

# RESEARCH ON PRINTING- CARVING PROCEDURE

## TRADITIONAL WOODBLOCKS IN VIETNAM

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*Printing techniques are believed to have originated from China and then introduced to some neighboring countries. In many ways, Han was presented in Viet Nam very early. Accordingly, woodblock printing techniques to make paper versions also gradually gained popularity in our country. Through the study of woodblocks in Viet Nam including the woodblock system of Vinh Nghiem Pagoda and Bo Da Pagoda (Bac Giang province), the author initially established a procedure for traditional woodblock printing in Viet Nam. This process is from the selected text stages until finishing the book.*

**Key words:** Woodblock; Carve; Print.

### ABSTRACT

*Printing techniques are believed to have originated from China and then introduced to some neighboring countries. In many ways, Han had been presented in Viet Nam since very early. Accordingly, woodblock printing techniques to make paper also gradually gained popularity in our country. Through the study of woodblocks in Viet Nam including the woodblock system of Vinh Nghiem Pagoda and Bo Da Pagoda (Bac Giang province), the author initially established a procedure for traditional woodblock printing in Viet Nam. This process is from the selected text stages until finishing the book.*

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### 1. History of woodblock carving printing in Vietnam

Printing techniques were popularized in our country quite early, of which the earliest evidence (to the best current understanding) that mentions printing techniques is *Thien uyen tap anh*. As confirmed in this book, Tin Hoc Zen master (Ly Dynasty) was born in a family with printing occupation. In XI century, Linh Nam, a kind of valuable paper

produced by Vietnamese people, was used by Ly Dynasty's King as a gift offered to Tong Dynasty's King. Unluckily, almost books from Ly and Tran Dynasties (Century XI- XIV) now have been "written off", the remaining may be only list of books' name. Hence, detailed status of that current book printing cannot be looked inside. *An Nam Chi Luoc* of Le Tac, a precious material source in terms of culture and politic was caused to be briefly recorded by Tran Dynasty: During process of diploma, Dai Viet obtained *Dai Tang kinh* for many times, to which Tran Dynasty's Kings compiled book for addition.

It might be the fact that there were sometimes in the history, the printing was lost in our country, which forced Vietnamese people to "re-study" it. Then, this craft occupation was maintained by several villages during XV century. Second- rank doctorate Luong Nhu Hoc, for the first time he had a mission to China, discovered the book printing career, then asked permission from the King to once again come back to China as a merchant to learn this technique- The event happened between 1443 and 1459. Although the study was not official, he was so successful that he could popularized this technique to people of two villages of Hong Luc and Lieu Chang (briefly called Luc Lieu) when he came back to the home country. Since then, workers of Luc Lieu migrated to establish large printing centers at many places in the country, namely *Hoi Van Duong, Quang Thinh Duong, Phuc Van Duong, Lac Thien Duong, Thu Van Duong, Duc Van Duong, Thinh Van Duong, Lieu Van Duong* as well as many other literatural printing quarters. Most of carvers and printers of big temple halls like *Bo Da, Lien Phai, Hong Phuc ...* originated from Luc Lieu. Luc Lieu workers gathered and established wood carving and printing quarters on streets like Hang Trong, Hang Non, Hang Bong, To Tich... Right here, Nhi Khe printing quarter (Thuong Tin), Hang Trong picture painting and other printing quarters once practiced their craft during three centuries (from XVII - XIX century). By the end of XX century, when examinations using Han letters were no longer organized, these villages of printing occupation fell into gradual loss.

Printing is one of the most important ways of culture propagation and popularization, as A.B Woodside said in *Vietnam and the Chinese Model*: "Printing industry in Vietnam made a standard impression in the whole Southeast Asia..."<sup>1</sup>. In time of democracy, printing was not usually organized but majorly subject to activities of large religious

centers. Printing organization was normally hosted by the State, Buddhist scripture printing was lead by temple halls (Buddhism centers), temples and schools used to have workers carve and print several sets of Buddhist scripture and the printing was often performed at site. After completion, printing frame could be stored at place of printing order or would be removed, several hundreds of books were stored as origins. The storage at pagodas were for long-term use and to serve anyone who came and proposed for the scripture. Per as statistic figures of Mai Hong and Nguyen Huu Mui published on *Han Nom Magazine*, within around four centuries, from XVII- XX, there were 318 facilities of book and scripture wood carving. Authors of *Vietnam ancient graphics* also confirmed further 18 facilities of printing<sup>2</sup>. The earliest of printing version that found until this time is *Thien tam thuong pham, with 3 volumes*, printed at Van Duc pagoda (Hoi An) in year Quang Hung XXI, means calender year 1598. Currently, printing frame (with handwriting style of Le Dynasty) is still preserved but not in an intact form, most of which is termite- cated.

