FEDERATION AERONAUTIQUE INTERNATIONALE
FAI ASTRONAUTIC RECORDS COMMISSION (ICARE)

MINUTES OF A MEETING HELD AT THE FAI HEADQUARTERS
24 AVENUE MON REPOS, 1005 LAUSANNE, SWITZERLAND
ON FRIDAY 29 APRIL 2005, STARTING AT 09h00

MINUTES

Present:

M. Segismundo SANZ FERNANDEZ de CORDOBA	President
Mr. Mike COLLINS	USA
M. Christian MARCHAL	France
Mr. Ulf MERBOLD	Germany
Mr. John F MILES	United Kingdom
Mr Yuri TARASOV	Russia

In attendance :

Mr Max Bishop	FAI Secretary General

1 WELCOME BY THE PRESIDENT

M. Segismundo SANZ FERNANDEZ de CORDOBA welcomed all those attending, and especially the new delegates from Germany and Russia.

2 APPROVAL OF THE MINUTES OF THE LAST MEETING (30 April 2004)

The minutes of the previous meeting were approved, subject to the following correction:

"Para 6(a) "Yuri Gagarin Gold Medal : STS 104 crew (posthumous) " should read:

"Yuri Gagarin Gold Medal : STS **107** crew (posthumous)"

The following matters arose from those Minutes:

- NASA had decided to write no letter in connection with the question of anti-doping controls.
- Delegates gave unanimous formal confirmation to the decision taken after the 2004 ICARE meeting to award the FAI Gold Space Medal to Dr. Sally Ride.

In response to a request, the FAI Secretary General agreed to include the names of FAI Executive Board Members in the ICARE Minutes. These are:

FAI President

-Pierre PORTMANN

Executive Directors :

- Alvaro de ORLEANS-BORBON (ESP)
- Robert CLIPSHAM (CAN)
- Bengt-Eric FONSELL (SWE)
- Hideo HIRASAWA (JAP)
- Bruce J. WORTH (USA)

3. GENERAL CONFERENCE

The ICARE President presented his report to the Madrid FAI General Conference, October 2004 (**Annex 1**).

The FAI Secretary General reported on plans for the FAI Centenary celebrations (http://www.fai.org/centenary/).

4. ASTRONAUTICS ACTIVITIES AND PROJECTS

a. Progress report by FAI and Delegates from Member countries.

France: M. Marchal reported that evidence had been found for water under the surface of Mars.

UK: Mr Miles reported that the Bristol spaceplane project was now dormant, but "Starchaser" still active, with an eye to space tourism.

USA: Mr Collins reported that all NASA's attention was focused on the Shuttle's return to flight. Phase-out of the Shuttle was scheduled for 2010, whereas the ISS was due to be operational until 2016-2020. The "Crew Exploration Vehicle" entry-into-service date was therefore likely to be advanced as close as possible to 2010. In future it would not be possible to man the ISS with more than 3 crew.

Germany: Mr Merbold reported on activity at the European Astronaut Training Centre in Germany. ESA astronaut Roberto Vittori had returned to earth, and Thomas Reiter would be the next to fly, the first ESA astronaut on a long-duration flight (6 months). The ISS was becoming hard to sustain, but was a great asset for science, especially as regards such matters as in-flight maintenance training for Mars, crew motivation for long-duration flights, and closed-loop systems for water re-cycling. ESA's Micro-Ecological Life Support System Alternative (MELiSSA) project, intended as a tool for understanding the behaviour of artificical ecosystems needed for the construction of a lunar or Mars observatory aims to develop self-sustaining, renewable life support systems based on plants and micro-organisms.

Russia: Mr Tarasov distributed extremely informative brochures to all delegates giving details of the activities in the Russian space industry.

Spain: The ICARE President reported that Spain was supporting the French and German space programmes. The ISS story had shown how nations can accomplish things together that were impossible if each nation acts alone.

b. X Prize Project. The ICARE President reported on his visit to the SpaceshipOne Launch. There had been great urgency to fly before January 2005, since the money pledged by an insurance company ceased to be available then. Speeches had been made at the launch by Richard Branson

(Virgin Galactic), the Ansari Chairman, the FAA Administrator, and the ICARE President. A contract had been signed with Branson to supply 6 vehicles capable of transporting 6 people for space tourism.

5. FAI SPORTING CODE SECTION 8 (ASTRONAUTICS).

No proposals for changes to the Sporting Code Section 8 had been received.

