

# Comparison of maritime safety management modes and measures for main inland waterways in China, US, and EU

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# Abstract

- Main inland waterways are geographically and economically important for many countries for transportation.
- Highways and railways tend to become saturated due to traffic, but inland waterway transport still has considerable room for growth.
- Effective safety management and proper management measures can make inland waterways safer, cleaner, and more efficient.
- This study provides an overview of maritime management practices comparing and contrasting China, US, and EU main inland waterway safety management. Subsequent research on enhancing measures related to maritime management can benefit from this study.

# Background

Major countries attach considerable importance to inland waterway transportation, since it is safe, reliable, multifunctional, and eco-friendly.

To prevent the potential risk from the increasing transportation volume, Chinese governors, experts and scholars begin to focus on management modes and measures from countries with similar navigable conditions.

Through comparison study, an overview of maritime management practices can be provided as a reference to government in each country if they want to make some adjustment or promotion to the present management.

# CHINA

China has massive and complicated inland waterway networks, with 127,100 km of navigable waterways, which are becoming increasingly essential to economic growth. The main navigable waterway include Yangtze River system, Pearl River system and Grand Canal etc. Based on these navigable river system, China invests to develop several national economic belts.

## **Management modes**

(1) Central authority: Ministry of Transport of the People's Republic of China (MOT) and its expatriate institutions.

Within the MOT:

Waterborne Transport Administration

Maritime Safety Administration (MSA)

Transport Service Administration

Safety and Quality Supervision Administration

Expatriate institutions include the Changjiang River Administration of Navigational Affairs (in charge of the Yangtze River) and the Pearl River Administration of Navigational Affairs (in charge of the Pearl River).

(2) Local authority: vary by province.

Example:

The Yangtze River is directly regulated by central authority and the Pearl River is regulated both centrally and locally. Other inland waterways are under the jurisdiction of respective local governments.

## **Management measures**

### (1) Vessel management

- Vessel inspection

- Vessel technical standards

- Vessel age

- Passenger transportation

### (2) Inland mariner management

### (3) Hazardous chemical transportation management

## **Legal system**

(1) Most major changes regarding safety policies and standards are generated after major accidents.

(2) Collisions and discontinuities among laws and regulations tend to be increasingly serious.

(3) Documents promulgated by the MOT, MSA, and other authorities have the same standing as regulations: violation of these documents is viewed as a legal violation.

# US

The US government invests heavily in inland waterway construction and maintenance every year, with more than 40,000 km of navigable waterways across the country. Most of the navigable waterways are in the eastern half of the US, in which the commercially important waterways consist of the Mississippi River system.





## Management modes

A collaborative framework, with cooperation between the US Department of Transportation (DOT), St. Lawrence Seaway Development Corporation (SLSDC), military (US Coast Guard (USCG), and Army Corps of Engineers), and local authorities.

In terms of maritime safety management, DOT is the policy making administration; USCG has authority over marine safety regulations as well as search and rescue, marine environmental protection, ice breaking, and maintenance of navigation aids; and the Army Corps of Engineers is in charge of harbor and waterway construction and maintenance.

Stress:

The USCG is part of the US “armed forces”, and is the main authority for maritime law enforcement.

