

# Dieu Sao

*...some preliminary notes  
on the  
Flute Kites of Vietnam*

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# Điêu Sáo - some preliminary notes on the Flute Kites of Vietnam

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## Summary and Acknowledgements

This paper has been prepared as a result of two weeks in April 2011 spent in and around Hanoi where the authors searched for, and found, the Vietnamese *Điêu Sáo* flute kite. The search would not have been successful had it not been for a great deal of earlier research and for the support of our generous Vietnamese friends. These friends are mentioned in the text but here we would especially like to thank Mr Quan Hang Cao for his unstinting assistance, translations and patient explanations.

In this paper, we have tried to bring together all that we know about the *Điêu Sáo*. The main body of the text deals with our experiences, with the old legends and stories, with the extraordinary *Điêu Sáo* event at Bá Dương Nội village and with our thoughts and concerns for this important aspect of Vietnamese life, centred, as it is, on the ancient rice farming culture. The appendices contain our edited notes on the specifics; the places, the people and especially on the techniques and types of kite flutes and the kites themselves.

As will be explained in the paper, we acknowledge that this represents only a preliminary review. We know that there are more kites, more flutes and more legends and villages to explore. Hopefully they will be found on a later visit, sometime in the future.

## 1. Introduction

The Vietnamese flute kite is not well known outside Vietnam, even among kiteflyers. Today, when it is mentioned, many people shake their heads or, if they suppose some knowledge, talk vaguely about paddy fields, buffalo and strange sounds that evoke the spirits of the wind. The aim of our project was to explore the flute kite<sup>1</sup>; to find it and to try to understand it. We started with what we imagined was a strong knowledge base. We knew something of these kites and their flutes through old images in the Western literature. Uli had visited the Musée de l'Homme in Paris and, while being knowledgeable about Armengaud's work<sup>2</sup>, there were no actual kites to be seen in the museum. Earlier we had met Vietnamese kiteflyers in France at the international kite festival at Dieppe and had seen and heard their wonderful musical kites. Then, and importantly, Uli discovered details and documents that drew parallels with other wind-blown instruments. He made and flew his own versions of both the kites and flutes. Paul, while not being so strong on Aeolian aspects or Vietnamese kites, is a knowledgeable kite historian and has travelled widely in the Far East on his own kite explorations. Together we formed a strong team with a background of academic research,



Figure 1 Old and new images of Vietnamese Flute Kites

<sup>1</sup> It is as well to explain our definition of the flute at this early stage. To many, the flute is the assembly of Aeolian devices that we saw attached to a stick and suspended above the kite. In fact these assemblies may contain several individual flutes. And these individual flutes generally have two separate chambers, each with its own mouthpiece and tuned individually to provide a pleasing beat when flying in the air. We only saw one flute, the Friendship flute made by Mr Nguyễn Hữu Kiêm, that was more complex and which comprised two sets of flutes within one flute body. We hope that the reader will take this explanation into account when reading the descriptions.

<sup>2</sup> Armengaud Christine. *Musiques Eoliennes*. Manu Presse. Paris, 1983, pp.33-35. The French Aeolist's "Bible"



open minds and a willingness to learn. Importantly, we are both kite makers and this common ability removed many potential barriers.

For reasons of cost, timing and logistics we were only in Vietnam for two weeks and had, as our principal objective, the traditional kite flying festival at Bá Dương Nội village<sup>3</sup>. Our preparatory work had put us in touch with Mr Quan Hang Cao from Hanoi and he proved invaluable with his ability to open doors, make introductions and provide an expert Vietnamese insight into what would otherwise have been unintelligible to us. Not unsurprisingly, our time in and around Hanoi was far too short as every day produced another insight, another adventure and another chance to make copious notes before bedtime. By the time we had left we had already recognised two things. Firstly, that we had collected more information on the Vietnamese *Diều Sáo*, as this is the Vietnamese name for the flute kite, than has been previously published and, secondly, that understanding anything Asian is like exploring an onion; there are so many layers and each layer brings not only greater understanding, but also contradictions. We recognise now that we have only been exposed to the “first layer of this complex onion”.

At first sight it seemed a simple matter to prepare a short note on these Vietnamese kites since they initially appeared to be simple kites (*Diều*) equipped with Aeolian windblown flutes (*Sáo*). This is not the case. We found that there are many types of kite and many types of flute and, like so many crafts, there are trade secrets only known to particular villages, or individuals. Collecting the documentary material and making sense of it has, therefore, been something of a challenge. Inevitably there has to be a certain amount of cross-referencing and this has defined the structure of our paper. The main body attempts to be an informative narrative while the detail, comprising primarily our cryptic notes and observations, is given in the appendices.

We only visited North Vietnam, and were based in Hanoi where we stayed in the excellent Freedom Hotel, situated on the edge of the Old Quarter and just a stone's throw from Hoan Kiem Lake famous for its ancient giant turtle. Hanoi seemed exotic. The flavour was immediately Asian, but with a strong Parisian influence where we could wind down over a glass of iced civet coffee. Once out of town, the French influence evaporated.

In retrospect, and after meeting many people, visiting many places, finding kite makers and flute makers as well as experiencing the kite ceremony and kite flying at Bá Dương Nội village, we were left perplexed. We had hoped to discover everything about this elusive onion but realise now that we had barely seen below its surface. It is for this reason that we title our findings as Preliminary. They are what we saw but they are certainly not complete and, in all probability, there may be misconceptions despite the efforts of our helpful and hospitable hosts. We hope that the Vietnamese people forgive us for any errors<sup>4</sup> and we look forward to their input for corrections and further insight.



Figure 2 Kites on the drainage pathway at Bá Dương Nội

<sup>3</sup> We now know that the tradition relates to an ancient religious story regarding the patron saint of Bá Dương Nội village. While the story is locally said to be 1000 years old, this needs to be understood in the context of it not occurring in the written history, as well as the term “1000 years old” meaning “a very long time ago”.

<sup>4</sup> There is an old proverb of the Bambara in Africa: “The stranger sees only the things he already knows...”

## 2. Stories, fables and myths

The first written mention of the kite is credited to the Chinese<sup>5</sup> where it is said to be at least 2,400 years old. The traditional, and auspicious, day for kite flying in China is the Qing Ming<sup>6</sup> “Pure Brightness” day in April. This festival marks the start of spring when whole families go out to picnic and enjoy the wind and good weather. The Chinese say that kite flying is a healthy activity for children because, when they look up towards the kite, they have to breathe deeply. Focussing on the kite is also considered good for the eyesight.

There are old legends in Polynesia, Cambodia, in South China and also in Vietnam where each makes claim to the invention of the kite. While the Chinese claim to have the first written mention of kites, these could equally have emerged in any of these countries since, apart from China, none had written traditions in ancient times and knowledge was handed down by mouth from generation to generation as, indeed, it does today with the Vietnamese kite and kite flute makers. It is possible that the Chinese source is just an indication of what was known at that time and cannot be seen as an absolute proof of priority<sup>7</sup>.

Ngô Quý Sơn refers to these stories and flute kite festivals in his “*Activités de la Société Enfantine Annamite du Tonkin*”. He tells us that the flute kite is linked to many old traditions in the old Tonkin Province in the north of Vietnam. This is the region around *Thang Long*, which was the old capital of Vietnam<sup>8</sup> dating from the 7th century and which is now Ha Noi.

The Vietnamese have a rich culture based on many myths and legends that are used to inform the people about life. Much relates to the weather and its associated typhoons, monsoons, dry periods and environmental catastrophes. This has been important in teaching the predominantly farming community about the annual rhythms of farming life and the close relations of men, heaven and earth. One old Vietnamese legend appears on the Internet:

*"Tương truyền tại đền Đức Thánh Cả của làng, cánh diều sáo truyền thống đã có hơn ngàn năm tuổi. Chuyện rằng xưa kia, khi trời - đất giao hoà, con người và thần tiên luôn quấn quýt bên nhau không muốn rời xa. Bỗng một ngày thảm hoạ ập đến, thế gian tăm tối, trời và đất bị chia cắt. Bầu trời thì cứ cao dần lên, tách xa khỏi mặt đất. Thần tiên và con người không làm cách nào gặp được nhau gây nên bao nỗi niềm thương nhớ. Vậy là cánh diều đã ra đời, nối sợi dây tình cảm giữa bầu trời và mặt đất, mang theo tiếng sáo du dương bày tỏ tấm lòng của người dưới hạ giới với người cõi trên."*

This has been translated by Ngô Quý Đức as follows:

*"According to the temple in Đức Thánh Cả village, and as stated in the legend, the traditional Vietnamese flute kite is more than a thousand years old. In ancient times, when heaven and earth were in harmony, the human beings and the gods were as one<sup>9</sup> and would never want to be separated."*

<sup>5</sup> Wang XiaoYu. *Chinese Kites: Their Arts and Crafts*. Shandong Friendship Publishing House, 1996. Previously only available in Chinese language editions. The book refers to Mo Zi (478-392 BC), the Chinese philosopher who “spent three years and successfully made a hawk out of wood, which was broken after one day’s flight”. Mo Zi passed his knowledge to Gongshu Ban who made a magpie that could be flown in the air for three days. Gongshu Ban also made a hawk to “pry into the citadel of the State of Song”. According to Li Shi (Song Dynasty) in “A Sequel to the Study of Myriads of Things”, it is said “In spring time, to fly a kite at the end of a string would entice young boys to look up with open mouths and thus release their inner heat”. And Fucha DunChong (Qing Dynasty) in “Yearly Events in Beijing” writes “A kite flying in the air can relax the eyes”

<sup>6</sup> The Chinese Pure Brightness festival of Qingmingjie (清明节) in early April is linked to the early Chinese lunar calendar and marks the important transition to warmer weather in the agricultural year. While the main activity is “sweeping the tombs” and honouring the ancestors, it is also a festival for spring outings and kite flying. It is interesting that both G N Wright in “*The Chinese Empire Illustrated*” and De Groot in “*Les fêtes annuellement célébrées à Émouï*” mention the Double 9<sup>th</sup>, Chongyangjie (重阳节) festival on the 9th day of the 9th month as a traditional day when the Chinese fly kites. The book by Wright contains the well known engraving “*Kite-flying at Hae-Kwan on the Ninth Day of the Ninth Moon*” and mentions kites equipped with musical hummers. Modern texts such as the *Oxford Chinese Dictionary* refer to the Double 9<sup>th</sup> as the traditional day for climbing mountains whereas Pure Brightness is the day for kite flying.

<sup>7</sup> Since ancient times the Chinese had a very well developed merchant marine that operated along the South China coast and beyond, along the Vietnamese coast to Indonesia, Malaysia and also to India and Africa. It is not known whether kites were found by the Chinese, or were introduced by them. It is not impossible that some forms of kites developed independently.

<sup>8</sup> Tonkin is the Eastern Capital; Vietnamese *Đông Kinh*, 東京. An early name for Hanoi is *Thang Long* meaning Ascending Dragon; the modern Chinese translation being *Shàng Lóng* 上龙. Mr Ngô Quý Đức refers to a flute kite festival at Vĩ-du’o’ng village (otherwise also known as Làng Trĩ, Bắc-Ninh)

<sup>9</sup> The story likens them as the segments of a tangerine or mandarin orange.



*However a sudden catastrophe came down and engulfed them. The world fell into darkness and heaven and earth were divided. The heavens rose higher and higher and became separated from the earth. The heavenly gods and the earth-bound humans were no longer able to meet one another and this created a deep feeling of sadness. This led to the creation of the kite which became the string to link together the affection between heaven and earth. The melodious sound of the kite flute showed the love felt by the people in lower world to those above."*

This story is mirrored by other such stories to be found throughout the region, particularly in the South Sea Islands of the Pacific where there are concepts of the gods being linked to chiefs through kites<sup>10</sup>.

Mr Ngô Quý Đức has provided a discussion of ancient stories, particularly the story of the founding of the Bá Dương Nội kite festival. This story is an oral one and is not to be found written down, although it appears graphically on many of the kites seen at Bá Dương Nội.

*"The legend says that Bá Dương Nội village was created by five clans who lived near the Red River around 3,500 years ago. At that time the area was a forest with bamboos and wild reeds spread over a distance of 5 km until it reached the river where Vinh Phuc is today. The story says that every day it was the job of the village children to herd buffalo in the forest from morning until nightfall. These children would gather to play at wrestling and other sports. However as time went on they became bored with these games. So they cut bamboos to make tents where they played. They copied the activities of the elders in the village and made a temple where they also copied the worship rituals. Initially, the children offered their lunch as an offering at their temple. They would bring rice from their homes to offer it at their temple. Bringing sticky rice to the temple mimicked the actions of the elders and this gave a feeling of reality to their worship.*

*One sunny day, while the children were lying on the grass and looking the blue sky, they suddenly saw a hawk flying overhead. They wondered about how it could fly in the sky and questioned why it did not fall down. The oldest child called the others together and told them to bring bamboo and paper so that they could make something like the hawk. This hawk became the kite and gave the children the new game of kite flying. Sometime later one*



Figure 3 The story of Bá Dương Nội is told on a kite made by Mr Nguyễn Gia Độ

*of the children found a dead bamboo whose stem had broken to leave the hollow reed exposed and which made a sound when the wind blew across it. The children cut down the bamboo to try to discover the secret of the sound and, as a result, they created a wind-blown flute. They attached the flute to the kite and this became the origin of the Vietnamese flute kite. The kites would fly high into the sky with the flutes sounding. When the villagers heard the sound, everyone became interested and from that time the kite was no longer considered just a children's game. The whole village made flute kites and flew them together. The flute sound made everyone feel happy; they forgot the weariness of their work and carried on working more enthusiastically.*

*All this time the children continued to bring sticky rice from home to the "bamboo temple" as an offering for worship. Their parents began to wonder why it was that the rice was disappearing so fast. As soon as they found out that their children were taking it, they immediately put it into safe keeping and the children were forbidden from taking it out of their home. The children stopped worshiping at their temple since there was no rice to offer for the ceremony. After a few days, and when the children were out herding buffalo, the sky suddenly turned dark and many black clouds appeared. When this happened, the herd of one hundred buffalo<sup>11</sup> disappeared. The children were shocked and ran everywhere trying*

<sup>10</sup> See Chadwick "The Kite: A Study in Polynesian Tradition". 1936.

<sup>11</sup> One hundred buffalo seems too many for one village although it may represent the collective herd of the five clans; we may have mistranslated or misheard. It could possibly be that "one hundred" represents the concept of "very many".

to find their lost buffalo but they could not find them. Then they ran back to the village in tears to tell their parents and elders what had happened. All of the villagers went to the buffalo grazing lands. They split up and searched everywhere but still could not find any buffalo. What they did find, however, was the bamboo temple made by the children. The oldest of the village elders asked who had made it and what it was being used for. The children then told their story of how they made it and how they took rice from their homes to offer at the temple. The village elder held a meeting to discuss this and speculated whether it had any relationship to their problems. They thought that the most probable explanation was that when the children stopped worshipping, the deity became angry and struck against the bamboo temple, and in his anger he hid the buffalo as a punishment. In this case the villagers thought they would need to recover the situation. This led to them restoring the ceremony and the villagers brought offerings of incense as well as fruits, chicken, pork, other meats and sticky rice to the bamboo temple. During these ceremonies the village elder prayed that if the deity had supernatural powers he would return the buffalo to the villagers, and that, in return, the villagers would build a beautiful new temple for him. When the village elder finished his worship the dark clouds vanished and the sky again became blue. The buffalo reappeared and everything returned to normal. This was on the first day of the full moon in the third month of the Vietnamese calendar (April in the Western calendar). Since then, and on the first full moon in the third month of every year, according to their calendar, the village hold a ceremony at the new temple and a village festival with flute kite flying competitions take place.

The deity became known as "Châu thổ Chi thần" or "Giang châu Chi thần". He is known as the Delta God and is the village's Tutelary God. We have found slightly different translations in the Vietnamese dictionaries. "Châu thổ" could mean the ground where the children herd buffalos, but it also means the Red River Delta; which is much the same place. "Chi thần" means one who has become godly and/or a very confidential and faithful friend; again similar in meaning.

The villagers built a temple for Châu thổ Chi thần, but some time ago the river changed its course and that led to a landslide and the temple was lost. In 1950 the villagers of Bá Dương Nội decided to revive the temple so they chose another site, this time on the protected inner side of the river dike, and built a new temple. Although the temple has been rebuilt since the 1950s, the site has remained the same."

There are other stories relating to the Bá Dương Nội kite festival. One explains that the kite flying ceremony and competitions are held as a celebration service for "The King's change of clothes holiday" at the Châu thổ Chi thần Temple dedicated to the Spirit of the Kite. This may explain why other festivals were also taking place in the villages that we passed on our journey along the Red River road. Another account says that the festival commemorates General Nguyễn Cầm, the native son of the village, who helped Đinh Bộ Lĩnh quell the rebellion of twelve feudal lords.

### 3. Flute Kite Ceremony and Kite Flying at Bá Dương Nội

According to the handwritten programme posted at the Bá Dương Nội temple entrance, the Flute kite festival started on the 14<sup>th</sup> day of the third moon in the Vietnamese calendar<sup>12</sup> and continued until 16<sup>th</sup>. We were only there for the last two days, firstly on Sunday April 17<sup>th</sup> and then we returned on Monday 18<sup>th</sup> April (the day of the full moon) since the winds were not co-operative on the Sunday. We were taken to the village by Mr Quan Hang Cao on the Sunday and again travelled there by taxi on the Monday. The road to Bá Dương Nội from Hanoi travels along the top of the Red River dike banking with views of the wide

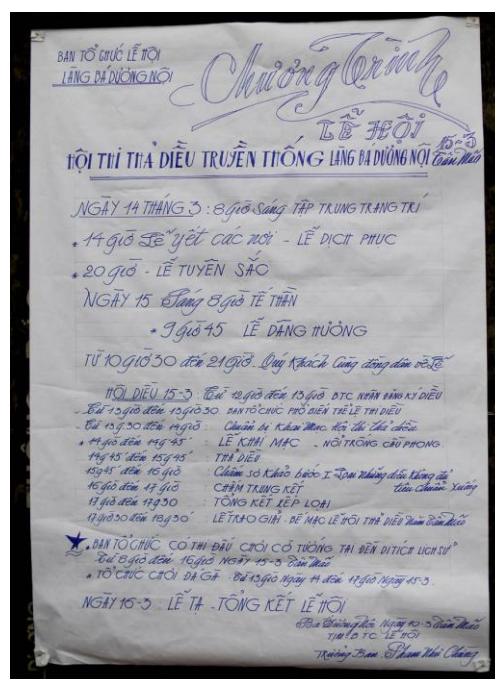


Figure 4 Festival programme, including dates and itinerary, at the entrance of the temple at Bá Dương Nội

<sup>12</sup> The Vietnamese calendar is the âm lịch and, because it is also based on solar positions, it is not a pure lunar calendar as is the Chinese calendar. The Vietnamese calendar is a lunisolar calendar. The differences between Chinese and Vietnamese calendars can be found at: <http://www.vietnamtravels.vn/tours/services/1375/Vietnamese-and-Chinese-calendar.htm>



river and the local bamboo matting and timber industries on one side and the villages and paddy fields on the other. The road became increasingly crowded with traffic and street markets as we passed the various riverside villages which were also holding weekend festivals. Eventually the traffic, which included many local industry transport vehicles, became so completely jammed that we were forced to abandon the car and walked the remaining kilometre, through the entrance gateway and down the local lane to the village. By the time we arrived it was evident that the villagers were already in festival mood since there were numerous food stalls and village games lining the roadway, all of which were crowded with people enjoying themselves. We passed through these activities and were taken to the village temple for the initial ceremonies. We met the president of the Bá Dương Nội village kite society, Mr Nguyễn Hữu Kiêm, and later went to his large house for discussions and lunch. Later in the afternoon we returned to the temple and the paddy fields opposite for the kite flying.

We were told that the village assembly at Bá Dương Nội decided to revive the village flute kite festival in 1986. Before then the flute kite ceremony and kite flying competition had been dormant for many years. The village festival, according to the village elders, has its origins in the stories of about 1000 years ago. We were told that the village temple is dedicated to a Weather God, and, according to the old folk story, is related to a cloud that made its appearance and took away some men. Here there is some conflict with the more detailed story which talks of missing buffalo. The story may have its origins in an exceptional typhoon and resulting inundation. In any case, and as a result, the local people pray for good winds, and good weather for the rice growing and harvesting season. This is most probably relating to the rainy season that starts around the date of the village festival. The festival is held each year on the first full moon (15<sup>th</sup> day) of the 3<sup>rd</sup> month in the Vietnamese *âm lịch* calendar.

As soon as we entered the temple forecourt we could see stalls on each side that were occupied by the village women who were managing the special temple foods. These were being prepared by girls adjacent to the main temple at the end of the forecourt where there was a small kitchen. These foods included small rice balls filled with a small cube of gingered sugar. There were sticky rice cakes shaped like a Chinese bell, small spices wrapped in lotus leaves and bananas. All of these were accompanied with jasmine tea. However beer and other drinks were also offered. As guests visiting from overseas we were well looked after by our generous hosts. We, in our turn, explained that this weekend was also the Easter festival and Paul provided chocolate Easter eggs which the village women happily gave to the numerous small children.



Figure 5 We were offered sticky rice balls at the Bá Dương Nội temple

The prayer and blessing ceremony was a long and complex affair. The village elders, dressed in their ceremonial robes, sat under a covered area and the ceremony was accompanied by music played on traditional Vietnamese instruments, chanting and singing. Somewhat surprisingly we were allowed access to all parts of the ceremonial areas for observation and discrete photography. While most of the ceremony involved the men folk, the village women followed with their own, shorter, ceremony. After praying for about one hour,



Figure 6 Diều Sáo being registered and blessed at the Bá Dương Nội temple

about fifty *Diều Sáo* were brought into the temple court and were lined up on the courtyard for inspection, to be measured, numbered and to be sealed. At this time the temple courtyard became very crowded, not only with the kites laid out before the temple, but with the kite teams and others, all of whom took a great interest in the presented kites. At the same time many people were making financial gifts to the temple and were being given refreshments. We saw that the gifts were all recorded and found later that these would be displayed publicly.

