Report

Organization Scientifique et Internationale du Vol à Voile (OSTIV)
International Scientific and Technical Gliding Organisation
www.ostiv.org

Rolf Radespiel, President

International Gliding Commission
Plenary on 7/8 March 2025
Celje

Braunschweig, February 2025

Report on the activities of OSTIV for the period 1 March 2024 to 1 March, 2025

1. Overview of OSTIV Board Operations

Extended Board of OSTIV:
President: Prof. Dr. Ing. Rolf Radespiel, Germany
Vice-President: Prof. Dr. Mark Maughmer, USA
Members: Prof. Dr. John Bird, USA; Dr. Goetz Bramesfeld, Canada; Dipl.-Ing. Michael Greiner, Germany; Dr. Judah Milgram, USA; Richard Carlson, USA; Dr. Ing. Lukas Popelka, Czech Republic; Murray Stimson, Australia.

The Journal "Technical Soaring (TS)" is an Online Journal, appearing quarterly. TS is downloaded from http://journals.sfu.ca/ts/index.php/ts . Chief Editor is Dr. Kurt Sermeus, Canada.

Note that the TS issues of the last 12 months are only accessible by login. This is a privilege of members only. Non-members can download TS from the 13th month after publishing.

The OSTIV secretariat is located in Braunschweig. The postal address is:

OSTIV c/o TU Braunschweig
Institute of Fluid Mechanics
Hermann Blenk Str. 37
D-38108 Braunschweig
Germany

The OSTIV secretariat is contacted via admin@ostiv.org . OSTIV financial administration is contacted via admin@ostiv.org as well.

2. Panel meetings

The ***Sailplane Development Panel (SDP)***, chaired by Michael Greiner, had its last annual meeting on 18-19 August 2024 at Uvalde. The meeting was held as a hybrid event and attended by around 25 engineers from 9 countries. Items discussed were:

- overview and discussions on activities by EASA related to certification and safety,
- report from the SDP working group on Crashworthiness of Cockpits: The group has drafted an OSTIV passive safety standard (OPSS), that could serve as a non-mandatory standard of passive safety for those sailplane manufacturers who are willing to offer their customers a safer product. The draft has been commented and improved over the last year, resulting in a first version ready for dissemination. The OPSS can be downloaded from the OSTIV Website, https://www.ostiv.org/ .
  The group is presently preparing a questionnaire on survived accidents.
- Recent work of SDP group on electric propulsion
- Further discussion topics: maintenance of wooden gliders, flutter requirements in altitude.

The recent World Gliding Championships 2024 in Uvalde saw the Nixus sailplane competing in the Open Class, see above. The Nixus employs fly-by-wire that uses stored energy from batteries in order to influence the flow of air around the wing by automatically moving the flaps. This has raised questions whether Nixus is a glider according to the rules of FAI, and whether the FAI Sporting Code in its general or section-wise rules needs to be adapted in order to allow for fair gliding competitions, taking into account recently developed technologies and developments that are conceivable in the future. On request by the International Gliding Commission (IGC) members of the SDP have drafted a document with relevant facts and assessment. Read what OSTIV experts have to say about future sailplanes. The document can also be downloaded from the OSTIV Website, https://www.ostiv.org/ .

Please approach the Panel Chair Michael Greiner, sdp@ostiv.org , if you are interested to participate in future works of the **SDP**.

The **Training and Safety Panel (TSP),** chaired by Richard Carlson and Henrik Svensson, met online during 1-2 Dec 2023 and on 19 August 2024. The topics discussed during these meetings comprised

- Safety reports by TSP member countries,
- Management of safety in gliding,
- Status of gathering statistical data on mid-air collisions by analysing igc-files.
  The joint Safety Group of IGC and OSTIV has identified mid-air collisions as the dominating single hazard for severe accidents in international competition flying in spring 2023. In order to analyse the sensitivities of the related risks with respect to a large number of contributing factors, the Group recommended to analyse existing and future flight data using igc-files from competition flight-recording. OSTIV participants of the SDP plan to use and develop further an existing flight proximity analysis software for this purpose. TU Braunschweig has established close contacts to the software developers, John Wharington and Angel Casado, and to a number of practitioners in competition flying and competition organizing. The University has started a first student project work to perform practical work for such analysis. The strategy is to involve metadata from gliding competitions to build sound evidence on the effects of e.g. weather, task setting and other decisions of competition directors on probability of mid-air collisions.

