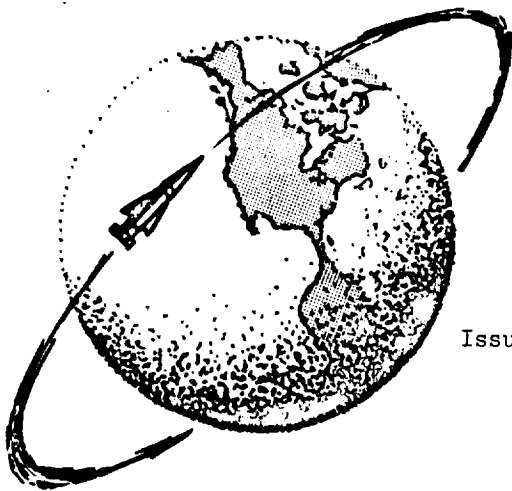


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Supplemental Report 5 — Part II

IBM

**Federal Systems Division
Space Systems Center
Bethesda, Maryland**

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Gemini IX-A
MSC-G-R-66-6
By: Gemini IX-A Mission Evaluation Team
National Aeronautics and Space Administration
Manned Spacecraft Center
Houston, Texas

GT-9 POST FLIGHT ANALYSIS
REPORT SUPPLEMENT (U)

IBM NO: 75-100-0014

DATE: 9 November 1966

CONTRACT NO: NAS 9-4792

GROUP - 4

~~Downgraded at 8 year intervals;
declassified after 12 years.~~

~~THIS DOCUMENT CONTAINS INFORMATION AFFECTING THE NATIONAL DEFENSE OF THE UNITED STATES WITHIN THE MEANING OF THE ESPIONAGE LAWS, TITLE 18 U.S.C., SECTIONS 793 AND 794, ITS TRANSMISSION OR THE REVELATION OF ITS CONTENTS IN ANY MANNER TO ANY UNAUTHORIZED PERSON IS PROHIBITED BY LAW.~~

ORIGINATED BY: Gemini Systems Engineering

APPROVED BY: *H. J. Manning*

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This document includes data which supplements "GT-9 Post Flight Analysis Report", dated 14 July 1966, IBM No. 66-554-0081 . The following information is contained in this supplement.

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TABLE I-2 -IGS INJECTION CONDITIONS
(at approximately SECO +20:359.957)

	IGS Flight Values (1)	FORTTRAN Reconstruction (2)	Operational Program Reconstruction (2)	IGS Navigation Error (3)	Corrected IGS Flight Value (4)
VX	25290.835 fps	25290.865	25290.873	9.5	25281.335
VY	4655.160 fps	4655.152	4655.162	-0.9	4656.060
VZ	-28.027 fps	-28.030	-28.018	-158.0	129.973
X	3836040 ft	3836034	3836036	800	3835240
Y	-21089876 ft	-21089878	-21089881	-200	-21089676
Z	-247924 ft	-247926	-247926	-22400	-225524
V	25715.708 fps	25715.735	25715.734		25706.839
R	21437340 ft	21437340	21437339		21436753
VR	-53.791 fps	-53.786	-53.797		-58.970
V1	-157.408 fps	-157.402	-157.386		0.610
Γ	-0.1198 deg	-0.1198	-0.1199		-0.1314

- (1) IGS parameters listed were obtained from in-flight DAS data.
(2) FORTTRAN and Operational Program results were obtained from reconstruction of the flight using DAS accelerometer and gimbal angle data.
(3) IGS navigation data obtained from STL, error defined as IGS minus tracking data.
(4) IGS flight values corrected for navigation errors.

