



GODDARD
Space Flight Center



1
00:00:06,789 --> 00:00:04,870
space shuttle endeavour born out of the

2
00:00:09,509 --> 00:00:06,799
loss of the space shuttle challenger in

3
00:00:11,669 --> 00:00:09,519
1986 represented a commitment to

4
00:00:12,789 --> 00:00:11,679
continuing america's human space flight

5
00:00:15,110 --> 00:00:12,799
program

6
00:00:17,029 --> 00:00:15,120
the nation's decision to build endeavor

7
00:00:17,910 --> 00:00:17,039
set the stage for dramatic missions to

8
00:00:19,830 --> 00:00:17,920
come

9
00:00:22,070 --> 00:00:19,840
the last of five orbiters to be built

10
00:00:24,310 --> 00:00:22,080
for space flight endeavor was named in a

11
00:00:26,790 --> 00:00:24,320
national competition by elementary and

12
00:00:28,710 --> 00:00:26,800
secondary school students after the 18th

13
00:00:31,509 --> 00:00:28,720

century sailing vessel commanded by

14

00:00:33,590 --> 00:00:31,519

captain james cook

15

00:00:36,790 --> 00:00:33,600

construction of endeavor began with its

16

00:00:39,830 --> 00:00:36,800

contract award on july 31 1987 to

17

00:00:42,830 --> 00:00:39,840

replace challenger which was lost 73

18

00:00:45,910 --> 00:00:42,840

seconds after launch on january 28

19

00:00:48,310 --> 00:00:45,920

1986. endeavour was outfitted with many

20

00:00:50,709 --> 00:00:48,320

safety improvements including a drag

21

00:00:52,790 --> 00:00:50,719

chute to be deployed post landing and

22

00:00:55,830 --> 00:00:52,800

nose wheel steering to improve wear on

23

00:00:58,150 --> 00:00:55,840

the tires during roll out on the runway

24

00:01:00,150 --> 00:00:58,160

additionally endeavour's plumbing was

25

00:01:02,950 --> 00:01:00,160

designed for a state-of-the-art addition

26

00:01:04,710 --> 00:01:02,960

allowing for longer stays in space

27

00:01:06,630 --> 00:01:04,720

endeavour was delivered to nasa's

28

00:01:09,030 --> 00:01:06,640

kennedy space center from its palmdale

29

00:01:11,750 --> 00:01:09,040

california construction site in may

30

00:01:13,670 --> 00:01:11,760

1991.

