

Episode 14 Risk Management

Mr. Kouki Isozaki and Mr. Narimasa Sakagawa aptly summarize the main point of risk management in *Aeronautical and Space Engineering Handbook* (Maruzen, 1992) in Chapter 9 A.9.3.6 (p. 281).

There are many management methods to lower the risk in a process of development. In a broad sense, various kinds of development plan management and technological inspections, both mentioned earlier, can be counted as risk management methods.

In general, risk management can be carried out in the following way:

- (1) **Risk Assessment:** Distinguish the areas of latent risk based on various technological activities, analysis, and past experiences.
- (2) **Risk Analysis:** Make use of risk factors calculated from the product of a probability of deformity and a measure of the effect of the deformity on the program. Quantitatively analyze the scale of risk.
- (3) **Risk Countermeasures:** Based on the above results, avoid companies which pose unacceptable risk (Risk Avoidance); develop an alternative plan simultaneously and give priority to the arrangement of important materials (Risk Prevention); set up a warranty clause (Risk Transfer); execute a simulation as an early start to development activities; and do a broad development experiment, and projection of performance (Risk Study).

Even after carrying out sufficient management of the development plan, it is common to see various problems become actualized once you enter the production phase. In order to lower the risk, the above method should be utilized in addition to what you have learned from past experience.

Moreover, technological and interface problems, and environmental conditions should be thoroughly examined. It is most important to understand the areas of risk and the risk factors at an early stage in the development. As long as you get a hold of the problem, there is a way to work it out.