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CONFIDENTIAL	TIDAS (SEC)	RS (K- FEET)	PHI (DEG)	THETA (DEG)	VE (FPS)	GAMMA (DEG)	PSIE (DEG)
	284.500	21793.060	7.514	196.784	23778.604	-0.811	60.234
	300.500	21787.594	8.010	197.660	23785.184	-0.835	60.373
	316.500	21781.966	8.503	198.540	23791.953	-0.859	60.520
	332.500	21776.178	8.995	199.423	23798.920	-0.883	60.677
	348.500	21770.222	9.484	200.309	23806.064	-0.907	60.843
	364.500	21764.128	9.972	201.198	23813.395	-0.930	61.018
	380.500	21757.868	10.456	202.090	23820.910	-0.953	61.202
	396.500	21751.454	10.938	202.987	23828.615	-0.975	61.395
	412.500	21744.892	11.418	203.886	23836.492	-0.997	61.598
	428.500	21738.174	11.894	204.790	23844.543	-1.019	61.810
	444.500	21731.328	12.368	205.697	23852.779	-1.041	62.031
	460.500	21724.324	12.838	206.610	23861.174	-1.062	62.262
	476.500	21717.178	13.305	207.525	23869.752	-1.082	62.502
	492.500	21709.894	13.768	208.446	23878.498	-1.103	62.752
	508.500	21702.472	14.228	209.371	23887.400	-1.123	63.011
	524.500	21694.912	14.684	210.301	23896.475	-1.142	63.279
	540.500	21687.236	15.136	211.235	23905.659	-1.161	63.557
	556.500	21679.412	15.583	212.175	23915.090	-1.180	63.844
	572.500	21671.472	16.027	213.120	23924.631	-1.198	64.141
	588.500	21663.420	16.466	214.070	23934.330	-1.216	64.447
	604.500	21655.226	16.900	215.025	23944.170	-1.233	64.763
	620.500	21646.918	17.330	215.986	23954.168	-1.250	65.088
	636.500	21638.502	17.755	216.952	23964.309	-1.267	65.423
	652.500	21629.968	18.174	217.924	23974.586	-1.283	65.767
	668.500	21621.234	18.589	218.902	23985.002	-1.298	66.121
	684.500	21612.586	18.997	219.886	23995.551	-1.313	66.485
	700.500	21603.730	19.400	220.876	24006.232	-1.328	66.857
	716.500	21594.776	19.798	221.871	24017.043	-1.342	67.240
	732.500	21585.740	20.189	222.874	24027.979	-1.356	67.632
	748.500	21576.600	20.574	223.882	24039.051	-1.369	68.033
	764.500	21567.364	20.953	224.897	24050.225	-1.381	68.444
	780.500	21558.038	21.325	225.918	24061.514	-1.394	68.864
	796.500	21548.634	21.691	226.945	24072.926	-1.405	69.293
	812.500	21539.154	22.049	227.979	24084.437	-1.416	69.731
	828.500	21529.590	22.400	229.019	24096.062	-1.427	70.179
	844.500	21519.942	22.745	230.067	24107.781	-1.437	70.636
	860.500	21510.238	23.081	231.120	24119.604	-1.447	71.102
	876.500	21500.468	23.410	232.180	24131.518	-1.456	71.577
	892.500	21490.628	23.731	233.246	24143.520	-1.464	72.061
	908.500	21480.728	24.044	234.320	24155.615	-1.472	72.553
	924.500	21470.772	24.349	235.399	24167.789	-1.479	73.054
	940.500	21460.768	24.646	236.486	24180.043	-1.486	73.564
	956.500	21450.706	24.933	237.579	24192.375	-1.492	74.082
	972.500	21440.600	25.212	238.678	24204.760	-1.498	74.608
	988.500	21430.454	25.483	239.783	24217.234	-1.503	75.143
	1004.500	21420.268	25.743	240.896	24229.766	-1.508	75.685
	1020.500	21410.048	25.995	242.014	24242.348	-1.512	76.235
	1036.500	21399.798	26.237	243.138	24254.986	-1.516	76.793
	1052.500	21389.526	26.470	244.269	24267.684	-1.519	77.358
	1068.500	21379.224	26.692	245.405	24280.412	-1.521	77.930
	1084.500	21368.902	26.905	246.547	24293.182	-1.523	78.509
	1100.500	21358.560	27.107	247.694	24305.994	-1.524	79.094
	1116.500	21348.216	27.299	248.848	24318.832	-1.525	79.686
	1132.500	21337.862	27.481	250.006	24331.684	-1.525	80.284
	1148.500	21327.492	27.652	251.170	24344.566	-1.524	80.888
	1164.500	21317.140	27.812	252.338	24357.439	-1.523	81.498
	1180.500	21306.776	27.962	253.511	24370.336	-1.522	82.113

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TABLE III-4
RECONSTRUCTED GT-9 RE-ENTRY PARAMETERS TO 400,000 FT.



