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BYEMAN-TALENT-KEYHOLE
CONTROL SYSTEMS JOINTLY

(S) NATIONAL RECONNAISSANCE OFFICE

WASHINGTON, D.C.



18 APR 1972

THE NRO STAFF

MEMORANDUM FOR CHAIRMAN, COMMITTEE ON IMAGERY
REQUIREMENTS AND EXPLOITATION

SUBJECT: GAMBIT and HEXAGON MBFR/SALT Simulations

~~Dr. Lucas has seen.~~

The NRO has performed GAMBIT and HEXAGON simulations for the FY 1973 through FY 1975 time period to provide data which can be used to develop estimates of the role photographic satellite reconnaissance might play in monitoring provisions of an agreement on Mutual Balanced Force Reduction (MBFR) and Strategic Arms Limitations Treaty. (SALT).

The data show the point target photographic coverage of GAMBIT, the anticipated amount and periodicity of area search coverage provided by HEXAGON and the target surveillance photography furnished by the combination of GAMBIT and HEXAGON.

The projected photographic reconnaissance satellite launch schedule used in the simulations was based on the EXCOM approved authorization of three HEXAGON launches per fiscal year and the anticipated interleaved GAMBIT schedule of four in FY 1973 and three thereafter. A graphic presentation of this FY 1973-FY 1975 projected schedule is shown at Figure 1. Based on the planning information available at the present time, parametric changes in orbit life, perigee height and inclination were projected and used in the computer simulations. These data are summarized at Figure 2.

To portray the photographic coverage that could be expected during the FY 1973-FY 1975 period the study profile was designed to show the results of differing priority emphasis on targeting requirements. A "standard/normal priorities" baseline case was initially developed which is considered today's prioritization of targets without special emphasis for MBFR or SALT requirements. Additional data were then generated to show satisfaction levels of the MBFR and SALT requirements as a

GAMBIT HEXAGON

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maximum effort collection need. The results thus structured provide the requirements satisfaction levels attainable without special emphasis of the MBFR and SALT requirements and the trade-offs in requirements satisfaction available if special MBFR or SALT collection emphasis is necessary.

The computer simulation results and a further explanation of the data are provided at TAB A - GAMBIT, TAB B - HEXAGON, and graphic displays combining GAMBIT and HEXAGON are at TAB C.



CHARLES L. MURPHY
Deputy Director for
Satellite Operations

3 Attachments

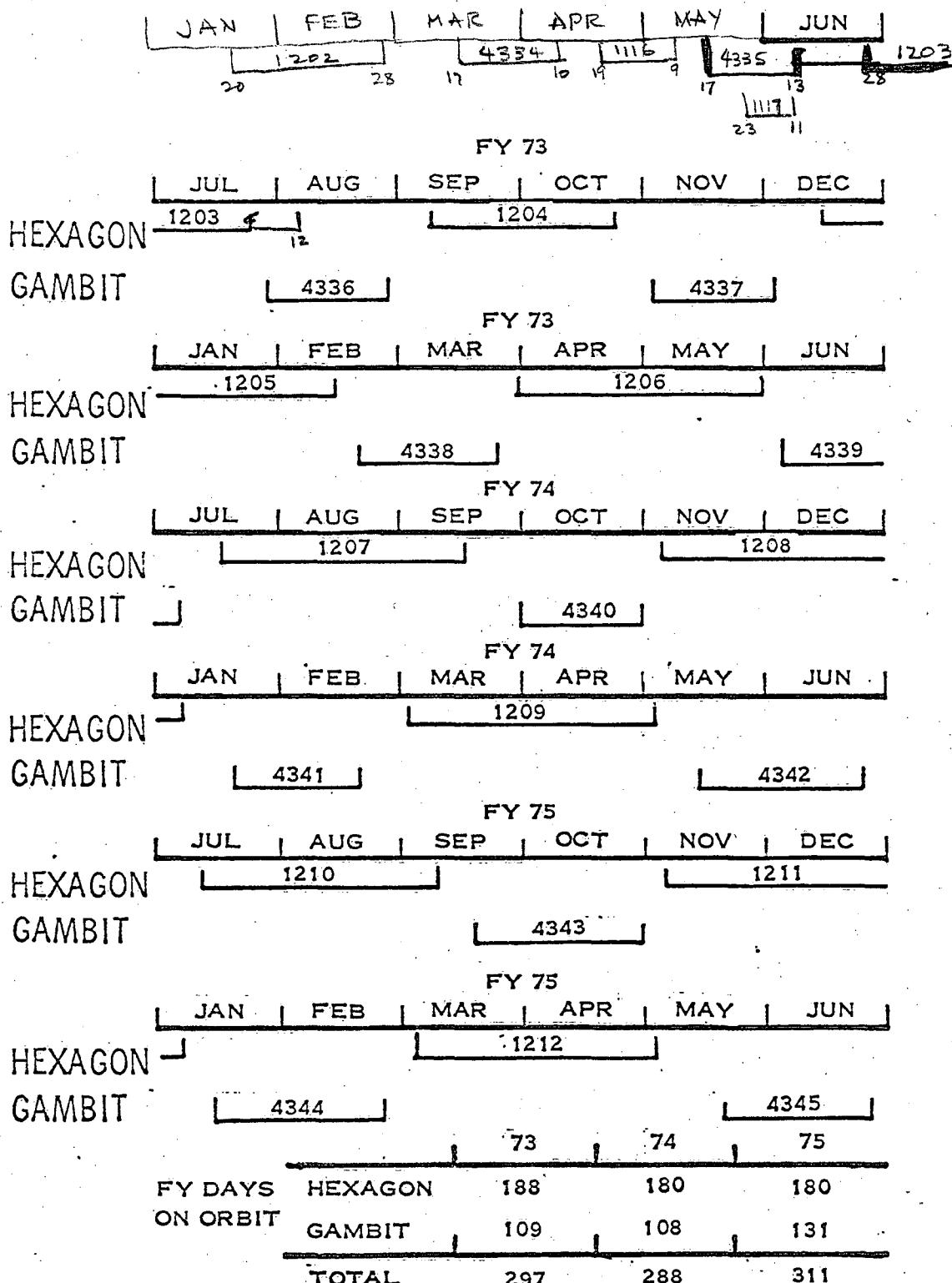
1. TAB A - GAMBIT
2. TAB B - HEXAGON
3. TAB C - GAMBIT & HEXAGON
Graphic Displays

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LAUNCH SCHEDULE



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<u>VEHICLE NUMBER</u>	<u>LIFETIME (Days)</u>	<u>INCLINATION (Deg.)</u>	<u>PERIGEE (n. m.)</u>
4336	27	110	75
1204	60	96	82
4337	30	110	75
1205	60	96	82
4338	30	110	75
1206	60	96	82
4339	30	110	75
1207	60	96	82
4340	30	110	75
1208	60	96	82
4341	30	110	75
1209	60	96	82
4342	40	96	67
1210	60	96	82
4343	42	96	67
1211	60	96	82
4344	44	96	67
1212	60	96	82
4345	45	96	67

Figure 2.

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Page 2 of 2 Pages

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SUBJECT: MBFR/SALT Study (GAMBIT)

PURPOSE

1. A study was performed to assess the capability of the GAMBIT system against the MBFR and SALT point target requirements in the FY 1973 to FY 1975 time era. The results of the computer simulation and the simulation input and run conditions are presented in this TAB.

METHODS & ASSUMPTIONS

2. The launch schedule assumed was August-November-March-June for FY 1973 and October-February-June for FY 1974 and beyond. The orbital life of GAMBIT was projected based on approved and funded vehicle improvements. Orbit life increases from 27 days in August 1972 (4336) to 45 days in June 1975 (4345).

3. A film quantity growth from 10,000 feet to 10,800 feet is scheduled for vehicle 4341 (February 1974) and was considered in the simulation.

4. The point target requirements were divided into three separate categories to provide MBFR and SALT correlation. The target requirements are described in Table A1. An initial condition of all targets due each mission was assumed.

5. The GOST GAMBIT simulation program was used to model the GAMBIT operational targeting program TMOP. TMOP and GOST runs were made to calibrate the GOST performance. The criteria established to determine when an acceptable calibration level had been reached were as follows:

(a) Total target difference, 2 percent or less.

(b) Film use difference, 3 percent or less.

6. Film use was managed on each mission (with the exception of 4337) to place the final film consumption within 600 feet of the available film. Mission 4337 was unmanaged and used only 9262 feet. The film management techniques used in the study were PCUM (Cumulative Probability of a Clear Image) and predicted weather thresholding. A

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minimum sun angle cut-off of zero degrees was used for the Missions 4336-4338 results and a two-degree sun angle cut-off for Missions 4339-4345 when PCUM deletions were employed. A target was dropped from consideration when the target PCUM reached 99. This was the first step to be employed when film management was required. The next step when required was to apply weather thresholding for each priority starting at the lowest priority.

7. Each mission was studied in three ways:

(a) Standard (Normal) Priorities - The priority structure on past Mission 4333 was used as a Standard (Normal) Priorities baseline case.

(b) MBFR Maximum Priority - This case was developed to show the anticipated satisfaction levels attainable if all MBFR targets were zero (highest) priority. All priority zero targets in the baseline (Standard Priorities) case were made priority one.

(c) SALT Maximum Priority - All SALT target requirements in this case were made priority zero and other zero priority targets were made priority one.

FACTORS AFFECTING ACCURACY OF RESULTS

8. The weather data used in the GOST simulation was the Environmental Technical Applications Center (ETAC) daily surface observations at local noon for the years 1966, 1967 and 1968. The actual results will vary depending upon how much the real weather departs from the ETAC weather used.

9. The GOST simulation against a high density area, such as the MBFR area, does not completely duplicate the TMOP operational program in mono/stereo ratios. Although the target totals are within calibration criteria, stereo only target totals could fluctuate greater than the calibration limits.

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10. The results reflect the planned emphasis in future GAMBIT missions to quality versus quantity. Longer life, sun-synchronous flight inclination, lower altitude perigee and resultant total mission lower average altitude all contribute to an increased mission image quality profile. Although the results of this GAMBIT simulation show today's plan, for any mission the flexibility exists to trade quality and quantity to attain the maximum satisfaction of intelligence needs.

11. The results depicted in Figure A1 (Standard Priorities), Figure A2 (MBFR Maximum Priority) and Figure A3 (SALT Maximum Priority) are on the basis of total targets in each of the above classes. For graphic display, the entire mission results are plotted at the launch month end as an instantaneous value. Additional data by category showing total targets attempted, stereo results, and total targets clear by mission is provided in tabular form at Appendix A1.

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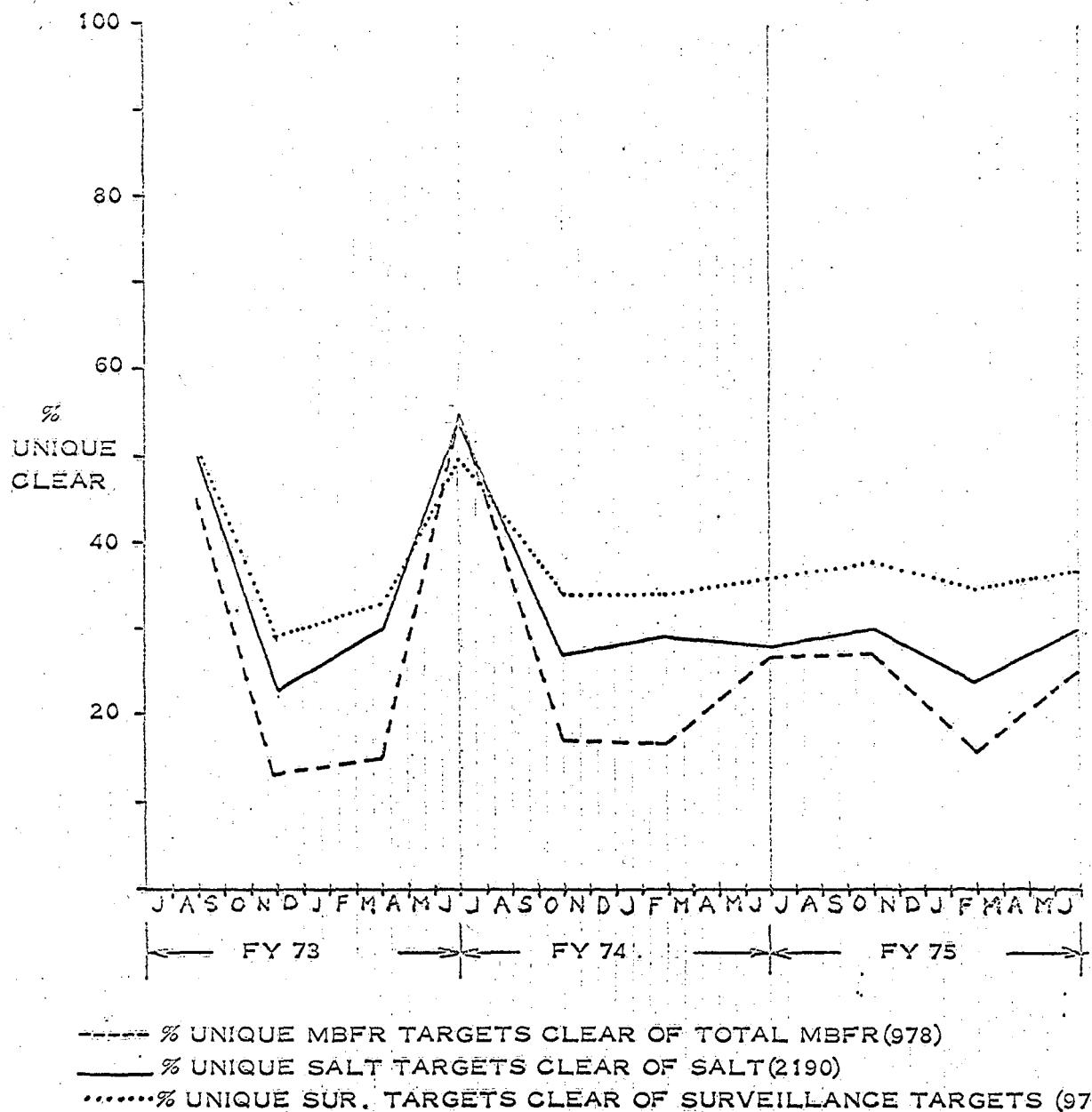
TABLE A1