On the left hand temple building entrance was a barrel shaped Chinese ceremonial drum covered on both sides with a membrane. A gong was on the right hand. The music accompanying the ceremony was played on a two string violin<sup>13</sup>, two sorts of wood bladed oboe<sup>14</sup> and a special ceremonial dragon headed *dan bau* played by Mr Phạm Hồng Nhâm. Mr Phạm Hồng Nhâm had previously won many kite competitions in his youth and is still highly regarded as a kite maker. This dragon headed *dan bau* was made from a bamboo stem with the roots of the culm forming the dragon's head and antlers. It is the famous traditional Vietnamese monochord where only the overtones are played<sup>15</sup>.

The *Diều Sáo* kite activity comprised two components; the presentation of the kites at the temple for registration, measuring, judging, sealing the flutes and the ceremonial blessing. The second component was the parade of kites to the flying field and the consequent flying. The kite competitions were performed over two days, partly because of the lack of a good wind on the Sunday.

When the kites were first brought into the temple it was necessary that they should be registered. The first part of the process was the measuring and a visual check of the kites. Each kite had to have a wingspan of at least 2.2 metres and it had to carry at least two flutes<sup>16</sup>, although most were fitted with either three or four flute assemblies. The smallest flutes had to be at least 2.5cm in diameter with the larger flutes being progressively larger. The kite sails were not allowed to be white as this is the colour of mourning. Generally the sails were made from brown paper although many of these were decorated, either with paintings or with appropriate motifs<sup>17</sup>. The kite flute itself was sealed with two strips of paper on each side in order to prevent tampering/replacement of the flutes. A further registration paper was attached to both the kite



Figure 7 Mr Phạm Hồng Nhâm (left) and the ceremonial dragon headed *dan bau*



Figure 8 Flute sealing in the courtyard of the temple at Bá Dương Nội

<sup>13</sup> Vietnamese name *Đàn hồ*, a variation of the Chinese *er hu*. A two stringed "violin" held vertically and played with a bow. There are other names for the instrument depending on the resonator of coconut, see [http://vi.wikipedia.org/wiki/%C4%90%C3%A0n\\_h%E1%BB%93](http://vi.wikipedia.org/wiki/%C4%90%C3%A0n_h%E1%BB%93)

<sup>14</sup> Vietnamese name *Kèn*; wood bladed oboe, see [http://en.wikipedia.org/wiki/K%C3%A8n\\_%28musical\\_instrument%29](http://en.wikipedia.org/wiki/K%C3%A8n_%28musical_instrument%29)

<sup>15</sup> see <http://www.vietnamesearwork.com/itemList.aspx?GroupID=212> for an overview

<sup>16</sup> Robert Whitehurst refers to the number of flutes as being at least three. He also mentions a cash prize.

<sup>17</sup> Some of the kites carried writings on their sails. The following is an example of one such poem:

*Đêm trăng vắng vắng tiếng sáo diều  
Vi vút tầng cao tựa tiếng tiêu  
Khúc nhạc thanh bình đêm thanh vắng  
Ngã mình nghe nhạc thú phiêu diêu*

Golden moonlight strikes the fluting kite  
Hours of enjoyment at an immeasurable height  
Singing quietly during the peaceful night  
Surreal music that makes me happy, and gives me rest.



surface and the flute attachment stick to prevent the owner changing the flute assembly or the kite. Later we understood the reason for this as there were many damaged kites, particularly those that crashed into the pond. The registration seals were stamped and the paper contained writing although we did not find out the reason for this. All of the kites were registered with a large red painted number on the kite sail and this number allowed easy identification when the kites were flying. The number of kite flutes varied between three and five although the majority carried three flutes. In no cases were there two flutes of the same size. In the competition the quality of the flutes and their sound was not judged. Judging was only for the quality of the kite itself as well as its flying properties; i.e. height and stability so we assumed that part of the reason for the flute sealing process was to limit any changes to improve the flight performance of the kites. We were told that many of these kites had been made by local people especially for the festival and that most had not previously been flown.

Flutes were, however, kept and flown from year to year. This may account for what we saw later when many kites suffered from tumbling, spiralling, lateral rocking, pitch oscillating as well as sometimes losing elements of the flute assembly. Several kites fell in the pond.

The reason for some of the failures was explained by the young fliers, mostly by hand gestures, as the result of weak wing spars or wing tips that bent up too high and which resulted in excessive dihedral. In other cases the flute assemblies were mounted too far forward and contributed to the kite instabilities, usually resulting in tumbling.

There were several categories of kite competition with the winners receiving a winner's scroll certificate, a hanging flag and a floor standing electric fan. This year there was no Juniors Category and in earlier years there may have been a cash prize. We were not certain how the separate categories were defined.

After registration we were taken to Mr Nguyễn Hữu Kiêm's house for discussions, to see his kites and for an excellent lunch. We were able to examine his kites, including the very unusual "fairy" kite, as well as have detailed discussions about the flutes since Mr Nguyễn Hữu Kiêm is a very accomplished flute maker and had made the unique "friendship flute" that he presented to Uli. Then we returned to the temple to witness the remaining preparations before the flying.

Uli was also invited to Mr Nguyễn Gia Độ's house where he was able to see the kites and flutes made by Mr. Nguyễn Gia Độ. The traditional one-room house is located next to the temple area; on the right side of the temple with the rice fields to the back of the house. Mr Nguyễn Gia Độ invited Mr Quan Hang Cao and Uli to drink some tea and, while he was looking at the flutes, Mr Nguyễn Gia Độ presented Uli with a yellow-violet coloured flute as gift. Uli saw several flute-kites, together with some large bird kites, hanging at the walls. He noticed the beautifully carved roof beams of the house as well as a hammock. He also saw cardboard templates as well as drawings for kite and flute making<sup>18</sup>. They were only at the house for about 10 minutes since Mr. Nguyễn Hữu Kiêm appeared and



*Figure 9 A kite with weak spars resulting in excessive dihedral*



*Figure 10 Flute kites in the garden at Mr Nguyễn Hữu Kiêm's house*



*Figure 11 The kite procession*

<sup>18</sup> There were a number of cardboard templates and drawings which appeared to be for flute and kite making.

it was necessary to leave quickly to go to the temple since the kite procession was about to start.

At the appropriate moment all the kiteflyers picked up their kites and proceeded to the nearby kite field. It was an excited and seemingly chaotic procession that involved exiting the temple gate and walking the short route to the field opposite that was accessed by a narrow opening leading to a concrete flagged pathway leading to the pond. Most spectators stood on this footpath as the paddy field was both under cultivation and boggy<sup>19</sup>. The footpath was, in fact, the cover for the village sewage drain and the flagstones were not continuous. The launching lines crossed the walkway at right angles with resulting amicable confusion. Several people fell into the drain, with unfortunate consequences.

Kite flying<sup>20</sup> involved a long launch so the launch teams found their way along the dry narrow pathways between the muddy paddy fields on one side while the fliers went to the other side. This left other members of the team protecting the line as it crossed the pathway.

The kite reels were almost all flat wooden winders comprising four wooden sticks. In some cases plastic spools were used but these usually carried nylon monofilament line. The most commonly used line was either three strand hemp or a similar silk or synthetic line with a diameter of 2 to 3 mm. There was no braided line or the traditional bamboo line. Some winders carried great lengths of line, possibly several hundreds of metres. The lines were prepared by laying out about 200 metres across the paddy-field in order to give a long launch. Each kite team comprised several launchers, fliers as well as line handlers.



*Figure 12 In flight at Bá Dương Nội*

The winds were very low which made launching very difficult as the line handlers could not run due to the soft and soaked ground. They had to haul in the kites by hand. This resulted in unstable starts and kites diving, tumbling and being caught in tangles. When the kites were airborne and at a reasonable height (100 metres) the low winds also caused trouble as some kites exhibited pitch rocking followed by, sometimes immediately, nose down tumbling. We thought, and this was confirmed later, that this was because the flutes were mounted too far

forward. Other instabilities caused diving and looping motions which could sometimes be corrected as the kite swooped low. There were many crashes although not many of these caused irreparable damage. In some cases both kite and flutes were completely submerged in the pond and were recovered to be flown again! Even paper covered kites were recovered intact, thanks in some part to the special paper treatment (discussed later), or with minor damage other than being soaked. The flutes themselves, whilst not being waterproofed, are



*Figure 13 Ten Điều Sáo sing in the wind above our heads*

<sup>19</sup> The paddy-field also served as a graveyard since there were numerous stone tombs to be seen.

<sup>20</sup> The winds on the Sunday morning were very light but, at about mid-day, the wind started to blow from the South East at 2-3 on the Beaufort Scale; i.e. less than 10ft/s, 3m/s.



the most valued part of the assembly and consequently received the most attention. When the kites were high they found better winds and at one time there were about 15 kites (out of the fleet of nearly 50) flying high and smoothly.

The flutes sounded loudly on the launch and when being pulled up. They howled during dives and sounded clearly when they were high. It was difficult to record the flying flutes because of the amplified temple music and announcements.

As well as the many participants and numerous interested spectators, the fields were managed by the farmers who generally ignored this invasion of their field and carried on with their weeding as if nothing unusual was taking place. Perhaps surprisingly there was actually very little damage to the crops.

As the winds on the Sunday were not very strong, it was decided that the kite flying would continue the next day. We were warned that the winds might not improve but we returned on the Monday in any case. The Monday winds were even lighter than before which left all the kites grounded and the kiteflyers huddled at the entrance to the paddy field. Uli had long discussions with the village elders while Paul was invited to by Mr Phạm Hồng Nhâm to see his kites and visit his house. Mr Phạm Hồng Nhâm is 81 years old and lives comfortably in a courtyard house. We had met on the path leading to the flying field when he invited me to his house. On one side of the road was a locked workshop where he stored kites that were under construction or about to be covered. The room contained a wooden slatted bed. We drank a white spirit that tasted like Chinese *bai jiu* (百酒; firewater). After photographing the kites and flutes we moved across to his courtyard house. The house contained a large living room with beds at each end and formal reception seating in the centre. Some finished kites were hung up as was a *Dan Bau* which Mr Phạm Hồng Nhâm played. Most of our discussions were conducted in French.



Figure 14 Flute kites in the temple courtyard



Figure 15 Lack of wind prevented any flying on the Monday





Figure 16 The Temple Ceremony at Bá Dương Nội





Figure 17 Flute Kite flying at Bá Dương Nội



#### 4. *Diều Sáo* in 2011

Our objectives prior to the experiences in Hanoi were relatively simple. These were to attend the flute kite ceremony and kite flying at *Bá Dương Nội* where we hoped to see and record the flutes as well as document the kites. We also wanted to see something of how the kites and flutes were made, and we intended to visit the museums and institutes of Hanoi as part of our research. The actuality of our visit far exceeded our initial objectives. In many ways we were overwhelmed by our findings and in others we were left confused.

We were disappointed to find that the *Diều Sáo* is not, apparently, recognised as being an important part of the cultural heritage by the institutions. We found nothing of importance in the Museum of Ethnology and the scarcity of publications at the National Library was surprising. Apart from once appearing in a stylised<sup>21</sup> form on a postage stamp, we were surprised that the *Diều Sáo* did not appear in imagery, despite its important folk art heritage. Even the woodblock stamp makers in the Old Quarter of Hanoi did not have the *Diều Sáo* image in their sample books, although one now does. This apparent indifference shown by the official bodies can have two influences. Firstly it shows a lack of interest and care for this important and ancient art form, and secondly, that the art form, where it still exists, is not influenced by the need to adapt to modern pressures, particularly tourism and remains preserved intact in its original form.



Figure 18 The 5000 dong postage stamp, circa 1999, featured a *Diều Sáo*

There are, however, some signs of support. The *Maison des Arts* gallery in Hanoi actively promotes a fusion between the *Diều Sáo* and art in the context of aid for the victims of Agent Orange. One would hope that this activity will bring awareness of the uplifting power of the *Diều Sáo* to future generations. Presently the basic kites and flutes are seen as a bare canvas but, as in Japan, Korea and increasingly in China, it may be expected that the artists will become kite and flute makers too. Clearly the *Diều Sáo* as an art form is a long way from its cultural heritage, but such a development may need to become acceptable as Vietnam continues its rapid pace of development and accompanying fundamental changes in lifestyle.

While questioning the lack of official acceptance, and the validity of the flute kite as an art form, we were delighted to find that the traditional Vietnamese *Diều Sáo* is still being made and flown. We were thrilled to have the privilege of meeting *Diều Sáo* enthusiasts in the villages of *Bắc Giang* where we were able to witness, at least in part, the art of flute and kite making. To be amazed is an understatement for our feelings when we spent two days witnessing the flute kite ceremonies and flying at *Bá Dương Nội* and the chance to meet important members of the kite community. Subsequent to our visit, and as a result of our findings and experiences, we were delighted to find that there are others in Vietnam who truly care for the *Diều Sáo* and who are prepared, like ourselves, to embark on the task of documenting and supporting this fascinating and unique aspect of Vietnamese culture.

One may ask “is the *Diều Sáo* safe”? In a fast developing country such as Vietnam, the answer can only be “it depends”. It depends on whether the activity remains respected. It depends on whether the reason for the *Diều Sáo* remains valid, even in the present form of village festival. It depends on whether young people in this increasingly mobile and materialistic society want to, and are prepared to learn the craft from the older generation. It depends on property development given the strong rumours that villages such as *Bá Dương Nội* might disappear in the face of increasing urbanisation and industrial development<sup>22</sup>. One unexpected uncertainty is that of the portability of the kites since they are large, some of them enormous, and they are not easy to store and are particularly difficult to transport. The traditional kite is not collapsible and could be discarded for another, more easily portable device to carry the traditional flutes. And it is not inconceivable that the flutes themselves could be cheaply mass

<sup>21</sup> The artist has drawn a very poor flute kite since the wing bending is excessive. However the graphic may have cultural links to a crescent moon and/or to the horns of the water buffalo. The form of the kite is that of a lemon leaf kite (type 1,1) and it is equipped with a single flute.

<sup>22</sup> Known developments near to *Bá Dương Nội* include a river bridge, link roads and major planned industrial developments, all of which are likely to encroach on the village.



produced in metal and/or plastic. Clearly nothing is certain and it seems appropriate that now is the time to capture the current status in order to have a firm basis for future generations.

We came to Vietnam as Europeans who thought they already had a good knowledge of the flute kite, so what were the surprises? Not entirely unsurprising were the varieties of actual kites and how these related to the old stories that we were told. Similarly we found new flutes and were surprised by the size and the quality of the workmanship of some of these. We were surprised to find that the villages essentially operated independently of one another<sup>23</sup> and, because of this, it would appear that there are significant local differences in style, quality and technique. The biggest negative surprise had to be the apparent lack of official recognition and documentation.

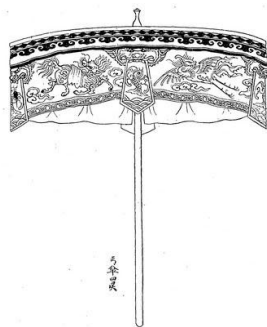


Fig. 35. — Tan. — Parasol d'étoffe brodée.

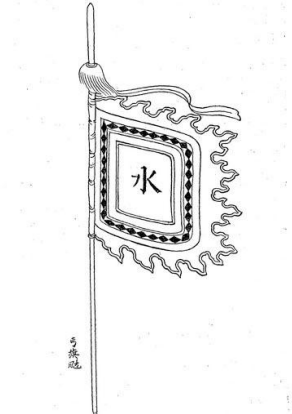


Fig. 19. — L'etendard de l'eau dans le groupe des cinq éléments.

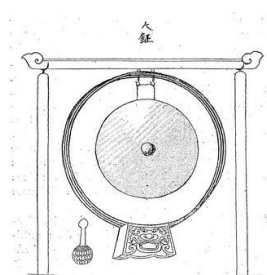


Fig. 22. — Le Gong. — Chông.

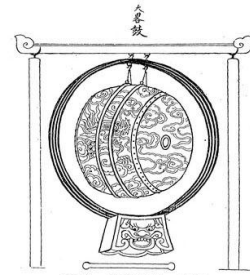


Fig. 23. — Le Tambour. — Trông.

Figure 19 Temple symbology - new and old. The drawings are taken from « Les Symboles, les Emblèmes et les Accessoires du Culte des Annamites ». G. Dumoutier, 1891



<sup>23</sup> Most of the kite and flute makers are farmers. We learnt that a farmer's life is hard and time consuming. He hardly ever leaves his fields during daylight hours. His only spare time is at night and, traditionally, the farmers found rest and relaxation by listening to the kite flutes since the kites could be left flying all through the night. At that time none in the farming community needed to travel far. The ability to travel would have been the privilege of the rich who would have had the time and money to do so and, in a similar way to Western countries until relatively recently, this would have been considered by the peasant farmers to be a waste of money and productive time. In any case the road network was very limited, particularly in the pre-French period where the rivers were more frequently used.

## 5. Annotated Bibliography and References

This bibliography comprises important reference material regarding all aspects of Vietnamese flutes, kites and related matters. In many cases the material can be found online although the sites quoted may change, or disappear completely, at any time in the future.

- 5.1. A.B., et P...., Capitaine de l'artillerie à Toulouse. *Les Cerfs Volants*. La Nature, Paris, 1887; pp.58-59.  
There is an online version. The article contains descriptions and drawings of the Russian rectangular kite with paper hummer and an "Annamite" (Kingdom of Annam; today a part of Vietnam) kite equipped with a "mirliton" kite flute.
- 5.2. Armengaud, Christine. *Musiques Éoliennes*. Manu Presse. Dessain et Tolra, Paris, 8/1983. Now out of print, this is a beautifully made book, written in French, on Aeolian Instruments (text/ photos/ drawings) of all kinds including Kite Whistles, Pigeon Flutes, Humming Gourd Tops, Cai-Sao, Yao Ch'in, Ék and others. French "Aeolists" refer to this as their "Bible".
- 5.3. Challan de Belval, Albert. *Au Tonkin*. A.Delahaye et E. Lecrosnier, Paris. 1886. pp.15-16
- 5.4. Chadwick Nora. K. *The Kite: A Study in Polynesian Tradition*. Journal of the Royal Anthropological Institute of Great Britain and Ireland, Vol.61, 1936. pp.455-491
- 5.5. Dumoutier, G. *Les Symboles, les Emblèmes et les Accessoires du Culte chez des Annamites*. Ernest Leroux, Paris, 1891.  
Gives illustrations and explanation of the symbols and artefacts seen in Vietnamese temples.
- 5.6. DVD *Art Contemporain sur Cerfs Volants Traditionnels*, Maison Des Arts, Hanoi.  
Video of the flute kites the Hanoi Red River Bridge festival in support of the victims of Agent Orange.
- 5.7. Gourou, Pierre. *Les Industries Villageoises. Le Papier*. in: *Les Paysans du Delta Tonkinois*, Publications de l'École Française d'Extrême Orient, Paris, 1936, p. 496 et image No.71.  
It contains a short description of Annamite (Vietnamese) paper making.
- 5.8. Gourou, Pierre. *Les Paysans du Delta Tonkinois*. Publications de l'École Française d'Extrême Orient, Paris, 1936.  
This two volume publication is Gourou's PhD thesis which discusses all aspects of peasant life, including politics, in the Hanoi Delta region. He says that the oldest known Vietnamese book was published around 1540 but that the printing process was unknown then. He also comments on how villages were frequently renamed, that the Western standard of providing consistent dates for events did not always exist and that sometimes it was decreed that "lost" history should be rewritten. Gourou's book was republished in French in 1965 by Mouton, Paris and an English translation exists as *The Peasants of the Tonkin Delta: a study of human geography*. Published by the University of Michigan, 1955.
- 5.9. Hart, Clive. *Kites: an historical survey*. Faber. London, 1967.  
See also reprint 1982 by Appel, New York. Hart is considered the "bible" by kite historians. The first three chapters of the book refer to kites from the Far East and there is an excellent bibliography. Unfortunately the book is not without errors and omissions. The Vietnamese flute kite image on p.30 is mistakenly ascribed to the Chinese, as well being incorrectly referred to as a kite with a hummer; while figure 20 (2<sup>nd</sup> Ed) correctly identifies the kite as Annamese, but again incorrectly says it has a "hummer".
- 5.10. Hô Pham-hoang, 1993, *An Illustrated Flora of Vietnam*, Edition III, N° 2, Smilacaceae, Cyperaceae, Orchidaceae & Poaceae, Montreal.
- 5.11. <http://www.youtube.com/watch?v=bnjl2t73gaw> An Internet YouTube video exists that shows kites and bamboo line being made as well as flute kite flying. A bee kite is shown in flight and has a single medium sized flute. This film is one of a series made by nguyenthanhtuan81 and is titled *Thái Bình - Sáo Đền (Phim tài liệu 2/4)*
- 5.12. de Groot, J.J.M. *Les Fêtes Annuellement célébrées à Émoui (Amoy) "Neuvième Jour du Neuvième Moi - La Fête des Cerfs-Volants" Étude concernant la religion populaire des Chinois*. Ernest Leroux, éditeur, Paris, 1886. Deux Vol. XXV+400+432 pages+24 illustrations. Originally published in the Netherlands with many notes.
- 5.13. Lecornu J. *Les Cerfs Volants*. (Chapter VI in 1st Ed 1902, VIII in 2<sup>nd</sup> Ed 1910 *Les cerfs-volants orientaux*). Vuibert et Nony Ed, Paris. 1910.  
Lecornu's book is considered the leading kite book of the early 1900s. While dealing principally with modern (at that time) Western scientific kites, there is a chapter devoted to Oriental Kites which contains material taken principally from La Nature.



