

US Stratosphere balloon flights in the 1950's to 1960's
Precursors to Manned Spaceflight
by Beatrice Bachmann

In the 1950's large "Skyhook" plastic strato-balloons constructed by Otto Winzen, were used in scientific unmanned and manned research projects to reach extreme heights into the stratosphere. These balloon flights constituted the beginning of space exploration.

Even before the official inauguration of the NASA in July 1958, a manned balloon training program was started by the United States during the International Geophysical Year (1957-58), on order of President Dwight. D. Eisenhower

The project's **top secret** code name was **MISS, (Man In Space Soonest).**

Both the U.S. Air Force and the U.S. Navy had major roles.

The Air Force with the "Man High" and the Navy with the "Strato-Lab" scientific and medical manned stratosphere-balloon flights up to the threshold of space by using Skyhook balloons. The physiological and mental data of the pilots were important in preparing for manned space flight.

The **first Man High balloon flight** was performed on **2 June 1957**
by **Captain Kittinger** of the US Air Force.

He ascended from Holloman Air Force Base, New Mexico, and remained airborne 6 hours and 34 minutes, including 2 hours over 96,000 ft, suspended below the 280 feet long polyethylene Skyhook balloon and landed at Minnesota Creek.



Figure 1

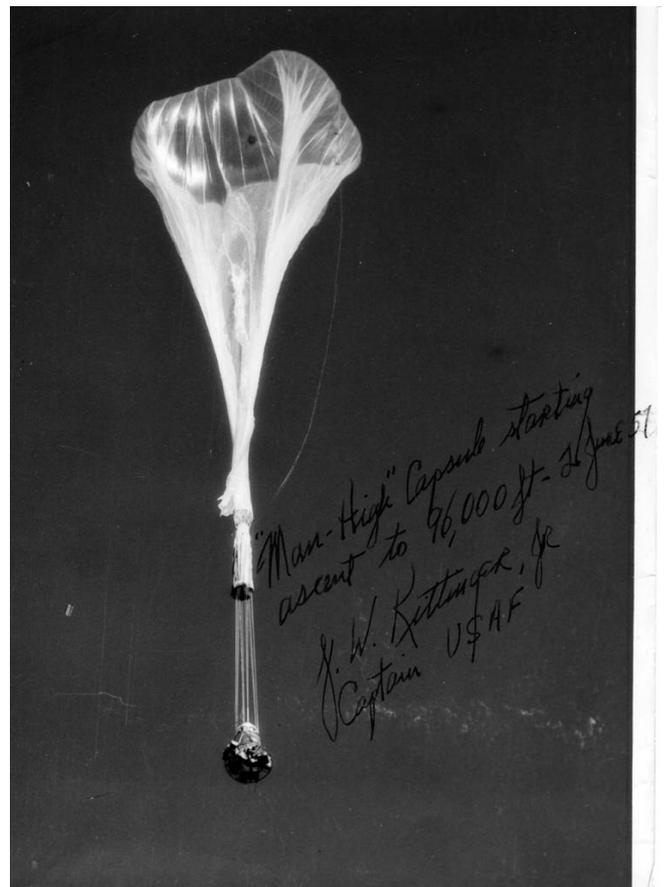


Figure 2

For lack of a philatelic document (never seen) of this event, (Fig.1) the narrow cabin and (Fig.2) Skyhook balloon demonstrate under which conditions the pilots undertook their flights into the stratosphere.

I am glad to be able to present some philatelic documents relating to this exciting and historical period of the stratosphere flights during the cold war between the USSR and USA.

From **19-20 August 1957** US Air Force **Major David G. Simons**, doctor of medicine, and chief of the Space Biology Laboratory Center at Holloman, New Mexico, made a medical self-experiment with the "**Man High**" confined into the narrow pressurized gondola of three feet in diameter and seven feet high to experience "inescapability" during space flight.

On **19 August 1957** early in the morning after he was sealed in his capsule at the hangar of the Skyhook balloon and was brought from Holloman, New Mexico, to Crosby, Minnesota. (Fig. 4)

Outside the city the capsule was led down in an abandoned copper mine shaft to avoid problems caused by a sudden squall during inflation of the balloon.

On **19 August 1957** at **8:00** Major David Simons ascended with the **Man High balloon** in the pressurized narrow capsule on a dramatic, solitary flight to the threshold of space. (Fig. 5)

