

提要

「貨幣營運管理研討會」課程內容著重於各項貨幣管理政策，本報告謹就新加坡券幣發行實務加以說明。新加坡貨幣委員會依據新加坡貨幣法，成立於 1967 年 4 月，為全國唯一貨幣發行機構，至今已發行蘭花、鳥類、船舶和人像等 4 種系列鈔券及海洋、花卉 2 種系列硬幣。報告內容涵蓋其發行相關業務如防偽措施、準備制度、券幣印鑄、庫儲管理及券幣整理等。另有關本國發行相關業務報告，亦附於報告內，以與新加坡發行實務有所比較。

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壹、前言

本次參加由東南亞中央銀行研訓中心舉辦之「貨幣營運管理研討會」，議程自民國 90 年 5 月 14 日至 18 日，地點為尼泊爾首都加德滿都，參加學員共計 29 人，課程內容著重於各項貨幣管理政策，如庫存管理、券幣印鑄、相關營運成本、券幣防偽設計、電子貨幣、新加坡、印尼及馬來西亞發行實務經驗分享等。本報告謹就新加坡券幣發行實務加以說明。

貳、新加坡券幣發行實務

新加坡貨幣委員會依據新加坡貨幣法，成立於 1967 年 4 月，為全國唯一貨幣發行機構，並於同年 6 月 12 日首次發行本國鈔券。自 1967 年以來，新加坡貨幣委員會共發行四種系列鈔券—分別是蘭花(1967 年發行)、鳥類(1976 年發行)、船舶(1984 年發行)和人像(1999 年發行)等 4 種系列；硬幣則為海洋(1967 年發行)及花卉(1985 年發行)2 種系列，前述鈔券及硬幣目前均具法償價值。

一、新加坡系列券幣發行面額明細

<u>鈔券系列</u>	<u>面額（新加坡幣）</u>
蘭花	\$1, \$5, \$10, \$25, \$50, \$100, \$500, \$1000, \$10000
鳥類	\$1, \$5, \$10, \$25, \$50, \$100, \$500, \$1000, \$10000
船舶	\$1, \$5, \$10, \$50, \$100, \$500, \$1000, \$10000
人像	\$2, \$5, \$10, \$50, \$100, \$1000, \$10000

<u>硬幣系列</u>	<u>面額（新加坡幣）</u>
海洋	\$0.01, \$0.05, \$0.1, \$0.2, \$0.5, \$1
花卉	\$0.01, \$0.05, \$0.1, \$0.2, \$0.5, \$1

二、現行流通鈔券

為迎接千禧年來臨，新加坡貨幣委員會於 1999 年 9 月 9 日發行之人像系列鈔券，共計七種面額同時發行。此系列鈔券為該國首度採用國內設計師作品，鈔券正面主題圖案皆為新加坡首任總統 Encik Yusof bin Ishak 先生，背面主題則依面額別而有不同主題，相關圖案及規格詳列如下表：

面額	背面主題	尺寸 (mm)	主色調	視障符號
2	教育	126*63	紫	•
5	花園城市	133*66	綠	• •
10	運動	141*69	紅	• •
50	藝術	156*74	藍	• • •
100	青年	162*77	橘	• •
1,000	政府	170*83	紫	• • •
10,000	經濟	180*90	金	• • • •

為使民眾認識新版鈔券，新加坡貨幣委員會於 1999 年 9 月 9 日新版鈔券發行後，針對各銀行、學校及社團等舉辦為期 6 個月之相關宣導及教育說明會等活動，且於 50 餘個社區中心巡迴展示人像系列鈔券，並更新該委員會網站 - 說明鈔券圖案、規格及防偽設計，印製介紹新版人像系列鈔券小冊子，供民眾索取。

三、防偽措施

新版人像系列鈔券之防偽措施，計有人像水印、套印、窗式安全線、凹版印刷、底紋防影印設計、微小字、三色螢光纖維絲、隱性螢光圖案、顯性螢光墨、含螢光墨之雙重隱藏圖案（Lift Twin）視覺變化金屬薄膜等。