- 5.14. Needham, Joseph. *Science and Civilisation in China, Volume IV:2*. Cambridge University Press. 1965.  
This volume deals with Mechanical Engineering and contains a section on Aeronautics that includes important discussions on the origins of the kite in the Far East. Needham is often quoted and referenced in modern kite histories. While there is mention of kite hummers and pigeon whistles there is no direct reference to flute kites.
- 5.15. Mrs Nguyen Nga, Hubert Olie and Maurice Nhan. *Art Contemporain et Cerfs-Volants Traditionnels du Vietnam*, Maison Des Arts, L'Espace – Centre Cultural Française de Hanoi, Hanoi.
- 5.16. N.N. *Musical Kites*. In Leisure Hour 1888 pp.473-474  
Based on the earlier 1888 publication by Gaston Tissandier in La Nature. The article includes the image of the Fairy kite but contains important errors compared to the original. The text is also confused.
- 5.17. N.N. *A Musical Kite*. In: Picture Magazine, 1894.  
Illustration shows an unusual kite carrying an èk hummer. "This kite is used by the natives of Indo-China and is made of palm leaves stretched on a bamboo frame...as the kite floats in the air, gives forth the strange, wild sounds of an Aeolian harp, which are heard far and wide over the banks of the river Mo Khong in the beautiful tropical nights."
- 5.18. N.N. *Chinese Kites*. In: Scientific American, March 24 1888 p.185.  
This is the translation of the article by M.Tissandier in La Nature and is similar to, but more complete, than the version in Leisure Hour. Four illustrations.
- 5.19. N.N. *Le Cerf-volant à Musique au Tonkin*. In: La Nature, Paris, Février 1890, pp.179-180.  
The article was also reprinted in "Sciences en Famille", 16 April 1897, pp159-160. The article describes the custom of flying musical kites by night in Annam (Vietnam) and includes a nice b/w image, probably a woodcut, where the inset detail shows the outline of a single chamber flute with a central mouth mounted on a long necked bird kite. See also the online La Nature.
- 5.20. Ngô Quý Sơn. *Jeux de Cerfs-Volants in: Activités de la Société Enfantine Annamite du Tonkin*. BIEH, Bulletin de l'Institut Indochinois pour l'Étude de l'Homme. 1944. Tome 6, pp.114-119 et 94, 95 (pl.VI+VII).  
This important reference was reprinted as "Jeux d'Enfants du Vietnam", Edition Sudestasia, Paris, 1985.
- 5.21. Porée-Maspero, Eveline. *Le Cerf-volant in: Étude sur les Rites Agraires des Cambodgiens*. Mouton&Co., Paris, La Haye, 1964; Tome II, pp.479-569.  
The book describes the rituals use in Cambodia and contains very detailed description of the kites, instruments and kite-culture of Cambodia and surrounding countries like China, Vietnam, Siam and Indonesia. It talks about the Cambodian èk kite hummer, kite flutes and Chinese lantern kites.
- 5.22. PROSEA (Plant Resources of South-East Asia). This is an online textfile database (popups will need to be activated) and is a good source for plant descriptions.
- 5.23. Richard, M. l'Abbé. *"Histoire naturelle, civile et politique du Tonquin"*. Chanoine de l'Église Royale de Vezelai; Tome premier, Edit. Moutard, Paris, 1779.  
There is a German edition "*Sittliche und natürliche Geschichte von Tunkin*", Leipzig, 1779.  
The book provides an interesting insight to the culture of the old Tonkin. The following summarises particularly relevant paragraphs:  
p. 42: It is believed that no Tonkinese can improve his knowledge by travelling in foreign countries. The wise laws of his country forbid him to leave. He only knows and appreciates the country of his fathers and he believes all the old stories, including those which refer to foreign empires...  
p.123: The ridiculous custom to burn effigies of all kinds (figures of animals, houses, flowers and fruit as well as other things) made from gold and silver paper when making sacrifices for the dead and at funerals does not come from Confucius. It is not written in the works of the ancient academics, but developed several centuries later. The educated Tonkinese, or Sinese, attribute this to the ingenuity of a paper trader who became rich by selling a tremendous mass of funerary paper. The common people interpreted the merchant's good fortune to be as the result of being protected by his own deceased relatives and due to the high degree of attention he paid to them by burning paper money and other paper objects. It was seen that it is possible to satisfy one's obligations to the dead both cheaply and with little effort. This lead to a trade in this form of paper and which developed into one of the most significant activities in the whole kingdom.

Note: This may explain the highly developed expertise in papermaking (used for kites, fans, lanterns, screens etc.) in a country where there is not a tradition for using paper for printing and books as it was in Europe.

p.344: The use of bamboo for papermaking is described. Two years old, split bamboo culms were boiled up in slaked lime to reduce the fibres to a mess of threads. These threads would be washed, dried and boiled again to produce a pulp which would then be screened to make a bamboo paper.

Note: The initial process seems very similar to the method of producing kite flying line from bamboo.

- 5.24. Silvestre J. *Empire d'Annam et le peuple Annamite*. Félix Alcan, éditeur, Paris, 1889; 380 pages.

On pp.181-183 he describes «Art et Métiers » where he notes that:

a) It is necessary to involve the whole village when complex things are made. Sometimes the village can only contribute to some parts or components of the whole article. This led to dependencies between villages.

b) If someone created something new, or better than previously made, he was in danger of being called to the royal court in order to produce it exclusively for the court. This would mean living, almost as an unpaid slave, near to the court in miserable conditions. It could mean that the artisan was separated from his wife and his children who remained at home and who were, with no income, in danger of starving. No one dared to be too good.

On page 164 he notes: "Enfin (...) le jeu innocent du cerf-volant au Tonkin. On est étonné de voir, dans chaque village, pendant la mousson S.-O., les hommes les plus sérieux et les plus âgés s'amuser à lancer dans les airs, pendant des journées et des nuits entières, ce morceau de papier, monté d'un tube qui siffle et bourdonne. C'est une préoccupation de toute l'année pour monter ce joujou, de manière à ce qu'il soit, sinon le plus beau de la contrée, du moins le plus remarquable de la localité. Tant il est vrai qu'on peut s'amuser souvent à bon marché à tout âge." Uli believes that this is the reason why it is so rare to find descriptions of Vietnamese kites since they were considered a toy for the young and that they were sometimes, and this involved a shaking of the head, also played with by the elderly.

- 5.25. Streeter Tal. *The Art of the Japanese Kite*, Weatherhill, New York/Tokyo. 1972.

The book is an in-depth study of the Japanese kite and focuses on the kite artists and their stories. Chapter 11 "Bamboo and Paper" contains interesting history and detail regarding mulberry papermaking.

- 5.26. Tissandier G. *Cerfs-Volants Chinois*. La Nature, 1888, Vol.16 (pt1), pp.44- 46.

This is an article from M. Huchet on the Chinese "original kite" and the Diều Sáo flute kite. The article contains steel engravings and is also available online. Versions of this article were reprinted in English in Leisure Hour and Scientific American, both 1888.

- 5.27. Wang XiaoYu. *Chinese Kites: Their Arts and Crafts*. Shandong Friendship Publishing House, 1996.

This book was previously only available in Chinese language editions. It is an excellent reference on Chinese kite history as well as providing detailed kite making information.

- 5.28. Whitehurst Robert. *My Red River Delta Kite Day*. Discourse from the End of the Line, Drachen Foundation April 2009. Vol1, No.4 pp.29-32.

Robert Whitehurst was an important contributor to our research. He had previously attended the festival at Bá Dương Nội.

- 5.29. Wright, G N. *The Chinese Empire Illustrated*. 1859.

The book by Wright contains the well known engraving "Kite-flying at Hae-Kwan on the Ninth Day of the Ninth Moon" and mentions kites equipped with musical hummers. The engravings were made in England by an artist who had not actually visited China. While it is most likely that he had access to detailed sketches to use as the basis for these engravings, it is also possible that there are inconsistencies and even invention. This problem of interpretation is likely to be common in the period prior to photography.



## Appendix A. People

### Mr Quan Hang Cao



Figure 20 Mr Quan Hang Cao

Mr Quan Hang Cao was our principal contact in Vietnam. He kindly arranged our hotel, transport and meetings with flute kite people in the villages and in Hanoi.

Mr Quan Hang Cao is of Vietnamese origin although British through naturalisation. He is a graduate in Electronic Engineering and has held senior positions, principally with Motorola. He now has a base in Hanoi which he uses to further his championing of Vietnamese kites. He is one of the principal organisers of the Vững Tàu International Kite Festival and was particularly responsible for bringing the flute kite teams there.

We spent a lot of time talking with Mr Quan Hang Cao. He told us that there are a lot of flute makers, but he considers that relatively few can be considered as expert makers. Similarly there are a lot of kite makers, although only a few are considered expert makers. We were told that, in general, there are no people who are expert in both flute and kite making. Mr Quan Hang Cao told us that flute makers such as Mr Ngô Văn Bội in Song Vân village (Village 1) will sell their flutes, whereas kite makers do not necessarily make good flutes and seldom sell their kites. The reason for the unusual “cat’s ear” flute mouth that we saw at Village 1 is not known to Mr Quan Hang Cao.

In respect of musical quality, it was noted that very little is done by the village flute makers to tune the flutes to a regular pitch in order that they make a good sound when flying together. It seems that the aim is to obtain a harmonious tone, a pleasant individual chord and one which enables the listener to identify the owner of the flute kite. Mr Quan Hang Cao said that he has a particularly old flute in his collection and that this flute has an exceptionally pure sound.

Although flutes had been saved by many people, the Vietnamese War resulted in people losing their skills as craftsmen due to other pressures. Even now there is little time to devote to what is considered a pastime, rather than the more serious side of making a living. Furthermore the limited time available for kites means that they are only flown for a few days a year and are often damaged, or discarded, after a few days of flying. It was significant that the Bá Dương Nội kites were not judged by the sound quality of their flutes. Many were made in the few days preceding the festival and had not previously been flight tested.

There is a threat to the continuity of flute making as many flute makers will only pass on the knowledge to their sons. Each flute maker has his own “secrets” and is generally unwilling to share them. Similarly each village carefully guards its flute making techniques from other village flute makers.

There is some evidence of continuity of kite designs along the common coast of Vietnam and south east China (according to Tissandier) although Mr Quan Hang Cao could not confirm this.

We learnt that kites may be flown to 2-3 km line length and can reach heights of more than 1000 metres.

Apparently box kites were flown as aerial barrage defence against American aircraft during the Vietnamese War<sup>24</sup>.

<sup>24</sup> This has been confirmed by Robert Whitehurst who took part in the Vietnam War. He writes that, while taking part in helicopter operations around Hue, a friend saw kites of some sort being flown at a similar height as the helicopter.

## Mr Nguyễn Hữu Kiêm

Mr Nguyễn Hữu Kiêm holds an important position in Bá Dương Nội society and is central to the kite flying festival. According to Phuong Hoa in the Internet article “Thang Long - Thousand years of Culture”, he was, at the age of 50, awarded the title of Folk Craftsman and Head of the Bá Dương Village Kite Club. He inherited his love and pleasure in the art of making kites, as well as gaining experience in making kites and flutes, from working with his father, Mr. Nguyễn Hữu Ngo. His father could make many traditional kinds of kite. These included the *canh muom* kite, *canh chanh* kite, *canh moc* kite, animal and flute kites with the sound of a gong, snail, bell and horn. All of these kites were known for their beauty, high-flying and their melodious sounds. With the folk knowledge of making kites that had been passed down from his father, and together with his own experience, Mr Nguyễn Hữu Kiêm has discovered, through survey and calculations, a standard formula for a high-flying and “echoing” kite.

Mr Nguyễn Hữu Kiêm has been responsible for supporting and encouraging young people maintain their ancient traditions of flute and kite making in the village. He sees this as being important, particularly since five or six generations of his own family have made and flown kites. He has become famous for making good flutes and beautiful kites. He is concerned for the survival of traditional kites in his village and has devoted his life to ensuring that the younger generations appreciate and participate in this important cultural activity.

The article by Phong Hoa mentioned that Mr Nguyễn Hữu Kiêm has made contact with other kite and flute making districts and villages, notably *Thai Binh*, *Bắc Giang*, *Bac Ninh*, *Hà Nam* and *Hà Tĩnh*. He has also been associated with the Folk Museum at the Hanoi Department of Culture.

We met Mr Nguyễn Hữu Kiêm at the flute kite festival and also at his large house in the centre of Bá Dương Nội where he showed us his impressive collection of different varieties of Vietnamese kites, one of which was decorated with the legendary flute kite story of the origins of Bá Dương Nội. We saw that Mr Nguyễn Hữu Kiêm is indeed an excellent flute maker. He made the unique “Friendship” flute which he presented to Uli.

We also saw other several kites at Mr Nguyễn Hữu Kiêm’s house. Some of these had been placed in the garden while others were hanging in a side lobby. One of the more unusual kites in the side lobby was a Fairy Kite of complex construction. Mr Nguyễn Hữu Kiêm also has a woven bamboo kite spool. This was not seen by us, but it was seen by Robert Whitehurst several years previously. It is not known whether the spool contained traditionally made bamboo flying line.

Another of Mr Nguyễn Hữu Kiêm’s interests is that of growing miniature trees. This is an old Vietnamese tradition, similar to the Japanese bonsai, and his courtyard garden contained many magnificent examples, one of which is this exquisite miniature banyan tree.



Figure 21 Mr Nguyễn Hữu Kiêm discusses the “Friendship” flute with Uli



Figure 22 A miniature banyan tree in the garden at Mr Nguyễn Hữu Kiêm’s house



## Mr Phạm Hồng Nhâm

Paul met Mr Phạm Hồng Nhâm and his old friend, Mr Pham Van Mai, at Bá Dương Nội. He is an elderly gentleman of 81 years and is one of the founder members of the Bá Dương Nội traditional kite flying group. Mr Phạm Hồng Nhâm is principally a kite maker and lives in a courtyard house on the main street in Bá Dương Nội. He speaks French and also plays the *dan bau* monochord instrument; he played a decorative bamboo dragon version of the *dan bau*<sup>25</sup> during the temple ceremony. Mr Pham Van Mai (see photo below) was a previous winner of many kite competitions at Bá Dương Nội.

Mr Phạm Hồng Nhâm is shown in a photograph by Mr Ngô Quý Đức here:

<http://myhanoigroup.com/album/index.php?n=2388>

Mr Phạm Hồng Nhâm showed a range of both incomplete and finished kites. They were all flute kites and they came in two sizes. Several small kites were in the process of being made. These were about 1.5 metres in wingspan and were all uncovered. There were also a number of partially and completed larger competition kites. Significant kites are described below:

- a) Red Kite. This was a large red kite with a cloth sail and carrying a single dark brown flute. The single flute appeared to be about 50cm x 9cm and was strung fore/aft by a line attached to the top of the attachment stick. Sway lines also went from the top of the attachment stick to the wing bridle points. The ends of the flute were supported by a loop that was tied at the flute and finished at the wing bridle points.



Figure 23 Mr Phạm Hồng Nhâm shows a number of unfinished kite frames



Figure 24 An unfinished kite by Mr Phạm Hồng Nhâm, together with his red kite and Mr Pham Van Mai

<sup>25</sup> *Dan Bau*. This is a single string musical instrument with a tapered box body resonator. The overtones/harmonics are regulated by the "heel" of the hand and a tremolo lever. The tremolo lever incorporates a resonance cup. The string is plucked with a pencil-like stylus the right hand in a way similar to guitar harmonics. This determines the frequency of the overtones when the "heel" of the same right hand slightly touches the metal string at particular points. The left hand is used to handle the tremolo lever.

- b) Dragon Kite. This was a large kite painted with a dragon flying in clouds together with a stack of three gold lacquered flutes. At least one of the flutes looked as if it was made from tin. The flute stack was supported fore/aft by a thick cord and then simply supported at the lower flute ends to the wing bridle points by string. Only the upper side of this kite was painted; metallic silver paint was used. The lower, earth-facing, side was red with blue reinforcing tapes, together with Chinese characters presumably denoting the maker's name and the name of the village.



*Figure 25 Mr Phạm Hồng Nhâm (right) shows his Dragon Kite. Note the small size of the triple stack of gold flutes. Mr Nguyễn Hữu Kiêm's mother can also be seen walking along the road*

- c) Phoenix Kite. This was a large kite hanging inside his house with a single gold lacquered flute. This kite was covered in polythene sheeting and was decorated with a golden phoenix as well as Vietnamese script.

Mr Phạm Hồng Nhâm also showed his collection of flutes. These were attached to the competition kites. There were several types; firstly a large single flute similar to those made by Mr Ngô Văn Bội in Song Vân village, then there were flutes finished in gold lacquer. The Phoenix kite had a single flute although this was not as large as the flute on the Red kite. The Dragon kite carried a stack of three gold lacquered flutes. It appeared that these were made from various materials and were finished in gold lacquer. Some of these flutes could possibly have been fashioned from tin or brass tubes.



*Figure 26 The Phoenix kite*



### Mr Ngô Văn Bội

Mr Ngô Văn Bội lives in Song Vân village (Village 1). He is a farmer who grows sweet potato, taro and rice, but is also known as a flute maker. The entrance to his courtyard house advertises his flutes on the entrance gate wall. Mr Ngô Văn Bội is now 61. He has been making flutes since he was 16 and carries on the family tradition. Mr Ngô Văn Bội is considered by Mr Quan Hang Cao to be a good flute maker but is not regarded as a kite maker. He has a son, but the son, who is in his mid-20s, does not want to carry on with the family tradition of flute making. Mr Ngô Văn Bội's house was full of flutes of various sizes and states of making. He makes Type 1 single flutes with a body length of approximately 30cm up to 120 cm.



*Figure 27 Mr Ngô Văn Bội*

### Mr Chung

We visited Mr Chung at his house in An Binh village (Village 2) where he showed us his kites. He gave a demonstration of how the kites were covered and treated with kaki “fruit juice” to give the sail a flexible and smooth finish. The quality of his kites was excellent. The finished kites were equipped with triple flute assemblies. These kites are discussed further in Appendix D.



*Figure 28 Mr Chung of An Binh village; note the extra string bracing in the inner wing*

### Mr Nguyễn Gia Độ (Bá Dương Nội)

Uli visited Mr Nguyễn Gia Độ at his house in Bá Dương Nội where Mr Nguyễn Gia Độ showed his flutes and presented one to Uli. Mr Nguyễn Gia Độ is considered an excellent flute maker in Bá Dương Nội. Mr Ngô Quý Đức was at the house of Mr Nguyễn Gia Độ when Uli visited during the Bá Dương Nội festival. There were a number of kites, including some big bird kites at the house so it is assumed that Mr Nguyễn Gia Độ is also an accomplished kite maker.



*Figure 29 Mr Nguyễn Gia Độ with his flute kite, a kite hanging in the rafters of his house and details of the flute given to Uli*

### Mr Ngô Quý Đức

Mr Ngô Quý Đức is the team leader and the founder of MyHanoi. This group of over 50 young people are studying and working in Hanoi, with the aim of launching and implementing different activities to research, develop and preserve the diversified cultural values of their capital city. This is being done in order to help other people, particularly the young people, to understand more about Hanoi.

Mr Ngô Quý Đức<sup>26</sup> (otherwise known as “Gervie” on the MyHanoi website) has been very helpful in providing information on Vietnamese kites via email correspondence with Uli.

The photographs in Figure 30 were supplied by Mr Ngô Quý Đức and show earlier festivals. An important participant was Mr Pham Van Mai who also attended the 2011 event.

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<sup>26</sup> [www.myhanoi.com.vn](http://www.myhanoi.com.vn)





These earlier photographs, taken before 2011, show Mr Pham Van Mai, He was winner of many earlier competitions. He is holding the bamboo kite spool.

Mr Ngô Quý Đức (Gervie) of MyHanoi (right) who supplied these photographs.

Below is a panorama of part of the kite field at Bá Dương Nội in April 2011.

Note the many family tombs. The temple is behind the flag.



Figure 30 Mr Pham Van Mai and Mr Ngô Quý Đức (before 2011)

## Appendix B. Places

### B1 Villages

#### B1.1 Bá Dương Nội Village, Hồng Hà, Đan Phượng, Hà Nội.

Bá Dương Nội (also known as Bá Giang) is a small village situated on the bank of the Red River about 15km from Hanoi. We visited on April 17<sup>th</sup> and April 18<sup>th</sup> 2011. We met Mr Nguyễn Hữu Kiêm, Mr Nguyễn Gia Độ and Mr Phạm Hồng Nhâm.

Google-Coordinates: 21.131893N,105.685126E

<http://wikimapia.org#lat=21.1318524&lon=105.6851077&z=19&l=0&m=b&search=hong%20ha>

#### B1.2 Song Vân Village, Tân Yên District, Bắc Giang District (North).

This is referred to as Village 1 and was visited on April 14<sup>th</sup>. We met flute maker Mr Ngô Văn Bội at his house. All were single flutes, some very large. Mr Ngô Văn Bội made a flute cap. We saw two kites being flown, both with circular tails (type 2a) and both with single flutes. Mr Ngô Văn Bội wrote his name and address on the yellow Type 1 flute that he gave to Paul. This is Xom Hong phúc - Xa Song Vân . Huyen Tan yen, Bắc Giang , Vietnam.

See Wikipedia maps {Song Vân - Tân Yên District, Bắc Giang Province, Vietnam} or

<http://wikimapia.org#lat=21.3855959&lon=106.0546598&z=19&l=0&m=b&search=bac%20Giang>

#### B1.3 An Binh Village, Bắc Giang District.

This is referred to as Village 2 and was visited on April 14<sup>th</sup>. We met kite maker Mr Chung at his house.

### B2 National Library, Hanoi

We visited the National Library which is located on Pho Trang Thi, close to Hoan Kiem lake. Whilst being an impressive building we did not find any old documentation. We did find two modern paperback books that referred to kites. The library has a computer reference system but requires knowledge of Vietnamese. We were told that when making a computer search for the Vietnamese word *Diều* (kite) it was best to type: d-i-ee-u+F.

### B3 Vietnam Museum of Ethnology, Hanoi

We visited the excellent and well maintained Vietnam Museum of Ethnology<sup>27</sup> but did not find any kites although these have previously been displayed. On enquiry we met Dr Nhi who is a specialist in children's collections. She knew of *Diều Sáo* but we did not follow up. This museum visit was one of the highlights of our trip.

