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More Details for 1971-06-26

N1 6L

Superbooster failure of N1 serial number 6L. This was a substantially improved vehicle, incorporating filters in the propellant lines to prevent any foreign objects from getting into the pumps. The shape of the tail of the booster was modified, and ventilation and refrigeration systems were added to keep the engine compartment cool. It was painted white overall to reduce temperatures while sitting on the pad. After liftoff and ascent, an axial rotation was introduced by gas dynamics interactions of the thirty engines with the air slipstream. The launch vehicle developed a roll beyond the capability of the control system to compensate, and began to break up as it went through Max Q. Control was lost at 50.2 seconds into the flight and it was destroyed by range safety a second later. The engines functioned well and did not shut down up to the point of vehicle destruction. No functional payload was carried. It has been stated that this launch did not have a working launch escape system.

N1-6L was launched on the night of 26-27 June at 02:11:52 Moscow time. All thirty engines ignited successfully, and the first 5 seconds of flight were nominal. But from the first motion off the ground the booster began a slow axial rotation. By 14 seconds after launch this had reached 8 degrees per second. The booster's gyroscopic platform commanded an AUD - energy engine shutdown. But the command was not accepted by the control system - as agreed with Barmin, to save the launch pad, it was blocked until T+50 seconds. By that time the booster had rolled 60 degrees, and as soon as the filter was removed, all 30 engines were shut down. The booster crashed 30 km downrange. Without the signal blocking the booster would have crashed 1 km from the pad, seriously damaging the launch complex. The viewers remembers at V-2 crash commission at Kapustin Yar in 1948., where Pilyugin declared he favoured rocket failures, since nothing could be learned from a nominal launch. But this did little to diminish the gloom, which was exacerbated by the space community attending Isayev's funeral a day later.

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