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HISTORIC AMERICAN ENGINEERING RECORD

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~~AL-129-K~~
AL-129-K

MARSHALL SPACE FLIGHT CENTER,
SATURN V S-IC ~~SATURN V~~ STATIC TEST FACILITY
(Advanced Engine Test Facility)
(Marshall Space Flight Center,
Building No. 4670)
Redstone Arsenal
West Test Area
Huntsville Vicinity
Madison County
Alabama

Photographs taken by Jet Lowe, Summer 1995

~~AL-129-E-1~~
AL-129-K-1

GENERAL VIEW LOOKING NORTHWEST AT THE SATURN V STATIC TEST FACILITY. THIS TEST FACILITY WAS DESIGNED TO RESIST THE 12 MILLION POUNDS OF THRUST GENERATED BY THE SATURN V ENGINE CLUSTER.

HISTORIC AMERICAN ENGINEERING RECORD

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ADDENDUM TO: HAER AL-129-K

MARSHALL SPACE FLIGHT CENTER, ~~SATURN IC~~ STATIC
TEST FACILITY SATURN V S-IC
(Advanced Engine Test Facility)
(Building No. 4670)
Redstone Arsenal
West Test Area
Huntsville vicinity
Madison County
Alabama

Photograph HAER AL-129-K-1 was previously transmitted to Library of Congress.

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Jet Lowe, photographer, August 2009

AL-129-K-2	View looking South from the top platform of the F-1 test stand at the Saturn 1C stage Static Test Stand. This view shows modifications underway on the test stand in anticipation for the engine testing for the Constellation Program.
AL-129-K-3	General view looking North in the West Test Area, the Saturn 1C Static test facility is in the image center, the Saturn F-1 Engine test stand is in the background left.
AL-129-K-4	Oblique view looking Southeast at the Staurn 1C stage Static Test Tower.

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Photographs HAER AL-129-K-1 through HAER AL-129-K-4 were previously transmitted to the Library of Congress.

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Jet Lowe, photographer, September 2012

AL-129-K-5	View looking at the northeast elevation of the test stand for a position along the centerline of the viewshed between the test stand and the blockhouse, building 4674 . Note the doors of support building, 4671 in the middle-ground right and the vehicles for a scale reference.
AL-129-K-6	View looking at the northeast elevation of the test stand with building 4658, the blower building, used to pump air to create a positive air-pressure environment within the test stand legs during tests. Note the large tube extending across the elevation at the lower portion of the concrete legs of the test stand, this is part of the air pressurization system.
AL-129-K-7	Slightly oblique view looking at the north corner of the test stand along one of the test area's access roads . In the middle ground left is the test facility support building 4671 and a segment of the air supply vent tube that traverses the roadway when the positive air pressure system is in operation. in the middle ground right is the lower derrick operator's cab and LOX storage tanks to supply the test stand.
AL-129-K-8	Slightly oblique view looking at the east corner of the test stand. The helium building and supply trailer in the foreground right and the two hydrogen storage spheres are in the foreground left.
AL-129-K-9	View looking at the southeast elevation of the test stand. A liquid hydrogen (LH2) storage sphere is in the foreground right and the LH2 cold flow facility 4626 is seen in the foreground left

AL-129-K-10	View from atop an elevated "pill box" structure 4686 located southeast of the test stand looking at the southeast elevation of the test stand 4670. Facility 4626, the liquid hydrogen cold flow facility is in foreground.
AL-129-K-11	Slightly oblique view of the south corner of 4670 looking at the massive flame deflector nestled between the two southwest legs of the test stand.
AL-129-K-12	Slightly oblique view looking at the west corner of the test stand. This view was taken from the test stand water outflow containment area used to retain and control the release of the water discharged from the flame deflector.
AL-129-K-13	Detail view of the northeast elevation of the test stand showing the support structure on the back side of the flame deflector and the positive airflow duct tubing. Note the trussed frame used to support the duct tubing as it passes between the concrete legs of the test stand.
AL-129-K-14	Detail view of the north leg of the test stand showing the positive air flow duct tubing and the lower-level derrick crane.
AL-129-K-15	Detail view of the southeast elevation showing the industrial cooling-water supply pipes at and near ground level and the positive airflow duct tubing and the side of the flame deflector behind. Note the trussed frame used to support the duct tubing as it passes between the concrete legs of the test stand.
AL-129-K-16	Detail view of the southeast elevation of the test stand looking at flame deflector, it's structural support and the piping for the deflector cooling and sound-suppression water system.
AL-129-K-17	Detail view of the southwest elevation along the approximate centerline of the flame deflector,and it's rollout pad. Note the scale figure slightly left of center in the view. Also note the two openings at the top of the deflector indicating that the test stand was modified into a two position test stand when it was converted to the Advanced Engine Test Facility
AL-129-K-18	Slightly oblique view of the southwest elevation of the test stand looking at the flame deflector nestled between the south and west legs of the test stand. This view was taken from atop a manmade berm that creates the containment pond used to retain and control the release of the outflow from the flame deflector cooling and suppression water.

