

# 獨在山中人未識： 功業彪炳的沈觀泰廠長

文·圖 陸寶原／煉製事業部



▲左圖起：美軍空襲嘉義工場（註1）。1961年，沈觀泰（後排左）以經濟專家身分隨外交部沈昌煥部長（前右）赴菲律賓，出席四國外長會議（照片提供／中央社）。台南市古蹟－億載金城（照片提供／中央社）。

▲From left: US air raid on the Chiayi Plant (Note 1). In 1961, Jin-Tai Shen 沈觀泰 (back row, left) as an economic expert accompanied Minister of Foreign Affairs Shen Chang-Huan 沈昌煥 (front right) to the Philippines to attend the Four-State Foreign Ministers' Meeting (Photo courtesy of Central News Agency). Tainan City Historic Site - Eternal Golden Castle (Photo courtesy of Central News Agency).

[https://ws.cpc.com.tw/CPCDA/files/815-19.pdf?utm\\_source=perplexity](https://ws.cpc.com.tw/CPCDA/files/815-19.pdf?utm_source=perplexity)

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# Alone in the Mountains, Unknown to the World: The Illustrious Achievements of Director Jin Tai Shen (沈觀泰)

## **PART 2 Takeover Period 1945-1946**

After World War II, the government established the Petroleum Industry Takeover Committee to take over the Six Naval Fuel Plant, which had been operated for approximately one year and four months by three Japanese directors: Beppu Ryozo, Fukuchi Hideo, and Kobayashi Jun.

Liuyan originally supplied oil to the military, with crude oil distillation as its primary equipment. Thanks to the efforts of its three plant managers and various departments, it completed the first and second distillation plants, as well as catalytic decomposition, vacuum, chemical, and barrel-making equipment in Kaoshiung.

To avoid Allied bombing, it relocated its "cave factory" to Banping Mountain. The road transportation, oil transportation, public utilities, material storage, repair systems, and employee dormitories necessary for operations were also established, laying a solid foundation for the plant's future development.

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▲1945年沈觀泰廠長與日方的交接在六燃廳舍(今高廠總辦公廳)2樓進行。

▲ *In 1945, the handover between Director Jin-Tai Shen and the Japanese side took place on the second floor of the Liuyan Hall (now the General Office of Kaoshiung Factory).*

The Kaoshiung Refinery was formerly the Japanese "Sixth Naval Fuel Plant" in Kaoshiung. After the war, it was taken over by the Chinese Nationalist government and renamed the Kaoshiung Refinery.

During the transition period between the Japanese construction and CPC's reconstruction, there was a lesser-known Plant Director, Jin Tai Shen. He was assigned to take over the Sixth Naval Fuel Plant in Kaoshiung and concurrently served as Director,

briefly managing refinery operations. Therefore, it can be clearly stated that the first Director of the Kaohsiung Refinery after the war was Jin Tai Shen, and Bing Guo was the first Director after CPC's establishment in 1946.

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## **Descendant of Shen BaoZhen (沈葆楨), a famous Qing Dynasty official**

Jin Tai Shen, a native of Minhou, Fujian, was born in Zhenjiang, Jiangsu Province, in 1911. He is a descendant of Shen Baozhen, a renowned Qing Dynasty official. He studied poetry from a young age and, as an adult, entered the Department of Chemistry at Xiamen University. After graduation, he went to study in the UK, where he earned a master's degree in petroleum chemistry from the University of Birmingham and continued his doctoral studies.

In 1937, with the outbreak of the Sino-Japanese War, he was summoned back to China to serve as an engineer at the Power Oil Plant of the Resources Committee of the Ministry of Economic Affairs and as Director of the Gansu Alcohol Plant.

After Japan's surrender in August 1945, the military initially took over the Liuyan Plant, and the government later decided to send personnel from the Ministry of Economic Affairs' "Petroleum Industry Takeover Committee" to take over.

Chairman Jin Kai-Ying (金開英) and member Li Da-Hai (李達海) of the Takeover Committee arrived in Taiwan, and Jin Tai Shen was assigned to take over the Liuyan Kaoshiung Plant and concurrently served as its Director.