### B4 Vietnam Fine Arts Museum, Hanoi

We visited the Vietnam Fine Arts Museum<sup>28</sup> on Wednesday 20<sup>th</sup> April. Only one kite image was found. This is on one of three Chinese scroll hangings dating to the early 1800s. The scroll depicts children's games and one child is shown, upper right, flying a kite with a billowing sail...looking somewhat like a delta kite but seems to be a rear view of a flute kite. A copy of this scroll painting can be purchased although, on enquiry, the museum shop was sold out. The same scroll was also on view at the History Museum. Two prints were purchased.

One was a cheap modern print showing an impression of a tailed kite being flown from the back of a water buffalo. The other print was a fine engraving, again modern, showing three children flying three stylised kites over a temple. There is detail in the kites and, although not flute kites, deserve further investigation.



Figure 31 Detail of the kite scroll at the Museum of History

<sup>27</sup> "Bảo tàng Dân tộc học Việt Nam" Nguyen Van Huyen Road, Cau Giay Street, Hanoi, Vietnam.

Official website: <http://www.vme.org.vn/index.asp>

The telephone number for Dr Nhi is 0912643125.

<sup>28</sup> 66 Pho Nguyen Thai Hoc. Website: <http://vnfineartsmuseum.org.vn/English/gioithieu.asp>



The *Maison des Arts* gallery is located at 31A Van Mieu, near the junction with Nguyen Khuyen. Together with Mr Quan Hang Cao, we visited on Tuesday 19<sup>th</sup> April to meet Mrs Nguyen Nga. She is the President and Art Director<sup>29</sup>.

Mrs Nguyen Nga is an architect, is married to a Frenchman and has made a study of Vietnamese culture. She lived in Paris during the Vietnam War and returned afterwards. She is very interested in kites and their place in Vietnamese culture. She told us that, for a long time, kites were forbidden during the war since they could be flown as high as 1000m, where they could be used for signalling, putting up antennas, act as light signals etc. Because of this prescription a whole generation was lost in the art of kite-building. While the kites were either destroyed, or not made at this time, the flutes themselves were protected and were kept in secret. Some were, for example, hidden inside the family “hotel of ancestors” in order not to be discovered and destroyed. They were mostly hidden in houses where they would be kept in the ancestral shrines. These shrines form part of every home and include relic boxes where the bones of the ancestors are kept. After returning to Vietnam, Mrs Nguyen Nga started to research the kites and found that the Vietnamese kite is not considered a children’s toy but represents a seriously undertaken adult activity.

She discussed these kites. She said that each village has a representative kite, which would be marked by specific local features, including its shape and configuration according to the different weather conditions pertaining in different regions.

The principal wing shape is that of a leaf<sup>30</sup>. There are variations in size and these are determined by the size and weight of the valuable payload, i.e. the flutes. Some villages make really big kites of up to 10 m wingspan which carry an ensemble of big flutes of up to 2m length. It can take several people to get these giant flute kites airborne. The whole ensemble would be flown up to a height of 1000m. In some cases the kite may be tethered to a tree and kept up for the whole day and the following night. People would listen to the kite’s sound for the whole night and the locals could distinguish the flute’s owner by listening to the variations in the sound of the flute. Every flute has the “signature” of its maker. But Mrs. Nguyen Nga asked herself why it was that the sound of these flutes can be transmitted over distances of up to several kilometres. Directly after the war, people returned to traditional kite flying. At one time there were so many of them that they caused disturbances, particularly at night, with the result that some villages revived the kite flying ban.



*Figure 32 Mrs. Nguyen Nga at the Maison des Arts*

Mrs Nguyen Nga went to several villages to ask the local people why they flew flute kites. The children did not know the stories about the kites, but they had learned how to fly them. When she spoke to the adults they responded by telling the old legend of the fairy godmother who came down from the sky. The adults said they sent the kites up into the sky in order to tempt the fairies to come down to earth. In this way they communicate with the heavens by means of kites and their musical wind flutes.

Mrs Nguyen Nga has researched further and has found references to kites being related to activities such as “erecting a temple with/to earth mother”, “rice cultivation”, “civilisation dependant on rice cultivation”...etc. She reasoned that the kite serves the purpose of supporting the musical instrument, and that the kite with its accompanying music acts as an instrument for weather forecasting. When she told this to the adults there was agreement, particularly from some very elderly grandmothers who

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<sup>30</sup> This was confirmed by Mr Quan Huang Cao as either the mango or the lemon leaf.

confirmed to her that the kites and flutes were used in this way, and that this was part of the culture of rice growing. In many ways this is like the European culture of watching out for swallows and dragonflies flying low over the fields since these are known to be harbingers rainy weather.

Rice farming in Vietnam is a complicated process and over the years people have looked for ways of predicting the weather in order to improve their crops. In doing so, they have used kites as a means of detecting changes in the weather.

In 2007, Mrs Nguyen Nga began trying to unite several villages and arranged meetings between them. Villagers had the opportunity to look at the kites from other villages and were able to make kite-related discoveries about things they had not known previously. Four or five years ago she became more seriously interested in kites. Beforehand she knew them from her childhood and thought of them as typically being played with by children on the water buffalo; as frequently depicted in Vietnamese art prints. When she came back to Vietnam after the war, she was introduced to the kites from the Bắc Giang District. These kites are very different from the Hue kites in central Vietnam. The Hue kites are principally Chinese kites and, by tradition, were flown by the king. These are very colourful and decorated kites but are NOT considered true Vietnam kites. She said that only the flute kite belongs to the rice civilisation<sup>31</sup>, and that in Vietnamese village life the flute kite is seen as a useful tool. She said it is to be used by the adults, by the people and not by the children.

There was a discussion of the shape of the kite and its similarity to the kites of south east Asia (Malaysia, Cambodia, and Thailand) and it was noted that these kites are quite different from the Chinese kites. It was pointed out that the Chinese kite is called *Feng Zheng* (风筝) which means wind zither and it was agreed that kites are used to lift musical Aeolian instruments all over southern Asia, although some use flutes while others use hummers.

We talked about the village kite ceremonies where the kites are used to “call the wind”. These kites are not particularly easy to fly and their behaviour close to the ground can be somewhat erratic. However when flown to a higher level, the kites become more stable and often fly very high. If the kite does not launch cleanly it will come down quickly and have to be relaunched. We noted that this is consistent with the large winders loaded with considerable lengths of line that we saw at Bá Dương Nội.

Mrs Nguyen Nga believes that the sight of kites flying is linked to peacetime. The Vietnamese people have been badly affected by the war and today people in Vietnam love to live in peace. During the war kites were forbidden...so kites are seen now as a sign of peace and stability.

*Maison des Arts* was founded in 2007 and pursues her concept of “no frontier between art”. This means that everything related to art can be seen in the same place; paintings, sculptures, kites, ancient relics as well as performances of literature, music, poetry.

She found that kiteflying takes place at the same time in all of the villages. The village people have never previously thought that there would be different styles of kite, so each village has its own signature flute kite. In 2007 she brought many plastic/sculpture artists to the *Maison des Arts* gallery and organized a big Full Moon Festival for the child victims of Agent Orange. Their families had suffered badly during the war. This arts festival gathered together many artists in Hanoi and the artists painted the kites in their own style. The kites were then shown to the village people and they saw, for the first time, the opportunity of using kites as art. She introduced the concept of change and alternatives. The only problem was that there was no wind for her festival; “*the wind did not come*”. An exhibition booklet and DVD “*Art Contemporain sur Cerfs Volants Traditionnels*” were made for this festival

We showed her photographs of Bá Dương Nội kites that were decorated similarly to the art kites in the exhibition booklet. She replied that they were encouraging kite art and that the bridge festivals were becoming art kite events. She talked about kites and the bridge (Hanoi Bridge<sup>32</sup>) with the kites “representing peacetime”. Each time she organises a kite workshop she gets up to 100 kite artists together to make kite art. Afterwards they auctioned the kites to raise funds for the children damaged by

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<sup>31</sup> Mme. Poreé Maspero mentions in her book, *Étude sur les Rites Agraires des Cambodgiens*, that the kite represents real birds of prey which themselves are harbingers of the dry weather required by the rice when it ripens and when it is ready for harvesting. In that respect, the raising of a kite can be seen as a request for dry weather.

<sup>32</sup> See: [http://www.associatedcontent.com/article/1064780/the\\_long\\_bien\\_bridge\\_in\\_hanoi\\_bridging.html?cat=16](http://www.associatedcontent.com/article/1064780/the_long_bien_bridge_in_hanoi_bridging.html?cat=16)



Agent Orange.

We talked about whether these art kites could be shown in Europe and whether it would be possible to do this. She was concerned about the size of the kites. When they make exhibitions in Vietnam, the kites had to be transported by motorbikes because of the impossibility of putting them into cars and the cost of other forms of transport. While difficult, the effect of carrying kites this way is that they naturally make their own wind music. She joked that when the kites travel through the towns they provided a wind concert! She did want to show Vietnamese kites as part of a kite/art/music Urban Arts Exhibition at LaDefence in Paris, however there have been a funding problems.

Mr Quan Hang Cao reminded us of the difference between our researches into the ethnological aspects of Vietnamese flute kites and the dynamics of the art world. Mrs Nguyen Nga responded that every year she tries to link art to the village people and she invited Mr Quan Hang Cao to the Festival of Long Bien/Red River Bridge so that they could co-operate. Her principal project is to show all the arts of Vietnam at a festival located on the island at the Red River Bridge.

We discussed the annual October 10<sup>th</sup> One Sky One World Kite Festival for Peace (OSOW). She had not heard of this and commented that at this time of the year the winds are always too low. However she would very much like to work together for OSOW.

Paul asked her whether she had any knowledge of pigeon flutes in Vietnam, but she had not heard of them.

### **Kites seen at the Maison des Arts**

An unusual kite (Type 2c Prince with Mango wing) was seen on the ground floor close to the stairwell. The wing was unusual in that it had a relatively high aspect ratio. The inner section of the wing was parallel and only the tips were curved. This kite had a rear trapezoidal body and twin oblate tails. It was painted by an artist.

The top floor gallery is used as a meeting/performing place. There were two groups of about 10 kites hanging from the rafters. These kites included some with more conventional wing shapes, but with the double tails (Type 2C). The kites were surfaced in clear polythene and painted by the artists. One of the kites had only the single wing and carried a two moderately large flutes. There were other single wing kites but they did not have flutes. There were stacks of kites with twin oblate tails and these had more conventional lower aspect ratio wings and the trapezoidal “body” appeared longer than the ground floor kite; these kites were covered in transparent film and painted with various designs. One conventional flute kite (Type 1) carried a conventional stack of three flutes and was lettered, somewhat appropriately, “KITSCH”! We did not have the time to examine these kites closely as Mrs Nguyen Nga had another appointment.



Figure 33 The Kitsch kite at the Maison des Arts

### **Publications**

There is a booklet written by Mrs Nguyen Nga, Hubert Olie and Maurice Nhan that accompanies the kite art exhibition titled “*Art Contemporain et cerfs-volants traditionnels du Vietnam*” produced by L’Espace – Centre Cultural Francais de Hanoi. The catalogue shows seven distinctly different types of kite.

We were given the DVD “*Art Contemporain sur Cerfs Volants Traditionnels*”.

## B6 Vietnam Institute for Musicology

We visited the Vietnam Institute for Musicology, CC2 Building Me Tri Road, My Dinh, Tu Liem in the suburban zone in the West of Hanoi on Thursday 21<sup>st</sup> April.

The Institute<sup>33</sup> is some way from the Old Quarter of Hanoi and the taxi driver had some difficulty in finding the correct address. We met Deputy Director Dr Nguyen Binh Dinh<sup>34</sup> at his office on the 3<sup>rd</sup> floor of the Institute and, following a short discussion, Dr Dinh showed us the musical instruments collection which was housed on a large gallery. While Dr Dinh knew of flute kites, the Institute does not hold any of these since they do not have any real interest in Aeolian music. This is most probably because these instruments are not musical instruments in the conventional sense. The Institute has a collection of sound recordings on the ground floor but these were not accessible since the doors to the collection had been sealed. This Institute building seemed to be the administrative building as well as the location for formal meetings. It was apparent from photographs that several foreign delegations had visited the Institute. The Institute does not incorporate the music teaching academy<sup>35</sup>. The building was relatively new and we had the impression that the instruments collection had been moved from its previous location at the north wall of the Temple of Literature where there had previously been demonstrations of instrument making and performance<sup>36</sup>.

## B7 Paper Street

On Wednesday 20<sup>th</sup> April we bought kite quality paper from an art shop in Hang Bo in the Old Quarter of Hanoi. Three weights were found; one was a very lightweight paper, similar to cigarette paper. The others were mulberry papers<sup>37</sup> similar, but lighter weight than Nepalese papers. Another suitable paper is Dó paper made from *Rhamnoneuron balansae*.

Papermaking can be found at these villages:

An Cốc village, Hồng Minh commune, Phú Xuyên district, Hà Tây Province.

Nghĩa Đô village, Nghĩa Đô commune, Cầu Giấy district, Hà Nội city

Triều Khúc village, Tân Triều commune, Thanh Trì district, Hà Nội city

Yên Thái village, Bưởi commune, Tây Hồ district, Hà Nội city

Cót village, Yên Hoà commune, Cầu Giấy district, Hà Nội city

## B8 Musical Instruments Street

We went to see musical instruments in Hang Manh, Old Quarter Hanoi on Wednesday 20<sup>th</sup> April. We commissioned two wood block stamps from a small shop. The stamp logo was based on a flute kite sketch by Uli although the wood carver knew of these kites. Further along the street were musical instrument shops. One shop, on the corner of Hang Manh and Hang Quat, had two kite flutes. Each comprised three flutes. However these were very badly made and damaged in parts. The price quoted was 250000 Dong. This was refused although later one flute set was bought and comprised the better flutes from the two sets; these are described and pictured later in Appendix C.

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<sup>33</sup> formerly at 32, Nguyen Thai Hoc, Hanoi

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Tel: (84-4) 3787 5733

<sup>35</sup> We were somewhat surprised at this as the Institute displays daily opening times and the guide books mentioned daily performances and exhibitions and the opportunity to see instruments being made. It seems that the guide books refer to an earlier location of the Institute at the north wall of the Temple of Literature.

<sup>36</sup> We went to the Temple of Literature, located close to the Maison des Arts, where excellent musical performances of traditional Vietnamese instruments are given daily. (*Văn Miếu*, *Hán tự*: 文廟) in Hanoi; Entrance *Quốc Tử Giám*, 國子監, opening time daily 8-17.

[http://en.wikipedia.org/wiki/Temple\\_of\\_Literature,\\_Hanoi](http://en.wikipedia.org/wiki/Temple_of_Literature,_Hanoi)

<sup>37</sup> A very detailed account of the Japanese method of making mulberry paper is given in Tal Streeter "The Art of the Japanese Kite", Weatherhill, 1972. The Chinese art of paper making was introduced into Japan by the Korean priest, Doncho, around the year 610.

The process of making paper from mulberry can be found at:

[www.druckstelle.info/de/papier](http://www.druckstelle.info/de/papier)

<http://www.vietnews.vn/News/Lifestyle/Life/6916/Traditional-paper-making-craft-on-the-ropes.htm>

<http://visithanoi.blogspot.com/2010/07/hang-giay-street-corner-of-thang-long.html>



We visited the imposing History Museum at 1 Pho Trang Tien on Saturday 23<sup>rd</sup> April. The only kite to be seen was painted on another version of the scroll painting seen at the Vietnam Fine Arts Museum. Other kite related artefacts included an inlaid panel depicting a traditional procession. The procession included bearers carrying a dragon that was playing with the “pearl of wisdom” and also a fish. These images reminded us of medieval European pennon proto-kites. The dragon is a classical mythological character of East Asian origin and is one of the gods that bring clouds, fruitful rains and good luck. We saw many dragon images in Vietnam and they appeared both on the old gateway building at Bá Dương Nội as well as roof guardians on the village temple.



Figure 34 Dragons protect the entrance gateway as well as the temple roof at Bá Dương Nội. They appear at the History Museum and in traditional imagery. The dragon on the wall at Bá Dương Nội represents a desire for freedom and independence

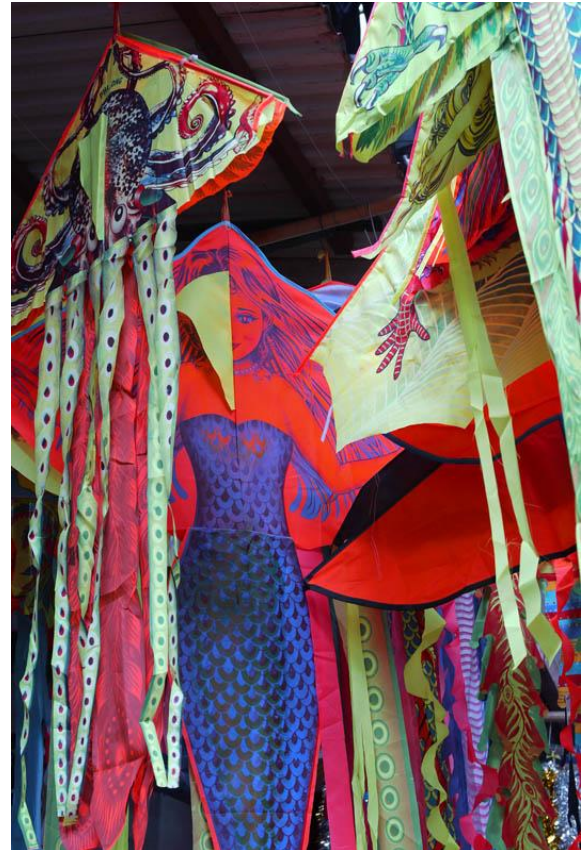


Figure 35 Dragons appear on the tombstone in the kite paddy field at Bá Dương Nội





*Figure 36 Uli scheming under the banyan tree at the Museum of Ethnology*



*Figure 37 The only kite shop in Hanoi. Cheap kites are a threat to the traditional culture*



*Figure 38 Paul relaxing at the Museum of History*



*Figure 39 A rare example of a Vietnamese book that is written on palm leaf slivers and held together by a cord. It is not surprising that little written documentation could be found.*

*Seen at the Museum of Ethnology*





*Figure 40 Detail of the print bought at the Museum of Art. These kites appear to be inspired by the Dieu Sao but are clearly not the kites as flown today. However the kites are associated with a temple and are being flown by children (not shown in the detail)*



*Figure 41 Another Vietnamese kite print, this time showing a stylised kite being flown from the back of a water buffalo*

## Appendix C. Flutes

### C1 Tools for flute making

We did not see any drawings for the kite flutes, so it appears that they are mostly made by eye and experience. Uli saw some templates that would be used to ensure repeatability.

The tools used for flute making appeared to be the standard Vietnamese woodworking tools that can be bought at the tool markets in Hanoi. These are primarily simple wooden handled steel chisels and knives that require dressing and sharpening prior to use. The flat chisels come in various widths and the gouge chisels have various diameters. The chisels are struck using a heavy wooden club.

A tension saw was used to cut the flute cap blank from the stock. Some of the initial rough shaping was done using a wide blade hatchet style knife. The rough cutting and gouging was primarily done by the chisels and the fine work of cutting the slot of the flute cap used a sharp knife. A knife, chisel and scraper are used for finishing; we did not see any sandpaper but it is sometimes used. Finally the completed flutes may be given a water-protecting finish, using paint or, sometimes, a clear varnish.

One important tool was the hollow in the stone yard in Village 1. This was used to locate the flute cap so that it could be held by the feet during the shaping process (see photo sequences).

### C2 Flute materials

The material used in the Friendship Flute is bamboo for the flute body and magnolia or jackfruit wood for the flute caps<sup>38</sup>. Some sort of light wood (for example Sibo Mahogany or Jackfruit wood) is used for the diaphragms that separate the individual flute sections. Bamboo pegs of 1mm diameter are used to locate the flute base diaphragms.

Mr Ngô Văn Bội in Song Vân village (Village 1) uses Mạ or Mạnh tông (*dendrocalamus giganteus*) bamboo for the flute body; 6 cm to 15 cm diameter with an original wall thickness of up to 2cm (on 15cm bamboo). The bamboo is sourced from Lạng Sơn Province in the North of Vietnam and is usually at least 3 years old before it is cut down. It is finally pre-processed by leaching in water for several weeks to make it less susceptible to insect damage, after which it is then dried. The dried bamboo stalk is carefully inspected to ensure there are no bamboo insects, moulds or cracks before the flute is made.

We were told that a “bitumen” paste<sup>39</sup> is used to attach the flute caps to the flute body. This is made with bitumen mixed with fillers such as sawdust. The black paste is made soft by heating. A cigarette lighter flame is often used to provide the final sealing. Natural bitumen can be found in northern Vietnam; however a later discussion with Ron Spaulding and local Thai members of the Thai Kite Heritage Group suggested that sticky bee propolis<sup>40</sup> might also be used.



Figure 42 Bee propolis in its original state  
©Max Westby www.mieldesully.fr

<sup>38</sup> Magnolia *Manglietia dandyi*; Vietnamese name: Vàng tâm. Jackfruit wood; Vietnamese name: Mít,

<sup>39</sup> Bitumen (Nhựa đường = asphalt) naturally emerges from the ground in many regions of the world, including northern Vietnam. Perhaps the most famous example being the Pitch Lake in Trinidad [http://en.wikipedia.org/wiki/Pitch\\_Lake](http://en.wikipedia.org/wiki/Pitch_Lake)

<sup>40</sup> Propolis was referred to by Ron Spaulding as “bee-shit” and comprises the resinous excretion from the bee, together with nest material. In Thailand the bees nest in rubber trees and propolis is often found forming an entrance perch at the nest entrance. It is collected and used for making the Thai/Cambodian “ek” kite hummer attachment weights.

