



*Fédération
Aéronautique
Internationale*

Minutes

of the
Annual Meeting
of the
**FAI Astronautic Records Commission
(ICARE)**

held in Lausanne, Switzerland,
on Friday 17 April 2015
at Maison du Sport International

*Maison du Sport International
Av. de Rhodanie 54
CH-1007 Lausanne
Switzerland
Tél. +41 (0)21 345 10 70
Fax +41 (0)21 345 10 77
E-mail: info@fai.org
Web: www.fai.org*

Ver. 2.0 / 27.03.2017

Changes approved by ICARE 2016 Plenary Meeting are highlighted in yellow

Contents

1	Welcome by the President	3
2	Roll Call	3
3	Conflicts of Interest.....	3
4	Approval of the minutes of the last meeting (25 th April 2014) and matters arising	3
5	FAI General Conference, Meetings and Activities	3
6	Astronautics Activities and Projects	4
7	FAI Sporting Code.....	6
8	New Astronautical records	6
9	Proposals for FAI Awards	6
10	International Astronautical Federation (IAF)	6
11	Present world records – report.....	6
12	Any Other Business.....	7
13	Elections.....	7
14	Date and place of next ICARE meeting.	7

1 Welcome by the President

The President welcomed delegates and a roll call was taken.

2 Roll Call

In attendance were the following delegates

Spain	Dr Sanz Fernandez de Cordoba Segismundo (ICARE President)
UK	Anu Ojha (ICARE Vice-President)
Sweden	Henrik Akerstedt

Also in attendance were

Mr Nicholas Berend	(France - Technical Expert to ICARE)
Mr Visa-Matti Leinikki	(FAI IT Manager)
Dr John Miles	(Former UK delegate and former Commission Vice-President)

3 Conflicts of Interest

No conflicts of interest were declared

4 Approval of the minutes of the last meeting (25th April 2014) and matters arising

Representation from the United States – it has been recognised that a US representative (to be proposed by the National Aeronautics Association) from NASA would be of significant value to the Commission. It was suggested that approaches could be made to ex-NASA astronauts and Mr Ojha will work with FAI to further progress this issue.

An approach has been made to the China National Space Administration (CNSA) for nomination of a China delegate to the Commission. Mr Ojha will work with FAI to further progress this issue.

5 FAI General Conference, Meetings and Activities

Mr Leinikki presented an overview of FAI activities and developments including:

- Mr Eric Bertin is leading the FAI organisation of the 2015 FAI World Air Games to be held in Dubai.
- FAI core staffing has remained consistent with last year but with the addition of an intern for the 2015 calendar year.
- FAI's strategic goals include strengthening of organisational relationships, promotion of airports/other FAI-related activities and service to the airports/other communities represented through the Commissions of FAI.
- There is now an enhanced focus on the visibility/profile of airports/FAI-related activities. Historically, promotion of airports/other related activities has been left to the Commissions. Promotion will now be driven by the FAI Head Office. New methodologies will be developed to grow general levels of interest especially for high-profile events such as the 2015 FAI World Air Games in Dubai.
- FAI will now recognise a new category of "Exceptional Airports Performance". These will be focused on areas for which the existing records parameters would normally preclude FAI recognition. An example is the recent new "speed flying" (paragliding+ski-ing) speed attained earlier this year for which an FAI observer was present to document.
- International relations have been maintained and strengthened.
- The 2014 General Conference in Pattaya was a successful meeting. The Executive Board of FAI has three new members. FAI statistics include the following: 86 active members, 11 associate members, 6 temporary members and 7 affiliate members.
- Flagship events for 2015 are also known as "Breitling" events. There will be a new airports electronic portal on the website to highlight these events.

- The vision for the 2015 FAI World Air Games, to be held in Dubai in December 2015 as an FAI-sanctioned event, was discussed. This is a high-publicity, high-profile event that will significantly boost the profile of FAI and the 9 airports currently confirmed for the event.

Questions were asked about the new FAI marketing approach. More material benefits are beginning to be yielded but it will take more time for this to translate into sustained greater revenue streams for the organisation.

6 Astronautics Activities and Projects

Progress reports by FAI and Delegate reports from member countries

6.1 France

ISS activities (not just France-specific) included the launch of ATV-5 with 6.6 tonnes of cargo on board on 29th July with a rendezvous with the ISS on 12th August. The vehicle was subsequently de-orbited with an atmospheric destructive re-entry on 15th February 2015. This re-entry included an experiment to relay thermal internal and other parameters during the re-entry which was successful but video footage from the interior of ATV-5 during re-entry was unfortunately not downloaded successfully.

French ESA astronaut Thomas Pesquet will be launched in December 2016 for a six-month increment on the ISS.