Clarification was sought on the following rules:

a) Flights not starting from ground

It was agreed that the start of an astronautic flight performance could be the moment of release or launch from a mother-ship, which itself was incapable of flight above 100 km.

b) Separation of aero and astro flights

The ICARE President was of the view that any flight that crossed the 100 km boundary could only be an astronautic record, not an airplane. He therefore called into question the ratification of the first flight of SpaceshipOne as a world airplane altitude record (breaking the previous X-15 rocket-plane record). He agreed to speak to the GAC President on this subject.

c) Reusable vehicles

It was pointed out that this was not a new class of vehicle, but rather a definition that could be applied either to spacecraft or aerospacecraft. There were thus two sub-classes of vehicle within each class – re-usable and non-re-usable.

d) Other Clarifications.

- Length travelled along trajectory: Delegates debated where a distance flight started. Was it the point on the earth directly below which the launch occurred? Or was it the actual trajectory followed, from the point in the air where the performance began (the launch). Clarification was needed on whether SpaceshipOne had claimed the distance from the point on the ground or from the launch point itself.

- What is a spacecraft? Could this term include balloons? Section 8 paragraph 2.2. referred to the term “Vehicle” but gave no definition of this.

It was agreed that these questions should be addressed in 2006. Changes would be proposed for the Sporting Code. The ICARE President would review rules 4.2.1.4. and 5.2.1.4.

M. Christian Marchal made a proposal to consider a record for distance travelled outside the atmosphere (above 100 km). He stated his intention to draw up a detailed proposal in this connection for 2006.

6. PROPOSALS FOR FAI AWARDS

a. Gold Space Medal: Nominations had been received from Spain and USA.

The ICARE President declared an interest and left the Chair. ICARE delegates agreed that, given the exceptional circumstances, the decision should be referred to the FAI Vice Presidents. (Note: The FAI Vice Presidents decided to award the Gold Medal to the SpaceshipOne Team of Scaled Composites LLC (citation attached, **Annex 2**).

b. Yuri Gagarin Gold Medals: No nominations had been received.

c. Komarov Diploma: ICARE approved the award of this Diploma to the Crew of International Space Station Expedition 9 (citation attached, **Annex 3**).

d. Korolev Diploma: ICARE approved the award of this Diploma to the Crew of International Space Station Expedition 8 (citation attached, **Annex 4**).

7. INTERNATIONAL ASTRONAUTIC FEDERATION

The ICARE President reported that he had been unable to attend the 2004 IAF Congress. He reminded delegates that FAI has a right to speak in the IAF assembly. The 2005 Congress was due to be held in Fukuoka Japan (October 2005). There was a possibility that Mr Merbold might be able to attend. It was agreed that FAI representation would be decided by the ICARE President.

8. WORLD RECORDS

The new world records ratified since the previous meeting are shown at **Annex 5**.

9. ANY OTHER BUSINESS

There was no other business.

10. ELECTIONS

The following were re-elected :

President : Dr Sanz Fernandez de Cordoba
Vice President : Mr John Miles (UK)

11. DATE AND PLACE OF NEXT ICARE MEETING

It was agreed that the next meeting would be held on in Lausanne on Friday 21 April 2006 at 09h00.

FEDERACION AERONAUTICA INTERNACIONAL

VICEPRESIDENTE

PRESIDENTE DE LA
COMISION INTERNACIONAL DE RECORDS ASTRONAUTICOS (ICARE)

REPORT FROM ICARE PRESIDENT
97th FAI General Conference, Madrid, Spain, September 2004

1.- General Activities of ICARE Committee 2003/2004

The ICARE Committee held its annual meeting on April 30, 2004, at the FAI Headquarters in Lausanne, Switzerland.

Although in previous occasions the Commission has been discussing the new anti-doping WADA based regulations, it was not officially reported to the General Assembly given the difficult situation. Nowadays this has become a topic of public discussion inside FAI, and I think we must report our position.

In Astronautic activities, it is clear we are facing a renewal of manned activity. Now we even envisage flying to Mars within a few decades. From past experience, it is obvious that, without the help of scientific methods and substances, many of them available today, such dreams are impossible. Unfortunately, many of those substances and/or methods are banned by the WADA regulations.

If WADA regulations are accepted by FAI and have to be assumed by the Commissions they have to be taken seriously. That means, we can not wait for some chance control discovering an Astronaut or Cosmonaut breaking a record has been consuming banned substances, bearing the popular discredit himself, when everybody knows that those substances were absolutely necessary for any human being surviving the event for medical, operational and flight safety reasons.