四、發行額及準備制度

截至 2000 年 12 月 31 日止，其流通券幣發行總額為 128 億新加坡幣（約折合新台幣 2,420 億餘元）。

新加坡發行準備制度採十足準備，提充準備資產包括黃金、白銀、外匯、外國政府或國外金融機構保證之證券等。

五、紀念性鈔券

- 1990 年發行面額\$50 之新加坡獨立二十五周年紀念塑膠鈔券，透明視窗內附視覺變化薄膜（OVD）。
- 1996 年發行面額\$25 之紀念貨幣管理委員會二十五周年紀念鈔券。

六、券幣印鑄成本

新加坡券幣之印鑄，因無國營印製廠及造幣廠，採委外方式，各類券幣成本詳如下表：

鈔券 - 人像系列成本（每千張）

面額	成本 (新加坡幣)	成本 (折合台幣) 1 : 18.91
2	48.83	923.38
5	57.20	1,081.65
10	58.09	1,098.48
50	62.03	1,172.99
100	69.91	1,322.00
1,000	86.88	1,642.90
10,000	475.43	8,990.38

硬幣成本（每千枚）

單位：新加坡幣

面額	光餅	鑄費	總成本	總成本 (折合台幣)
0.01	8.07	1.98	10.05	190.05
0.05	11.55	6.48	18.03	340.95
0.10	22.33	9.20	31.53	596.23
0.20	38.11	9.00	47.11	890.85
0.50	63.94	13.75	77.69	1,469.12

1.00	22.15	44.59	66.74	1,262.05
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七、庫存及保險

鈔券庫存量以二年需求量為最低標準；硬幣庫存量以一年需求量為最低標準。前述庫存券幣並未保險，因其會計部門將此庫存數視為費用項目。

八、庫儲管理自動化

新加坡貨幣委員會裝設自動庫儲管理系統於現鈔庫房，此一系統垂直整合庫存及出入庫等流程管理，涵蓋多項子系統，如自動庫儲及補充系統、自動引導機具、橋形台架機器人、經電腦監控之輸送裝置、單點監控及「鈔券處理登記及管理系統」(具有監控整體作業流程之功能)等。如鈔券之出庫流程，只須於「鈔券處理登記及管理系統」輸入出庫之正確數額、且經核對密碼及指紋正確無誤，電腦即經由各子系統機器操控送出所需之鈔券箱數，其運送過程無需人工處理。

九、券幣整理

新加坡貨幣委員會設置 4 台鈔券整理機，因型號不同，其中 2 台每小時整理 80,000 張，另 2 台每小時整理約 100,000 張。

每日工作開始，即由負責工程師啟動「鈔券處理登記及管理系統」之整批作業，預定處理之待整理鈔箱即經由自動輸送機具運送至鈔券整理機操作處，期間無需人工處理。由操作員檢查無誤後，將鈔券送入整理機處理。對於每捆鈔券之張數多短，將由各送款銀行自行負責；整理過之作廢券則直接線上銷毀；若為可用券，則每千張成捆，並經收縮包封，每 10 捆為 1 箱，貼上條碼，經自動輸送機具運送至庫儲單位保管，準備再次流通；對於機器無法辨認之可疑券，則由人工處理。

有關硬幣回收整理作業，則委託 Singaport Precision Industries Pte Ltd 代為處理，並自 1999 年起與其簽訂 5 年委託合約。

十、破損不堪使用券幣之回收

依據新加坡貨幣法規定，破損不堪使用之券幣本身已無價值，但新加坡貨幣委員會仍可視券幣毀損情形，兌換相當價值。有關破損券幣可至各商業銀行分行申請兌換，各商業銀行分行經新加坡貨幣委員會授權可依相關兌換標準評估並兌換該等券幣。

破損鈔券兌換標準（新加坡鈔券左、右各有 1 組序號，每組序號有 9 個數字/字母）

- 每組序號 9 個數字/字母中超過 5 個可兌換 1/2 鈔券價值（每張鈔券共有 2 組序號）。
- 刻意破壞「視覺變化金屬薄膜」者，不予兌換。
- 惡意移除「視覺變化金屬薄膜」者，不予兌換。
- 惡意破壞主題人像者，不予兌換。
- 樣券不予兌換 - 樣券序號皆印上紅色。

