

中國港口建設

CHINA PORT CONSTRUCTION



1986-1990

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前言

本圖冊主要展示我國第七個五年計劃期間(1986~1990)沿海港口建設的成就。

“七五”期間是我國建國以來港口發展速度最快、技術進步最大的五年。在此期間，建成深水泊位96個、中級泊位90個，加上過駁設施，新增吞吐能力1.38億噸(不包括貨主專用泊位)，使我國港口的緊張狀況得到了較大程度的緩解，港口的倉儲能力和疏運條件也有明顯的改善。

“七五”期間建成的深水泊位數是“六五”期間的1.7倍，超過建國後頭三十年的總和。至1990年底，我國沿海港口泊位總數達到930個，其中深水泊位284個(計入長江的南京及其下游各港則為312個)。港口吞吐能力達到約4.45億噸。

“七五”期間港口建設繼續貫徹大中小港口並舉和沿海、內河並舉方針。在國家統一規劃下，支持各省市和各企業單位集資建設各類專業化泊位。同時，吸引外資，合作興建重點項目，加快了港口建設步伐。

“七五”期間建成的深水泊位，大多數是具有先進技術水平的專業化泊位。計有煤炭泊位14個，木材泊位1個，專用集裝箱泊位3個，專用化肥泊位1個，危險品泊位2個。開始形成比較完善的海上煤炭運輸系統，煤炭裝船能力達到1億噸以上。

“七五”期間建設了一批新港口和新港區。如丹東港大東港區，大連港大連灣和大窯灣港區，錦州港，青島前灣港區，連雲港廟嶺港區，上海港朱家門、關港和寶山港區，廣州新沙和西基港區以及海南洋浦港等。這些新港口和新港區的建成，對提高我國海上綜合運輸能力、促進國民經濟和各地區的經濟發展起到了重要的作用。同時，為我國港口建設的大發展打下了堅實的基礎。

“七五”期間在完成港口建設的同時，港口工程技術也取得了較大發展。如大型格形鋼板樁碼頭結構、真空預壓排水加固軟土地基技術推廣、深層水泥拌合加固軟土地基、爆炸法處理水下軟基技術、取軟粘土原狀土樣技術的應用、大直徑預應力鋼筋混凝土管樁應用技術、大型沉箱預制出運技術、爆破夯實水下拋石基床技術、粉煤灰在港口工程中的應用技術、計算機進行工程設計和管理等等。

“八五”期間，我國沿海港口建設將繼續堅持“大中小港口相結合”的方針，重點建設南北海上運輸主通道的樞紐港，計劃建成泊位180個，其中深水泊位100個，中級泊位80個，新增吞吐能力1.7億噸。建成沿海煤炭、集裝箱和陸島滾裝運輸三大運輸系統，強化海上南北運輸大通道。

我國的港口建設大門向全世界敞開着，熱烈歡迎港澳臺同胞、海外僑胞和外國客商來中國投資興建港口，為加快中國港口現代化作出貢獻。

FOREWORD

This picture album mainly shows the great achievements gained from the construction of coastal ports in China within the period of the "Seventh Five-Year-Plan" (1986~1990).

The "Seventh Five-Year-Plan" is a period in which the port construction has been developed with greatest speed and the technical progress was most brilliant. Altogether 96 deepwater berths and 90 medium-sized ones have been built within this period. With the newly-built barge berths, the port throughput capacity was increased by 138 million tons (not including the cargo owner's specialized berths), thus making the situation of port congestion greatly eased and the storage capacity and hinterland transport conditions being improved prominently.

The number of deepwater berths built in the "Seventh Five-Year-Plan" was 1.7 times of those built in the "Sixth Five-Year-Plan", and was over the total sum in the first thirty years since the establishment of new China. Up to the end of 1990, the total number of coastal berths was 930, in which 284 berths were of deepwater ones (if taking account of the river ports downstream Nanjing, the total amount would be 312), the total port throughput capacity was 445 million tons.

During the "Seventh Five-Year-Plan", the policy of the port construction was to develop large, medium and small-sized ports, coastal and inland ports simultaneously. Under the integrated planning of the State, all provinces, cities and enterprises were encouraged to build various kinds of specialized berths by their own finances. At the same time, foreign investments were used for building the key port projects which has been speeding up the port construction steps.

