

Apollo 13






Apollo 13 Launch



The mission started as for Apollo 8, 10, 11 and 12 with a spectacular launch of the mighty Saturn V rocket.

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The Astronauts

CM Pilot	Commander	LM Pilot
		
Jack Swigert	Jim Lovell	Fred Haise

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Reality and Hollywood




The story of the Apollo 13 accident, and the heroic efforts of those in Mission Control to get the three astronauts safely back to Earth, was immortalised by Hollywood in the 1995 film ...

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Apollo 13

The Actors

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Reality and Hollywood

The story of the Apollo 13 accident, and the heroic efforts of those in Mission Control to get the three astronauts safely back to Earth, was immortalised by Hollywood and also by ...

LEGO !

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6

LEGO Apollo 13



APOLLO 13
LEGO Ideas Project
492 pcs

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LEGO Mission Control

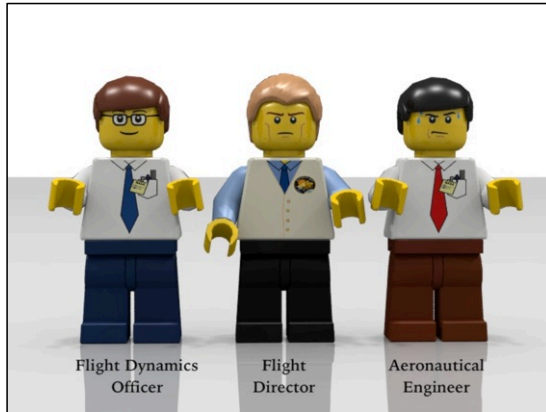


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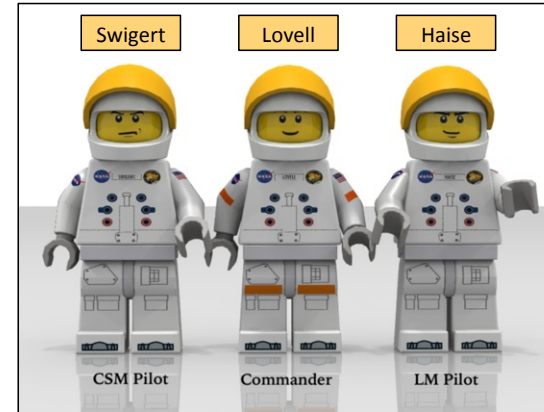
8

