

# Technical Soaring



The Scientific, Technical and Operational Journal of  
the Organisation Scientifique et Technique Internationale du Vol à Voile  
(International Scientific and Technical Organization for Soaring)

Volume 44, Number 2

April — June 2020

## EDITOR-IN-CHIEF

Dr. Arne Seitz

## ASSOCIATE EDITORS

Prof. Dr. Zafer Aslan — *Turkey*

Chair, Scientific Section and Chair, Meteorological Panel

Prof. Dr. Mark Maughmer — *USA*

Chair, Technical Section

Dipl. Ing. Michael Greiner — *Germany*

Chair, Sailplane Development Panel

Richard Carlson — *USA*

Chair, Training and Safety Panel

Prof. Dr. Goetz Bramesfeld — *Canada*

Dr. Kurt Sermeus — *Canada*

## OSTIV PRESIDENT

Prof. Dr. Rolf Radespiel

*Germany*

## OSTIV VICE PRESIDENT

Prof. Dr. Mark Maughmer

*USA*

## MEMBERS OF THE OSTIV BOARD

Prof. Dr. Zafer Aslan — *Turkey*

Prof. Dr. Goetz Bramesfeld — *Canada*

Dipl. Ing. Michael Greiner — *Germany*

Dr. Judah Milgram — *USA*

Richard Carlson — *USA*

Dr. Ing. Lukáš Popelka — *Czech Republic*

Dipl.-Ing. Gerhard Robertson — *Australia*

## Journal Online Manager and Archivist

Dr. Kurt Sermeus

## Copy editing/Layout

Dr. Arne Seitz

© 2020 Organisation Scientifique et Technique Internationale  
du Vol à Voile  
All rights reserved  
ISSN 0744-8996

From the Editor ..... 14

## Aerodynamic Design of a Morphing Wing Sailplane

Johannes Achleitner, Kai Rohde-Brandenburger, Paul Rogalla von  
Bieberstein, Fabian Sturm, and Mirko Hornung ..... 15

*Technical Soaring (TS)* documents recent advances in the science, technology and operations of motorless aviation.

*TS* is published quarterly by the Organisation Scientifique et Technique Internationale du Vol à Voile (International Scientific and Technical Organization for Soaring, OSTIV), c/o TU Braunschweig, Institute of Fluid Mechanics, Hermann-Blenk Str. 37, D-38108 Braunschweig, Germany. E-mail: [president@ostiv.org](mailto:president@ostiv.org); URL: [www.ostiv.org](http://www.ostiv.org).

Subscription is restricted to OSTIV members but material can be submitted by anyone. Annual dues are €25 for Individual/Local Club Membership; €80 for Scientific/Technical Organization/Library Membership and €250 for Active Members (National Aero Club Members of FAI). Students under 25 years of age may join free of charge.

Submitted research papers will be peer-reviewed. Guidelines for preparation and submission of manuscripts can be found in this issue and on the OSTIV website in the 'editor' section.

*TS* is online (full-color) at [journals.sfu.ca/ts/](http://journals.sfu.ca/ts/). Back issues, from Vol. 1, No. 1 to the current issue are online. OSTIV members have complete access to *TS* online; non-members may access titles and abstracts. Members should contact the webmaster, [Jannes.Neumann@t-online.de](mailto:Jannes.Neumann@t-online.de), for access.

The name Technical Soaring and its cover layout are fully rights-protected and belong to the Soaring Society of America; they are used by permission.

## Open Access Policy

**Reader Rights.** For the first twelve months following publication, only OSTIV members may download material. After twelve months, free download to all.

**Reuse Rights.** No reuse for the first twelve months, after which material may be reused in other works only with permission of the authors of the article.

**Copyrights** Authors retain copyright to the basic material. OSTIV retains copyright to the published version. Works that are inherently in the public domain will be noted as such on their title pages.

**Author posting rights** Authors may not post copies of their articles on websites until twelve months after publication, except for posting on a ResearchGate account owned by the author. After twelve months, author may distribute freely by any means and post to third-party repositories. Authors may distribute individual copies of their articles at any time.

**Archiving.** Authors may archive their own papers on the web and in Open-Access archives as follows. The version of the paper as first submitted to *Technical Soaring* may be archived at any time. (This will not disqualify the manuscript from publication in *TS*.) The version as published may be archived in Open-Access archives starting twelve months following publication. OSTIV may archive papers as published at any time.

**Machine Readability** After twelve months, article full text, metadata, and citations may be crawled or accessed without special permission or registration.