<u>Category Number</u>	<u>Category Description</u>	<u>Total Targets</u>	
MBFR 101		133	(b)(1)
MBFR 102		90	(b)(3)
MBFR 103		148	
MBFR 104		164	
MBFR 105		122	
MBFR 106		91	
MBFR 107		98	
MBFR 108		132	
GS 701	Missiles	3423	
GS 702	Aviation	1330	
GS 703	Nuclear	224	
GS 704	Naval	412	
GS 705	BW/CW	62	
GS 706	Electronics	792	
GS 707	Ground Force	2809	
GS 708	Urban/Industrial	594	
GS 709	Unidentified	99	
SALT 801	ICBM SS7 & SS8	116	
SALT 802	ICBM SS9	351	
SALT 803	ICBM SS11	1092	
SALT 804	ICBM SS13	71	
SALT 805	MRBM/IRBM	322	
SALT 806	Test Ranges/RD	119	
SALT 807	ABM	10	
SALT 808	Naval	32	
SALT 809	Aviation	70	
SALT 810	Other	7	

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STANDARD PRIORITIES

POINT TARGETS - KH8



Page 1 of 3 Pages

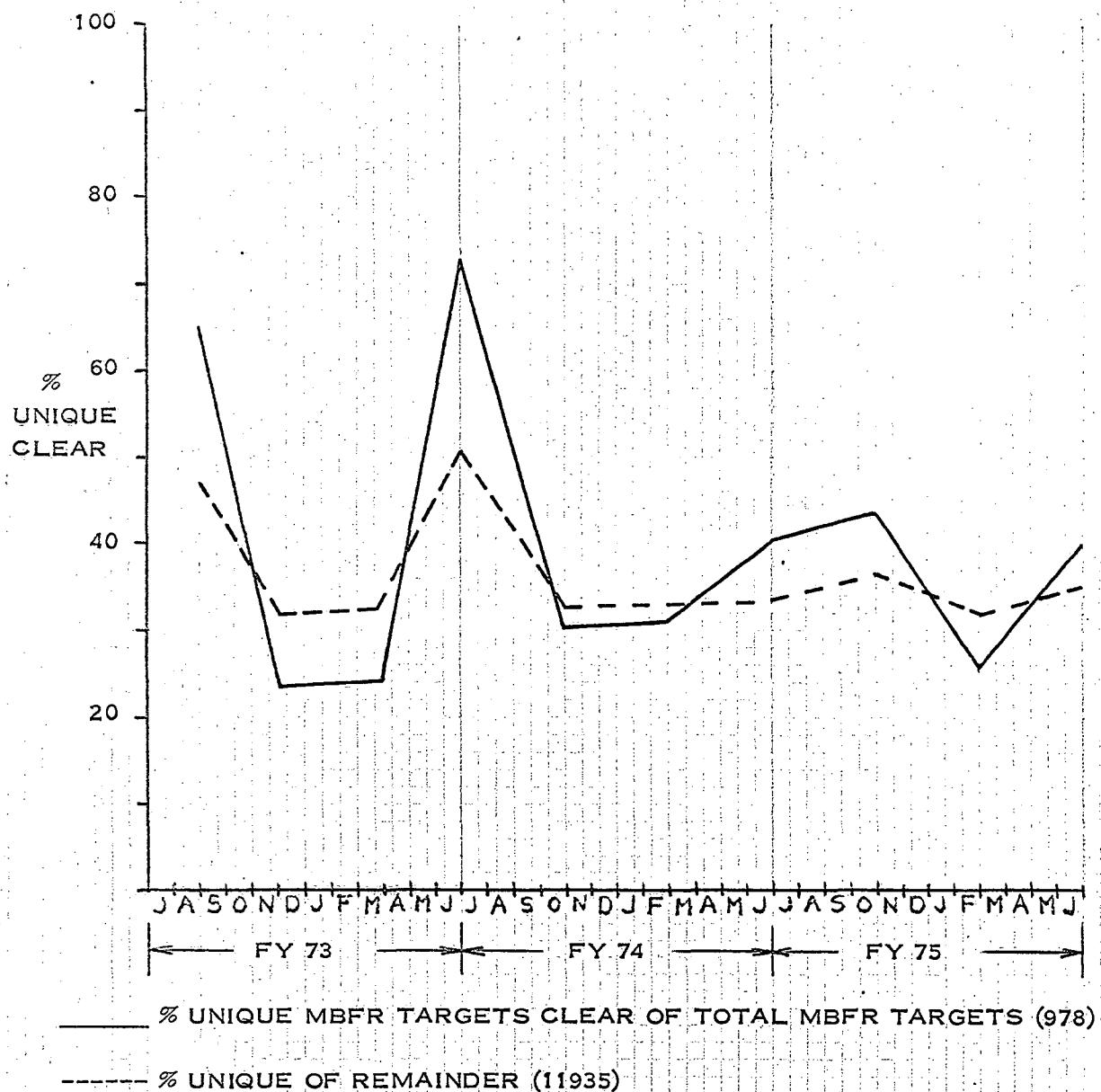
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Figure A1. New page

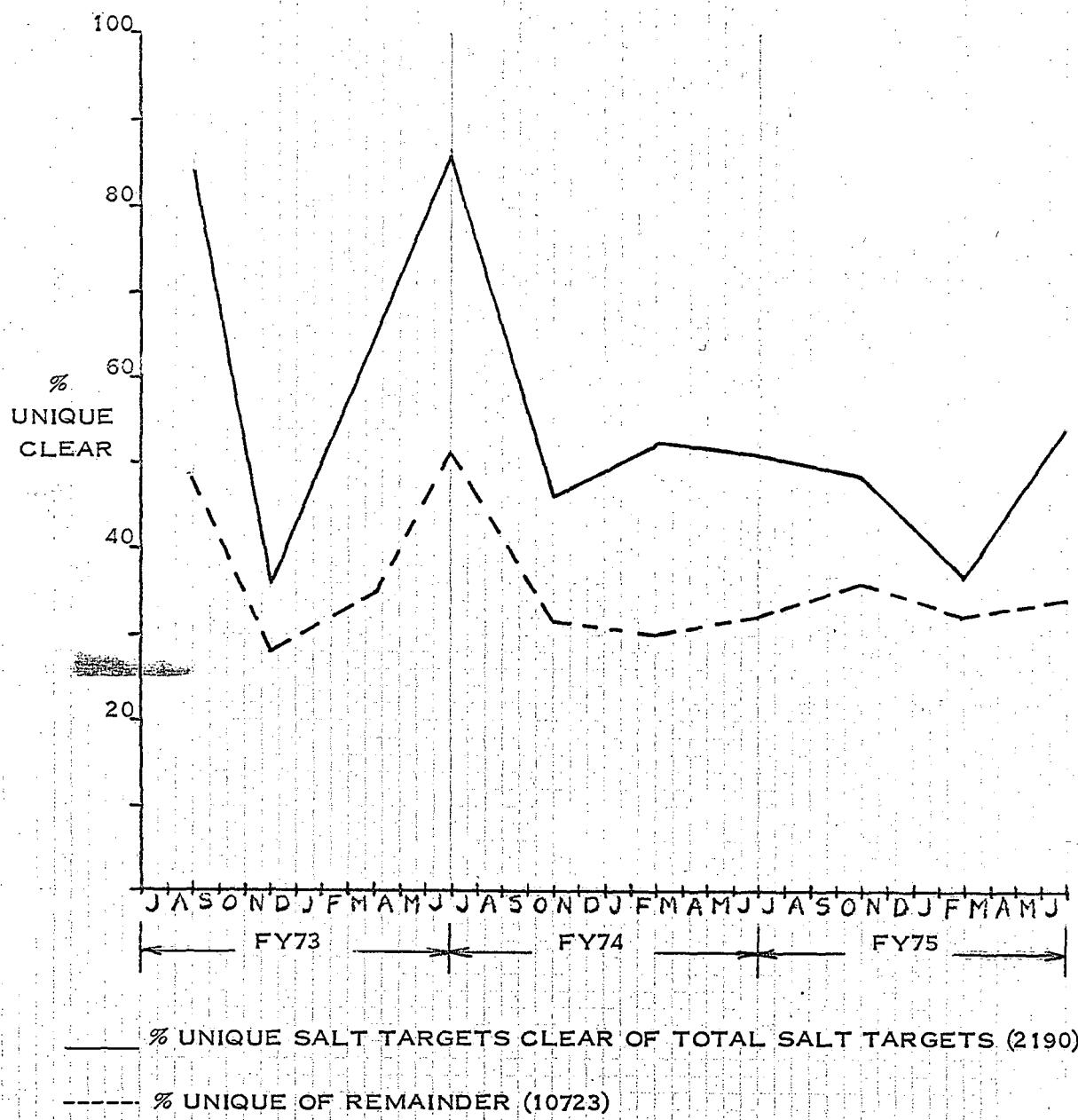
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MBFR MAX PRIORITY

POINT TARGETS - KH8



SALT MAX PRIORITY
POINT TARGETS-KH8



Page 3 of 3 Pages
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Figure A3

DAYS ON ORBIT 30

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Category	Nr. of Targets in Cat.	Total Targets Attempted (Stereo)	Total Targets Attempted	Total Targets Clear (Stereo)	Total Targets Clear	Total Unique Targets Clear (Stereo)	Total Unique Targets Clear	Total Unique Targets (%)
101	133	50	154	14	65	11	55	51
102	90	29	122	8	55	5	43	48
103	148	25	115	14	57	13	52	35
104	164	26	164	15	77	14	62	39
105	122	29	98	20	53	18	48	39
106	91	49	126	24	58	18	43	48
107	98	62	169	28	83	23	68	69
108	132	29	120	15	70	14	63	48
109	628	280	1070	138	518	8832	426	45
701	3423	1463	4648	665	2190	458	1586	46
702	1330	1233	2403	545	1105	352	746	56
703	224	185	455	81	218	51	137	61
704	412	347	725	145	327	95	233	57
705	62	37	71	18	36	12	23	45
706	792	673	1470	321	707	183	437	55
707	2869	1275	3563	662	1820	466	1326	47
708	594	214	215	160	247	123	256	43
709	99	52	131	25	66	18	45	45
Total Surv.	9745	5520	14181	2622	6816	1756	4296	49
801	116	107	256	41	101	26	65	56
802	351	165	555	109	353	82	267	76
803	1092	320	946	135	475	104	365	33
804	71	54	138	17	44	11	31	44
805	322	79	331	43	177	35	143	44
806	119	92	410	26	195	18	109	91
807	10	12	23	6	11	4	7	70
808	32	93	266	24	58	12	27	85
809	70	50	132	26	74	17	46	66
810	7	7	16	5	10	3	5	77
Total SAT	2100	670	3073	424	1498	312	1067	49
Mission Total	12913	6847	16324	3194	8832	2186	6299	49

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Page 1 of 30 Pages

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30
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STANDARD PRIORITIES

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Category	Nr. of Targets in Cat.	Total Targets Attempted (Stereo)	Total Targets Attempted	Total Targets Clear (Stereo)	Total Targets Clear	Total Unique Targets Clear	Total Unique Targets Clear	Percent (%)
101	133	8	45	2	6	2	6	5
102	90	18	98	2	18	2	17	19
103	143	22	56	5	17	4	16	11
104	164	30	124	6	24	4	21	13
105	122	35	87	6	17	5	16	13
106	91	55	95	10	15	9	14	15
107	98	42	101	7	18	7	17	17
108	132	42	92	6	17	6	16	12
Total	978	261	696	44	132	39	123	13
701	3423	1050	3294	353	1060	277	848	25
702	1330	1148	2066	409	703	282	497	37
703	224	170	391	53	118	38	77	34
704	412	376	693	134	250	91	184	45
705	62	23	52	7	16	6	13	21
706	792	590	1263	204	411	127	279	35
707	2809	1198	3067	534	1295	401	1004	36
708	594	300	679	114	236	87	183	31
709	99	63	152	21	71	17	41	41
Total Sury.	9745	4036	11687	1829	4160	1326	3144	32
801	116	46	209	22	77	17	62	54
802	351	135	360	36	106	31	91	26
803	1092	146	690	50	201	43	180	16
804	71	15	74	4	20	2	17	24
805	322	48	200	23	62	20	54	17
806	119	79	211	10	84	8	70	59
807	10	7	33	2	4	2	3	30
808	32	35	148	8	43	5	28	83
809	70	54	120	19	35	14	26	37
810	7	12	18	3	6	2	3	47
Total SAT	2100	527	2063	177	638	154	534	24
Mission	12913	5774	14448	2050	4930	1509	4335	34

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DAYS ON ORBIT 30
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Category	Nr. of Targets in Cat.	Total Targets Attempted (Stereo)	Total Targets Attempted	Total Targets Clear (Stereo)	Total Targets Clear	Total Unique Targets Clear	Total Unique Targets Clear	Percent (%) Unique Targets Clear
101	133	13	62	6	19	5	19	14
102	90	10	83	3	22	2	20	22
103	148	13	69	4	22	4	21	14
104	164	24	118	5	31	4	27	17
105	122	36	90	6	14	5	13	11
106	91	46	100	5	13	4	13	14
107	98	35	112	6	23	5	21	21
108	132	21	62	7	17	6	16	12
Total MBR	878	108	605	42	161	25	150	15
701	3423	1240	3862	450	1341	348	892	20
702	1330	1240	2231	444	753	313	535	40
703	224	192	421	72	142	48	94	42
704	412	370	608	130	222	93	160	70
705	62	74	40	0	18	7	15	25
706	792	726	1547	241	524	148	327	41
707	2809	1139	2986	467	1138	380	913	33
708	594	271	599	106	214	85	171	29
709	99	53	133	20	53	16	62	42
Total Survey	9745	5255	12525	1030	4405	1438	3246	33
801	116	75	227	25	88	19	68	50
802	351	115	361	52	153	42	133	38
803	1092	202	670	64	235	57	213	20
804	71	19	50	15	40	12	37	52
805	322	71	251	20	74	18	62	19
806	119	78	327	22	117	14	86	72
807	10	7	25	2	7	2	5	51
808	32	36	184	13	62	9	26	80
809	70	69	139	26	42	19	29	41
810	7	8	13	4	6	2	3	43
Total SALT	2190	620	2256	243	826	194	662	30
Mission Total	12913	6133	15477	2224	5390	1667	4045	31

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DAYS ON ORBIT 30
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STANDARD PRIORITIES