Apollo 13

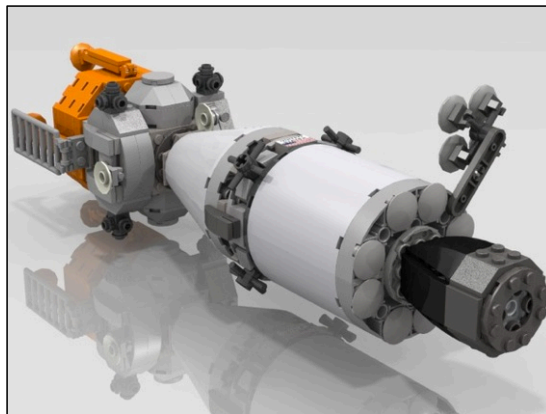
LEGO Mission Controllers



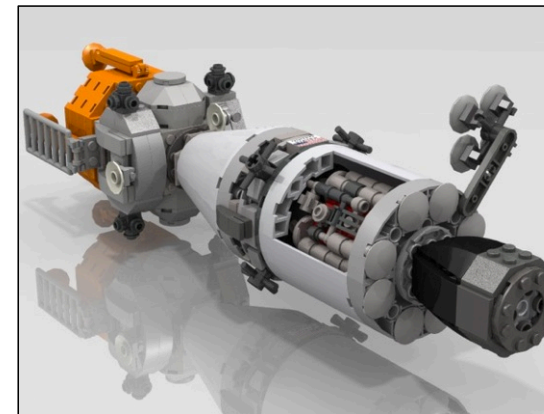
LEGO Astronauts



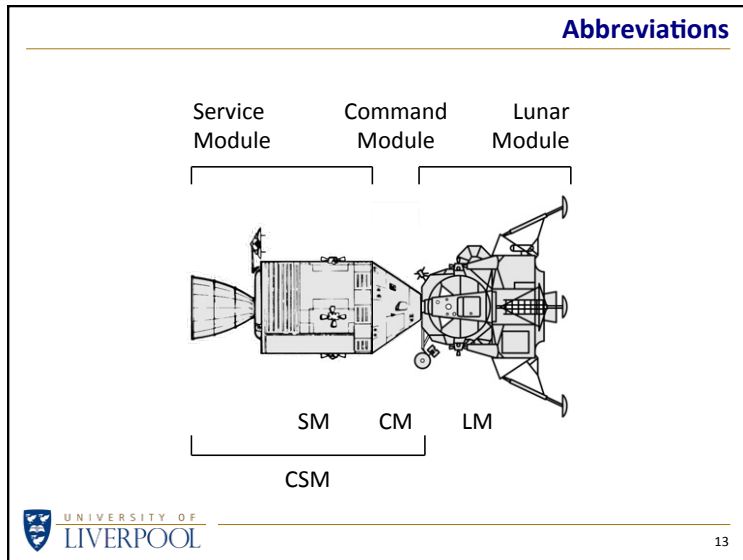
Pre-Explosion



Post-Explosion



Apollo 13



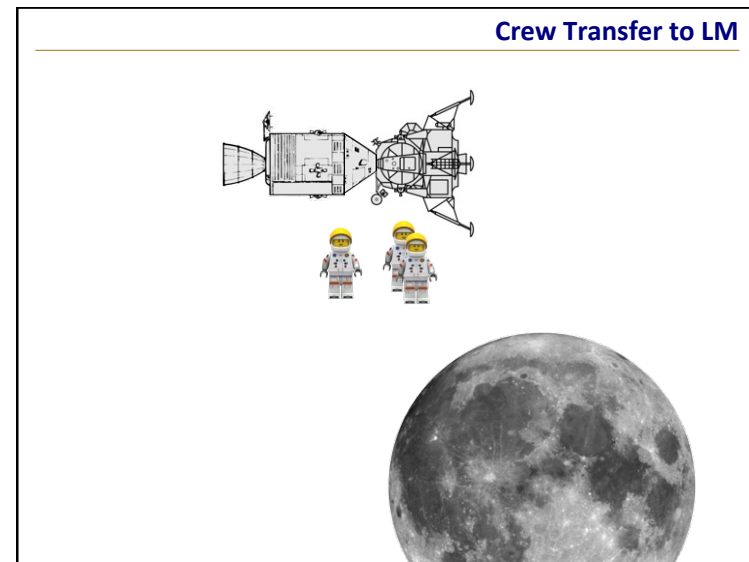
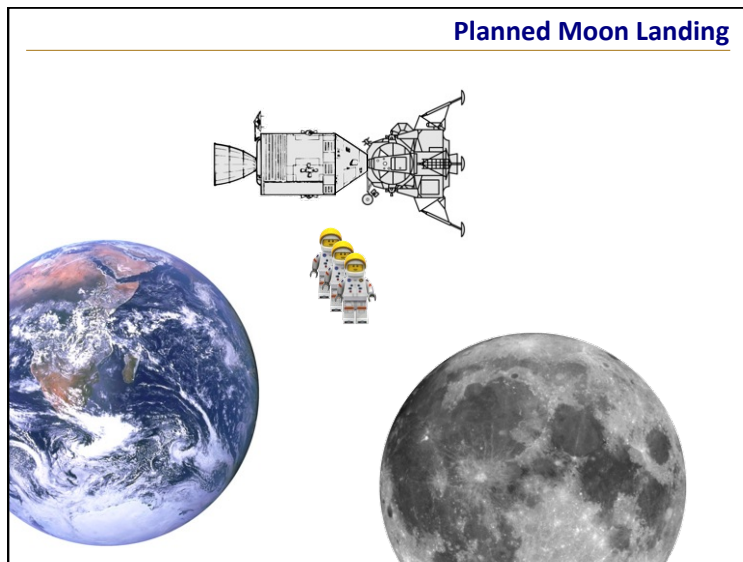
The Mission

The mission ...