破損及污損硬幣兌換標準

- 在正常流通使用情形下，遭污損或磨損之硬幣，經鑑識為真幣者，可等值兌換。
- 受水、火災侵襲而受損之硬幣，經鑑識為真幣

者，可等值兌換。

- 經惡意破壞之硬幣，如穿孔、切割、鍍色等，不予兌換。

十一、特定目的委員會

審查委員會

此委員會成立於 1967 年，成立目的在監督新加坡貨幣委員會所持有未發行之流通貨幣庫存情形，共有委員 6 人及主席 1 人，成員均來自財政部，由財政部長任命。於每年度開始第一個工作天檢查庫存情形，並每年擇 2 至 3 次隨機以突襲方式審查庫存情形，審查結果將直接向財政部長報告。

新加坡券幣諮詢委員會

此委員會成立於 1999 年 1 月，諮詢委員由財政部長任命，任期 3 年，業務內容如下：

- 新版鈔券及硬幣發行業務之諮詢。
- 新版鈔券及硬幣設計準則及主題選擇之諮

詢。

- 針對新加坡貨幣委員會券幣圖案設計及規格作審查、檢討及建議。
- 其他與券幣發行業務相關機構之諮詢。

參、我國券幣發行現況

為應東南亞中央銀行研訓中心「貨幣營運管理研討會」規定，各會員國與會人員，需備妥本國相關業務報告，以分享各國經驗。茲摘述報告內容如下（原文附於後）：

- 一、 貨幣發行簡介：本行職掌之貨幣發行業務、委託台銀之發行業務、十足準備、貨幣需求分析、新台幣發行依據及八十九年平均貨幣發行數。
- 二、 本國鈔券：現今面額種類、八十九年底發行鈔券面額分析、新版鈔券圖案及防偽設計說明及舊版鈔券回收規定。
- 三、 本國硬幣：現今面額種類及新版二十元幣簡介。
- 四、 印鑄說明：二廠歸屬央行、製造成本、二廠業務簡介、券幣需求量預估之時點及影響因素，並附二廠之組織圖。
- 五、 鈔券之整理及銷毀：法令依據、人工檢券及機器整理、銷毀程序。
- 六、 偽造券幣之處理：法令依據、偽造券幣處理程序。
- 七、 套幣及紀念券幣發行：列舉本行發行之套幣及自八十五年以來發行之各項紀念幣。

1 INTRODUCTION OF CURRENCY ISSUING

1.1 According to Article 13 of *the Central Bank of China Act*, the currency of the Republic of China shall be issued by the Central Bank of China. The Central Bank is in charge of the printing, minting, and storage of NT dollar notes and coins. All assets and liabilities pertaining to issuance of New Taiwan currency are to the account of the Central Bank, which bears all expenses incidental to currency issuance. All reserves against currency issues are in the custody of the Central Bank and supervised by the Supervisory Committee on the Reserves for Issuance of the New Taiwan Dollar.

1.2 As the delegate of the Central Bank, the Bank of Taiwan handles the operation of the payment system. The allocation and delivery of the currency and the sorting of returned notes are the responsibility of the Bank of Taiwan. With regard to the circulation of notes within designated areas, the Central Bank has appointed 40 branches of the Bank of Taiwan to act as its agent of issue vault, so that the currency may circulate smoothly within each region. Both the transportation and storage of currency are insured.

1.3 According to Article 16 of the *Central Bank of China Act*, for the amount of the currency issued by the Central Bank and its delegated banks, 100-percent reserve shall be kept, in equivalent,