31

00:01:15,429 --> 00:01:13,680

endeavor's flight history has included

32

00:01:17,990 --> 00:01:15,439

some of the shuttle program's most

33

00:01:19,149 --> 00:01:18,000

memorable flights starting with its very

34

00:01:22,310 --> 00:01:19,159

first mission

35

00:01:24,310 --> 00:01:22,320

sts-49 in may 1992

36

00:01:26,390 --> 00:01:24,320

just one year after endeavour first

37

00:01:28,550 --> 00:01:26,400

arrived at the kennedy space center for

38

00:01:30,550 --> 00:01:28,560

final processing

39

00:01:33,670 --> 00:01:30,560

the primary goal of that mission was to

40

00:01:35,670 --> 00:01:33,680

rescue the intelsat 6 satellite stranded

41

00:01:37,350 --> 00:01:35,680

in low earth orbit after launch atop an

42

00:01:39,670 --> 00:01:37,360

expendable rocket

43

00:01:41,429 --> 00:01:39,680

it would be outfitted with a new motor

44

00:01:43,910 --> 00:01:41,439

designed to boost the communications

45

00:01:46,310 --> 00:01:43,920

satellite to its operational orbit 22

46

00:01:48,469 --> 00:01:46,320

thousand miles above the earth ignition

47

00:01:52,870 --> 00:01:48,479

and liftoff of the maiden voyage of

48

00:01:57,030 --> 00:01:55,030

for two spacewalks astronauts pierre

49

00:01:58,950 --> 00:01:57,040

that and rick tried to place a

50

00:02:01,270 --> 00:01:58,960

specially designed grapple bar on

51
00:02:03,190 --> 00:02:01,280
intelsat to facilitate its capture with

52
00:02:05,510 --> 00:02:03,200
the shuttle's robot arm

53
00:02:08,150 --> 00:02:05,520
when those attempts failed the crew and

54
00:02:10,389 --> 00:02:08,160
mission control devised a dramatic plan

55
00:02:13,190 --> 00:02:10,399
calling for through it and a third

56
00:02:15,350 --> 00:02:13,200
astronaut tom akers to reach up and grab

57
00:02:31,990 --> 00:02:15,360
the huge satellite by hand

58
00:02:37,509 --> 00:02:34,869
it was and still is the only spacewalk

59
00:02:39,670 --> 00:02:37,519
ever performed by three people

60
00:02:41,350 --> 00:02:39,680
the flight set a host of other records

61
00:02:43,030 --> 00:02:41,360
including the most spacewalks on a

62
00:02:45,430 --> 00:02:43,040
shuttle mission to date

63
00:02:50,790 --> 00:02:45,440

the longest spacewalk to date and the

64

00:02:57,350 --> 00:02:52,790

endeavour continued that trend on its

65

00:02:59,110 --> 00:02:57,360

second mission sts-47 in september 1992

66

00:03:01,270 --> 00:02:59,120

a flight that conducted japanese

67

00:03:02,309 --> 00:03:01,280

research in a laboratory in the cargo

68

00:03:03,589 --> 00:03:02,319

bay

69

00:03:06,149 --> 00:03:03,599

the crew included the first

70

00:03:08,470 --> 00:03:06,159

african-american female to fly in space

71

00:03:09,990 --> 00:03:08,480

astronaut mae jemison i think the

72

00:03:12,070 --> 00:03:10,000

important thing is for people to

73

00:03:14,149 --> 00:03:12,080

understand and to know that yes we are

74

00:03:16,229 --> 00:03:14,159

we do have and are willing to

75

00:03:19,190 --> 00:03:16,239

accept women and minorities as

76

00:03:21,509 --> 00:03:19,200

minorities as astronauts and

77

00:03:23,350 --> 00:03:21,519

i hope that i'm just the first in a long

78

00:03:24,949 --> 00:03:23,360

line of

79

00:03:28,309 --> 00:03:24,959

african-american women who will be

80

00:03:30,710 --> 00:03:28,319

involved in the space program

81

00:03:32,390 --> 00:03:30,720

and we have liftoff liftoff of the space

82

00:03:34,070 --> 00:03:32,400

shuttle endeavour on an ambitious

83

00:03:35,750 --> 00:03:34,080

mission to service the hubble space

84

00:03:38,949 --> 00:03:35,760

telescope

85

00:03:40,949 --> 00:03:38,959

in december 1993 endeavour was called

86

00:03:44,470 --> 00:03:40,959

upon to carry out the most ambitious

87

00:03:46,550 --> 00:03:44,480

shuttle mission to date on sts-61 the

88

00:03:47,990 --> 00:03:46,560

first hubble space telescope servicing

89

00:03:50,949 --> 00:03:48,000

mission

90

00:03:53,910 --> 00:03:50,959

houston endeavor has a firm handshake

91

00:03:55,990 --> 00:03:53,920

with mr hubble's telescope

92

00:03:58,470 --> 00:03:56,000

with the world riveted on the mission's

93

00:04:00,789 --> 00:03:58,480

every move seven astronauts restored

94

00:04:02,470 --> 00:04:00,799

hubble's vision during an unprecedented

95

00:04:04,869 --> 00:04:02,480

five spacewalks

96

00:04:07,509 --> 00:04:04,879

the back-to-back evas were completed by

97

00:04:09,190 --> 00:04:07,519

two teams of spacewalkers who outfitted

98

00:04:11,350 --> 00:04:09,200

hubble with a corrective optics

99

00:04:13,429 --> 00:04:11,360

instrument called costar

100

00:04:16,310 --> 00:04:13,439

installed a second generation field

101
00:04:18,229 --> 00:04:16,320
planetary camera

102
00:04:21,830 --> 00:04:18,239
look how stable you left that

103
00:04:24,629 --> 00:04:21,840
almost like a bird look at it

104
00:04:30,469 --> 00:04:24,639
and replaced hubble's solar arrays the

105
00:04:35,430 --> 00:04:32,310
endeavour further pushed the boundaries

106
00:04:38,310 --> 00:04:35,440
of shuttle missions in march 1995.