If holding Astronautic recognised records require the record holder is not under the effect of WADA banned substances during the performance, very few, if any, significant Astronautic performance will be claimed as record in front of FAI any more. This will not quite conform to FAI duty to promote Astronautics.

In our Commission (and in others in FAI), we are dealing with extreme performance of human being. We have to be careful not to confuse possibilities of performance with fair competition. Certainly we are all for fair competition. But must be careful not to hinder the limits of performance in its name.

2.- Proposals for Awards

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The FAI Space Medal is proposed to be awarded to Dr. Sally Ride, for her unsurpassed achievements in space flight and public service in the field of Astronautics.

The Yuri Gagarin Gold Medal for 2003 is proposed to be awarded (posthumous) to STS 104 Crew. As You may remember, that was the crew that died in the Columbia Shuttle in Feb 1, 2003.

The Commission recommended as well to award a Komarov Diploma to Crew Expedition 7 to the International Space Station (ISS), and a Korolev Diploma to Crew Expedition 6 to the ISS.

3.- X Prize

I have been reporting about this private initiative in the last few conferences. Doubtless, it is the most exciting private initiative currently being developed.

It was clear at the time of the Commission Meeting in April, that at least one team from the US will make the attempt to go privately into space within this year.

In fact, SpaceShipOne (as the space ship is named) made a trial flight that nearly reached the 100 Km altitude of Space Frontier on June 21, 2004. The real attempt is now scheduled for September 29, 2004.

It is my intention to be present at that flight, lifting from and landing at Mojave, California, and an event to which the organisers have kindly invited me to attend as President of ICARE. This is the reason why, much as I would like to be among you at the present FAI Conference, taking place in my own Country and City of birth and residence, I must present to the Delegates and Officers my apologies for not being able to do so.

Dr. S. Sanz Fernández de Córdoba

FAI Gold Space Medal for 2004
Nominated by the National Aeronautic Association of the USA

Scaled Composites, LLC SpaceShipOne Team - for taking humans to space using an aeroplane launch vehicle and aerospace flight vehicle, in the first-ever manned, private space flight. Their vision and innovation can open the door to space travel for the common man.

The SpaceShipOne Team at Scaled Composites, LLC succeeded in 2004 not once, but three times--the last two flights capturing for them the $10 Million Dollar Ansari X-Prize.

Renowned aircraft designer Burt Rutan and financier Paul Allen teamed up with astronauts Mike Melvill and Brian Binnie, numerous engineers, analyzers, fabricators and others to make manned, private space flight a reality. As a result, SpaceShipOne and its carrier aircraft, White Knight, were designed, developed, tested, and put into service to carry out this unique mission. The civilian astronauts trained on a one-of-a-kind flight simulator built entirely in-house, to prepare them for the unknown. On June 21 the world watched in awe as SpaceShipOne rocketed into the history books, carrying the first truly civilian astronaut, Mike Melvill, into space. Again, on September 29, 2004, Melvill repeated the spectacular achievement. People around the globe watched again on October 4, 2004 as civilian astronaut Brian Binnie piloted SpaceShipOne to a record-setting 367,484 feet, and returned safely to earth.

Virgin Galactic, the first commercial space tourism operator, has licensed SpaceShipOne's technology and is scheduled to begin space travel for the space tourist in 2007.

This unique, visionary team proved to the world that the sky is no longer the limit--and is deserving of the Gold Space Medal for 2004.

FAI Komarov Diploma for 2004
Nominated by the National Aeronautic Association of the USA

Nominee: **The International Space Station Expedition 9 Crew**

Col Gennady Ivanovich Padalka, Russian Air Force
Lt Col Edward Michael Fincke, U.S. Air Force

Affiliations: Col Padalka: Rosaviakosmos, Russian Cosmonaut
Lt Col Fincke: NASA Astronaut

Suggested Citation:

For the successful completion of the ninth expeditionary mission to live and work on board the International Space Station (ISS), and the first spacewalk on the U.S. segment of the ISS using the Russian Orlan spacesuit.

Justification:

The Expedition 9 mission was originally planned to have three crew members, but after the Columbia mishap and the subsequent grounding of the Shuttle fleet in February 2003, the crew size was reduced to two in order to lessen the logistical support required. Col Padalka and Lt Col Fincke were originally assigned as the expedition 9 backup crew, but after a medical issue with the prime crew, they were then assigned to the mission only three months before launch. Col Padalka and Lt Col Fincke distinguished themselves by quickly and tirelessly undergoing the required training in a small fraction of the time normally allotted.

