

Dilemmas and Optimisation Ideas for Liability Division in International Cargo Multimodal Transport

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Abstract: This paper studies the dilemma and optimisation ideas of liability division in international cargo multimodal transport. It will not provide new empirical data but will collect existing legal and policy research on multimodal liability systems to clarify how uniform, network and modified systems distribute responsibility, and where practical and doctrinal gaps exist. First, the discussion will review the current system of unimodal conventions, regional agreements and contractual rules governing loss, damage and delay in door-to-door multimodal carriage, and point out problems such as unpredictability, recourse and fragmented liability. Then it will examine the main ways of liability division for multimodal transport operators (MTOs), such as uniform, network and modified systems, and refer to instruments such as the 1980 MT Convention proposals, UNCTAD/ICC Rules, the Rotterdam Rules and regional initiatives in Europe and Eurasia. Based on academic research and the recommendations of the UN, this paper identifies problems with unlocalised damage, overlapping regimes, limitation levels and contractual allocation. Therefore, any optimisation of liability division should consider the legal certainty, fairness to the interests of the cargo, and feasibility for carriers and insurers. The paper proposes a system of reforms for liability rules in the conclusion, which includes a clearer default mechanism, harmonised recourse arrangements, and improved integration of multimodal contracts with underlying unimodal conventions; however, it does not expect immediate global uniformity.

Keywords: Multimodal transport; liability division; multimodal transport operator; uniform liability; network liability; legal harmonization.

1. Introduction

International cargo multimodal transport refers to combining two or more modes of transport under a single contract for the entire journey of goods around the world. Door-to-door services offered by a single multimodal transport operator (MTO) are logistically efficient and contractually simple for shippers and consignees.

The legal system of liability for multimodal transport has not kept up with the changes in commercial practice. Rather than a single multimodal convention in force, parties need to deal with a large number of unimodal conventions, regional agreements, national laws and contractual provisions that vary depending on the place and circumstances of the loss.

This paper offers a conceptual analysis of the problem and optimisation ideas for liability division in international cargo multimodal transport. It integrates existing legal and policy research rather than presenting new empirical data, aims to clarify current problems in the allocation of responsibility, and puts forward ideas for a more coherent and predictable liability system for MTOs and cargo interests.

2. Current Legal Landscape and Fragmented Liability

UNCTAD and other institutions have pointed out that there is currently no single international rulebook for liability in the event of loss, damage or delay under multimodal transport [1][2][11]. The current system consists of unimodal conventions, such as the Hague-Visby and Hamburg Rules for sea carriage, CMR for road, CIM for rail, Warsaw/Montreal for air, various regional and subregional agreements, national laws and standard terms [2][5].

Therefore, the rules and limits of liability differ according to the stage of the event causing the loss and the court where

the case is heard [2, 9]. Localised loss may be governed by the unimodal convention applicable to that leg, and unlocalised or mixed loss triggers fallback rules or default national law [1][2][10]. Due to this division, the cargo interest cannot know the relevant policy and possible recovery at the time of signing the contract.

According to the analysis in the UNCTAD's notes, without a single international rule, the spread of national and regional multimodal laws has led to more diversity rather than harmony [2][11]. MTOs may have different liabilities for the same loss depending on the route, selected law and jurisdiction, and thus need to arrange complex insurance to cover these uncertainties. Therefore, the problem of liability division has been discussed in recent years, and scholars have proposed various solutions [1-3].

3. Uniform, Network and Modified Liability Systems

Legal and policy literature generally categorizes the three main types of liability division in multimodal transport as uniform, network and modified systems [1][3][7][10]. In a pure uniform liability system, the same liability rules apply to all parts of the multimodal carriage, regardless of when the loss, damage or delay occurs at that stage [1][3]. The multimodal contract is regarded as *sui generis*, and a single set of rules applies to the relationship between MTO and cargo interests [10].

In a network liability system, different rules apply according to the unimodal stage at which the loss occurs, and fallback rules are provided for unlocalised damage [1-3]. Thus, the multimodal contract "hangs" on the existing unimodal convention or national law for each leg and provides alternative provisions where the stage of loss cannot be determined [2][9]. The current international system is

mainly a de facto network system due to the lack of a mandatory uniform multimodal convention [1][2][7].