On June 1, 1946, China Petroleum Corporation (CPC) was established in Shanghai, and Bing Guo was appointed Director of the Kaoshiung Refinery. Jin Tai Shen left the refinery at the end of May of that year.

According to Mr. Feng Zong-Dao's (馮宗道) recollections, the first group of special envoys from the Ministry of Economic Affairs to take over the Kaoshiung Refinery were Jin Tai Shen, Liu Kui-Yu (劉魁餘), and Li Da-Hai. They arrived at Zuoying Station in Kaoshiung on the evening of February 8, 1946.

The person in charge of the Kaoshiung Refinery at that time was Colonel Hiroshi Fukushima, Director of the Refining Department of the Japanese Navy's Sixth Fuel Plant. According to the liquidation report attached to the article "Takeover of the Sixth Naval Fuel Plant" by Lin Shen-Zhen (林身振) and Lin Bing-Yan (林炳炎), the restoration supervision of the Sixth Fuel Plant began in December 1945. Jin Tai Shen oversaw the restoration of the Kaoshiung facility, while Jin Kai-Ying oversaw the restoration of Hsinchu and Hsin-Kao facilities.

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## **Maintain good interaction with Japan during the receiving process**

During the takeover, Director Shen hoped to retain Japanese technicians to assist with equipment maintenance and furnace testing.

At the end of 1945, the government accelerated repatriation efforts, and in April of the following year, the last Japanese personnel at the plant returned to Japan. The Sixth Fuel Plant was officially taken over by the Takeover Team and Taiwanese employees. Director Jin Tai Shen maintained good interaction with the Japanese side during the takeover process.

Documents record that the handover took place on the second floor of the Sixth Fuel Plant building. Colonel Fukushima Hiroshi and others, who later represented Japan, were

invited to a consolation meeting hosted by Director Shen in the dining room of the Officers' Club.

After the war, social order in Taiwan had yet to be restored, and public security was a major issue. Thefts of factory property were common. To prevent any accidents, Director Jin Tai Shen requested military and police assistance, but this was ineffective. Therefore, the then-official mayor of Kaoshiung, Mr. Lian Mou (連謀), gifted Director Shen a pistol for self-defense. However, Director Shen, a scholar, found the use of a gun difficult. After much deliberation, he decided to return the pistol. This anecdote not only reflects the social situation at the time but also highlights the difficulties faced during the takeover.

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## **The First Director of the Chiayi Plant Promoted Exports**

In June 1946, China Petroleum Corporation was established, with Mr. Bing Guo (賓果) taking over as Director of the Kaoyi Plant. Jin Tai Shen became Director of the Employee Management Office of the Shanghai Corporate Office.

In May 1947, he was transferred to become the first Director of the Chiayi Solvent Plant. He pioneered the export of organic solvents such as butanol and acetone to countries such as Britain and Australia. His achievements in acetic acid fermentation using the immersion method received international acclaim.

The Chiayi solvent plant's history dates back to World War II, when the US embargo on oil sales forced Japan to seek new oil sources. Besides acquiring Southeast Asian oil, organic solvents such as butanol and acetone, which could be used to refine automobile and aircraft fuels, also gained increasing attention.

In 1938, Japan established the Chiayi Chemical Plant of the Taiwan Development and Research Institute (Taiwan Development and Research Institute) in Chiayi.

Utilizing technology from the Central Research Institute and using sweet potatoes from the Chiayi Plain as raw materials, the plant produced butanol, acetone, and alcohol through fermentation, which were then refined into gasoline and aviation fuel. At the time, it was the world's largest fermentation-based organic solvent plant.

In 1943, the Taiwan Development and Research Institute (Taiwan Development and Research Institute) and the Japan Beer Co., Ltd. (Japan Beer Co., Ltd.) merged to form the Taiwan Development and Research Chemical Industry Co., Ltd. While continuing its own business, the plant also planned to assist the Sixth Fuel Plant in developing fermentation alcohol technology.

