneath 2 layers of white

When painting directly on Masonite, Soo Pieng would have applied a priming layer himself. According to Mr Tay, Straits Commercial did not sell any readymade priming in the 1950s or 1960s. Artists would either buy pre-primed canvases, or make the priming themselves by mixing bone glue (from carpenter shops), zinc white and linseed oil. Bone glue was used as a replacement for rabbit skin glue as the latter was very expensive¹⁰.

Technical examination of Cheong Soo Pieng paintings in other collections by Tse has revealed that some of his works appear to have a filling material underneath the paint used to create texture¹¹. Chen Wen Hsi, a colleague and fellow artist of Cheong Soo Pieng, was known to promote and use a linseed oil based white filling material which he obtained from a local hardware shop, for ground layers which enabled the creation of texture. It has been anecdotally noted that both Chen Wen Hsi and Cheong Soo Pieng used this white filling material from the hardware shop for their ground layers and to create texture¹².

Finally, many of Soo Pieng's works from the 1950 presented varnishes that had badly discoloured and most of them have been removed in previous conservation treatments. This suggests that he might have used a varnish of a natural resin base to coat his paintings in the early days.

Early 1960s: The Western Influence and Materials post-Europe trip

Cheong Soo Pieng travelled to Europe in late 1961, returning to Singapore in mid 1963. Along with stylistic changes, Soo Pieng's materials also changed after his experience abroad. His oil paintings held by NHB from the 5 years following his trip present a series of similarities in materials, as well as a stronger adherence to Western art conventions.

Canvas Supports

After his trip to the United Kingdom and other European countries, Cheong Soo Pieng started consistently using linen canvas as a support. His paintings also became larger in size. This might be associated with the increased availability of linen canvases in Singapore. In the 1960s Straits Commercial increased their imports of rolls of pre-primed linen canvases from Belgium¹³.

All the paintings examined from this period were on pre-primed linen canvas and would therefore most likely contain an oil based priming, as this was the common priming used by colourmen at the time. According to Mr Tay, Belgium-imported canvas had a rabbit skin glue size and oil priming¹⁴. Most canvas examined also presented the same thread count (15 x 14 thread per cm), suggesting that they were from the same batch of canvas.

It should be noted that as linen was imported from abroad it was, as still is, more expensive than other canvas supports such as cotton, which could be obtained from some of the local Chinese upholstery shops. Therefore, as it has been noted by Tse, the identification of linen as a painting support in Southeast Asia suggests a degree of commitment to Western practice¹⁵.

All but one of Soo Pieng paintings on canvas in the NHB collection are stretched on strainers¹⁶. Stretchers were not available at the time in Singapore, and continue to be a rare occurrence today. Soo Pieng would buy lengths of canvas from Straits Commercial and would purchase strainers from a local frame maker. His daughter often assisted him in the stretching of canvas in his studio.

According to Ms Cheong, 'he always purchased his stretchers from *Hung Wah Frame Makers* in Tiong Bahru¹⁷, who would make them according to his specifications. Sometimes they would take up to a month to make, so he used to order a few in advance'¹⁸. This was corroborated by the finding of a frame maker stamp from this business on the back of the stretcher board for the later work 'Resting' (Fig. 5). All of the paintings on canvas from the 1960s present a very standard type of strainer with corner braces, meaning that they were probably made by the same framer (Fig. 6).



Fig. 5: *Hung Wah Frame Makers* stamp found on back of *Resting* (1972)



Fig. 6: Back of *Rome* showing type of strainer and pre-primed linen canvas commonly found in paintings from early 1960s

The only painting in the NHB collection that is mounted on a stretcher and has expandable corners is *A Vision*, which was painted in 1962 during Soo Pieng's stay in the UK. This is in line with common Western art practice of the time, where paintings were usually mounted on stretchers which would allow re-stretching when canvas became slack with changes of humidity. Therefore this stretcher would have been purchased in the UK.

Finally, it appears that Soo Pieng did not completely abandon Masonite during this period. The painting *Two Sisters* has been painted on a pre-primed linen canvas laid on a Masonite board by the artist.