Modified systems aim to balance the uniformity and network models. For example, the 1980 MT Convention and the UNCTAD/ICC Rules adopt a form of modified uniform regime in which uniform rules apply in principle to the whole journey, but limitation of liability or specific provisions may follow unimodal conventions when loss is localised [1][9][11]. Regional proposals in the EU and TRACECA corridor have also considered uniform liability with exceptions for limitation levels or recourse [3][11]. These categories offer a system for analysing the problem of liability division and possible optimisation.

4. Dilemmas in Uniform Liability Approaches

A uniform liability system will apply the same rules to all modes of transport and be simpler to administer [1][3][7]. From the standpoint of cargo interests, a uniform system can reduce the risk and recovery assessment ex ante by making liability independent of the place of loss or the applicable unimodal convention [1][10]. Legal analysis shows that a single norm has the following problems.

Another problem is the "recourse gap" for MTO liability under multimodal contracts and liability under subcontractors' unimodal contracts [3][7][11]. If a uniform multimodal regime imposes a higher or different liability standard than the underlying unimodal convention, MTOs may be unable to recover the amounts paid to cargo interests from subcontracting carriers. Therefore, a single system cannot be built by the carrier, and insurance costs will rise [7, 11].

Uniform systems may also be unable to cover the mandatory provisions in unimodal conventions. Instruments such as the Hague-Visby Rules and CMR contain provisions that states deem essential, and it is therefore politically and legally difficult to deviate from them entirely in multimodal transport [5][8]. As UNCTAD has pointed out, any new uniform system should have obvious advantages over the current system and address the sensitivity of states to the existing unimodal liability standards [1, 2]. These problems will restrict the full implementation of uniform liability division in the near future.

5. Dilemmas in Network Liability Approaches

Network liability systems align MTO liability with the unimodal regime applicable at the time of loss and avoid recourse gaps by maintaining consistency between multimodal and underlying contracts [2][3][7]. They respect the mandatory unimodal convention and permit carriers and insurers to use the established liability profile for that mode [5, 7]. Yet UNCTAD and scholars have identified serious shortcomings.

First, the network system needs to be able to locate the source of the loss. In practice, many cases involve unlocalised or gradual damage, where goods deteriorate over multiple legs, and documentation and evidence do not clearly indicate when the loss occurred [2][9]. Most of the existing network frameworks have fallback rules for such circumstances, but these may be less favourable to the cargo owner or result in complex conflict of laws [1,2].

Second, network systems perpetuate fragmentation and

unpredictability. Cargo interests may have different liability limits and defences according to the route and mode mix, and forum shopping can affect the outcome [2][3][10]. This complexity defeats the purpose of simplicity for multimodal contracts at the door. Asariotis and others have pointed out that network systems do not fully address problems such as delay, mixed causes of loss and interaction with non-mandatory contractual provisions, and thus leave gaps in liability division [4][7][11].

6. Modified Liability Systems and Regional Experiments

Modified liability systems aim to combine the advantages of uniform and network approaches by applying uniform rules in most respects and referring to unimodal conventions in certain areas, such as limitation levels or defences for localised loss [1][3][9]. The 1980 MT Convention and UNCTAD/ICC Rules are typical examples of such compromises, providing for MTO liability from the taking over of goods to delivery under a relatively uniform system, with exceptions for mandatory unimodal provisions [1][9][11].

The 2009 European Commission-commissioned study presents a "modified uniform" system, setting out general mandatory rules for most provisions and permitting contractual assignment of liability limitations in a single way, determined by the longer leg or explicit agreement [3][9]. In the absence of an express assignment, the default rule may apply the highest liability limit or the "longest mode" convention [3]. TRACECA's agreement on multimodal transport also sets a uniform liability limit of 8.33 SDR per kilogram for all modes and is another regional experiment in this regard [11].

The optimised system will have a clear structure and be simple to use, meeting the new unimodal requirement. However, the commentary shows that they are not feasible to implement, require careful drafting of fallback rules, and need coordination between the contractual and statutory systems [3][7][11]. They also need to be well-adopted by the government and industry for actual cooperation.

7. Specific Liability Division Issues in Practice

Many particular issues are involved in the division of liability for multimodal transport. One is the treatment of containerised carriage under the Maritime Code. Arbabi's study of the Hague-Visby and Hamburg Rules shows how "package or unit" definitions, weight-based limits and container clauses affect carrier liability for damage to goods packed in containers, especially when the loss occurs before loading or after discharge [5]. Therefore, MTOs are unaware whether sea-leg liability and door-to-door responsibility fall within the scope of coverage for them.