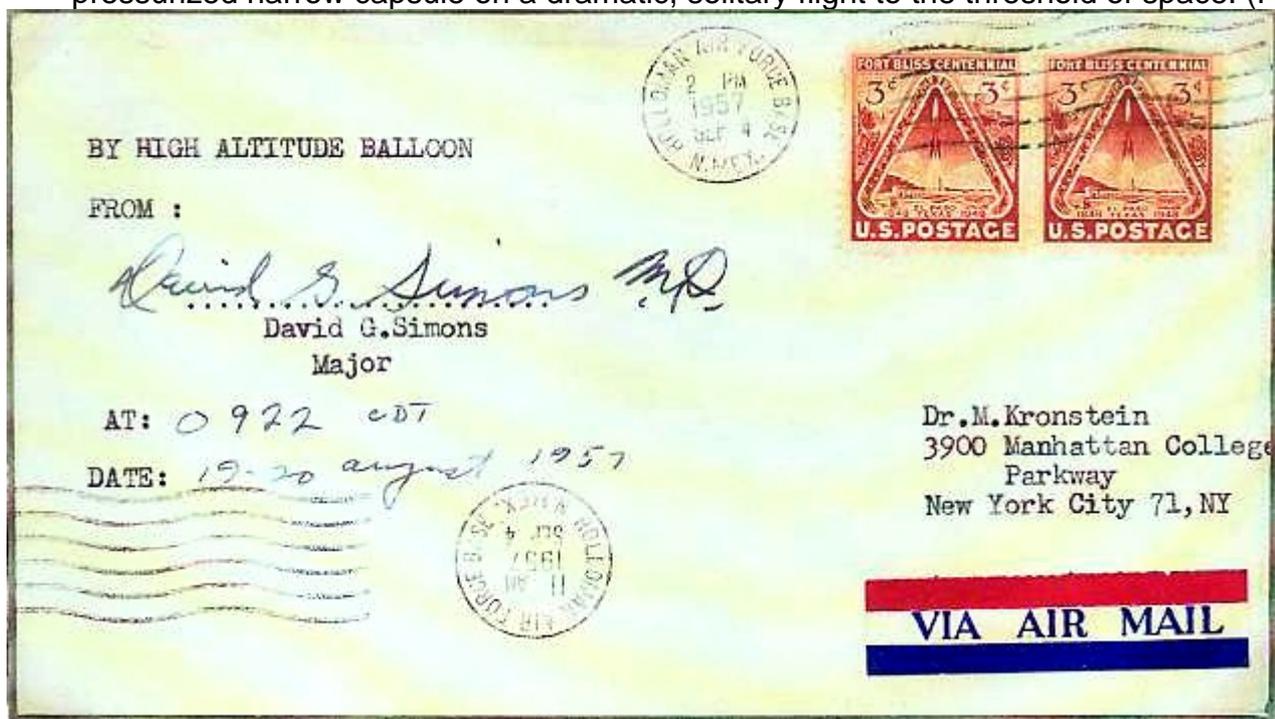


Figure 3

This cover was **flown** by **Major Simons** on his "**Man High**" balloon flight from 19-20 August 1957 confirmed by the time marked on the cover.(Fig. 3)

According to his report in "Life" journal (2 Sept. 1957) he was on 20 August at an altitude of 90,000 ft. at 8 AM; at 10 AM, he saw he was drifting over a storm in Aberdeen, South Dakota.

The cover shows the time 0922 CDT (Central Daylight Time) handwritten by **David Simons** with the date 19-20 August 1957. According to the Log book he was at this time at 96,000 ft.

Major Simons achieved an official altitude of 102,000 ft (31 km), (Fig. 6) and landed at Elk Lake, South Dakota, at 5.32 PM after a record-breaking stratospheric flight of 32 hours, confined in his capsule.

He was brought to the hospital where he underwent exhaustive physiologic and psychological evaluation.

The flown cover was later on posted at Holloman AFB, the home base of the balloon (It is most likely unique).

(Fig. 4) The photo was taken when Major Simons, confined in the sealed capsule was loaded on the car for the journey to Crosby, Minnesota.