Branches of folk pictures also used *thi* wood (*diospyros decandra*) to make printing frame. Dong Ho picture had both line and color printing frames, of which number of color printing frames is subject to number of colors on the picture. Kim Hoang picture used limited- color printing frame. Sinh village and Hang Trong pictures used to print lines on the pictures and then paint on them, which is called color- additional technique. The Chinese people summarized three basic techniques of carving- printing on wood, including: *hac bach moc khac*- black and white wood curving, there were only black lines on white background, this type was used for scripture curving printing or making printing frame for folk pictures; *thao sac moc khac*- wood curving and printing with colored printing frames (like Dong ho folk picture); *but thai moc khac*- curving and printing with one black line frame then use pen brush to add colors to the pictures (Hang Trong folk pictures). Each type of wood frame bears its own typical beauty expressed through “*Moc vi*” and “*Dao vi*” which mean the beauty of wood features and the beauty of curving lines respectively. From different ways of “*Moc vi*” and “*Dao vi*”, different styles of wood curving and printing were born. The people of Dong Ho village call style of scripture carving square carving and call their picture carving style round carving.

Through surveys on folk picture villages like Dong Ho, Hang Trong, Kim Hoang, Luc

Lieu, Nhi Khu.... As in the 1960s, Dong Ho village used to have co-operative societies or groups of picture making which worked under agriculture co-operative societies (Mr. Sam was the leader), this is the only village to reserve frames, especially ancient ones. Hang Trong village has family of Mr. Nghiem knows about the printing occupation. Kim Hoang or Luc Lieu suffer from the same status, means that some people know about the techniques but they are not also the people who directly practice printing. Some villagers join in seal making but in other places like Hanoi or Ho Chi Minh City.

To have woodblocks for book printing, firstly, they must select good handwriters, literature writers or literalists kinh sinh nhân<sup>3</sup> with qualification of calligraphy. Letters would be written on rhamnoneuron paper and then stuck conversely on normal wood plates, each of which comprises two pages, two sheets comprise four pages. The letters could be written in free style or in *Sòng Style*<sup>4</sup>. *Kham dinh Dai Nam hoi dien su le tue bien* (book 32, *Le bo tu thuu, toan tu thuc luc*, page 6) recorded information on selection of good writer to write letters in *Sòng style*. In petition of National History Department on writing lists of literatural books “*Thuc luc chinh bien de tu ky*” in *Sòng style* then carving them on a wood plate for the King’s view in the year of Thanh Thai IX (1897)<sup>5</sup>. Maximum number of pages carved on one wood plate was only two or four pages that made number of woodblocks of a hundred- page book huge. Letter- carving workers were called *Tu nhan*, these persons must also be literate. Mis-carved positions could be removed and replaced by new ones, on which correct letters would be re-carved. Wood used for carving in China was often of pear or apple trees, these kinds are hard and with multi-dimension wood fiber whereas the used wood in our country is often of *thi tree* or apple tree<sup>6</sup>. *Kham dinh Dai Nam hoi dien su le tue bien* (book 49, *Quoc Suu quan thuc luc su nghi*, document on material and performance of carving 65) said that wood used for carving and printing books must be of *thi tree* (柿木). Another type of wood reminded is long muc (*Homarrhena pubescens*), this is easy for the carving but the stability is not much.

In the time of Tu Duc King, when printing the set of *Ngu che thi so tap* (Primary book of poems), *Quoc Su Quan* (National History Department) offered a letter to the King, said that: “In June, Hai Duong province assigned 30 carvers of the North origin, 4 of

whom escaped, 26 are now staying to work. We have reviewed and found out that model of the book *Thuc luc* comprises 1900 pages and needs 995 plates of *thi* wood. 540 of those have been obtained, this number is planned to be used up at the end of next month. The outstanding number of those cannot be submitted properly as this is flood season and the transportation is prevented. In addition, the useless awaiting workers can cause waste of money for salary. Regarding 10 workers of the South origin who carve *Thuc luc* and 14 workers of the South origin carve *Ngu che thi tap*, we propose to assign them to Labor Department of *Vu kho* for mission or allow them to come back their hometown. Regarding 26 workers of the North origin, 6 of them will be kept for printing and carving, other 10 will be moved to Department of Letter Printing from 1<sup>st</sup> day of next month. The whole workers are intended to back to work upon our reception of enough wood frame”<sup>7</sup>.