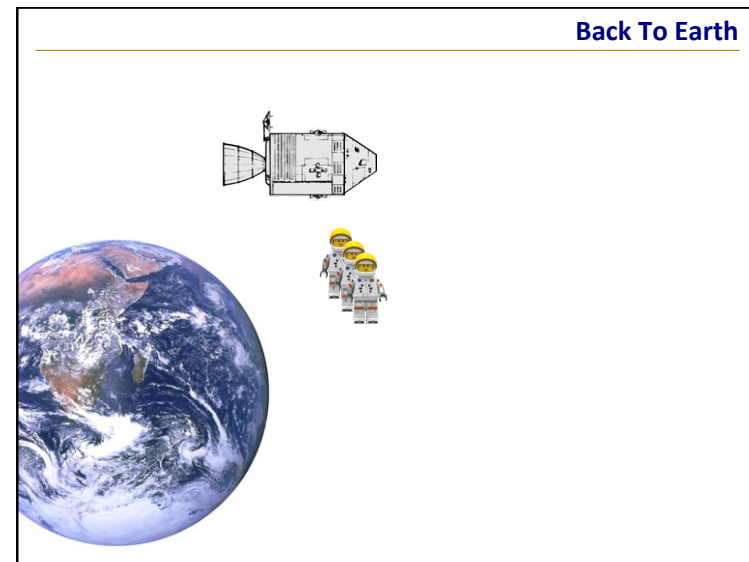
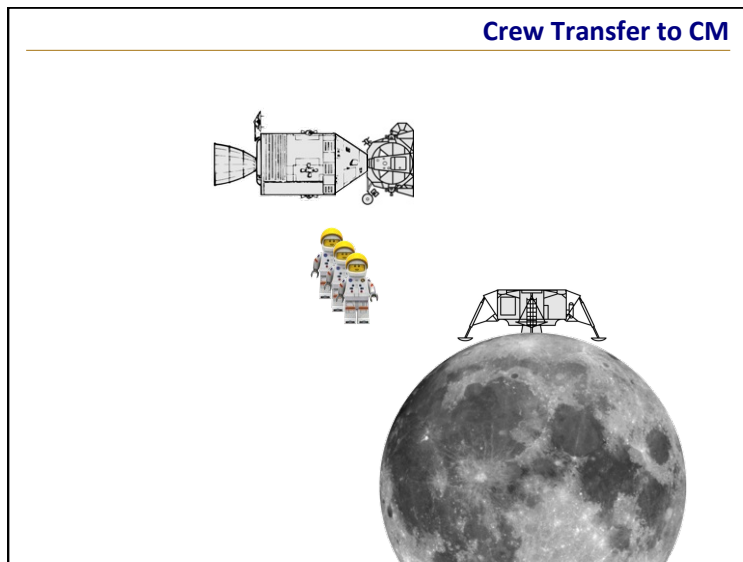
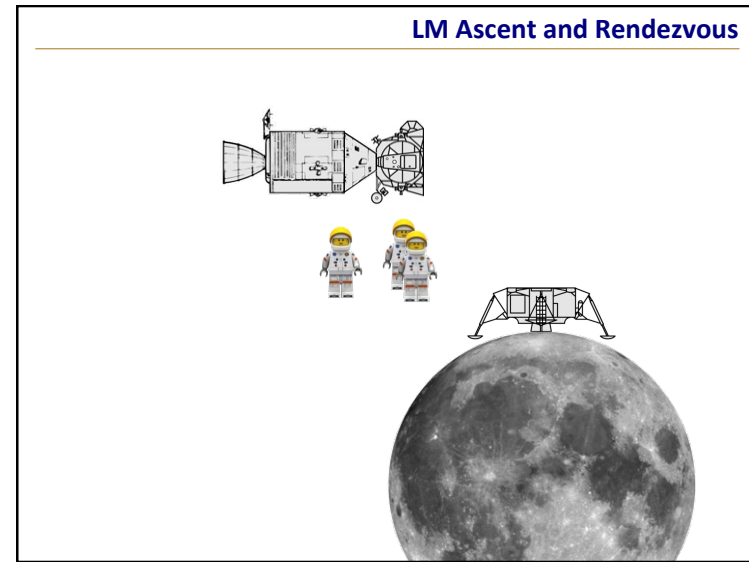
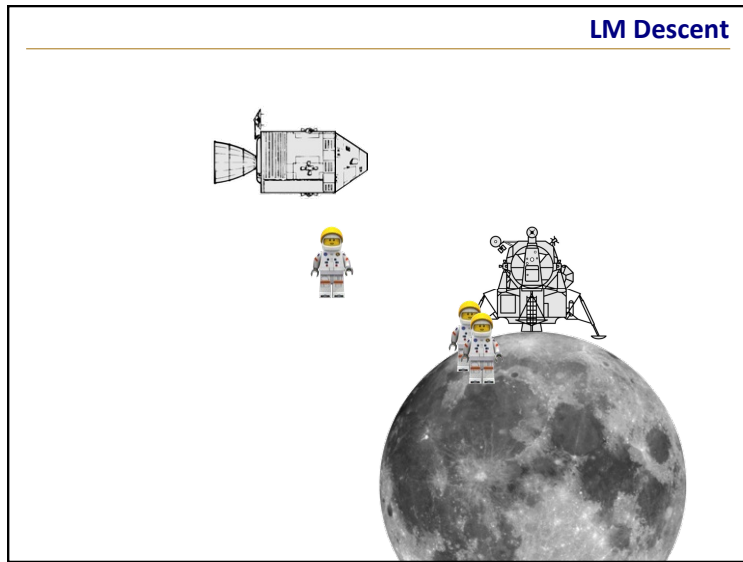
... as it was supposed to happen

