GENERAL SECRETARY'S REVIEW

on the activities of the

INTERNATIONAL COMMITTEE ON AERONAUTICAL FATIGUE (ICAF)

during the period May 2007 to May 2009

30th ICAF MEETING IN NAPLES, ITALY

The 30th ICAF meeting was held in Naples, Italy, and was organized by Profs Attilio Salvetti and Luigi Lazzeri, the former and current Italian National Delegates, respectively. The meeting started with the two day 30th ICAF Conference (May 14-15) followed by the 24th ICAF Symposium (May 16-18).

The Conference began with the General Secretary's Review followed by the presentation of the 13 National Reviews and an invited Review from Poland. During the National Delegate's Business Meeting, Poland was selected new member of ICAF. All presented National Reviews were compiled in the Minutes of the Conference, issued by the University of Pisa, as ICAF Document 2416. The ICAF Symposium Proceedings, ICAF Document 2417, were printed in two hard cover volumes and were distributed to all conference attendees together with a CD containing the Conference Minutes.

The Symposium opened, as has become tradition ever since 1967, with the invited Plantema Memorial Lecture in memory of the founding father of ICAF, Dr. Frederick J. Plantema. This lecture with the title "A Review of Philosophies, Processes, Methods and Approaches that Protect In-Service Aircraft from the Scourge of Fatigue Failures" was presented by Joseph P. Gallagher from Wright Patterson Air Force Base, Ohio, USA. He described the USAF aircraft structural integrity program (ASIP) and the key processes for controlling the risks associated with external threats and evolving damage. Although, after the introduction of ASIP, the relatively limited number of structural accidents that has occurred has demonstrated the ASIP effectiveness, there remain significant challenges for protecting the structural safety of aging aircraft fleets. To handle such issues, the USAF has instituted an ASIP focus that utilizes risk-driven decision making. This focus was institutionalized as a key element of the updated ASIP Standard (MIL-STD-1530C). The risk-driven approach provides an improved framework for addressing and controlling risks resulting from the growing crack populations (at multiple locations) associated with aging. The growing crack (more generally damage) population significantly contributes to the risks of structural failure. And as part of its overall risk-driven method, the USAF now requires that aging-related damage information be collected, stored, and used to assess structural health and the risks of failure. To be effective, the ASIP must define and mitigate these aging aircraft related risks. At the conclusion of his lecture, Dr. Gallagher was presented with the Plantema Memorial Lecture Medal.

The 24th ICAF Symposium consisted of 34 presented papers plus an additional 45 papers in poster format. All papers are published in the Proceedings of the Symposium entitled "Durability and Damage Tolerance of Aircraft Structures: Metals vs Composites", edited by Profs Luigi Lazzeri and Attilio Salvetti, the current and former Italian National Delegates, respectively. The Proceedings were printed in two volumes by Pacini editore.

The 30th ICAF meeting was a great success in terms of the quality of the technical presentations. Also enjoyed were a number of noteworthy social events, including a marvellous conference dinner held inside an old castle, situated on a hill with splendid views of Naples and its gorgeous surroundings. The organizers also lived up to the high standards of previous meetings in terms of all the details that make for a great meeting.

ICAF STATUS

The International Committee on Aeronautical Fatigue (ICAF) is an informal organization that deals with all aspects of aircraft fatigue related problems as the common basis for its activities. The committee consists of one General Secretary and a number (currently 14) of National Delegates, each representing a member country.

The objectives of ICAF are:

- to stimulate personal contacts between persons actively engaged in aircraft fatigue problems, and
- to exchange information, experience, opinions and ideas concerning aircraft fatigue problems.

These objectives are pursued by regular meetings and by exchange of ICAF documents (technical reports, publications and other documents) before those get available by other means.

SOME REFLECTIONS

Although many aeronautical research centres are currently having their funds reduced and many countries prioritize research in new and trendier areas, there is no doubt that aeronautical fatigue maintains its status as a challenging technical topic involving research and development in a multitude of disciplines involving e.g. mathematics, physics, statistics, loads, solid mechanics, finite elements, fracture mechanics, materials science, manufacturing techniques, NDI, maintenance procedures etc. Apart from basic understanding of underlying principles, the challenges for the fatigue engineer working on real aircraft applications is the need to put knowledge of all the above topics into a systematic and verifiable procedure that can be used to guarantee the structural safety and durability over the entire design life of the aircraft. With the development of new materials, new aircraft concepts, new manufacturing techniques and with the continued aim at reducing noise and emission, whilst maintaining risk levels at acceptably low levels, all at a competitive price, aeronautical fatigue issues will always exist. Hence, the need and motivation for ICAF feels as relevant today as it did in 1951, the year when ICAF was founded.

During the last two years a few changes have been made amongst the national delegates. I would like to welcome Dr. Antoni Niepokólczycki, Poland, Prof. Luigi Lazzeri, Italy, Dr. Thierry Ansart, France, and Prof. Nobuo Takeda, Japan welcome into ICAF as new delegates for their respective countries. At the same time I would like to thank their predecessors, Prof. Attilio Salvetti, Jean Rouchon, and Dr. Hiroyuki Terada, for all their valuable contributions to ICAF over the years.

Anders F. Blom
General Secretary of ICAF