Painting technique

Soo Pieng's oil paintings from the early 1960s also show a significant change in technique. He started using a thinner and more diluted paint. Slight impasto can be observed in central areas, with thinner paint in the background. According to Ms Cheong, 'he used turpentine to dilute his paint and he would build up the painting's background with 4-5 layers of paint. He would leave each layer to dry until the next day before applying next one [...]. He liked to use raw umber for the outline, as this colour dried very fast'¹⁹. Using turpentine to dilute paint is a common method in Singapore, which has been passed down by older artists and is still practised today. Adding turpentine makes the paint dry faster while reducing the amount of oil paint needed and therefore the cost of materials. Cheong Soo Pieng's use of turpentine to dilute his paint can also be inferred from the cracks that have formed in many of his paintings in the areas with thinner paint²⁰. Ms Cheong also mentioned that 'in the 1960s he used a "gelly" form varnish that came in a tube and took a long time to dry'²¹. This description corresponds to the WinGel medium sold at the time²². It is therefore likely that he also used this medium to dilute his oil paint while maintaining its viscosity.

Many of his oil paintings from the early 1960s still retain their original varnishes. Ultraviolet examination of all the paintings in the NHB collection from this time suggests that he continued to use a natural resin varnish for coating his paintings²³. His daughter would often help him to varnish his paintings. Anecdotal evidence suggests that 'he always varnished paintings quite glossy so that people could not take good photos to copy them!'²⁴.

After returning from his trip, a newspaper article announced that '[Soo Pieng]now paints in Violeen, a tough synthetic material which is used in dress making. He finds this material most suitable to give expression to his new experiment in abstract painting'²⁵. At the point of writing, it was not possible to determine what type of medium this article was referring to, and whether it was referring to a painting medium or to a new type of support²⁶.

Metal Reliefs: experimentation with found objects

In the late 1960s and early 1970s, Cheong Soo Pieng went through his major period of experimentation. This was also a time when many new materials had been introduced in the art market, such as synthetic glues and resins, acrylic paints, etc.

During this time he produced a whole series of metal relief works, where he incorporated all kinds of unconventional materials and found objects. These range from cut aluminium sheets, nails and screws forming different patterns, metal wire, cut sections of steel pipes and cement; to everyday objects such as screw caps and lids from bottles and containers, a bicycle bell, cutlery, and even a cooking wok (Figs. 7-10).



Fig. 7: Bottle caps in *Abstract I* (1968)



Fig. 8: Wok, folded aluminium and cutlery used in *Composition* (1973)



Fig. 9: Metal wire, folded aluminium, metal pins and open weave canvas in *Abstract II* (1968)



Fig. 10: Bicycle bell and metal off-cuts embedded in cement material in *Construction* (1970)

All of his works from this period have a plywood board support with strainer reinforcement. He constructed the three-dimensional structures of these works by carefully attaching the pieces of folded metal to the plywood board by passing metal wire through each piece of metal into pre-drilled holes in the plywood board, and twisting it on the back of the work, as seen in *Construction* (1969) (Fig. 11). He folded and shaped these pieces of metal to create the required shape and in some cases he used hammering technique to give a pattern texture to the sheets of metal (refer to Fig. 7). In some cases he used glue and tacks to attach the small elements to the plywood board. Some metal bits and objects are glued with yellow-brown colour hard glue. This glue appears to be the solvent-based type of glue commonly used in shoe repair. Anecdotally, Ms Chong remembered this glue as being very 'smelly' and of yellow colour²⁷. In the 1972 works *The Universe*, *Silence* and *Composition 1*, he has used a brown cement or putty-like material²⁸ to create a three-dimensional relief and to embed smaller strips of metal and gravel. This material has also been used to sculpt the shapes in the figurative work *Resting* from the same year (Fig. 12).



Fig. 11: Back of *Construction* (1969) showing metal wires used to attach objects on the front



Fig. 12: Detail of relief in *Resting* (1972)

Many of the pieces and objects found on the metal reliefs- round metal with sharp cut edges, small bits of wire and pipes, aluminium filings, etc- appear to be a by-product, off-cuts left over after the manufacture of something else. Due to the nature of these materials, it is likely that he collected them from scrap metal yards. According to his daughter, Soo Pieng always recycled materials, including any leftover pieces from his home such as old tins and food containers which he would use

in his artworks, as well as for mixing his paint²⁹. Many of the materials were also likely to be purchased from local hardware shops, included the sheets of aluminium that he would cut and bend to shape. One roll of similar material was also observed in his workshop in River Valley road (Fig. 13).

Ironically, it was in these metal relief works that Soo Pieng started to experiment with different types of canvas. He pasted pieces of open weave coarse canvas such as 'gunny sack'³⁰ type in many of his reliefs such as in *Abstract II* (Fig. 9). Other 'recycled' materials from his earlier painting practice are metal tacks, commonly used for stretching canvases, which he used to attach pieces of metal to the board and also to form different patterns, hence using conventional art materials in an unconventional way (Fig. 14).



