Chapter 11 Technical Transfer

11. Technical Transfer

11.1 Technical Transfer in Dredging Operation

Within the period between the first and second visits of the Study Team in Thailand, dredging operations for C-25, C-37 and H-12 were greatly improved as summarized below:

Dredger	Major improvement	Results of improvement
C-25 and C-37	1) Control of adequate dredging velocity by diffuser arrangement at the end of discharge pipe (see Figure 11.1-1) 2) Cutter position arrangement in Pak Phanang Channel (see Figure 11.1-2)	- More than double dredging output - Decreasing of fuel consumption by 30-40% - Decreasing of engine trouble to almost zero
H-12	1) Continuous dredging operation more than five hours for "hard" area in Songkhla channel (see Figure 11.1-3)	- More than three times of dredging output

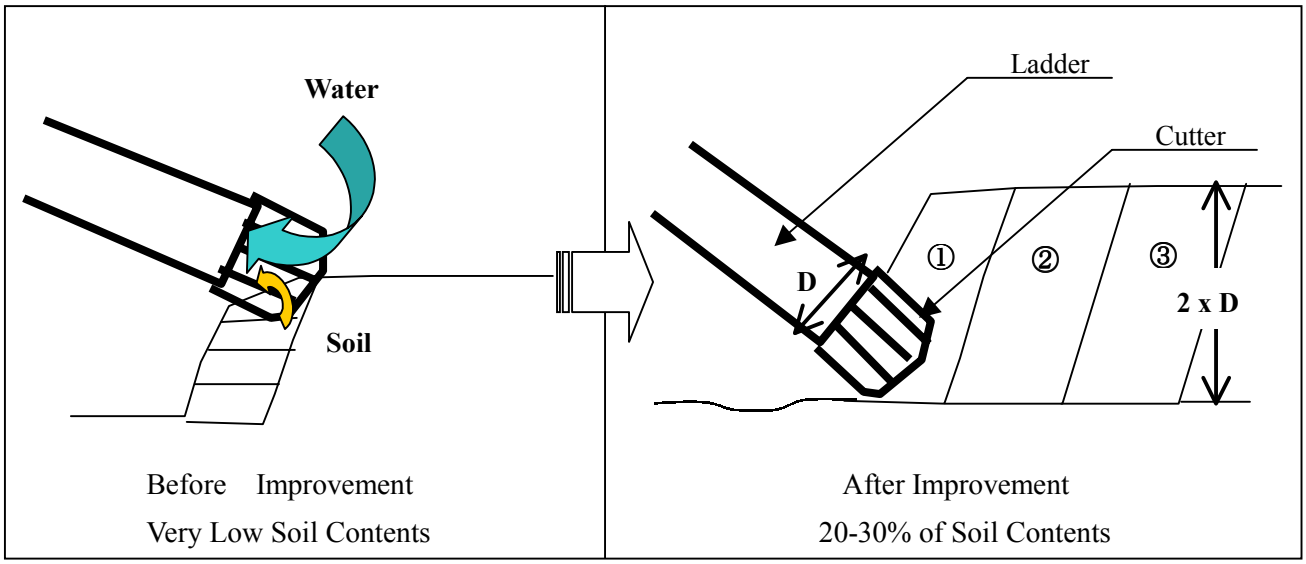

Figure 11.1-1 Improvement of Position of Cutter Head

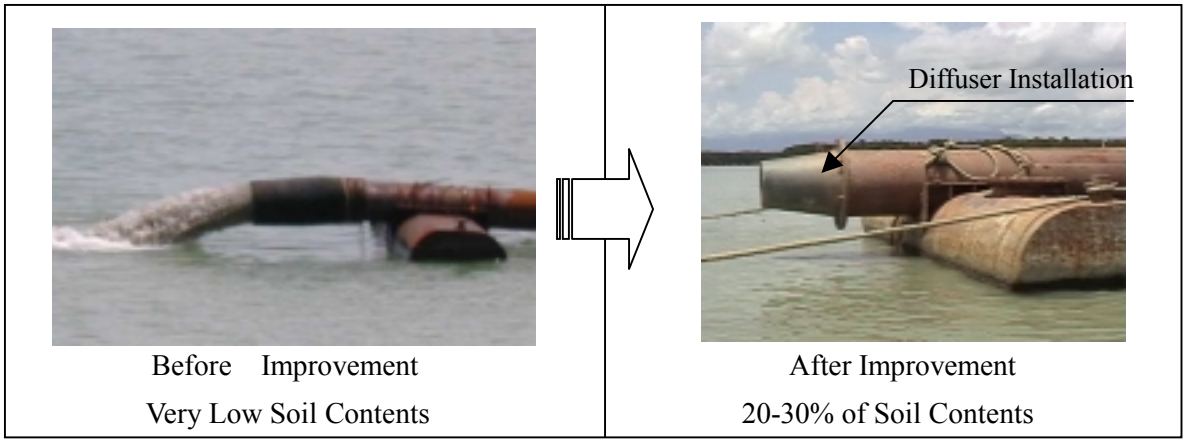

Figure 11.1-2 Improvement of Discharge Pipe

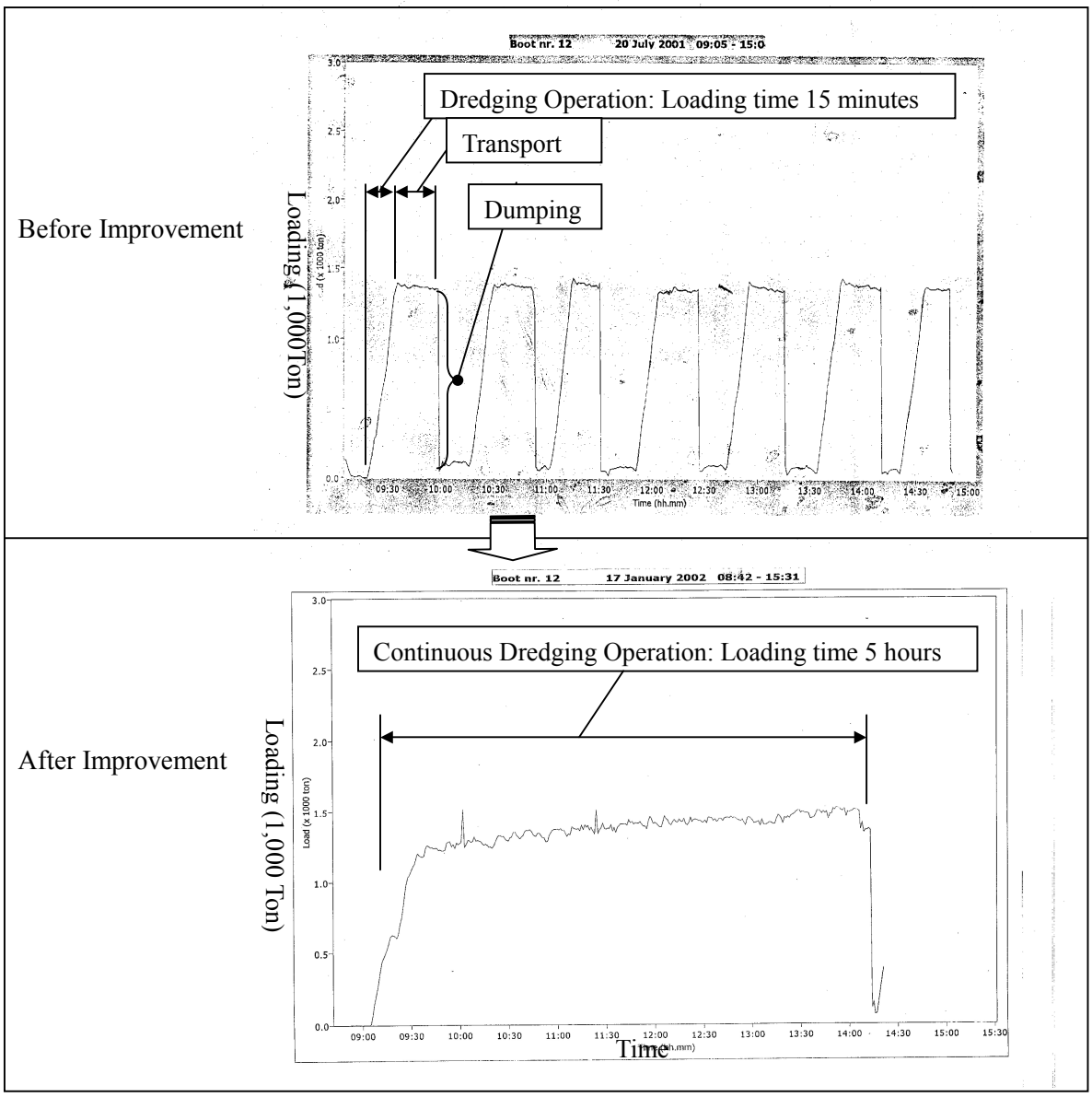

Figure 11.1-3 Improvement of Hopper Dredger Operation

11.2 Seminar

The seminar entitled "Coastal Channels and Ports Development" was held in Bangkok by the Harbour Department (HD) in cooperation with the Japan International Cooperation Agency (JICA) on December 20, 2001 on the following subjects:

- Dredging Improvements of Navigational Channels
- Forecast of Coastal Changes by Numerical Simulation Models
- Intermodal Shift of Transport from Land Transport to Sea Transport

