

~~TOP SECRET HEXAGON 20053~~

BYE 11100-79

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15 February 1979

MEMORANDUM FOR: Chairman/COMIREX

SUBJECT : STS PCS Performance Data

1. The attached tables present the STS PCS performance data that you requested during the presentation of the STS PCS Performance Analysis Study Mid-Study Briefing on 1 February. Attachment 1 describes the different cases analyzed. Attachments 2, 3 and 4 present average end-of-mission status, average cloud freeness, and average percent of the film load used for each major collection requirement type for each of the cases.

2. All of these data were generated in the STS PCS First Order Analysis Model (FOAM) simulations and therefore may not be precisely representative of operational performance. This is especially true for the percent of film load data.

3. Please call me if you have any questions concerning this data or any other aspects of the FOAM STS PCS simulations.



(b)(3) 10 USC 424

Attachments: As stated

Distribution:

- Cy 1-Addressee, w/atts
- 2-LtC D. Raspet, NRO Stf, w/atts
- 3-AC/AD, w/atts
- 4-C/ISAB, w/atts

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Attachment 1

STS PCS PERFORMANCE ANALYSIS STUDY FOAM CASE CONDITIONS

CONDITIONS WHICH APPLY TO ALL CASES

LAUNCH DATES: 15 FEB, 17 JUN, 17 OCT (~122 DAYS BETWEEN LAUNCHES)
 SIX MISSIONS PER CASE - RUN AS A SEQUENTIAL SERIES FOR 2 YEARS
 OLD REQUIREMENTS INITIALIZED FROM 1214 END-OF-MISSION STATUS
 NEW REQUIREMENTS ALL SET OVERDUE PRIOR TO FIRST MISSION
 160,000 FEET (+20%) FILM PER SIDE (1.5 x .75 x 142,000)
 1972 and 1973 3DNEPH HISTORICAL WEATHER
 CONTROL PARAMETERS SET MANUALLY USING EXPERIENCE IN CHECKOUT RUNS
 DLS FOR TARGETING IS BASED ON REQUIRED NIIRS

CASE SPECIFIC CONDITIONS

<u>CASE</u>	<u>INCLINATION</u>	<u>PERIGEE/APOGEE</u>	<u>DURATION</u>	<u>REQUIREMENTS</u>
A	97°	91x140 NM	21 DAYS	CURRENT REQ'TS ONLY
B	97°	91x140 NM	14 DAYS	CURRENT REQ'TS ONLY
C	97°	91x140 NM	21 DAYS	CURRENT AND NEW REQ'TS
E	97°	91x140 NM	14 DAYS	CURRENT AND NEW REQ'TS
F	97°	91x140 NM	14 DAYS	CURRENT AND NEW REQ'TS, WITHOUT CLUSTERS
D	75°	95x120 NM	21 DAYS	CURRENT AND NEW REQ'TS
G	75°	95x120 NM	14 DAYS	CURRENT AND NEW REQ'TS
H	75°	95x120 NM	14 DAYS	CURRENT AND NEW REQ'TS, WITHOUT CLUSTERS

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Attachment 1
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Attachment 2

AVERAGE END-OF-MISSION COMIRES STATUS

CASE	ALL REQ'TS	ALL CURRENT REQ'TS	ALL NEW REQ'TS	CURRENT							NEW		
				2 MO	4 MO	6 MO	9 MO	12 MO	18 MO	24 MO	9 MO	12 MO	18 MO
A	-	92	-	57	87	94	98	98	98	97	-	-	-
B	-	89	-	40	80	91	96	97	98	97	-	-	-
C	78	83	74	53	76	84	96	89	86	86	77	71	69
E	84	82	86	39	72	83	91	91	90	90	88	84	80
F	86	81	90	30*	70	83	90	91	92	93	92	88	86
D	81	80	82	39	74	83	91	89	81	87	86	78	70
G	84	80	87	33	72	83	91	90	85	88	91	83	81
H	85	79	89	26*	68	83	90	90	88	89	93	85	84

* Bonus

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Attachment 3

AVERAGE PERCENT CLOUD FREENESS OF GROSS COVERAGE

CASE	ALL REQ'TS	ALL CURRENT REQ'TS	ALL NEW REQ'TS	CURRENT							NEW		
				2 MO	4 MO	6 MO	9 MO	12 MO	18 MO	24 MO	9 MO	12 MO	18 MO
A	-	57	-	49	50	52	54	59	64	68	-	-	-
B	-	56	-	48	49	51	52	57	61	60	-	-	-
C	65	58	74	49	51	53	55	60	69	77	78	73	62
E	65	58	74	52	52	53	55	60	68	76	78	72	61
F	68	64	70	55	54	57	61	66	71	72	75	66	58
D	65	58	74	52	52	53	55	60	68	76	78	72	61
G	64	58	70	51	51	53	55	60	67	73	75	68	55
H	67	64	69	50	54	57	60	67	71	74	74	67	55

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Attachment 4

AVERAGE PERCENT OF FILM LOAD USED AGAINST EACH REQUIREMENT

CASE	ALL REQ'TS	ALL CURRENT REQ'TS	ALL NEW REQ'TS	CURRENT							NEW		
				2 MO	4 MO	6 MO	9 MO	12 MO	18 MO	24 MO	9 MO	12 MO	18 MO
A	-	100	-	70	18	2	3	5	2	0.1	-	-	-
B	-	100	-	69	20	2	3	4	2	0.1	-	-	-
C	100	76	24	53	12	2	2	4	2	0.2	16	6	2
E	100	74	26	49	13	2	3	5	2	0.2	17	7	2
F	100	48	52	-	27	4	5	9	3	0.4	32	14	6
D	100	73	27	50	13	2	2	4	2	0.2	18	6	3
G	100	74	26	49	14	2	2	4	2	0.2	17	7	2
H	100	50	50	-	28	4	5	8	4	0.4	32	13	5

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