Propolis or bee glue is created by bees from resins, balsams and tree saps. Those species of honey bees which nest in tree cavities use propolis to seal cracks in the hive. Bees produce sticky excretions and use it mainly for fixing down anything that moves, sealing up cracks but also to reduce nest entrances against predator attack. If it comes from solitary bees then it probably is the tree resin (rubber) with added enzymes/ fungicides etc secreted by the bees ; see [http://www.mieldesully.fr/en/Propolis\\_description.html](http://www.mieldesully.fr/en/Propolis_description.html)



### C3 Types of Flutes

At first sight the Vietnamese kite flutes appear generically similar, however it quickly becomes clear that there are a great many varieties and it is probable that each village has its own variant. Each flute maker will have his distinct “signature”.

There are differences in the relationship between the flute length to flute diameter, the shape of the flute cap, the form of the sound-hole, and the relationship between the sound-hole length to its depth as well as the shape of the central components that separate the individual flute chambers and provide the attachment fitting to the flute mounting stick. Indeed the flutes of Mr Ngô Văn Bội simply used the natural bamboo node. All of these factors are taken into consideration by individual flute makers in order to adapt their flutes to the expected wind speed as well as the desired sound quality when in flight.

Flutes are almost always made as a single unit comprising a pair of individual flutes tuned such that there is a distinctive beat. In order to simplify matters, the most common flute types are:

#### Type 1 Single flutes

The Type 1 single flutes, comprising two flute chambers in one unit, tend to be quite large. These are flown with as a single flute unit (i.e. a “tuned” pair) mounted on the kite. We saw these flutes being flown at Song Vân (Village 1) where they were flown on Type 2a kites. The Song Vân flutes made by Mr Ngô Văn Bội were matt finished in red, yellow or blue. According to Mr Quan Hang Cao these kites in the Bắc Giang district are generally fitted with one or two large flutes. When two flutes are employed, this is called “mother calling son (*mẹ gọi con trai*)”. We saw a flute cap being made; this is described later.



Figure 43 Uli with Mr Ngô Văn Bội and his flutes

## Type 2 Multiple flutes

We considered Type 2 flutes to comprise flute assemblies of three or four flute units mounted together on a single kite. The larger flute is always mounted closest to the kite with the remaining flutes becoming progressively smaller. We saw these assemblies at An Binh (Village 2), at Bá Dương Nội and at the *Maison des Arts*. These were also flown at the Bà Rịa - Vũng Tàu International Kite Festival.

The biggest flute has the bass pitch. The middle size flute is usually tuned to a fifth tone higher and the smallest one is called the whistle "còi" and is tuned at one octave above the bass flute. Rich people have their flutes lacquered in red or gold. Poorer people may use unpainted flutes. In this case they are called "sáo mộc"; roughly made. The flutes bought by Paul in the Old Quarter of Hanoi are sáo mộc<sup>41</sup>.

Mr Quan Hang Cao showed us a photograph of an experimental kite where a double bank of Type 2 flute assemblies had been mounted on a kite. This was at Vũng Tàu<sup>42</sup>.

## Type 3 Special flutes

Mr Quan Hang Cao's experimental flutes. Mr Quan Hang Cao showed us a group of eight individual flutes while we at Mr Nguyễn Hữu Kiêm's house in Bá Dương Nội. These were tuned in half tone steps according to the western octave. He was proposing to experiment with these with the aim of creating a flute medley with some kind of mechanical triggering driven by the natural relative wind at the kite.



Figure 44 Mr Cao's experimental flutes

<sup>41</sup> These names need to be confirmed. They come from an article written by the late Philippe Cottenceau who wrote his notes regarding an article by Ngô Quý Sơn after his visit to Mr. Nguyen Van Be in Hue some years before his death. There is an article on the Internet that refers to this (in Vietnamese).

<sup>42</sup> This reminded us that, in 2002, at the Dieppe International Kite Festival in France there were Vietnamese flute kites that had multiple wings and multiple banks of flutes below the wings. These kites were made by Mr. Nguyen Van Be (76) from Hue, Vietnam. However we are not sure whether these were experimental kites.

See the article from the Drachen Foundation Journal Fall 2003,  
<http://www.drachen.org/journals/a12/Mr-Be-vietnamese-master.pdf>



Friendship Flute. Mr Nguyễn Hữu Kiêm presented Uli with a special single flute that he had made. This is a “one off” flute comprising four sound tubes with two pairs of matched flutes and two different types of sound-holes. The outer flutes are traditionally Vietnamese and the other, inner set, employ the principle used in Kalimantan in Indonesia. It was named the “Friendship” flute “*tinh bạn cây sáo*”.

The material used in the Friendship Flute is bamboo for the flute body and magnolia wood for the flute caps. (*Manglietia dandyi*; Vietnamese name: *Vàng tâm*). Some sort of light wood (for example Sibo Mahogany, Jackfruit) is used for the diaphragms separating individual flute sections and bamboo is used for the 1mm diameter bamboo pegs that locate the diaphragms.

The flute consists of three general parts, two outer sections containing the flutes tubes and the central section/ intersection serving firstly for attaching the flute to the attachment stick that carries the flute on the kite and, secondly, to separate the two outer flute sections. This feature prevents possible acoustic interference which otherwise could dampen the flute's sound and the desired beat effect.



Figure 45 The Friendship Flute

The flute outer sections comprise inner and outer sub-flutes. The outer sub-flutes are similar, but tuned separately to produce the beat sound. The inner sub-flutes are also similar and again tuned separately.

The whole flute unit has a weight of 63g and an overall length of 315mm. The flute cap is mushroom shaped with a maximum diameter of 61mm; maximum height is 12mm (from max diameter section to top). There is another 3mm from the maximum diameter section to the flute cap base; the flute body bamboo tube is 41mm in diameter. In the centre there is an intersection with a length of 32mm with two small 7.5x7.5mm and 8x8mm opposite square holes, reinforced by using a thicker wall than the flute wall, designed to accept the square section tapered attachment stick. There are two lightening holes on each side of the square holes that act to lighten the structure and give visual access to the inner part of the central section. These holes each cover about one fourth of the bamboo tube's diameter, and are

rectangular measuring 11x22mm with a half circle cut-out of 5mm at the narrow ends of the rectangle.

The central section is bounded by two rims that extend to the full bamboo diameter/ wall thickness and serve as strengthening as well as decoration.

The inner and outer flute sections are separated by a thin 2mm thick diaphragm which is pegged in place similarly to the diaphragm at the centre section. Two bamboo pegs are used in each case. In this flute the inner and outer peg holes are nearly in-line. We note that the inner peg is stress relieved by the rim, so any split caused by the outer peg swelling is unlikely to be made worse at the inner end.

The internal shape of the outer flute end forms a smooth curve to the leeward flute lip.

There is a large overhang of 10mm between the flute tube and the flute cap. This is primarily to locate the fixing bridles, but probably also manages any wind interference between the flute tube and the sound-hole. It may also be done to make manufacture easier, to maintain a minimum distance between the several flute units, to protect the sound-hole from damage and for aesthetic reasons.

The inner flute sound-holes are integral with the original bamboo tube with the outer surface being the original bamboo skin. The actual holes are rectangles with half rounds at each end. The sound-hole face is also rectangular 23x4.5mm and 25x4.5mm leaving a flat between the edge of the face and the sound-hole lips. There is a flat taper from the face to the flute tube. The end face is cut normal (90 degrees) to the flute tube. Aerodynamically the inner rim acts as a "fence" to direct the air over the sound-hole; the outer sharp section might trip a flow separation/vortex that reduces any cross flow. The sharp angle between the ramp and the flat face may limit the angular range possible to produce a clear flute sound. Typically the outer flutes would be expected to have an angular range of  $\pm 45$  degrees.

The interior structure of the inner flute sound-holes is different from the more conventional outer flutes. The windward lip is cut sharply at 60 degrees to the front face and is the full depth of the bamboo wall. The leeward lip is cut similarly; the sound-hole slot has parallel walls. The inner flutes would be expected to have an angular range of  $\pm 15$  degrees.

The outer flute tube exterior dimensions of each are 4mm wide and 88mm long including the bottom-plate. The flute wall thickness is about 1mm. The inner flute exterior dimensions are 40mm wide and 41mm long including the bottom-plate with the same wall thickness.

The outer flutes are tuned to a frequency of 565Hz (C#5) and 557Hz and the inner flutes are tuned approx. one fourth higher to 782Hz and 800Hz (G). The corresponding flute pairs are made so that there is a beat frequency of about 12Hz to 20Hz between the corresponding pairs of flutes. While this flute has not yet been flown, it is expected to produce two separate tones and accompanying amplitude modulation (beat). This is designed to give a pleasant chord but does not amplify the sound (see C6 where sound amplification is discussed). The operating wind speed is not yet known; however hand testing shows that the flutes all operate together<sup>43</sup>.

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<sup>43</sup> As a further observation, Uli notes that, while the construction method is difficult, the flutes work well. When designing the flutes, there is often a problem that occurs when single flutes stop sounding above a certain wind speed. Low pitched flutes are most susceptible. The flute makers have discovered an "art" which some consider a secret where the flute tube geometry (the relationship of the flute-body length to its diameter) avoids this. The bigger the relationship, the lower the sound and the less wind speed is required. There is also a relationship between the tube body geometry and the geometry of the flute mouth (this time the relationship is between the width and depth of the mouth). A wide, but narrow, mouth enables an exact tone but this is susceptible to being "overblown". A deeper sound-hole for a given width means that it is not overblown so easily, but the sound frequency increases with increasing wind speed. In the case of the "Friendship Flute" this problem has been solved very well and was remarked on by Mr. Cao when he told us that he knows of a flute maker knowing the "formula" for such measurements.



#### C4 Flute making

##### Type 1 Flute Making by Mr Ngô Văn Bội at Song Vân (Village 1)

Parts – Flute tube/body, Flute cap<sup>44</sup>, Flute attachment

##### Flute Body

The flute body making process was not observed, but was discussed with Mr Ngô Văn Bội. He uses May bamboo (*dendrocalamus giganteus*) that is between 6 cm to 15 cm diameter with an original wall thickness of up to 2cm (on 15cm bamboo). The bamboo is sourced from Lạng Sơn Province in the north of Vietnam and is usually at least 3 to 5 years old before it is cut down. When ready for making, the green state bamboo stalk is inspected to make sure there are no bamboo insects, moulds or cracks. The bamboo tube is two internodes long and leaves one diaphragm intact in the centre. The outer nodes are cut off. The outer surface of the bamboo is roughly shaved by a knife and then scraped with a knife or scraper down to a final wall thickness of 2 - 3 mm depending on the size of the tube. This initial shaping allows the bamboo to dry, and then be stored without it developing any damaging cracks. The flute diameter to tube length ratio is approximately 2.5 for the smaller flutes and 3 for large flutes.

The flute tube making process is:

- Step 1. The bamboo is initially in its green state when the tube interior is cleaned of debris and the inside paper-like membrane is removed
- Step 2. Cut off outer nodes
- Step 3. Mark out position of the attachment block (at the central node)
- Step 4. Use chisel to pre-cut attachment block
- Step 5. Start shave process; each side separately towards the node.
- Step 6. Remove node material to reveal attachment block.
- Step 7. Node material is cut away (to reduce weight); the inner base of the flute is a little thicker than the end wall (for better structural integrity)
- Step 8. Fine finish of outer tube and shape attachment block
- Step 9. Make attachment block hole using a hot iron spike (probably a nail) close to the base of the node
- Step 10. Flute cap attachment lip is formed by shaving the outer skin of the prepared tube.

Flute tubes are stored for several months, probably 6 months, to dry out until ready for assembly.

Because the flute tube is thin walled, it is flexible enough to be moulded to a circular cross section when it is fitted to the flute cap<sup>45</sup>. Generally the inside of the flute is not lacquered.

Mr Ngô Văn Bội also demonstrated how a flute cap is made. He later presented to Uli, together with an unfinished flute tube. The cap has an outer diameter of 100mm; rim width is 12mm; internal diameter at the basis of rim:  $110-2 \times 12 = 90\text{mm}$ . Mushroom maximum height of 20mm from the maximum diameter. The cap weight is 156g. The flute overall length (with flute caps) is 635mm; tube length (without caps) 570mm. The outer tube diameter is 90mm with a wall thickness of 1mm. The natural bamboo diaphragm was left intact. The flute frequency was measured later and found to be 220Hz.

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<sup>44</sup> The term “flute cap” has been used consistently in our paper. We could equally have described it as the “flute head”. The term “cap” refers to the flute tube end cover and also evokes the similar looking cyclist’s cap. However the term “head” could be argued since this represents the end of the flute and contains the flute’s mouthpiece. We do not yet have the Vietnamese name.

<sup>45</sup> Note by Uli: When making a flute in Europe, the pre-scraped rough flute body must be dried SLOWLY because the European winter climate is drier than Vietnam. He also notes problems with kite flutes when travelling by air. Airliner passenger cabins tend to have very low humidity and the bamboo tubes should be protected by wrapped in plastic sheeting. This will prevent rapid drying as they will otherwise develop severe cracks and distort badly; Paul notes that his flutes which were wrapped in a plastic bag and surrounded by clothing and a damp towel were not damaged when carried in hold baggage. Uli also notes: In my trials when I tried to dry whole bamboo culms, the cracking occurred first at the nodes and then spread to the whole culm after some weeks. The bamboos became useless for flute making. He says that when the bamboo is cut and scraped down to a wall thickness of 1-2mm while still in the green state, the possibility of cracking is less likely during drying-out process and this procedure should be a safe procedure even in the dry climate of Germany!

## Flute Cap

Mr Ngô Văn Bội demonstrated how he made the flute cap. The initial making process was observed and photographs and video were captured. Some of the photographs are reproduced at the end of this section. An important “tool” used in this process was a shallow depression or “pit” chipped into the surface of the courtyard. Mr Ngô Văn Bội was very skilled in holding the flute cap in this restraining pit with his bare feet while using a wooden mallet and a wood chisel to fashion the cap. The flute caps are made from fairly soft light, white/brown short grain wood<sup>46</sup> and Mr Ngô Văn Bội used a straight split branch/stem that had been split in half and which had no large knots. The diameter of branch was at least 3 cm greater than the tube diameter. The flute cap block was sawn from the block of wood using a tension saw.

- Step 1. Rough cutting of the top/outer surface to reduce the block and to give general shaping to the cap.
- Step 2. Put cap into the pit and hold it steady for marking out the inside. The grain crosses the sound-hole at 90 degrees to minimise splitting/maximise strength.
- Step 3. Using the flute tube, mark out the attachment outline. Mark out the overblown lip on inner side of flute cap. The line is curved and is placed at about one third diameter. It is “windward” curved back by 8% of the width.
- Step 4. Rough interior chopping of the windward lip using straight chisel. Check photos for type of chisel used to hollow out the cap. Note placing a tangent across the slot, the windward lip drops at 90 degrees
- Step 5. Inside/outside carving/chiselling to refine the cap shape. The most delicate part was to maintain the exact shape of the windward lip.
- Step 6. Use sharp knives to pre cut the windward slot but the blade does not cut through to the outer cover.
- Step 7. Further smooth shaping until the slot cut is exposed
- Step 8. Cut the slot with a pointed tip knife. Using a special sharp knife where only the tip of the knife was sharpened).
- Step 9. Using curved chisel to trim back the inside lip of the flute cap to take flute tube (2<sup>nd</sup> step) Final assembly needs further cutting. Chiselling is straight into the cap.
- Step 10. Further hollowing out of the interior using curved chisel
- Step 11. Outer rim exterior cutback done using chopping knife ensuring sharp lip to the cap.
- Step 12. Interior top of windward lip is convex and cross section is slightly convex-concave lenticular.
- Step 13. Fine finishing of the sound-hole. Outer cap is fine finished with knife (then sandpaper?). Further work is done on the inside before cutting the leeward side of the slot with a large diameter curved chisel where the cuts are directed towards the mouth lip.

We did not observe the final shaping of the flute cap. The remaining stages are to further cut away the inside to make the leeward skin thin, sharp and yet stable; this can only be done with a curved chisel. We did not see any sandpaper being used. We thought that small flute caps may be sanded and we believe that the inside of the flute cap is sometimes hardened by applying lacquer/glue to the surface.

We observed that the small yellow flute cap skin is thicker in proportion than the large red flute cap. The mouth slot geometry is a section of large diameter torroidal arc. Large red flute has “cat’s ear” end shaping while the small yellow flute given to Paul has a “normal” slot.

## Cap Fitting

The flute tube outer wall is chamfered into a shallow wedge shape, about 6mm. The interior of the flute cap rim is cut back to an “interference” chamfered fit with the tube. The cap is fitted so that the slot is at right angles to the attachment block (note that the block is at the leeward side of the flute). The glue used is molten (hot) black “bitumen” paste – this allows the cap to be removed for fine tuning or for repairs.

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<sup>46</sup> Probably *Magnolia/Manglietia dandyi*; Vietnamese name: Vàng tâm; Dạ hợp đàn-đi.



## Tuning

Flute tuning was not discussed with Mr Ngô Văn Bội. It is assumed that the process used is as follows: Sound can only be adjusted by shortening the length of the tube and, as a final fine tuning, by carefully increasing the area of the sound-hole in length and/or width. However the sound-hole is the “heart” or at least the “mouth” of the flute and modifying it can have severe side effects on its acoustic properties in respect of pitch, “speaking”, clearness of sound and tone stability! Shortening the tube will increase the pitch frequency. Increasing the sound-hole area has the same effect. By starting at the shortest tube (the frequency can be checked by blowing across the tube), attach the flute cap temporarily (but airtight) and make adjustments to the length until the desired frequency is obtained. The cap is then finally sealed. This tube gives the highest frequency. The other part of the tube is then adjusted in length so that the beat frequency is slightly above/below the frequency of the first tube and then the cap is attached and sealed using the same technique.

The “cat’s ears” on the larger flute by Mr Ngô Văn Bội are assumed to provide a means of final adjustment of the beat by increasing the area of the sound-hole without changing the main geometry of the sound-hole.

The final step is to sand the surfaces smooth and apply a coloured lacquer (red, blue and yellow...as in the religious flags:

- Red** = The blessings of behaviour - achievement, wisdom, virtue, fortune and dignity
- Blue** = Loving kindness, peace and universal compassion
- Yellow** = The Middle Path - avoiding extremes, emptiness)

The geometry of the yellow flute given by Mr Ngô Văn Bội to Paul is as follows:

Flute length overall	365mm
Tube length	315mm
Tube diameter	60mm
Cap depth	25mm
Cap diameter	75mm
Sound-hole width	50mm
Sound-hole depth	10mm



Figure 46 Mr Ngô Văn Bội's single yellow flute and the poor quality set of flutes found in Hanoi



Figure 47 Flute making with Mr Ngô Văn Bội; note the “bitumen” pot in photo centre left





Figure 48 Flute cap making (1)





Figure 49 Flute cap making (2)





Figure 50 Details of the “Cat’s Ear” flute given to Uli by Mr Ngô Văn Bội

## Type 2 Flute Making

We did not observe any Type 2 flutes being made.

Multiple flutes were discussed at An Binh village (Village 2) and it was noted that these flutes were relatively small, i.e. up to about 30cm long in groups of 3 and that the flute diameter to tube length ratio was about 4. Flute assemblies are created by mounting the flutes to a support stick. The flutes are connected together by cords to secure them and also to prevent twisting.

The group of three “sáo mộc” Type 2 flutes bought by Paul in the Music Street in the Old Quarter of Hanoi were measured as follows:

	Tube length mm	Tube Diameter mm	Cap Diameter mm	Cap depth mm
Large Flute	230	40	60	13
Middle Flute	175	30	48	10
Small Flute	125	26	40	10

These bamboo flutes are simply made and the caps are roughly cut internally. The cap is attached to the body using a black “bitumen” paste<sup>47</sup> that can be softened by heat. The middle flute cap is not fixed in place and exposes the tube which has a wall thickness of 2mm. The flute tubes are made without nodes so they will be divided by a pair of diaphragms. The large flute diaphragms are about 7mm apart. The individual tube depth is about 80mm which agrees with that for the large flute when the diaphragm thickness is taken into account. The flute exteriors have not been treated. The bamboo attachment stick has a shoulder to seat the large flute and is split so that thin bamboo inserts wedge the remaining flutes in place. This stick is 320x8x5mm with the shoulder located at 170mm from the base.

### C5 Mounting flutes on the kite

The flutes are mounted on a mounting stick that fits into a central slot in the flute. This stick generally has a “shoulder” to locate the lower, largest flute. The stick may be split above this shoulder so that small wedges can be inserted to fix the smaller flutes as they are added to the assembly. The flute array is aligned so that the flutes are close to, but not touching one another. The mounting stick shoulder is at least half the stick length from its base and is placed so that the top flute is slightly behind the leading edge of the kite wing when viewed from above. The base of the stick is tapered so that it fits into a mounting hole on the kite spine. The locating hole is about one third of the distance from the wing leading edge. A number of lines are used to brace the flute array on the kite. One line runs from the top of the mounting stick to the rear of the kite spine. This is tensioned by



Figure 51 Kite Flutes

another line that runs from the top of the stick to the wing leading edge/spine junction. Additional lines run from the lower flute cap end to locations outboard on the wing leading edge and also to the rear spine. These lines prevent the flutes from twisting in flight. Lines may also tension the top flute cap ends to the central wing/spine junction. Then there are lines that link the flutes together to keep them aligned with one another.

A similar, but slightly different system is used to locate single flute (Type 1) assemblies. The important issues here are securing the flute in the fore/aft direction in order to prevent the flute from swaying and to prevent it from twisting in flight. This is because these movements could adversely affect both the equilibrium of the kite and, importantly, the sound of the flute.

<sup>47</sup> Uli subsequently found that the black paste was more stable when mixed with a little beeswax. Otherwise the paste behaves like a high viscosity fluid and cannot be relied upon to retain the flute caps.