In the seminar, HD counterpart personnel and the JICA Team members as well as JICA Advisory Committee members and an OMPC official presented eight papers according to the program below. The presentation was followed by comments and discussions by about 80 participants.

Time		Activity	Speaker	Organization
From	To			
9:00	9:10	Opening Address	Mr. W. Sarathulthat	HD
9:10	9:20	Address from JICA	Mr. M. Morimoto	JICA
9:20	9:30	Coffee Break		
		Session I : Maintenance of Channels at the South on the Bay of Thailand		
9:30	10:30	1) Channels Now under CDC-II (Photos, Maintenance Dredging and Issues)	Mr. N. Endo	JICA Team
10:30	11:00	2) Maintenance Dredging Operation at Present	Mr. S. Danai	HD
11:00	11:30	3) Recommendations by JICA Study Team in Dredging Operation	Mr. M. Hasegawa	JICA Team
11:30	12:00	Discussion		
12:00	13:30	Lunch		
		Session II : Forecast of Coastal Changes		
13:30	13:50	1) Erosion Mechanism at the Southern Coast	Mr. S. Nakamura	PARI
13:50	14:10	2) Forecast of Coastal Changes at the Southern Coast	Mr. T. Kikuta	JICA Team
14:10	14:20	Coffee Break		
		Session III : Intermodal Shift of Transport from Land to Sea		
14:20	14:40	1) Intermodal Shift of Transport in Japan	Mr. S. Naruse	MLTI
14:40	15:00	2) Intermodal Shift of Transport in Thailand	Mr. N. Lertchai	OMPC
15:00	15:20	3) Development of Songkhla Port	Mr. S. Shiratori	JICA Team
15:20	15:30	Closing Address	Sen. Lt. V Cheuysupakate	HD

Notes : MLTI: Ministry of Land, Transport and Infrastructure
PARI: Port and Airport Research Institute of Japan

11.3 Counterpart Training