Most of the deepwater berths built in the period of the "Seventh Five-Year-Plan" were of specialized berths with advanced technical standards. There were altogether 14 coal berths, 1 timber berth, 3 specialized container berths, 1 specialized chemical fertilizer berth and 2 dangerous cargo berths. The maritime coal transport system has been well formed, and the ship loading capacity was over 100 million tons a year.

A lot of ports and port areas were also constructed during the "Seventh Five-Year-Plan", such as Dadong port area in Port of Dandong, Dalianwan and Dayaowan port areas in Port of Dalian, Port of Jinzhou, Qianwan port area in Port of Qingdao, Miaoling port area in Port of Lianyungang.

gang, Zhujiamen, Guangang and Baoshan port areas in Port of Shanghai, Xinsha and Xiji port areas in Port of Guangzhou, and Port of Yangpu in Hainan Island, etc.. All these ports and port areas are playing an important role in raising the comprehensive transport capacity of sea-going traffic and promoting the development of national economy and regional economy. Meanwhile, they also lay a solid foundation for the further port construction development.

During the "Seventh Five-Year-Plan", as the time of construction work went on, the engineering techniques on port construction were also in progress, such as the large-sized cellular sheet pile structure for wharves, vacuum preload consolidation by drainage for soft ground, deep consolidation by mixing cement for soft ground, processing of underwater soft foundation by blasting, technique on taking soil samples with raw condition of soft clay, large-diameter prestressed reinforced concrete pipe piles, precast and towing of large-sized caisson, blasting and ramming of underwater rubble-mound foundation, application of coal ash in port engineering and application of computers in design and management, etc..

As for the "Eighth Five-Year-Plan", the policy of developing coastal ports will continue to insist on the principle of "combining big, medium and small-sized ports together". The construction will be focused on the hub ports situated on the main passway from the north to the south. It is planned that 180 berths, in which 100 are of deepwater ones and 80 of medium-sized will be built in this period, and the throughput capacity will be increased by 170 million tons. After the completion of those berths, the three transport systems of coal, container and roll on/roll off between the mainland and the islands will be established, and the transport between the north and the south main passway will be also greatly improved.

The door of the port construction in China is open to the outside world, all fellow-countrymen in Hong Kong, Macao and Taiwan, overseas Chinese and foreign clients are warmly welcome to invest and take part in the port construction and devote the contributions to the modernization of the Chinese ports.



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大 連 港

PORT OF DALIAN

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營 口 港

PORT OF YINGKOU

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錦 州 港

PORT OF JINZHOU

渤海
THE BOHAI SEA

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秦 皇 島 港

PORT OF QINHUANGDAO

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•

天 津 港

PORT OF TIANJIN

大連港 PORT OF DALIAN



大連港鳥瞰 Bird's-eye view of port of Dalian

(張春亮 攝)

大連港位於遼東半島南端，是我國沿海樞紐港之一，也是東北地區最大的綜合性港口。由大港區、大連灣港區、香爐礁港區、鮎魚灣港區、甘井子港區、黑嘴子港區、寺兒溝港區和大窯灣港區組成，共有生產性泊位55個。港口吞吐量保持在5000萬噸。

“七五”期間新建大連灣港區的萬噸級危險品和煤炭泊位3個，新增設計年吞吐能力340萬噸。

Port of Dalian is situated at the south end of Liaodong Peninsula and is one of the Chinese coastal hub ports as well as one of the largest multifunctional ports in the north-eastern district of China. It is composed of Dagang, Dalianwan, Xianglujiao, Nianyuwan, Ganjingzi, Heizuizi, Si'ergou and Dayaowan port areas. There are altogether 55 productive berths, with a total throughput capacity of 50 million tons.