Sometimes, tin frame was used for printing, it is commented by officers at National History Department that: “The preface printed by tin frame with red ink makes letters small and unclear. We would like to propose Internal Affairs Department to ask for the writing and for the preface sheet, History Department is requested to take *thi* wood, cause workers to carve frame, print with red ink, this is belived to make the letters clear and gentle”<sup>8</sup>

We can see, *thi* wood is a preferable kind to be used for curving and printing. This wood was often soaked for many years to stable its shrinkage and prevent being termite cated. As we can see, the ancient wood frames of Buddhism scripture were carved and printed three- four hundered years ago but are still quite intact now.

## **2. Procedure of curving and printing wood blocks**

*Procedure of curving and printing wood blocks is as follows:*

### *2.1. Selection of document*

Document selection is the first and the most important step that decides of which form the completed printing document will be. Normally, there were 7 types of documents as follows:

1. Versions of *tan san*, *tan khac*, *tan thuyen*: Are the first ones caused to be printed.

2. Versions of *trung san, trung khac, trung thuyen*: are the original re-curved of the first version.

3. Versions of *tan tuc, tan dinh*: Are second version with adjustment or addition to the content to complete the document.

4. Version of *hau bo* (Version of *Hau bo*: Is the third version, with supplementation or adjustment of contents, is treated as the last version.

*Additional versions:*

5. Perfect version: A delicate carved version with nice outcome in terms of both content and presentation.

6. Second version: Basing on age of carving frame, quantity of printings was decided. Bold version is arranged in type 1- perfect version, the ones with worn- out letters due to much printing were called second version.

7. Combined carving version: Is the version combined between one part of this version and another one of that version, means printing several books into one.

Printed books, in addition to the division basing on printing facilities, like carving agencies (of the state), carving groups (folk) self- carving facilities (pagodas, churches, different religious facilities), were divided into four various types, including:

1- Type of document with purely Sino letters, like re-printing Buddhist scripture or foreign books.

2- Sino-Nom comparison, like *Tam tu kinh*, beside Sino letters, each row or sentence has small notes in Nom- *Dai Nam quoc su dien ca* (*National history of Vietnam*), was printed with upper row in Sino and lower row in Nom.

3- Purely Nom letters like new edition of *Kim Van Kieu* printed by Tu Van Duong in 1921. Literatural groups published this kind of books the most.

4- Vietnamese letters. During period of 1883 - 1912, books translated into Vietnamese language like *Tam quoc, Thuy hu, Phong than dien nghia, Tuy Duong story, Can Long*

*ha Giang Nam, Bach xa dien nghia, most of them are printed with tin frame in Sai Gon.*

Normally, version one is the first version which takes a lot of attempt for page design, line arrangement for letter writing. Later versions are mostly based on the first one with less time and work. The recovered procedure is based on the one of *tan san* version.

## 2.2. Preparation of frame, paper and ink

Select materials for carving, printing as well as paper and ink to perform the phases. The first phase is engraving, including selection of materials, sawing wood plates, soaking, drying and flattening ...

### 2.2.1. Preparing board

2.2.1.1. Selection of material: Material selected should have good power of resistance and ink absorbance (ink absorbance and ink release are equal). Types of wood which are often used: pear, apple, *thi*, holarrhena pubescens. Sometimes, wood of buxus, ginkgo bilora, birch ...- these materials were mainly used by the Chinese and Korean people<sup>9</sup>, Japanese people used to use wood from tree of sakura. Those kinds of wood have proper hardness, tight fibre and easy to be engraved. Ink absorbed on this kind of wood is not subject to the weather. Moreover, the material is available in nature at any local.

In Vietnam, *thi* wood or holarrhena pubescens were often used. For *thi* wood, it is necessary to select old trees (not producing fruit anymore), this kind of wood does not shrink in dry weather.

### 2.2.1.2. Sawing the frame

After selecting wood tree, cut out small branches and retain the parts with enough size to make frame. Cut along the vertical side of the tree and saw it into 2-3 cm boards. This vertical processing helps take more frames and avoid knots or hollow parts. Chinese people often choose this style of sawing frame to process woodblocks. This is method of forward pattern processing. However, when engraving frame, Westerners often take wood along horizontal side, this helps facilitate carving patterns and is also called pattern cutting. In our country, wood is often taken by horizontal side.

### 2.2.1.3. Soaking

Soak the sawed wood into water, place object things on them, this time often lasts for 1-6 months. During the soaking, water should be replaced many times (or soak the wood frames into mud of pond for a long time, then take them for use upon request) so that all latex of wood can be soluble (For wood of so old tree, this procedure can be omitted) and be prevented from cracking after getting dry, enable the carving, easy to absorb and release ink. Time for soaking in summer is often shorter than in winter. For wood awaited for a long time, soaking is not necessary. Korean people often use boiled water with salt to remove latex in the wood.