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Category	Nr. of Targets in Cat.	Total Targets Attempted (Stereo)	Total Targets Attempted	Total Targets Clear (Stereo)	Total Targets Clear	Total Unique Targets Clear	Total Unique Targets Clear	Percent (%)
101	133	29	206	13	91	9	69	52
102	90	18	166	7	70	4	51	57
103	148	50	141	19	60	16	51	34
104	164	44	238	23	112	18	91	56
105	122	31	147	19	86	14	67	55
106	91	63	143	40	79	24	54	60
107	98	63	167	30	82	25	63	65
108	132	57	187	35	116	24	84	64
Total NUMBER	978	355	1395	186	696	134	530	54
701	3423	1535	5020	693	2399	475	1695	50
702	1330	1337	2680	593	1210	352	756	57
703	224	214	479	99	224	61	140	62
704	412	418	848	164	744	107	231	56
705	62	44	102	24	49	16	33	54
706	792	658	1512	334	763	179	436	55
707	2809	1429	4071	678	1943	447	1325	47
708	594	370	828	163	372	110	252	42
709	99	51	133	24	64	18	47	47
Total Surv.	9745	6056	15673	2772	7368	1765	4016	50
801	116	95	246	53	135	35	84	73
802	351	209	655	104	294	73	215	61
803	1092	291	1026	162	563	127	438	40
804	71	39	170	20	78	15	51	72
805	322	112	428	57	232	47	184	57
806	119	91	426	41	222	21	114	96
807	10	7	26	2	12	2	8	82
808	32	70	224	21	68	8	31	97
809	70	73	185	32	93	19	52	75
810	7	8	17	5	9	3	5	77
Total SALT	2100	905	3403	497	1706	350	1182	54
Mission HANDLE VIA	12913	7406	20471	3455	9770	2249	6628	51

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Category	Nr. of Targets in Cat.	Total Targets Attempted (Stereo)	Total Targets Attempted	Total Targets Clear (Stereo)	Total Targets Clear	Total Unique Targets Clear (Stereo)	Total Unique Targets Clear	Percent (%) Unique Targets Clear
101	133	9	42	3	8	3	8	6
102	90	16	121	3	17	3	14	16
103	148	13	60	6	29	5	25	17
104	164	32	118	10	35	8	30	19
105	122	21	73	12	36	12	35	29
106	91	53	84	8	12	7	11	12
107	98	24	64	8	22	7	20	21
108	132	39	83	13	24	12	22	17
Total MBER	978	207	645	63	183	57	165	17
701	3423	1104	3498	402	1127	307	889	26
702	1330	1211	2112	470	770	335	554	42
703	224	173	366	52	117	33	81	36
704	412	357	646	124	249	89	193	47
705	62	24	47	13	23	9	17	27
706	792	780	1458	233	436	141	273	34
707	2809	1128	3033	575	1387	444	1095	39
708	594	296	632	129	283	111	211	26
709	99	54	147	22	71	17	42	43
Total Surv.	8745	5217	11939	2030	4463	1426	3255	34
801	116	95	210	16	57	13	44	38
802	351	109	392	40	171	31	140	40
803	1092	128	549	43	214	38	187	17
804	71	16	52	2	6	1	5	7
805	322	61	208	20	64	18	61	19
806	119	87	247	29	113	22	85	72
807	10	5	21	2	5	1	4	37
808	32	26	183	7	28	5	21	65
809	70	67	158	24	51	18	35	50
810	7	9	16	2	3	1	2	30
Total SALT	2190	603	2036	185	712	148	584	27
Mission Total	12913	6027	14620	2278	5358	1691	4104	31

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Category	Nr. of Targets in Cat.	Total Targets Attempted (Stereo)	Total Targets Attempted	Total Targets Clear (Stereo)	Total Targets Clear	Total Unique Targets Clear	Total Unique Targets Clear (Stereo)	Percent Unique Targets Clear
101	133	18	68	7	31	6	26	19
102	90	16	86	8	50	7	39	43
103	148	17	54	1	5	1	4	3
104	164	35	115	7	24	6	21	13
105	122	24	85	7	23	6	21	17
106	91	56	84	14	18	11	15	16
107	98	35	77	11	28	10	27	27
108	132	37	90	9	16	7	14	11
Total AIRFR	978	232	650	64	195	54	167	17
701	3423	1195	3420	427	1255	330	945	28
702	1330	1344	2296	492	840	319	547	41
703	224	177	405	61	137	37	93	41
704	412	370	670	150	276	103	197	48
705	62	32	57	10	18	9	17	27
706	792	983	1799	339	655	139	299	38
707	2809	1175	2986	492	1281	374	1017	36
708	594	313	652	123	256	91	195	33
709	99	57	143	24	69	20	42	43
Total Surv.	9745	5646	12428	2118	4787	1422	3352	34
801	116	70	165	32	75	23	58	50
802	351	105	336	63	163	55	135	39
803	1092	195	530	101	262	87	226	21
804	71	15	77	10	42	8	33	47
805	322	44	180	17	71	16	66	21
806	119	70	259	13	58	12	47	40
807	10	3	10	1	7	2	7	68
808	32	38	150	12	52	9	29	90
809	70	67	169	24	70	15	27	39
810	7	12	17	3	5	2	3	46
Total SALT	2100	619	1893	276	805	229	631	29
Mission Total	12913	6503	14080	2458	5787	1705	4150	32

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40
DAYS ON ORBIT

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Category	Nr. of Targets in Cat.	Total Targets Attempted (Stereo)	Total Targets Attempted	Total Targets Clear (Stereo)	Total Targets Clear	Total Unique Targets Clear (Stereo)	Total Unique Targets Clear	Percent (%) Unique Targets Clear
101	133	13	53	4	14	4	14	10
102	90	17	78	8	18	4	16	18
103	148	10	65	10	30	9	28	10
104	164	36	116	16	53	15	40	30
105	122	30	108	18	62	15	49	40
106	91	43	85	18	30	15	26	29
107	98	35	98	14	42	13	38	39
108	132	23	88	13	49	13	46	35
Total MBFR	978	216	691	101	298	83	266	27
701	3423	1068	3382	465	1370	357	1060	31
702	1330	1134	2033	467	845	322	591	44
703	224	206	440	89	176	56	107	48
704	412	386	673	134	242	92	177	43
705	62	31	64	12	28	8	21	34
706	792	665	1385	261	541	154	338	43
707	2809	1125	2801	520	1277	404	998	36
708	594	290	585	118	237	86	177	30
709	99	50	113	20	51	15	38	39
Total Surv.	9745	4052	11476	2086	6853	1404	3507	36
801	116	61	167	27	65	20	48	42
802	351	116	327	45	124	40	105	30
803	1092	92	392	58	204	56	188	17
804	71	27	81	9	28	6	22	31
805	322	41	198	22	97	21	86	27
806	119	51	216	18	116	12	78	65
807	10	5	19	1	7	1	7	71
808	32	25	174	9	42	6	27	84
809	70	95	163	35	66	23	41	59
810	7	1	7	0	4	0	3	41
Total SALT	2100	514	1744	224	753	185	605	23
Mission Total	12913	5682	13911	2415	7904	1767	4378	34

~~TOP SECRET~~

S ON ORBIT 42

~~HANDLE VIA~~

LUNCH DATE OCT 74

~~BYEMAN/TALENT KEYHOLE~~
~~CONTROL SYSTEMS JOINTLY~~

Category	Nr. of Targets in Cat.	Total Targets Attempted (Stereo)	Total Targets Attempted	Total Targets Clear (Stereo)	Total Targets Clear	Total Unique Targets Clear	Total Unique Targets Clear	Total Unique Targets Clear (%)
101	133	13	71	5	28	5	27	20
102	90	20	76	3	16	3	14	16
103	148	17	73	8	32	8	30	20
104	164	32	110	20	56	19	51	31
105	122	22	85	13	42	11	33	31
106	91	41	72	22	42	18	36	39
107	98	38	106	14	38	12	32	33
108	132	45	102	23	46	19	38	28
Total MBR	978	228	695	108	300	95	266	27
701	3423	1024	2791	474	1359	383	1091	32
702	1330	1150	1953	506	881	353	622	47
703	224	170	338	88	162	62	114	51
704	412	363	611	150	268	105	193	47
705	62	20	54	10	28	7	21	33
706	792	532	1041	268	513	175	348	44
707	2809	1195	2851	579	1359	454	1094	39
708	594	295	607	135	290	103	223	38
709	99	67	133	31	61	21	43	44
Total Surv.	9745	4816	10379	2241	4921	1663	3740	38
801	116	22	107	13	63	11	54	47
802	351	98	327	40	153	34	129	37
803	1092	85	369	43	214	38	195	18
804	71	25	93	9	33	7	26	37
805	322	67	207	33	107	29	98	30
806	119	56	247	24	98	18	70	59
807	10	4	16	3	10	3	8	84
808	32	14	86	5	34	4	24	73
809	70	65	114	32	53	26	41	59
810	7	3	7	2	4	2	4	52
Total SALT	2190	430	1573	204	760	172	649	30
Mission	12013	5483	12647	2553	5990	1930	4664	36

~~HANDLE VIA~~~~BYEMAN/TALENT KEYHOLE~~
~~CONTROL SYSTEMS JOINTLY~~~~TOP SECRET~~

~~HANDLE VIA~~~~BYEMAN/TALENT-KEYHOLE
CONTROL SYSTEMS JOINTLY~~~~TOP SECRET~~DAYS ON ORBIT 44
LAUNCH DATE FEB 1975

Category	Nr. of Targets in Cat.	Total Targets Attempted (Stereo)	Total Targets Attempted	Total Targets Clear (Stereo)	Total Targets Clear	Total Unique Targets Clear	Total Unique Targets Clear	Percent (%) Unique Targets Clear
101	133	20	72	6	22	5	20	15
102	90	18	99	5	27	4	24	27
103	148	23	73	4	20	3	19	13
104	164	33	102	8	20	7	19	11
105	122	28	64	9	23	9	22	18
106	91	45	90	8	21	7	18	20
107	98	31	83	6	16	6	15	16
108	132	39	78	8	23	6	20	15
Total MBR	978	242	661	54	172	47	157	16
701	3423	1071	2891	384	1170	303	931	27
702	1330	1101	1869	437	773	311	565	42
703	224	168	334	64	132	45	94	42
704	412	343	630	130	255	90	198	48
705	62	26	58	10	26	7	19	30
706	792	481	992	240	465	170	335	42
707	2809	1142	2657	524	1300	416	1065	38
708	594	334	614	123	240	98	198	33
709	99	57	123	21	53	16	38	38
Total Surv.	9745	4723	10168	1933	4414	1456	2442	35
801	116	41	184	19	65	14	51	44
802	351	126	336	35	134	31	113	32
803	1092	126	493	35	156	30	139	13
804	71	26	70	3	10	3	9	13
805	322	44	139	17	63	14	55	17
806	119	67	246	19	92	15	70	59
807	10	8	20	1	2	1	3	25
808	32	34	100	10	40	8	28	86
809	70	93	148	32	54	21	34	49
810	7	2	8	1	4	1	3	39
Total SAT	2190	567	1744	172	620	138	505	23
Mission Total	10012	5532	12573	2159	5206	1641	4105	32

~~TOP SECRET~~

DAYS ON ORBIT 45
LAUNCH DATE JUN 1973HANDLE VIA
BYEMAN/TALENT-KEYHOLE
CONTROL SYSTEMS JOINTLY

Category	Nr. of Targets in Cat.	Total Targets Attempted (Stereo)	Total Targets Attempted	Total Targets Clear (Stereo)	Total Targets Clear	Total Unique Targets Clear	Total Unique Targets Clear	Percent Unique Targets Clear (%)
101	133	15	47	5	12	5	10	8
102	90	21	92	3	15	3	13	14
103	148	24	70	6	20	5	18	12
104	164	45	130	17	53	14	46	28
105	122	31	101	11	43	8	36	30
106	91	34	79	19	42	16	36	39
107	98	42	98	21	46	16	39	40
108	132	37	98	18	51	14	45	34
Total MFR	878	240	724	100	282	81	243	25
701	3423	1141	3132	533	1471	407	1106	32
702	1330	1132	1977	499	884	336	603	45
703	224	185	394	86	186	55	114	51
704	412	330	594	152	252	104	179	43
705	62	23	57	12	31	9	23	37
706	792	528	1030	282	556	177	362	46
707	2809	1086	2580	524	1263	398	988	35
708	594	288	538	139	256	105	193	33
709	99	60	107	26	52	19	37	37
Total Surv.	8745	4822	10400	2253	4951	1610	3605	37
801	116	36	154	23	74	15	55	47
802	351	136	361	59	161	44	129	37
803	1092	114	417	57	203	39	169	15
804	71	20	82	6	39	5	31	44
805	322	45	224	27	118	25	104	32
806	119	51	230	25	126	19	97	82
807	10	9	19	3	7	3	6	58
808	32	21	157	7	36	6	25	77
809	70	74	134	37	70	24	43	61
810	7	7	12	4	6	2	4	54
Total SALT	2100	513	1700	248	840	192	652	30
Mission Total	12913	5585	12923	2601	6073	1873	4511	35

~~TOP SECRET~~

DAYS ON ORBIT 27

LAUNCH DATE AUG 1972

~~HANDLE VIA~~~~BYEMAN/TALENT-KEYHOLE-~~
~~CONTROL SYSTEMS JOINTLY~~

Category	Nr. of Targets in Cat.	Total Targets Attempted (Stereo)	Total Targets Attempted	Total Targets Clear (Stereo)	Total Targets Clear	Total Unique Targets Clear	Total Unique Targets Clear (Stereo)	Percent (%) Unique Targets Clear
101	133	15	204	4	81	3	72	54
102	90	0	149	3	55	3	46	53
103	148	15	160	8	84	8	73	53
104	164	60	204	31	122	24	101	62
105	122	15	182	7	93	4	79	65
106	91	50	225	20	103	17	76	83
107	98	37	222	11	112	8	84	86
108	132	39	243	17	121	14	96	73
Total MBFR	972	241	1679	101	771	81	634	65
701	3423	1221	4150	573	2003	398	1468	44
702	1330	1002	2253	501	1061	322	720	54
703	224	170	411	76	201	45	129	58
704	412	334	673	142	313	93	227	55
705	62	27	77	13	39	10	31	50
706	792	464	1410	303	682	172	422	53
707	2809	1104	3406	623	1772	443	1314	47
708	594	265	653	137	329	99	244	51
709	99	51	120	26	60	19	43	44
Total Surv.	9725	4008	13153	2394	6465	1601	4628	47
801	116	108	262	42	104	26	67	57
802	351	102	553	72	354	48	269	77
803	1092	261	839	109	420	73	320	29
804	71	35	110	10	39	5	29	40
805	322	73	309	34	167	27	135	42
806	119	96	366	34	183	17	107	90
807	10	7	22	3	9	2	7	70
808	32	57	209	17	56	9	28	86
809	70	59	121	36	63	24	41	53
810	7	6	15	4	9	2	6	81
Total SALT	2190	804	2606	361	1404	233	1009	46
Mission Total	12913	6043	17633	2856	8640	1915	6271	49

