

## HUMAN FACTOR TRENDS IN GLIDER ACCIDENTS IN JAPAN

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**INTRODUCTION:** Most of the glider cross-country flight hours flown in Japan, as well as those in Europe, are logged by composite-construction machines. Gliders are also equipped with FAI-approved GPS flight recorders, which also are able to graphically indicate current position for navigation.. Another aspect of change in sport soaring is that modern high performance motorgliders with retractable engine are heavily used in challenging flights such as record attempts. Current Japanese zigzag distance record is 1,038km in 8 hours, cruising at 20,000 ft in mountain lee waves (World Record made in Argentina is 3,008km.) Use of motor and GPS forced revision of FAI rules. You can choose distant start point and use turn points covered with low clouds.

These changes in flight technology have enhanced sports aspects of soaring. However, engine retraction/extension, GPS/chart navigation to avoid prohibited area, oxygen use, transponder, battery management, and ATC communication with high-altitude centers made the already burdensome cockpit load even higher. We see new types of glider accidents in Japan, in which new technology should be examined as contributing factor. In addition, margin for control error in ultra-high performance open class gliders are slim, as well described in NTSB N807BB accident investigation report. How to construct training system for these machines deserves consideration.

**CASES:** 1) In-flight fatal breakup of JA2402 retractable engine motorglider cruising in mountain wave in VMC attracted attention as unusual. Cause of accident was not clarified. 2) Hull damage, in which carrying over maintenance of automatic engine extension control was pointed out as possibly contributing. 3)4) Hard landings by high-wing loading motorgliders; one case was taking-over too late. 5) Partial check list redo case.

**CONCLUSION:** Because soaring operation employs many new components compare to that in the past, human factor and medical considerations should be stressed at training and accident investigation.

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Note: Another abstract "JAPANESE MEDICAL OPERATIONS FOR

**THE INTERNATIONAL SPACE STATION”** is subjected also from this author with different organization.