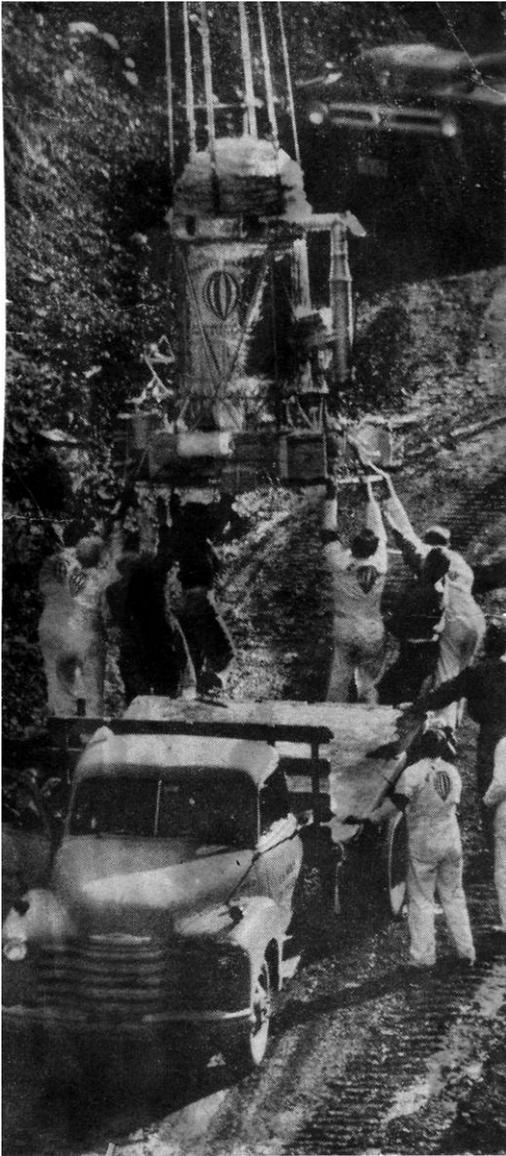


Figure 4

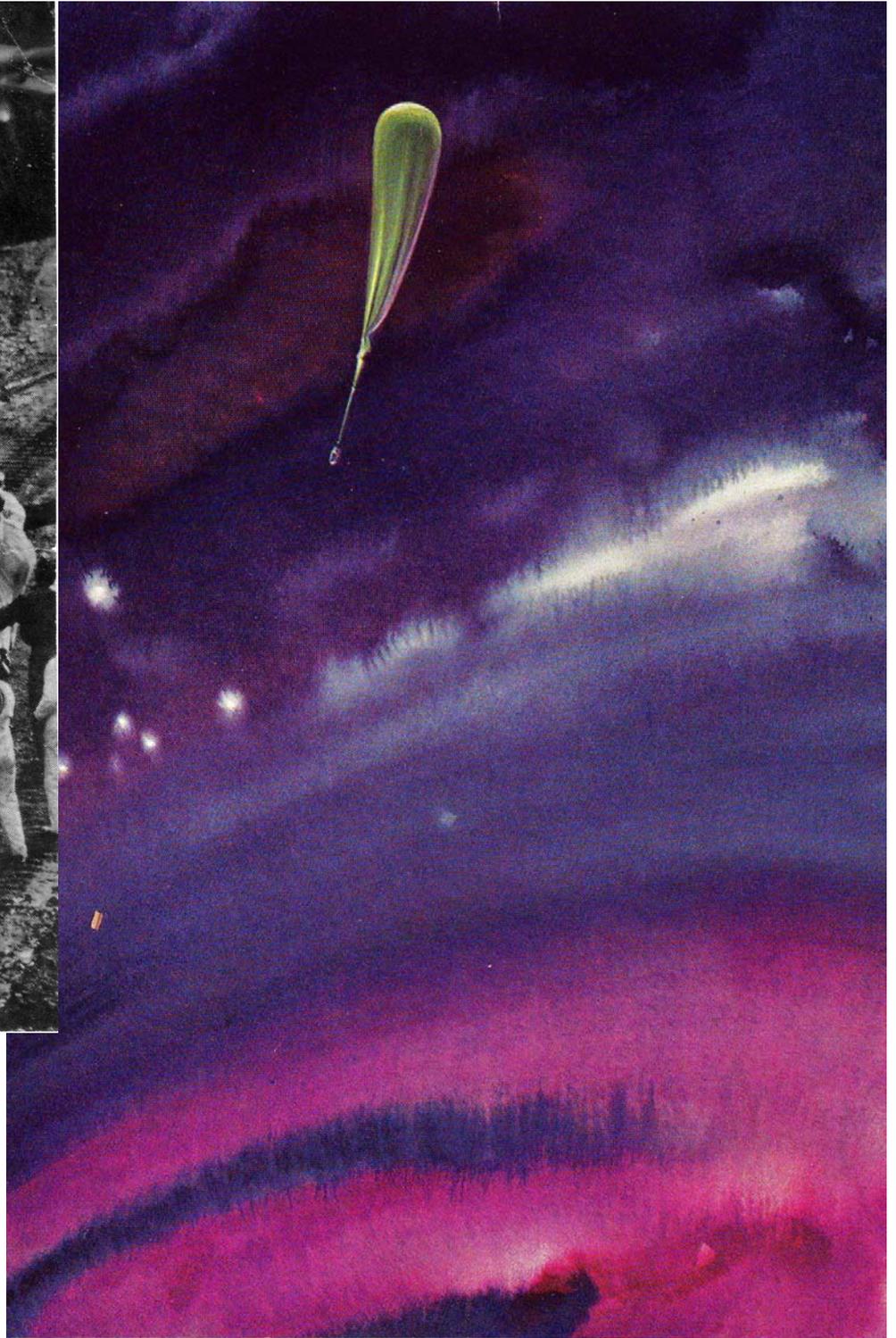


Figure 5

(Fig. 5) The photo was taken during the phase of the balloon ascent



Self-photograph of Major Simons taken near the peak of his 102,000-ft. ascent. He was confined to the capsule for 42½ hours.

Figure 6

(Fig. 6) The press reports on a peak altitude of 102,000 ft. The info of 42 ½ hours includes the time when he was sealed in the cabin at the hangar up to the release after landing.

On **8 October 1958**, the young USAF **Lt. Clifton McClure**, ascended from Holloman, New Mexico, for a medical research flight with a “**Man-High**” balloon.