~~TOP SECRET~~

DAYS ON ORBIT 30

LAUNCH DATE NOV 1972

HANDLE VIA
BYEMAN/TALENT KEYHOLE
CONTROL SYSTEMS JOINTLY

Category	Nr. of Targets in Cat.	Total Targets Attempted (Stereo)	Total Targets Attempted	Total Targets Clear (Stereo)	Total Targets Clear	Total Unique Targets Clear	Total Unique Targets Clear	Percent (%) Unique Targets Clear
101	133	5	112	0	15	0	15	11
102	90	2	84	0	8	0	8	9
103	148	10	102	3	32	2	31	21
104	164	38	232	8	39	8	36	22
105	122	19	142	6	27	6	23	19
106	91	40	201	4	25	4	23	26
107	98	22	196	3	41	3	41	42
108	132	34	193	10	50	10	48	36
Total MBFR	978	170	1262	34	237	33	225	23
701	3423	943	2966	311	971	241	785	23
702	1330	1015	1903	387	681	266	483	37
703	224	150	328	45	106	33	77	34
704	412	240	625	123	228	83	172	42
705	62	20	59	8	20	7	16	26
706	792	511	1141	183	388	116	267	34
707	2809	1093	2871	408	1244	377	966	34
708	594	256	610	98	234	76	183	31
709	99	61	147	22	70	17	45	45
Total Surv.	9745	4394	10650	1675	3942	1216	2999	31
801	116	44	148	16	62	14	51	44
802	351	62	322	22	104	16	89	25
803	1092	133	567	28	138	26	125	11
804	71	16	53	3	20	3	19	26
805	322	41	194	18	53	16	47	15
806	119	57	188	13	81	7	71	59
807	10	12	21	1	2	1	2	23
808	32	30	118	8	31	4	22	69
809	70	28	77	11	23	10	18	25
810	7	8	13	1	4	1	3	44
Total SALT	2190	431	1701	121	518	98	447	20
Mission Total	12913	4995	13613	1830	4697	1347	3671	28

~~TOP SECRET~~

~~BYEMAN/TALENT-KEYHOLE
CONTROL SYSTEMS JOINTLY~~

Approved for Release: 2019/01/21 C05100875
DAYS ON ORBIT 30
LAUNCH DATE MAR 73

MBFR MAX EFFORT
-PRIORITY

Category	Nr. of Targets in Cat.	Total Targets Attempted (Stereo)	Total Targets Attempted	Total Targets Clear (Stereo)	Total Targets Clear	Total Unique Targets Clear	Total Unique Targets	Percent (%) Unique Targets Clear
101	133	7	102	2	31	2	30	22
102	90	6	60	2	14	2	12	13
103	148	6	103	3	28	3	27	16
104	164	35	183	10	61	9	55	33
105	122	16	147	2	25	2	24	20
106	91	46	209	9	38	8	34	37
107	98	26	155	7	41	5	35	37
108	132	31	174	11	38	8	34	26
Total MBFR	978	173	1133	46	276	39	252	26
701	3423	1110	3622	418	1264	322	970	27
702	1330	1187	2174	426	742	208	526	40
703	224	186	412	66	140	43	95	42
704	412	257	671	120	219	83	158	33
705	62	22	50	8	18	6	16	25
706	792	744	1562	243	533	149	332	42
707	2809	1120	2881	452	1113	375	901	32
708	594	257	571	100	213	83	175	39
709	99	48	124	19	51	15	41	41
Total Surv.	9745	5031	12107	1852	4293	1374	3183	33
801	116	71	199	23	83	19	62	53
802	351	60	340	29	149	25	131	37
803	1092	140	503	52	197	46	180	17
804	71	12	46	0	33	0	33	46
805	322	65	220	19	67	18	57	18
806	119	58	276	14	112	9	83	70
807	10	5	17	1	5	1	4	40
808	32	17	170	5	53	3	27	85
809	70	54	105	10	35	14	21	31
810	7	8	12	4	6	2	4	57
Total SAIT	2190	490	1888	175	740	146	602	27
Mission Total	12913	5604	15128	2073	5309	1559	4037	31

~~TOP SECRET~~

Page 13 of 30 Pages

DYK 12600 72

DAYS ON ORBIT 30

LAUNCH DATE JUN 1975

HANDLE VIA

BYEMAN/TALENT-KEYHOLE
CONTROL SYSTEMS JOINTLY

Category	Nr. of Targets in Cat.	Total Targets Attempted (Stereo)	Total Targets Attempted	Total Targets Clear (Stereo)	Total Targets Clear	Total Unique Targets Clear	Total Unique Targets	Percent Unique Targets Clear (%)
101	133	23	248	10	102	9	82	62
102	90	14	195	6	77	4	56	62
103	148	22	200	8	101	8	82	55
104	164	59	345	31	158	25	110	73
105	122	21	202	12	122	10	94	77
106	91	53	229	23	117	15	80	88
107	98	61	302	29	133	20	87	89
108	132	30	283	19	174	15	115	87
Total MSFR	978	292	2004	138	984	106	715	73
701	3423	1286	4222	648	2268	440	1633	49
702	1330	1132	2322	558	1161	330	734	55
703	224	168	407	84	208	52	132	59
704	412	325	697	139	331	93	232	56
705	62	37	93	21	49	14	37	60
706	792	593	1321	333	758	180	440	56
707	2809	1205	3290	659	1861	436	1290	46
708	594	286	602	143	361	97	247	42
709	99	47	112	26	61	20	46	46
Total Surv.	9745	5074	13311	2611	7058	1671	4790	49
801	116	69	224	46	135	28	86	75
802	351	106	506	62	282	48	210	60
803	1092	223	932	115	518	92	416	38
804	71	46	144	21	72	15	49	69
805	322	72	336	41	189	32	151	47
806	119	89	317	47	206	28	117	99
807	10	7	20	3	10	2	8	77
808	32	43	118	20	54	9	30	94
809	70	78	140	44	82	25	48	69
810	7	6	17	4	10	2	5	73
Total SALT	2190	739	2763	403	1558	281	1120	51
Mission Total	12013	6105	18278	3152	8600	2059	6625	51

~~TOP SECRET~~

DAYS ON ORBIT 30
LAUNCH DATE OCT 1973HANDLE VIA
BYEMAN/TALENT-KEYHOLE
CONTROL SYSTEMS JOINTLY

Category	Nr. of Targets in Cat.	Total Targets Attempted (Stereo)	Total Targets Attempted	Total Targets Clear (Stereo)	Total Targets Clear	Total Unique Targets Clear	Total Unique Targets Clear (Stereo)	Total Unique Targets Clear	Percent (%)
101	133	6	101	1	22	1	21	16	
102	90	7	62	1	13	1	12	14	
103	148	0	111	4	46	5	43	29	
104	164	40	205	14	62	13	55	34	
105	122	18	120	7	59	5	50	41	
106	91	38	181	5	27	5	25	28	
107	98	53	182	14	47	11	49	41	
108	132	28	186	13	51	10	45	34	
Total MBFR	978	199	1148	59	327	50	291	30	
701	3423	987	3179	364	1060	281	839	24	
702	1330	1105	2013	432	737	302	535	40	
703	224	162	355	47	115	31	80	36	
704	412	351	640	124	236	94	184	45	
705	62	22	56	12	26	8	21	33	
706	792	731	1450	214	437	126	273	35	
707	2809	1078	2069	548	1355	425	1082	39	
708	594	277	605	123	267	80	202	34	
709	99	50	147	21	69	16	42	43	
Total Surv.	9745	4773	11423	1885	4302	1382	3257	33	
801	116	85	184	15	53	11	40	35	
802	351	61	376	33	160	25	131	37	
803	1092	100	480	33	175	28	154	14	
804	71	6	56	0	17	0	14	22	
805	322	55	205	16	55	15	51	16	
806	119	65	216	29	113	22	84	70	
807	10	4	15	1	4	1	3	31	
808	32	27	172	4	24	2	18	57	
809	70	44	130	17	30	14	26	37	
810	7	5	12	2	4	1	3	44	
Total SALT	2190	452	1846	150	644	119	526	24	
Mission Total	12913	5424	14417	2094	5273	1551	4074	31	

~~TOP SECRET~~

DAYS ON ORBIT 30

LAUNCH DATE FEB 1974

HANDLE VIA

BYEMAN/TALENT KEYHOLE
CONTROL SYSTEMS JOINTLY

Category	Nr. of Targets in Cat.	Total Targets Attempted (Stereo)	Total Targets Attempted	Total Targets Clear (Stereo)	Total Targets Clear	Total Unique Targets Clear	Total Unique Targets Clear	Percent (%) Unique Targets Clear
101	133	13	112	6	53	5	48	36
102	90	5	59	3	33	2	26	29
103	148	9	85	4	15	4	15	10
104	164	47	247	11	59	11	51	31
105	122	13	90	4	32	3	29	24
106	91	29	163	5	46	5	35	39
107	98	24	196	8	65	5	59	61
108	132	34	201	8	52	7	45	34
Total MBFR	978	174	1153	49	355	42	308	31
701	3423	1060	3259	378	1203	290	904	26
702	1330	1195	2131	441	810	282	533	40
703	224	171	360	60	127	38	88	39
704	412	330	633	125	265	89	194	47
705	62	23	58	9	19	8	18	29
706	792	926	1752	323	655	131	305	39
707	2809	1105	2863	462	1238	355	981	35
708	594	252	587	102	240	74	185	31
709	99	56	141	24	67	19	43	43
Total Surv.	9745	5118	11784	1924	4624	1286	3252	33
801	116	53	148	24	68	17	52	45
802	351	64	326	36	173	30	143	41
803	1092	111	404	70	224	58	194	18
804	71	10	74	6	43	5	32	45
805	322	29	206	11	74	11	66	20
806	119	59	216	8	59	5	46	39
807	10	7	15	3	6	3	6	58
808	32	30	168	5	50	3	29	89
809	70	59	153	21	63	14	22	32
810	7	9	15	3	5	2	3	41
Total SALT	2190	431	1725	187	765	148	593	27
Mission Total	12913	5723	14662	2160	5744	1476	4153	32

~~TOP SECRET~~

Category	Nr. of Targets in Cat.	Total Targets	Total Targets Attempted	Total Targets Clear (Stereo)	Total Targets Clear	CONTROL SYSTEMS JOINTLY		
		Total Targets Attempted (Stereo)	Total Targets Attempted	Total Targets Clear (Stereo)	Total Targets Clear	Unique Targets	Unique Targets	(%)
101	133	5	98	1	25	1	23	17
102	90	3	89	1	16	1	15	17
103	148	8	99	4	48	4	47	31
104	164	47	177	21	83	19	74	45
105	122	6	133	3	72	2	62	51
106	91	51	151	16	55	13	45	49
107	98	42	144	20	60	18	53	54
108	132	45	181	20	89	18	74	56
Total MBFR	978	207	1072	86	448	76	393	40
701	3423	648	2937	411	1249	319	978	29
702	1330	1075	1896	444	799	306	563	42
703	224	195	418	82	167	51	102	45
704	412	344	651	125	248	85	180	44
705	62	26	58	10	26	6	20	32
706	792	640	1324	262	529	158	337	43
707	2809	1001	2604	510	1252	389	983	35
708	594	251	539	107	232	76	173	29
709	99	47	110	19	50	14	37	38
Total Surv.	9745	4617	10627	1970	4552	1404	3373	35
801	116	40	158	24	63	19	47	40
802	351	63	309	28	130	24	113	32
803	1092	73	341	40	170	46	166	15
804	71	26	85	10	28	7	22	31
805	322	31	165	20	85	19	74	23
806	119	41	212	18	117	12	79	66
807	10	0	8	0	5	0	4	43
808	32	20	131	8	42	6	27	24
809	70	81	148	34	64	21	37	54
810	7	5	7	2	4	2	3	48
Total SALT	2190	394	1564	193	717	156	572	26
Mission Total	12913	5218	13263	2249	5717	1636	4338	33

~~TOP SECRET~~

HANDLE VIA
BYEMAN/TALENT-KEYHOLE-
CONTROL SYSTEMS JOINTLY

Approved for Release: 2019/01/21 C05100875
DAYS ON ORBIT 42
LAUNCH DATE OCT 74

MBFR MAX EFFORT/
PRIORITY

Category	Nr. of Targets in Cat.	Total Targets Attempted (Stereo)	Total Targets Attempted	Total Targets Clear (Stereo)	Total Targets Clear	Total Unique Targets Clear	Total Unique Targets Clear	Percent (%) Unique Targets Clear
101	133	12	112	7	38	7	37	28
102	90	7	93	2	28	2	24	26
103	148	0	116	4	53	4	50	36
104	164	37	178	15	74	14	60	42
105	122	13	128	6	59	5	55	45
106	91	48	153	23	76	19	63	69
107	98	51	172	19	66	16	53	51
108	132	38	180	17	77	14	67	51
Total MBFR	978	216	1132	93	471	81	418	43
701	3423	020	2771	448	1358	359	1091	32
702	1330	1005	1936	486	865	337	608	46
703	224	160	338	85	161	58	115	51
704	412	256	620	147	272	101	192	47
705	62	22	49	11	24	8	10	30
706	792	512	1038	259	515	163	243	44
707	2809	1168	2815	572	1345	851	1085	20
708	594	293	603	138	286	105	221	37
709	99	63	133	27	60	18	41	42
Total Surv.	9745	4608	10312	2173	4886	1605	3722	38
801	116	22	106	13	63	11	54	47
802	351	97	333	41	157	34	134	38
803	1092	79	333	38	108	32	182	17
804	71	1	87	0	31	0	25	25
805	322	63	178	30	91	27	83	26
806	119	66	213	26	86	21	64	54
807	10	5	9	3	7	3	6	59
808	32	11	79	7	36	4	26	82
809	70	53	96	28	46	23	27	52
810	7	5	9	3	5	2	4	52
Total SALT	2190	402	1443	189	720	157	615	28
Mission Total	12913	5226	12887	2455	6077	1843	4755	37