RS (K- FEET)	PHI (DEG)	THETA (DEG)	VE (FPS)	GAMMA (DEG)	PSIE (DEG)	RD (N M)	RC (N M)	BC (DEG)	RP (N M)	D	TTDAS (SEC)	RT (N M)
21041.442	27.827	284.131	8508.789	-4.376	98.499	-37.21	-0.13	0.	83.88	6.233	1633.861	46.57
21040.786	27.824	284.157	8338.570	-4.416	98.514	-11.67	-0.13	0.	56.94	5.913	1634.885	45.27
21040.070	27.820	284.186	8159.303	-4.478	98.529	-3.55	-0.14	0.	47.27	5.724	1635.993	43.71
21039.422	27.817	284.209	7993.670	-4.540	98.543	0.68	-0.11	3.234	41.83	5.582	1637.018	42.51
21038.780	27.814	284.234	7828.037	-4.606	98.555	0.32	-0.12	3.564	40.83	5.567	1638.041	41.15
21038.020	27.810	284.263	7637.689	-4.689	98.570	-0.19	-0.13	3.564	39.78	5.552	1639.250	39.59
21037.452	27.807	284.284	7492.455	-4.757	98.580	-0.49	-0.12	3.564	38.97	5.538	1640.172	38.48
21036.794	27.804	284.307	7328.170	-4.833	98.588	-0.90	-0.13	3.564	38.11	5.522	1641.229	37.21
21036.226	27.801	284.327	7184.754	-4.903	98.594	-1.23	-0.12	3.564	37.38	5.509	1642.150	36.15
21035.550	27.798	284.352	7017.242	-5.005	98.651	-1.54	-0.10	3.564	36.34	5.493	1643.259	34.80
21034.986	27.795	284.371	6879.455	-5.095	98.700	-1.55	-0.08	3.564	35.34	5.480	1644.172	33.80
21034.426	27.793	284.389	6740.070	-5.190	98.751	-1.43	-0.05	3.564	34.23	5.465	1645.094	32.81
21033.772	27.790	284.411	6585.172	-5.353	98.862	-1.48	0.00	3.564	33.13	5.452	1645.159	31.55
21033.202	27.787	284.429	6451.262	-5.501	98.961	-1.43	0.05	3.564	32.08	5.438	1647.081	30.65
21032.518	27.784	284.451	6297.191	-5.753	99.101	-1.42	0.12	3.564	30.91	5.426	1648.190	29.48
21031.944	27.782	284.467	6173.660	-5.965	99.217	-1.42	0.17	3.564	30.03	5.418	1649.080	28.52
21031.332	27.779	284.484	6042.391	-6.202	99.345	-1.28	0.24	3.564	28.98	5.404	1650.025	27.70
21030.646	27.777	284.503	5905.260	-6.527	99.473	-1.22	0.30	3.564	27.92	5.393	1651.062	26.70
21030.000	27.774	284.520	5779.209	-6.839	99.595	-1.08	0.34	3.564	26.84	5.379	1652.015	25.77
21029.224	27.771	284.540	5636.498	-7.252	99.682	-0.91	0.38	3.564	25.64	5.365	1653.123	24.73
21028.586	27.769	284.554	5523.217	-7.597	99.753	-0.76	0.41	3.564	24.72	5.355	1654.005	23.97
21027.886	27.767	284.571	5401.941	-7.984	99.835	-0.57	0.42	3.564	23.58	5.338	1654.950	23.02
21027.098	27.764	284.588	5272.258	-8.424	99.843	-0.36	0.42	3.564	22.48	5.322	1655.985	22.12
21026.356	27.762	284.602	5153.104	-8.850	99.849	-0.10	0.42	3.564	21.44	5.304	1656.938	21.34
21025.520	27.759	284.618	5024.709	-9.300	99.793	0.14	0.40	-10.942	20.34	5.286	1657.978	20.49
21024.738	27.757	284.633	4907.180	-9.733	99.735	0.28	0.37	-10.190	19.42	5.268	1658.931	19.70
21023.810	27.755	284.647	4771.687	-10.176	99.618	0.51	0.35	-9.369	18.45	5.246	1660.039	18.95
21022.928	27.753	284.662	4645.020	-10.616	99.499	0.55	0.30	-8.106	17.58	5.224	1661.079	18.13
21022.046	27.751	284.676	4520.482	-11.074	99.375	0.63	0.26	-7.024	16.75	5.201	1662.103	17.38
21021.072	27.748	284.691	4389.051	-11.470	99.233	0.53	0.21	-5.835	16.05	5.179	1663.215	16.57
21020.170	27.747	284.704	4267.365	-11.860	99.090	0.41	0.17	-4.616	15.45	5.158	1664.245	15.86
21019.198	27.745	284.719	4140.922	-12.214	98.970	0.08	0.13	-3.647	14.97	5.138	1665.360	15.05
21018.290	27.743	284.732	4023.871	-12.563	98.850	-0.12	0.10	-3.647	14.50	5.120	1666.392	14.38
21017.326	27.741	284.743	3903.045	-12.892	98.797	-0.38	0.09	-3.647	14.14	5.101	1667.500	13.76
21016.500	27.740	284.756	3799.465	-13.191	98.747	-0.77	0.07	-3.647	13.88	5.085	1668.452	13.10
21015.682	27.738	284.766	3696.662	-13.506	98.692	-1.09	0.06	-3.647	13.66	5.065	1669.397	12.55
21014.788	27.737	284.778	3588.398	-13.845	98.700	-1.58	0.05	-3.647	13.50	5.047	1670.434	11.92

