ETR

INTEGRAL LAUNCH DUAL COMPARTMENT LABORATORY

(Configuration and Performance)

- Configuration

- Performance

- Total Pressurized Volume (Shirt Sleeve Environment) 2,000 ft³
- Available Pressurized Volume for Crew 1,200 ft³
- Available Pressurized Volume for Experiment Equipment 600 ft³
- Available Unpressurized Volume for Experiment Equipment ~700 ft³
- Experiment Payload Capacity (ETR, \( i = 28.5^\circ \), 180 N M CIR) ~5,500 lb
- Experiment Payload Capacity (WTR, \( i = 80^\circ \), 180 N M CIR) ~1,000 lb
- Electrical Power (Average) 1,650 watts
- Mission Duration 90 days

*Includes 200 watts for experiments

SECRET SPECIAL HANDLING
SECRET SPECIAL HANDLING

4 MAN DUAL COMPARTMENT LABORATORY

- Initial Launch Configuration (2 Man Ops)
- First Rendezvous Resupply (4 Man Ops)
- On-Orbit Configuration (4 Man Ops)

**RRV Functions**
- ACTS Propulsion
- Prime Electrical Power
- Life Support Expendables
- Experiments
- Spare Equipment

**Laboratory Functions**
- Life Support/Environmental Control
- ACTS - Reference
- Communications/Data
- Bio-Medical Equipment
- Experiments
4 MAN DUAL COMPARTMENT LABORATORY

CONFIGURATION

- LH₂ TANKS (4)
- LO₂ TANKS (4)
- ACTS PRESSURANT TANKS (4)
- ACTS THRUSTER MODULES (4)
- SPARE PARTS
- ACTS FUEL TANKS (4)
- CREW TRANSFER TUNNEL
- DOCKING MECHANISM (PASSIVE)
- AVAILABLE FOR MISSION EQUIPMENT
- AVAILABLE FOR PAYLOAD

PERFORMANCE

TOTAL PRESSURIZED VOLUME (SHIRT SLEEVE ENVIRONMENT)
- AVAILABLE PRESSURIZED VOLUME FOR CREW
- AVAILABLE PRESSURIZED VOLUME FOR EXPERIMENT EQUIPMENT
- AVAILABLE UNPRESSURIZED VOLUME FOR EXPERIMENT EQUIPMENT
- EXPERIMENT PAYLOAD CAPACITY (WTR, i = 80°, 180 N M CIR)
- ELECTRICAL POWER (AVERAGE)
- RESUPPLY CYCLE

2,000 FT³
1,200 FT³
600 FT³
950 FT³
5,700 LBS
2,000 WATTS*
60 DAYS

* 200 WATTS AVAILABLE FOR EXPERIMENTS

SECRET SPECIAL HANDLING
RENNDEZVOUS RESUPPLY VEHICLE

(Configuration and Performance)

- Configuration
  - 0.2 Accum. Tanks (4)
  - LH₂ Tanks (5)
  - LO₂ Tanks (5)
  - ACTS Fuel Tanks (6)
  - ACTS Thrustor Modules (4)
  - ACTS Pressurant Tanks (6)
  - Docking Mechanism (Active)
  - Crew Transfer Tunnel
  - Available for Payload

- Performance
  - Unpressurized Volume for Experiment Equipment: 2,000 ft³
  - Experiment Payload Capacity (wtr, i = 80°, 180° N M Cir): 10,000 lbs
  - Electrical Power (Average): 2,000 watts*
  - Resupply Cycle (to supply 4 man crew): 60 days

*200 watts available for experiments
SECRET SPECIAL HANDLING

UTILIZATION OF MOL HARDWARE FOR
4 MAN DUAL COMPARTMENT LABORATORY CONFIGURATION

O MOL BASELINE VEHICLE

O RENDEZVOUS INITIAL VEHICLE (RIV)

O RENDEZVOUS RESUPPLY VEHICLE (RRV)
2 MAN DUAL COMPARTMENT LABORATORY CONFIGURATION
(COMBINED MISSION)

RENDEZVOUS RESUPPLY VEHICLE (RRV)

INITIAL LAUNCH RENDEZVOUS LABORATORY VEHICLE (RIV)

POSSIBLE CREW TRANSFER FROM SUBSEQUENT RRV'S

RENDEZVOUS ORBITING VEHICLE (ROV)

RRV FUNCTIONS
- CREW TRANSPORT VEHICLE
- ACTS PROPULSION
- PRIME POWER
- LIFE SUPPORT EXPENDABLES
- DATA RETURN SYSTEM
- SUBSYSTEM SPARES/REPLACEMENTS

RIV FUNCTIONS
- LIFE SUPPORT SYSTEM
- ATTITUDE CONTROL REF. ELECTRONICS
- COMMUNICATIONS AND DATA HANDLING
- ENVIRONMENTAL CONTROL
- PERFORMANCE DATA
2 MAN DUAL COMPARTMENT LABORATORY
CONFIGURATION AND PERFORMANCE SUMMARY
(COMBINED MISSION)

**CONFIGURATION**

107'

**PERFORMANCE DATA**

- TOTAL PRESSURIZED VOLUME (SHIRT SLEEVE ENVIRONMENT): 2,060 FT³
- AVAILABLE PRESSURIZED VOLUME FOR CREW: 1,200 FT³
- AVAILABLE PRESSURIZED VOLUME FOR EXPERIMENT EQUIPMENT: 210 FT³
- R. I. V. EXP. PAYLOAD CAPACITY (i = 96.4°, 80/180 NM): 3,000 LBS
- ELECTRICAL POWER (AVERAGE): 1,950 WATTS
- RESUPPLY CYCLE: 60 DAYS
APPLICATION OF BASELINE COMPONENTS FOR 2 MAN
DUAL COMPARTMENT LABORATORY
(COMBINED MISSION)

AUTOMATIC MODE VEHICLE (AMV)

MISSION SUPPORT MODULE
UNPRESSION COMPART.
PRESSURIZED COMPART.
MISSION PAYLOAD

ADD GEMINI B
ADD EXTEND LENGTH & ADD CREW TUNNEL
ADD ACTIVE DOCKING INTERFACE
ADD PASSIVE DOCKING INTERFACE

RENDEZVOUS RESUPPLY VEHICLE
(RRV)

SECRET SPECIAL HANDLING