~~TOP SECRET~~

HANDLE VIA

Approved for Release: 2019/01/21 C05100875

~~BYEMAN/TALENT-KEYHOLE
CONTROL SYSTEMS JOINTLY~~

DAYS ON ORBIT 44

LAUNCH DATE FEB 1975

MBFR MAX EFFORT

PRIORITY

Category	Nr. of Targets in Cat.	Total Targets Attempted	Total Targets Attempted (Stereo)	Total Targets Clear	Total Targets Clear (Stereo)	Total Unique Targets Clear	Total Unique Targets Clear (Stereo)	Percent (%) Unique Targets Clear
101	133	4	133	1	36	1	33	25
102	90	0	28	0	31	0	29	33
103	148	10	118	4	24	3	22	15
104	164	27	221	5	32	5	29	17
105	122	11	132	4	38	4	35	28
106	91	50	206	9	30	7	27	30
107	98	58	171	13	33	13	22	32
108	132	36	206	11	44	11	40	31
Total VENR	978	205	1285	47	268	44	247	25
701	3423	957	2842	340	1075	270	867	25
702	1330	1131	2017	410	744	300	545	41
703	224	182	371	63	128	45	91	40
704	412	329	555	120	243	82	187	45
705	62	28	55	11	21	8	16	26
706	792	505	1095	235	467	166	329	43
707	2809	1188	2890	512	1246	407	1031	37
708	594	207	624	124	242	102	201	24
709	99	61	130	23	56	16	39	40
Total Surv	9745	4678	10698	1847	4230	1396	3316	34
801	116	47	182	16	63	12	49	42
802	351	64	334	32	131	26	112	32
803	1092	133	462	21	145	19	130	12
804	71	0	95	0	24	0	22	31
805	322	46	173	21	67	19	59	18
806	119	66	222	25	73	20	54	45
807	10	6	16	0	1	0	1	13
808	32	14	97	4	37	2	22	37
809	70	61	128	25	46	16	29	42
810	7	1	7	0	4	0	2	30
Total SALT	2190	438	1715	144	591	114	426	22
Mission Total	12913	5321	13698	2038	5089	1554	4049	31

~~TOP SECRET~~

DAYS ON ORBIT 45

LAUNCH DATE

JUN 1975

HANDLE VIA

BYEMAN/TALENT-KEYHOLE
CONTROL SYSTEMS JOINTLY~~TOP SECRET~~

Category	Nr. of Targets in Cat.	Total Targets Attempted (Stereo)	Total Targets Attempted	Total Targets Clear (Stereo)	Total Targets Clear	Total Unique Targets Clear (Stereo)	Total Unique Targets Clear	Percent (%)
101	133	6	140	2	28	2	26	19
102	90	3	96	1	16	1	15	16
103	148	8	120	3	31	3	29	20
104	164	36	244	15	76	12	65	40
105	122	16	125	5	55	5	48	39
106	91	51	137	23	69	19	57	63
107	98	52	168	24	70	15	61	63
108	132	40	209	27	108	22	86	65
Total MBFR	978	221	1248	100	462	79	387	39
701	3423	1026	3016	474	1438	352	1023	31
702	1330	1120	1001	403	887	329	609	46
703	224	106	397	90	182	54	110	40
704	412	274	623	148	261	103	184	45
705	62	24	63	12	31	9	24	39
706	792	562	1155	284	581	166	364	46
707	2809	1103	2673	524	1277	390	908	36
708	594	273	550	130	259	96	195	33
709	99	56	114	25	54	18	38	38
Total Surv.	9745	4743	10582	2180	4970	1527	3595	37
801	116	55	152	31	72	22	54	46
802	351	60	380	25	170	17	136	39
803	1092	137	405	63	182	51	155	14
804	71	7	91	4	45	1	33	47
805	322	55	179	28	91	23	78	24
806	119	66	225	30	119	24	93	79
807	10	6	15	3	6	3	5	54
808	32	32	90	13	38	10	25	77
809	70	60	117	31	60	22	37	53
810	7	4	12	1	5	1	4	54
Total SAIT	2190	482	1666	229	788	174	620	28
Mission Total	12913	5446	13496	2509	6220	1780	4602	36

~~TOP SECRET~~

HANDLE VIA

Approved for Release: 2019/01/21 C05100875

~~BYEMAN/TALENT KEYHOLE
CONTROL SYSTEMS JOINTLY~~

DAYS ON ORBIT 27

LAUNCH DATE AUG 72

SALT MAX EFFORT/
PRIORITY

Category	Nr. of Targets in Cat.	Total Targets Attempted (Stereo)	Total Targets Attempted	Total Targets Clear (Stereo)	Total Targets Clear	Total Unique Targets Clear	Total Unique Targets Clear	Percent (%)
101	133	38	136	14	60	12	54	40
102	90	16	95	7	50	7	43	43
103	148	25	120	15	65	15	58	39
104	164	37	123	14	63	11	60	36
105	122	30	113	20	58	20	55	45
106	91	11	111	6	56	6	46	51
107	98	44	140	20	62	15	50	51
108	132	17	101	9	45	9	41	31
Total VMEFR	978	218	1003	105	465	95	407	42
701	3423	1404	4305	610	2100	457	1570	46
702	1330	854	1920	420	978	204	631	51
703	224	136	346	71	104	44	122	44
704	412	241	612	60	205	77	222	51
705	62	20	50	13	30	11	23	37
706	792	587	1303	293	677	176	426	55
707	2809	1181	3494	627	1896	459	1395	50
708	594	238	641	114	320	85	236	40
709	99	40	115	25	59	15	41	41
Total Surv.	9745	4710	12840	2281	6549	1618	4720	48
801	116	158	566	55	171	30	96	83
802	351	115	814	69	481	48	321	91
803	1092	264	2780	200	1322	128	822	81
804	71	78	265	36	81	28	55	77
805	322	264	899	102	393	67	278	86
806	119	148	460	69	225	44	114	96
807	10	5	29	2	8	1	6	62
808	32	138	298	24	64	12	31	97
809	70	112	217	51	96	30	57	82
810	7	18	31	9	13	4	6	87
Total SALT	2190	1300	6378	617	2854	392	1846	84
Mission Total	12913	6228	20221	3003	9868	2105	6932	54

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Page 21 of 30 Pages

DRAFT 12600 72

BYEMAN/TALENT KEYHOLE
CONTROL SYSTEMS JOINTLY

Approved for Release: 2019/01/21 C05100875

DAYS ON ORBIT 30
LAUNCH DATE NOV 72

SALT MAX EFFORT/
PRIORITY

Category	Nr. of Targets in Cat.	Total Targets Attempted (Stereo)	Total Targets Attempted	Total Targets Clear (Stereo)	Total Targets Clear	Total Unique Targets Clear (Stereo)	Total Unique Targets Clear	Percent (%) Unique Targets Clear
101	133	9	72	1	10	1	0	7
102	90	7	65	1	8	1	8	0
103	148	18	60	8	22	7	20	44
104	164	20	101	6	17	6	12	10
105	122	35	81	3	7	3	7	6
106	91	7	61	2	7	2	7	8
107	98	8	32	3	8	3	8	2
108	132	19	58	4	13	4	13	10
Total MRFR	978	131	530	28	92	27	89	9
701	3423	370	2855	208	923	248	762	22
702	1330	1009	1806	276	616	201	495	26
703	224	124	312	46	109	32	81	36
704	412	324	615	113	222	80	173	42
705	62	21	53	7	18	6	13	20
706	792	521	1160	190	367	139	234	35
707	2809	1030	2691	472	1121	375	665	24
708	594	263	571	102	212	81	171	29
709	99	50	135	22	57	18	43	43
Total Survey	9745	4259	10199	1636	3725	1269	2967	30
801	116	24	227	11	87	0	56	57
802	351	61	420	18	113	15	101	29
803	1092	212	1438	63	372	60	336	31
804	71	25	142	4	20	4	18	25
805	322	163	664	44	151	35	124	39
806	119	80	295	39	103	31	81	68
807	10	2	23	1	4	1	4	38
808	32	22	170	4	40	3	25	77
809	70	91	153	22	37	15	28	40
810	7	13	18	5	7	3	5	65
Total SAPDO	2190	703	3619	211	934	176	782	35
Mission Total	12913	5093	14348	1875	4751	1472	3844	30

~~TOP SECRET~~

Page, 22 of 30 Pages

537-12600-52

DAYS ON ORBIT 30
LAUNCH DATE MAR 197~~TOP SECRET~~HANDLE VIA
~~BYEMAN/TALENT-KEYHOLE~~
~~CONTROL SYSTEMS JOINTLY~~

Category	Nr. of Targets in Cat.	Total Targets Attempted (Stereo)	Total Targets Attempted	Total Targets Clear (Stereo)	Total Targets Clear	Total Unique Targets Clear (Stereo)	Total Unique Targets Clear	Percent (%) Unique Targets Clear
101	133	13	66	4	28	4	25	10
102	90	5	63	2	25	2	23	26
103	148	22	60	7	21	6	20	14
104	164	23	121	13	35	12	31	10
105	122	16	70	5	19	5	18	15
106	91	12	58	5	16	5	14	16
107	98	6	72	1	17	1	16	16
108	132	7	52	1	13	1	12	10
Total MBER	923	114	571	38	174	36	160	16
701	3423	1050	3535	1442	1521	328	1110	32
702	1330	1003	1913	425	807	280	556	12
703	224	151	258	60	147	40	102	15
704	412	284	555	111	223	81	156	22
705	62	22	50	13	24	11	20	32
706	792	636	1440	282	644	152	377	43
707	2809	1016	2633	490	1315	376	1013	36
708	594	202	525	101	251	59	200	24
709	99	49	107	22	57	16	44	42
Total Surv.	9745	4427	11154	1946	4992	1362	3580	37
801	116	27	438	33	133	10	105	90
802	351	97	663	14	326	21	252	72
803	1092	295	1950	132	821	100	658	60
804	71	40	167	22	97	13	67	94
805	322	206	872	55	200	46	162	50
806	119	158	524	36	144	24	78	66
807	10	8	27	3	10	2	8	76
808	32	48	172	21	62	14	26	82
809	70	83	205	31	68	20	46	66
810	7	13	28	5	11	4	7	97
Total SALT	2190	1054	5046	382	1922	273	1409	64
Mission Total	12913	5595	16771	2366	7088	1671	5149	40

~~TOP SECRET~~

DAYS ON ORBIT 30
LAUNCH DATE JUN 73

SALT MAX REPORT /

PRIORITY

HANDLE VIA

BYEMAN/TALENT-KEYHOLE

CONTROL SYSTEMS JOINTLY

Category	Nr. of Targets in Cat.	Total Targets Attempted (Stereo)	Total Targets Attempted	Total Targets Clear (Stereo)	Total Targets Clear	Total Unique Targets Clear	Total Unique Targets Clear	Percent (%) Unique Targets Clear
101	133	50	136	31	94	22	71	53
102	90	21	148	11	78	9	56	62
103	148	33	165	17	87	12	65	44
104	164	44	204	24	102	19	84	51
105	122	31	163	19	98	15	74	61
106	91	37	130	18	68	13	52	58
107	98	20	150	11	82	9	65	66
108	132	19	148	13	97	11	75	57
Total MBER	978	264	1294	144	706	110	542	55
701	3423	1306	4459	642	2387	454	1723	51
702	1330	572	1920	671	1060	305	714	51
703	224	145	355	85	210	56	135	60
704	412	262	565	127	288	93	214	52
705	62	20	60	13	40	12	30	49
706	792	528	1266	312	742	170	446	56
707	2809	1109	2405	616	1964	434	1395	50
708	594	250	624	133	335	93	234	39
709	99	35	101	19	55	13	41	41
Total Surv.	9745	4528	12724	2410	7081	1630	4940	51
801	116	418	472	52	223	23	109	95
802	351	130	885	57	395	34	267	76
803	1092	586	3287	295	1599	176	941	86
804	71	43	202	19	126	12	62	90
805	322	256	951	119	454	80	287	89
806	119	475	476	71	230	40	118	99
807	10	5	20	2	0	2	7	71
808	32	66	142	21	49	14	31	95
809	70	106	261	41	115	21	60	86
810	7	16	31	6	14	4	6	39
Total SALT	2190	1500	6827	688	3214	415	1890	86
Mission Total	12913	6292	20845	3244	11001	2155	7381	57

~~TOP SECRET~~

Page 24 of 30 Pages

REF ID: A6600 72

HANDLE VIA
BYEMAN/TALENT KEYHOLE
CONTROL SYSTEMS JOINTLY

Approved for Release: 2019/01/21 C05100875

SALT MAX EFFORT/
PRIORITY

DAYS ON ORBIT 30
LAUNCH DATE OCT 1973

Category	Nr. of Targets in Cat.	Total Targets Attempted (Stereo)	Total Targets Attempted	Total Targets Clear (Stereo)	Total Targets Clear	Total Unique Targets Clear	Total Unique Targets Clear (Stereo)	Percent (%) Unique Targets Clear
101	133	24	46	0	14	8	13	10
102	90	7	42	1	9	1	3	0
103	148	22	67	10	24	0	21	21
104	164	25	64	11	31	11	29	18
105	122	13	50	0	39	0	36	31
106	91	9	38	3	8	3	7	8
107	98	13	32	3	0	3	0	0
108	132	12	31	3	14	4	14	10
Total MBER	978	126	409	49	158	48	149	15
701	3423	803	2688	362	1041	292	877	26
702	1330	824	1621	420	719	301	510	41
703	224	123	266	45	115	40	86	38
704	412	272	500	134	242	102	165	40
705	62	23	54	14	29	11	22	36
706	792	513	1124	300	520	129	695	27
707	2809	623	6317	500	1211	615	1026	27
708	594	319	605	110	258	64	302	24
709	99	46	117	25	60	19	46	47
Total SURV.	9745	3935	9182	1827	4109	1410	3289	34
801	116	59	333	15	80	12	59	51
802	351	74	472	29	218	25	187	53
803	1092	161	1482	86	517	73	429	41
804	71	31	133	6	19	6	19	27
805	322	191	599	52	151	45	132	41
806	119	72	259	24	80	16	62	52
807	10	4	28	2	7	1	5	53
808	32	40	270	9	29	7	22	70
809	70	86	171	33	54	23	36	52
810	7	8	24	5	9	2	5	70
Total SALT	2190	756	3771	261	1164	210	1015	46
Mission Total	12913	4817	13362	2137	5431	1668	4453	34

