

Appendix C

User Manual

C.1 Introduction

Thank you for choosing our tug boat scheduling system! In today's fast-paced shipping industry, tug boat management is key to ensuring safe and efficient operations. Our system is designed to be a one-stop solution for administrators, captains and schedulers so they can easily manage boat information, staff assignments, and inbound/outbound.

C.2 Full User Guide

The purpose of this guide is to provide you with account management guidance to help you make full use of the system's identity authentication, improve your work efficiency and management level. Whether you are a administrator, captain or scheduler, the following will provide you with detailed steps and tips to use.

- **Login**

Login is the first step to use our service, please enter your account number and password on the login page (Figure C.1) to enter the system.

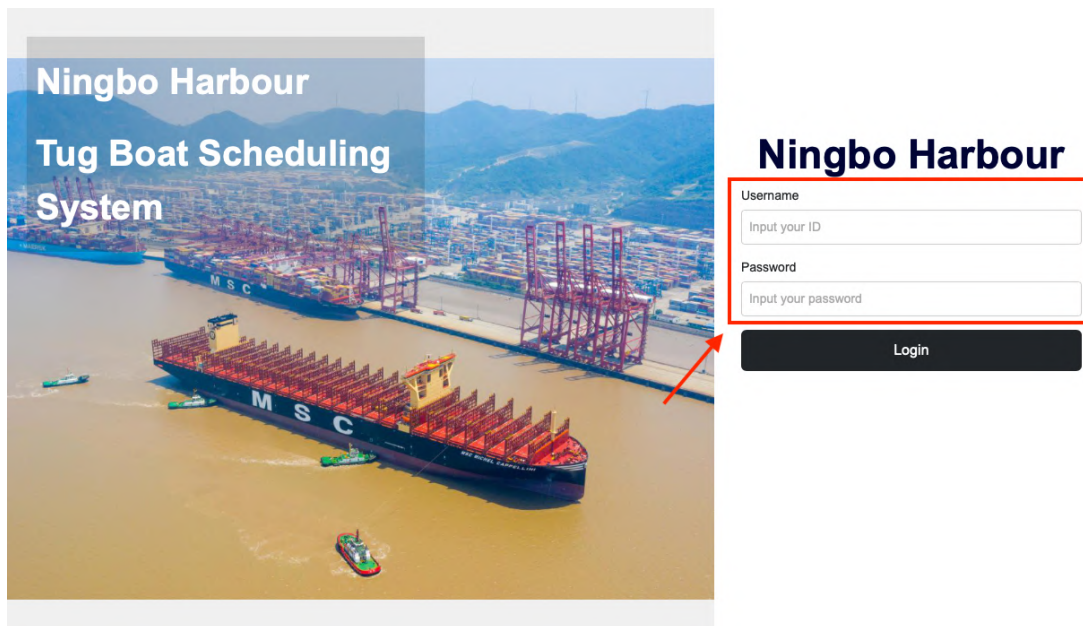


Figure C.1: Login Page

Before we get started, we offer some universal accounts for you to try out the system, and you can log in with the following credentials:

Administrator Account

- **Username:** ADMIN001
- **Password:** 12345678

Captain Account

- **Username:** CP0001 - CP0040
- **Password:** 12345678

Scheduler Account

- **Username:** SC0001 / SC0002
- **Password:** 12345678

- **Logout**

You can open your own account management page by clicking on "Settings" in the

bottom left corner of the page (Figure C.2). You can log out of the system by clicking the "Logout" button, which will automatically jump you back to the login page.

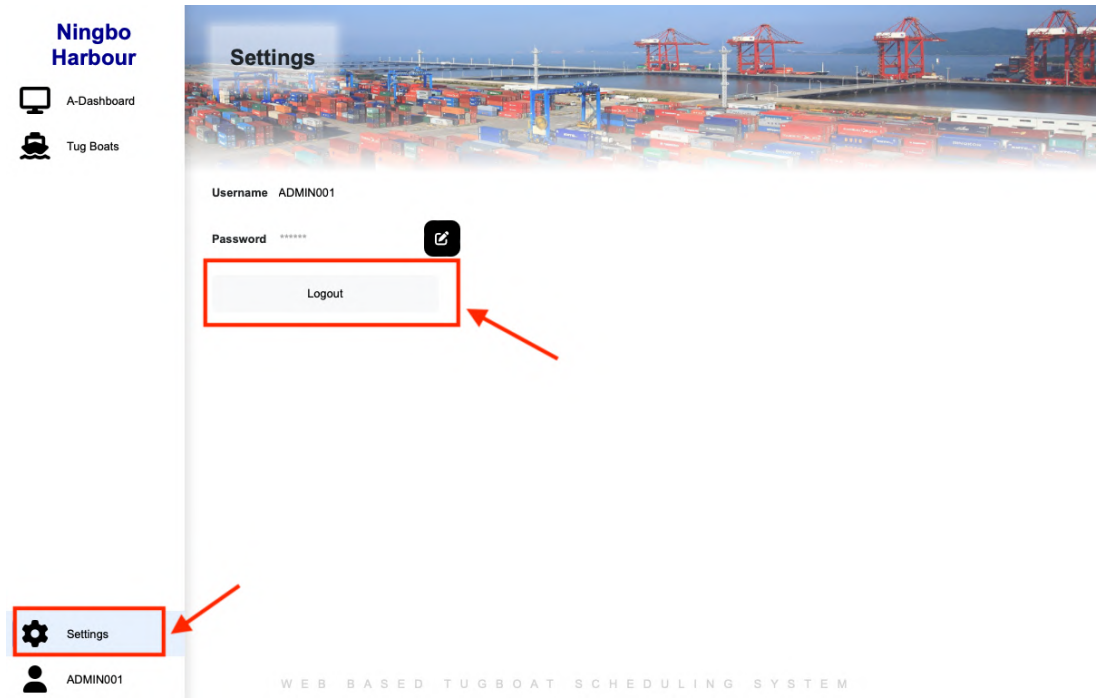
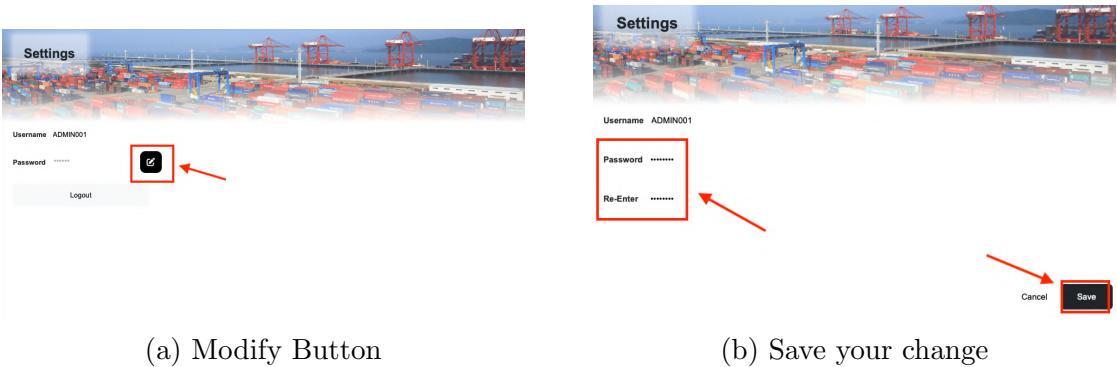


Figure C.2: Settings Page

• Password Modification

Click the "change" button to change your account password (Figure C.3). Please make sure that you have the same content in the new password and confirm the new password. After entering, click the "save" button at the bottom right to save your changes and jump back to the login interface.