In 1944, maritime transport was disrupted, forcing the suspension of butanol and acetone production. In 1945, a US air raid halted all operations at the plant.

After the war, the plant was taken over by the Petroleum Industry Takeover Committee and renamed the "Chiayi Butanol Plant." After the establishment of CPC Corporation, it was renamed the "Kaoshiung Refinery Chiayi Plant." In 1947, the name was changed to "Chiayi Solvent Plant."



◀1945年遭美軍空襲之嘉義工場。

▲The Chiayi factory, attacked by US airstrikes in 1945.\*\*

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## Hold many important positions with rich academic and experience

With extensive experience and expense, the Chiayi Solvent Plant actively repaired the damaged plant and, after resuming operations, achieved breakthroughs in technology and production.



This period marked the beginning of Jin Tai Shen's tenure as the Plant's Manager. In March 1950, Jin Tai Shen was promoted to Assistant General Manager of the company, while also serving as Director of the solvent plant.

In 1953, he became full-time Assistant General Manager and later transferred to the position of Director of the Joint Industrial Research Institute of the Ministry of Economic Affairs, affiliated with CPC Corporation (Note 2).

In 1962, he became Director of the First Division of the US Agency for International Development of the Executive Yuan. In 1964, he was seconded to the United Nations as an advisor to the United Nations Economic Commission for Asia and the Far East (ECAFE).

In 1969, he returned to Taiwan and served as an advisor to the Executive Yuan's Council for International Economic Cooperation and Development, concurrently also became the first Chairman of the China Petrochemical Industry Development Corporation. In 1971, he was seconded again by the United Nations to work in Thailand. In September 1985, he died of a heart attack in Los Angeles, USA, at the age of 74.

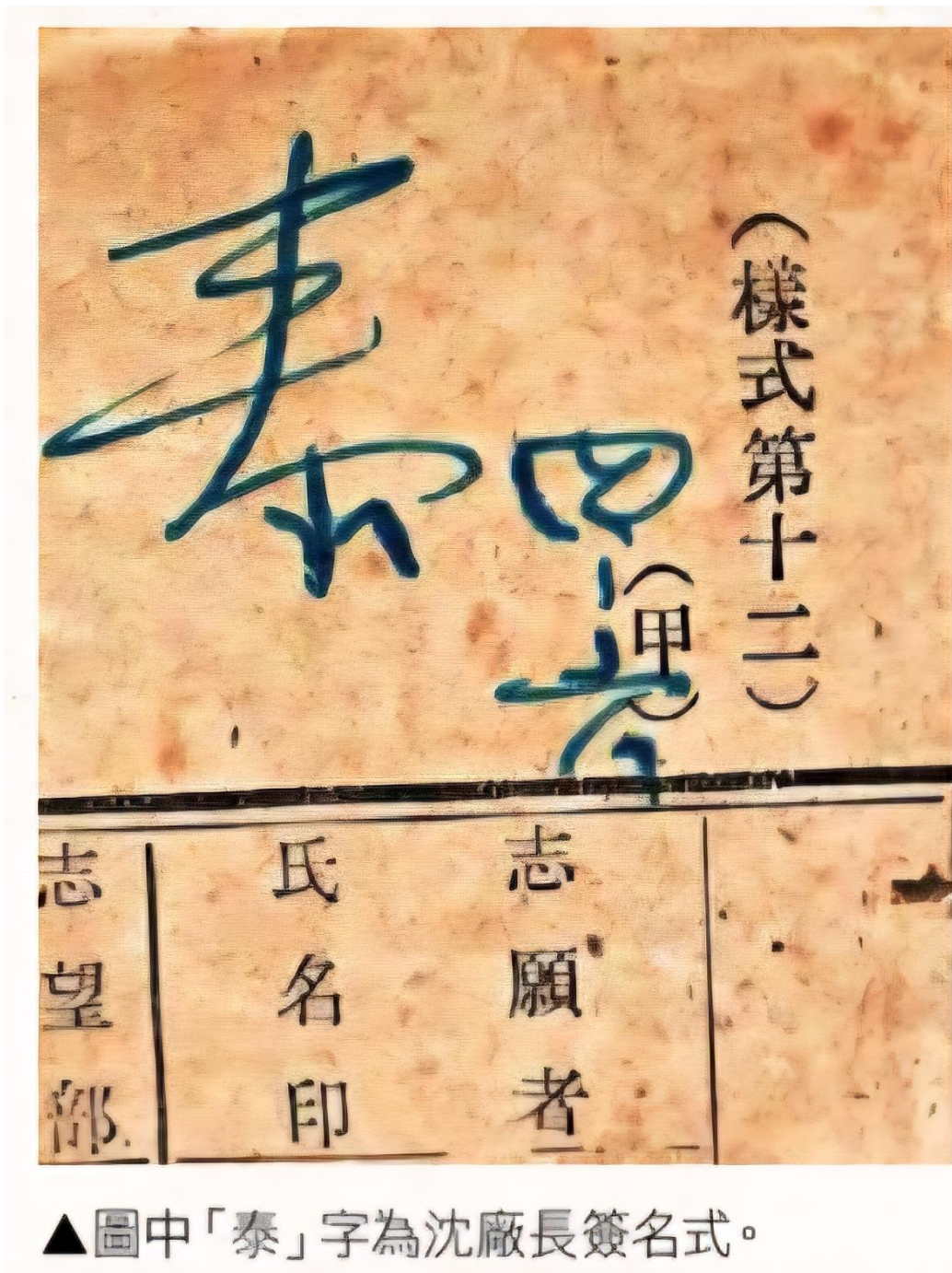
In addition to holding important government positions, Jin Tai Shen, due to his extensive academic experience, was frequently invited to serve in prominent positions within private organizations and academic societies.