TOP SECRET

Page 25 of 30 Pages

~~BYEMAN/TALENT KEYHOLE
CONTROL SYSTEMS JOINTLY.~~

DAYS ON ORBIT 30

LAUNCH DATE FEB 74

Category	Nr. of Targets in Cat.	Total Targets Attempted	Total Targets Attempted (Stereo)	Total Targets Clear	Total Targets Clear	Total Unique Targets Clear	Total Unique Targets Clear	Percent (%) Unique Targets Clear
101	133	20	56	8	23	7	20	15
102	90	15	52	7	33	5	28	31
103	148	21	55	3	12	31	29	17
104	164	32	123	13	31	13	26	17
105	122	10	73	6	20	5	19	15
106	91	12	65	2	13	2	11	12
107	98	7	29	4	9	4	8	0
108	132	12	52	3	12	3	12	9
Total MBR	979	144	515	46	153	70	156	16
701	3423	914	3120	372	1120	264	822	26
702	1330	1001	1070	400	626	295	400	37
703	224	127	228	41	102	23	73	32
704	412	213	506	136	247	100	163	47
705	62	10	50	5	15	4	12	20
706	792	625	1402	230	466	130	308	39
707	2809	850	2762	398	1124	326	848	34
708	594	257	626	20	246	60	160	29
709	99	57	128	21	55	16	22	22
Total Surv.	9745	4400	10247	1692	4041	1263	3129	32
801	116	33	200	10	125	15	60	70
802	351	67	425	38	191	33	172	49
803	1092	215	1376	124	641	68	527	49
804	71	32	141	16	52	11	42	59
805	322	140	643	47	177	37	148	46
806	119	43	364	12	84	10	65	55
807	10	3	15	2	7	2	7	50
808	32	29	169	8	51	5	29	90
809	70	83	147	30	58	21	44	62
810	7	2	15	3	7	2	6	20
Total SALT	2190	662	3594	299	1393	235	1130	51
Mission Total	12013	5206	14356	2027	5587	1562	4415	34

~~TOP SECRET~~

HANDLE VIA

Approved for Release: 2019/01/21 C05100875

SALT MAX EFFORT/PRIORITY

BYEMAN/TALENT-KEYHOLE
CONTROL SYSTEMS JOINTLY

DAYS ON ORBIT 40

LAUNCH DATE JUN 1974

Category	Nr. of Targets in Cat.	Total Targets Attempted (Stereo)	Total Targets Attempted	Total Targets Clear (Stereo)	Total Targets Clear	Total Unique Targets Clear (Stereo)	Total Unique Targets Clear	Total Unique Targets	Percent (%) Unique Targets Clear
101	133	17	22	5	24	5	21	16	
102	90	5	56	1	20	1	19	21	
103	148	15	53	8	28	7	25	17	
104	164	26	107	9	50	8	45	27	
105	122	22	103	13	59	11	46	23	
106	91	0	50	4	10	4	17	19	
107	98	22	63	0	26	8	24	24	
108	132	22	75	9	34	8	30	23	
Total MEMBER	978	142	594	58	260	52	227	23	
701	3423	682	2715	412	1203	311	953	28	
702	1330	685	1814	425	785	206	555	42	
703	224	178	372	80	166	48	102	46	
704	412	688	585	126	224	85	172	42	
705	62	25	47	11	21	7	15	25	
706	792	510	1102	345	407	154	300	40	
707	2809	669	2360	481	1160	374	925	23	
708	594	217	474	100	222	77	170	20	
709	99	37	62	18	49	13	36	37	
Total Surv.	9745	4210	9570	1808	4345	1365	3248	33	
801	116	30	263	0	107	7	79	68	
802	351	24	425	39	156	34	14	40	
803	1092	203	1250	103	571	39	493	45	
804	71	14	167	4	56	3	53	60	
805	322	202	557	94	235	77	191	59	
806	119	44	256	18	110	10	77	65	
807	10	3	15	1	6	1	4	25	
808	32	50	186	14	41	9	26	20	
809	70	154	250	47	91	26	52	74	
810	7	3	14	2	6	2	5	72	
Total SALT	2190	796	3413	331	1379	253	924	45	
Mission Total	2913	5148	13577	2287	5984	1675	4450	24	

TOP SECRET

Page 27 of 30 Pages

DAYS ON ORBIT 42

LAUNCH DATE OCT 14

HANDLE VIA

BYEMAN/TALENT-KEYHOLE
CONTROL SYSTEMS JOINTLY~~TOP SECRET~~

Category	Nr. of Targets in Cat.	Total Targets Attempted (Stereo)	Total Targets Attempted	Total Targets Clear (Stereo)	Total Targets Clear	Total Unique Targets Clear (Stereo)	Total Unique Targets Clear	Percent (%) Unique Targets Clear
101	133	12	72	7	32	7	20	23
102	90	12	66	5	10	5	16	17
103	148	21	71	10	33	10	31	21
104	164	21	102	16	57	16	51	22
105	122	18	81	12	44	10	20	22
106	91	26	51	18	34	14	27	30
107	98	20	60	7	23	7	21	21
108	132	23	58	11	28	10	25	19
Total MNR	678	159	545	84	270	77	243	25
701	3423	620	2567	463	1330	380	1069	21
702	1330	1022	1725	481	820	338	622	45
703	224	139	267	76	146	54	106	48
704	412	212	598	146	265	102	189	46
705	62	21	57	11	24	8	13	20
706	792	877	903	242	507	165	241	53
707	2809	1050	2632	524	1308	413	1052	22
708	594	287	565	140	276	108	213	36
709	99	55	120	27	57	20	40	41
Total Surv.	9745	4304	9574	2115	4743	1588	3616	37
801	116	26	166	16	95	10	73	63
802	351	82	341	39	190	36	174	49
803	1092	120	810	77	482	63	418	38
804	71	22	144	11	55	11	42	60
805	322	185	464	91	235	81	196	61
806	119	60	250	25	101	10	73	61
807	10	5	13	3	10	3	8	77
808	32	20	72	10	36	8	24	75
809	70	59	120	32	63	25	47	67
810	7	3	11	2	7	2	5	23
Total SALT	2100	602	2401	306	1274	258	1061	48
Mission Total	12913	5065	12520	2505	6287	1923	4920	38

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DAYS ON ORBIT

LAUNCH DATE FEB 197

HANDLE VIA

BYEMAN/TALENT-KEYHOLE

CONTROL SYSTEMS JOINTLY

Category	Nr. of Targets in Cat.	Total Targets Attempted (Stereo)	Total Targets Attempted	Total Targets Clear (Stereo)	Total Targets Clear	Total Unique Targets Clear	Total Unique Targets Clear	Percent (%) Unique Targets Clear
101	133	12	102	5	24	4	21	16
102	90	17	89	6	25	5	23	25
103	148	10	69	1	17	1	16	11
104	164	33	82	0	20	7	19	44
105	122	22	66	3	23	8	22	18
106	91	16	20	6	0	5	7	8
107	98	25	25	6	12	6	11	12
108	132	11	46	3	9	3	8	6
Total MBER	978	148	528	44	139	34	126	13
701	3423	216	2721	262	1085	285	992	26
702	1330	1020	1220	423	729	201	534	40
703	224	143	216	57	125	41	98	20
704	412	327	503	122	245	26	186	45
705	62	25	48	11	23	8	17	27
706	792	429	960	225	451	164	334	42
707	2809	1025	9107	423	1214	392	1005	26
708	594	253	536	141	224	90	187	21
709	99	27	105	21	49	17	36	35
Total Surv.	9745	4286	9606	1821	4146	1384	3270	33
801	116	12	272	5	22	3	72	62
802	351	24	425	29	124	26	129	37
803	1092	156	1326	25	335	23	299	27
804	71	37	151	3	36	2	33	46
805	322	175	709	51	160	46	139	43
806	119	87	281	31	90	26	64	54
807	10	2	20	1	2	1	2	19
808	32	20	116	10	41	7	26	21
809	70	114	233	34	65	21	42	59
810	7	3	20	2	5	2	3	45
Total SALT	2190	706	3553	191	966	157	809	37
Mission Total	2913	5140	13687	2056	5251	1575	4205	32

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DAYS ON ORBIT

LAUNCH DATE JUN 19.

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CONTROL SYSTEMS JOINTLY

Category	Nr. of Targets in Cat.	Total Targets Attempted (Stereo)	Total Targets Attempted	Total Targets Clear (Stereo)	Total Targets Clear	Total Unique Targets Clear	Total Unique Targets Clear (Stereo)	Total Unique Targets Clear	Percent (%) Unique Targets Clear
101	133	23	56	7	16	7	15	11	
102	90	13	62	3	14	3	12	13	
103	148	13	51	5	19	5	18	12	
104	164	23	102	10	48	9	42	25	
105	122	20	90	10	40	8	32	26	
106	91	12	46	7	26	5	22	24	
107	98	23	54	15	30	11	25	25	
108	132	27	71	12	39	11	24	26	
Total MBFR	978	164	536	69	232	59	200	20	
701	3423	940	2730	460	1344	356	1025	30	
702	1330	266	1252	465	845	313	582	44	
703	224	151	331	78	169	47	103	46	
704	412	251	545	114	244	103	102	52	
705	62	22	50	12	28	10	21	34	
706	792	480	907	274	549	172	352	44	
707	2809	928	2145	490	1166	383	917	33	
708	594	261	432	131	245	101	189	22	
709	99	45	95	22	51	16	37	37	
Total Surv.	9745	4207	9132	2077	4641	1501	3408	35	
801	116	25	298	11	118	0	70	63	
802	351	76	479	37	210	31	173	49	
803	1092	237	1376	125	591	101	482	44	
804	71	22	154	22	72	17	56	73	
805	322	203	566	104	271	77	212	66	
806	119	44	246	59	125	46	89	75	
807	10	5	12	2	4	2	4	32	
808	32	30	86	17	33	16	26	31	
809	70	144	245	55	64	30	51	73	
810	7	8	24	3	8	2	5	25	
Total SALT	2190	875	3476	435	1526	331	1177	54	
Mission Total	12913	5246	13144	2581	6399	1891	4785	37	

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CONTROL SYSTEMS JOINTLY

SUBJECT: MBFR/SALT Study (HEXAGON)

PURPOSE

1. This paper presents the results of a study performed to assess the capability of the HEXAGON system against the MBFR and SALT requirements in the FY 1973 and beyond time era.

METHODS & ASSUMPTIONS

2. The launch schedule assumed was October-January-April for FY 1973 and August-December-March for FY 1974 and beyond. Each mission was assumed to be 60 days in length with no failure. Although the October 1972 launch is scheduled for only 45 days, this was unaccounted for in the method used to perform the study.

3. The HEXAGON Multiple Mission Planner (HMMP) was used to generate the basic film versus return data for each requirement, taking into account the weather forecasting skill assumed to be reasonable during the given time intervals. The standing HEXAGON requirements were modeled in HMMP with the addition of the SALT/MBFR requirements. The definition of these areas is presented in Table B1.

4. The conditions assumed at the start of each mission were that the quarterlies and semi-annuals were entirely due and the annual search areas had a 40% status. It was further assumed that (1) of the 208,000 feet film load, 198,000 feet was available for intelligence and mapping and charting, and (2) that 10% of the 198,000 feet would be utilized for special requirements and mapping and charting. Consequently, the usable film was established at approximately 178,000 feet. It should be noted that about 25% (vice 10% is thought of as a normal allotment for M & C and Special Requirements.

5. Each mission was studied in three ways:

(a) Case A 45°/60° Normal - A plus or minus 45° obliquity limit was imposed on all quarterlies while attempting to maintain the 85-80-75 accomplishment levels on quarterly, semi-annual and annual requirements, respectively.

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(b) Case B $45^{\circ}/60^{\circ}$ Adjusted - A plus or minus 45° obliquity limit was imposed on all quarterlies while attempting to maintain the 85-80-75 accomplishment levels on quarterly, semi-annual and annual requirements, respectively, except for the MBFR/SALT which were driven to 90% accomplishment when possible.

(c) Case C 60° - No obliquity limits on coverage; i.e., plus or minus 60° , while attempting to meet or better the 85-80-75 accomplishment level on quarterlies, semi-annual and annual requirements, respectively.

6. Additionally, where reasonable the accomplishment levels on the annual search areas were reduced an additional 5% in order to determine the approximate amounts of film which might be made available if more film was desired for special requirements and mapping and charting. Obviously, each mission varied in its ability to meet the requirement. When this occurred, trades were made to adjust the total film expenditure by manipulating the actual accomplishment levels. A hierarchy for those adjustments was established and maintained throughout the study. The adjustment philosophy was as follows:

(a) The initial adjustments were made to annual search areas. Within the annual areas, adjustments were made based upon reasonable changes in efficiency.

(b) If the desired film utilization was not achieved from the above, then semi-annual areas were adjusted. Again, as with the annuals, the adjustments were made on the basis of efficiency.

These adjustments were made on a mission-to-mission basis and in some instances a case-to-case basis. It should also be noted that removing the plus or minus 45° obliquity limit, thereby increasing accesses, in effect increases the usable film supply. This then allowed a higher accomplishment on not only the quarterlies, but other requirements as well.

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CONTROL SYSTEMS JOINTLYFACTORS AFFECTING ACCURACY OF RESULTS

7. The overall mission results and the yearly results are believed to be representative. The specific figures on a given requirement on a given mission are subject to some inaccuracy due to the following considerations.

8. The HMMP program does not model the requirements in as much detail as the operational software. It does not, for example, recognize so-called bonus photography (for example, the coverage of an adjacent semi-annual requirement area that may result from photographing a cluster).

9. HMMP utilizes climatology, a statistical representation on a month-to-month basis of a nine year mean of actual weather data. Further, in this study it was assumed that a single month's weather, as represented by the climatology data prevailed over the whole two month mission period.

RESULTS

10. The results are presented in Appendix B1 which is divided by fiscal year, by mission within the year and by mission specific case. The detailed study results are presented in Figures 1 and 2 of Appendix B1.

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TABLE B1

REQUIREMENT MODEL

<u>CURRENT HEXAGON</u>	<u>STUDY MODEL</u>	<u>NUMBER CELLS</u>
- UR3	- SALT Clusters (302 324 326 328 333 343 345 347 348 360 373 376 382 383 384 388 389 390 391 396 399 400 408 413 421 422 426 427 428 437 439 441 442)	976
	- MBFR Adjacent Zone Clusters (310 312 346 350 355 369 372 374 411 443)	169
	- Remaining UR3	221
- UR6	- UR6	14500
- UR12	- UR12	17430
- CH3	- CH3	420
- CH6	- CH6	6568
- CH12	- CH12	7008
- EE3	- MBFR - Reduction Zone Cluster	134
	(b)(1) (b)(3)	
	- Remaining EE6	600
	(b)(1) (b)(3)	
- EE12	- EE12	405
- MOG6	- MOG6	585
- MOG12	- MOG12	1634
- NK3	- NK3 & 6*	205
- NK6		
- NV3	- NV3 & 6*	215
- NV6		
- ME3	- ME3 & 6*	1000
- ME6		

*These requirements were treated as quarterlies.