(a) Modify Button

(b) Save your change

Figure C.3: Modify Password

If you want to interrupt the operation during the modification process, click the

”cancel” button (Figure C.4) in the lower right corner to exit the modification.



(a) Cancel Button



(b) Quit Page

Figure C.4: Cancel Modification

C.3 Administrator

Welcome to use our tug boat scheduling system as an administrator! You have the highest authority over the system, and this user manual will guide you on how to effectively manage ship information and other user information.

- **View All Captains & Schedulers**

After logging into your administrator account, you will be presented with an administrator-only dashboard (Figure C.5) that displays information about all captains and schedulers in tables above and below respectively.

 A screenshot of the 'Your Dashboard' page for the Ningbo Harbour tug boat scheduling system. The dashboard has a sidebar with 'A-Dashboard' and 'Tug Boats' options. The main content area displays two tables: 'Captain' and 'Scheduler'. The 'Captain' table lists 8 captains with their names, IDs, assigned tug boats, and status (Free or Maintenance). The 'Scheduler' table lists 2 schedulers with their names and IDs. At the bottom, it says 'WEB BASED TUGBOAT SCHEDULING SYSTEM'.

Captain Name	Captain ID	Tug Boat	Tug Boat Status
Wei CHEN	CP0001	NB001	Free
Jing LI	CP0002	NB002	Free
Tao Ze WANG	CP0003	NB003	Free
Xiang ZHANG	CP0004	NB004	Free
Zhi Ming LIU	CP0005	NB005	Free
Yue Hang HUANG	CP0006	NB006	Maintenance
Xin Yi ZHAO	CP0007	NB007	Free
Yi Fang WU	CP0008	NB008	Free

Scheduler Name	Scheduler ID
Zhang Zhi LIU	SC0001
Wen Xiu QING	SC0002

Figure C.5: Dashboard page

- **Add a staff**

You can add a New staff by clicking the "New+" button (Figure C.6) in the upper right corner of the dashboard and entering the staff information.

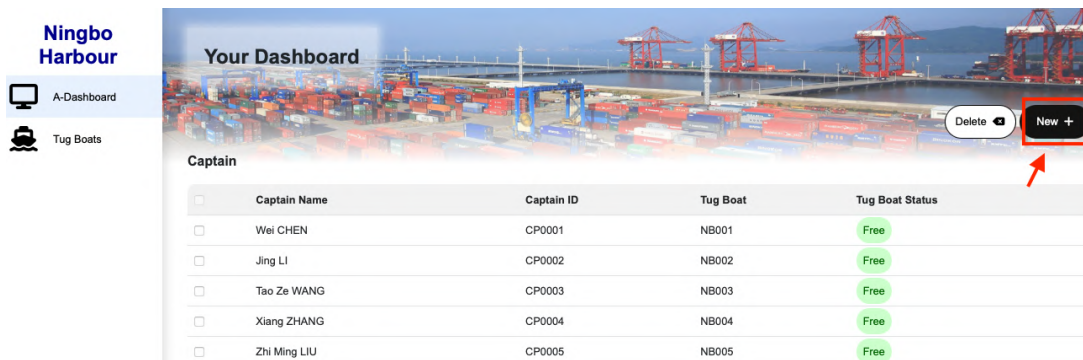


Figure C.6: Add button

You can save the new information by clicking on the Confirm button when you have finished entering.

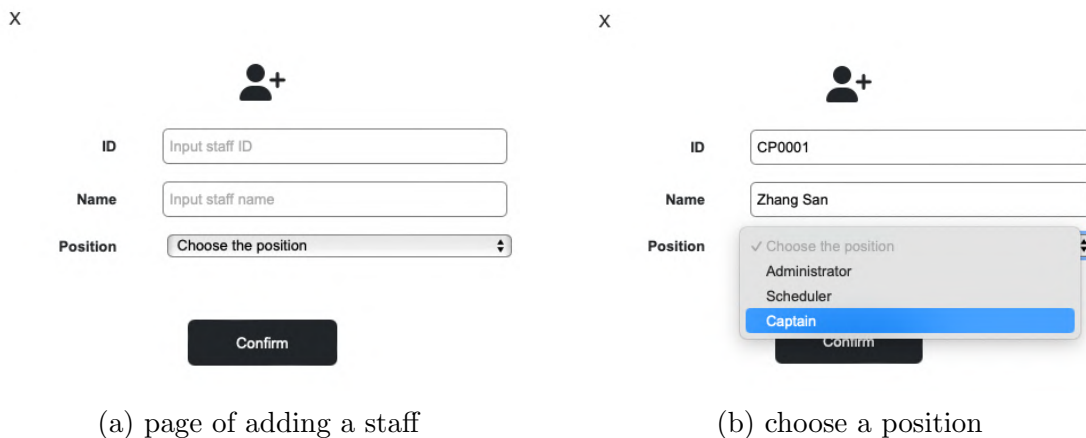
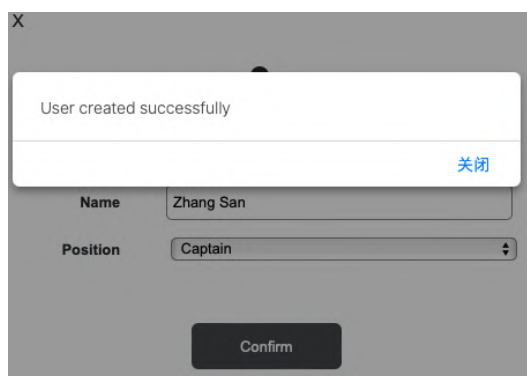
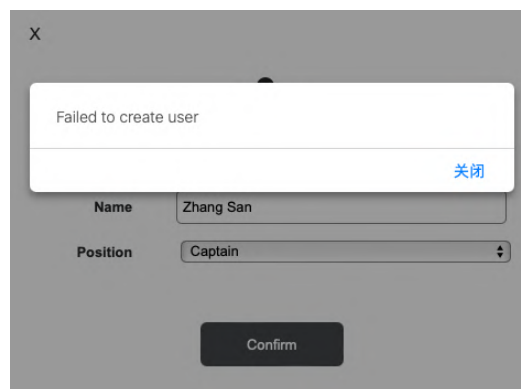


Figure C.7: Add a Staff

You can judge whether the addition is successful or not according to the system's prompt message (Figure C.18), displaying successful means that the new employee will appear in the table (Figure C.9), if displaying a failure then you need to recheck whether the information you have entered is incorrect or not.