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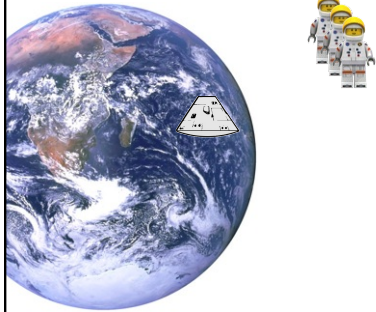


Apollo 13



Apollo 13

Splashdown

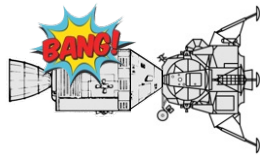


The Mission

The mission ...

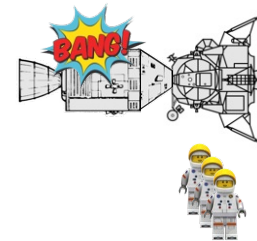
... as it actually happened

Houston, We've Had a Problem



A fan inside one of the oxygen tanks had faulty wiring insulation, so when the tank was stirred a spark caused the oxygen tank to explode, damaging the fuel cells and blowing out a side panel of the SM.

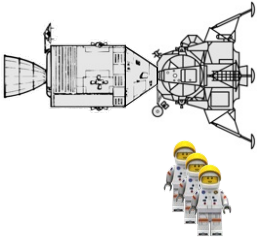
Into the LM Lifeboat



Contingency plans for a three-day flight returning from the Moon with a crippled CSM had been thought about, but Apollo 13 was at least four days from Earth.