AL-129-K-19	Detail view of the northwest elevation showing the industrial cooling-water supply pipes at and near ground level and the positive airflow duct tubing and the side of the flame deflector behind. Note the trussed frame used to support the duct tubing as it passes between the concrete legs of the test stand.
AL-129-K-20	Detail view of the test stand showing the underside structure of the flame deflector and portions of the cooling water supply system.
AL-129-K-21	Detail view of the test stand looking underneath flame deflector showing a carriage assembly that is part of the system that enabled the flame deflector to be rolled out from underneath the test stand. The flame deflector was moved onto its rollout pad during the testing of the External Tank during the development of the Space Transportation System, m ore popularly known as the Space Shuttle.
AL-129-K-22	Detail view of the test stand looking underneath flame deflector showing a carriage assembly that is part of the system that enabled the flame deflector to be rolled out from underneath the test stand. The flame deflector was moved onto its rollout pad during the testing of the External Tank during the development of the Space Transportation System, m ore popularly known as the Space Shuttle.
AL-129-K-23	General view from the top of the north tower structure at level 27 at approximately 267 feet looking toward the 200 ton derrick crane mounted on top of the east tower structure.
AL-129-K-24	View from the upper catwalk between the west and south towers of test stand looking northeast the superstructure of the test stand is in the left and right side of the view, the 200 ton derrick crane is right of center, In the background, from nearest to farthest is the Blockhouse, building 4674, the Pump House, 4667 and above ground water tanks 4668 and 4669. Building 4666, the West Test Area offices and labs is beyond the Pump House and the tall structure in the extreme background is the Structural Test Facility, building 4550 in the East Test Area.
AL-129-K-25	General view of Marshall Space Flight Center from the north tower of the test stand looking north. In the middle ground is the F-1 engine test stand, building 4696 in the process of being demolished. In the middle ground right is the West Test Area,s Block House, building 4674. In the extreme background is the main core of Marshall's center

AL-129-K-26	General view of Marshall Space Flight Center from the north tower of looking northeast. In the middle ground and background from nearest to farthest is the Blower Building, building 4658, the Blockhouse, building 4674, the Pump House, 4667 and above ground water tanks 4668 and 4669. Building 4666, the West Test Area offices and labs is beyond the Pump House and the tall structure in the extreme background is the Structural Test Facility, building 4550 in the East Test Area. The cable reeving and lower block for the 200 ton derrick.
AL-129-K-27	General view from the Upper Platform, level 23, at approximately 235 feet looking northeast. In this view, from nearest to farthest, is the Blockhouse, building 4674, the Pump House, 4667 and above ground water tanks 4668 and 4669. Building 4666, the West Test Area offices and labs is beyond the Pump House and the tall structure in the extreme background is the Structural Test Facility, building 4550 in the East Test Area.
AL-129-K-28	View looking out from level 11 at approximately 104 feet above the ground level of the test stand looking southeast. In this view t is facility 4626, the Liquid Hydrogen Cold Flow Facility in the center middle ground and in the background right is facility 4699, the Cryogenic Structural Test Facility.
AL-129-K-29	View from platform on top of a liquid oxygen tank on level 17 at approximately 169 feet above the ground level of the test stand looking southeast at the tops of the liquid oxygen run tank in the background right and the liquid hydrogen run tank, the sphere, in the foreground left in this image.
AL-129-K-30	View at level 17 at approximately 169 feet above the ground level of the test stand looking at the liquid oxygen and liquid hydrogen run tanks.
AL-129-K-31	Detail view of valves and piping for the liquid nitrogen sphere on the Load Platform, level 15, at approximately 144 feet above the ground level of the test stand.
AL-129-K-32	General view from the north tower of the test on the Load Platform, level 15, at approximately 144 feet above ground level, looking towards the south at the hydrogen sphere and liquid oxygen run tanks
AL-129-K-33	General view on the Load Platform, level 15, at approximately 144 feet above the ground level of the test stand looking at the liquid hydrogen and liquid oxygen run tanks, supply and vent piping and control valves with their actuators.

AL-129-K-34	View from the top of the South leg at level 15, at approximately 144 feet above the ground level of the test stand looking at the test stand's steel superstructure constructed atop the concrete legs. On the foreground is the piping for the Liquid Hydrogen (LH2) fill and drain line for the LH2 run tank, above that is a supply pipie for the Fireex fire suppression system.
AL-129-K-35	Detail view on level 12 of the test stand looking at the gaseous nitrogen control panel. Gaseous nitrogen was used for pressurization and purging of portions of the propellant delivery systems.
AL-129-K-36	Close-up view on view of a gaseous-nitrogen (GN2) system control panel segment on level 12 of the test stand.
AL-129-K-37	Detail of test article mounting position just below level 12 in the test stand. Note the mounting brackets and the propellant feed lines.
AL-129-K-38	View looking at the bottom of a R.P.1 tank at test position 2 in the test stand. Note the conduit holes on the Northwest leg of the test stand.
AL-129-K-39	Detail view of the test-stand thrust structure showing two sets of tie-down flanges used to hold the Saturn V S-IC-T in place during the test firing of the F-1 engine clusters.
AL-129-K-40	Detail view of the test-stand thrust structure showing Saturn era tie-down flanges and and more recent-era modifications.

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Jet Lowe, photographer, September 2012

AL-129-K-41 (CT)	Color duplicate of HAER No. AL-129-K-7. Slightly oblique view looking at the north corner of the test stand along one of the test area's access roads . In the middle ground left is the test facility support building 4671 and a segment of the air supply vent tube that traverses the roadway when the positive air pressure system is in operation. In the middle ground right is the lower derrick operator's cab and LOX storage tanks to supply the test stand.
AL-129-K-42 (CT)	Color duplicate of HAER No. AL-129-K-33. General view on the Load Platform, level 15, at approximately 144 feet above the ground level of the test stand looking at the liquid hydrogen and liquid oxygen run tanks, supply and vent piping and control valves with their actuators.