

Measures for more efficient and secure logistics

MIZUTANI Masahiro, Head

SATOMURA Daiki, Senior Researcher

Disaster and Emergency Management Division, Coastal Marine and Disaster Prevention
Department

(Key words) International logistics, security inspections, logistics information

1. Introduction

In response to the 9/11 terrorist attacks of September 11, 2001, in 2004 the revised SOLAS Convention came into force and the Act on the Assurance of Security of International Ships and Port Facilities took effect.

And the United States began to demand that exporting countries perform 100% cargo security inspections, resulting in fear that meeting the requirements of such strengthened security could slow down logistics.

As a result of the internationalization of industry on the other hand, the impacts of any interruption or slow-down of economic activities by terrorism or a large-scale disaster will have wide repercussions, and there is now a demand that economic activities in disaster regions be quickly restored.

So our division has conducted research to clarify trends and characteristics of new security technologies capable of responding to the increasingly strict security requirements, to develop methods of predicting the slow-down of logistics by strengthening inspections and of evaluating countermeasures, and to create logistics information systems, which will be one tool for speeding up action to restore economies after disasters.

2. Trends and characteristics of security measure technologies

We collected information about overseas emergency response programs, and at the same time, clarified new X-ray inspection technologies capable of discovering hazardous substances including non-metals hidden in containers as container cargo inspection technologies, and identification technologies to deter suspicious people.

3. Development of logistics slow-down prediction and countermeasure evaluation methods

It is feared that strengthening logistics security inspections will increase gate waiting time, causing congestion of trailers.

So we conducted a field survey to clarify the actual situation and performed numerical simulations that can represent and evaluate the situation. The change of

waiting time caused by longer inspections was also numerically simulated, showing that if inspection time increases, it will be impossible to deliver all cargoes to piers. A numerical simulation confirmed that it would be possible to handle the cargoes by changing present specialized lanes into multi-purpose lanes as a countermeasure.



Photo. View of vehicles waiting for a gate to open
Approximately 300 vehicles are waiting

4. Internationalization of logistics information systems

It is necessary to clarify the state of logistics at normal times in order to promptly take countermeasures when an international logistics network has been disrupted by a disaster or by terrorism.

Logistics information systems are now being built around the world, but it would be beneficial to build an information network linking nations and able to deal with international supply chains. So we are cooperating with administrative bodies in the construction of container logistics information networks linking countries.

5. Conclusions

At this time, the internationalization of manufacturing etc. has given international logistics networks an important role in the international economy, and any slow-down of logistics could slow down international economic activities.

So technologies that can be used to smooth logistics are becoming increasingly important, and we will conduct research to create more efficient security

countermeasures and logistics.

[Sources]

TECHNICAL NOTE of NILIM

695<http://www.nilim.go.jp/lab/bcg/siryou/tnn/tnn0695.htm>