Fig. 13: Roll of aluminium in Cheong Soo Pieng's studio



Fig. 14: Tacks, folded aluminium metal off-cuts and on the right an industrial type red paint in *Composition (1)* (1969)

In some works such as *Abstract II* and *Imagination* he used a thick white plaster-like material to create a thick texture underneath the paint (Fig. 15). Mr Tay from Straits Commercial recalls Mr Cheong buying a white modelling paste which they started selling in the 1960s, and his father Mr Tay Long did demonstration workshops on how to use it³¹. This modelling paste could correspond to the material used by Soo Pieng in his reliefs³².

The surface of some of his metal reliefs such as *Composition (3 parts)* is painted with a very matte and opaque paint (Fig. 16). According to Mr Tay from Straits Commercial, Soo Pieng liked to use 'poster paint', a matte and opaque casein emulsion paint commonly known as 'Plaka', which was used to paint posters and for graphic design³³. It is possible that some of his mixed media works, as well as earlier tempera works such as *Bali Beach* (1955) might have been painted using this casein³⁴ paint. Further paint analysis would help to determine how often he used this medium.



Fig. 15: Modelling clay material in *Bottle caps in Abstract II* (1967)



Fig. 16: Matt opaque paint used in *Composition (1)* (1969)

Finally, Soo Pieng also used an unusual type of tough red paint in his work *Composition (3 parts)* and *The Universe*. Because of the formation of bubbles and wrinkles (Fig. 14) it appears that this paint could be a catalyst-cured type of paint where too much catalyst has been added³⁵. The use of this type of non-artists' paint shows Soo Pieng's wide-ranging horizons in his endless search of new materials as a medium for his expression. He also started using metallic gold and silver paints during this period which he would continue to use in his later figurative works.

Back to two dimensions: experimentation with new media and canvas textures

In his later two-dimensional paintings from the mid 1970s until the end of his life, Cheong Soo Pieng incorporated many of the materials that he had experimented with in his metal reliefs.

Supports

Soo Pieng's last use of pre-primed linen canvas in the NHB collection is in *Landscape 1* painted in 1973. After this time it appears that he started using different types of cotton canvas and applying the priming himself.

This corresponds with oral history from his daughter, who stated that 'he stopped using the "English" canvas as he realised these canvas were not suitable for the tropical climate in Singapore and noted that the paint would "come off"'. He stopped buying canvases from Straits Commercial and started visiting all the 'zip shops' and tailor suppliers, sourcing for different fabrics [...]. He would prime his own canvas with 2-3 layers of house paint³⁶. Priming canvas with emulsion house paint was a common practice in Singapore at the time, and is still practiced by many artists in Singapore today. According to Ms Cheong, he was always experimenting with different types of canvases and he would buy canvas by the roll, which later she would help him to stretch. He used a 'white collar cloth' - an already hardened fabric used for interfacing shirt collar necks, which was very elastic, soft and flexible; as well as a cotton canvas which was used for lining the inside of jackets and suits (Fig 17). Many other rolls of different fabrics were still present in his studio in River Valley Road (Fig. 18).



Fig. 17 Roll of cotton canvas found in Cheong Soo Pieng studio



Fig. 18: Rolls of canvas found in Cheong Soo Pieng's studio, which according to his daughter he used as painting supports as well as for lining window mounts in his frames

His paintings from the late 70s and early 80s are testimony to this experimentation with fabric supports. In both abstract works *Landscape 1* (1973), *Motion and Stillness* (1975) he has created textures in the surface plane by pasting a coarser linen canvas over a thinner canvas.

After his abstract period, Cheong Soo Pieng continued to create new textures in his figurative paintings by using different fabrics. In the figurative work *Horse Carriage* (Fig. 19) he has pasted a very coarse top fabric likely to be the inexpensive fabric commonly known as 'gunny sack', on top of a thinner cotton canvas. The paint has been applied directly on the fabric, giving the painting an unusual surface texture. In 3 of his works from 1981, *Kayan Musician*, *Landscape* and *Weavers*, he has pasted an open weave canvas onto another thinner canvas, giving a woven texture to the surface of the painting (Figs. 19-21). In these works he stopped using stretchers, and pasted the canvas onto a thin paper board. According to his daughter this was to make them lighter and easier to travel to a show in China he was preparing for³⁷.



Fig. 19: Coarse canvas used in *Horse Carriage* (1979)



Fig. 20: Side of *Weavers* (1981) showing 2 layers of canvas used as support



Fig. 21: Detail of surface texture in *Landscape 1* (1981) created by the use of 2 canvas.

