D31 A Case Report on a Cable Car Stoppage Accident Caused by Wild Mice

Youngsu Kong, Department of Physical Engineering in Gwangju, Jangseong, Republic of Korea; Jaehak Lee, PhD, Jangseong-gun, Korea, SOUTH KOREA; Gie-tae Lee, MS, National Forensic Service, Gwangju Institute, Jangseong-gun, SOUTH KOREA; Jae-mo Goh, PhD, National Forensic Service, Wonju-si, Gangwon-do 26460, SOUTH KOREA; Nam-Kyu Park, PhD, National Forensic Service, Wonju, SOUTH KOREA*

Learning Overview: After attending this presentation, attendees will be informed about a special case of a cable car stoppage accident caused by wild mice and will thus be informed of more possibilities to be considered when investigating cable car accidents.

Impact on the Forensic Science Community: This presentation will impact the forensic science community by providing a case report for a non-typical case of a cable car stoppage accident caused by wild mice.

With technology development and urbanization, accidents caused by wild mice are gradually disappearing in South Korea. Nonetheless, buildings in the countryside and mountains of a famous place occasionally have accidents caused by wild mice. In one case, a cable car that was normally running suddenly stopped due to wild mice. On November 5, 2015, at Duryun Mountain in Haenam, South Korea, the cable car, which was operating normally with passengers, was suddenly stopped by a power failure.

The site of the accident consisted of a cable car, a cable car platform, a machine room, and a cab. The machine room was equipped with the main power and the Automatic Transfer Switch (ATS) panel, a generator to supply spare power, a motor to drive the cable car, and a wire rope pulley. The ATS installed on the ATS panel was partially destroyed due to electrical fault. After replacing the ATS, the operation test for the cable car system was performed and the cable car system operated normally. The ATS operates as follows: the ATS is in contact with the main power terminal when the cable car is operating normally, but it automatically contacts the backup power terminal of the ATS when there is a problem with the main power supply of the cable car. Through scene investigation, it was found that the cause of sudden stoppage of the cable car was the ATS breakage. As a result of the inspection of the ATS, the main and backup power indicators of the ATS were both on and the ATS conversion switch had been moved to the backup power side. Two mice bodies were found on the R phase and the S phase between the main and backup power terminals of the ATS, respectively. Many electric arc marks were observed on the R phase, the S phase, and the T phase of the main power and standby power terminals.

According to the results of the scene investigation and ATS inspection, the cause of the cable car accident was the breakdown of the insulation due to the intrusion of the wild mice between the R phase and the S phase of the main power and standby power terminals of the ATS. Such a situation, with buildings in rural and mountainous areas of famous places, can still cause accidents due to wild mice. This case report can be used as a reference for future similar accidents.

Wild Mice, Automatic Transfer Switch (ATS), Cable Car