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Survival versus safety at sea. Regulators' portrayal of paralysis in safety regulation development

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ABSTRACT

Safety regulation can decrease the frequent accidents in sea transportation, but aspects of the existing regulations are found to contribute *negatively* to safety. Earlier studies suggest other framework conditions to influence maritime safety more than regulation, without reviewing the relation between the maritime context and regulation. Therefore, this paper explores maritime regulators' safety-related decisions. The data consist of interviews with regulators and facts about other actors (i.e., politicians, shipping companies, interests groups, and the media) in the maritime transport arena. The findings, which are based on safety, decision-making, and arena theories, are not described by earlier research.

Primarily, I find that a paralysis constrains safety regulation. Despite wanting a safe industry, transport competition leads the maritime actors to disagree about the priority of safety or profit, which paralyzes safety regulation development and constrains the regulators and their discretionary space (where they enforce the right safety regulations for the right sectors). Many of the decision criteria with which regulators must comply are forced upon them by others, so that regulators see them as constraints. Safety regulation is further weakened when market forces influence both regulation-making and enforcement. The findings demonstrate that industrial or political actors do not prioritize safety in practice; however, safety priority could lift maritime transport above the choice between safety and survival.

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1. The regulator's lot

The safest form of transport is by sea, but the number of serious maritime incidents has risen over the last decade (IMO, 2012). Globally, there are several large-scale accidents every year, such as the disasters of the ferry *Sewol* and freighter *Grand Fortune I* in 2014. In 2013, at least 69 large vessels were declared total losses, with over 600 casualties (Maritime Bulletin, 2014) out of approximately 1,300,000 seafarers worldwide (IMO, 2012). This paper explores safety regulation from the viewpoint of the regulators.

Regulation can be an important defense against organizational accidents if one has resourceful regulators with discretionary space (Reason, 1997; Rasmussen, 1997; Walters et al., 2011). Regulation motivates maritime organizations to take safety precautions (Kongsvik et al., submitted for publication; Knapp and Van de Velden, 2011), but the trend toward auditability and accountability as safety measures can marginalize useful safety practices and improvisation abilities (Almklov et al., 2014; Dekker, 2014; Størkersen and Johansen, 2014; Bieder and Bourrier, 2013). In spite of such secondary effects, research shows this type of regulation

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continues due to *lack of* resources: maritime deaths in poor sectors are not given public attention, let alone funding for regulatory development (Lindøe et al., 2011). Societies tend to be skeptical about expanding regulation in general, so regulators are often lagging compared to industry innovation (Walters et al., 2011; Johnson, 2014). Rather, multiple transnational actors in global industries come in, alongside the national regulators, with heavy means to influence standards and safety measures, thus adding complexity and uncertainty, and corrupting the regulators' work (Bratspies, 2009). At the same time, legislators and other governmental institutions with different objectives give the regulators responsibilities without authority (over legislation, insurance, market forces, etc.), and then tend to blame the regulator if a case gets negative attention (Baram and Lindøe, 2014). Reason (1997) labels it "the regulator's unhappy lot": regulators are to take care of societal interests, but with limited discretionary space, funding, or understanding. No wonder other framework conditions seem to influence maritime safety more than regulation (Kongsvik et al., submitted for publication; Knudsen and Hassler, 2011; Walters and Bailey, 2013). Earlier research does not explain further how the maritime context influences the regulators.

In this paper, I explore maritime regulations by asking Norwegian maritime regulators what affects the regulators' decisions when

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Fig. 1. Competing problems and priorities leads to weakened safety regulation in maritime transport.

facilitating for safe maritime transportation? I find that transport competition makes many maritime actors prioritize profit over safety regulation, which paralyzes safety regulation development and constrains the maritime safety regulators (see Fig. 1).

In the analysis, I use literature about safety, decision-making, and arena theory, which is explained in Section 2. As in arena analysis (Georgakopoulos and Thomson, 2008), my data materials consist of document analysis and interviews, though the interviews are only with the regulators (see method description in Section 3). The regulators' descriptions of their own decision-making are voiced in Section 4, categorized by the arena actors to which they relate the subjects, together with some information about the actors. In Section 5, the regulators' decision-making is analyzed, followed by a discussion of the situation of the maritime arena, to find out what affects the regulators' decision-making and to present the contents of Fig. 1.