In regard to the framing of his works, it has been noted that Soo Pieng remained loyal to *Hung Wah Frame Makers* throughout his career, who would frame his paintings as well as make his strainers. He used aluminium frames, and simple plain wood frames, as these were sometimes the only materials available. Ms Cheong pointed out that her father 'didn't like the ornate frames, he thought they disturbed his paintings'³⁸. Some of his original simple aluminium and gold slip frames have survived to date, however most of his frames have been replaced for larger and more elaborate frames by subsequent owners.

Paints and varnishes

Although in his mixed media abstract works from the 1970s he incorporated new media such as graphite, ink and possibly house paint³⁹ (Fig. 22), Soo Pieng continued to use oil as his main paint medium. In many later figurative works he used silver and gold paint in his backgrounds. According to Ms Cheong he used acrylic paint for this base colour because it would dry very fast. 'He only used 3 colours: bronze, gold and silver paint [acrylic paint]; which he applied as background colour and then painted over with oil. He loved to use a very thin layer of raw umber [oil] on top of the acrylic bronze'⁴⁰.

Soo Pieng also experimented with different types of varnishes during this period. While in his paintings from the 1960s a traditional natural resin can still be observed, in the 1970s he started using other synthetic varnishes. A PVA⁴¹ varnish was identified on *Quiet, Landscape 1* and *Motion and Stillness* by its characteristic fluorescence under ultraviolet (UV) light (Fig. 23), while an alkyd varnish⁴² was found in *Resting*. A bottle of Rembrandt Picture Varnish Glossy is kept by Ms Chong, who stated that he also used this type of varnish later in his life. Thus it is evident that Soo Pieng didn't stick to one type of varnish and instead he experimented with the different new types of varnishes in the market.



Fig. 22: Mixed media in *Landscape 1* (1973)



Fig. 23: White fluorescence of PVA varnish under ultraviolet (UV) light in *Motion and Stillness* (1975)

Finally, it has been anecdotally noted that 1 or 2 years before his death, Cheong Soo Pieng started making glass powder by grinding glass, which he then mixed with white glue to apply on his

paintings. 'He only had time to use it on one painting, but if he was still alive, he probably would have continued experimenting in this area'⁴³.

Conclusion

In his endless testing and experimentation, Cheong Soo Pieng explored all types of materials, ranging from supports to primers, paints and varnishes, throughout every stage of his career; incorporating a large range of new unconventional non-art materials into his works.

Research has shown that Cheong Soo Pieng's evolution in his use of materials was not only driven by his new ideas and concepts, but it also reflected an inherent concern with using good quality and durable materials according to established Western painting practices, while adapting these to cope with the different conditions pose by the Singapore climate. Surprisingly, despite the wide ranging materials that he used, most of his works have been kept in very good condition, giving credit to the mastery of his technique and knowledge of the properties of the materials he used at every stage of his life.

This study has presented the results from preliminary documentary research into the materials and techniques of Cheong Soo Pieng. Current findings could be much expanded and deepened by further detailed analysis of his painting materials using scientific examination methods. Looking at other collection outside of NHB, as well as including the study of his works on paper and other three-dimensional works such as his sculptures, will also provide a broader perspective on his art practice and will complement the findings of this study.

Finally, it should be noted that as Cheong Soo Pieng was a very influential artist in Singapore, his techniques and use of materials have been passed down to his students and later generations of artists. Hence the study of his materials is of great importance for Singapore's art history. It is hoped that the current work will also contribute to open new avenues for research into the materials used by Singapore's pioneer artists as well as their influence on contemporary artists.

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About HCC

The Heritage Conservation Centre (HCC) is an institution which provides conservation support to the national museums under the National Heritage Board, Singapore. It is also an environmentally-controlled, secured repository for the Board's national museum collections. Comprising the Collection Services, Conservation and Facilities Management Services Department, HCC's main function is to preserve, protect and manage the NHB museum collections.

¹ Straits Commercial Art Co. was established in 1947 by Mr Tay Long, who passed away in 2009. His son Mr Tay Nam Seng has been running the business since the early 1990s.

² Tay Nam Seng, pers. comm., *Interview Transcript on the Materials and Techniques of Cheong Soo Pieng and the Supply of Western Art Materials in Singapore*, Straits Commercial Art Co. , Singapore, 20 July 2010.

³ Heritage Conservation Centre, 'Materials and Condition Survey of Cheong Soo Pieng Works in the NHB Collection', Singapore, 2010.