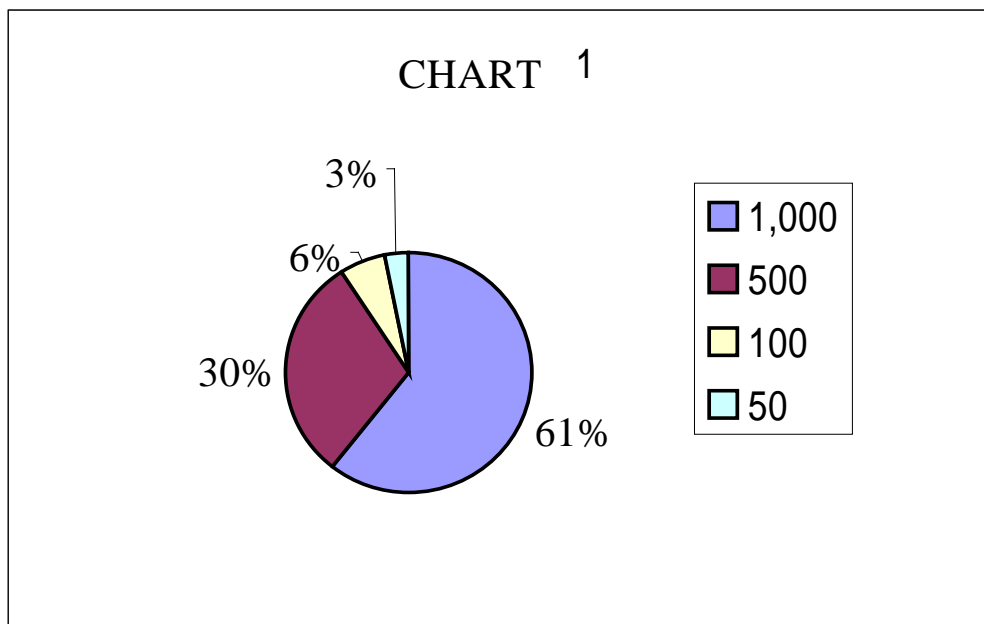
in gold and silver bullion, foreign exchange, and eligible bills and securities and the coins shall be exempt from reserve. The reserve remains in the special custody of the Central Bank, after it is examined, counted, and sealed by the “ Issue Reserves Committee ”. At the end of each month, the committee audits the total volume of NT dollars having been issued as well as the Central Bank’s issue reserve position, and makes public reports of its findings. “Board of Supervisors” of the Central Bank will perform the same function instead of the Committee when the *Regulations Governing the Delegation of the Bank of Taiwan by the Central Bank of China as Agent of Issue of New Taiwan Currency in the Taiwan Region* ceased on June 30, 2002.

- 1.4 The demand for NT dollars is influenced by the ebbs and flows of domestic economic activities. For instance, seasonal needs such as the Chinese Lunar New Year may result in an increase in the outstanding amount by as much as 45 percent of the normal amount. Therefore, projecting seasonal needs is an important step in the process of estimating the demand for currency, and hence, is necessary for the Central Bank to determine the quantity of currency to be supplied. Besides seasonal factors, the Central Bank also pays attention to changes in the demand pattern prevailing in the different localities. To ensure adequate supply, it always tries to maintain appropriate quantities of notes and coins in vaults as buffer stock.

1.5 Under the *Regulation for the Issuance of the New Taiwan Dollar*, the New Taiwan dollar was first issued in 1949. In 2000, the average amount of New Taiwan Dollar in circulation equals to 715,855 million, which represents 2.86 percent more than in the previous year.

2 NEW TAIWAN DOLLAR NOTE

2.1 The denominations of New Taiwan dollar note consist of NT\$50, NT\$100, NT\$500 and NT\$1000 currently. At the end of year 2000, the amount of New Taiwan Dollar notes in circulation reaches 655.98 billion. The composition of the note circulation by denomination is shown on chart 1:



2.2 In order to protect against counterfeiting by incorporating several of the latest security features, a new series of New Taiwan dollar notes has been released since July 3, 2000. The new series contains 5 denominations: NT\$1000, NT\$500, NT\$100, NT\$200 and NT\$2000, which would be issued every half a year sequentially.

2.3 Design of the new series:

The notes are designed and produced at the Bank's own Printing Works, the China Engraving & Printing Works. The design of the new series has to be approved by the Executive Yuan before printing.

Denomination	Front	Back	Size(mm)
100	The founding Father Dr. Sun Yat-Sen	The Chung-Shan Building	145 * 70
200	The Late President Chiang Kai-Shek	The Presidential Office	150 *70
500	A group of baseball players	A herd of Formosan Sika Deer	155 *70

1000	Prime school students	The Mikado Pheasant	160 *70
2000	Satellite Antenna	Taiwan Salmon	165 *70

2.4 Security features of the new series:

Followings are numerous security features found on the new series, which can help identify a genuine note (example: NT\$1000 banknote):

- Designation for blind people

An embossed vertical bar with the figure “1000” inside is available for blind people to identify with their fingertips.