(a) Successful Message



(b) Failed Message

Figure C.8: Pop Up Message

<input type="checkbox"/>	Captain Name	Captain ID	Tug Boat	Tug Boat Status
<input type="checkbox"/>	Ying LI	CP0015	NB015	Free
<input type="checkbox"/>	Lei WANG	CP0016	NB016	Free
<input type="checkbox"/>	Shan Shan LIU	CP0017	NB017	Free
<input type="checkbox"/>	Yan JIANG	CP0018	NB018	Free
<input type="checkbox"/>	Wen ZHOU	CP0019	NB019	Free
<input type="checkbox"/>	Zhen Xi ZHANG	CP0020	NB020	Free
<input type="checkbox"/>	Zhang San	CP0080	waiting	waiting

Figure C.9: Add successfully

• Delete Captains/Schedulers

You can delete any caption or scheduler by clicking on the box in front of their entry to select the target employee and then clicking on the "delete" button on the top right.

<input type="checkbox"/>	Captain Name	Captain ID	Tug Boat	Tug Boat Status
<input type="checkbox"/>	Ying LI	CP0015	NB015	Free
<input type="checkbox"/>	Lei WANG	CP0016	NB016	Free
<input type="checkbox"/>	Shan Shan LIU	CP0017	NB017	Free
<input type="checkbox"/>	Yan JIANG	CP0018	NB018	Free
<input type="checkbox"/>	Wen ZHOU	CP0019	NB019	Free
<input type="checkbox"/>	Zhen Xi ZHANG	CP0020	NB020	Free
<input checked="" type="checkbox"/>	Zhang San	CP0080	waiting	waiting

Figure C.10: Delete Captains/Schedulers

Secondary confirmation and successful deletion will be prompted (Figure C.11), and this deletion function supports batch selection.

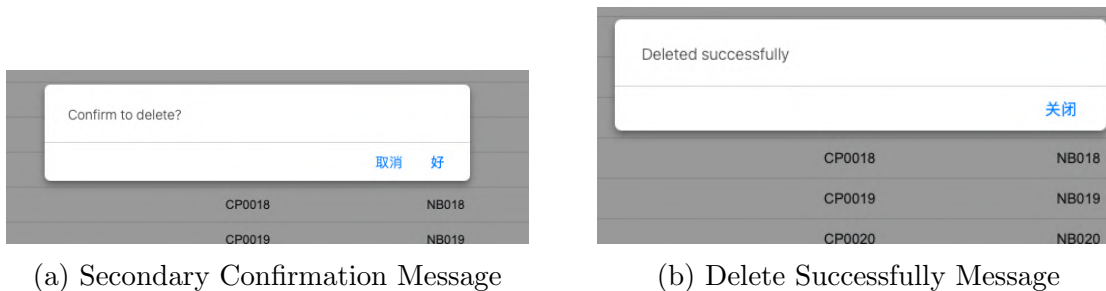


Figure C.11: Pop Up Message

- **View all tugboat information**

Open and view the exclusive list of tug boats by clicking on "Tug Boats" (Figure C.12) in the navigation bar on the left side of the page. You can filter the tugs you want to view by clicking on the status bar at the top of the page.

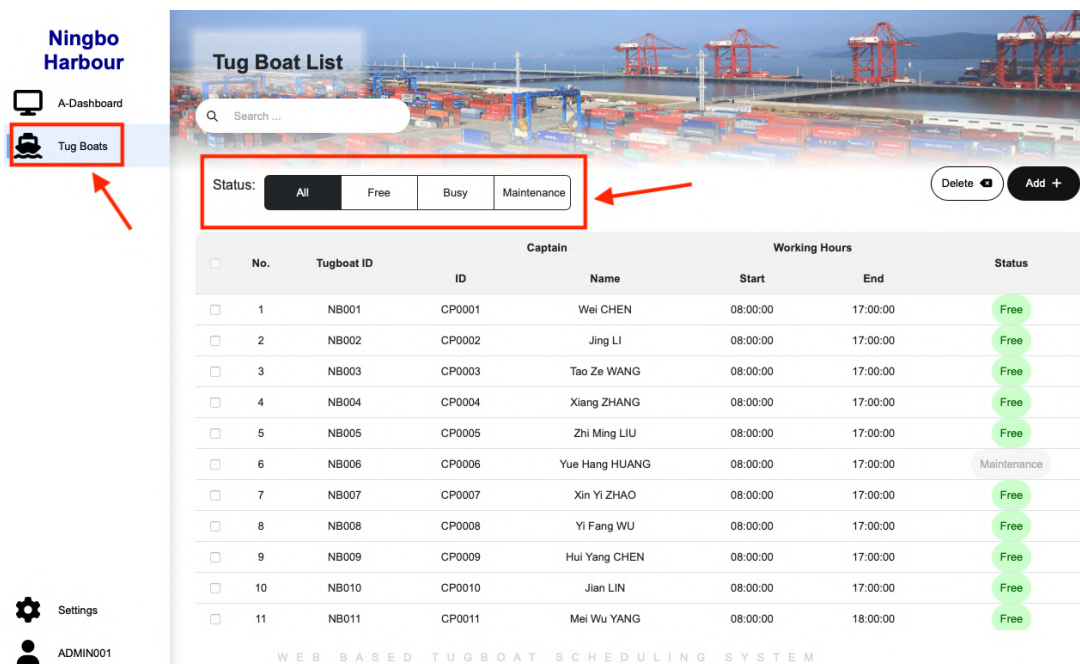


Figure C.12: Tug Boat List

- **Add tugboat**

You can add a New tug boat by clicking the "Add+" button (Figure C.13) in the upper right corner of the dashboard and entering the staff information.

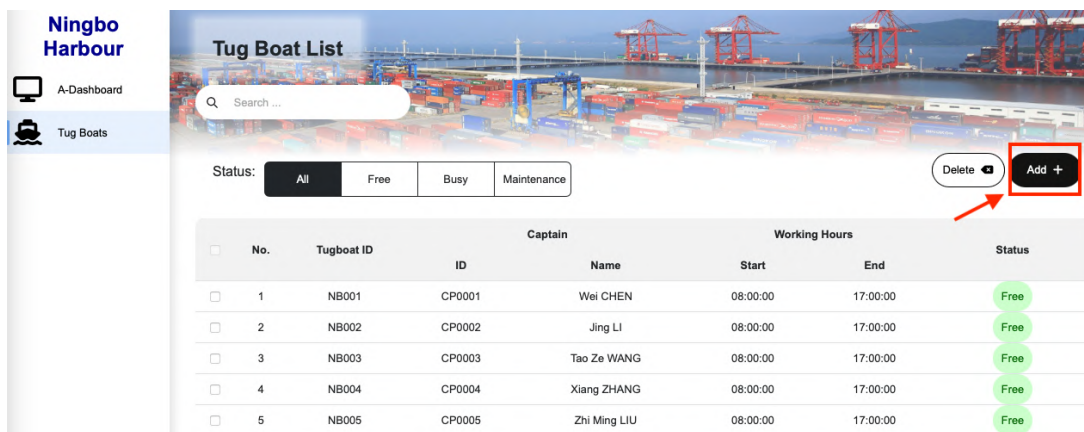


Figure C.13: Add button

You can save the new information by clicking on the Add button when you have finished entering.