⁴ Singapore Art Society, *The Art of Cheong Soo Pieng*, October 1956, reproduced in *Encountering Cheong Soo Pieng*, National University of Singapore, Singapore 2010, pp.18-19

⁵ N S Long, cited in N A Tse, *The Characterisation of Oil Paintings in Tropical Southeast Asia* (unpublished PhD thesis), The University of Melbourne, Australia, 2008, p.107.

⁶ Masonite is composite hardboard made of compressed wood chips, developed for the building industry.

⁷ Cheong Leng Guat, pers. comm., *Interview Transcript on the Materials and Techniques of Cheong Soo Pieng*, Singapore, 24 June 2010.

⁸ *Marouflage* is an extreme restoration process used by early restorers where a painting on canvas was glued onto a board, normally in order to flatten distortions and cracks on the paint, with the cutting of the canvas edges.

⁹ Cross-sections are prepared by embedding a tiny sample of paint in clear resin and slicing it through the middle to observe the layer structure in the sample.

¹⁰ N S Tay, pers. comm., 20 July 2010.

¹¹ N A Tse, *The Characterisation of Oil Paintings in Tropical Southeast Asia* (unpublished PhD thesis), The University of Melbourne, Australia, 2008, pp.75-6, 118.

¹² Long T S, cited in N A Tse, *The Characterisation of Oil Paintings in Tropical Southeast Asia* (unpublished PhD thesis), The University of Melbourne, Australia, 2008, p. 76.

¹³ N S Tay, pers. comm., 20 July 2010.

¹⁴ *Ibid.*

¹⁵ Tse, *op. cit.*, p. 63.

¹⁶ A strainer is a type of wooden support that holds the canvas stretched with fixed corners. It is of much simpler construction than 'stretchers', which have wooden 'keys' to allow for expandable corners.

¹⁷ *Hung Wah Frame Makers* are no longer in business.

¹⁸ L G Cheong, pers. comm., 24 June 2010.

¹⁹ *Ibid.*

²⁰ The lack of binding medium makes the painting more susceptible to cracking.

²¹ L G Cheong, pers. comm., 24 June 2010.

²² Winsor and Newton's 'WinGel' is an oil-modified alkyd resin (a type of synthetic resin). It was launched in 1960 as Winsor and Newton's first alkyd medium.

²³ Natural resin varnishes have a yellow-greenish fluorescence under ultraviolet light.

²⁴ L G Cheong, pers. comm., 24 June 2010.

²⁵ Sunday Times, 'Tour has opened my eyes, says painter', 4 August 1963, Singapore (article courtesy of NUS).

²⁶ It has been suggested that the newspaper might have misspelled the term Voile (French for 'veil'), a thin transparent fabric used to make dresses and curtains. During the survey of NHB works no such fabric has been observed in his paintings. However Cheong Soo Pieng did start experimenting with new fabrics in the 1970s. Further research is required to find out the nature of this medium.

²⁷ L G Cheong, pers. comm., 24 June 2010.

²⁸ This material appears to be a mixture of saw dust and PVA (refer to endnote 41), however no further analysis has been undertaken to date

²⁹ L G Cheong, pers. comm., 24 June 2010.

³⁰ Gunny sack is usually made from jute. Gunny sacks are traditionally used to transport grain and other agricultural products. No fibre identification was performed on this fabric because of the difficulty to obtain samples due to its central position in the painting.

³¹ N S Tay, pers. comm., 20 July 2010.

³² Further characterization by analytical means of this white filling material could determine its exact composition.

³³ N S Tay, pers. comm., 20 July 2010.

³⁴ Casein, a product derived from milk, has been used as a water soluble painting medium since Antiquity. It was widely used by commercial illustrators until the 1960s, when was widely replaced for acrylic paint.

³⁵ Further paint characterization could reveal the composition of this paint.

³⁶ L G Cheong, pers. comm., 24 June 2010.

³⁷ Ibid.

³⁸ Ibid.

³⁹ Further analysis could determine the composition of all of the media in his mixed media works.

⁴⁰ L G Cheong, pers. comm., 24 June 2010. Analysis of background paint, not undertaken as part of this study, could confirm its composition.

⁴¹ Polyvinyl Acetate or PVA is a synthetic polymer adhesive commonly known as 'white glue' or 'wood glue'.

⁴² Alkyd varnishes fluoresce an opaque yellow under ultraviolet light

⁴³ L G Cheong, pers. comm., 24 June 2010.