107
00:04:40,070 --> 00:04:38,320
on sts-67 it flew an astronomy mission

108
00:04:43,510 --> 00:04:40,080
that became the longest shuttle flight

109
00:04:45,909 --> 00:04:43,520
to date amassing over 16 days 15 hours

110
00:04:48,070 --> 00:04:45,919
in orbit conducting its studies with the

111
00:04:49,830 --> 00:04:48,080
suite of astro one science instruments

112
00:04:51,909 --> 00:04:49,840
in the payload bay

113
00:04:54,310 --> 00:04:51,919

the mission showcased the capabilities

114

00:04:55,909 --> 00:04:54,320

of the shuttle's fine steering jets a

115

00:04:58,390 --> 00:04:55,919

system used to hold the instruments

116

00:05:00,790 --> 00:04:58,400

stable enough to focus on the stars and

117

00:05:02,790 --> 00:05:00,800

celestial phenomena as endeavours

118

00:05:05,749 --> 00:05:02,800

circled the earth at more than 17

119

00:05:07,510 --> 00:05:05,759

thousand miles per hour

120

00:05:09,590 --> 00:05:07,520

two later missions for endeavor

121

00:05:11,430 --> 00:05:09,600

continued the spacecraft's expansion of

122

00:05:15,110 --> 00:05:11,440

shuttle capabilities

123

00:05:16,950 --> 00:05:15,120

on sts-69 in september 1995

124

00:05:19,430 --> 00:05:16,960

endeavour became the first shuttle to

125

00:05:21,110 --> 00:05:19,440

release and recapture two satellites

126
00:05:25,510 --> 00:05:21,120
during a single mission

127
00:05:27,189 --> 00:05:25,520
and later on mission sts-77 in may 1996

128
00:05:29,590 --> 00:05:27,199
endeavour completed a record four

129
00:05:32,950 --> 00:05:29,600
rendezvous in orbit with a research

130
00:05:35,430 --> 00:05:32,960
platform called spartan

131
00:05:38,550 --> 00:05:35,440
and ready to fly

132
00:05:40,950 --> 00:05:38,560
two years later in december 1998

133
00:05:43,550 --> 00:05:40,960
endeavor was used to christen a new era

134
00:05:46,310 --> 00:05:43,560
in world space exploration

135
00:05:49,510 --> 00:05:46,320
sts-88 would be the first international

136
00:05:52,150 --> 00:05:49,520
space station assembly mission

137
00:05:54,950 --> 00:05:52,160
in endeavors payload bay was the node 1

138
00:05:56,710 --> 00:05:54,960

unity module the first u.s component of

139

00:05:59,510 --> 00:05:56,720

the space station

140

00:06:01,430 --> 00:05:59,520

zarya the russian functional cargo block

141

00:06:04,070 --> 00:06:01,440

module had been flown to orbit a few

142

00:06:05,830 --> 00:06:04,080

weeks earlier on a russian proton rocket

143

00:06:08,550 --> 00:06:05,840

from kazakhstan

144

00:06:10,629 --> 00:06:08,560

after endeavour's rendezvous with zaria

145

00:06:13,430 --> 00:06:10,639

mission specialist nancy curry used the

146

00:06:15,909 --> 00:06:13,440

shuttle's robotic arm to capture zarya

147

00:06:18,830 --> 00:06:15,919

and mated it to unity completing the

148

00:06:20,390 --> 00:06:18,840

very first iss assembly

149

00:06:22,790 --> 00:06:20,400

operation here's an endeavor we have

150

00:06:25,270 --> 00:06:22,800

capture of zarya

151
00:06:27,909 --> 00:06:25,280
weak copy congratulations to the crew of

152
00:06:30,230 --> 00:06:27,919
the good ship endeavor that's terrific

153
00:06:32,550 --> 00:06:30,240
several days later endeavors crew became

154
00:06:35,110 --> 00:06:32,560
the first to board the new international

155
00:06:37,510 --> 00:06:35,120
space station mission commander bob

156
00:06:39,990 --> 00:06:37,520
cabana and russian cosmonaut sergey

157
00:06:43,749 --> 00:06:40,000
krikalov opened the hatches and entered

158
00:06:46,629 --> 00:06:43,759
the new international outpost together

159
00:06:49,749 --> 00:06:46,639
we are so pleased and excited and proud

160
00:06:52,390 --> 00:06:49,759
to be a part of the team that made this

161
00:06:55,189 --> 00:06:52,400
happen and our special thanks to

162
00:06:57,749 --> 00:06:55,199
all the iss folks all their hard work we

163
00:07:00,710 --> 00:06:57,759

remember when unity was just an aluminum

164

00:07:02,870 --> 00:07:00,720

shell and it is a truly fine piece of

165

00:07:04,790 --> 00:07:02,880

hardware

166

00:07:07,830 --> 00:07:04,800

when endeavor made its next trip to the

167

00:07:10,790 --> 00:07:07,840

international space station on sts-97 in

168

00:07:13,749 --> 00:07:10,800

late november 2000 the space station was

169

00:07:15,430 --> 00:07:13,759

occupied by the expedition 1 crew and

170