The Expedition 9 crew launched to the ISS on board Soyuz TMA-4 on April 18, 2004, and docked to the Space Station on April 21. During their six-month stay on board the ISS, they performed four spacewalks, an extensive science and utilization program, and multiple maintenance tasks. Increment 9 had the honor of performing the first spacewalk on the US segment of the ISS using the Russian Orlan spacesuit. They also oversaw the docking, unloading, and undocking of three Progress cargo vehicles. The crew returned to Earth aboard the same TMA-4 vehicle on October 23, 2004, after spending 187 days in space.

As commander of both the ISS and the Soyuz vehicle, Col Padalka was responsible for the overall safety and mission operations of the crew. Lt Col Fincke, as the U.S. Science Officer and Flight Engineer on the Soyuz vehicle, was responsible for all systems in the U.S. segment and the conduct of the U.S. science program. Both crew members were responsible for performing spacewalks that included unplanned maintenance as well as ISS assembly tasks.

Throughout their mission, the Expedition 9 crew was continually called upon to repair systems and modify procedures in order to continue operations on board the ISS. The crew demonstrated extraordinary flexibility and technical prowess as they repaired the on-board oxygen generating equipment multiple times to keep it running beyond its operational design. After the U.S. spacesuits experienced multiple failures, they performed unprecedented repair work that had previously been limited to ground technicians working in a laboratory. Their exceptional ingenuity and skill at on-board maintenance enabled the ISS to continue its operational mission under logistical conditions for which it was not designed.

The Expedition 9 crew was forced to plan and execute a first-of-its-kind spacewalk when a critical attitude control gyro on ISS lost its source of power. Col Padalka and Lt Col Fincke used the Russian Orlan suit and traversed over 40 meters to their worksite on the U.S. segment, where they performed the first-ever replacement of the damaged electrical power unit. The crew also accomplished two additional spacewalks on the Russian segment which comprised of scientific payload deployment and retrieval as well as multiple ISS assembly tasks.

Since the Expedition 9 crew size was reduced to two, it was expected that their science program would be extremely limited. However, because of their outstanding efficiency and selfless work during off-duty periods, this crew accomplished more science than originally planned. This was accomplished despite the large amount of time required for the unexpected spacewalks and internal maintenance tasks. The investigators and the crew were even able to submit a scientific paper from orbit based on research they completed with an advanced ultrasound device. They also accomplished microgravity research in the fields of colloids, viscous materials, heat transfer, and human neurovestibular response.

The success of the ninth expedition was an extremely important event in the history of the ISS Program and will contribute greatly to the future human exploration of the solar system. The crew of Expedition 9 showed that through teamwork, humans could continue to live and work aboard the ISS during this prolonged period of reduced logistical support. The hard work, adaptability, and tireless devotion to duty exhibited by the crew during this groundbreaking mission reflect most highly upon themselves, and show they are very deserving of the Komarov Diploma.

FAI Korolev Diploma for 2004
Nominated by the National Aeronautic Association of the USA

Nominee: **The International Space Station Expedition 8 Crew**

C. Michael Foale, Ph.D.
Alexander Y. Kaleri

Affiliations: C. Michael Foale, Ph.D.: NASA Astronaut
Alexander Y. Kaleri: Russian Cosmonaut, Energia Rocket/Space Corp.

Suggested Citation:

For the successful completion of the eighth expeditionary mission to the International Space Station (ISS), including unplanned operations with limited resources and continuation of the ISS mission with a two-person crew as a result of the Columbia Space Shuttle accident.

Justification:

The Expedition 8 crew launched to the ISS aboard Soyuz TMA-3, October 18, 2003, and returned to Earth on April 29, 2004, aboard the same Soyuz spacecraft, having spent 194 days in space. This crew traveled to the ISS aboard a Soyuz capsule, owing to the grounding of the U.S. Shuttle fleet after the Columbia mishap. In addition, they conducted a space-walk, performed numerous in-flight repairs, and assisted the logistical efforts in continuation of the ISS mission with a reduced crew complement.

Expedition 8 was originally assigned in 2001 with Dr. Foale and two colleagues being delivered to the ISS on Space Shuttle flight STS-116 in May 2003, for a 3 or 4-month stay. Towards this goal, the original three-member crew began an extensive training program conducted in the U.S. and Russia. They concentrated on the operations of both the U.S. and Russian segments of the ISS, as well as extravehicular activities (EVAs) using both American and Russian hardware. They further underwent training on the U.S. Space Shuttle and Russian Soyuz systems.