2. Literature about regulatory decision-making in an arena

Decision-making and risk literature often mention that regulators are dependent on politicians and other actors around them. Yet studies seldom provide insights about the regulators' perspectives on their regulation and the context. To analyze what affects the regulators' decisions, I use an arena model (Renn, 1992) as a starting point to employ further decision-making theory (literature overview by Rosness, 2009).

As *safety* is a background subject here, this term must be clarified first (according to Rasmussen, 1997, 184): "Safety depends on the control of work processes so as to avoid accidental side effects causing harm to people, environment, or investment". A business can be safe to both people and economic profit. However, sometimes all negative side effects are unavoidable, and a value conflict arises over which of the positive effects one should prioritize (for instance, personal health or environment). Whether an operation is safe or not depends to a large degree on decisions made, before and during the operations, by groups of personnel at multiple societal levels and settings.

2.1. The arena approach

The arena approach can help explain group responses to risk issues and interpret institutional and political actions (Renn, 1992), such as the regulators' decision-making. An arena is a sphere or domain with certain participants, policies, interactions, and decision-making processes (Georgakopoulos and Thomson, 2008). In an arena, an actor has *discretionary space* – room for decisions and actions within a system (Dekker, 2012). The arena model (Fig. 2) illustrates patterns of such actors and the activities between them.

Arena theory is based on assumptions that the actors can influence and convince their decision-makers (by arguing or through public pressure) if they have sufficient resources available (Renn, 1992). Formal power is often not enough to get successfully one's preferred actions acted out in an arena. Authority must be accompanied with other valuable resources, such as social influence or financial capacity. Many arenas are so full of political constraints that decisions are not necessarily made in accordance with the values of any of the participants. If none of the actors can dominate the process, there can be a case of *political paralysis* and issues can remain unresolved (Renn, 1992). Political paralysis occurs when several actors fail to cooperate and decide on collective measures because of different values and goals.

2.2. Decision-making on the regulatory level(s)

Decision-making is seen as an individual or collective activity, over shorter or longer time, more or less intentional, constrained and shaped by context and individual qualities (Rosness, 2009). A decision is close every time an actor can choose to act out other alternatives. It is difficult to separate the decision from the decision-making process, and it is important to take into account the social context of the work (March, 1994; Rasmussen, 1997; Rosness, 2009).

Rosness (2009) characterizes decision settings based on proximity to the hazard and level of authority.¹ Currently, regulatory institutions are juggling between *political arenas, business management*, and *administrative and technical support functions*. Table 1 shows the dominant constraints and decision criteria in these decision settings (Rosness, 2009).

In the *business management* setting, managers rely on information from subordinates, and might not be able to weigh a full set of pros and cons. They are concerned with economic outcome and can be motivated to continue operations in conflict with safety (Rasmussen, 1997; Reason, 1997). Often, business decision-makers easily understand the process and value of the product (which can lead to bankruptcy if not handled right), while it is harder to recognize the processes and value of personnel or organizational safety (which can lead to catastrophe if not treated right) (Reason, 1997). This implies that they can value short-term financial and survival criteria rather than welfare, safety, and environmental criteria (Rasmussen, 1997). Employees are often pushed to work fast even if, theoretically, they should strive instead for quality. Hollnagel (2009) calls this the efficiency/thoroughness trade-off (ETTO) principle.

The administrative and technical support functions refer to personnel with limited formal authority, such as regulatory staff. Osmundsen et al. (2012) have found that the Norwegian Food Safety Authority personnel are obliged to make decisions that balance between societal interests and industrial interests, but that rigid regulations can limit their authority, constrain the decisionmaking, and sometimes result in irrational decisions.

In the decision setting of *political arenas* there are likely to be conflicting interests, as pointed out in arena theory. For instance, one often hears that "safety has a high priority, but so has employment and trade balance" (Rasmussen, 1997, 184). Interest groups are important here, due to the power in lobbies and the ability of interest groups to raise the voice of the public (Lindøe et al., 2011). Profit priority is often the case amongst maritime industry actors (Walters and Bailey, 2013).

¹ Rosness (2009) describes five decision settings: operations, business management, administrative and technical functions, political arenas, and crisis handling. For an example of research using his model on operational decision-making in Norwegian fish-farming, see Størkersen (2012).

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