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APPENDIX B1

FY 1973 SCHEDULEJanuaryA. 45°/60° Normal

1. All requirements can be met at standing requirement levels except:

Annual Russia - 65% accomplishment level
(Primarily due to sunline)

Annual China - 71%

Annual East Europe - 74%

2. 10,000 feet of film can be made available by lowering all annual requirement levels to 70%.

3. 23,000 feet of film reserved for M & C and Specials.

B. 45/60° Adjusted

1. SALT, MBFR Quarterlies, [redacted] and Middle East Areas can be achieved at 90% by reducing Annual Mongolia accomplishment level to 73%. (b)(1)
(b)(3)

2. All other requirement satisfactions unchanged from 45°/60° Normal case.

3. 10,000 feet can be made available by lowering all annual requirement levels to 70%.

4. 20,500 reserved for M & C and Specials.

C. 60°

1. All quarterly requirement areas can be achieved at 90% accomplishment level.

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2. All others can be met at standing level except for Annual China and Annual Russia for reasons indicated in the $45^{\circ}/60^{\circ}$ Normal case.

April

A. $45^{\circ}/60^{\circ}$ Normal

1. All requirements can be met at standing requirement levels except:

Quarterly China - 77% accomplishment level due to difficulty (weather) and relatively low access frequency

Annual Russia - 69% accomplishment level due to difficulty

Annual China - 68% due to difficulty

Annual East Europe & Annual Mongolia (72% and 70%, respectively).

2. Only 600 feet can be made available by lowering annual requirement levels to 70%.

3. 18,000 feet reserved for M & C and Specials.

B. $45^{\circ}/60^{\circ}$ Adjusted

1. SALT and MBFR quarterlies can be achieved at 90% accomplishment level by reducing annual Mongolia accomplishment level to 69%.

2. Remaining requirements can be achieved as indicated for the $45^{\circ}/60^{\circ}$ Normal case.

3. 600 feet save by reducing annual requirement level to 70%.

4. 18,000 feet reserved for M & C and Specials.

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CONTROL SYSTEMS JOINTLYAprilC. 60°

1. Requirements can be met as indicated for preceding case except:

Semi-Annual MBFR can be achieved at 90% accomplishment level

Quarterly China can be achieved at 85% accomplishment level

Annual Russia can be achieved at 70% accomplishment level

2. 600 feet saved by reducing annual requirement level to 70%.

3. 18,000 feet reserved for M & C and Specials.

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HANDLE VIA

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CONTROL SYSTEMS JOINTLYOctoberA. $45^{\circ}/60^{\circ}$ Normal

1. All requirements can be met at standing requirement levels except:

Quarterly China - 75%

Semi-Annual Russia - 79%

Annual Russia - 66% (Partially due to sunline)

Annual China - 65%

Annual Mongolia - 73%

2. 4300 feet can be save by reducing annual requirement level to 70%.

3. 23,000 feet reserved for M & C and Specials.

B. $45^{\circ}/60^{\circ}$ Adjusted

1. SALT and MBFR Quarterlies can be achieved at 90% accomplishment level.

2. All others can be met at accomplishment level specified for the $45^{\circ}/60^{\circ}$ Normal case except:

Annual Russia - 65%

Annual East Europe - 71%

Annual Mongolia - 69%

3. Since only one area can be achieved above 70% accomplishment level (71) an insignificant amount of film can be gained by reducing the annual requirement level to 70%.

4. 23,000 feet reserved for M & C and Specials.

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CONTROL SYSTEMS JOINTLYOctoberC. 60°

1. Accomplishment same as for 45°/60° Adjusted except:

SA/MBFR - increased to 90%

Quarterly China - increased to 85%

S/A China - decreased to 78%

Annual USSR & China - 66%

Annual E. Europe - 75%

Annual Mongolia - 73%

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CONTROL SYSTEMS JOINTLYFY 1974 (AND BEYOND) SCHEDULE (See Figure 2)MarchA. 45°/60° Normal

1. All requirements can be met at standing requirements levels except:

Annual USSR - 72% Accomplishment Level

Annual China - 70% Accomplishment Level

Annual East Europe - 73% Accomplishment Level

2. Approximately 30,000 feet can be made available by reducing annual requirement level to 70%.

3. 21,500 feet reserved for M & C and Specials.

B. 45°/60° Adjusted

1. SALT and MBFR quarterlies can be achieved at 90% accomplishment level.

2. Other accomplishment levels are unchanged from the 45°/60° Normal case except:

Annual USSR - 71%

Annual Mongolia - 70%

3. Approximately 20,000 feet can be made available by reducing annual requirement levels to 70%.

4. 21,500 feet reserved for M & C and Specials.

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CONTROL SYSTEMS JOINTLYMarchC. 60°

1. All quarterly and semi-annual requirements can be achieved at 90% accomplishment level.

2. Remaining requirements can be achieved at standing requirement levels except:

Annual USSR - 72%

Annual China - 70%

Annual East Europe - 73%

Annual Mongolia - 70%

3. 27,500 feet can be made available by reducing annual requirement level to 70%.

4. 21,500 feet reserved for M & C and Specials.

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HANDLE VIA

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CONTROL SYSTEMS JOINTLYAugustA. $45^{\circ}/60^{\circ}$ Normal

1. Only five requirement areas can be achieved at standing requirement levels.

Adjacent Zone MBFR - 85%

USSR quarterlies - 85%

S/A East Europe - 80%

Middle East 3 & 6 - 85%

S/A Mongolia - 80%

2. Remaining requirements can be achieved as indicated in Figure 2.

3. Since none of the annual requirement areas can be achieved above 70%, no film can be made available by reducing the requirement level for annuals.

4. 21,000 feet reserved for M & C and Specials.

B. $45^{\circ}/60^{\circ}$ Adjusted

1. Accomplishment level for SALT targets can be increased to 82% by reducing S/A USSR accomplishment level to 73%.

2. Remaining requirements can be achieved at levels indicated for the $45^{\circ}/60^{\circ}$ Normal case.

3. No film can be made available by reducing annual requirement level to 70%.

4. 21,000 feet reserved for M & C and Specials.

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CONTROL SYSTEMS JOINTLYAugustC. 60°

- Accomplishment levels for all requirement areas are unchanged except the following can be adjusted upwards:

SALT - 85%

Red. Zone MBFR Quarterlies - 80%

Red. Zone MBFR S/A - 80%

China quarterlies - 78%

Semi-Annual China - 77%

Semi-Annual USSR - 72%

- No film can be made available by reducing annual requirement level to 70%.

- 21,000 feet reserved for M & C and Specials.

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CONTROL SYSTEMS JOINTLYDecemberA. 45°/60° Normal

1. All requirements can be met at standing requirement levels except:

Annual USSR - 51% (Primarily due to sunline)

Annual China - 73%

2. 20,000 feet can be made available by reducing annual requirement level to 70%.

3. 22,500 feet reserved for M & C and Specials.

B. 45°/60° Adjusted

1. Nearly all accomplishment levels can be increased by slightly decreasing accomplishment levels for annual USSR and China. (See Figure 2).

2. Approximately 10,000 feet can be made available by reducing annual requirement level to 70%.

3. 22,500 feet reserved for M & C and Specials.

C. 60°

1. All requirement areas can be achieved at or above standing requirement levels except Annual USSR - 49% (sunline).

2. 28,500 feet can be made available by reducing annual requirement level to 70%.

3. 22,500 feet reserved for M & C and Specials.

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FY 73 SCHEDULE

	JANUARY			APRIL			OCTOBER		
	45°/60°	45°/60°	60°	45°/60°	45°/60°	60°	45°/60°	45°/60°	60°
Normal	Adjusted			Normal	Adjusted		Normal	Adjusted	
SALT	85	90↑	90	85	90↑	90	85	90↑	90
MBFR-RZ3	85	90↑	90	85	90↑	90	85	90↑	90
MBFR-AZ3	85	90↑	90	85	90↑	90	85	90↑	90
MBFR-RZ6	80	80	90↑	80	80	90↑	80	80	90↑
UR3	85	85	90↑	85	85	85	85	85	85
CH3	85	85	90↑	77	77	85↑	75	75	85↑
UR6	80	80	80	80	80	80	79	79	79
CH6	80	80	80	80	80	80	80	80	78↓
* UR12	65	65	65	69	69	70↑	66	65↓	66↑
* CH12	71	71	71	68	68	68	65	65	66↑
EE6	80	80	80	80	80	80	80	80	80
* EE12	74	74	75↑	72	72	72	75	71↓	75↑
NK3 & 6	85	90↑	90	85	85	85	85	85	85
NVN3 & 6	85	90↑	90	85	85	85	85	85	85
ME3 & 6	85	90↑	90	85	85	85	85	85	85
MG6	80	80	80	80	80	80	80	80	80
* MG12	75	73↓	75	70	69↓	70	73	69↓	73↑
TOTAL FILM	175,000	177,500	177,500	180,000	180,000	180,000	175,000	175,000	175,000
FILM GAINED WITH ANN. @ .70	10,000	10,000	10,200	600	600	600	4,300	100	2,060
FILM REMAINING FOR OTHER PURPOSES	23,000	20,500	20,500	18,000	18,000	18,000	23,000	23,000	23,000

FIGURE 1

* ANNUAL SATISFACTIONS EXPRESSED
IN ACCOMPLISHMENT LEVEL, NOT
RETURN. PRE-MISSION STATUS FOR
ANNUALS WAS 40%.

NOTE: ARROWS (+&↓) INDICATE WHERE
TRADES WERE MADE IN ADJUSTING
FROM 45°/60° NORMAL CASE.

FY 74 (AND BEYOND) SCHEDULE

	MARCH				AUGUST				DECEMBER			
	45°/60°		60°	45°/60°		45°/60°		60°	45°/60°		45°/60°	
	NORMAL	ADJUSTED		NORMAL	ADJUSTED		NORMAL	ADJUSTED		NORMAL	ADJUSTED	
SALT	85	90↑	90	81	82↑	85↑	85	90↑	91↑			
MBFR-RZ3	85	90↑	90	73	73	80↑	85	90↑	90			
MBFR-AZ3	85	90↑	90	85	85	85	85	90↑	90			
MBFR-RZ6	80	80	90↑	73	73	80↑	80	85↑	85			
UR3	85	85	90↑	85	85	85	85	90↑	90			
CH3	85	85	90↑	67	67	78↑	85	90↑	90			
UR6	80	80	80	74	73↓	77↑	80	87↑	87			
CH6	80	80	80	69	69	72↑	80	85↑	88↑			
* UR12	72	71↓	72	66	66	66	51	49↓	49			
* CH12	70	70	70	61	61	61	73	71↓	75↑			
EE6	80	80	80	80	80	80	80	86↑	86			
* EE12	73	73	73	70	70	70	75	75	75			
NK3 & 6	85	85	90↑	75	75	75	85	89↑	89			
NVN3 & 6	85	85	90↑	70	70	70	85	90↑	90			
ME3 & 6	85	85	90↑	85	85	85	85	91↑	91			
MG6	80	80	80	80	80	80	80	90↑	90			
* MG12	75	70↓	70	62	62	62	75	75	75			
TOTAL FILM	176,500	176,500	176,500	177,000	177,000	177,000	175,500	175,500	175,500			
FILM GAINED WITH ANNUAL @ .70	30,000	20,000	27,500	-----	-----	-----	20,000	9,600	28,500			
FILM REMAINING FOR OTHER PURPOSES	21,500	21,500	21,500	21,000	21,000	21,000	22,500	22,500	22,500			

FIGURE 2

* ANNUAL SATISFACTIONS EXPRESSED IN ACCOMPLISHMENT LEVEL, NOT RETURN.
PRE-MISSION STATUS FOR ANNUALS WAS 40%.

NOTE: ARROWS (↑ & ↓) INDICATE WHERE TRADES WERE MADE IN ADJUSTING FROM 45°/60° NORMAL CASE.
Page 16 of 16 Pages

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CONTROL SYSTEMS JOINTLYPURPOSE

1. The results of the GAMBIT and HEXAGON simulations are presented graphically in this section to show point target surveillance probabilities that can be anticipated utilizing the coverage from both systems. The results are combined to produce target age probability plots for each year. The period depicted is FY 1973 through FY 1975.

RESULTS

2. An assumption is made that the HEXAGON coverage accomplishment level equates to percent point target coverage attainable.

3. The results in Figure C1 (MBFR Standard Priorities) show the target age probabilities of MBFR point target surveillance maintaining today's priority structure. The HEXAGON MBFR accomplishment levels used were for the reduction zone clusters.

4. The results in Figure C2 (MBFR Maximum Priority) are based on increasing the MBFR targets to the highest priority for GAMBIT and increasing the accomplishment level of the MBFR requirements in the HEXAGON simulations.

5. The SALT Standard Priorities point target age probabilities shown in Figure C3 are the result of combining the GAMBIT and HEXAGON simulations which maintained today's priorities structure for those targets identified as a SALT requirement.