After the Space Shuttle Columbia accident, logistical constraints imposed by the lack of an operating Shuttle fleet for ISS re-supply and crew exchange, forced the restructuring of the mission. Expedition 8 was reduced from 3 to 2 crew members, and would now have to launch – with very limited supplies – aboard a Soyuz spacecraft from the Baikonur Cosmodrome, in Kazakhstan. Alexander Kaleri, a member of the original 3-person Expedition 7 crew, was assigned to be the ISS Flight Engineer for Expedition 8, and the Soyuz Commander for Soyuz TMA-3.

In October 2003 – after just 8 months of preparation together – the new Expedition 8, consisting of Dr. Foale and Mr. Kaleri, was launched in Soyuz TMA-3 to begin a 6-month stay aboard the ISS. Once aboard the ISS, the crew took over operation of the Station from the Expedition 7 crew, and began a rigorous science and Station-upkeep program.

During the six months they were aboard the ISS, Expedition 8 received only one visit: from a small, unmanned cargo ship. Progress 13 brought much-needed food and water, as well as critical replacement parts for the ISS.

In February 2004, after four months on orbit, Dr. Foale and Mr. Kaleri performed an EVA using the Russian Orlan spacesuits. During this spacewalk, they deployed Russian and European experiments to the outside of the Service Module, and retrieved Russian and Japanese experiments for return to Earth.

The Expedition 8 crew was responsible for the maintenance and upkeep of the ISS and was often called on to repair items which had not been designed for in-flight maintenance, and for which appropriate tools and spares were not available. Chief among these tasks was the repair of the Station's treadmill, which had experienced a failure of its gyroscopic stabilization system. Without this gyroscope, it could not safely be used in the crew's critical exercise program. The crew disassembled the treadmill's two-foot diameter gyroscope, which had not been designed to be opened in flight, and was able to replace and re-shim the gyroscope's sensitive bearings. After several days of maintenance, the treadmill was returned to operational status, and the crew was able to continue their exercise regime, which was crucial both to NASA's science objectives for the mission and to the crew's long-term health.

Dr. Foale was on his sixth space flight and second long-duration space mission, having spent 145 days aboard the Russian Mir station in 1997. He has now logged a total of 374 days in space, more than any other US astronaut. As ISS commander, he was responsible for the overall safety and mission operations of the crew, in addition to being responsible for the American systems, and many of the scientific experiments performed during the increment.

This was Mr. Kaleri's fourth long-duration space mission. He served aboard Mir on three different missions (twice as mission flight engineer). He was responsible for the operation and maintenance of all Russian systems and payload experiments, and was also the commander of the Soyuz TMA-3 for the crew's launch to ISS and their return to Earth.

By their exemplary service as the ISS crew during a difficult and dynamic time for the ISS Program, the crew ensured the future of the ISS as a manned outpost in space. They demonstrated by deed outstanding international cooperation, exhibited an incredibly high level of skill and productivity, and successfully completed their demanding mission. The Expedition 8 crew members are most highly deserving of the Korolev Diploma.

ANNEX 5

IDrecord	Class	Subclass	Description	Group	TypeRecord	Performance	DateAttempt	Surname	Firstname	Country	Status
9859	P	P-1	Suborbital missions	category	aerospacecraft	102.9 km	29-sept-04	MELVILL	Michael W.	USA	Ratified
9861	P	P-1	Suborbital missions	category	Length travelled along the trajectory from lift-off to touch down	46.27 km	29-sept-04	MELVILL	Michael W.	USA	Ratified
10434	P	P-1	Suborbital missions	category	Greatest mass lifted to altitude	1 439.8 kg	04-oct-04	BINNIE	Brian	USA	Ratified
9858	P	P-1	Suborbital missions	category	Duration	24 min 10 sec	29-sept-04	MELVILL	Michael W.	USA	Ratified
9860	P	P-1	Suborbital missions	category	Greatest mass lifted to altitude	1 417.5 kg	29-sept-04	MELVILL	Michael W.	USA	Cancelled
9862	P	P-1	Suborbital missions	category	Number of people in suborbital flight	1	29-sept-04	MELVILL	Michael W.	USA	Ratified
9881	P	P-1	Suborbital missions	category	aerospacecraft	112.01 km	04-oct-04	BINNIE	Brian	USA	Ratified
9882	P	P-1	Suborbital missions	category	Minimum time between two consecutive flights in a reusable vehicle	15 min 9 sec	04-oct-04	BINNIE	Brian	USA	Ratified