After 12 hours and 16 minutes remaining at a sustained altitude of **99,600 feet** (30,300 m), the flight was aborted due to overheating in the gondola and the temperature of Lt. Clifton McClure registered 40°C (104 Fahrenheit).

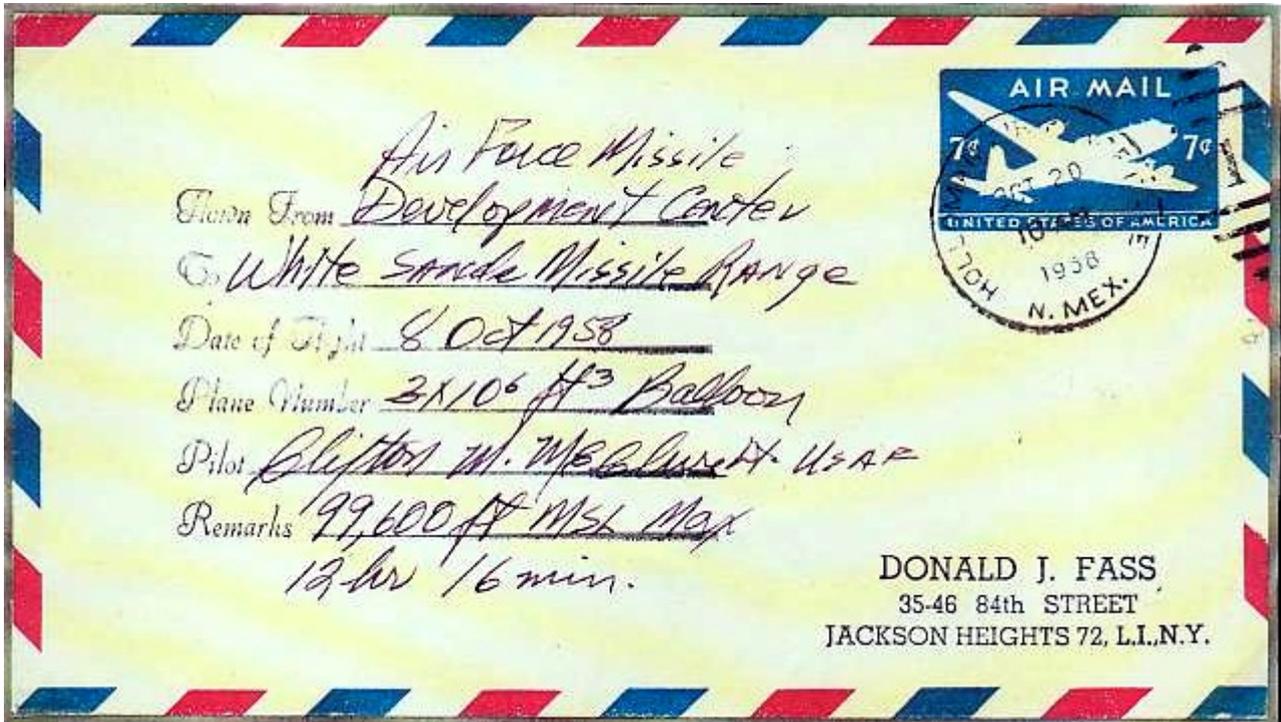


Figure 7

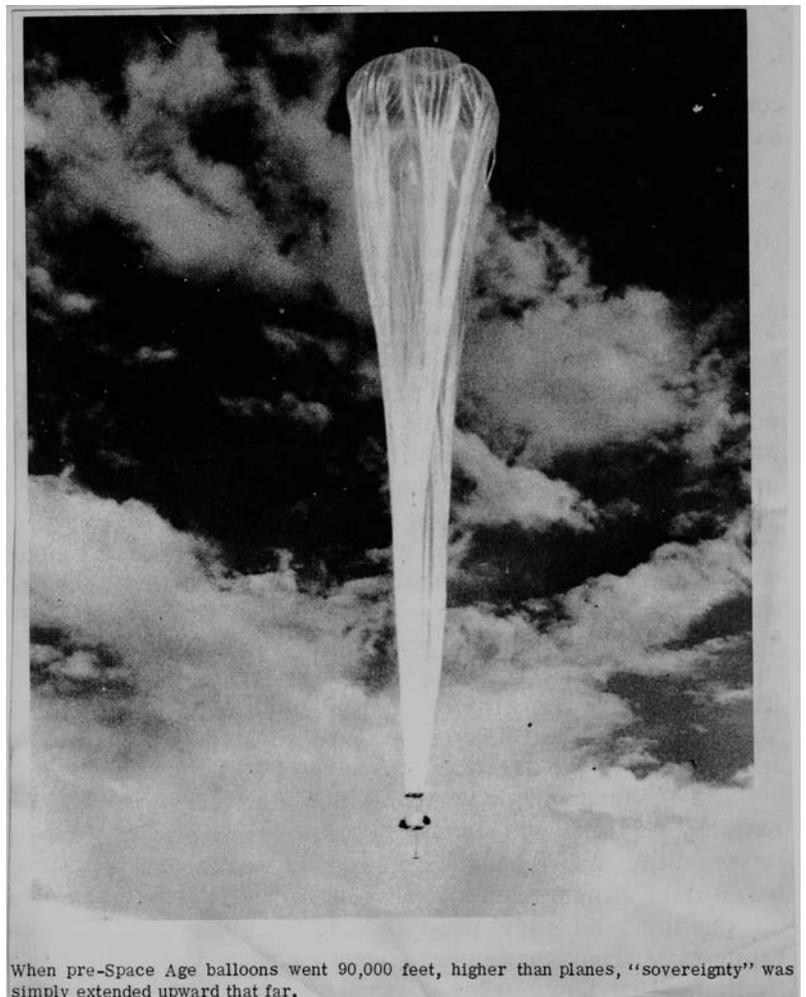
Cover flown on the “**Man High**” balloon flight by **Lt. McClure** on 8 October 1958 with hand written data of the flight noted by Lt. Clifton McClure (Fig. 7).