X

Tug Boat ID

Captain

Working Hours to

Add

X

Tug Boat ID

Captain

Working Hours to

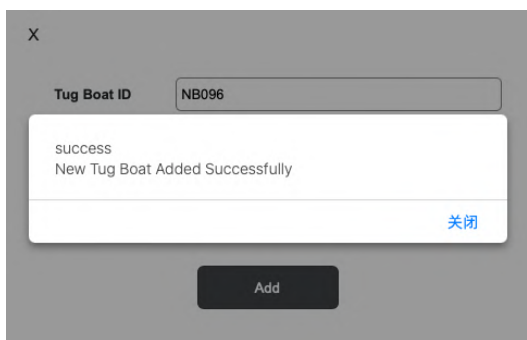
Add

(a) page of adding a staff

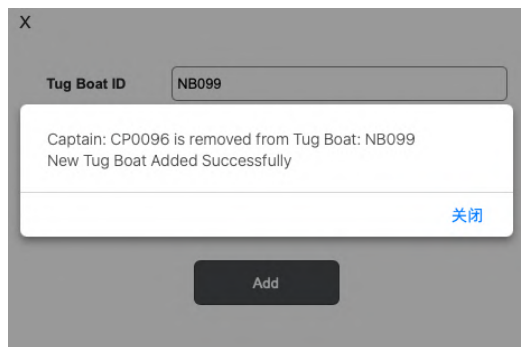
(b) choose a position

Figure C.14: Add a boat

You can judge whether the addition is successful or not according to the system's prompt message (Figure C.15), displaying successful means that the new employee will appear in the table (Figure C.16), When the system detects that the information you enter conflicts with the original information, the system automatically creates a new tug and updates the information.



(a) Successful Message



(b) Updated Message

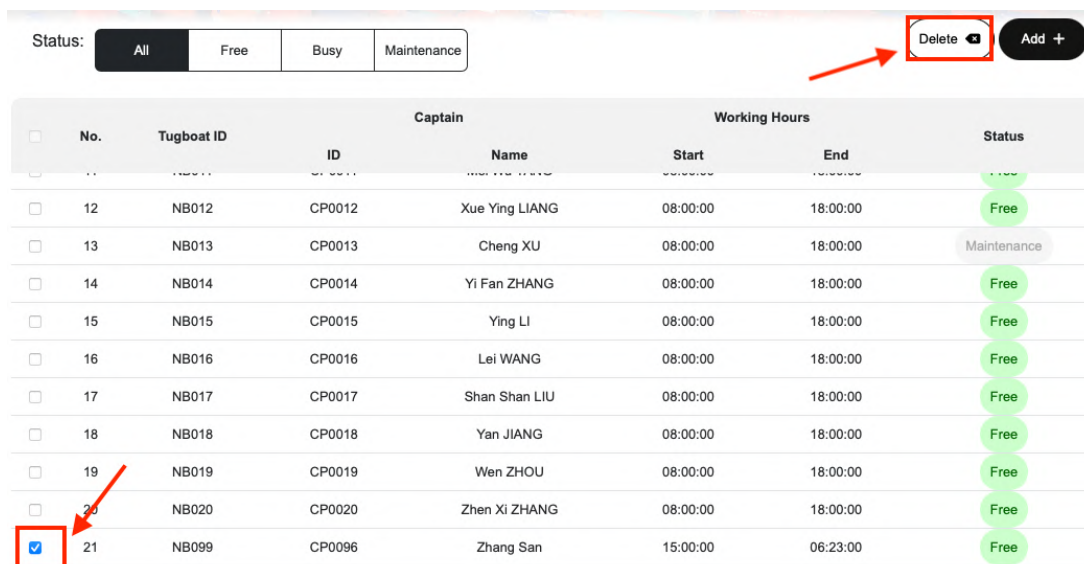
Figure C.15: Pop Up Message

Status: All Free Busy Maintenance Delete Add +							
	No.	Tugboat ID	Captain		Working Hours		Status
			ID	Name	Start	End	
<input type="checkbox"/>	11	NB011	CP0011	Wen ZHOU	08:00:00	18:00:00	Free
<input type="checkbox"/>	12	NB012	CP0012	Xue Ying LIANG	08:00:00	18:00:00	Free
<input type="checkbox"/>	13	NB013	CP0013	Cheng XU	08:00:00	18:00:00	Maintenance
<input type="checkbox"/>	14	NB014	CP0014	Yi Fan ZHANG	08:00:00	18:00:00	Free
<input type="checkbox"/>	15	NB015	CP0015	Ying LI	08:00:00	18:00:00	Free
<input type="checkbox"/>	16	NB016	CP0016	Lei WANG	08:00:00	18:00:00	Free
<input type="checkbox"/>	17	NB017	CP0017	Shan Shan LIU	08:00:00	18:00:00	Free
<input type="checkbox"/>	18	NB018	CP0018	Yan JIANG	08:00:00	18:00:00	Free
<input type="checkbox"/>	19	NB019	CP0019	Wen ZHOU	08:00:00	18:00:00	Free
<input type="checkbox"/>	20	NB020	CP0020	Zhen Xi ZHANG	08:00:00	18:00:00	Free
<input type="checkbox"/>	21	NB096	CP0096	Zhang San	08:00:00	16:30:00	Free

Figure C.16: Add boat successfully

- Delete tugboat

You can delete any tugboat by clicking on the box in front of the their entry to select the target boat and then clicking on the "delete" button on the top right.



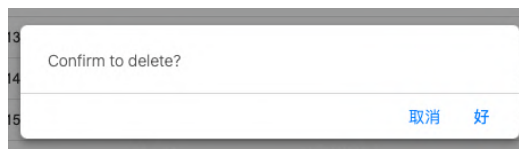
	No.	Tugboat ID	Captain		Working Hours		Status
			ID	Name	Start	End	
<input type="checkbox"/>	12	NB012	CP0012	Xue Ying LIANG	08:00:00	18:00:00	Free
<input type="checkbox"/>	13	NB013	CP0013	Cheng XU	08:00:00	18:00:00	Maintenance
<input type="checkbox"/>	14	NB014	CP0014	Yi Fan ZHANG	08:00:00	18:00:00	Free
<input type="checkbox"/>	15	NB015	CP0015	Ying LI	08:00:00	18:00:00	Free
<input type="checkbox"/>	16	NB016	CP0016	Lei WANG	08:00:00	18:00:00	Free
<input type="checkbox"/>	17	NB017	CP0017	Shan Shan LIU	08:00:00	18:00:00	Free
<input type="checkbox"/>	18	NB018	CP0018	Yan JIANG	08:00:00	18:00:00	Free
<input type="checkbox"/>	19	NB019	CP0019	Wen ZHOU	08:00:00	18:00:00	Free
<input type="checkbox"/>	20	NB020	CP0020	Zhen Xi ZHANG	08:00:00	18:00:00	Free
<input checked="" type="checkbox"/>	21	NB099	CP0096	Zhang San	15:00:00	06:23:00	Free

Figure C.17: Delete Boats

Secondary confirmation and successful deletion will be prompted (Figure C.18), and this deletion function supports batch selection.



