

General Disclaimer

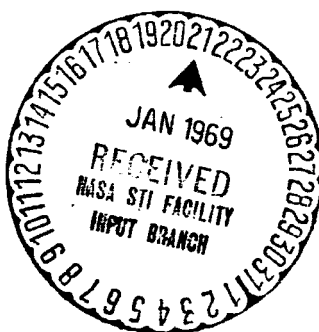
One or more of the Following Statements may affect this Document

- This document has been reproduced from the best copy furnished by the organizational source. It is being released in the interest of making available as much information as possible.
- This document may contain data, which exceeds the sheet parameters. It was furnished in this condition by the organizational source and is the best copy available.
- This document may contain tone-on-tone or color graphs, charts and/or pictures, which have been reproduced in black and white.
- This document is paginated as submitted by the original source.
- Portions of this document are not fully legible due to the historical nature of some of the material. However, it is the best reproduction available from the original submission.

THE ESRO 11/IRIS SATELLITE LAUNCH AS SEEN FROM ESTEC

J. Toussaint

[Translated from ESRO/ELDO Bulletin, Aug. 2, 1968, pp. 34-35]



FACILITY FORM 002	<u>N 69-15657</u>	
	(ACCESSION NUMBER)	(THRU)
	<u>7</u>	<u>1</u>
	(PAGES)	(CODE)
	<u>CR# 99124</u>	<u>31</u>
	(NASA CR OR TMX OR AD NUMBER)	(CATEGORY)

Translated by
TECHTRAN CORP.
Glen Burnie, Md.
under Contract NAS 5-14826, 6 SFC., 1968
32

The ESRO II/IRIS Satellite Launch as Seen From ESTEC.
J. Toussaint

The celebration organized early in the morning of that 17 May 1968 in the European Space Technology Center at Noordwijk was a very special one. The ESTEC personnel had come together to observe in real time, although at a distance of 8,000 kilometers, the launch of the IRIS Satellite forecast for 0306 hours local time.

The festive atmosphere was there for sure. For the last hour the snackbar had been operating as usual. The loudspeaker carried soft music and good tempered, lively conversations could be heard.

For this stage critical for the Organization, the persons present were reduced to the role of spectators since ESTEC had no operational part to play in what was to happen. They had, moreover, time to dwell on the circumstances surrounding this launch and to compute the odds for success. It was known that, since the failure of the May 1967 try, everything possible had been done to remove the last element of risk and that absolute confidence could be given to the "project" team directing the operations. Nevertheless, it is difficult to be a technical expert and have no permanent awareness of the possibility of the unpredictable occurring at the last moment. Moreover, it appeared that a "spell" of some kind had been laid on the Organization since its creation. It was hard to keep from thinking of the first failure owing to an unexpected defect of the "Scout" booster, the burning up of the prefabricated buildings, the floodings of Fairbanks during the integration of the telemetry station, the known menaces to other specific projects, etc... In addition, the moving back of the launch - announced in matter of fact manner the evening before 10 May 1968, the date for

which everything had been organized--appeared to be a bad omen and most of the persons there were not very sure the launch would in actual fact take place on that night. Its success was nevertheless imperative on the basis that a successful launch would lift the spell. In the event of failure.....a joke made the rounds to the effect that the personnel had been gathered together this particular evening in order that everyone could get an even start for a search for new employment. The stakes did appear extremely high to everybody and it was this which gave the "celebration" its special character.

It was 0115 hours and everything was proceeding routinely. On the permanent direct circuit with the "Western Test Range", the voice of M. J. Lagarde announced that there were one hundred and eleven minutes before firing. The invariable reply given to the first question, "At what stage is it?", asked by all late arrivals to the snackbar was that everything was going well. The deepseated worry of people present tended to disappear and people found themselves listening to the various announcements with the same confidence as when attending a lecture on satellite launch operations. At 0200 hours the voice of Mr. P. Blassel, project director, came through announcing that on-board checks carried out after erection of the rocket had given satisfactory results. At the same time, it was learned that countdown operations were not proceeding completely without incident. In particular, a breakdown of one of the two transmitters for remote destruction planned for the mission caused a twenty-five minute delay. This was reduced, however, to ten minutes owing to the speeding up of later operations. The launch could still take place in the "window" planned for. This possibly premature announcement reminded even the most optimistic persons that the prospect quite

possibly included an inglorious return home after a disappointing night spent without sleep. This had, moreover, happened to a good number of persons who, a week earlier, had not been able to be warned in time of a launch postponement.