- Watermark

The watermark can be recognized by the gradual change of lighter and darker tints when held up against the light.

- Optical variable ink

When viewed from different angles, the color of the

figure “1000” changes from gold to green.

- See-through register

The circle containing the plum blossom is printed on both side of the banknote. When holding the banknote up to the light, both figures match properly.

- Window thread

The color of the security thread changes into purple when the banknote is tilted. Cleartext “1000” can be seen when holding the banknote up to the light.

- Fluorescent fibers

The luminescent fibers in the paper are visible under ultraviolet light.

- Intaglio

The main features are printed with a thick layer of ink that can be felt by fingertips.

- Latent image

The denomination number in the bottom right-handed side of the

note becomes visible when the banknote is tilted.

- Microprint

The text, “THE REPUBLIC OF CHINA”, is repeated. This text can be read with the aid of a magnifying glass.

2.5 The old notes will remain in circulation until June 30, 2002. After the above-mentioned date, the old notes can still be redeemed in all branches of the Bank of Taiwan.

3 NEW TAIWAN DOLLAR COIN

3.1 The denominations of New Taiwan dollar coin consist of NT\$50, NT\$10, NT\$5 and NT\$1 at present.

3.2 The Bank is going to issue a new denomination of NT\$20 in July 2001. The specification of NT\$20 coin is as follows.

Obverse	Mona Rudao, an Indigenous Tribal Resistance hero
Reverse	The traditional canoes used by the Yami tribe
Composition	Ring: Cu 92, Ni 2, Al 6 Core: Cu 75, Ni 25

Weight	8.5 g
Diameter	26.85 mm

4 PRINTING AND MINTING

4.1 The printing and minting of the NT dollar are carried out in accordance with Section 3 of Article 13 of *the Central Bank of China Act*, by the China Engraving and Printing Works and the Central Mint of China, both wholly-owned by the Central Bank.

4.2 The production cost of note is 4 NT dollar per piece approximately and that of coin is around 1 to 5 NT dollar per piece according to its size and material.