Immediately after landing, he was brought to the hospital for intensive medical evaluation.

The cover was later on posted from the home base of the balloon, on 20 October 1958.

(Fig.8) The text on the press photo reads: When pre-Space Age balloons went 90,000 ft, higher than planes, “sovereignty” was simply extended upward that far.

Figure 8



When pre-Space Age balloons went 90,000 feet, higher than planes, “sovereignty” was simply extended upward that far.

I'll continue with the **Man in Space Soonest** project and this time referring to the "**Strato-Lab**" program of the **US Navy**.

The "**Strato-Lab**" flights of the U.S. Navy were made primarily by Commander **Malcolm D. Ross**, accompanied by scientists.

On **8 November 1956** the **1st Strato-Lab** balloon flight was undertaken by Cdr. Malcolm Ross and Cdr. Morton Lee Lewis of the US Navy from Rapid City, South Dakota.

At the peak of 76,000 feet (14.4 miles) they noted a loss of helium due to a valve failure of the Skyhook balloon. The gondola began spinning dizzily on its line and the balloon started dropping fast and was only checked by rapid dropping of ballast to arrest the descent of 1400 feet per minute.

Just before the gondola reached the ground the giant balloon was cut away. The gondola landed near Kennedy Nebr. with Cdr. Ross and Lewis uninjured.

During the 4 hours flight they achieved a record breaking altitude ever reached by a two men stratosphere flight exceeding the 72,395 feet reached on 11 November 1935 by Captain Stevens and Anderson with Explorer 2.



Figure 9

One of the 3 covers flown on this historical first Strato-Lab balloon flight on 8 Nov. 1956 inscribed and autographed by Malcolm Ross and Morton Lee Lewis. (Fig.9) This cover was mailed after return to the Navy Research Laboratory in Washington DC. (Linn's Weekly Stamp News Feb. 4, 1957)

I extend my appreciation to the late Dr. Max Kronstein, USA, a well-known aero-philatelist, who had the foresight to service covers, obtain extremely scarce documents from pilots as flown covers from 'Man-High' and 'Strato-Lab' balloon flights.

These materials are better appreciated as we realize that they were obtained during the period of maximum secrecy and rivalry between the USA and USSR over the Conquest of Space.

My thanks are also extended to Dr. Ben Ramkisson, USA, for his kind assistance with English editing of the text.

On 18 October 1957 Commander Malcolm D. Ross and Morton L. Lewis ascended from Crosby, Minnesota, with a "Strato-Lab" balloon for a 2nd research flight to a height of 85,800 ft (25,850 m).

29 October 1957
OUR 461
Washington, D.C.

Dear Dr. Kronstein

Please accept my apologies for the delay in returning this cover to you. It may be of further interest for you to know that Commander Lewis and I have carried a fair number of covers on previous flights. In view of our policy of no pre-release of plans for this flight, however, yours was the only one received.

In addition to some excellent data acquired on our trip, from a research viewpoint, we also went higher than any other two man crew has ever gone. On our Wallace and Tiernan instrument we read a peak of about 85,800 feet. The radio beacon transmitted code which indicated 84,300 feet. It will take a check of calibration curves to determine the actual altitude.

Sincerely
Malcolm D. Ross

Figure 10



Cover flown by CDR. Ross and Lewis on the "Strato Lab" balloon research flight on 18 Oct. 1957.

(Fig. 10) According to a covering letter of Commander M. Ross, the flight was performed "top secret" without pre-release of the flight schedule.

Hence, this cover was the **only one** received to be carried aloft.

On **26 July 1958** M. Ross and Lee Lewis ascended from Crosby, Minnesota for the **3rd Strato-Lab** research flight.

They remained at 82,000 feet (25,000 m) for over 34 hours.