The schedule now went faster. At 0216 hours it was learned that the bulletin from the Darmstadt control center concerning the state of readiness of the monitoring network had just arrived at the launch site. At 0230 hours the voice of Mr. P. Blassel was heard again giving a brief summary of the operations which were now entirely oriented toward the launcher check-out. Soon the announcement that the umbilical cord of the satellite had been extracted was made by Mr. J. Lagarde who shortly after sounded off the last seconds of the countdown. The doubts of the IRIS satellite launch for that night were dispelled. The spectators present in the snackbar were excited for sure and this could be clearly seen although the swift progress of operations now makes difficult a too detailed summary of events at this point.

The ignition of the first, second and third stages of the rocket was announced. The trajectory followed was perfectly normal and all diagrams checked out. Thus, the critical phase of the first launch trial was reached and happening at a time well suited for sustaining excitement. It is unnecessary to add that from this time forth conversations stopped since most of the assistants had left their tables and formed a circle around the loudspeaker. The question was whether the correct ignition of the fourth stage would be announced. The long wait broke down into a general commotion through which the commentator's voice no longer became very audible. Questions, and often very silly ones, were asked of better placed persons: Has the ignition of the last stage been announced? Has the

satellite already separated from the cap? Has a guarantee been given that the orbit was correct? It was then 0330 hours and much too soon to hope for a reply to these overly impatient questions. It was, however, sure that the May 1968 launch was an improvement over the May 1967 launch. This observation was made with no little optimism and the only important decision left to take at ESTEC that night was to serve champagne.

The celebration was over for some but for others work had only begun. The mix of enthusiasm and worry with which they left the snackbar to go down to the ESTEC experimental telemetry station in the early morning hours of a propitious day can easily be imagined. There, the rendezvous was set with the satellite for exactly 0419 hours and 21 seconds exactly, at least if the orbit was correct, and this had not yet been confirmed. Representatives of manufacturers of on-board equipment assembled with ESTEC ground equipment specialists responsible for supplying the station. Mr. Pera, unable to attend the celebration and on watch at the station, watched the personnel arrive with some relief. Everything was in readiness; the equipments had been placed under stress and appropriately tested starting from midnight on. The necessary simulations were completed. For the event, an operator team had to be improvised. Mr. Okkes, the theoretician of the group, was responsible for monitoring the receivers assisted by Mr. Lecomte. Mr. Bregonje was responsible for controlling the orientation of the antenna. Mr. Albarda had the task of taking care of the magnetic and graphic records. Finally, Mr. Pera was entrusted with the responsibility for switching and visual display. The spectators were jammed into the great room and kept apart from the equipment by a safety cordon. This was an unusual sight for a

room which had only a few days before still had the appearance of a peaceful laboratory.

0415 hours arrived and the wait continued. It was not to be for very long if all went well. All the equipments were checked out and the operators stood before them arms dangling. The exception was Mr. Bregonje who was seated at his console with the serious mind of a Boeing pilot preparing his approach. People present continued to make comments. They wondered what would have to be done in the event that the satellite did not appear at the time and place desired. For many people, the few seconds coming up would serve to crown months if not years of efforts. But the satellite did cooperate. It arrived at 0419 hours plus a few seconds or just a few seconds ahead of time. After some hesitation on the part of its automatic tracking system, the real time transmission receiver locked onto a signal which could only be the one from IRIS. After a few seconds, the slightly scratchy deep tone of the board beacon was heard. This tone was to be heard for thirteen minutes, insofar as it was possible to hear it through all the exclamations coming from the other side of the cordon. The technicians responsible for on-board equipment strained their eyes at the visual display lights which had begun to mean something and to transmit their first diagnosis. One set of four signal lights especially held their attention. These were the ones which indicated the state of the telecommunications system on board the IRIS satellite. There was an abrupt change in the configuration of these lights and an exclamation was heard: "Play back!". The Redu station had just sent to the satellite the first of the control signals to be sent to it during its flight and it had been carried out. The operators unemotionally performed their tasks and left interpretation of their demeanor to the spectators.

For the ESTEC telecommunications experts the real celebration was the one following the first transit for which some bottles of champagne and beer had been saved. Talk now was hardly frivolous. Comments were made on the findings produced by telemetry means and in turn Messrs. Duran, Berges, and Sigwald confirmed their diagnosis. The telemetering operated normally as best as could be told from a first analysis. The recorder had successfully survived undamaged from the rigors of the launch and the satellite had reacted normally to two control guidance orders. In total, it could be confirmed that the IRIS satellite was on an orbit very close to the predicted one and that its telecommunications system was in operation. In spite of these assurances, the enthusiasm was such that the entire host of those invited remained for the next transit. This took place at 0630 hours as day broke.

The participants took leave, most thinking about the great things that could be related to the family on this morning. The Organization had from this moment forth a satellite in orbit. The spell was broken.