From November 4 to 17, 2001, counterpart training was conducted on “Dredging Management and Measures against Coastal Erosion in Japan”. The goal of this training course was to reinforce skills and understandings of the counterpart personnel on dredging management techniques and countermeasures against coastal erosion in Thailand.

The following are the major points of the course curriculum.

(1) Principles of cutter suction pump dredgers operation

a. Theory of a cutter suction pump dredger

b. How to optimize the capacity of cutter suction pump dredgers of CDCII with respect to parameters below:
   - Horsepower
   - Diameter and rpm of impeller
   - Dredging velocity
   - Diameter of discharge pipe

(2) Site inspection for the dredging works in Niigata Port

a. Hopper dredger

Dredging operation, management and main specifications of “Hakusan-maru” are as follows:

Operation, Management and Specifications	
Dredging volume per year	600,000 m^3/year, Soil condition: S.M, Specific gravity: 1.45
Dredging operation time	3-shifts, 24 hours/day
Repair	2 months/year
Location management	Dredging Vessel Trail Recorder with GPS
Main specification	
Built-in : country	Japan
Built year	1973
Hopper capacity: m^3	1,350
Width: m	13.50
Length: m	76.50
Depth: m	6.00
Draft at full load: m	4.70
Pump capacity:m^3/hrs	3,000
Number of dredging pumps	2
Workforce persons	53

Hakusan-maru has similar specifications to H-12 or H-10. GPS is utilized by Hakusan-maru for accuracy of the path of the dredger.

b. Cutter suction dredger

- Method of dredging and reclamation in the construction project
- Dredging pipe arrangement
- Management of reclamation