## **Management measures**

(1) Vessel management

Vessel inspection

(2) Inland mariner management

(3) Hazardous chemical transportation management

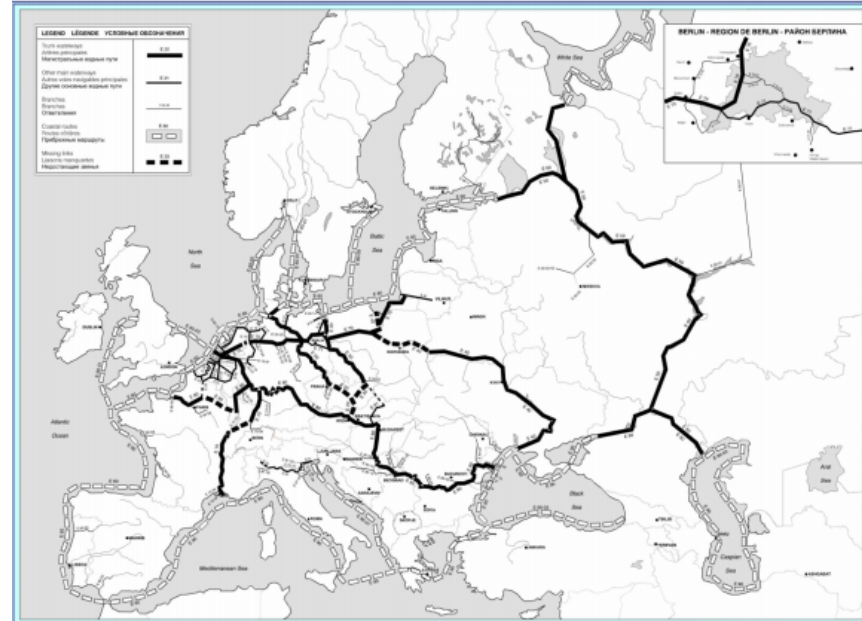
## **Legal system**

Under the US legislative system, US Congress compiles all statutory laws every six years. Most legal provisions on shipping are centrally listed under Shipping CFR 46. All parts of CFR 46 are available to the public.

Most major changes to safety policies and standards are generated after major accidents.

# EU

The EU has 28 member countries, 18 have inland waterway transport systems and 16 are connected with waterway system. More than 29,000 km of navigable waterways, 400 ports and terminals have been constructed along Danube River, Rhine River and other international river system.



## **Management modes**

### (1) EU authorities

Mobility and Transport Commission (MTC)

Europe Maritime Safety Administration (EMSA)

The MTC is responsible for waterway and vessel standards, and import and export laws. The EMSA, deals with maritime safety and pollution prevention, and is a technical organization without executive staff .

### (2) International organizations

Central Commission for Navigation on the Rhine (CCNR)

The CCNR formulates and modifies relevant laws and regulations concerning navigation safety, supervises implementation of these laws and regulations, and proposes systematic standards and recommendations for the Rhine waterway, vessel standards, navigational requirements, and technical specifications. Since it exercises its power through ministerial meetings, CCNR resolutions are enforced politically.

### (3) EU member country governments and their departments

Stress:

EU inland waterway management authorization has significantly more layers than US and China, including country, state, and city authorities. Private companies are also involved in daily safety management, assuming part of the responsibility.

## **Management measures**

### (1) Vessel management

Vessel inspection

Vessel technical standards

Vessel age

Passenger transportation

### (2) Inland mariner management

### (3) Hazardous chemicals transportation management

## Legal system

EU law can be divided into directives, regulations, decisions, recommendations, and opinions. Most major changes to safety policies and standards are generated after major accidents.

The MTC initiated fitness checks of overall legislation in place to evaluate whether the regulatory framework for an entire policy sector is fit for purpose, and various ambiguities, overlaps, and inconsistencies have been discovered.



# Conclusions

- Commissions within the EU and international organizations, such as CCNR, cooperate to take actions to ensure inland waterway safety and cleanliness. Generally, there is sufficient room in the legislative, executive, and judiciary for member countries to only comply with minimum safety requirements and make their own additions based on local situations.
- In the US, the federal government provides a broad mandate for the USCG, hence law enforcement is highly unified. Boundaries between different federal departments, as well as the legislature, executive, and judiciary, are fixed and precise [5].

- In China, inland waterways are governed by central and local authorities, and legislation and executive documents may not be consistent in various ways. To reduce potential risk generated by these inconsistencies, central government tends to adopt stringent and detailed management measures for critical inland waterway aspects, including vessel inspection, vessel standardization and retirement, mariner training, and hazardous chemical transportation.
- China, US, and EU have similar in legislation revision, that most improvements are generated only after major accidents. To change this passive situation, governments should take active steps for risk identification and management. Changes based on legislation or administration studies could reduce the number of major accidents in the future.

谢谢观看

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THANKS