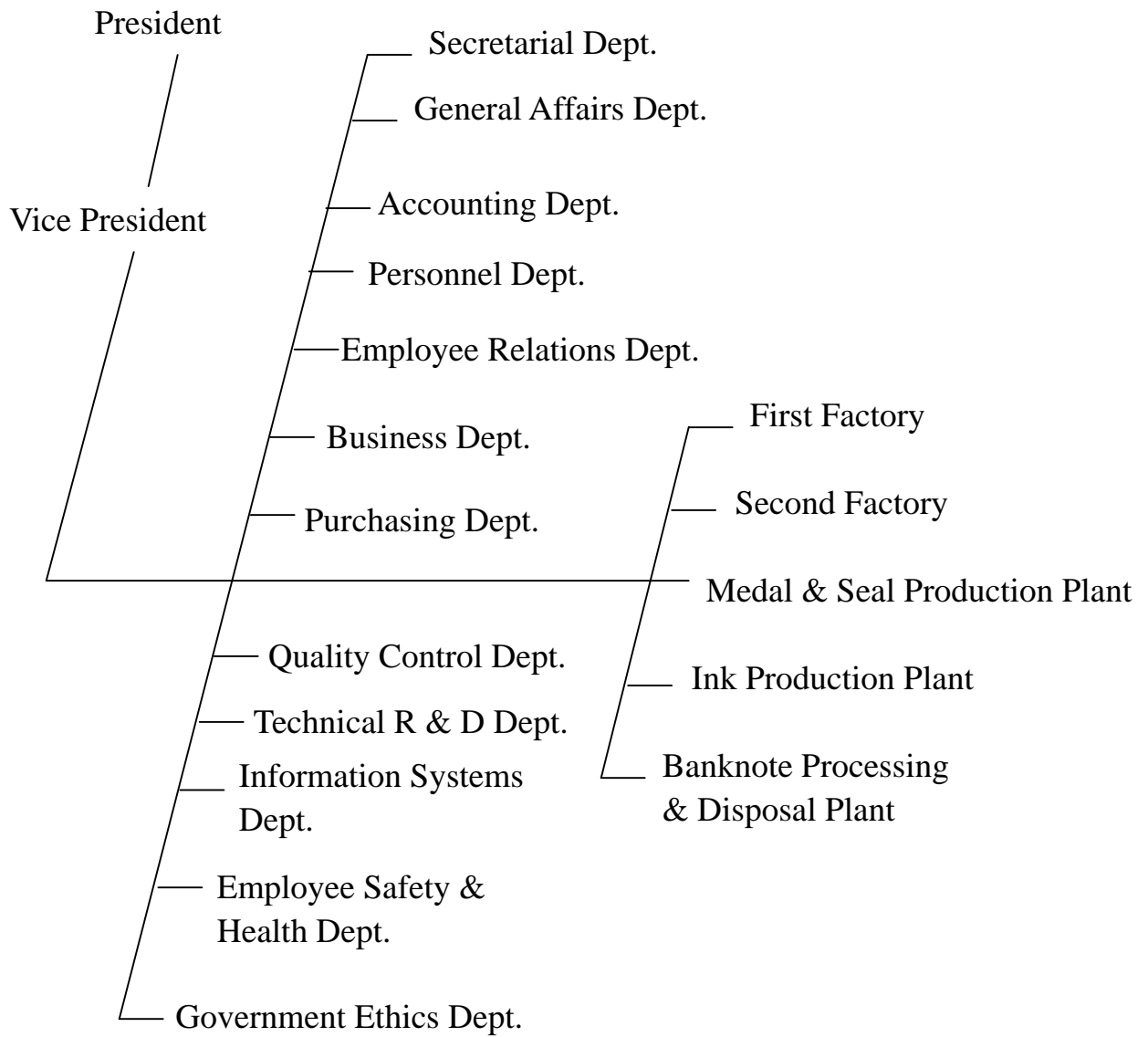
4.3 The China Engraving & Printing Works specializes in printing banknotes, passports, checks, bonds, tax receipts, postage stamps, treasury bills, and government important documents. The banknotes constitute its primary product. It is also responsible for manufacturing medals, seals and ink, as well as for the destruction of banknotes no longer fit for circulation.