ESA's IXV re-entry demonstrator (a programme led by the Italian space agency ASI) was launched on a Vega rocket and reached an apogee of 4012km. The re-entry was successful and the vehicle is now the subject of intensive post-flight analysis.

At the recent ESA Ministerial the decision was taken to develop the new Ariane 6 launch vehicle. This will come in two variants – the 6.2 version (with two solid rocket boosters) will be capable of sending 4.5 tonnes to GTO (Geostationary Transfer Orbit) whilst the 6.4 version (with four solid rocket boosters) will be able to take two separate payloads to GTO with a total payload mass to this orbit of 10.5 tonnes. The programme target is to reduce launch costs to figures of E 70 million per launch for the 6.2 version and E115 million per launch for the 6.4 version.

6.2 Sweden

SSC is focusing on the development of microelectromechanical engines (microthrusters) which will be tested soon.

The ESRANGE launch facility is being proposed for suborbital launches provided by commercial space tourism companies. A suborbital training facility for potential commercial passengers on such vehicles is being developed at Kiruna.

The Association of Space Explorers (ASE) held a conference in September 2014 in Stockholm with many international astronauts participating. The outreach programme for this event was run by the Swedish National Space Board and further outreach programmes focused on student cosmic ray experiments using high-altitude stratospheric balloon platforms are being planned. The Swedish delegate will have a significant role in managing this programme.

Copenhagen Suborbitals – a privately-funded amateur group developing capsule and propulsion demonstrator technologies focused in reaching the Karman line (100km) with a human passenger on board conducted further tests of their launch vehicles during 2014. A static test of a 45kN engine led to failure due to failure of the liquid oxygen line which provided cooling for the combustion chamber bell. The group has had success with several rocket flights to 10km altitude but the group has currently fractured into three separate groups under new management. One of these is continuing with capsule parachute tests and is testing a new 5kN engine design. A 100kN engine is currently under development.

6.3 Spain

The financial situation with regards to Government funding of space-related activities is still restricted as a result of the current economic climate. Spain is participating in ESA's mandatory programmes only with no other optional programmatic involvement.

6.4 United Kingdom

ESA's new international centre for space applications and telecommunications – ECSAT – has been established at Harwell in the UK. Full opening of the new building – named after Roy Gibson, the first

Director-General of ESA, is scheduled for July 2015. There are planned to be 200 staff working at this centre by the end of 2015.

UK government has drawn up a shortlist of 6 potential sites for UK spaceports. These would be focused on being potential launch sites for suborbital spaceplane programmes such as Virgin Galactic's Space Ship 2/ launcher One and XCOR's Lynx spaceplane. The focus thus far has been on creation of the necessary legal framework for aerospace/spaceplane activities and defining how these fit within current Civil Aviation frameworks. Although "space tourism" is raising the profile of these projects it is recognised that the business case will be much more dependent on the use of such platforms as first stage vehicles for small satellite/microsatellite launch systems such as Orbital Sciences' Pegasus system.

UK space sector growth is a key priority for the UK government. Current UK space sector statistics include:

- Annual turnover in excess of £11bn in 2013-14 (> 85% in the downstream or applications sector – mainly broadcasting and telecommunications derived)
- Current workforce in excess of 35 000 people (27000 downstream, 8000 upstream i.e manufacture of space systems)
- A combined Government-Industry plan has been drawn to target growth by 2030 to a total value of £40 billion per annum, i.e. 10% of the projected global market)
- Skills development programmes will be a key factor as thousands more entrants will be needed into the UK space sector to grow it in this manner.

British ESA astronaut Tim Peake will launch in November 2015 as part of Expedition 46/47 to the International Space Station for a five-month increment. His mission will be used by the UK space Agency to promote science/mathematics education as well as to raise the overall profile of the UK space sector.

6.5 Proposal on ratification of FAI-recognised categories for "astronaut" and "stratonaut" status

The position paper written by the UK delegate was discussed in length and the following decisions were made after unanimous agreement from all delegates:

FAI "astronaut" exceptional performance diploma and badge/"wings"

- The Commission agreed that a significant opportunity exists for FAI to formally award recognition to those individuals who, through participation in Governmental or private orbital or suborbital programmes, exceed the Karman line altitude of 100km (328 000ft).
- This recognition would be in the form of a Diploma, the framework for which would be added to the existing Section 8 of the Sporting Code under a new section named "Exceptional Performance Diplomas – Astronautics" or similar.
- A full set of rules would be devised for this diploma to be awarded.
- The awards would be proposed by ICARE but awarded by FAI.
- An annual ceremony could be held to award these at the annual General Conference or at another high-profile event.
- It was agreed that Mr Ojha will work with FAI's Marketing Director (Mr Hagganey) to develop a full framework for presentation to the FAI Executive Board. This will be targeted for a July/August 2015 timescale.