During the flight they gathered a number of scientific and medical data for future manned space flights. They landed near Jamestown, North Dakota, on 27 July 1958.

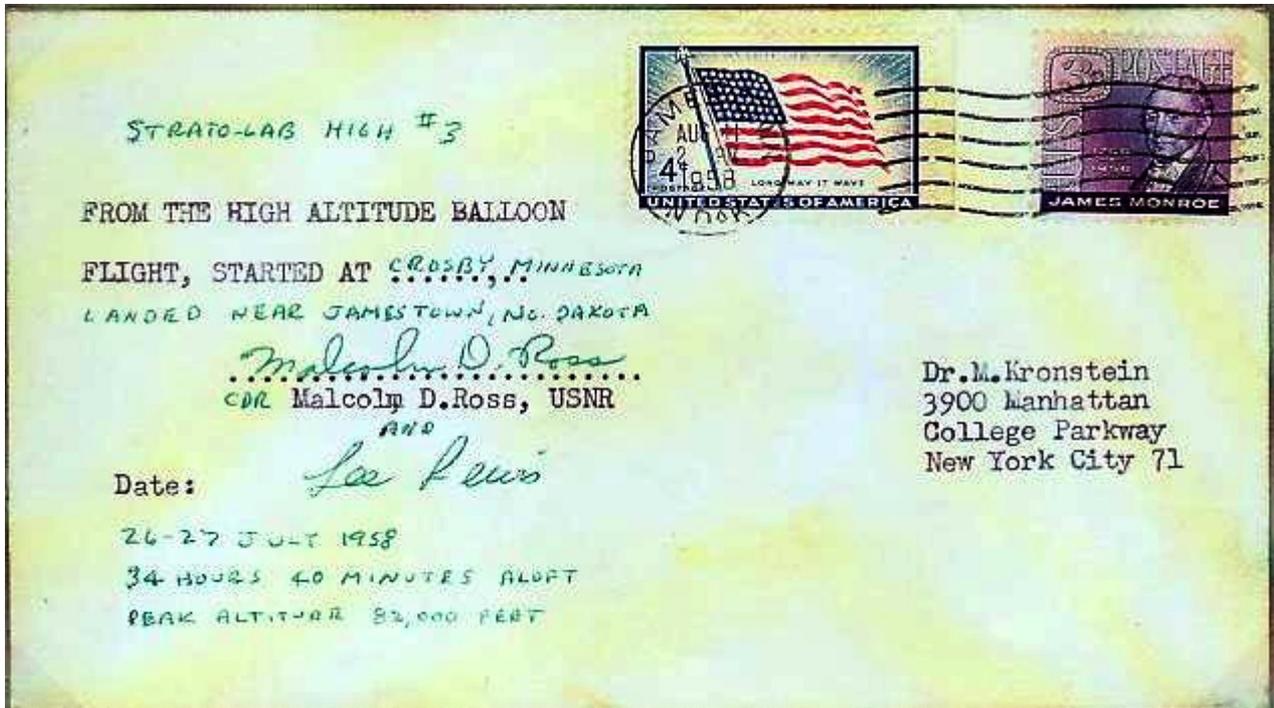


Figure 11

This cover was carried along by Malcolm Ross on his **Strato-Lab** flight **No. 3** on 26-27 July 1958. (Fig. 11)

Dr. Kronstein: 4 August 1958

Thanks for your continuing interest in our program. Sorry about the delay. The cover is authentic but I had to return it to Jamestown for mailing.

Sincerely,
Mal Ross

This message reads:

Thanks for your continuing interest in our program. Sorry about the delay. The cover is authentic but I had to return it to Jamestown for mailing. Sincerely Mal Ross

From **28-29 Nov. 1959**, Capt. Malcolm O. Ross, U.S. Navy, and scientist Charles Moore ascended near Rapid City, Kansas,

with the **Strato-Lab** balloon for a **4th** medical, scientific research flight. (Fig.12)

On their flight over Nebraska, Kansas, at a height of **81,000 feet** (24,600 m), they were confronted with heavy storms and had to undertake an emergency landing at Manhattan, Kans. Malcolm Ross was injured and had to be brought to the hospital.

