McDonnell Douglas

Program

Due to Gemini and Apollo hardware, and with minimum interference to the maintenance of the lunar landing with NASA needs, the G can provide the capability by 1971, using Gemini technology applied in a versatile spacecraft which can provide economical logistic support to space missions and have the capability of existing spacecraft to provide economic support to the station is severely limited. Therefore, a need exists, therefore, for a spacecraft that can support to the station is severely limited. However, the capability of existing spacecraft to provide accommodations for longer crews and have provisions for long duration experiments conducted, the spacecraft being studied for use in developing this technology have hardware for long duration earth orbital space stations and for later interplanetary space.

Current published NASA plans encompass the development of the space technology and

CONSIDERATIONS
a logistics system with improved crew and cargo versatility for orbital workshops. (2)(1).

1970 can be supported by the Apollo CSM, it would be economically advantageous to introduce

1970 can be supported by the Apollo CSM, it would be economically advantageous to introduce

cost effective and that the best available resources are utilized. Although the flights in

requirement is a significant one, it deserves major attention to assure that the launches are

requirement is a significant one, it deserves major attention to assure that the launches are

Since the logistics

of the Apollo module delivery and published NASA documents. Since the logistics

of the Apollo module delivery and published NASA documents. Since the logistics

for logistic purposes, this is an estimate of the AAPP schedule based on our knowledge

In the 1970-1980 period, it appears that at least a dozen launches will be required

SAA EARLY ORBITAL FLIGHT SCHEDULE
LOGISTIC SYSTEM EVOLUTION

BIG C

1979
APOLLO CSM + RM
EARLY LOGISTIC SYSTEM

1969
BIG "G".

2-12 MAN

1971
BIC G.

3-6 MAN
APOLLO

1972
ADVANCED LOGISTICスペースカフト

1973
MCDONNELL DOUGLAS
LOW & HIGH ORBIT
MUTLTI-MISSION MODULE
SERVICE MODULE +

MANEUVERING & CARGO MODULE

RETOGRADE MODULE PLUS

MANEUVERING & CARGO MODULE

LOW & HIGH ORBIT

ALSS MANEUVERING & CARGO MODULE
Crew Safety

The configuration employs the "packaged return capability" utilized in Gemini. A "seated-stand" oxygen supply, RCS system, and retrograde motor and separation rocket system enhance safety until needed. The configuration shown carries a crew of six and is arranged to provide growth in both crew and pressurized tunnel to the docking probe. It is possible to transfer crew and cargo without DVA.

A bulkhead, a pressurized tunnel from the pressurized tunnel to the main compartment to the cargo area, and a pressure tunnel, a pressurized tunnel from the main compartment to the main area through hatch in the Gemini. Through use of the existing hatch in the Gemini for attachment to a space station, through use of the existing hatch in the Gemini for attachment to a space station, through use of the existing hatch in the Gemini for attachment to a space station, through use of the existing hatch in the Gemini for attachment to a space station, through use of the existing hatch in the Gemini for attachment to a space station.

The automation, electrical power, a pressurized and unpressurized volume for cargo, and oxygen supplies. A maneuvering and cargo module provides propulsion for orbit.

The configuration of the module contains retrograde motors, separation rockets, and water provided for de-orbit. The module contains retrograde motors. A maneuvering module is utilized to a 1:4 inch diameter (same as the Apollo service module). A retrograde module is a passenger compartment for escape. A passenger compartment is provided by extending theGemini.
McDonnell Douglas

LEO / Apollo Telescope Mount

518B

Airlock

Multiple Docking Adapter

33

BIG G

APOLLO APPLICATIONS UTILIZATION
been studied by several aerospace companies under NASA advanced study programs.

The second configuration depicts the Big G mounted on a 560-inch diameter Saturn booster.

28.5° inclination, 61 x 120 N.M. orbit.

Space station without EVA. This configuration can launch a payload of 130,000 pounds into a
to a 160-inch diameter Titan III G booster. Also included are an abort tower, a retro
shown with different launch vehicles. The first configuration depicts the Big G mounted

The versatility of the Big G re-entry vehicle is demonstrated in the configurations

An Apollo service module and with future planned equipment such as the Multi-Mission Module.

The basic Big G crew and passenger module (174-inch diameter) is compatible with the

ALTERNATE CONFIGURATIONS

BIG G
SUMMARY
Team

Utilize an experienced, available, and successful industrial
benefit both NASA and AF in cost sharing and commonality
by utilizing existing developments
economically accomplish project AAP logistics requirements
not interfere with high priority lunar program

BIG C logistics vehicle will
modified Apollo and BIG C are the only logical contenders
nothing now exists to cover 1971 and 1972 flights
systems in the late 1970's but
both NASA and AF have studies in work for advanced logistic
AF is interested in a logistics vehicle for AAP

Big C

SUMMARY