He served as a Supervisor on the Board of Directors of the Taiwan Merchants' Association. He also served as a member of the Preparatory Committee for the Reopening of National Chiao Tung University in Taiwan, a Director of the National Rainmaking Research Institute, and a Director and Chairman of the Taiwan Society of Chemical Engineers. He was also appointed by the government as an Advisor to the delegation to the International Conference on the Peaceful Uses of Atomic Energy. In 1961, as an economic expert, he accompanied Foreign Minister Shen Changhuan to the Philippines to attend the Four-State Foreign Ministers' Conference.



▲台南市億載金城。(照片提供／中央社)

▲Yizai Jincheng, Tainan City. (Photo courtesy of Central News Agency)



▲The character "Tai" in the photo is Director Shen's signature.

## Numerous publications on petroleum chemistry

He was a prolific author of numerous works on petroleum chemistry. With a background in petroleum chemistry, he published numerous works during his lifetime, covering topics such as artificial rainmaking, biochemistry, atomic energy, and economic development.

He published articles such as "Research on Methanol as a Petrochemical Raw Material" and "Proposal for Blending Methanol into Gasoline" in Petroleum Newsletter. He also wrote "New Energy Chemicals - Methanol," "Exploration of the Feasibility of Tidal Power Generation," "The Miracle of Zinc," "The Miracle of Selenium," "The U.S. Strategic Petroleum Reserve," and "The Development of Argentina's Nuclear Energy Industry." July 22, 2019 Special Report.

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### ***[Postscript]***

Revisiting history, whether during the Japanese colonial period or the postwar period, during factory construction or dismantling, factory managers throughout the ages have consistently accomplished their tasks successfully.

However, when recounting the postwar history of Kaohsiung Industrial Plant, we often begin with Director Bin Guo. This seems somewhat unfair to Jin Tai Shen, the post-war Restitution Recipient Representative and concurrent Director. As I learned more about his life, I felt it was appropriate to document it so that this nearly forgotten Director can be re-established in the historical context of Kaoshiung Industrial Plant.

Jin Tai Shen graduated from Xiamen University in China. His outstanding performance earned the designation as a distinguished alumnus, with the following introduction: Jin Tai Shen — Father of Taiwan's Petroleum Industry, Founder and General Manager of CPC

Corporation (Note 3). Although Jin Tai Shen's tenure was short with limited surviving documents beyond contractual documents during the restoration and rebuilding period, as the first Director of the postwar Kaoshiung Petroleum Plant he deserves proper recognition in the history of Kaoshiung Petroleum Plant.

