**FAI- CIACA**

Commission Internationale des Aeronefs de Construction Amateur

Experimental and Amateur Built Commission

110th General Conference
Bali - Indonesia

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**Mayor Contents**

- CIACA Worldwide
- Experimental vs. >100 NAC’s
- New Technologies and new Power Sources
- FAI CIACA Records, Competitions and SC’s
- Awards of CIACA
- Youth educational programmes

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**NAC,s >100 vs. CIACA <30**

- Australia
- Austria
- Belgium
- Brazil
- Canada
- Chile
- China
- Costa Rica
- Cyprus
- Denmark
- Germany
- Finland
- France
- Guatemala
- Hong Kong
- India
- Ireland
- Israel
- Italy
- Japan
- New Zealand
- Netherlands
- Norway
- Mexico
- Poland
- Portugal
- Russia
- Sweden
- Switzerland
- Singapore
- Slovakia
- Spain
- South Africa
- South Korea
- Czech Rep.
- Hungary
- U.K.
- USA

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**New Technologies and new Power Sources**

- Human powered take-off/Hang Glider
- Electric Experimental Aircraft
- Solar - Powerline
  - New Batteries
  - Hydrogene (HY4)

- X - Competitions and Records
  - > Ecology

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**Human Powered New Materials**

- Many records are achieved every year

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**Solar Impulse sc13 –World Surround**

Rule by CIACA – Observers

The mission is completed and we are looking for new projects. Congratulations to Bertrand Piccard and André Borschberg!
Electric - Advantages:
- high efficiency factor of 95%
- light weight (20-30 kg)
- low emissions (noise, CO2, NOx etc.)
- low vibrations
- no power loss with increasing altitude
- longer maintenance intervals

Old Engines with Carburants:
- low efficiency factor of ~35%
- heavy weight
- high vibrations
- high noise level

Electric Experimental Aerobatic Aircraft #1
Silence Aircraft Twister
First electric Aircraft performing aerobatics in Europe
Weight engine: 13kg
Weight cell: 140kg
Weight batteries: 160kg
Never exceed speed: 300km/h
Many Records attempts - Competitions following as well

Evolaris – Votec
Aerobatic Experimental Aircraft
technical data:
- wing span: 6.30m
- length: 6.00m
- wing area: 7.32m²
- empty weight: 440kg
- MTOW: 680kg
- roll rate: about 440°/sec
- g-load: +/-10g
- power: 147-162kW/200-220PS
- Stall speed: 65mph
- Speed up to: 270mph

Solar Stratos - Solar Cells

HY4 - Hydrogene
- Endlich flügge geworden! Mit der HY4 des Deutschen Zentrums für Luft- und Raumfahrt (DLR) entstehen keinerlei Abgaspartikel und kein CO2, wenn die HY4 fliegt.
Awards and Competitions of CIACA

- Competitions at the Fly-Ins all over the World!
- New Technologies used
- Best built Aircraft + others
- Phoenix + Henri Mignet Diplomas

GPS based Precision Flights

- Virtual parcour
- GPS based Precision Flight and Landing competition
  Raron FlyIn May 2016
  Langenthal August 2016

Phoenix Diploma

- 1 nomination: Philip Cozens – Royal Aero Club (UK)
- Philip Cozens bought the parts of a 1930’s Pobjoy radial engine in a flea market and, as so often happens, then found a second one which he also bought, hoping to make one good engine from the parts of the two. He had always been interested in the little Comper Swift aircraft, which had been powered by a Pobjoy, and as soon as he was confident that he could build a viable engine he started to build a Swift for it. As he didn’t have a complete set of plans, and those that he did have were difficult to decipher, this was a monumental undertaking. It eventually took 15 years to complete the airframe but in December of last year it took to the air. The phoenix diploma has been devoted to Philip Cozens unanimously.

Phoenix Group Diploma

- 1 nomination: David & Rick Bremner and Theo Willford Royal Aero Club (UK)
- 1264 is built exactly as the original, with spliced cable ends, linen covering and riveted and soldered tanks. It is complete with all the various modifications made by the factory, the RNAS, and their grandfather. The original Union flag markings on the fuselage side were overpainted with roundels and they have even replicated that.
- In 1916 Bunnie Bremner, a pilot with the RNAS, was invalided home from no. 2 Wing in the Eastern Mediterranean with dysentery and malaria. He brought back with him the stick, rudder bar and magneto of his favourite aircraft, Bristol Scout Type C, serial no. 1264. In 2002 his grandsons, David and Rick Bremner, together with Theo Willford, started research into rebuilding 1264 using those three parts exactly as their grandfather flew it 99 years before. Construction started in 2008, and it flew for the first time on 9 July, 2015 in the hands of Gene DeMarco, the most experienced pilot of WWI aircraft in history.
- Powered by an 80hp le Rhône engine, exactly like the original, it is the only airworthy Bristol Scout in the world, and the only rotary-engined aircraft in the UK being operated by private individuals.
- For this effort and superb result achieved David Bremner, Rick Bremner and Willford have been nominated for the FAI Phoenix Group Diploma and accepted by FAI CIACA.

Building Competitions

Gyrocopters are, similar to helicopters, a very attractive Aircraft

This Magni-Copter has been built within 4 days at the World Air Games 2015 in Dubai

9. Ciaca Educational and Social Initiatives

- Children building Aircraft at:
  - World Air Games, Dubai
  - On many national Experimental Meetings

In: Mai 2016
AGM 41th Meeting FAI / CIACA
Date and place of next Annual General Meeting

∞FAI CIACA 42th AGM is planned for AERO 2017 Friedrichshafen

Experimental Volumes

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<th>Experimental Aircraft</th>
<th>Cost</th>
<th>35% = Hardware</th>
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<td>$ / unit</td>
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