Meanwhile another project of collecting statistical data on In-Flight Engine Start Procedures of motorized gliders has been initiated by the US Soaring Safety Foundation. We look forward to hearing more about these efforts to gain new insight into important safety hazards.

Please approach the Panel Chair Richard Carlson, rcarlson501@comcast.net , if you are interested to participate in future works of the **TSP**.

The **Meteorological Panel (MP)** had a hybrid meeting on 16-17 February 2024 at University of Kyrenia, Cyprus. Organized by Prof. Dr. Zafer Aslan, the meeting focused on presentations aimed at training newcomers in the field. In June 2024 Zafer retired from her duties as Panel Chair after more than 12 years of service to the OSTIV community. The Panel is now jointly chaired by Prof. Dr. John Bird, Texas University of El Paso, and Prof. em. Dr. Bruno Neininger, Zurich University of Applied Sciences. The initial goal of the Co-Chairs is to consolidate the future mission of the Panel. The Co-Chairs are planning a next MP Meeting this year on May 26/27, hosted at the Zurich University of Applied Sciences (ZHAW), by the Centre for Aviation. The reserved room will allow hybrid sessions. Previous stakeholders of the Panel as well as new interested people are invited to participate in the process of defining future work areas. Please connect to ostiv@zhaw.ch to indicate your interest to participate in the process.

3. OSTIV Congress in Uvalde, USA

The XXXVI Congress of the International Scientific and Technical Organisation for Gliding (OSTIV) took place from 19-23 August 2024 in Uvalde, Texas along with the 38th FAI World Gliding Championships 2024 (18m, 20m, Open, 14 August - 1 September 2024). The Congress was organized as a hybrid event. Meeting rooms were provided at the Campus of the Southwest Texas Junior College, which is located close to the airport. The Congress also offered an online means of Congress participation. After the long lasting COVID pandemic, OSTIV supported the participation of student researchers by partial re-imbursement of the cost of travel tickets.

The Congress was a great opportunity to present the OSTIV Awards of the year 2024. The OSTIV Prize was awarded to Patrick L. McLaughlin for his contribution to the safety of gliding by creating the Mountain High Equipment EDS pulse-demand oxygen system. The OSTIV Plaque and Klemperer Award was given to Dipl.-Ing. Gerhard Waibel for his lifetime achievements in sailplane design. Please visit OSTIV's website https://www.ostiv.org/ to read more about our Award Recipients.

The Congress featured 39 technical and scientific presentations which went along with intensive communications and exchange among the participants. Around 30 people were usually present at the Congress auditorium, while another 15-20 people attended online. Generally, Congress participants were impressed by the excellent quality of presentations. A special highlight was the public evening session on Tuesday, when Paulo Iscold and Jim Payne told the story of the first fly-by-wire sailplane, Nixus. Note, that the book of four-page Extended Abstracts can be downloaded from OSTIV's website.
A good number of the Congress presentations were held by students at Bachelor, Master, and PhD level. At the final Congress day, five Board members present at the Congress served as a Jury to select the best student contributions to the Congress. After careful evaluation the Jury decided to present Student Paper Awards:

Mertens Award, technical paper
Christopher Axton, Penn State University, “CFD Comparison of a Slotted, Natural-Laminar-Flow 18m Sailplane”
Anand Sudhi, TU Braunschweig, “Multi-Objective Optimization of a Dual-Mode Airfoil for Enhanced Performance in NLF and HLFC Operations”
McCready Award, scientific paper
Zihao Zhuo, McGill University, “Dynamics Models in Trajectory Optimization for Dynamic Soaring”
Segal Award, paper on training and safety
Joel D. Navaratman and Lester Pinlac, Toronto Metropolitan University, “Enhancing Student Glider Training Through Simulator Integration”
Till K. Lindner, TU Braunschweig, „Crashtest Results of a Sailplane at Full Scale”

I would like to close this report by thanking IGC delegates for their continuous interest and support. I will be present at the IGC-Plenary 2025 in Celje. I look forward to meeting with people interested in the work of OSTIV.

Rolf Radespiel