Connecting this with the deeds of his great-grandfather, Shen BaoZhen, in Taiwan would not only allow the two generations, separated by 70 years, to reflect each other's achievements in Taiwan, but would also add a fascinating chapter to CPC's history, one that combines both narrative and historical significance. This is the original intention of this article, hoping to share it with colleagues

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### ***[Further Reading]***

#### **Shen BaoZhen - His Life and Contributions**

Director Jin Tai Shen is a descendant of the renowned Qing Dynasty official Shen BaoZhen (Note 4). Here is a brief account of Shen BaoZhen's time in Taiwan:

Shen BaoZhen, a native of Minhou, Fujian, served as the Imperial Commissioner for Taiwan's Coastal Defense from the 13th year of the Tongzhi reign of the Qing Dynasty to the first year of the Guangxu reign (1874-1875).

In the 13th year of the Tongzhi reign, the Mudan Incident occurred, and the Qing government dispatched Shen BaoZhen, then Minister of the Fujian Navy, to Taiwan to oversee defense efforts. Shen BaoZhen established Taiwan's first Western-style artillery fort at Erkunshen in Anping (present-day Yizai Jincheng in Tainan) and the Qihou Fort in Kaoshiung.

He also stationed troops in Donggang and Fangliao, actively preparing for war. After the incident subsided, Shen BaoZhen felt that Taiwan needed to strengthen its defense capabilities. He petitioned to establish Hengchun County in Langqiao (the ancient name for Hengchun), where the incident occurred, and to establish the Taipei Prefecture.

He also built city walls and other defensive facilities in various locations. To support the development of the mountains and the pacification of the indigenous peoples, he constructed roads such as the "Eight Pass Ancient Road" that traversed Taiwan from east to west.

Other measures, such as approving tax cuts, abolishing the ban on crossing to Taiwan, and commending loyalists, had a significant impact on Taiwan's future development. Together with Liu Ming-Chuan (劉銘傳) and others, he laid the foundation for Taiwan's modernization.

A few years ago, the Academia Sinica selected eight important historical figures who influenced Taiwan's internationalization over the century from the opening of Taiwan's ports in 1860 to the post-war period in 1960. Shen BaoZhen was one of them.

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### ***[Footnotes]***

**Note 1:** Photo source: <https://blog-imgs-90.fc2.com/e/v/n/evnara/taiwanww2.jpg>.

**Note 2:** The "United Industrial Research Institute" (JIRI) was formerly the "Natural Gas Research Institute," established in August 1936 and affiliated with the Taiwan Governor-General's Office.

After the war, it was taken over by the Resources Commission and renamed the "Natural Gas Research Institute." In January 1946, it was merged into the China National Petroleum Corporation and renamed the "China National Petroleum Corporation Hsinchu Research Institute," incorporating the R&D center of the nearby Liuyan Hsinchu Plant.

In 1954, it was transferred to the Ministry of Economic Affairs and renamed the "United Industrial Research Institute." In 1973, it merged with the "United Mining Research Institute" and the "Metal Industry Research Institute" to form the "Industrial Technology Research Institute."

**Note 3:** The "Collection of Essays Commemorating the Centennial of Mr. Jin Kai-Ying's Birth," published in 2001, states, "Mr. Jin Kai-Ying was appointed concurrently as the first Director-General of the Ministry of Economic Affairs' State-Owned Enterprises (September 1952 to June 1954), while Mr. Jin Tai Shen served as acting General Manager of CPC Corporation." This indicates that Jin Tai Shen not only served as Assistant Manager (renamed Deputy General Manager in October 1981) but also served as Acting General Manager.

**Note 4:** Shen BaoZhen had seven children, of whom Jin Tai Shen was the fourth-generation grandson. His grandfather was Shen BaoZhen's third son, Shen Lin-Qing (沈璘慶), and therefore he is Shen BaoZhen's great-grandson.

