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PRIORITY [REDACTED] INFO [REDACTED]

CORONA

TO DR. MCLUCAS FROM [REDACTED]

REF: [REDACTED]

SUBJECT: UTB IN THE CORONA SYSTEM

CITE [REDACTED] [REDACTED]

Declassified and Released by the N R C
In Accordance with E. O. 12958
on NOV 26 1997

1. THE TASK FORCE REFERRED TO IN REF HAS REPORTED TO ME AND RECOMMENDED THAT UTB NOT BE USED IN THE CORONA CAMERA. I HAVE REVIEWED THEIR RECOMMENDATION AND CONCUR. ACCORDINGLY, I HAVE DECIDED THAT FURTHER WORK ON THE USE OF UTB IN THE CORONA CAMERA IS NOT WARRANTED AS THE PROBABILITY OF SUCCESS, AT THIS STAGE IN THE PROGRAM, IS LOW.

2. THE LAST MINUTE DIFFICULTIES EXPERIENCED WITH CR-11 WERE RECOUNTED IN REF MESSAGE. IN THE LAST TWO WEEKS, HOWEVER, I HAVE BECOME CONCERNED DUE TO THE UTB PROBLEM WITH BOTH CR-12 AND CR-13. PARTICULARLY, IN THE LAST WEEK IT BECAME CLEAR THAT THERE WERE SERIOUS MISTRACKING PROBLEMS WITH BOTH CR-12 AND CR-13. ON FRIDAY, 13 FEBRUARY, CR-12, WHICH WAS COMPLETING ITS TEST CYCLE AND BEING READIED FOR STORAGE, BEGAN SUDDENLY TO EXHIBIT TRACKING PROBLEM ON THE NUMBER ONE

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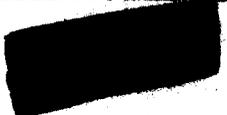
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INSTRUMENT. THE FILM CLIMBED THE ~~FOOD~~ ROLLER AND NO EASY EXPLANATION FOR THE APPEARANCE OF THIS PROBLEM IS AVAILABLE. SUBSEQUENTLY ON 16 FEBRUARY WHILE ATTEMPTING TO CORRECT CR-12'S TRACKING PROBLEMS, A PIN WAS SHEARED DUE TO THE UTB MISTRACKING, ~~REPAIRS~~. SUCH AN ENCOUNTER IN FLIGHT WOULD HAVE CAUSED A CATASTROPHIC FAILURE.

3. APPROXIMATELY THREE WEEKS AGO, CR-13, WHILE IN ITS NORMAL TEST CYCLE, BEGAN TO EXHIBIT TRACKING PROBLEMS. AT THE TIME, THESE APPEARED TO BE NO MORE SERIOUS THAN NORMAL. AS WORK PROCEEDED, HOWEVER, IT BECAME CLEAR THAT CR-13'S TRACKING PROBLEMS WERE NOT NORMAL. THE SITUATION IS THAT THE UTB FILM IS FOLDING OVER ON THE INPUT ROLLER TO THE INTERMEDIATE ROLLER ASSEMBLY IN A WAY WHICH WOULD BE CATASTROPHIC IN FLIGHT. CONTINUED EFFORTS TO IMPROVE TRACKING HAVE BEEN UNSUCCESSFUL. AT THE MOMENT, THE TESTING OF CR-13 IS AT A STANDSTILL AND IT APPEARS THAT THE ONLY POSSIBLE SOLUTION (FOR UTB USE) WOULD BE A DISASSEMBLY OF THE SYSTEM AND A COMPLETE REALIGNMENT.

4. THERE IS VERY LITTLE, AT THIS STAGE IN THE PROGRAM, THAT ONE COULD DO TO SIGNIFICANTLY IMPROVE THE UTB SITUATION. WHILE THE OBVIOUS ANSWER IS TO IMPROVE TRACKING, THIS IS SIMPLY NOT PRACTICAL. TRACKING DOES IMPROVE WITH LOWER DYNAMIC