Apollo 13

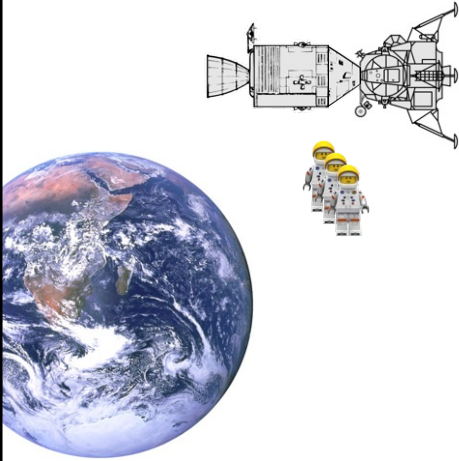
Survival Mode



How could they ensure that the remaining oxygen, water and electrical power would last long enough to get them home safely?

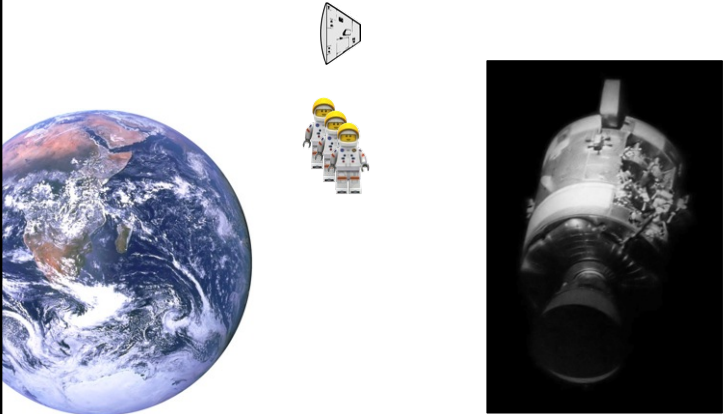
The diagram shows the Apollo 13 spacecraft in a simplified configuration. The Lunar Module (LM) is detached and its descent stage is jettisoned. The Command Module (CM) and Service Module (SM) are shown with various systems disabled, indicated by the absence of certain external components. Three astronauts are shown in their seats, looking towards the Earth.

Crew Transfer to CM



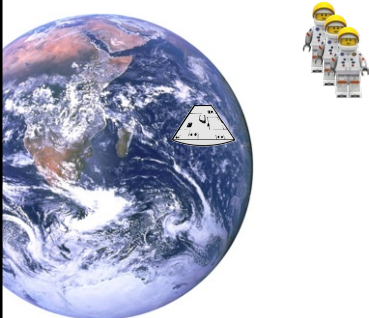
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SM and LM Jettisoned



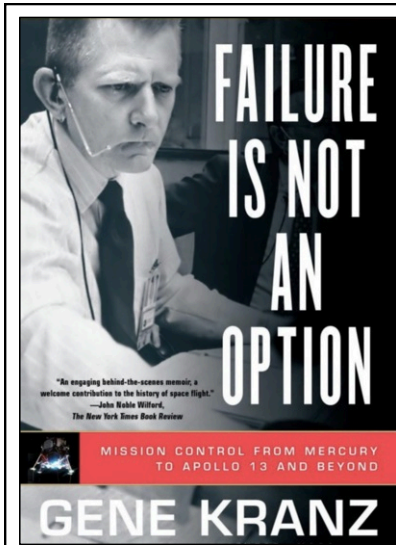
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Splashdown



The diagram shows the Apollo 13 spacecraft in a simplified configuration. The Lunar Module (LM) and Service Module (SM) are detached and jettisoned. The Command Module (CM) is shown in a simplified configuration, with various systems disabled, indicated by the absence of certain external components. Three astronauts are shown in their seats, looking towards the Earth.