Jin Tai Shen lived in Zhenjiang, Jiangsu Province as a child. After his father's death, he returned to Fujian with his grandmother and mother to attend private school. He later attended Xiamen University and later studied petroleum chemistry in the UK, earning a master's degree and pursuing a doctorate. With the outbreak of the Sino-Japanese War, he was recalled to Taiwan and participated in the takeover of the Liuyan Kaoshiung Plant in 1945.

According to the August 2012 issue of Fujian Province's Yanhuang Zongheng magazine, Jin Tai Shen was kinship-adopted as the grandson of Shen Wan-Qing (沈琬慶), the seventh

son of Shen BaoZhen. Shen Wan-Qing's wife, Lin BuXun (林步荀), was the granddaughter of Lin ZexXu. Lin BuXun studied in Japan and joined the Tongmenghui.

In 1911, after his only son, Shen Gan (沈綱), died of illness at the age of 24, Lin BuXun, heartbroken by the loss of his son, kinship-adopted Jin Tai Shen as his grandson, personally educating and disciplining him. Jin Tai Shen has used his adopted name Shen Gan in early documents and publications.

Lin BuXun, a master of poetry, not only taught Jin Tai Shen poetry but also guided him in his pursuit of science and technology. At the age of 17, she hired a renowned teacher to teach Jin Tai chemistry at home, cultivating him to contribute to national development. Jin Tai's subsequent success in the petrochemical industry is largely due to Lin BuXun's meticulous training.



▲ Lin BuXun's "Collection of Poems from Woyunxian Pavilion."



**Note 5:** Eight important historical figures who have influenced Taiwan's internationalization over the past century, in addition to Shen Baozhen, include:

\*The Xu (許家) family of Qianhe, one of the six major trading houses in Lukang during the early Japanese colonial era

\*The Chen (陳家) family of Nagasaki Taiyi (Kinmen), which once controlled the trade network between Japan, Taiwan, China, Southeast Asia, and Northeast Asia;

\*The Miyoshi family of Taipei's Tsujiri Tea House, founded by Miyoshi Tokusaburo, known as the "civilian governor";

\*Painter Chen Cheng-Bo (陳澄波), the first Taiwanese to have Western paintings exhibited at an official Japanese exhibition;

\*Pianist Gao Ci-Mei (高慈美), the first female pianist professor in postwar Taiwan;

\*Lin Xian-Tang (林獻堂), the "Father of the Taiwan Parliament" and a pioneer of democracy who founded the Taiwan Cultural Association with Chiang Wei-Shui; and

\*Yang Zhao-Jia (楊肇嘉), an autonomy activist who devoted himself to the Taiwanese national movement during the Japanese colonial period.

Academia Sinica has collected family letters, photographs, and paintings of these eight important figures to help us understand Taiwan's internationalization and modernization through their travels across Asia, Europe, and America.

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\*"Dictionary of Republican Figures,"

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\*"History of the Kaohsiung Refinery," Volume 1,

- \*"The Burning Tower Beneath Banping Mountain" (Part 2),
  - \*"China Petroleum Corporation Over the Past 70 Years,"
  - \*"Kaoshiung Literature" (Volume 6, No. 3),
  - \*"Collection of Essays Commemorating the Centennial Birthday of Mr. Jin Kaiying,"
  - \*"Selected Essays from the History of the Factory," Volume 1 (Kaohsiung Refinery).
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***[Supplementary Reading]***

- (1) Shen BaoZhen's Life and Story
  - (2) Lin Bu-Xun's "Collection of Poems from Woyunxian Pavilion."
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Additional information on the Bombing of Chiayi (aka Kagi) Solvent Factory April 3, 1945.

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[https://ww2db.com/photo.php?list=sp&sp=city\\_Tainan\\_Kagi&startRow=20&keyword=&source=&color=&foreigntype=&foreigntype\\_id=&dt=&image\\_id=](https://ww2db.com/photo.php?list=sp&sp=city_Tainan_Kagi&startRow=20&keyword=&source=&color=&foreigntype=&foreigntype_id=&dt=&image_id=)