TABLE III-7

RECONSTRUCTED GT-9 RE-ENTRY PARAMETERS FROM END OF
BLACKOUT TO 80,000 FT.

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RS (K- FEET)	PHI (DEG)	THETA (DEG)	VE (FPS)	GAMMA (DEG)	PSIE (DEG)	RD (N M)	RC (N M)	BC (DEG)	RP (N M)	D	TTDAS (SEC)	RT (N M)
21013.972	27.735	284.787	3488.885	-14.175	98.723	-1.97	0.06	-3.647	13.38	5.027	1671.387	11.43
21013.090	27.734	284.798	3384.953	-14.562	98.782	-2.45	0.07	-3.647	13.30	5.008	1672.419	10.85
21012.282	27.733	284.807	3289.068	-14.942	98.843	-2.64	0.08	-3.647	13.00	4.990	1673.372	10.36
21011.342	27.731	284.818	3183.846	-15.440	98.942	-2.58	0.09	-3.647	12.31	4.971	1674.481	9.74
21010.602	27.730	284.826	3100.818	-15.858	99.023	-2.52	0.11	-3.647	11.86	4.957	1675.358	9.34
21009.792	27.729	284.834	3010.584	-16.340	99.119	-2.38	0.13	-3.647	11.28	4.937	1676.312	8.90
21008.898	27.727	284.843	2914.461	-16.921	99.233	-2.27	0.14	-3.647	10.67	4.918	1677.368	8.41
21008.116	27.726	284.850	2830.875	-17.451	99.340	-2.09	0.16	-3.647	10.11	4.896	1678.290	8.02
21007.172	27.725	284.860	2736.721	-18.171	99.430	-2.08	0.16	-3.647	9.56	4.877	1679.393	7.48
21006.402	27.724	284.866	2661.338	-18.778	99.507	-2.04	0.18	-3.647	9.17	4.863	1680.291	7.14
21005.598	27.723	284.873	2581.658	-19.461	99.599	-1.86	0.19	-3.647	8.64	4.842	1681.235	6.78
21004.708	27.722	284.881	2498.631	-20.227	99.638	-1.80	0.20	-3.647	8.17	4.824	1682.271	6.38
21003.884	27.721	284.888	2422.455	-20.978	99.673	-1.68	0.20	-3.647	7.67	4.801	1683.225	5.99
21002.916	27.720	284.896	2338.816	-21.847	99.626	-1.63	0.19	-3.647	7.20	4.779	1684.333	5.58
21002.148	27.719	284.901	2272.711	-22.584	99.585	-1.54	0.19	-3.647	6.84	4.764	1685.215	5.30
21001.320	27.718	284.906	2202.082	-23.427	99.532	-1.46	0.19	-3.647	6.47	4.741	1686.160	5.01
21000.414	27.717	284.912	2128.689	-24.289	99.385	-1.41	0.18	-3.647	6.08	4.721	1687.198	4.58
20999.576	27.716	284.918	2061.662	-25.133	99.235	-1.37	0.16	-3.647	5.72	4.697	1688.151	4.35
20998.676	27.715	284.924	1994.150	-25.972	99.038	-1.40	0.15	-3.647	5.44	4.678	1689.185	4.05
20997.844	27.715	284.929	1932.268	-26.799	98.834	-1.37	0.14	-3.647	5.16	4.661	1690.138	3.79
20996.880	27.714	284.935	1865.611	-27.599	98.560	-1.47	0.12	-3.647	4.94	4.642	1691.245	3.47
20996.036	27.713	284.939	1807.049	-28.355	98.297	-1.47	0.10	-3.647	4.69	4.626	1692.228	3.22
20995.212	27.713	284.944	1749.961	-29.147	98.014	-1.47	0.08	0.	4.52	4.604	1693.188	2.95

TABLE III-7 (Continued)
 RECONSTRUCTED GT-9 RE-ENTRY PARAMETERS FROM
 END OF BLACKOUT TO 80,000 FT.

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