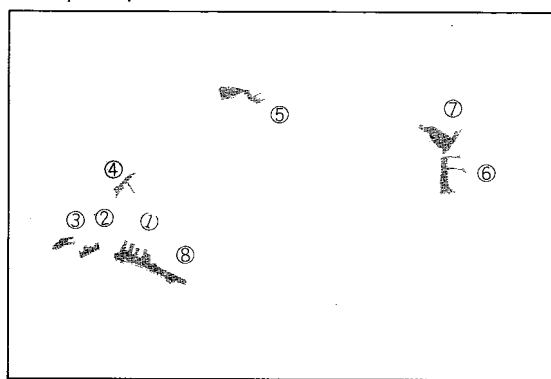
During the "Seventh Five-Year-Plan", 3 new berths for vessels of 10000 dwt for handling dangerous cargo and coal were completed in Dalianwan port area with a new designed throughput capacity of 3.4 million tons per year.



1989年大連港務局獲“全國企業管理優秀獎”
The prize of the "State Enterprise Management Excellent Medal" won by the Dalian Port Authority

大連港港區位置示意圖

Sketch plan of port areas in Port of Dalian



- | | |
|---------|------------------|
| ① 大港區 | Dagang area |
| ② 黑咀子港區 | Heizuizi area |
| ③ 香爐礁港區 | Xianglujiao area |
| ④ 甘井子港區 | Ganjingzi area |
| ⑤ 大連灣港區 | Dalianwan area |
| ⑥ 鮎魚灣港區 | Nianyuwan area |
| ⑦ 大窯灣港區 | Dayaowan area |
| ⑧ 寺兒溝港區 | Si'ergou area |



大港區鳥瞰 Bird's-eye view of Dagang port area

(張春亮 攝)



寺兒溝港區成品油碼頭鳥瞰

(張春亮 攝)

Bird's-eye view of oil products terminal at Si'ergou port area



大連灣港區

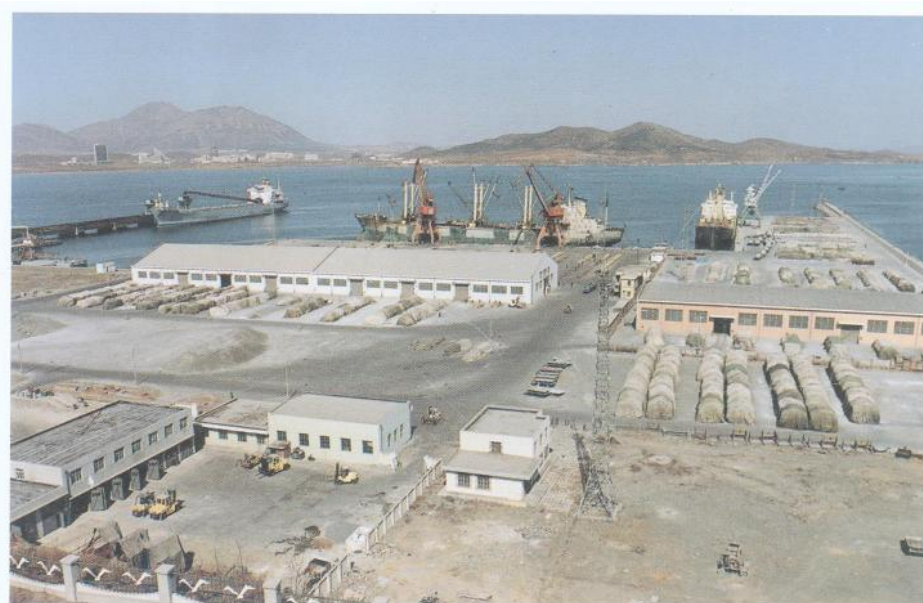
“七五”期間新建工程：港區陸域 60 萬平方米；堤岸 3000 米；碼頭有 2 萬噸級煤炭自卸船泊位 1 個（配置 1.8 米寬皮帶機 2 條，卸船效率 3500 噸/時，設計年吞吐能力 300 萬噸）、2 萬噸級和 3 萬噸級危險品泊位各 1 個（設計年吞吐能力 40 萬噸）。

Dalianwan Port Area

New projects completed in the "Seventh Five-Year-Plan": Port area 600000m²; mole 3000 m, one coal berth for self-unloading vessels of 20000 dwt (with two 1.8m conveyors, unloading rate 3500 t/hr, with the designed throughput capacity of 3.0 million tons per year); two dangerous cargo berths, in which one for vessels of 20000 dwt, and another for vessels of 30000 dwt (with the designed throughput capacity of 400000 tons a year).

