

A Brief History of JSC: Understanding Our Heritage

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In the beginning...

Post WWII – big changes in our business

- Chuck Yeager breaks the sound barrier
- X15 work started in the mid 1950's
- The Cold War effect

Launch of Sputnik on 10/4/57



Part of the US response was to form NASA as a civilian space agency 10/1/1958

- Included elements of ABMA, NACA, Navy
- Von Braun – launch vehicle
- Gilruth – human space flight

JSC begins to take shape...

JSC's story starts at Langley Research Center

- Dr. Robert Gilruth selected to lead the Space Task Group
- Decision to relocate to Houston announced 9/19/1961
 - Land donated by Humble Oil Co. through Rice University



MSC SITE JANUARY 1962

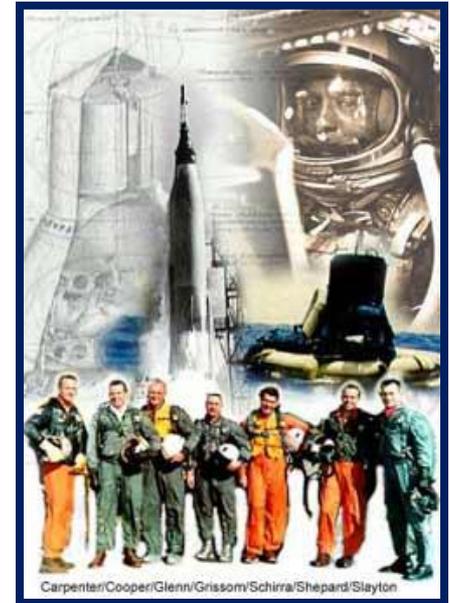
Manned Spacecraft Center (MSC) formally established 11/1/1961

- Design work started in 1962
- MSC used temporary offices in SE Houston
- Staff relocated in April, 1964

This is a demanding business with high stakes...bring your “A” game!

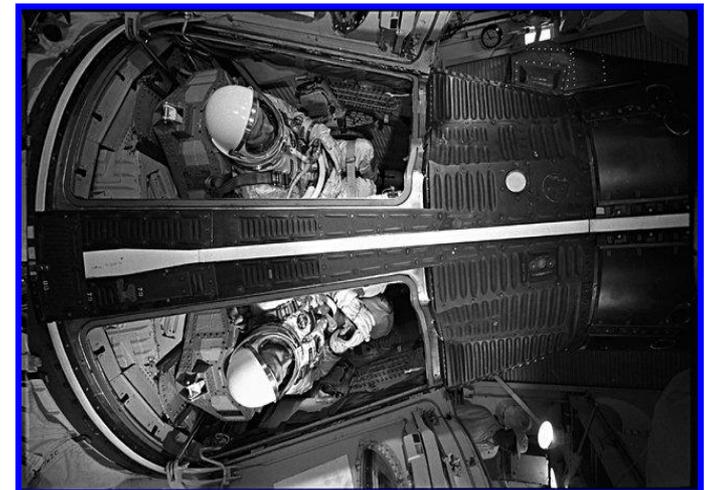
Mercury Program (1961-1963)

- Chose ballistic technology (Faget’s work) over winged flight (X-15 work)
- Introduced the concept of a mission control center (Kraft)
- Shepard sub-orbital (5/5/61); Glenn orbital (2/20/62)



Gemini Program (1965-1966)

- Proved rendezvous/docking capability
- Lengthened flight duration time, established EVA capability



This is a demanding business with high stakes...
...bring your “A” game!

Apollo Program (1967-1972)

- Starts with Pres. Kennedy’s 5/25/61 challenge
- Achieved despite Apollo 1 fire (1/27/67)
- Includes the daring Apollo 8 mission (December, 1968)
- Highlighted by first lunar landing on Apollo 11 on 7/20/69
- Apollo 13 – “Failure is not an option”
- Ended with Apollo 17, the sixth lunar landing mission in December, 1972



Bridges to the future

Skylab (1973-74)

- Opportunity to get long duration spaceflight experience
- Ramped up science in orbit work



Apollo Soyuz Test Program (1975)

- The political driver...the spirit of detente
- Gave us experience in international operations
- Generated compatible docking systems for crew rescue
- Built relationships that last to this day

Big challenges require bold solutions

The Space Shuttle

- JSC led the design that would:
 - provide large payload to orbit capability
 - be reusable and provide a high ops tempo capability
- Accomplished without supporting budgets and political will of Apollo!
- The program required solving significant technical issues
 - Space Shuttle Main Engines (SSME's)
 - Thermal Protection System (TPS)
 - Extensive computer/software capabilities



Big challenges require bold solutions

Space Shuttle

- Approach and Landing Tests (ALT) – 1977-78
- Orbital Flight Test Program (STS-1 to 4) – 1981-82
- Early operations – 1982-86
- The loss of Challenger and her crew – January 28, 1986
 - Reset the notion of risk: Shuttle will always be a test vehicle
 - Brought a commitment to a new orbiter, Endeavour



Big challenges require bold solutions



Space Shuttle

- Return to flight and the “golden age” – 1988 to 2003
 - Hubble Space Telescope – delivery and servicing
 - Support of MIR and the ISS
- The loss of Columbia and her crew – February 1, 2003
 - Brought about an extensive relook at how we do business
- Finishing strong – 2005 to 2011

Teamwork is essential

International Space Station

- Initially proposed by Pres. Reagan in 1984
- Went through seven major redesigns (1984-93)
- Program survived by 1 vote in the House in 1993
 - New design, Alpha, emerged
 - Ushered in an expanded international collaboration approach
 - Shuttle/MIR program provided valuable operations experience
- First element (Zarya) launched in 1998
- Expedition 1 took up residence in November, 2000
- Now staffed with a crew of 6, fully operational
- Plan to operate thru 2020



Reality check: we live and work in a political world

- We have a political “bottom line”
- Competition between discretionary spending and space
- NASA has limited presence across U.S.
- Long term programs versus short term political processes
- Our challenge: Continue to do high quality, inspiring work that adds value to the country and advances the national agenda



Summary

- The first 50 years of NASA has produced some amazing contributions to the history of humankind.
- Some incredible foundations for spaceflight and exploration have been put in place...but it's only the beginning.
- Exploration is not a sprint...it's a marathon.
- **The questions today are:**
 - **What significant contributions will we make as the next team to “carry the baton”?**
 - **What will you do to help make and write history?**