

to checkout and shipment, seems to become impractical and excessively costly. In spite of the fact that our so-called Block III logistics vehicle has not yet been fully defined, some of the possible subsystems additions and deletions being considered now are itemized here (slide 78). We would, for example, have to take out the three-man couch and replace it with a six-man couch. Certainly, that modification could be done at the Cape. We could add the advanced landing system and take out the regular Block II recovery system; we could take out the fuel cells and put in a simpler battery system, for electrical power, that is suitable for the logistics function; we could take out some of the propellant tanks and make any of the other modifications that I have indicated here. The point is, however, that there appears to be, within the logistics vehicle version of the command and service modules, a large number of complex subsystem changes. Any one of these could be done off site, but it seems to us to be more costly and more complex to do it in that way. Rather, we would recommend instead a Block II lunar mission vehicle shipment, the AAP Block III logistics vehicle shipped from Downey. In this way, all the changes and all the associated facilities, equipment, and supply problems at the Cape can be avoided. We think significant dollar savings can be realized and the impact on normal operations can be avoided.

Let us go back again to schedule considerations, and assume we were to start in the middle of the calendar year 1967—which is the start of the Government fiscal year 1968—with a final definition study

POTENTIAL SUBSYSTEM CHANGES

(FROM BLOCK II TO "BLOCK III" LOGISTICS VEHICLE)

SUBSYSTEM	ADD	DELETE
CREW SYSTEMS	6-MAN COUCHES (OPTIONAL)	CM FOOD STORAGE
EARTH RECOVERY	LAND LANDING (GLIDE CHUTE & LDG RETRO-ROCKETS) • OPTIONAL-3 MEN • REQD-6 MEN	3 RINGSAIL PARACHUTES (IF LAND LDG ADDED)
GUIDANCE & CONTROL		✓ (OPTIONAL)
ELECTRICAL POWER (EPS)	BATTERIES	• FUEL CELLS • EPS RADIATORS
CRYO STORAGE		✓
ENVIRON CONTROL	• WATER SUPPLY • GO ₂ STORAGE	PARTIAL LIOH STORAGE
PROPULSION (SPS)	• SOLID MOTOR DE-ORBIT SYSTEM • SPS TANK GAGING • SPS HEATERS	• 2 SPS PROPELLANT TANKS OR • 4 TANKS (ADD 2 SMALL TANKS)
REACTION CONTROLS (RCS)	• BIGGER RCS PROPELLANT TANKS • RCS TANK GAGING • METAL BELLOWS TANK	ALL TANKS ON SM RCS QUADS
COMM/DATA SYSTEM		• TV • S-BAND (DEEP SPACE) ITEMS
STRUCTURE	• CARGO SUPPORTS IN SM • REMOVABLE SM SECTOR COVERS	

SLIDE 78. POTENTIAL SUBSYSTEM CHANGES—FROM BLOCK II TO
"BLOCK III" LOGISTICS VEHICLE