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TENSIONS, HOWEVER, THESE LOWER TENSIONS PRODUCE UNACCEPTABLE (AND UNCONTROLLABLE) DEVIATIONS IN FILM FLATNESS IN THE FOCAL PLANE. FURTHER, RETRACKING THE SYSTEMS AT THIS TIME IS VIRTUALLY IMPOSSIBLE BECAUSE OF THE LACK OF ACCESSABILITY IN THE FIELD FOR BOTH ADJUSTMENT AND GOOD VISUAL OBSERVATION. FOR EXAMPLE, OBTAINING SATISFACTORY TRACKING WITH UTB IN BOSTON WITH AN INSTRUMENT DOLLY TAKES APPROXIMATELY FOUR WEEKS. THE SAME EFFORT IN SYSTEM OPERATION AT A/P TAKES 16-20 WEEKS. TO MAINTAIN AND ASSURE AN OPERATIONAL LAUNCH SCHEDULE, WE SIMPLY DO NOT HAVE TIME TO UNDERTAKE SUCH A RETRACKING/REALIGNMENT EFFORT WITH THE CAMERA SYSTEMS.

5. EVEN IF THERE WERE TIME TO RETRACK THE SYSTEMS, THERE ARE OTHER FACTORS WHICH LOWER YOUR CONFIDENCE IN SUCCESSFUL OPERATIONS WITH UTB: NAMELY,

A. UTB CANNOT BE EDGE GUIDED BY ROLLER FLANGES AS CAN STB.

B. TAKE UP TENSIONS PLAY A MAJOR ROLL IN TRACKING. THIS PROBLEM IS COMPOUNDED BY THE INHERENT VARIABILITY OF THE DYNAMIC TAKE UP TENSION FROM HUB TO RIM.

C. WHAT IS ACCEPTABLE TRACKING IS DIFFICULT TO DEFINE POSITIVELY AS DIFFERENT FILM LOADS (E.G. TEST TO FLIGHT) BEHAVE DIFFERENTLY; THAT IS, THE SYSTEM MAY TRACK WELL WITH ONE ROLL AND POORLY WITH ANOTHER.

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D. OBTAINING GOOD IMAGE QUALITY/TRACKING AND CUT AND WRAP OPERATION
R REQUIRES DIAMETRICALLY OPPOSED CONDITIONS.

6. THE TASK FORCE ASSESSED WHAT CHANGES TO THE CAMERA MIGHT BE MADE TO IMPROVE ITS UTB OPERATIONS. THE ANSWER WAS THAT WHAT WAS NEEDED WAS HIGH TENSIONS IN THE RAIL (EXPOSURE) AREA AND LOW TENSIONS IN THE TRANSPORT AREA. WAYS OF IMPLEMENTING SUCH A REQUIREMENT WERE DISCUSSED. UNFORTUNATELY, THESE WOULD REQUIRE A MAJOR SYSTEM REDESIGN WHICH IS CERTAINLY NOT PRACTICAL AT THIS TIME.

7. THE CONCLUSION THAT I HAVE REACHED IS THAT FURTHER WORK ON TRACKING/ALIGNMENT WITH UTB IS NOT WARRANTED. NOT ONLY IS THERE INSUFFICIENT TIME TO DO SUCH WORK, BUT THE CONFIDENCE THAT ANY SIGNIFICANT IMPROVEMENTS COULD BE MADE IS LOW DUE PRIMARILY TO :

- A. CONFLICTING REQUIREMENTS ON TENSION FOR GOOD FLATNESS, TRACKING AND C/W OPERATION, AND
- B. VARIABILITY IN TRACKING FROM ROLL TO ROLL OF FILM.

8. THE RECONVERSION OF THE REMAINING CORONA CAMERA TO STB DOES NOT APPEAR TO OFFER ANY REAL PROBLEMS. HISTORICALLY THE CONVERSION FROM A UTB SYSTEM TO A STB SYSTEM HAS BEEN STRAIGHTFORWARD. THIS RECONVERSION IS UNDERWAY; AND WITH COORDINATING OFFICERS

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THE EXCEPTION OF THE 1109 FLIGHT, THERE IS NO ANTICIPATED IMPACT ON FLIGHT SCHEDULE. CR-11, WHICH IS THE FIRST SYSTEM TO BE CONVERTED BACK, SHOULD BE READY FOR USE AS REQUIRED ON 6 MAY.

8. IF YOU DESIRE, THE BRIEFING PUT TOGETHER BY THE TASK FORCE IS AVAILABLE TO YOU OR YOUR STAFF.

END OF MESSAGE

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