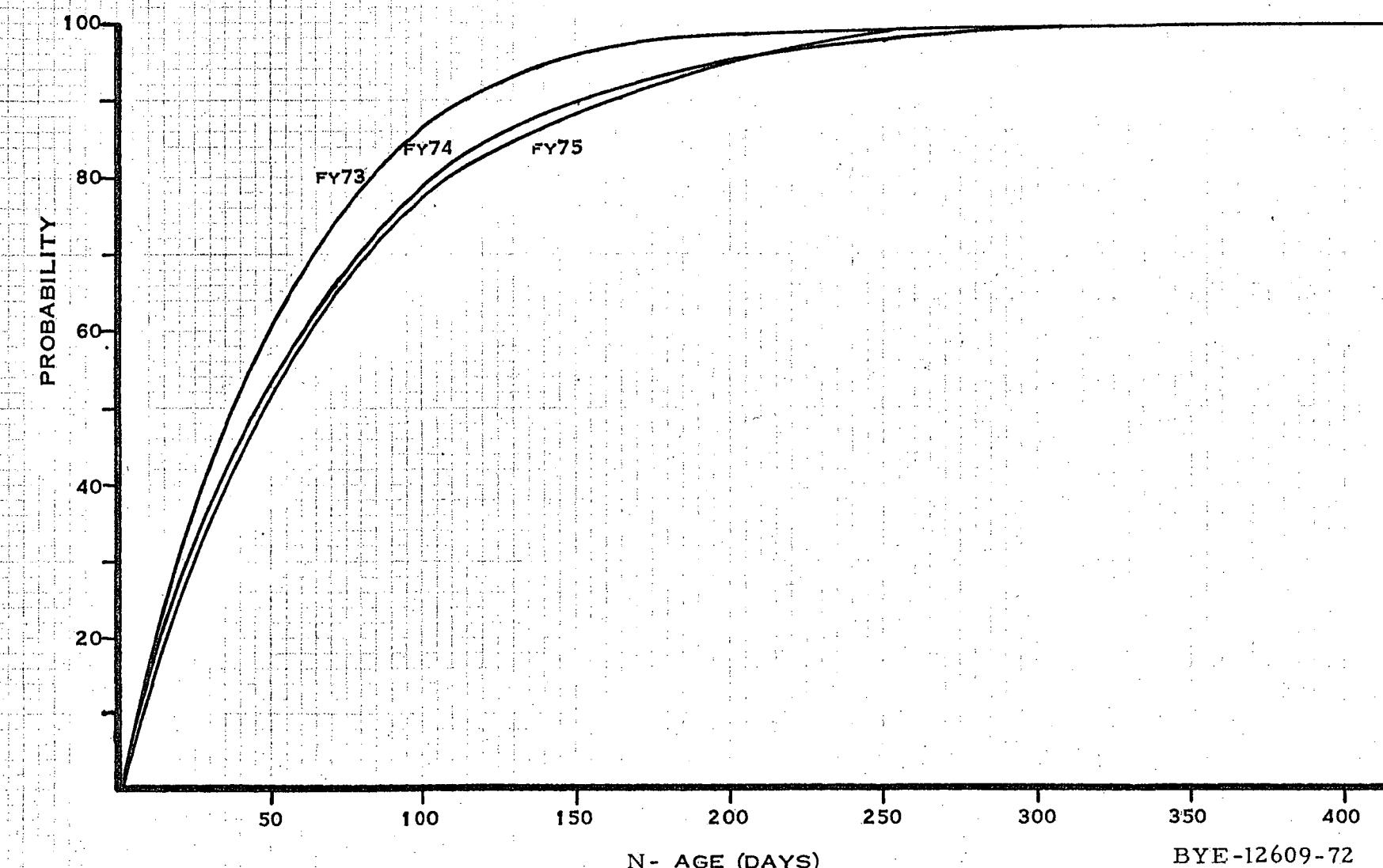
6. Figure C4 (SALT Maximum Priority) shows the point target age probability results for increasing SALT requirements to the highest GAMBIT priority and increasing the HEXAGON accomplishment level.

7. The data plotted in Figures C1-C4 yields the probability that a target has an age of N or less days. These data can also be used to ask, "what is the probability that a target will be photographed again within N days, or from any random day over a yearly period what is the probability that I will see that target (or a percent of a population of targets) in N days?"

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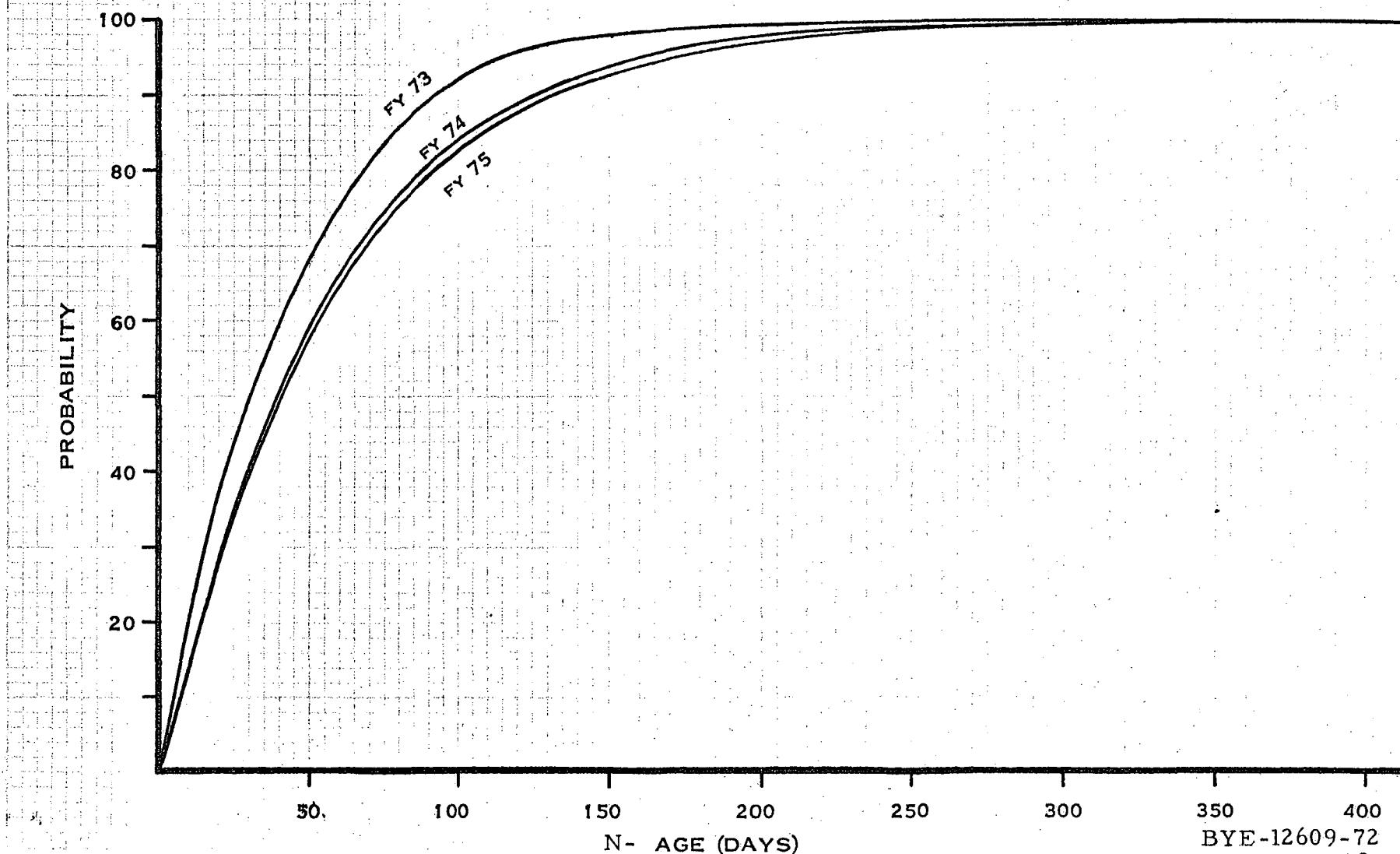
TARGET AGE PROBABILITY DISTRIBUTION (CUMULATIVE)
MBFR STANDARD PRIORITIES / ACCOMPLISHMENT FY73-FY75
KH8-KH9



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Figure Cl

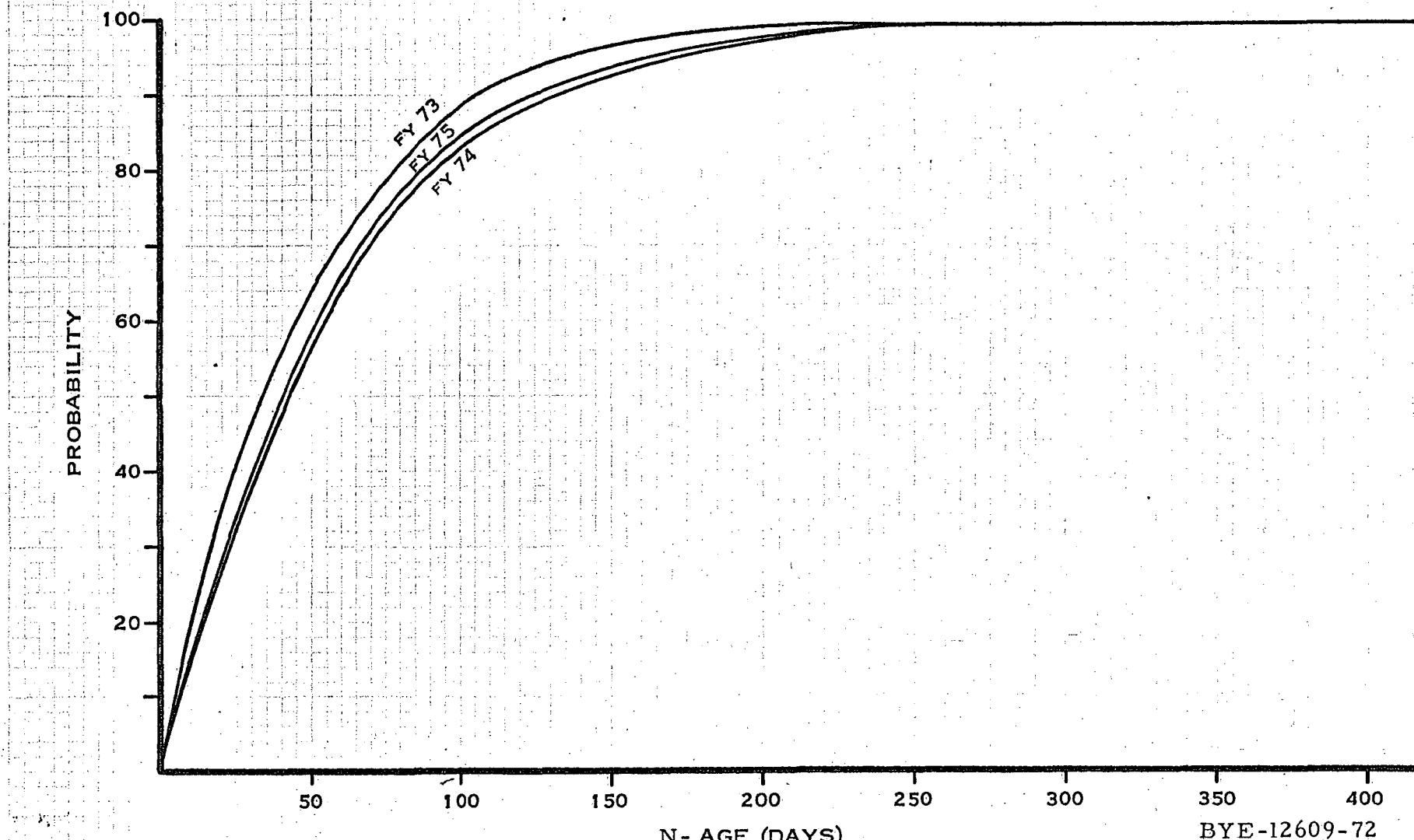
MBFR MAX PRIORITY / ACCOMPLISHMENT FY73-FY75
KH8-KH9
TARGET AGE PROBABILITY DISTRIBUTION (CUMULATIVE)



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Figure C2

SALT STANDARD PRIORITIES / ACCOMPLISHMENT FY73-FY75
KH8-KH9
TARGET AGE PROBABILITY DISTRIBUTION (CUMULATIVE)

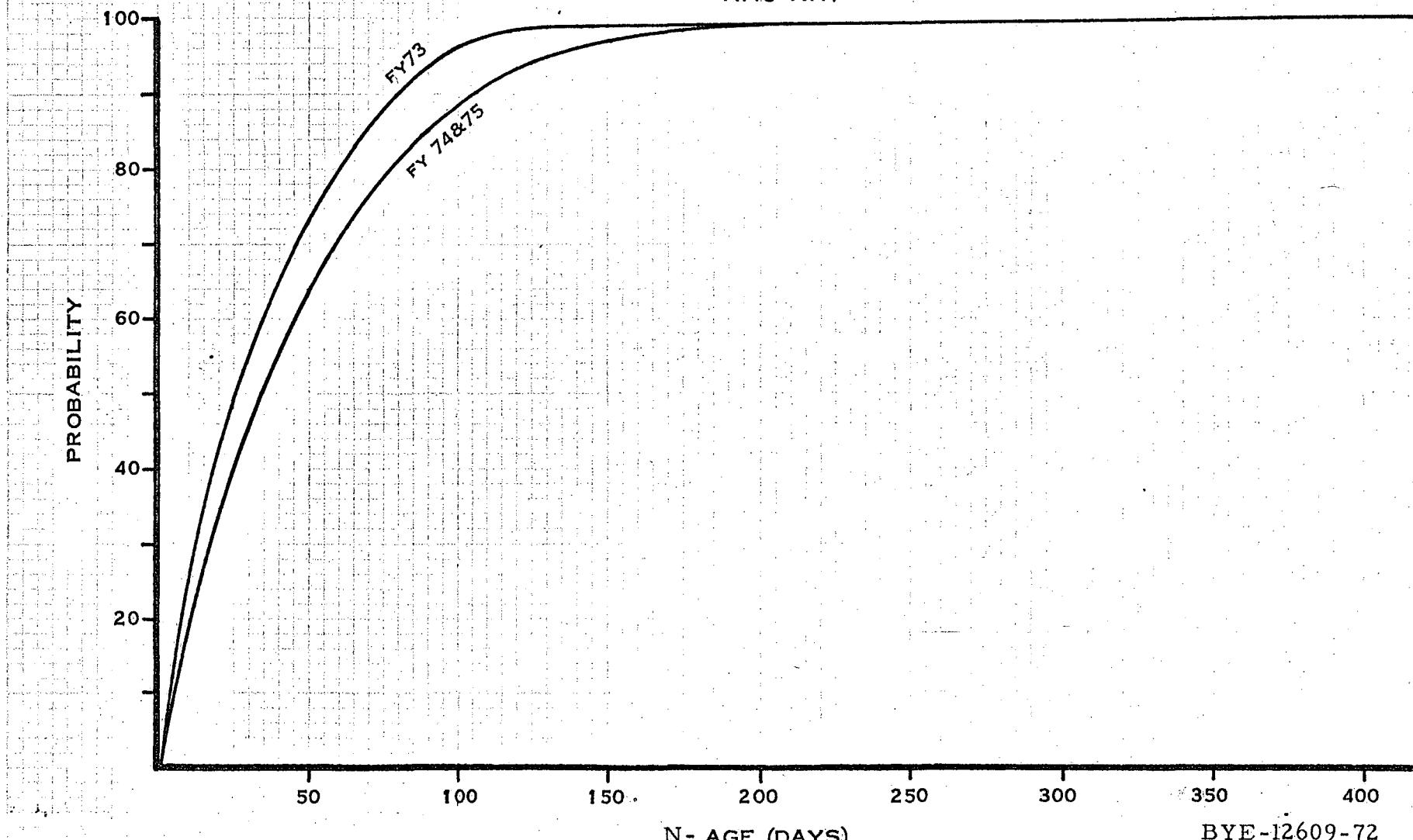


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Page 4 of 5 Pages

Figure C.3

SALT MAX PRIORITY / ACCOMPLISHMENT FY73-FY75
TARGET AGE PROBABILITY DISTRIBUTION (CUMULATIVE)
KH8-KH9



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Page 5 of 5 Pages

Figure C4