(a) Secondary Confirmation Message

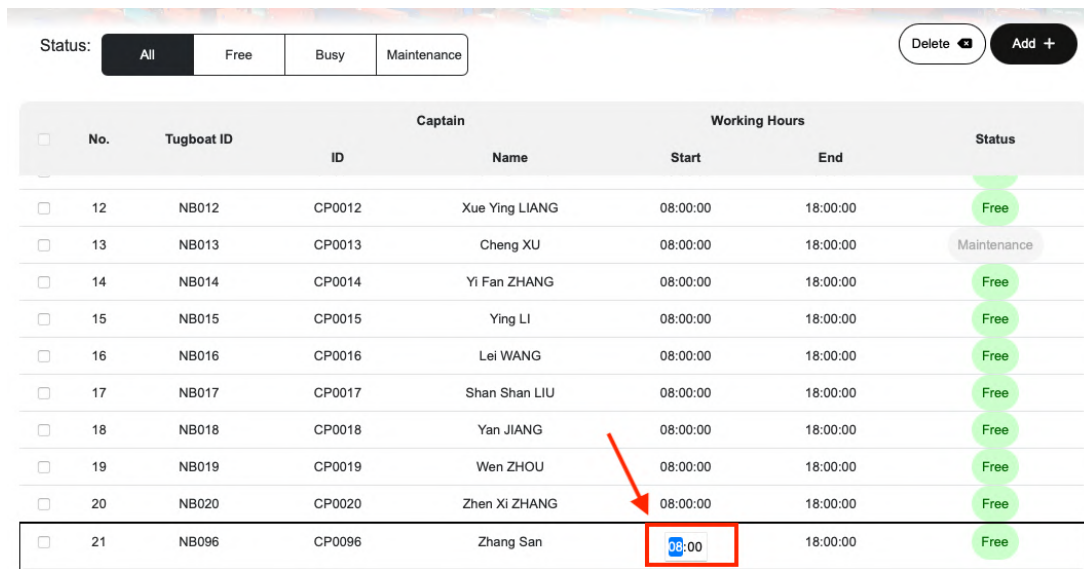


(b) Delete Successfully Message

Figure C.18: Pop Up Message

• Edit tugboat information

You can edit the tugboat information by clicking directly on the tugboat (Figure C.19), Enter Press Enter to save your edits. You can change the working hours, working status of each tugboat and change the captain of each boat by changing the captain ID, the rest of the information cannot be changed.



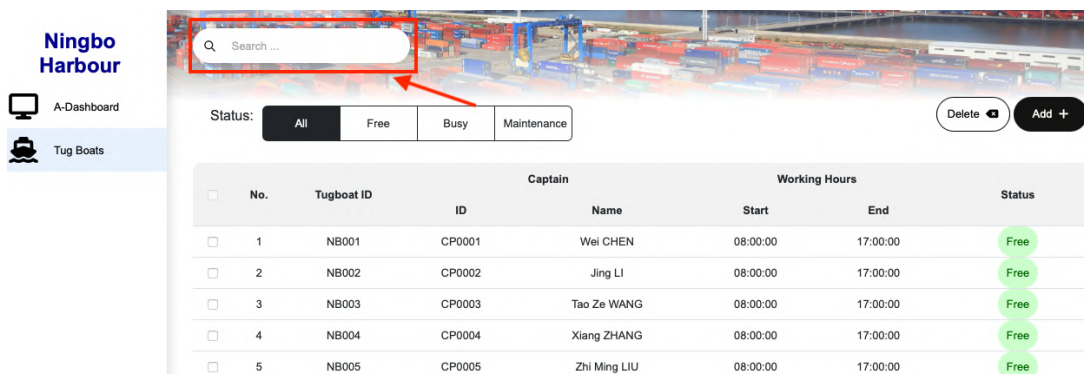
Status: All Free Busy Maintenance Delete Add +

	No.	Tugboat ID	Captain		Working Hours		Status
			ID	Name	Start	End	
<input type="checkbox"/>	12	NB012	CP0012	Xue Ying LIANG	08:00:00	18:00:00	Free
<input type="checkbox"/>	13	NB013	CP0013	Cheng XU	08:00:00	18:00:00	Maintenance
<input type="checkbox"/>	14	NB014	CP0014	Yi Fan ZHANG	08:00:00	18:00:00	Free
<input type="checkbox"/>	15	NB015	CP0015	Ying LI	08:00:00	18:00:00	Free
<input type="checkbox"/>	16	NB016	CP0016	Lei WANG	08:00:00	18:00:00	Free
<input type="checkbox"/>	17	NB017	CP0017	Shan Shan LIU	08:00:00	18:00:00	Free
<input type="checkbox"/>	18	NB018	CP0018	Yan JIANG	08:00:00	18:00:00	Free
<input type="checkbox"/>	19	NB019	CP0019	Wen ZHOU	08:00:00	18:00:00	Free
<input type="checkbox"/>	20	NB020	CP0020	Zhen Xi ZHANG	08:00:00	18:00:00	Free
<input type="checkbox"/>	21	NB096	CP0096	Zhang San	08:00:00	18:00:00	Free

Figure C.19: Edit boat information

- Search tugboat

You can search for a specific tugboat by clicking on the search bar (Figure C.20) at the top of the page and entering the ID of the boat or the ID of the captain or the name of the captain, the list below will change according to the information you enter.



Ningbo Harbour

A-Dashboard
Tug Boats

Search ...

Status: All Free Busy Maintenance Delete Add +

	No.	Tugboat ID	Captain		Working Hours		Status
			ID	Name	Start	End	
<input type="checkbox"/>	1	NB001	CP0001	Wei CHEN	08:00:00	17:00:00	Free
<input type="checkbox"/>	2	NB002	CP0002	Jing LI	08:00:00	17:00:00	Free
<input type="checkbox"/>	3	NB003	CP0003	Tao Ze WANG	08:00:00	17:00:00	Free
<input type="checkbox"/>	4	NB004	CP0004	Xiang ZHANG	08:00:00	17:00:00	Free
<input type="checkbox"/>	5	NB005	CP0005	Zhi Ming LIU	08:00:00	17:00:00	Free

Figure C.20: Search boat

When you want to end your search and return to the overall list, click the close button (Figure C.21) to the right of the search bar or clear the search list.

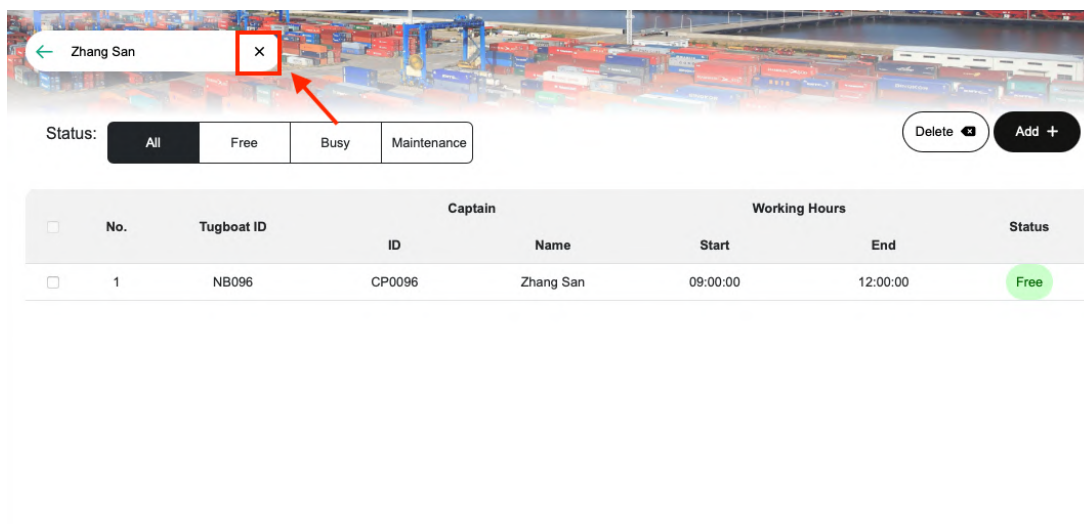


Figure C.21: Return to list

C.4 Captain

Welcome to the Ship Scheduling System User Manual! This manual is designed to provide captains with detailed instructions on how to use the ship scheduling system, enabling you to manage and schedule vessel trips with ease.