Another issue is that the unimodal convention CMR is being applied to multimodal contracts containing road sections. CMR studies have yielded different interpretations of whether and in what way they apply to international road legs in multimodal transport, affecting liability limits and defences [8][10]. CIM also faces the same problem in rail, and Rotterdam Rules are used for combined sea and inland carriage to extend the period of liability and modal coverage [6].

Delay and unlocalised damage are also problems. Existing

unimodal conventions vary in how they handle delay and consequential loss, and network systems often lack explicit rules for delay caused by coordination failures across modes. Academic studies on pro-rata liability and mixed causation have explored how to distribute responsibility among carriers, but actual application is still limited [7][8][10]. The above problems show that the division of liability in the headline system is not limited to these categories.

8. Optimisation Ideas: Legal Certainty and Equity for Cargo Interests

Optimisation of liability division in multimodal transport needs to balance legal certainty and fairness for cargo interests. UNCTAD and the region have shown that an open-ended default system reduces uncertainty [1-3]. One idea is to introduce a modified uniform system at the international or regional level that provides a standard set of liability rules for MTOs, including the basis of liability, defences and core obligations, while allowing limited variation in limitation levels to align with unimodal conventions when the loss is localised.

For cargo, harmonised minimum liability standards across all modes would improve equity by providing some basic protection for all routes and modal mixes [2, 3, 11]. Set default rules for jurisdiction and applicable law in multimodal contracts to reduce forum shopping and enhance predictability. Add user-friendly instruments, such as the UNCTAD/ICC Rules, to the contract and clearly refer to mandatory law and multimodal-specific provisions to enhance transparency [1, 9].

At the same time, any optimisation should not be presented as an imminent global uniformity. Legal analysis suggests that incremental harmonisation, through regional agreements, model laws and contractual standardisation, may be more feasible than a single all-encompassing convention in the short run [4][7][11]. Knowing this can help to present the optimisation idea as a feasible step rather than an all-new system.

9. Optimisation Ideas: Recourse Structures and Contractual Design

A second cluster of optimisation ideas is recourse structures and contract design. To solve the recourse problem, modified systems can be built to align the MTO liability for cargo interests with the liability of subcontractors under unimodal contracts, such as harmonizing limitation levels or providing express contractual back-to-back clauses [3][7][11]. Explicitly stipulate in the contract that indemnity and subrogation rights shall be exercised to recover the amounts paid by MTOs from the carrier responsible for the loss.

Model multimodal transport documents, such as those based on UNCTAD/ICC Rules, can include explicit mapping of liability rules to different legs, while making transparent to shippers how claims will be handled in cases of localised and unlocalised loss [1][9]. Standard clauses can specify when the network rules apply and when modified uniform rules are used to avoid liability disputes.

Contractual design can also be used to optimise by specifying the main mode assignment for limitation levels, consistently defining notice and time-bar provisions across modes, and integrating multimodal-specific provisions on delay, mixed causation and containerised carriage [3][10][11]. Although these measures are subject to negotiation and legal

advice, they provide a practical way to reduce liability in the absence of all-encompassing uniform international rules.

10. Limits of This Study and Conclusion

Based on the existing legal and policy literature, this paper has provided a conceptual analysis of the dilemmas and optimisation ideas in liability division for international cargo multimodal transport. No new empirical data or drafting proposals have been added, and the conclusions are only general principles supported by the cited sources.

Given the current fragmented legal system, one of the three choices—a uniform, network-based or modified liability system—must be selected by trading off simplicity and conformity with unimodal conventions for recourse feasibility. Specific problems include containerised carriage, the application of unimodal regimes to multimodal contracts, delay and unlocalised damage, etc., which further complicate liability division.

The optimisation ideas put forward here indicate that there is a prospect for modified uniform regimes, harmonised minimum standards, clearer default rules on jurisdiction and applicable law, and better coordinated contractual design to enhance predictability and fairness for both cargo interests and MTOs. Future work at the international, regional and industry levels can be based on these ideas to test concrete instruments and model clauses. At present, any research on the division of liability in multimodal transport must pay attention to the complex interaction of conventions, national laws and commercial practice to identify current problems and explore practical optimisation paths.

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