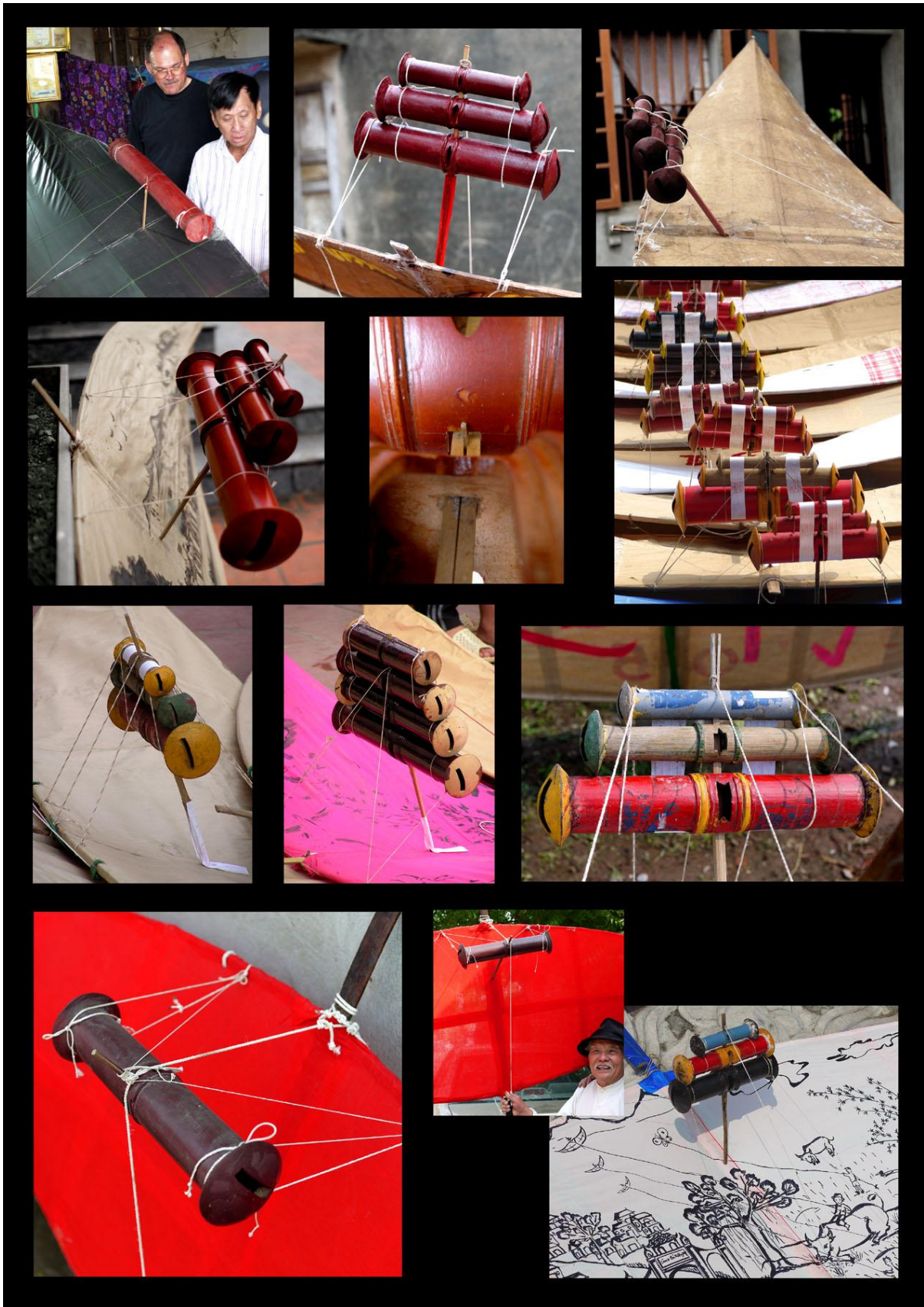


Figure 52 Each kite flyer has his own method of mounting the flutes

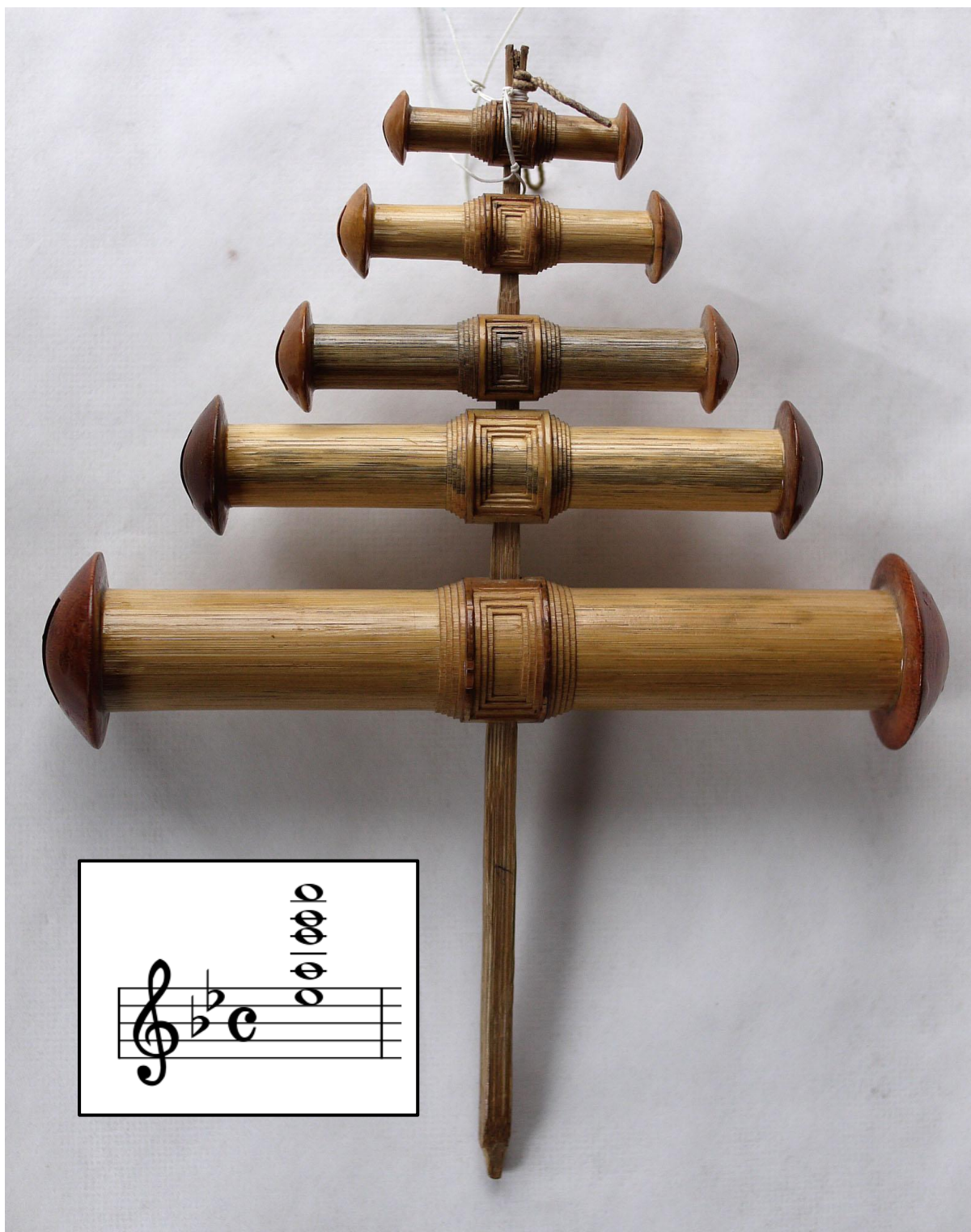


Figure 53 Five flute assembly. Tuning is C, G, C, E, A



We learnt that the number of flute units in an assembly could range from a single flute to several flutes. We saw assemblies of 1, 2, 3 and 4, but later found that these could increase to 5, 7 and 13. We understand that the assembly of 13 represents a record in Vietnam and, because the assembly weighed more than 5 kg it required a kite of greater than 7 metres wingspan. With the exception of the units of 2 and 4, we understand that they are mounted in odd numbers and it is probable that units of 9 and 11 also exist. In Asia, even numbers are not considered auspicious; e.g. 2 represents chaos, 4 is death and stagnation while three represents spirituality and five is harmony etc.

The choice of selecting two individual flutes tuned to the same frequency and loudness in order to boost the sound is not a good one because the maximum perceived effect is only 3 Phon (loudness level), i.e. not a significant change. This is the reason why kites were never normally seen with two identical flutes.

In order to make the flute sounds more audible, each flute unit is tuned to emit a slightly dissimilar tone which results in a distinctive amplitude modulated beat. The lowest frequency flute provides the reference tone (one chamber at reference, and the other slightly higher at a frequency selected by the maker, typically 1 to 16Hz). The perceived loudness of the base flute is increased by adding flutes tuned to the base flute overtones. The base sound will be amplified by adding a flute tuned at an overtone of one fifth higher and another at an octave higher. This is why most flute assemblies consist of three flutes. Another combination is the base, base plus one octave, base plus one third above the octave. Adding additional pairs of flutes adds “colour” to the basic sound. In the case of a five flute assembly we have the base flute, a flute tuned at one fifth higher, one tuned at one octave higher than the base. The fourth flute providing “colour” is one octave plus one third (big third) above the base flute. The fifth flute is one big sixth above the base. The “colour” of a five flute assembly is considered more pleasing, and auspicious, than a four flute assembly. One example five flute assembly is tuned as follows: Base C, G, C octave higher than base, E and A. It is remarked, however, that individual flute makers make their base flutes with other notes depending on their individual taste and the availability of the bamboo.

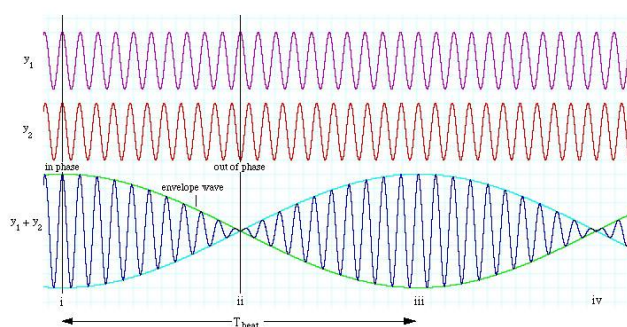


Figure 54 Illustration of how two dissimilar frequencies combine to form an amplitude modulated "beat"

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The frequency of the flute is determined primarily by the chamber length, but is also influenced by the area of the sound-hole. The loudness is a function of the flute diameter and also the area of the sound-hole; the sound-hole is usually the same width as the chamber tube, although some flute heads have slightly wider mouths to increase loudness. To order to make an individual flute dominant in the assembly, it has to be made with an increased diameter and, consequently, can have a wider sound-hole.

The sound-hole aspect ratio (the ratio of width to the depth) determines the clarity of the tone. A high ratio gives a clearer tone, but with reduced range of windspeeds and vice versa. All the sound-holes in a flute assembly should have the same sound-hole aspect ratio otherwise some flutes will stop sounding. The ratio of chamber length to diameter also determines the useable “wind window”. High aspect ratio flutes (long and narrow) are suited to low winds, while fat flutes work better in high winds. The wind speed also affects the frequency with frequency increasing with higher winds. In some cases, an individual flute becomes “overblown”, and the frequency jumps by one octave causing a dissonant sound. We have never seen an individual flute with dissimilar aspect ratio chambers.

It is clear that the physics of the Aeolian properties of these flutes is extremely complex. This tests the skill of the flute maker who has to incorporate all these factors into a lightweight flute assembly capable of producing the loudest and most pleasing sounds in the range of expected ambient wind speeds. It is common for one district to have different local winds from another. The skills and “secrets” of the Vietnamese flute makers tend to be held within a closed community, not dissimilar to that of the European church organ builders who are confronted with similar problems.

## Appendix D. Kites

### D1 General

Our initial understanding was that there were two distinct types of traditional kites to be found in Vietnam. These were the flute kites, predominantly made by the village farming communities, and then there were kites similar to those from China. The Chinese style kites are sometimes referred to as the kites from Hue and have old links to the rulers and higher classes. While our main interest is in the flute kites, we have expanded our interest a little to include all of the kites made by the village communities, although by doing so we accept that some of these are not necessarily flown with flutes. We have not actively pursued the Chinese influenced Hue kites but, subsequent to our visit, it occurs to us that a useful comparison could be made between these kites and their Chinese forebears.

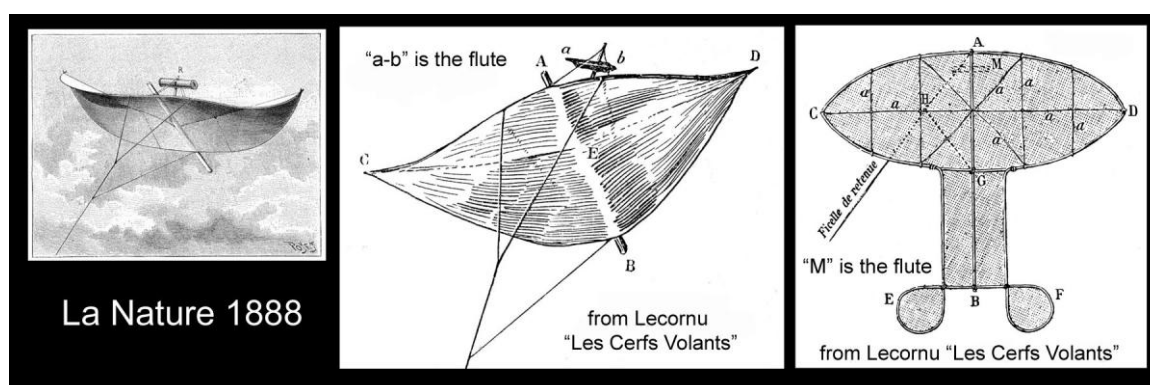


Figure 55 Early illustrations of "Annamite" musical kites from the region of Tonkin

Illustrations of Vietnamese kites are difficult to find and may often be inaccurate. There are no books that deal with them and very few articles other than the old articles in *La Nature* which were largely repeated in Lecornu's *"Les Cerfs Volants"*. The modern Western literature, where it exists, is generally a repeat of these century-old articles. Some of the more modern histories, particularly in the case of Hart and Pelham<sup>48</sup>, contain notable errors. In respect of the Vietnamese literature the situation is a little different. Old books have disappeared completely and only two good modern references could be found. One of these is the catalogue and DVD for the exhibition *"Art Contemporarain et cerfs-volants traditionels du Vietnam"* and the other is an anonymous Internet .pdf article *"Vietnamese People's Kite Game"*<sup>49</sup>. The latter is most likely a reprint of the article *"Customs of Vietnam"* written in 1943 by Ngô Quý Sơn and is probably the most informative paper, illustrated with simple line drawings, that describes the diversity of Vietnamese kites.

It seemed remarkable to us that these excellent high flying and generally stable kites, along with other similar tailless kites that can be found in Asia, have been developed over the centuries by peasant farmers with no formal education. They feature what we refer to as a modern cambered wing profile as well as stabilising dihedral<sup>50</sup>. These features, together with the well-defined wing covering, results in very limited movement of the centre of pressure. Thus equilibrium<sup>51</sup> is maintained in flight. This is all the more remarkable because of the relatively high aspect ratio<sup>52</sup> of the wings.

<sup>48</sup> Clive Hart. "Kites an Historical Survey". 1967. London. pp 30, fig 4, where the illustration of the flute kite is incorrectly referred to as a "Chinese kite with hummer attached". Pelham "Kites" 1976, London. pp.10, 11 has two illustrations and also makes the same error. These are two generally well respected kite references that, in this case, have been badly researched.

<sup>49</sup> The article carries the note "According to Ngô Quý Sơn – Customs of Vietnam – "Indochina" magazine issue No. 142 dated May 20, 1943 – Page 13 to 36" Mr Ngô Quý Sơn published in the Indochina Institute for the Studies of Man.

<sup>50</sup> Both qualities are as old as the birds but were essentially unrecognised by Western kite and aeronautical experts until the 1890s.

<sup>51</sup> The flute kites may sway, and sometimes circle, but that is a deliberate feature that results in a varying flute sound. The motion is stable in the dynamic sense because the kite remains flying and does not crash. We saw several poorly made, or poorly bridled kites that were unstable and failed to achieve a steady equilibrium and which invariably crashed.

<sup>52</sup> Aspect Ratio is the ratio of the wing span to the wing chord. For non-rectangular wings it is easier to express this as  $b^2/S$  where  $b$ =wingspan and  $S$ =wing area. It is generally found that the higher aspect ratio kites fly higher, but they are more prone to lateral instabilities. The flying angle is directly related to the ratio of lift:drag ( $L/D$ ); it was called lift:drift by the aeronautical pioneers. The



## D2 Tools for kite making

The main tool used is the bamboo knife. These come in many sizes. The main splitting tool is a long broad bladed knife. Finer bamboo cutting, trimming and scraping may also be done with this knife although smaller ones are also used. All of these knives are locally made and could easily be found in the tools district of Hang Ma in the Old Quarter of Hanoi.



*Figure 56 Vietnamese bamboo knives. The large knife is the principal kite bamboo knife*

It appears that some kite makers use paper or cardboard patterns as these were seen by Uli at Mr Nguyễn Gia Độ's house in Bá Dương Nội. We were told that kite making knowledge is traditionally passed down to the younger generations through making demonstrations and experience.

## D2 Types of Kites

On the 22<sup>nd</sup> April, just before we left Hanoi, we had a long discussion with Mr Quan Hang Cao. By then we had seen a number of different Vietnamese Flute kites and asked for clarification. Mr Quan Hang Cao said that while all Vietnamese kites were based on the typical leaf shape, there were three main groups of Vietnamese Flute kites:

### Group 1

These are the basic leaf kites.

#### Type 1.1 The lemon leaf kite.

This is commonly made and is typical of the kites at An Binh (Village 2) as well as at Bá Dương Nội. This is the traditional Vietnamese kite and is suited to relatively low winds.

Two kites were seen at An Binh. These are referred to as kite 1.1A, kite 1.1B and were made by Mr Chung who is considered an expert kite maker. Kites 1.1A and 1.1B were similar in construction and comprised a single paper covered wing. Kite 1.1A was complete and kite 1.1B was under construction. These kites were smaller than the 2 metre kites of Bá Dương Nội and had a wingspan of about 1.5 metres. They were made to be flown with a triple stack of flutes. Mr Chung showed us how the assembly of three



*Figure 57 Mr Chung with his "lemon" leaf kite*

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Lift:Drag ratio is a measure of the flying efficiency for all sorts of flying machines. Kites typically have an L/D of 4 whereas a modern airliner will fly at an L/D of 20 and high aspect ratio competition sailplanes achieve L/D values of up to 60.

flutes were fitted to Kite 1A.

The first step in making the kites is to make the kite spine. This is a stiff bamboo flat split stick with the inner side facing the upper surface of the wing. The spine extended forward of the front spar by 10cm and aft of the rear spar by about 25 cm. The extensions acted to protect the flute at the nose and to provide a launching handle at the rear. The spine stick contains the slot to support the flute stick but this hole is cut out when the kite is completed.

The front and rear spars are roughly square in cross-section and are carefully tapered towards the outer tips in order that the central section that carries the flutes remains relatively stiff, while the tips are rather more flexible. The flexibility of the wing therefore depends on the size of the cross section and the degree of tapering; we saw some kites at Bá Dương Nội where the spars were clearly too weak and this resulted in excessive bending, especially during the launch climb. The spars are lashed at right angles to the spine, i.e. parallel to one another. We saw that the spars are lashed at an angle to the spine such that the skin side faces forwards and downwards. The front and rear spars are then bound together at the tips in the form a cross. The flexibility of the spars and the resulting curvature results in an upwards dihedral. The amount of dihedral bending depends on the angle that the spar tips cross: the higher the angle, the greater the dihedral. The angle is generally between 60 and 90°. Mr Quan Hang Cao told us that a more stable kite can be made when the front spar is slightly shorter than the rear spar. A line is strung from one tip, around the spine and then to the other tip. This line supports the wing skin and also acts to maintain the dihedral tensioning.

The wings were covered in lateral and longitudinal bracing strings to produce a loose netting which supports the paper wing skin and takes the wing loads. This netting minimises the chance of the paper tearing, especially when the kite crashes or is wet. The most common point where the skin is likely to tear is along the rear wing spar. The netting is most closely pitched around the inner wing as this is required to take the main lifting load and to remain stiff. The outboard wings are designed to be flexible. Kite 1.1A had a X netting inboard while Kite 1.1B had a rectangular netting.



Figure 58 Mr Chung's "lemon" leaf kite frame



Figure 59 Applying the skin

The final stage, other than bridling and mounting the flutes, is applying the paper covering. The covering comprised two layers of paper, one on each side of the netting. The paper is a lightweight grey/brown Mulberry paper<sup>53</sup>. The paper was prepared by coating it with a purple persimmon (kaki) fruit "juice". The persimmon fruit is rich in tannic acids that act as a colouring agent and make the paper stiff, tear resistant, leatherlike and waterproof, and acts as a repellent to insects. The pectin acts as a gluing

<sup>53</sup> Mulberry (*Broussonetia papyrifera*) paper. This is made from the inner part of the bark of mulberry trees. The bark is steamed away from the tree trunk. The brown outer part is removed and the remaining *white inner part* is washed in cold water and freed from any residual brown bark pieces in order that the paper should be as white as possible. It is then boiled with potash to separate the fibres and becomes a pulp. Then it is heated for specified (but not known) time. Finally the fibres are removed and screened to become the paper sheet.



agent. Repairs to damaged kite skins can be made using this “juice” and paper patches. The juice is made from small, inedible wild fruits, crushed whole, including the calyx and seeds. The juice has to undergo some sort of fermentation process over a period of several months and is then “ripened” for three months in order to get the desired properties before use. In Vietnam the process also involves iron tools being put into the juice for some time and probably accounts for the black tannic acid staining of the tools that we bought in Hanoi. When ready for use, the juice is diluted with water and painted on paper or cloth where it also acts as an insect and moisture repellent<sup>54</sup>. It was not clear whether dipping the tools in the juice was a tool finishing process to stop the tools from rusting or whether it is to improve the performance and colour of the juice; or both.

