A SPECIAL NOTE TO READERS OF TECHNICAL SOARING

Bruce Carmichael's *Personal Aircraft Drag Reduction*

Technical Soaring readers may find it interesting to read Bruce Carmichael's newly revised printing of *Personal Aircraft Drag Reduction*. This technical publication is very readable and represents a chronological history of experimental verification of theoretical predicted drag reductions on aircraft having extensive laminar flow. Bruce Carmichael is a world wide recognized aerodynamicist who has worked on many aircraft developments. The following is a brief review of the publication.

Bruce Carmichael spent a long and productive career working in aerospace searching for the understanding and means to reducing drag for aircraft and hydrodynamic bodies. Upon his retirement, Bruce set out to document not only his knowledge on the subject but the recent history and state of the art for homebuilt aircraft. *Personal Aircraft Drag Reduction* is an important compilation of Bruce's vast experience and that of other experts in the field of drag reduction and laminar flow.

The book uses a number of remarkable already existing aircraft taking advantage of at least partial laminar flow to lead the reader through detailed aerodynanmic theory, and data that follows. Minimum drag levels, maximum lift values, maximum lift/drag ratios, and minimum power factors obtained in low turbulence wind tunnels are presented. The focus of the book is for the low speed flight regime from Reynolds number of 40,000 (model aircraft) to over 40 million (representating large transport aircraft). Obviously there is an emphasis in the book on soaring and sailplane aerodynamics.

This book is limited to aerodynamic considerations, principally in the field of drag reduction. A very useful and extensive bibliography is an added bonus with this book. Other outstanding books and authors in this field are listed.

This soft-bound book (English text) comprises 207 pages with 195 illustrations, and 239 references. It may be ordered from Bruce Carmichael, 34795 Camino Capistrano, Capistrano Beach, California 92624 USA. The cost including postage is $25 in the U.S., $28 in Canada, $33 in Europe, $30 in South America and $35 elsewhere.