

57th IAA HISTORY OF ASTRONAUTICS SYMPOSIUM (E4)

Scientific and Technical Histories (2)

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THE ORIGINS OF THE ASTRONAUT PROGRAM IN ISRAEL: PREPARING FOR THE SPACEFLIGHT - 1999-2001

Abstract

The paper is the third in a series of essays which portray the origins of the first Israeli astronaut project – that culminated in the spaceflight of astronaut colonel Ilan Ramon, on the space shuttle Columbia on the STS-107 mission, that ended in tragedy just minutes before landing on February 1st, 2003. The series of papers on the Israeli astronaut project is an initiative of the history committee of the International Academy of Astronautics. The paper will cover the period of 1999-2001, in which Ilan Ramon was preparing for his mission at the Johnson Spaceflight Center in Houston, and the scientific experiment he was responsible for (MEIDEX) was taking shape, both in Israel and in the USA. Recently released documents of the ministry of science and technology will be included to further understand the political aspect of the mission, that was originally scheduled for 2001. As in previous papers of the series, original documents (many of which are handwritten) of Ilan Ramon will give another, somewhat personal account of the events researched.

Preface

This paper is the third part of a series of papers describing the first Israeli astronaut project, and its affiliated research projects. This series was envisioned by the history committee of the International Academy of Astronautics. The covered period is the

height of Israel's first astronaut Ilan Ramon's personal preparations for his flight, as well as advancements in the MEIDEX¹ experiments and its scientific team. During

¹ For a short summary on MEIDEX see NASA's paper at <https://www.nasa.gov/sites/default/files/atoms/files/meidex.pdf>

these years the activity within Israel Space Agency (ISA) also took shape, and this paper will reveal recently released archival materials from Israel State Archives, released by requests of the author, and published here for the first time.

Houston – Here we come: Ilan Ramon arrival to the Johnson Spaceflight Center

Ilan Ramon, the first Israeli astronaut, spent the years 1999-2001 in Houston, Texas, training at the NASA Johnson Space Center for his mission on Space Shuttle Columbia STS-107. 1998: Ramon arrived in Houston in June 1998 with his wife Rona and their children. and began his training at NASA.

By the year 2000 Ramon continued his training at NASA, and he also began working with the Israeli Space Agency to prepare for his experiments on STS-107.

In 2001 Ramon completed his training at NASA and was certified for flight. He also continued working on his experiments, and he made several public appearances in Houston to talk about his mission.

During the first year of training, Israel's backup astronaut, Lt. Col. Itzhak Mayo (and his family) were also in Houston. Later into the training, and after several delays of the

launch, it was decided that Mayo will leave the US and will return to his IAF² duties. Mayo returned later to the US as part of the MEIDEX scientific and technical team and was in Goddard spaceflight center during the flight of Ilan Ramon in 2003.



Ilan Ramon (at right) with Itzhak Mayo, his backup, on a weightlessness flight onboard NASA plane, 1999³

² Israel Air Force

³ From Aby Har-Even (Israel space Agency director General) archives, scanned by the author.

Some personal entries from Ilan Ramon's diary

One diary of Ilan Ramon, hand-written, was given to the author by Ramon's widow, Rona. This is a unique document that was never published. The first entry is from July 5, 1998, two weeks after the Ramon family arrived at Houston, and the last entry is from May 15, 2000. In this diary Ilan Ramon wrote personal impressions and reflections on training, and meetings he had. This diary will be thoroughly researched in the future, but to this paper I choose just fragments. On July 6, 1998, Ilan Ramon wrote: *"The first day at NASA! We came to the weekly astronauts' meeting before 8AM.... sitting next to me was John Young – Apollo astronaut who walked on the moon. He was also the commander of the first space shuttle⁴...It was suggested that I will learn independently and will also be part of the two months "orientation" program – before I will join the astronaut's course – due to open in late August"*.

On the diary there are many of Ilan Ramon's personal reflections on people he met like Neil Armstrong and John Glenn, as well as notes on the training process.

⁴ Columbia, in which Ramon will fly in 2003.

More valuable notes are the many notes he wrote on technical documents – more than 10000 pages in total, a major part of the "technical archive" of Ramon.⁵

MEIDEX completion

MEIDEX was the scientific experiment that was the justification of the Israeli astronaut project (and a mandatory requirement by NASA) – and comprised of a camera that was fitted inside a standard NASA provided canister of the "Get Away Special" program. More details on the scientific and technical aspects of the experiment were described thoroughly in the previous paper by the author.⁶



MEIDEX mission patch

⁵ The collection was also donated by Rona Ramon, and it is in the authors library – yet to be scanned. For this paper (and the previous papers in this series) – some documents were used.