4.4 The Central Mint of China specializes in the design and

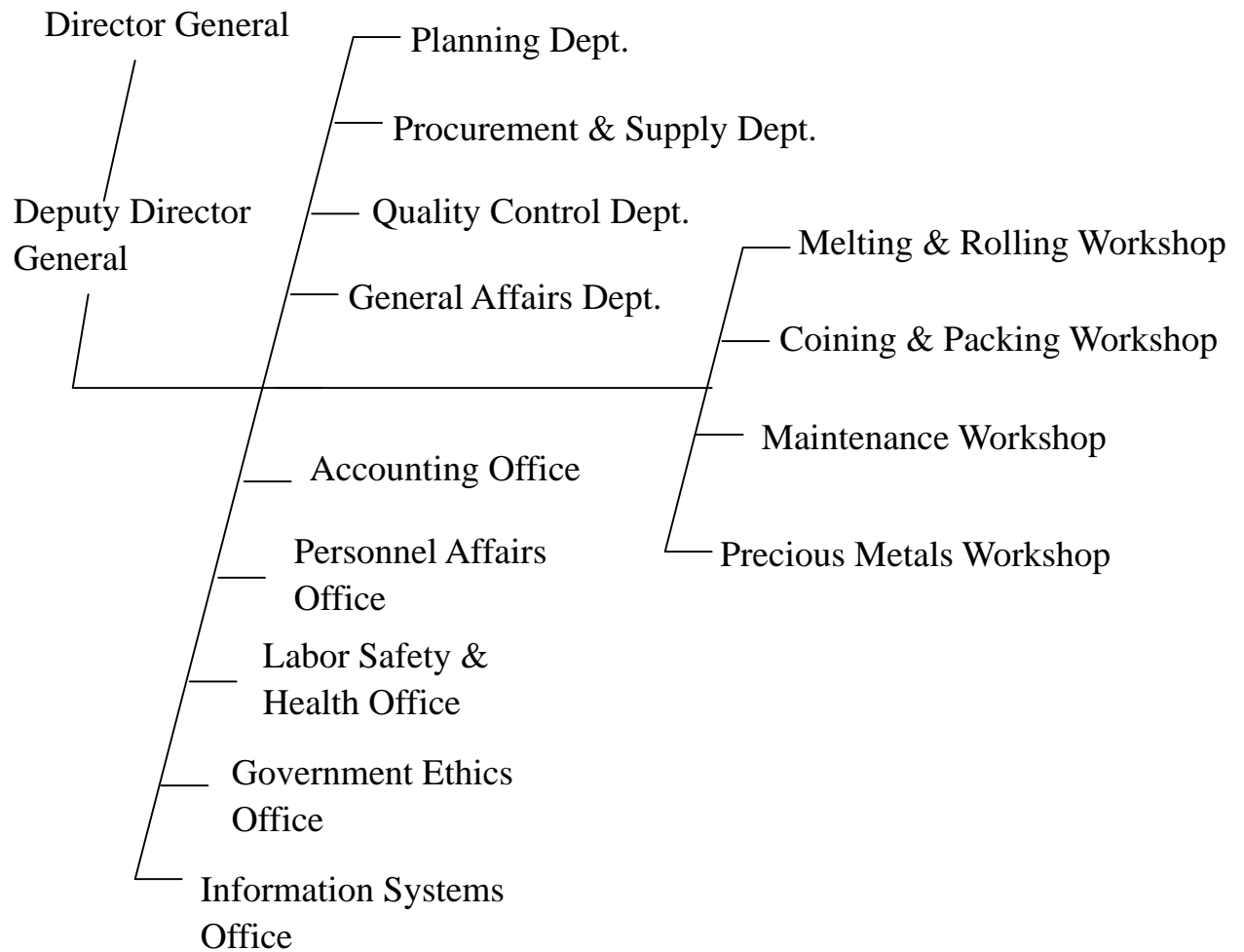
manufacture of coins, proof coins, commemorative coins, medals, and tokens.

4.5 The quantity of notes and coins to be produced is determined by the Central Bank during the 15-month period preceding a fiscal year. To obtain an estimate of the amount that needs to be produced for the fiscal year, it takes into account the following factors: the natural growth in the currency, the quantity to be withdrawn from circulation and destroyed, the volume required as buffer stock, and the vault cash.

The Organization Chart of the China Engraving and Printing Works



The Organization Chart of the Central Mint of China



5 SORTING AND DESTROYING NEW TAIWAN DOLLAR

NOTE

Once notes begin to circulate, it is easy for them to become stained or damaged. In order that damaged notes can be replaced; the Central Bank has enacted the *Criteria for the Destruction of Returned Notes* and the *Criteria for the Redemption of Stained and Damaged Notes and Coins Unfit for Circulation*. Thus, provided that these regulations are conformed to, all such notes can be exchanged. For instance, approval may be given to replace notes damaged as a result of situations that cannot be contended with, such as a fire, provided that the relevant authorities can fully appraise the facts of the case through laboratory tests.

Under the *Rules on the Destruction of Returned Notes*, each bank is encouraged to help identify stained or damaged notes that should be withdrawn from circulation. The Central Bank, in accordance with the *Criteria for Rewarding Banks' Assistance in Sorting Returned Notes*, offers rewards to a bank based on the number of bundles of stained notes it returns in. The Rules also require that the Bank of Taiwan, as the Central Bank's agent of currency issuance, should sort out all received notes.

The notes to be destroyed are first punched and invalidated by the BOT. When a considerable number of bundles have been accumulated, they are taken to the China Engraving and Print Works to be shredded and

burnt, after being verified by a group of government and bank representatives from the Ministry of Finance, the Issue Reserves Committee, the BOT, and the Board of Supervisors and the Accounting Department of the Central Bank.