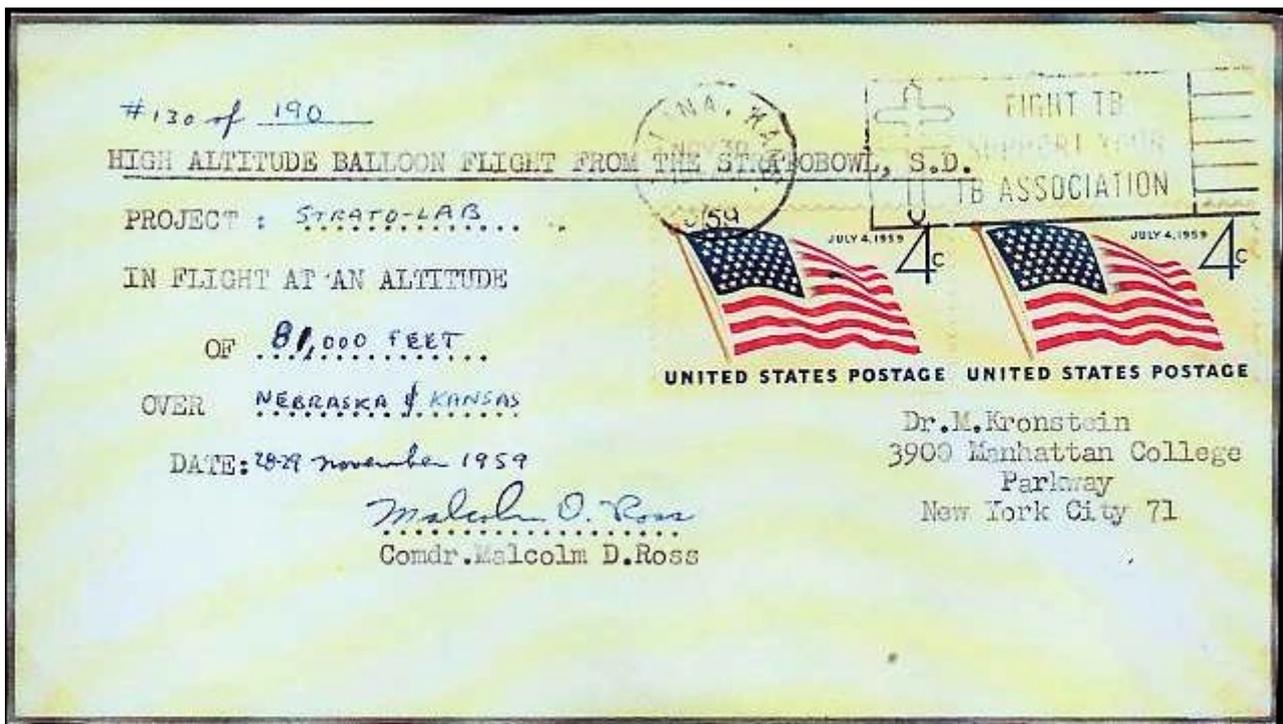


Figure 12

Cover No.130 of the 190 flown on the **Strato-Lab** balloon from 28-29 November 1959

A **Strato-Lab High** flight planned by the Navy to take place for the first time from the carrier ship USS Antietam on 1 May 1961 had to be postponed due to very bad weather conditions.

On **4 May 1961**, a day before the first manned ballistic space flight was made by Alan Shepard, the **5th and last Strato Lab High** flight of the U.S. "**Man in Space Soonest**" project took place.

The strato-balloon ascended from the aircraft carrier **USS Antietam** with Commander Ross and scientist Victor Prather. (Fig.13)

Ross and Prather reached a new record altitude ever achieved by a manned strato-balloon, of 113,740 feet (34,575 m).