The paper “juice” is the same as that used for making paper fans; these are also made in An Binh. The juice was poured on a flat aluminium plate and the paper was pulled through the juice, thus being semi-soaked, and afterwards carefully attached to the netting; one sheet of paper from upper side and the other from below. The sheets of paper were first carefully soaked in the juice by means of a brush. In the case of Kite 1.1B the sheet was first attached at the front spar and the spine. This is a time consuming process as the paper can easily tear when wet. We were shown how the upper and lower skins were applied. The juice acts a natural dope as it provides a gluing and a tautening action. It is also used when repairs have to be made to the kite skins. It is likely that several coats of “juice” are applied in order to achieve the final finish.

In the case of Kite 1.1A the finished paper skin had the appearance of thin animal skin; it was slightly shiny and flexible. The kite group logo was made on the front face using plastic stencil lettering.

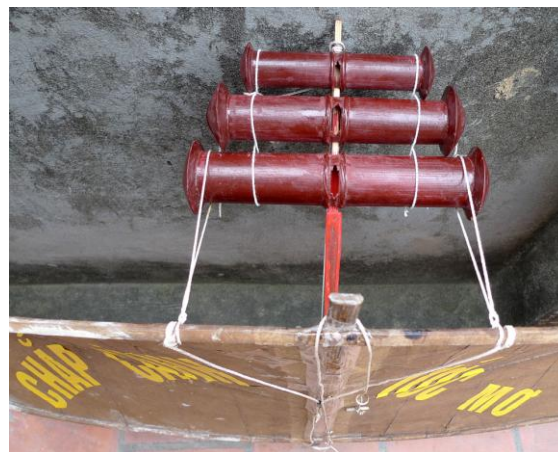


Figure 60 Attaching the flute assembly

Kite 1.1A was equipped with a stack of three kite flutes. The mounting stick attached to a slot in the kite spine. The attachment stick itself was rectangular in section; running to the start of the flute stack. Then the stick was cut back, again to a rectangular section which then tapered to the tip. The flute stack was slotted onto the attachment stick and string loops ran from the large lower flute to the outboard bridle attachments on the front spar. Lines also run from the aft spar to the top of the flute attachment stick and then down to the front central spine/spar crossing.

<sup>54</sup> The fruit “juice” is made from a species of wild astringent persimmon (*kaki* cây (=tree) *Chi Thị* or *cây hồng*” fruit (*diospyros kaki* spp.). *shizi* (柿子 in Chinese).

Wild Persimmons are considered the best for this purpose. Persimmon juice dye was used on a daily basis in former times. It was frequently used on paper to make it water proof, insect proof, to strengthen it and to dye it. The juice was also used to treat fishing nets as well as used for staining patterns on furniture and fabrics. The persimmon juice is also used in Japan and China for treating paper used for fans and lanterns. Uli also notes that the Date-plum (*Diospyros lotus*) is native to southwest Asia and southeast Europe. It was known to the ancient Greeks as “the fruit of the gods”, or often referred to as “nature’s candy” i.e. *Diospyros* (lit. “the wheat of Zeus”), hence the scientific name of the genus. Its English name probably derives from Persian *Khormaloo* خرمالو literally “Date-Plum”, referring to the taste of this fruit which is reminiscent of both plums and dates. This species is one candidate for the lotus mentioned in the *Odyssey*: it was so delicious that those who ate it forgot about returning home and wanted to stay and eat lotus with the lotus-eaters.[

About three kg of fruit gives 1kg of juice.

Processing can be seen in this example:

<http://elephantbooty.blogspot.com/2009/09/juicing-persimmons-for-kakishibui.html>

There is also a Vietnamese article on kaki article at:

[http://vi.wikipedia.org/wiki/H%E1%BB%93ng\\_%28qu%E1%BA%A3%29](http://vi.wikipedia.org/wiki/H%E1%BB%93ng_%28qu%E1%BA%A3%29)

The following also discusses the black colour of the tools sourced in Vietnam:

[http://en.wikipedia.org/wiki/Iron\\_gall\\_ink](http://en.wikipedia.org/wiki/Iron_gall_ink)

<http://store.hiromipaper.com/kakishibupersimmonjuice.aspx>

and

<http://www.hiromipaper.com/newsletter/LoriGoodman.htm>

## Type 1.2 The mango leaf kite.

This is a higher aspect ratio version of the lemon leaf kite. The kite skin is tighter and it is more difficult to make, but when made well it will fly in higher winds. The sound of the *sao* flute on this kite is stronger when the winds are stronger. We did not see any kites of this sort; or if we did, the differences between this and the common lemon leaf kite were not made clear. We did, however, see a mango leaf wing on one of the type 2C kites at the Mason des Arts.

## Group 2

These are kites with circular tails

Type 2a. This is typical of the kites from Song Vân (Village 1). The wing spars were conventionally made, although seemingly lightweight. The spine was a light square section split bamboo stick that ran from the front wing spar (there was no noticeable overhang) and terminated about a wing chord aft of the rear spar. The tail structure comprises finely cut split bamboo longerons starting at the nose of the kite and widening laterally slightly at the rear spar, then forming loops that join at the central stick. The tail has a flexible split bamboo cross spar that acts as a spreader rather than resisting dihedral bending. The tails are flexible and fold upwards in flight so behave partly as fins and partly as horizontal stabilisers. In the case of the Song Vân Type 2a kite, the kite was very lightly made and meandered about the sky. This meandering motion would cause the sound of the flute to fluctuate.



Figure 61 Song Vân Type 2a kite

Several Type 2a kites were seen at Song Vân (Village 1) on Friday 15th April. One was hanging in house inside doorway while another was flown by Mr Ngô Văn Bội's son and yet another similar one was seen flown by another household. They were all Type 2a kites and all kites were flown with a single flute.

The kite was about 2 metres in wingspan and comprised a large traditional lemon leaf wing together with twin tails. The complete kite was very flexible with the tails rising to act also as fins in flight. The structure was split bamboos; mostly light weight and flexible. The wing covering was what seemed like lightweight sateen of silver grey colour. The fabric was translucent. This lightweight fabric was supported by loose string netting on the upper surface to take the wind loads and to minimise the sail distortion. A string joined the wing-tip – central spine – wing-tip.

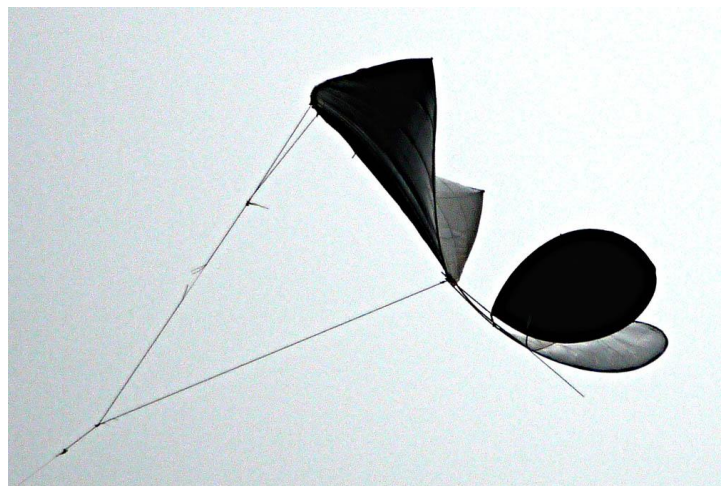


Figure 62 Song Vân Type 2a kite in flight

The tails were stretched over two bamboo outlining sticks that were lashed together where they joined



at the tail leading edge and were also tied to the spine. Another bamboo was used as a spreader.

The spine stick contains a hole at one third chord from the front spar which is used to locate the flute support stick. The flute is fitted to this stick and is adjusted so that it locates above the one fifth chord point. Supporting side bridles are attached to the outer ends of the flute and run to the outside front flying bridle lines.

The flying bridle used was a three leg system where the front bridles were connected to a rear line that was tied at the end of the spine stick. The flying bridle (*lèo*) is quite long and will act to assist lateral stability. The bridling therefore comprises two pieces of cord. The front part of the bridle is a relatively short cord attached to the front spar a little way on either side of the spine. In the case of the kite that we saw, this was approximately in line with the caps of the large red flute. When attached, and the middle of the line is pulled aft, the centre reaches to about the middle of the wing chord. A much longer cord is attached to the centre of this leading bridle which is then tied to the rear wing spar/spine junction. The length of this cord appears to be about two wingspans. The cord used is invariably larger diameter than the flying line. The bridling can be adjusted by altering the lateral position of the forward bridling junction and, of course, the flying tether point. The tether point is located about one third back from the wing leading edge.



*Figure 63 Type 2a kite in the paddy fields at Song Vân village*



*Figure 64 Type 2a kite climbing*



*Figure 65 Type 2a kite; swaying and being pulled up*

Type 2b. This kite is similar to the Group 2a kite but the longerons that form the tail structure are further apart. These kites were seen at the *Maison des Arts* gallery.

Type 2c. This kite is similar to the Group 2b kite except that there is a “skirt” between the tail longerons. This type of kite was described in La Nature and can be found in Lecornu’s “Les Cerfs Volants” of 1902/10. Mr Quan Hang Cao told us that this is called the “Prince Kite”, but it is also known as the “Penis Kite” since the shape of the kite looks like a man’s penis and a woman’s vagina!! Another name is the “Testicle Kite”. Kite of this type were seen at the *Maison des Arts* gallery. Some of them had “lemon leaf” style wings and one had a more parallel centre section, i.e. a “mango leaf” type wing. We later found that kites of this type are to be found at the Kiến Thụy district of Hải Phòng where the kites are flown with multiple flute assemblies.



Figure 66 Type 2c mango leaf kite at the *Maison des Arts*



Figure 67 Leaves, Bamboo and Wild Persimmon



### Group 3 Winged creatures.

Type 3a. This kite is the “Fairy” or “Angel” kite that was seen in Bá Dương Nội at Mr Nguyễn Hữu Kiêm’s house. The main wings are approximately figure of eight shaped. The body has a rounded head and a delta shaped tail. The bamboo construction is quite complex as can be seen in the detail photograph that shows the head/body.



Figure 68 Mr Nguyễn Hữu Kiêm's Fairy kite



Figure 69 Detail of the Fairy kite

It was only after returning from Vietnam that the Fairy kite was identified in an illustration from an article titled “Chinese Kites” in *Scientific American* for March 1888. It is clearly the right hand kite in the illustration, which has its origins in an earlier article by Gaston Tissandier in *La Nature*. The description is as follows “...gives us the aspect of a bird kite, the frame of which is represented in the right of the figure. The thin paper attached to the wings moves under the direction of the wind and simulates the flapping of the wings. This kite is sometimes three feet in length.” Mr Nguyễn Hữu Kiêm’s Fairy kite is similar to the right hand kite, but does not have the birds head or the fluttering paper wing embellishments that could be attached to the wing central ridge..

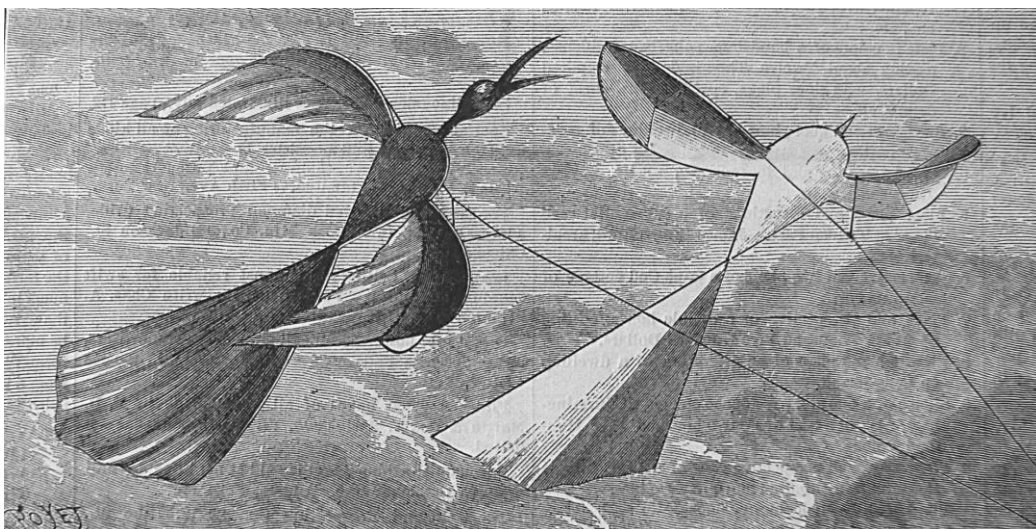


Figure 70 “Bird kite and frame used in making it”. *Scientific American*, March 24<sup>th</sup> 1888

Type 3b. This is the “Bee” kite and is similar to the “Angel” kite except that it has additional rear wings and that the tails are spread further apart. Internet Youtube videos exist that shows a Bee kite in flight. This one had a single medium sized flute.

<http://www.youtube.com/watch?v=xuqrYQoz9nY&NR=1> Thái Bình - Sáo Đền (Phim tài liệu 4/4)

<http://www.youtube.com/watch?v=bnjl2t73gaw> Thái Bình - Sáo Đền (Phim tài liệu 2/4)

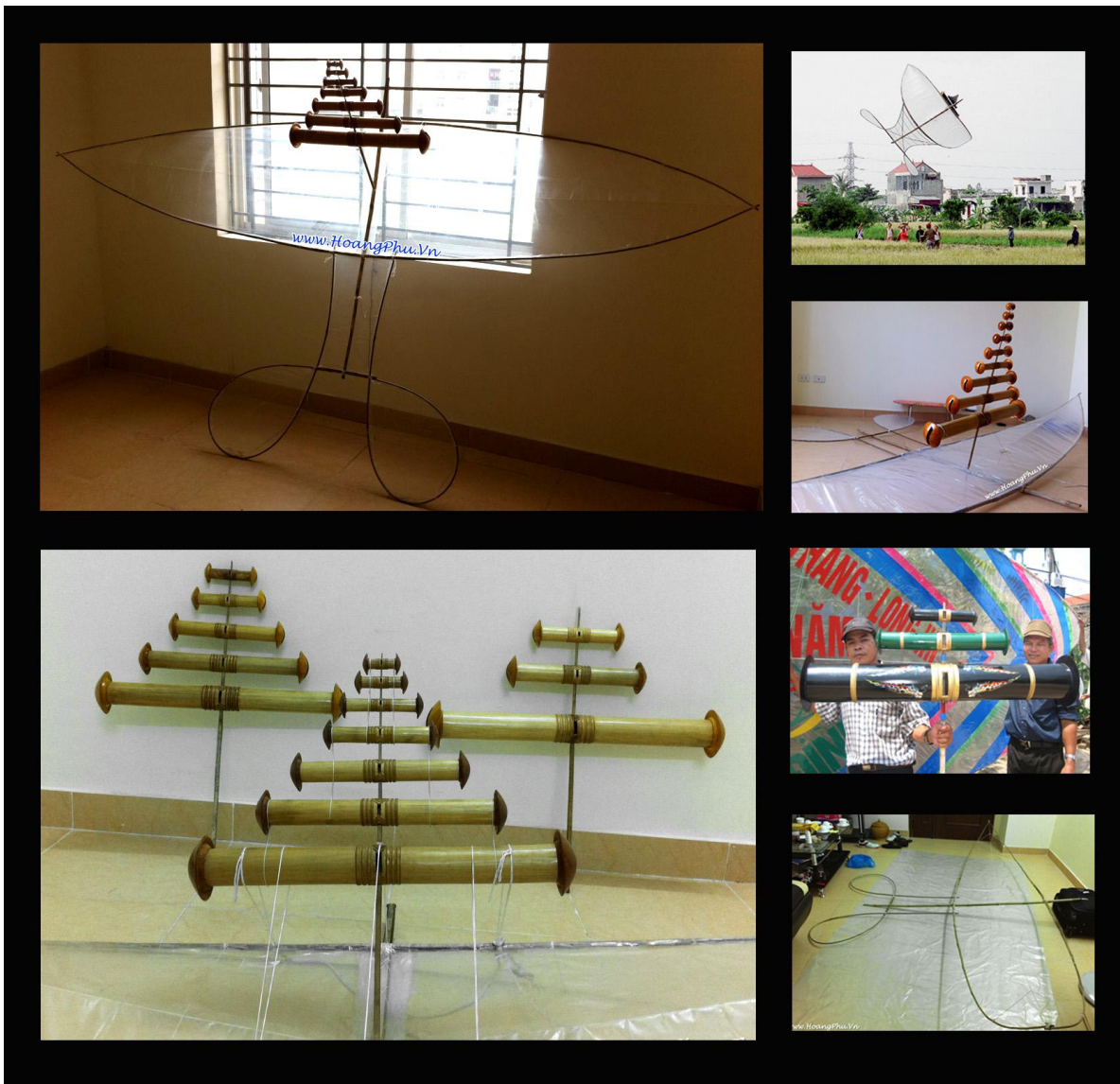
These films were made by nguyenthanhtuan81.

Type 3c. This refers to another “Bee” kite but this time it has the usual figure eight wings, a rounded head and an extended oblate rear body. This kite is typically made from bamboo and silk and is made in Kinh Môn Province. We did not see any of these.



Figure 71 Bee and other unusual kites



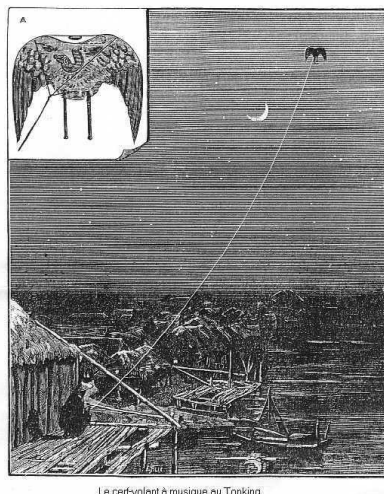


*Figure 72 Flutes and flute kites from the Hai Phong area. Note that 3, 5, 7 and 9 flute assemblies are made. Note also the high aspect ratio of the three flute assembly which indicates that this is a low wind flute. Credit [www.HoangPhu.vn](http://www.HoangPhu.vn)*

Other kites:

There is a version of the Lemon kite where the central stick extends rearwards and carries a circular section tail...the flat facing upwards towards the wing. This is a modified version of Group 2. This kite is from Thái Bình Province.

Tissandier described a musical bird kite in *La Nature* in 1890<sup>55</sup>. The kite was based on the wading birds that frequent the paddy fields and the kite is illustrated with a bamboo tube flute, although in this case the flute is described as having a single central mouth<sup>56</sup>. These single mouthed flutes are known to have existed and, in some ways, are similar to the inner flutes of the "Friendship Flute" by Mr Nguyễn Hữu Kiêm. It is also interesting that Mr ĐỘ at Bá Dương Nội had long-necked bird kites with hanging legs in his house, although these were not investigated further to see if there were other similarities to the kites from Tissandier.



La cerf-volant à musique au Tonking.

Figure 73 Illustration from "*La Nature*" by Tissandier



Figure 74 Mr ĐỘ's bird kites

Ngô Quý Sơn, in his 1944 paper "*Activités de la société enfantine annamite du Tonkin*" makes reference to the following types of kites:

Kites with no tail

- Dieu Vang – the traditional "simple" leaf kite equipped with three flutes. "It may be made up to 3 metres wingspan and 1 metre wide. Such a kite can be lifted and flown very high, only thanks to the strength of very strong young men".
- Dieu Canh Coc – the moor hen's wing kite. This is not dissimilar to the "fairy" kite seen at Mr Nguyễn Hữu Kiêm's house. It "is made of two series of bamboo rods that intersect at the middle. The horizontal series has the shape of an 8. The vertical one consists of an oval at its superior part, and a square at its base."
- Dieu Con Ca – the fish kite. This is a flat kite comprising two fish side by side and has a tail. It is a "Chinese" kite referred to as a "kite in the shape of a plank". "One glues paper on both fish and ornaments them with drawings so as to give the toy the shape of two interlocked fish".

<sup>55</sup> roughly translated as ".....Today, we will describe the kite, which is one of the preferred games of the young Vietnamese and which, while differing notably from ours by its form, still presents itself as a new attraction, that to be a musician. ....This one appears as a flying bird with spread wings and hanging legs, such as a snipe or an egret, birds of the family of the waders which abound on the rice plantations and which were certainly used as a model by the Vietnamese when making their toy. The spread wings of the bird offer the wind resistance necessary to maintain the kite in the air; the hanging legs, formed of paper bands cut out and weighted at their end, are used to maintain the bird in a favourable position and fulfil the same goal as the tail of the kite here. It is not only the original shape of this toy which makes the principal attraction, indeed, it is designed to recreate the same sight and sound. A piece of bamboo is placed horizontally above the tilted head of the bird. This is closed at its two ends by its natural nodes and [*pecé*] pierced in the middle with an oval longitudinal hole. It is easily understood that this apparatus constitutes a kind of flute and that it reproduces the low notes of this instrument when the air enters the hole and vibrates the air locked up in the tube. It will be also understood that because of dimensions of the bamboo and the central hole, whose diameter is 5 to 6 centimetres, the sound is stronger than that of an ordinary flute.

The Vietnamese really like this form of recreation. The enthusiasts seldom have enough wind during the day and are forced to spend their nights squatting under the beautiful stars, holding the kite string in their hands, and singing one their monotonous chants which the flying flute always accompanies by the same note.

One cannot have an idea of the surprise experienced by the Europeans who, on arrival in Tonkin, and, hearing this for the first time and seeing nothing except the monotonous and continuous sound of this musical kite, especially if two or three of these are flown away from the houses such that the noise mingles with the dreadful love songs from the frog-ox.

While nature has deprived us of the frog-ox, it is only for us now to recreate the musical kite. Our young people may as well replace Vietnamese bamboo by metal tubes. The sound will improve in clarity; moreover, they will be able to make other sounds by varying the tube dimensions, and, by selectively joining together different tubes, better sounds."