To improve the efficiency of the notes-sorting process, the BOT has a team of specialists to handle the sorting of notes, and 14 high-speed banknote sorting machines. Those machines, installed in the Issue Department, branches of the BOT located in Taipei, Taichung and Kaohsiung, can outsort counterfeits and distinguish fit from unfit notes. After processing, all fit notes are banded in bundles (1 bundle = 10 batches = 1000 notes), while unfit notes are accessed to an integrated destruction module and shredded into an approximate size of 1mm by 10mm.

6 PROCEDURES FOR THE HANDLING OF COUNTERFEIT MONEY

For the purpose of preventing counterfeit, altered, or imitation currency from circulating, the Central Bank drew up the *Guideline on the Handling of Counterfeit, Altered, and Imitation New Taiwan Dollar Notes & Coin(s) by Financial Institutions*. The guideline requires that a financial institution which discovers counterfeit money should clearly explain the discovery to the original holder of the note(s) & coin(s), and, with the consent of the original holder, retain the note(s) & coin(s) in

question.

The financial institution making the discovery should also, in the presence of the original holder, chop the counterfeit note(s) with a stamp “Counterfeit & Invalid”, and fill in three identical copies of a form concerned with the detention of the note(s) and coin(s). The first copy should be kept by itself. The second copy should be given to the person who originally held the fake money for safekeeping. The third copy should be sent, together with the fake note(s) & coin(s), to the Central Bank. The Central Bank should file all the fake notes and send the records back for confirmation to the institution that originally made the discovery. If it is the first time that the Central Bank has discovered the existence of these counterfeit notes, it should immediately inform the police authorities so that they can conduct an investigation. In the case where the original holder of the fake money in question does not agree to have the note(s) & coin(s) retained, or where other special circumstances prevail, the discovering bank should report to the local police authorities.

7 NUMISMATIC NOTES AND COINS

7.1 Coin Sets – Each set consists of five coins in different denomination as well as a medal bearing the design in accordance with the motif.

- The Flower-Butterfly Series issued since 1995

- The Taiwan Indigenous Peoples Cultural Series issued since 1998

7.2 Proof Coin Sets issued since 1993

Each set consists of five fine-minted coins in different denomination as well as a medal, a silver medal since year 2001, bearing the design in accordance with the symbol of the year.

7.3 Commemorative coins and Banknotes

According to the *Regulation Governing the Issuance of Gold and Silver Coins and Commemorative Banknotes and Coins* revised in 1996, the Central Bank of China has issued the items as follows.

- The Inauguration of the 9th President and Vice-President of the Republic of China Commemorative coins
- The 50th anniversary of the 2-28 Incident Commemorative Silver Coin
- Coins in Commemoration of the 10th Anniversary of the Death of the Late President Chiang Ching-Kuo
- Banknote and Coins in Commemoration of the 50th Anniversary of the New Taiwan Dollar s Issue
- Coins, NT\$10 and silver coin, in commemoration of the Year 2000
- The Inauguration of the 10th President and Vice-President of the Republic of China Commemorative coins

肆、心得及建議

貨幣管理為各國中央銀行主要工作內容之一，但近年來電子貨幣日漸普及，各種與券幣發行業務相關科技不斷創新，亦衝擊各國央行之貨幣管理政策。因此，如何因應科技及環境改變，實為目前各國中央銀行重要課題。

本次研討會，新加坡貨幣委員會所分享之新加坡貨幣發行實務，確實令人印象深刻。如其自 2000 年 12 月 18 日起啟用佔地 8400 平方公尺的現金庫房，為達庫房管理自動化，涵蓋一全自動垂直整合現金管理系統，一垂直整合保全系統、一現代化大樓管理系統及一自動化庫房門禁系統，凡現鈔之庫存、日常進、出庫之作業、保全，等皆不須經由人工，即能透過各電腦系統自動監控，並經各式運送機具完成作業。

由此可見，貨幣發行管理業務，未來將可能結合各種新式科技，不斷創新與改進，以因應未來環境需求。

伍、結語

本次研討會除瞭解當前券幣先進技術外，能與東南亞各國央行從事發行業務人員共同研習，並交換心得，實為此行最大收穫。

會議期間，主辦單位東南亞中央銀行年會研訓中心精心籌畫各種課程，並承蒙當地承辦單位 Nepal Rastra Bank 人員殷勤接待，在此一併致謝。