Apollo 13



Gene Kranz

That famous phrase was spoken by actor Ed Harris but not by Kranz himself.

However, Kranz used it for his autobiography because it reflected so succinctly the attitude of those working in Mission Control.

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What Happened To ...?

The Command Module (call sign 'Odyssey') made it safely back to Earth with its three occupants.

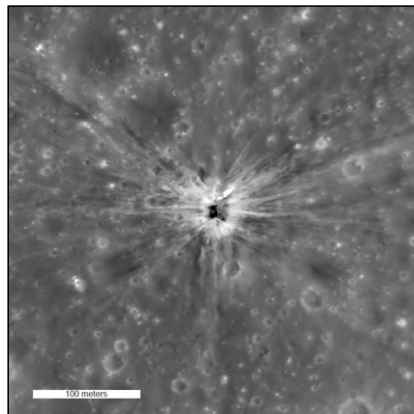
What about the rest of the Apollo hardware?

The third stage of the Saturn V rocket, after it had accelerated the CSM+LM spacecraft towards the Moon, was given one last task to perform ...



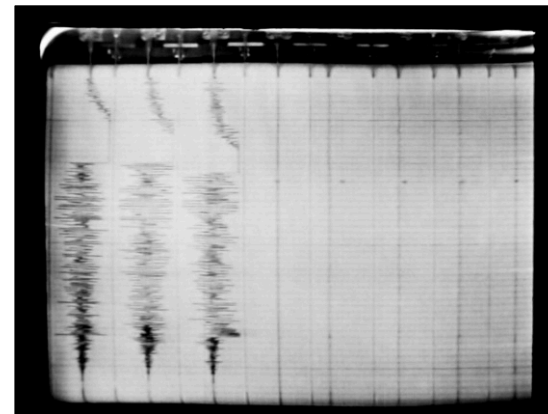
30

Saturn S-IVB Impact Site



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Apollo 12 Seismometer



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Apollo 13

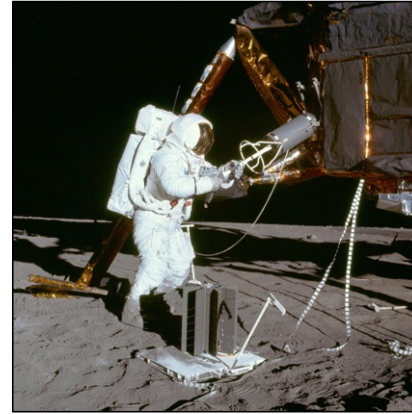
What Happened To Aquarius?

After the Lunar Module (call sign 'Aquarius') was jettisoned it re-entered the Earth's atmosphere and disintegrated.

However, it was important to ensure that its re-entry was controlled to ensure that any surviving components fell into the deepest Pacific trench.

In particular ...

Plutonium Power



Alan Bean (Apollo 12) removes the plutonium fuel cask from the LM to transfer it to the RTG in front of him that powers the experiments on the lunar surface.

RTG = Radioisotope
Thermoelectric
Generator

Jim Lovell and Tom Hanks



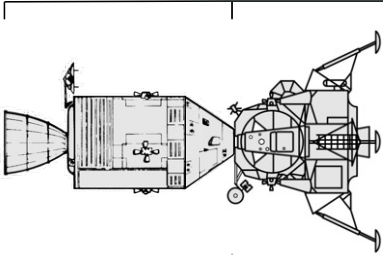
Read All About It!