<sup>56</sup> N.N. *Le Cerf-Volant A Musique Au Tonking*, in: "*La Nature*", Fevrier 1890; pp.179-180



- d) Dieu Con Buom – the butterfly kite. This is a soft wing kite similar to the Chinese butterfly kite.
- e) Dieu Con Qua – the crow kite. This is a soft wing kite in the shape of a crow that may be similar to the Chinese bird kites. The three leg bridling indicates that it is a steady flier rather than a circling kite.
- f) Dieu Chu Thap/Nhat – Character “Thap” kite. “This is the most simple kind of kite, flown by children under ten years old. Its frame consists of two pieces of bamboo tied into a cross. The vertical piece of bamboo is a little longer than the horizontal one”. Two kites are illustrated. One is a simple rectangle with a three leg bridle while the other is a Malay/ Indian “fighting kite”. The fighting kite is not such a simple kite to make or fly.
- g) Dieu Cai Goi – The pillow kite. This is identical to the European box kite in its simplest form and flown from a single bridle point at the front end of the leading box. It is flown in the villages of Nam Dinh.

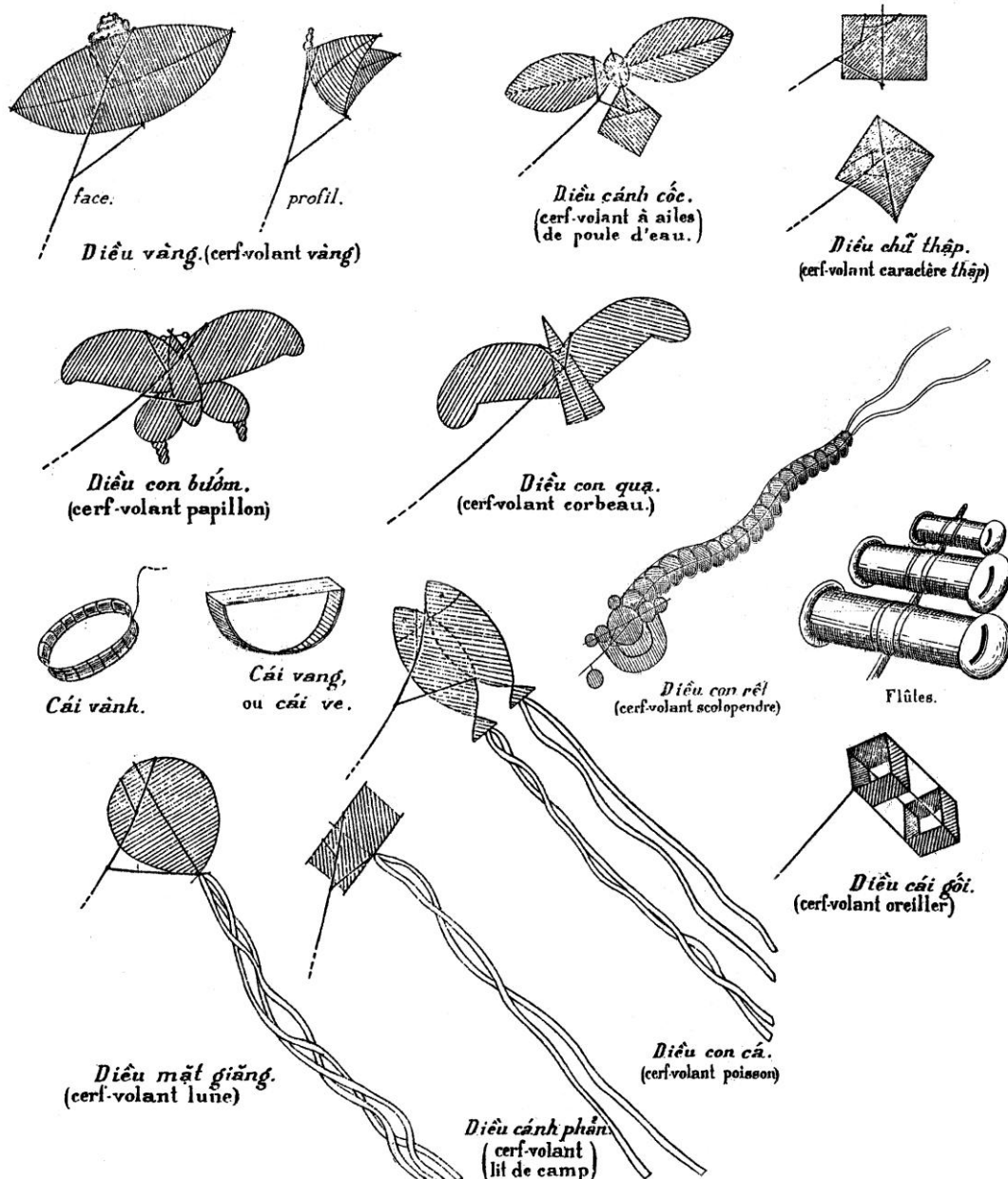


Figure 75 Vietnamese kites, flutes and kite spools (cái vàng) according to Ngô Quý Sơn

## Tailed kites

- a) Dieu Canh Phan – the plank-bed kite. This is essentially the same kite as the Dieu Chu Thap kite with paper tails.
- b) Dieu Mat Trang – the Moon kite. This has a round outline formed by a bamboo circle. It has a three leg bridle and is flown with a tail. It is not dissimilar to known Chinese kites although there are similarities to some Polynesian fishing kites that can be made from a single leaf.
- c) Dieu Con Rit – the Scolopendrium kite. “This kite is simply gigantic and one finds it flown in the vicinity of Nam Dinh, on the shore of the Vi Hoang river. Some people believe that it’s a Chinese invention, and it’s so called because once lifted in the air it looks like a giant scolopendrium. On a segment of bamboo of one metre long, one attaches five bamboo circles of different dimensions. The biggest circle at the middle of the animal’s nose. Two smaller circles on both sides of the animal’s nose constitute the eyes of the scolopendrium. Two other smallest circles, placed outside of the two eyes, are the ears of the scolopendrium. Under the nose, one attaches a bamboo arc to figure the scolopendrium’s superior lip, and under the eyes, one fixes another bigger arc to represent it’s inferior lip. Behind the scolopendrium’s nose are a series of other circles which the number varies between fifty to sixty of them, on a length that reaches, at times, fifty metres. These circles have the same form with the nose, and are bound together by three strings. To the last circle, one attaches two strips made of paper or light silk, constituting the antennae of the animal’s tail. All rounded surfaces are recovered with thick paper, coated with persimmon glue, or with raw silk. As a special feature, this type of kite differs notably from all other types of kites described above, not only because it’s much bigger and much more complicated, but also because of its handling and making; finally, because of its tail, as, in fact, once flown in the air, this tail, instead of descending, is flying high toward the sky, much higher than its head”.

## D3 Kite materials

Mr Ngô Quý Sơn tells us that Vietnamese flute kites are generally made from bamboo and paper. They are homemade by the kiteflyers and are not the subject of trade. He says that “the bamboo for the kite frame is pre-split and stored in the shadow to become dry”. Before use, the bamboo is often submerged with heavy stones in flowing water for 10-20 days in order to leach out sugar and starch, which is a favourite food for the bamboo damaging insects.

The wing framework and central spine is split bamboo. The flexible tail structure of the Group 2 kites is also bamboo. Split bamboo is used for the fine detail framework on the Group 3 kites.

A suitable bamboo has to be found to make the kite bones. In order to be as light and strong as possible, the bamboo culm has to be old. The ageing makes the bamboo strong. According to other references the bones are made from old bamboo that has been naturally dried in the forest. This bamboo is sometimes difficult to find in the kite makers home village, so the amateurs sometimes have to travel a long way in order to find the right bamboo (Lạng Sơn province). Around 1940, this search could last up to several weeks!

The wing coverings are primarily paper<sup>57</sup> and either comprise a single skin with strips of paper covering the stringing to make a sandwich, or is made of a covering comprising two layers of paper, one on each side of the netting. The paper was Mulberry or Do paper and was generally lightweight and grey/brown in colour. In some cases the kite paper is painted/smeared with a purple ‘fruit juice’ called *cây* that acts as glue and provides a taught “dope”-like waterproof finish. It results in a very fine and flexible wing covering that could be likened to a thin animal skin.

Some of the modern artistic kites at the *Maison des Arts* gallery were covered in transparent polythene sheeting.

<sup>57</sup> According to Mr Quan Hang Cao paper is “do”, also see:  
[http://www.amasixasiagroup.com/shop/index.php?main\\_page=page\\_3](http://www.amasixasiagroup.com/shop/index.php?main_page=page_3)

The tree “*Rhamnoneuron balansae*” is “giấy do” in Vietnamese and has a lifespan of up to 500 years. According to Mr Ngô Quý Sơn the paper used is “giấy-bán” where giấy is paper in Vietnamese. The kite paper is made of “giấy dâu tằm”, i.e. mulberry paper (*Broussonetia papyrifera*) which is grown in Phú-Thò province located about 40km north of Hanoi (see also our notes on the papermaking villages around Hanoi).



Kites from Song Vân (village 1) were covered with a form of lightweight grey/silver rayon fabric.

Bindings and wing stringing were common cord. Various thicknesses are used according to the need. The bindings were not sealed with glue. The kite bridling (*lèo*; *trans. small line*) is generally cord that is heavier than the main flying line. In some cases a form of tape was used, the reason for using this is not known.

#### D5 Spools, winders and flying lines

At Bá Dương Nội the most common form of flying line was a twisted hemp type line of about 1.5mm diameter wound on a simple flat wooden winder. This line resembled that which would be used for making fishing nets. In some cases a nylon monofilament line is used and others were of twisted silk and synthetic cord. From observation of these winders it seems that several hundreds of metres of line could be used.

Ngô Quý Đức, in an email, provided a description written earlier by Ngô Quý Sơn regarding flying line: "In former times the holding line was made of a special sort of bamboo called "*giang*"<sup>58</sup>. This bamboo is now also widely used for basketry. Today monofilament fishing nylon and twisted silk/synthetic line is most often used as a substitute. Hemp and cotton are used rarely, particularly because of its poor reliability in tropical humidity.

An Internet Youtube video made by nguyenthanhtuan81 and titled Thái Bình - Sáo Đền (Phim tài liệu 2/4) shows bamboo line being prepared (also the Bee kite in flight).

<http://www.youtube.com/watch?v=bnjl2t73gaw>

Mr Ngô Quý Sơn estimates that it takes about 10 days to make a good kite frame, make a length of traditional line and to apply the kite skin persimmon fruit/kaki sap ("*cậy*") treatment.

Although no longer made, Mr Ngô Quý Sơn tells us that the traditional "holding line" bamboo is made by carefully splitting bamboo lengthwise along its grain until splits the size of chopsticks are obtained. These are made even and smooth and the splits are combined with "*giang*" bamboo fibres. The "line" is then put in a big copper vessel, water is added and the mixture is then heated, possibly with slacked lime or potash ("Chinese medicine"), for a whole day. When the mass has cooled down, the resulting line is rolled on a "*cái vành*", a bamboo-spool of about 50cm diameter.

The accompanying photograph<sup>59</sup> by Robert Whitehurst shows Mr. Nguyễn Hữu Kiên with such a spool, although this one is empty. It looks similar to, and may be the same as the one carried by Mr Pham Van Mai in Figure 30.



Figure 76 Kite line and winders at Bá Dương Nội



Figure 77 Mr. Nguyễn Hữu Kiên with the bamboo spool

<sup>58</sup> Latin name *dendrocalamus patellaris*, see Hô Pham-hoang, 1993, *An Illustrated Flora of Vietnam*, Edition III, N° 2, Smilacaceae, Cyperaceae, Orchidaceae & Poaceae, Montreal.

<sup>59</sup> <http://www.windmusik.com/pictures/caireel.jpg>

## D6 Launching

Flying a Vietnamese flute kite is invariably a team process because a long launch is necessary. This is partly because high aspect ratio kites are notoriously unstable on short lines, and because a rapid launch is necessary to create a strong stabilising dihedral during the climb. Once airborne, the kiteflyer is able to manage the meandering motion of the kite by adjusting line tension through letting out or reeling in line.

The kite team generally comprises the kiteflyer and the reel handler who holds the kite reel, one or two launch assistants who steady the kite and several line keepers who make sure that the flying line does not snag on other lines, people, trees, buffalo etc. The line keepers also act as relays for launching instructions.

About 100 metres of line are laid out for the long launch. On the instruction to launch the launch assistant will toss the kite firmly upwards into the wind while the kiteflyer rapidly pulls in line. If successful the kite will rise steadily to the point where the flier will feel it safe to let out line and raise the kite higher to its operating height of at least 100 metres where the wind would be stronger and steadier.

Not all launches are successful. Sometimes the kite will swoop to one side. If it does this a competent flier will let out a little line, slow the swoop, right the kite and pull the line in to maintain the climb. On some occasions the kite would climb to a moderate height but there would not be enough wind and the kite might tip sideways or start to tumble. It proved almost impossible to correct a tumbling kite and these invariably crashed. Other problems occurred during tangles when lines crossed.

## D7 Flying characteristics

The Vietnamese flute kite requires at least a moderate wind to fly successfully and particularly to allow the flutes to sound strongly. The minimum wind speed to make the flutes sound well is about 20 kph (5.5 m/s) for the low-wind Song Vân kite flutes; the kite itself needs an estimated wind speed of 15 kph (4 m/s) to fly, but at this speed the flutes will not make any sound. The launch is the most difficult part of the flight since the winds are slower at low level and there are the problems of tangles and maintaining line tension. Once properly airborne, the kites fly at a high angle and tend to meander around the sky. This meandering motion leads to the soulful sounds from the flutes as the sound varies in intensity as the flute angle to the wind changes. The sound of the flutes seems to be strongest during the launch, even in low winds, when the kite is rising rapidly and when the relative wind speed is at its highest.

We saw that some kites exhibiting excessive dihedral when climbing during the launch. This was because the wing spar bamboo sticks were too weak. When this happened the flute suspension strings became loose and the flute lost alignment to the wind. This movement could affect the kite's equilibrium. The better kites would have their wing bamboos cut so that they would be quite stiff inboard and would become more flexible towards the wing tips. In this case the stiffer inner wing structure is less likely to distort and relax the flute rigging lines.

We only saw Type 2a kites flying at Village 1. These kites have the circular tails. These tail surfaces are very flexible and were seen to be continuously moving in flight. At low speeds they would be flat and rise as the speed increased. Their function seemed to be to increase lateral stability at higher wind speeds<sup>60</sup>.



Figure 78 Not all kites flew well. This one crashed into the village pond

<sup>60</sup> <http://www.youtube.com/watch?v=Y5vOaYnEACI>



D8 The bird kite with a single mouth flute - an anomaly.

After returning from Vietnam, Paul found an original copy of the article "*Le Cerf-Volant A Musique Au Tonking*" that included the steel engraving. Whereas we had initially thought that the "flute" was somehow suspended by a wire, it became quite clear that we were mistaken. What we had thought was the flute was, in fact, the central open mouth of a very large flute. We are not sure if such flutes exist in Vietnam today, although these single tone Aeolian flutes do appear in Kalimantan in Indonesia where they are flown in pairs, i.e. attached separately on the inner wing, on large bird kites. In 1886 Albert Challan de Belval wrote in his "*Au Tonkin*"<sup>61</sup>; "Bamboos are frequently found placed deliberately around the villages. Quite broad holes are cut into these bamboos which turn them into real organ pipes which resonate sadly under the action of the wind. These sounds act to dispel any bad spirits which might threaten the village. These same bamboos, when they are fixed to kites, sometimes fill the air with shrill sounds that reminds us of our steam engines.....". It may be that these open-mouthed bamboo "organs" are the same as the flute in the engraving.

The inner flutes of the Friendship Flute made by Mr Nguyễn Hữu Kiêm are very similar to the Kalimantan flute but we know that he was influenced by previous sight of the Kalimantan flute on Uli's website "Windmusik". The steel engraving is clearly diagrammatic and does not show how this single mouthed flute is mounted on the kite. While we can speculate on possibilities, this aspect remains a dilemma for further investigation.



Figure 79 The bird kite with a single mouth flute

It was only after we had returned from Vietnam that contact was made with a group that fly the kites with very large single mouthed flutes. These are flown in Indonesia in the region of Kalimantan<sup>62</sup>. Individual flutes are made but they are mounted in pairs. In one case, see Figure 80, two pairs of flutes are mounted on one kite. The binding on the flutes gives a reference that enables them to be strapped to "rails" located at the leading edge of the kite wings. It is speculated that the single mouthed Vietnamese flute would have been mounted in a similar manner.

<sup>61</sup> « ...Fréquemment, autour des villages, sont disposés des bambous, percés d'orifices plus ou moins larges, constituant ainsi de véritables tuyaux d'orgue qui vibrent tristement sous l'action du vent. C'est ainsi que l'on éloigne les mauvais esprits qui menacent le village. Ces mêmes bambous, fixés à des cerfs-volants, remplissent parfois l'air de sons aigus qui rappellent nos machines à vapeur. ... »

See also <http://www.windmusik.com/html/bamborgl.htm>

<sup>62</sup> These are the Badandang giant kites flown in the Tapin district of Kalimantan, Indonesia, possibly in the village of Bitahan Lokpaikat.





Figure 80 *The Flutes and Flute Kites of Kalimantan, Indonesia.*  
 Photographs by Abu Sulthan Rantau



## PostScript

Towards the end of writing these notes Paul was given a marvellous book on “Traditional Malaysian Kites” which itself was written by kite enthusiasts at the Pasir Gudang Kite Museum in Malaysia. In many ways this book reflects the themes of our paper. It also revealed an aspect of our “onion” that we had not considered. This is the deep relationship between the kite, or flute, maker and his materials. In Malaysia, for instance, “the best bamboo is said to be the one leaning towards the rising sun because according to the elders, this bamboo is full of high spirits”. Prayers are said before and after cutting the bamboo and on leaving the bamboo plantation, which is always on “spacious and high ground”, the harvester will proclaim “...the ones left are yours, the ones with me are mine, please do not follow me, what is left is for your consumption”. These are, of course, the beliefs of the Malaysians. We need to return to find out what they say in Vietnam.



Figure 81 Paul in researching, writing and editing mode

From what we have discovered, our friends in Vietnam have a strong relationship with the *Điếu Sáo*. Uli likens this to the spirit of the French writer, *Antoine de Saint-Exupéry*:

“If you want to build a flute kite it is not necessary to call your people and provide them with bamboo, paper, tools and detailed instructions, but teach them about the strong longing and enjoyment of free winds and good sounds...”

*"Si tu veux construire un bateau, fais naître dans le cœur de tes hommes et femmes le désir de la mer."*

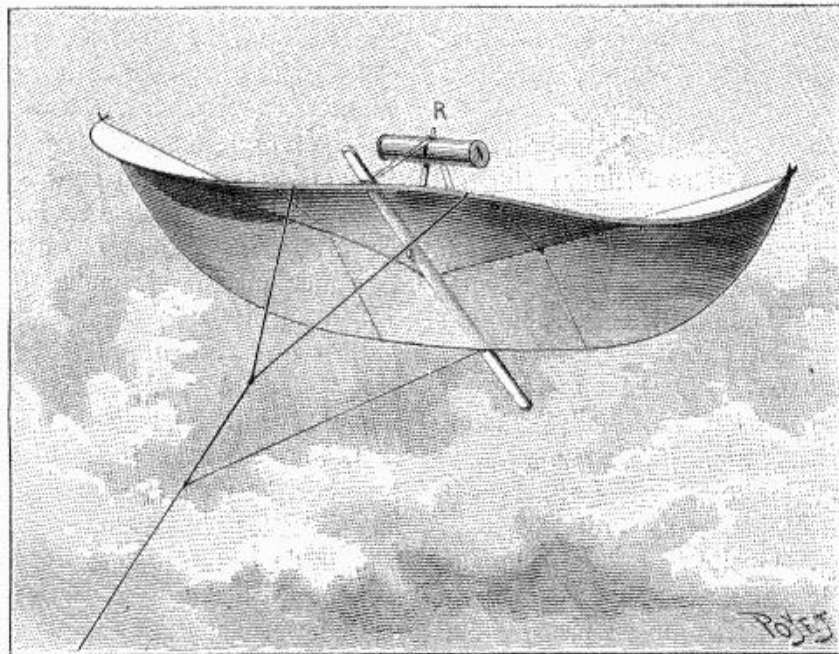


Figure 82 Musical kite, with bamboo resonator.  
Poyet's illustration that appeared in  
*La Nature* and *Scientific American* 1888

## About the authors

**Uli Wahl** (55) is a medical doctor living in Weinheim, Germany. His special interests are the natural sciences, ethnology and meteorology. These complement his outdoor activities of sailing, hang-gliding and kites. He has made a special study of Aeolian music and this leads naturally to kite-borne musical instruments. His extensive website <http://www.windmusik.com> is widely regarded as the first point of contact for anyone interested in wind music; it contains many quotations from original documents as well as providing illustrations and audio clips. Uli is both a craftsman and an academic researcher and uses these skills to create replicas and new designs of wind instruments as well as the accompanying kites. He has previously published his work in "*Experimental Musical Instruments*" as well as giving lectures and public demonstrations, sometimes as a member of the "*The Aeolist Orchestra*" <http://w1.neuronnexion.fr/~dferment/aeolist.html>. The flute kites of Vietnam have been a very special interest and, after much hard work, researching and negotiating, he is delighted to have achieved his dream of finding and, now, documenting them.

**Paul Chapman** (64) is a recently retired aeronautical engineer living in Bristol, UK. His primary interests are in early aeronautics and kites; his extensive library of original books and papers document these back to the early 1600s. He has travelled in China, India and Korea where he has met and lived with many traditional kitemakers. He has previously published in professional aerospace journals as well as in specialist kite magazines. He is Historic Kite Advisor to the World Kite Museum in Seattle, USA and has lectured to the Royal Aeronautical Society as well as to other university, aerospace and kite organisations, including the annual Historic Kite Workshops. Several years ago he featured on the BBC Radio 3 Proms Interval talk "East meets West" to discuss the Aeolian kites of south-east Asia. The opportunity to accompany Uli and make a joint in-depth study of the Vietnamese kites, the flutes and their culture has been a fascinating journey.

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Figure 71 top left, top right and bottom left; Mrs Nguyen Nga: taken from her Maison des Arts catalogue "*Arts Contemporain et Cerfs-Volants Traditionnelles du Vietnam*"

Figure 72; Hoang Phu

Figure 77; Robert Whitehurst

Figure 80; Abu Sulthan Rantau