

An Accident Round-table Discussion (ARD) Method Designed to Increase Safety Awareness

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It is said that opportunities for communication among field personnel tend to be low, and risk-related information such as experience gained and techniques used by individual personnel regarding safety is becoming hard to share in the workplace. The author conducted a survey of eighty-four deputy managers of a railway, in which they were asked about subjective rates of opportunity for sharing information about hazards observed, incidents encountered, and accident prevention. The result of survey indicates that most participants felt decreasing trend of sharing communication about risk compared with before (Fig. 1).

The author first developed an Accident Round-table Discussion (ARD) method to enable the sharing of risk-related information among field personnel and to increase safety awareness in the workplace by holding discussions in small groups of five or six people on the causes of accidents and measures to prevent them (Fig. 2). Facilitators are employed to conduct the ARD and encourage the participants to talk to one another about their own experience. The method consists of three primary stages: (1) discussion of accident situations, (2) discussion of accident causes, and (3) discussion of accident prevention.

In the first stage, participants discuss the process, situation, and severity of the accident. The aim of the first stage is to raise sensitivity to risk and to recognize the severity of an incident. In the second stage, participants discuss the cause of an accident based on the cause-down analysis method and on the multiple human factors involved. Facilitators ask participants about the cause of the accident and the cause of the cause by repetition of the question “why”. This leads to a detailed examination of the reasons for the accident. The facilitators also ask the participants about many aspects relating to human factors with the use of Hawkins’ SHEL model. Hawkins’ SHEL model includes various human-centered factors; Liveware-Software (procedures), Liveware-Hardware (equipments), Liveware-Environment (working conditions), Liveware (personnel issues), and Liveware-Liveware (interhuman relationships). The aim of the second stage is to raise sensitivity to risk, to share experience of risk, and to sympathize with those experiences. In the third stage, participants discuss accident prevention based on their own efforts. The aim of this stage is not only to share their efforts but also to understand difficulties with accident prevention measures. For this, facilitators encourage the participants to evaluate the accident prevention measures

that they discussed.

The author conducted actual trial runs of the ARD at field sites and confirmed its effectiveness by asking participants to fill in a questionnaire. The questionnaire included five items; increasing sensitivity to risk, sympathy with experience of risk, sharing each other’s efforts to prevent accidents, understanding difficulties with accident prevention measures, and improving safety awareness. The answers were graded according to the five point Likert scale; 1.absolutely not, 2.not much, 3.neither, 4.tentative yes, 5.strong yes. The proportion of answers for all items showed that there were about eighty percent positive answers and no negative answers. The result indicates that information sharing among personnel and increased safety awareness can be expected as a result of holding discussion meetings using the system in conjunction with safety activities at field sites (Fig. 3).

Furthermore, to facilitate the introduction of the ARD, the author prepared manuals (in Japanese) and training programmes for the facilitators who will implement it. The purpose of such training is to teach the ARD through simulated discussion meetings. The technique is now being implemented by a number of railway operators.

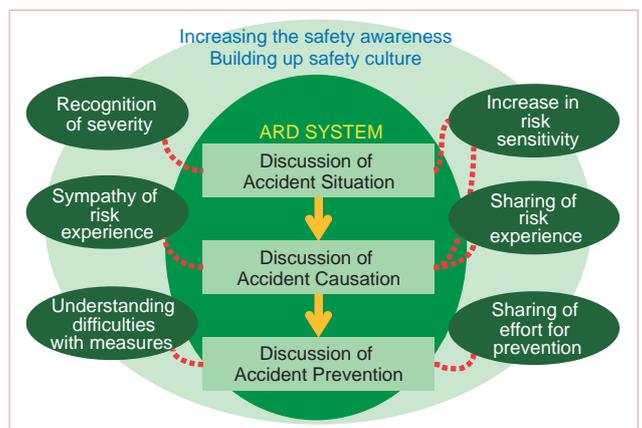


Fig. 2 Flow of Accident Round-table Discussion (ARD) method for raising safety consciousness

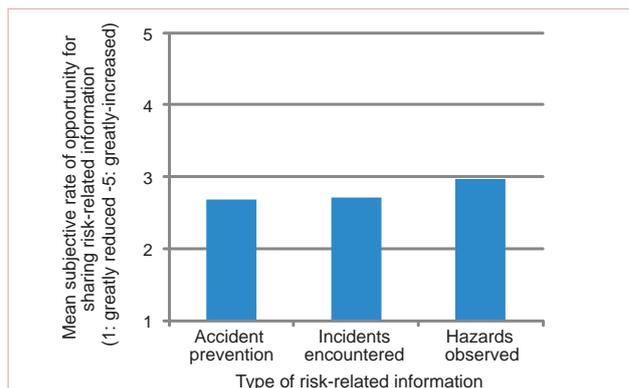


Fig. 1 Mean score of subjective value of sharing risk information in a railway company

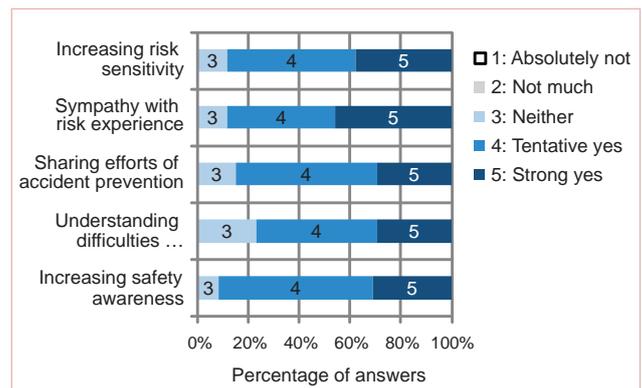


Fig. 3 Percentage of answers of questionnaire about risk sharing and safety awareness after the ARD