Apollo 13

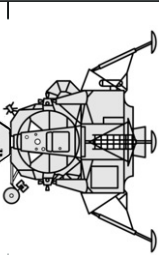
Who Made What

Command and Service Modules




North American Rockwell

Lunar Module

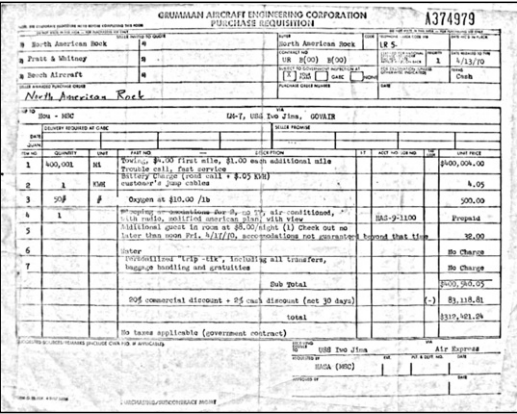



Grumman Aerospace



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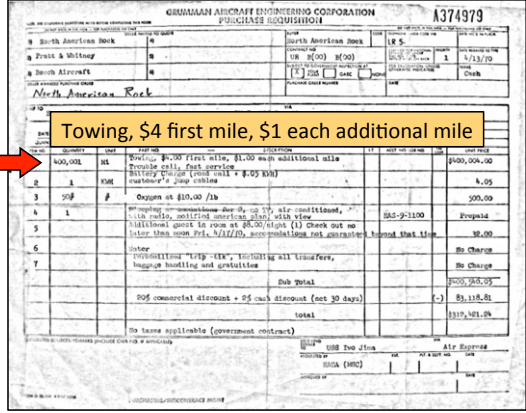
Grumman Invoice To North American






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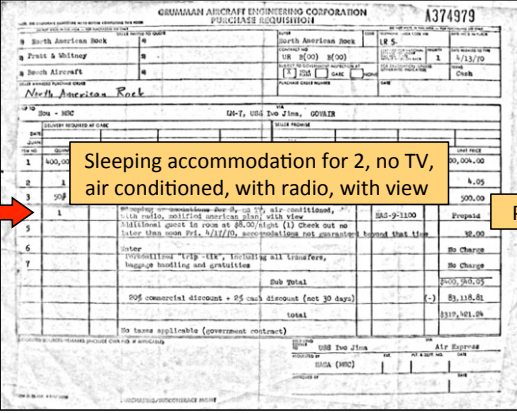
Grumman Invoice To North American






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Grumman Invoice To North American





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Apollo 13

Grumman Invoice To North American

QUANTITIES		DESCRIPTION	UNIT	PRICE	TOTAL
1	400,000	Mileage - \$2.00 first mile, \$1.00 each additional mile	Mile	\$1,000.00	\$1,000.00
2	1	Travel - \$4.05	Per diem	\$4.05	\$4.05
3	500	Room - \$8.00 per night	Night	\$4,000.00	\$4,000.00
4	1	Additional guest in room at \$8/night	Night	\$8.00	\$8.00
5	1	Meals - \$1.00 per meal	Meal	\$1.00	\$1.00
6	1	Telephone - \$1.00 per call	Call	\$1.00	\$1.00
7	1	Transportation - \$1.00 per trip	Trip	\$1.00	\$1.00
8	1	Insurance - \$1.00 per day	Day	\$1.00	\$1.00
9	1	Medical - \$1.00 per day	Day	\$1.00	\$1.00
10	1	Laundry - \$1.00 per item	Item	\$1.00	\$1.00
11	1	Shower - \$1.00 per use	Use	\$1.00	\$1.00
12	1	Telephone - \$1.00 per call	Call	\$1.00	\$1.00
13	1	Transportation - \$1.00 per trip	Trip	\$1.00	\$1.00
14	1	Insurance - \$1.00 per day	Day	\$1.00	\$1.00
15	1	Medical - \$1.00 per day	Day	\$1.00	\$1.00
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18	1	Telephone - \$1.00 per call	Call	\$1.00	\$1.00
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99	1	Medical - \$1.00 per day	Day	\$1.00	\$1.00
100	1	Laundry - \$1.00 per item	Item	\$1.00	\$1.00

Epilogue – Recovery of Odyssey



Epilogue – NASA's Finest Hour