⁶ See IAC-22, E4,2,12

The payload was successfully integrated by the year 2000 and went through a series of experiments and tests. During this evaluation phase, the principal investigators were present at the Kennedy Space Center, as well as the Goddard Spaceflight Center, which was set as the Israeli science team as the HQ during the STS-107 mission.



Professor Jehoiachin Yosef and Dr. Adam Dvir pose by MEIDEX experiment at JSC, 2000

The Science team

The scientific team of MEIDEX, from the Tel Aviv University, were spent most of the time when Ilan Ramon was in Houston in the US, preparing for the mission. The base of the team during the mission was set to be in Goddard Space Flight Center (GSFC) in Maryland, so a lot of time was spent at this location, as well as in Johnson Spaceflight Center in Houston. Some of the team went

with Ilan Ramon to Kennedy Space Center to observe the integration of MEIDEX with its Get Away Special canister.



A meeting of the Israeli team (Ilan Ramon third from left) with NASA officials, circa 2000

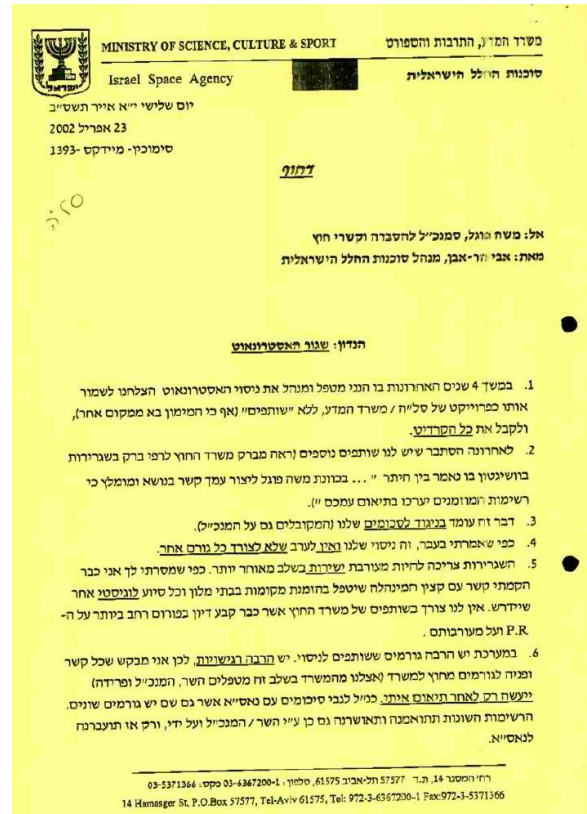
Delays and postponing of the flight

Changes in NASA's schedule were led to significant delay in the launch of STS-107 mission. As a result, more funds were needed to sustain the program – from the unplanned expansions of Ramon family on its stay in the US, to many flights of the scientific teams between Israel and the US. On the positive side, more tests of the payload itself and more preparations by the team were made possible.

The Bureaucratic Front

As part of the research on the subject, the author initiated a process of scanning and revealing documents from the Israel state archives. It is a long process, and the records are not provided on a chronological order, However, one large file (326 pages) covering the Israel Space Agency preparations to the flight of Ilan Ramon (planned at the time for June 2002) gives an insiders' view on the bureaucratic front (or, sometimes, better described as "battle front"). As something to be expected, the bureaucratic struggle over credits for the first Israeli astronaut intensified as the flight date was approaching. Several letters from ISA director general Aby Har Even were sent to various individuals at the Ministry of Science, complaining about the Ministry of Foreign Affairs intervention with ISA's responsibilities over the MEIDEX experiment and the STS-107 launch.⁷

⁷ The astronaut's participation in NASA's spaceflight was indeed the outcome of the NASA-ISA agreement over the MEIDEX experiment and was led by ISA and the Ministry of Science and Technology.



Complaint by ISA Director General over the involvement of Ministry of Foreign Affairs in the upcoming launch of STS-107.⁸ The headline of the letter is "Urgent."

⁸ From Israel State Archives, released per the author's request. The file covers the period of 5/2001 to 4/2002

Of the dozens of documents in the files of the Israel Space Agency and Ministry of Science, most deals with preparations for VIP guests to attend the launch, communication plans and PR for the flight.

The file also reveals the inter-ministries struggle over credit – while the Israeli astronaut program was led by the space agency (within the ministry of science), the ministry of Foreign Affairs was also becoming more and more involved – to the point of ISA's director approaching his superior, complaining about the interventions in (what he thought to be) his sole responsibility.