大連灣港區鳥瞰 Bird's-eye view of Dalianwan port area

（張春亮 攝）



危險品碼頭 Dangerous cargo terminal

（張春亮 攝）

煤炭自卸船碼頭 Coal self-unloading terminal

（張春亮 攝）



香爐礁港區

“七五”期間對雜貨深水泊位進行改造，建成集裝箱泊位。

Xianglujiao Port Area

During the "Seventh Five-Year-Plan", renovation works were undertaken for the deepwater general cargo berth, and the container berth was completed.

香爐礁港區鳥瞰 (張春亮 攝)
Bird's-eye view of Xianglujiao port area



集裝箱碼頭裝卸作業 (張春亮 攝)
Handling operation on the container terminal

香爐礁突堤碼頭
Xianglujiao pier

(張春亮 攝)



大寮灣港區

大寮灣港區一期工程於1988年12月開工，將先建成2個3萬噸級集裝箱泊位、2個2.5萬噸級多用途泊位，設計年吞吐能力260萬噸，水域72.5萬平方米、陸域94.2萬平方米。計劃在防波堤內建8萬噸級散糧泊位1個，設計年吞吐能力300萬噸。

Dayaowan Port Area

The First-phase project for Dayaowan port area started in December, 1988. According to the plan, 2 berths for container ships of 30000 dwt and 2 berths for multi-purpose ships of 25000 dwt will be built first, with the designed throughput capacity of 2.6 million tons per year. The water area is 725000m², and the land area, 942000m². In addition, one berth for bulk grain ships of 80000 dwt will be built at the inner side of breakwater, with the designed throughput capacity of 3.0 million tons a year.

施工中大寮灣港區一期工程鳥瞰

Bird's-eye view of the first-phase project (under construction) at Dayaowan port area

(張春亮 攝)



陸域強夯 Heavy ramming of land area

(張春亮 攝)

營口港

PORT OF YINGKOU

營口港位於渤海灣東部遼東灣，是沿海主要樞紐港之一，由老港區和鮫魚圈港區組成。全港共有生產性泊位16個，其中萬噸級泊位7個。1991年吞吐量380萬噸。

“七五”期間鮫魚圈港區建成萬噸級泊位5個（其中2.7萬噸級煤炭泊位1個，萬噸級雜貨泊位4個），中級多用途泊位2個，3千噸級液化氣泊位1個，新增設計年吞吐能力672萬噸（含集裝箱5萬TEU）；老港區擴建3個中級泊位。

“八五”期間鮫魚圈港區除續建一期工程最後2個萬噸級雜貨泊位（於1991年底竣工投產），並將建設二期工程：1個3萬噸級和2個5萬噸級深水泊位；還將建成年接卸汽車19萬輛的萬噸級滾裝船碼頭，以及水泥碼頭、散糧碼頭、原油碼頭、成品油碼頭和危險品碼頭。

Port of Yingkou, situated at the Liaodong Bay in the east of Bohai Bay, is one of the coastal hub ports. It is composed of Old port area and Bayuquan port area, with a total of 16 productive berths, in which 7 are deepwater berths for vessels of over 10000 dwt. The throughput volume was 3.8 million tons in 1991.

During the "Seventh Five-Year-Plan", 5 berths for vessels of over 10000 dwt (one for coal vessel of 27000 dwt and 4 for general cargo vessels of 10000 dwt each) were built, as well as 2 multi-purpose berths for medium-sized ships and one for liquefied gas ships of 3000 dwt were built with a newly designed throughput capacity of 6.72 million tons per year (including 50000 TEU). At the Old port area, 3 medium-sized berths were extended.

In the period of the "Eighth Five-Year-Plan", in addition to the last two berths for general cargo ships of 10000 dwt of 1st-phase project at Bayuquan Port Area (completed at the end of 1991), the second-phase project will include: one deepwater berth for vessels of 30000 dwt and two berths for vessels of 50000 dwt, one roll-on roll-off berth for vessels of 10000 dwt with a capacity of handling 190000 vehicles per year; as well as cement, bulk grain, crude oil, oil-product and dangerous cargo terminals, etc..

營口港鮫魚圈港區鳥瞰 Bird's-eye view of Bayuquan port area

（鐘咏 攝）