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MEMORANDUM

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SUBJ: Current Status of Waste Collection System (WCS)

Paul Weitz and I spent the morning of November 3, 1977, at the General Electric (GE) Space Systems Division using and exploring all aspects of their current waste collection system development. It became immediately obvious that GE has made a quantum jump in its development of these items over that previously demonstrated by their prototypes.

The mockup was a high-fidelity prototype of the final system and showed a high degree of finish and operational suitability. This prototype, which is currently on life test, satisfied a number of the previous complaints against previous failures and deficiencies in the WCS. Operations are now easy with a three-position vacuum-switching arrangement mechanically ganged to other functions and a single lever controlling the seat opening which involes a relatively simple two-step maneuver. In one-g there was little to be desired in the anatomical arrangement, odor control was vastly improved, and the noise level was not objectionable during use. The present mode of operation eliminates the previous one-wipe concept and GE now places no restrictions on paper usage but they do point out that paper will occupy a large volume, an item of some concern. The same basic 30-watt motor design has been retained but a new vendor, building to tighter specifications, is being used. One had the feeling that the design engineers would be much happier with a larger unit however. In operations, some previously unseen items came to light which will be the subjects of RIDs.

We were rather thoroughly briefed on planned operations and explored virtually all aspects that could be anticipated at this time. There was long discussion of the paper problem which has not been solved completely for I restricted my usage to seven double wipes and at the beginning of the next cycle considerable amounts of paper were still on the slinger wheel. I am still not sure that GE's assurance that it would go away is well founded. Another aspect of clean up is that with soft stools, dry tissue is not a very efficient mode of operation, and I resorted to some available wet wipes which were much more effective. The use of wet wipes as a regular aid might profitably be explored. There is a question of amounts of tissue required versus the volume of the WCS to accept it. There is a problem of menstural products and attendant clean up. Disposal of contingency/vomitus bags require manual placement down a long soiled tube which will result in contamination of the hand. Odor control was less than perfect but the problem seems to arise

from the incomplete closure of the seat and inadequate air flow entrapment. Noise level is above that specified but still well below that previously encountered and could probably be tolerated (in the vicinity of 70 dbA). Other areas to be considered are methods for cleansing the WCS itself and provision for "hanging" clothes in the area. These items plus some "motherhood" issues such as reliability and backup systems were included in 12 RIDs submitted to Brady. Terry Neal and Brady were both briefed on the trip and I am still waiting to see Liebergot, the FOD representative for the telephonic CDR which was held on the 21st.

Two of the RIDs were already covered by others and the ones which went forward are enclosed for information. The RID covering the clothes retainer is not a GE problem and will be submitted to Chris Perner.

In summary, a great deal of improvement has occurred in the system. The items which I was deeply concerned about are being worked by contractor and monitors, however, all aspects will be followed closely.