- **View Captain's Works Today**

After logging into your captain account, you will be presented with an captain-only dashboard (Figure C.22) that displays information about your works today.

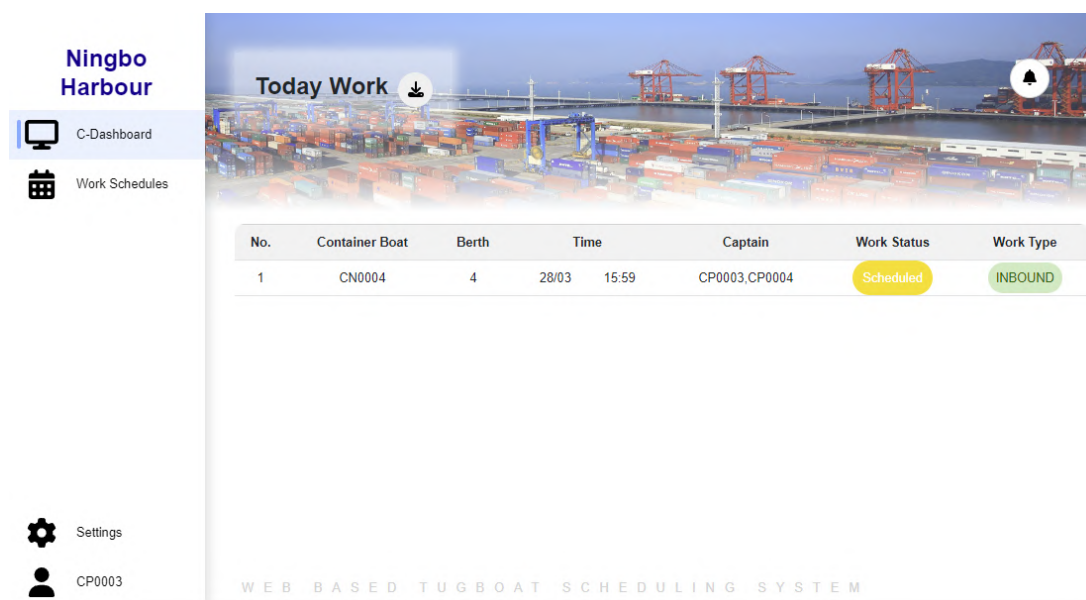


Figure C.22: Captain Dashboard page

- **Download and Contact**

By clicking Download button(Figure C.24a), you can download the information of the current page's tasks to your local device.

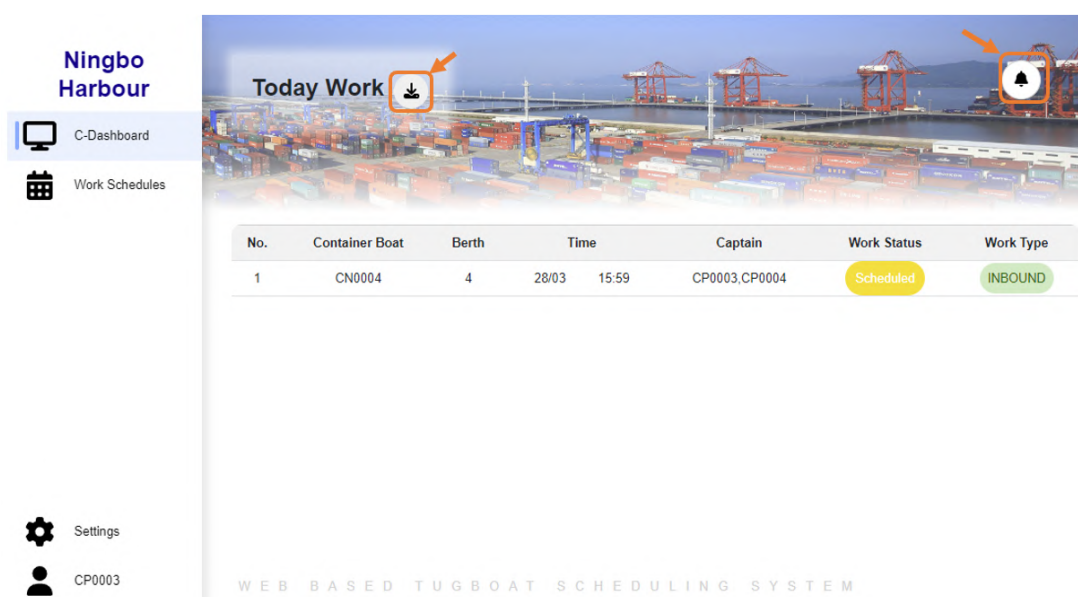


Figure C.23: Download and Contact

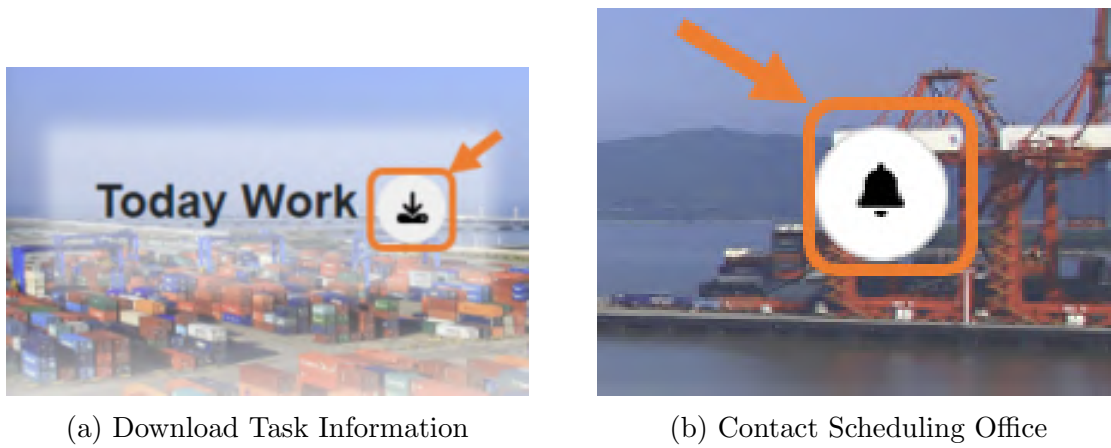


Figure C.24: Download and Contact Button

If the captain encounters any issues, including scheduling conflicts or other situations, they can contact the Ningbo Harbour General Scheduling Office by clicking this button (Figure C.24b).