00:07:18,309 --> 00:07:15,440

endeavour became the first shuttle to

171

00:07:21,350 --> 00:07:18,319

visit a crew aboard the station

172

00:07:23,589 --> 00:07:21,360

during sts-97 endeavour was used to

173

00:07:25,110 --> 00:07:23,599

deliver and install the first set of u.s

174

00:07:27,029 --> 00:07:25,120

solar arrays

175

00:07:29,510 --> 00:07:27,039

the hatches stayed closed between

176
00:07:31,430 --> 00:07:29,520
endeavour and the station for five days

177
00:07:33,189 --> 00:07:31,440
to allow the shuttle crew to conduct

178
00:07:34,390 --> 00:07:33,199
three spacewalks from endeavour's

179
00:07:36,710 --> 00:07:34,400
airlock

180
00:07:38,629 --> 00:07:36,720
after the evas were completed the

181
00:07:41,749 --> 00:07:38,639
hatches were opened and the crew of

182
00:07:45,350 --> 00:07:41,759
expedition one welcomed its visitors the

183
00:07:52,469 --> 00:07:45,360
crew request permission to come aboard

184
00:07:58,390 --> 00:07:55,909
on april 19th 2001 endeavour headed to

185
00:08:00,790 --> 00:07:58,400
orbit on sts-100

186
00:08:03,990 --> 00:08:00,800
the mission delivered a new era in space

187
00:08:06,150 --> 00:08:04,000
robotics to the station the 58-foot long

188
00:08:07,909 --> 00:08:06,160

canadarm2

189

00:08:10,230 --> 00:08:07,919

endeavors group performed the first

190

00:08:12,710 --> 00:08:10,240

operations in history using two robotic

191

00:08:15,110 --> 00:08:12,720

arms in space working together

192

00:08:18,070 --> 00:08:15,120

endeavour's robotic arm plus the new

193

00:08:20,309 --> 00:08:18,080

station arm to complete the mission

194

00:08:23,430 --> 00:08:20,319

dual robotics operations would become a

195

00:08:25,270 --> 00:08:23,440

mainstay of future station construction

196

00:08:27,270 --> 00:08:25,280

near the end of the mission as the big

197

00:08:29,909 --> 00:08:27,280

arm handed its carrier to endeavour's

198

00:08:32,469 --> 00:08:29,919

robotic arm it marked the first robotic

199

00:08:36,469 --> 00:08:32,479

handshake in space

200

00:08:38,310 --> 00:08:36,479

between 2003 and 2006 endeavour received

201
00:08:39,990 --> 00:08:38,320
a series of upgrades and safety

202
00:08:42,070 --> 00:08:40,000
modifications

203
00:08:46,150 --> 00:08:42,080
its first flight after those upgrades

204
00:08:47,829 --> 00:08:46,160
was sts-118 in august 2007.

205
00:08:50,150 --> 00:08:47,839
the mission was a fitting one for

206
00:08:52,150 --> 00:08:50,160
endeavor as the crew included mission

207
00:08:54,790 --> 00:08:52,160
specialist and educator astronaut

208
00:08:57,190 --> 00:08:54,800
barbara morgan who served as the backup

209
00:09:00,150 --> 00:08:57,200
teacher in space to christa mcauliffe

210
00:09:02,150 --> 00:09:00,160
who was lost in the challenger accident

211
00:09:05,750 --> 00:09:02,160
morgan made her historic flight aboard

212
00:09:07,750 --> 00:09:05,760
endeavor to fulfill mcauliffe's legacy

213
00:09:10,470 --> 00:09:07,760

some of my

214

00:09:12,630 --> 00:09:10,480

that have meant more than anything to me

215

00:09:14,710 --> 00:09:12,640

are seven very special people who i

216

00:09:17,030 --> 00:09:14,720

believe are mentors to you too

217

00:09:18,470 --> 00:09:17,040

and that was um the challenger crew they

218

00:09:20,550 --> 00:09:18,480

were my teachers

219

00:09:21,590 --> 00:09:20,560

and i believe they are teaching us today

220

00:09:23,269 --> 00:09:21,600

still

221

00:09:25,230 --> 00:09:23,279

when endeavor completes its final

222

00:09:28,710 --> 00:09:25,240

mission it will have traveled more than

223

00:09:29,829 --> 00:09:28,720

115 million miles during 25 trips to

224

00:09:32,230 --> 00:09:29,839

space

225

00:09:34,070 --> 00:09:32,240

it will have carried 139 different

226

00:09:35,910 --> 00:09:34,080

people into orbit

227

00:09:38,389 --> 00:09:35,920

although endeavor was the final space

228

00:09:39,829 --> 00:09:38,399

shuttle to be built its career has been

229

00:09:41,829 --> 00:09:39,839

one of firsts

230

00:09:44,710 --> 00:09:41,839

and its legacy will be one of opening

231

00:09:47,030 --> 00:09:44,720

humanity's greatest eye on the universe

232

00:09:49,190 --> 00:09:47,040

and expanding the space frontier for

233

00:09:50,949 --> 00:09:49,200

nations around the world

234

00:09:55,590 --> 00:09:50,959

for an out of this world space