Prather was killed in an accident caused during their retrieval by helicopter

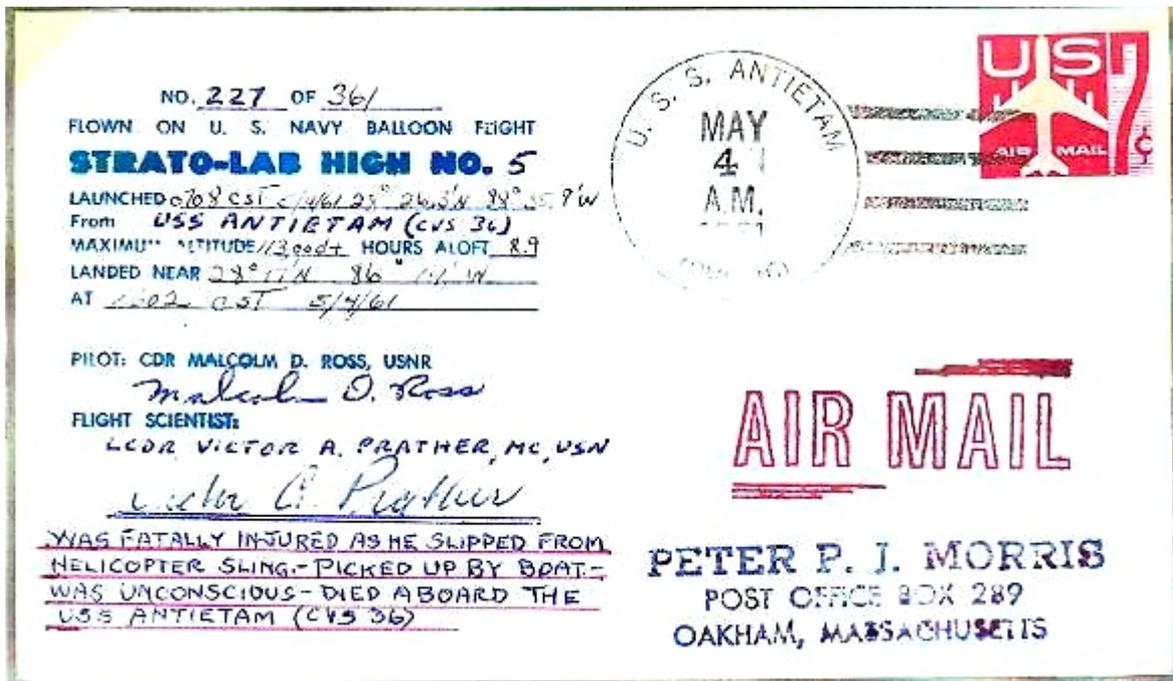


Figure 13

Cover flown by **Strato-Lab High No. 5**, on 4 May 1961, with detailed note on the death of Victor Prather.

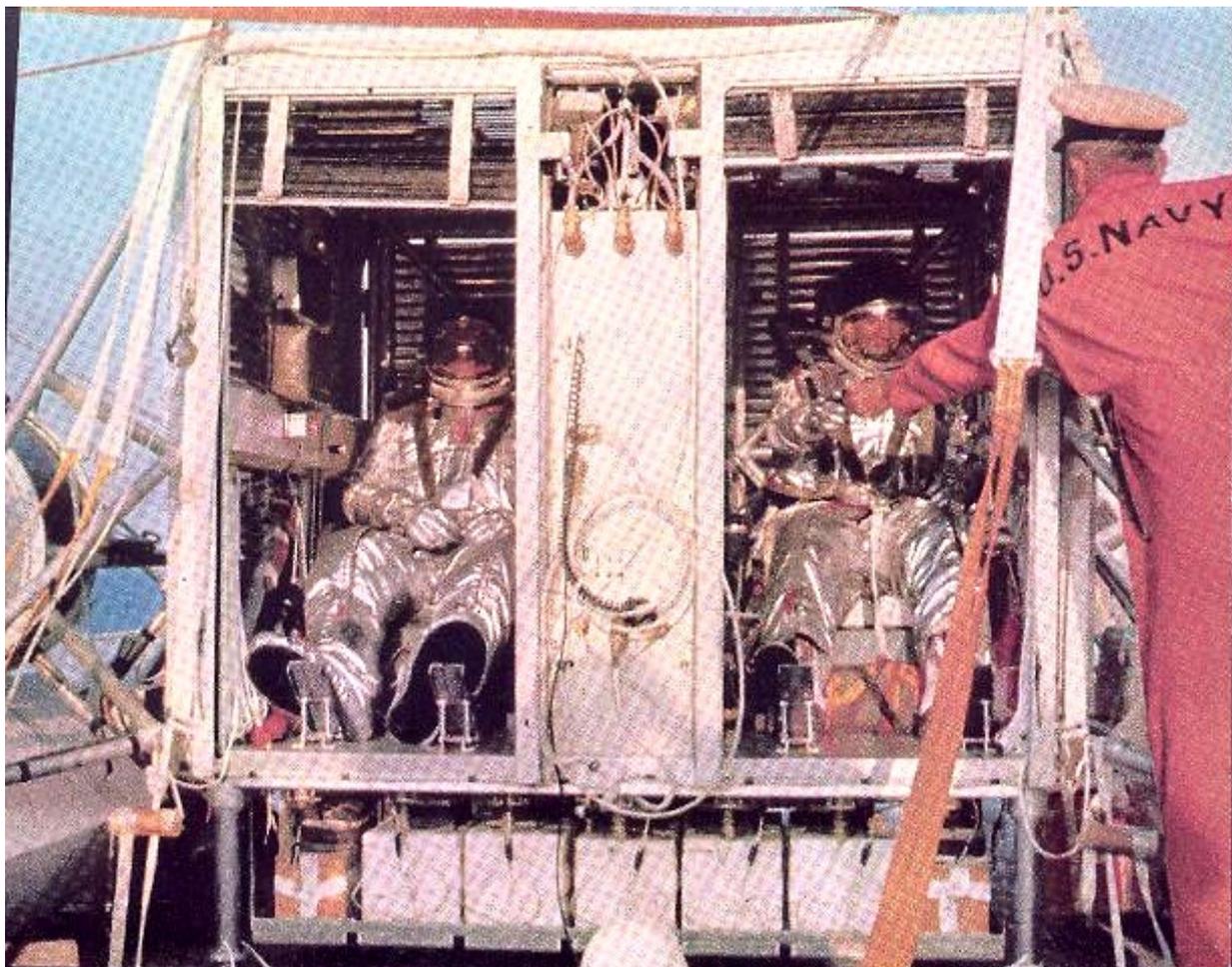


Figure 14

(Fig.14) This photo is helpful in providing an appreciation of the extraordinary conditions under which these two men, CDR. Ross at left and Prather at right, made their scientific and medical research flight at extreme altitude with the Skyhook balloon.

The temperature of the **Strato-Lab** gondola could only be regulated by using Venetian blinds.