C.5 Scheduler

Welcome to the Scheduler function! This part will help you familiarise yourself with how to effectively use the Scheduler function to manage crew scheduling and task allocation.

- **Import Data**

The dashboard will display a list of all daily tasks. You need to click the Import button at the top to import task information and tugboat information respectively to schedule and generate missions, the import task must be the current day data. You can filter the tasks by clicking the filter bar at the top.

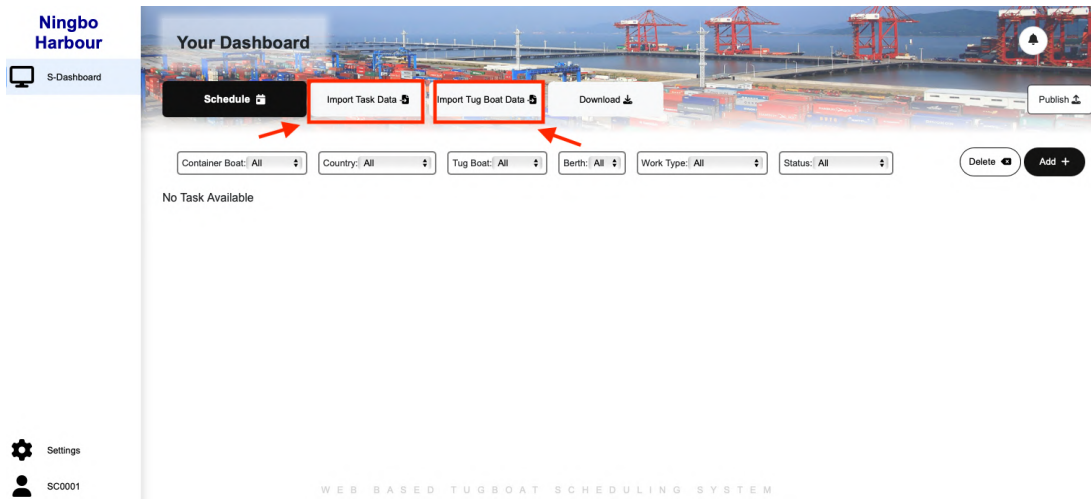


Figure C.25: Scheduler Dashboard

Import the information required by the task through the pop-up page (Figure C.26a). You can select Save or cancel by clicking the button in the lower right corner. If the import succeeds, a message (Figure C.26b) is displayed indicating that the import succeeds. Repeat import will cause submission failure.

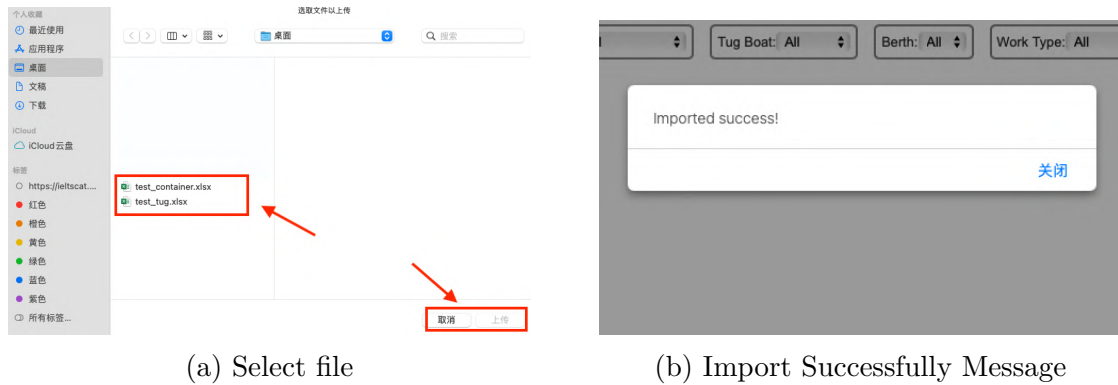


Figure C.26: Pop Up Message

• Fully Automated Scheduling

You can automate scheduling by clicking the scheduling button at the top of the dashboard, and the task progress will be displayed as a (Figure C.27a) progress bar.

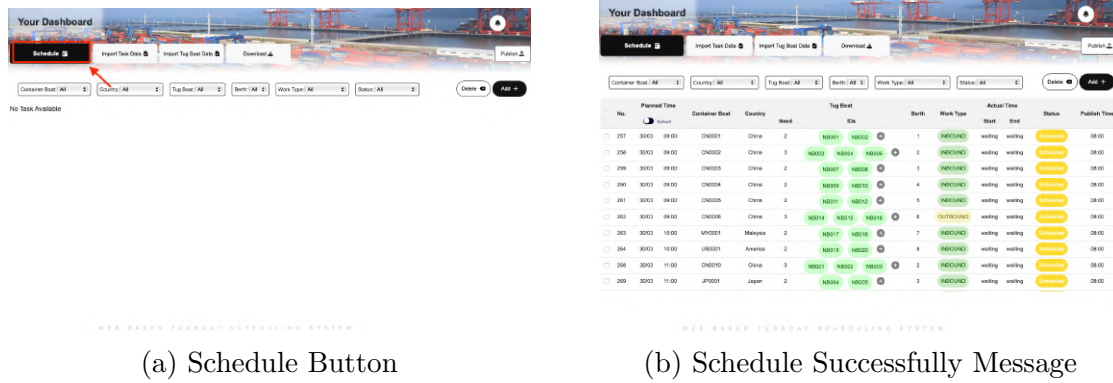


Figure C.27: Pop Up Message

• Semi-automated Scheduling

You can add tasks by clicking the Add button in the upper right corner or click the box in front of the taskbar to select and delete them, and each task information can be directly clicked to modify. When you have finished the modification work, re-click the schedule button and the system will keep your changes and re-schedule to achieve semi-automatic function.

