

OSTIV Plaque 1974 with Klemperer Award

The President of OSTIV, Mr. L. A. de Lange, presented at the Opening Ceremony of the XIVth OSTIV Congress in Waikerie, Australia, on January 21, 1974, the OSTIV Plaque with Klemperer Award to Dr. Wim Toutenhoofd, in appreciation of his noteworthy scientific contribution to soaring flight.



Biography and achievements of Dr. Wim Toutenhoofd

Born on 15 January 1935 in The Hague, The Netherlands, Wim Toutenhoofd graduated from the University of Leiden in 1960 with the «Doctorandus» degree in physics, and from the University of Melbourne in 1968 with the Doctor's degree on the thesis «Resonances in Nuclear Reactions».

He removed to Boulder, Colorado, U.S.A., in 1968, where Dr. Toutenhoofd took up office as Senior Scientist at the National Center for Atmospheric Research, sharing in the «Cloud Physics Program».

As a young boy, sixteen years of age, he started soaring with the «Zuidhollandse Vliegclub», getting his «Gold C»-badge in 1955, and the three Diamonds to it in 1957. Twice he was Dutch National Soaring Champion (in 1956 and in 1957), and represented The Netherlands three times in the World Gliding Championships (St-Yan 1956, Leszno 1958 and Cologne 1960).

Combining his experience as soaring pilot with his theoretical and practical knowledge as a physicist, Dr. Toutenhoofd has pioneered the use of a sailplane for scientific cloud physics research. This research into the physical processes of clouds and the accompanying air motion requires the special talents of an extremely expert soaring pilot with the

knowledge of the meteorological scientist. The effort requires a high ability to work with sophisticated electronic flight and scientific gear. Most importantly of all is the special ability required of the combination of scientific and flight skills in planning and supervising the research flights, and in carrying out the supervision and analysis of the unique data obtained in this way.

The results of Dr. Toutenhoofd's work have been a breakthrough in the scientific ability to obtain high resolution fast response data on the physics of clouds. One aspect of Dr. Toutenhoofd's work is concentrated on flights through the base and in the updraft of developing cumulus clouds. The basic procedures used by him of the motion of the sailplane in sensing and recording the vertical speed of the air, simultaneously obtaining microphysical data on cloud particles, had been suggested earlier and exploited to some extent with small powered aircraft by another internationally famous soaring pilot, Dr. Paul MacCready. The sailplane flown by Wim Toutenhoofd allows this to become a reality through the new lightweight low power solid state electronics of the space age. Nevertheless, the flights made by Dr. Toutenhoofd require originality, initiative, drive and a great deal of courage.

Imagine climbing in the updraft of developing cumulus clouds in the close proximity to the towering thunderstorms that develop over the plains of northeastern Colorado or imagine flying routinely to above nine or ten kilometers in the mountain wave clouds, on the way passing through the violent turbulence of the rotor, and – upon completion of up to nine hours of flight – to be confronted with the possibility of violently gusty surface winds that frequently accompany this situation. The pioneering efforts of Dr. Toutenhoofd open up a great new era of scientific soaring for research into the physical processes of clouds and their relationship to the motion of the air. What was a pioneering achievement a few years ago, namely to fly in the mountain waves of the Rocky Mountains, has now in Toutenhoofd's hands, due to his courage, dedication and physical toughness, become almost a routine mission for the sake of scientific data collection.

Dr. Wim Toutenhoofd has brought into full view the value of the sailplane as an excellent scientific sensor of cloud properties – be it at 1000 meters or at 13 000 meters altitude. Consequently, he is a pioneer on the scientific frontier of soaring.