FAI "stratonaut" exceptional performance diploma/award

- A significant opportunity exists to recognise those individuals who, through aircraft, balloon, aerospacecraft and other vehicular flights, attain altitudes within the stratosphere that necessitate the use of pressure suit systems – i.e. altitudes in excess of the Armstrong line (19 km, or 63 000 ft).
- It is proposed that FAI develops a framework to recognise these achievements through the award of an Exceptional Performance Diploma ("stratonaut" status) in Human Stratospheric Flight.
- A similar Exceptional Performance in Stratospheric flight Diploma could be awarded to those groups from the ballooning/aeromodelling community which successfully conduct unmanned flights which exceed this altitude.

- Such a Diploma would be awarded by FAI and not ICARE. It was recognised that such flights would fall into areas normally covered by other FAI Commissions. This would not be included in Section 8 of the Sporting Code but may be covered in the FAI bye-laws section.
- A full framework for awards criteria would need to be developed by the FAI.
- It was agreed that Mr Ojha will develop these proposals to a full programme with Mr Haggeneby for presentation to the FAI Executive Board as well as FAI Commission Presidents.

7 FAI Sporting Code

No changes were proposed

8 New Astronautical records

No new records have been submitted in 2014-15.

9 Proposals for FAI Awards

One proposal was received for the FAI's Y.A. Gagarin Gold Medal. Unfortunately the candidate proposed had not completed a spaceflight during the preceding twelve months (a key criterion for receiving this award).

It was agreed that Mr Ojha will contact the proposer to explain the situation and to discuss other categories for which the candidate could be eligible for submission in 2015-16.

A general discussion on the lack of candidates being proposed by NACs then followed. It was agreed that ICARE must take a much more proactive approach in this area.

Mr Ojha agreed to develop an annual letter to be sent to all NACs highlighting the various awards, their relevant criteria and inviting NACs to make specific nominations.

10 International Astronautical Federation (IAF)

The IAF 2014 Congress in Toronto attracted over 3000 delegates in a week-long series of discussions, seminars and plenaries focused on satellites, launchers etc This event is distinct from CESPAC which focuses on the science outcomes of planetary and Earth Observation space missions. M. Berend (ICARE technical delegate) attended as the nominated FAI delegate to the IAF.

It was agreed that the FAI Secretary-General should explicitly highlight to the IAF senior leadership that the FAI nominated delegate to IAF should be recognised as a full member of the IAF Congress as agreed between FAI and IAF. In 2014 there was a lack of recognition from IAF due to ineffective lines of communication.

M. Berend was proposed by ICARE and accepted the nomination to be the FAI representative to attend the 2015 IAF Congress to be held in Jerusalem in October.

11 Present world records – report

M. Berend presented an analysis of cumulative human spaceflight times.

It was noted that during 2015, Russian astronaut Gennady Padalka (currently aboard the ISS) may, upon return to Earth, exceed Sergei Krikalev's record for cumulative time in space. This will be by a comfortable margin if his mission ends when planned in September 2015. If this is the case, a new record will be submitted next year.

A subsequent discussion highlighted that the usual condition for ratification of a new spaceflight record is an excess of 5% over the previous record. It was agreed that ICARE should consider at the 2016 meeting a formal proposal to change this excess figure for human duration spaceflight records to a reduced value.

12 Any Other Business

It was highlighted that the current ICARE badge includes a space shuttle visualisation that is now obsolete following the end of the US Space Shuttle programme in 2011. It was noted that the Soviet shuttle "Buran" flew only one mission (unmanned) in 1989 and that the US Department of Defense X-37B unmanned spaceplane (still operational) bears no resemblance whatsoever to the current badge design.

It was agreed that ICARE should work with FAI to propose a new badge design to the Executive Board. This could be through a competition organised by the Education Expert Group or by other means.

13 Elections

Nominations for President

The current President (Dr Cordoba) was nominated for President. He refused.

Mr Ojha (UK) was nominated as President. A vote was held and the decision to appoint him was unanimous.

Dr Cordoba will continue as ICARE delegate for Spain.

Nominations for Vice-President

Having been elected as President, Mr Ojha relinquished the post of Vice-President of ICARE. ***Mr Akersdedt (Sweden) was proposed as Vice-President. A vote was held and the decision to appoint him was unanimous.***

Nominations for President of Honour

Dr Cordoba was nominated as President of Honour. A vote was held and the decision to appoint him was unanimous.

14 Date and place of next ICARE meeting.

The next meeting will be held on Friday 8th April 2016. It will either be in Lausanne or at the new ESA centre (ECSAT) in the United Kingdom.

Minutes recorded by Anu Ojha, UK delegate and President (2015-16), ICARE.