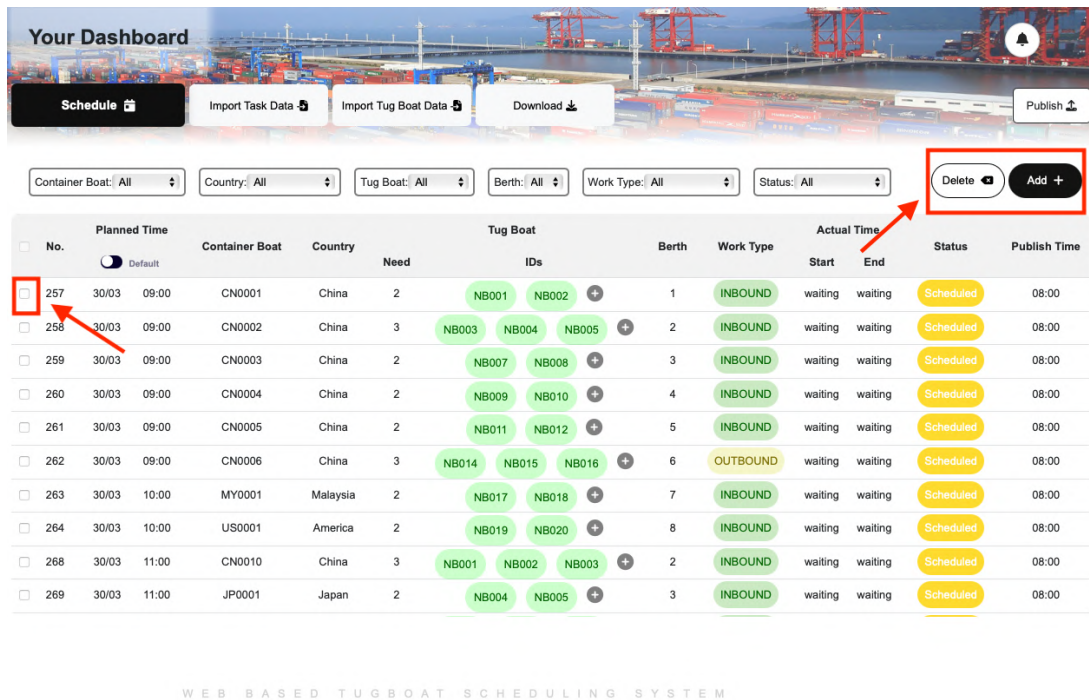


Figure C.28: Add or Delete

After filling in all the information, you can choose to save or cancel the operation through the button in the lower right corner, and the system will directly prompt

you whether you need to reschedule.

New Task

Container Boat

CP0001

Country

China

Tonnage

500

Total Tugboat Required

4

Time

2024/03/30 20:11

Action

OUTBOUND

Berth

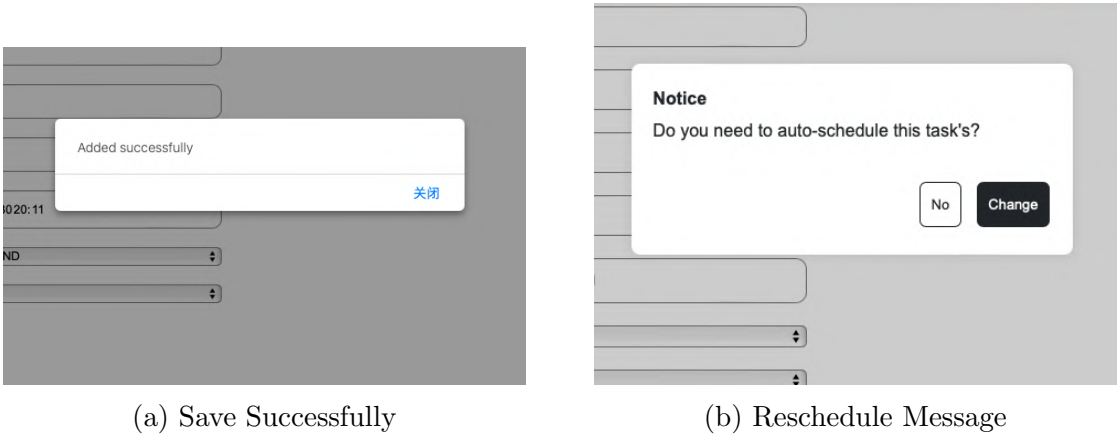
5

Cancel

Save

WEB BASED TUGBOAT SCHEDULING SYSTEM

Figure C.29: Save or Cancel



(a) Save Successfully

(b) Reschedule Message

Figure C.30: Pop Up Message

● Publish

You can publish the quest information by clicking the "Publish" button (Figure C.31) on the top right of the dashboard, and all Captain users will receive the daily quest after you publish.

Your Dashboard

Schedule Import Task Data Import Tug Boat Data Download Publish

Container Boat: All Country: All Tug Boat: All Berth: All Work Type: All Status: All Delete Add

No.	Planned Time	Container Boat	Country	Need	Tug Boat IDs	Berth	Work Type	Actual Time	Status	Publish Time
								Start End		
257	30/03 09:00	CN0001	China	2	NB001 NB002	1	INBOUND	waiting waiting	Scheduled	08:00
258	30/03 09:00	CN0002	China	3	NB003 NB004 NB005	2	INBOUND	waiting waiting	Scheduled	08:00
259	30/03 09:00	CN0003	China	2	NB007 NB008	3	INBOUND	waiting waiting	Scheduled	08:00
260	30/03 09:00	CN0004	China	2	NB009 NB010	4	INBOUND	waiting waiting	Scheduled	08:00
261	30/03 09:00	CN0005	China	2	NB011 NB012	5	INBOUND	waiting waiting	Scheduled	08:00
262	30/03 09:00	CN0006	China	3	NB014 NB015 NB016	6	OUTBOUND	waiting waiting	Scheduled	08:00
263	30/03 10:00	MY0001	Malaysia	2	NB017 NB018	7	INBOUND	waiting waiting	Scheduled	08:00
264	30/03 10:00	US0001	America	2	NB019 NB020	8	INBOUND	waiting waiting	Scheduled	08:00
268	30/03 11:00	CN0010	China	3	NB001 NB002 NB003	2	INBOUND	waiting waiting	Scheduled	08:00
269	30/03 11:00	JP0001	Japan	2	NB004 NB005	3	INBOUND	waiting waiting	Scheduled	08:00

WEB BASED TUGBOAT SCHEDULING SYSTEM

Figure C.31: Publish

- Download and Contact

You can download the entire task list to your local device by clicking the Download button above the dashboard.

Your Dashboard

Schedule Import Task Data Import Tug Boat Data Download Publish

Container Boat: All Country: All Tug Boat: All Berth: All Work Type: All Status: All Delete Add

No.	Planned Time	Container Boat	Country	Need	Tug Boat IDs	Berth	Work Type	Actual Time	Status	Publish Time
								Start End		
257	30/03 09:00	CN0001	China	2	NB001 NB002	1	INBOUND	waiting waiting	Scheduled	08:00
258	30/03 09:00	CN0002	China	3	NB003 NB004 NB005	2	INBOUND	waiting waiting	Scheduled	08:00
259	30/03 09:00	CN0003	China	2	NB007 NB008	3	INBOUND	waiting waiting	Scheduled	08:00
260	30/03 09:00	CN0004	China	2	NB009 NB010	4	INBOUND	waiting waiting	Scheduled	08:00
261	30/03 09:00	CN0005	China	2	NB011 NB012	5	INBOUND	waiting waiting	Scheduled	08:00
262	30/03 09:00	CN0006	China	3	NB014 NB015 NB016	6	OUTBOUND	waiting waiting	Scheduled	08:00
263	30/03 10:00	MY0001	Malaysia	2	NB017 NB018	7	INBOUND	waiting waiting	Scheduled	08:00
264	30/03 10:00	US0001	America	2	NB019 NB020	8	INBOUND	waiting waiting	Scheduled	08:00
268	30/03 11:00	CN0010	China	3	NB001 NB002 NB003	2	INBOUND	waiting waiting	Scheduled	08:00
269	30/03 11:00	JP0001	Japan	2	NB004 NB005	3	INBOUND	waiting waiting	Scheduled	08:00

WEB BASED TUGBOAT SCHEDULING SYSTEM

Figure C.32: Download and Contact

If you encounter any problems, please contact the system maintenance staff by

clicking on the call button at the top right.