### 2.2.1.4. Drying

Aftering completion of soaking, the frame would be raised and placed at position of direct sunshine and air ventilation to be dried. Each layer of woodblocks is installed with bars of wood or bamboo to keep them balance and make material dry naturally. When waiting for the frame drying, the frames should be turned over to be checked and prevented from uneven bending or cracking.

Completing this process, the woodblock is easier to become dry and to be carved on. In case of emergent use, the woodblocks can be placed in a big pot, boiled for 3-4 hours then put up side down to make dry.

### 2.2.1.5. Flatenning

After the woodblocks get dry, two sides of them will be dried and cut into the shape which is similar to printing frame, then use vegetable oil to spread on its surface.

### 2.2.2. Preparing paper

In Vietnam, there are many different types of paper like Thuong Luc<sup>10</sup>, Lenh<sup>11</sup> paper... Each type of it can be used in accordance with demand. In China, there are many kinds of reputable papers, such as Lim Tuc of To Chau, Chilli paper of Phuc Kien, Bo Ky paper of Ho Bac, Quang Do paper of Tu Xuyen... In our country, popular paper used is rhamnoneuron paper (now is still produced by Dong Cao village). Sometimes, Chinese papers like Ky Lan, Nguyen Giap<sup>12</sup> papers are used to write letters on<sup>13</sup>. The petition

of National History Department in Duy Tan year 3 (1909). Petition of National History Department in third year of Duy Tan (1909) mentioned the preparation of thick Ki Lan and Nguyen Giap papers to print book *Thuc luc chinh bien de luc ki* and two story books of *Liet truyen chinh bien*<sup>14</sup>. Also in accordance with this petition, Ky Lan paper was more expensive<sup>15</sup>, so Nguyen Giap paper was preferable.

### 2.2.3. Preparing ink

Ink for printing is often processed as ink bar then will be ground, added with glue and wine to make it a kind of gel. Put the mixture into a pot, place the pot underground through 3 winters and 4 summers to make stench disappear. The longer time of storage, the better the ink becomes. Add water into the mixture and filter it before use.

Traditional folk way of making ink is simpler, can meet demand for use with large volume. Use dry bamboo leaves, burn them into ash then soak it into water in a pot. Some other materials were added to create color of the ink. When using, the mixture would continue to be mixed with glue or rice water to make cohesion. One another special technique was used so that the picture could be more shining and bright, they used tapioca powder to mix with ink, the surface would be much more durable and brighter.

## 2.3. Stage of carving on frame

The content after being ensured correct would be written on paper and then placed conversely on the frame. Then, make the frame wet to highlight the letters appear, when carving, worker would remove white parts and remain black ones. The stages are performed as follows:

### 2.3.1. Writing letters

Persons who can write letter beautifully would write the whole document on paper, we call it model. Free style of Song style are all accepted. Pink paper is often used, letters are printed in row which we call the distance. There is one blank row between two rows. Each row has three lines, of which the middle one divides the shape into medium shape. If there are two rows of small letters, then center of the halved row will be taken as

standard.

### 2.3.2. Checking and adjustment

After the writing completion, checking for errors is performed. Any error will be noted, removed with knife, the adjustment is re-written and stuck to that position; or the whole content of the page is re-written before use.

### 2.3.3. Transferring letters to the frame

Model letters are written on paper then inverted and glued on surface of the wood frame. The wood frame surface must be spread with glue carefully- Lieu Trang village's workers used boiled rice instead of glue- use hand to jam evenly on the wood surface. The papers are stuck on the surface row by row- from the left to the right or vice versa. When the papers get dry, use vegetable oil (or white oil) to spread on the them so that the letters (black) can be prominent.

### 2.3.4. Carving the frame

This process is keeping the letters on the frame and removing the white parts. Different tools with typical functions are used, such as knife, scraper, carving tools, pierce.

Firstly, carving the barrier lines of each row must be done, this is called pruning lines. Then going along the letter, prune two sides of the letter. Use the knife with round tip and pierce to remove the positions without letters. Carving lines is performed from the left to the right (in accordance with handedness of each worker). Next, edge of letters is carved, the largest space outside the letters are taken out (the parts bordering to line of the row), then process the part inside the letters, which is called taking the core out. The letters must be carved from line to line then continue to adjust channel of the carving frame. Finally, use water to clean out the sawdust left on the frame surface. Now the carving is completed.

## 2.4. *Printing the frame, binding books*

### 2.4.1. Printing the frame

Firstly, the wood frame is soaked to absorb water, when printing, the frame will absorb

ink less. Ink would be spread evenly on the frame surface with brushes- normally pine brushes are used (or roller) to coat ink on the surface, put papers on then use brush or loofah to rub. First time of printing is often for trial and check whether the letters are correct or not. In case of one or two errors, the errors would be removed and replaced by another one- this is called inserting the text<sup>16</sup>.

#### 2.4.2. Bookbinding

The sheets with printing errors, ink smudges or moving paper are thickened to make cover. Fold the printed sheets into duplicate ones, make page order, arrange them evenly with same margin, this is called thread placing, the thickened cover is pressed and rimmed. Trim the pages along the margin, twist the excessively trimmed bends of paper to make thread then bind the book. Remove the brace, press the book and coat Vietnamese paint on the book spine with thread to fix the wire. Spread paint on the rest 3 margins of the book to avoid wearing out spine whenever the book is opened. Write name of the book and its order to make completion.

### 3. Conclusion

In history of Vietnam, woodblock printing is not only an important mean to propagandize culture but also a kind of typical art with the perfect combination between authors, handwriters and carving artists. Nowadays, woodblock is a type of cultural heritage of which value is being conserved and promoted. Accordingly, the reseach and reset of traditional woodblock helps make factual value for work of protection and promotion for this unique cultural heritage. The traditional woodblock procedure afore-outlined surely contains defects. We hope that it will be supplemented and completed in the nearest time<sup>17</sup>./.

N.S

#### Notes:

1- A.B. Woodside, *Vietnam and the Chinese Model*, 1988.

2- Phan Cam Thuong, Cung Khac Luoc, Le Quoc Viet, *Vietnam's ancient graphic*, Publishing house of Fine arts 1999.

- 3- Persons in charge of Buddhism scripture writing.
- 4- Sòng Style: A style of letters for printing. The pen strokes are modified in terms of size. Normally, horizontal line is small, vertical line is plain, at the end of each line is decoration part which is called letter's foot, dot, *phiet*, *nai*, *cau* with spike.
- 5- TTLTQGI, *CBTN - Thanh Thai, Volume 32*, sheet 273.
- 6- Apple 棗: We haven't known this kind of wood at this time.
- 7- Official document, Tu Duc reign, 310,010,030.
- 8- Official document, Tu Duc reign, 275,056,133.
- 9- Referring to Document on woodblock recovery made by Institute of Korean National Study.
- 10- Le Quy Don, *Van dai loai ngu* Publishing house of Culture and Information, page 445
- 11- Hoang Hong Cam, "First step looking inside Vietnam's traditional paper making career", *Magazine on Sino- Nom*, No.19.
- 12- Nguyen Giap paper (元甲紙) - Nguyen Giap is a kind of paper made in Nguyen Giao Hamlet, Co Dien Town, Lien Thanh District, Man Tay (Phuc Kien). This paper making center established by Tuong Thieu Lam after 1750s (Can Long reign).
- 13- *Kham dinh Dai Nam hoi dien su le tuc bien*, book 49, recorded by National History Department, document on curving 65.
- 14- TTLTQGI, *CBTN - Duy Tan, volume 21*, sheet 77.
- 15- It is unknown about the type and place of production of Ky Lan paper.
- 16- This type of printing gets technical support from Thich Tuc Phuong monk of Tram Gian Pagoda, Hai Duong.

17- The essay is completed with the help regarding knowledge and experiences of researcher Phan Cam Thuong and wood carving artist Nguyen Thao.

**Sources of reference:**

1- Hoa Bang, “Our techniques of printing at the old time”, *Magazine of History Research*, No. 133, 1970.

2- Hoang Hong Cam, “First step for looking inside Vietnam’s national paper making”, *Magazine on Sino- Nom*, No. 19.

3- Truong Tu Dan, *History of printing in China* (中國印刷史) , Publishing House. People of Shanghai, 1989.

4- Le Quy Don, *Van dai loai ngu*, Publishing House of Culture and Information.

5- Mai Hong, Nguyen Huu Mui, “Researching on our printing techniques through Sino- Nom book references”, *Magazine on Sino- Nom*, No. Jan/1986.

6- Nguy An Nho, *History of Ancient China’s printing* (中國古代印刷史) , Publishing House of Industry, 1988.

7- Phan Cam Thuong, Cung Khac Luoc, Le Quoc Viet, Vietnam’s ancient, *Publishing House of Fine Arts*, 2014.

8- Institute of Korean National Study Development, *Material of recovering traditional Confucianism woodblocks*.