



1  
00:00:29,589 --> 00:00:25,830  
hello

2  
00:00:31,189 --> 00:00:29,599  
my name is bob griffin i had the honor

3  
00:00:33,030 --> 00:00:31,199  
along with my friend john young

4  
00:00:35,430 --> 00:00:33,040  
of flying the first space shuttle into

5  
00:00:38,470 --> 00:00:35,440  
orbit back in april of 1981.

6  
00:00:41,430 --> 00:00:38,480  
it was a fantastic flight one that i'll

7  
00:00:41,910 --> 00:00:41,440  
always remember the shuttle has done

8  
00:00:45,350 --> 00:00:41,920  
some

9  
00:00:47,590 --> 00:00:45,360  
magnificent things it has revolutionized

10  
00:00:48,869 --> 00:00:47,600  
the way we uh we fly in space and it's

11  
00:00:51,990 --> 00:00:48,879  
done things that we couldn't

12  
00:00:54,709 --> 00:00:52,000  
have done with any other kind of vehicle

13  
00:00:56,389 --> 00:00:54,719

we also have revolutionized our

14

00:00:59,590 --> 00:00:56,399

knowledge of the solar system

15

00:01:02,470 --> 00:00:59,600

and of the universe with missions like

16

00:01:04,469 --> 00:01:02,480

magellan galileo and the hubble space

17

00:01:07,429 --> 00:01:04,479

telescope

18

00:01:08,310 --> 00:01:07,439

then we went on to work international

19

00:01:11,190 --> 00:01:08,320

relations

20

00:01:12,390 --> 00:01:11,200

by flying up to the russian mir and that

21

00:01:14,789 --> 00:01:12,400

relationship

22

00:01:16,149 --> 00:01:14,799

has allowed us to build the greatest

23

00:01:19,830 --> 00:01:16,159

engineering marvel of all the

24

00:01:23,670 --> 00:01:21,749

you can be proud of what the space

25

00:01:26,469 --> 00:01:23,680

shuttle has accomplished

26  
00:01:27,590 --> 00:01:26,479  
and you are the ones that made it happen

27  
00:01:29,749 --> 00:01:27,600  
i like to tell people

28  
00:01:31,670 --> 00:01:29,759  
that the space shuttle it's not about

29  
00:01:32,950 --> 00:01:31,680  
hardware it's not about software it's

30  
00:01:36,950 --> 00:01:32,960  
not about propellants

31  
00:01:39,749 --> 00:01:36,960  
it's about people the american workforce

32  
00:01:41,270 --> 00:01:39,759  
can accomplish wondrous things and

33  
00:01:55,190 --> 00:01:41,280  
you've proven that

34  
00:01:57,270 --> 00:01:55,200  
time and time again

35  
00:01:58,469 --> 00:01:57,280  
you know the initial flight was not

36  
00:02:01,590 --> 00:01:58,479  
without problems

37  
00:02:05,190 --> 00:02:01,600  
during the development we uh we ran

38  
00:02:06,709 --> 00:02:05,200

into lots of problems the

39

00:02:09,190 --> 00:02:06,719

space shuttle tiles the thermal

40

00:02:11,670 --> 00:02:09,200

protection system and the main engines

41

00:02:13,350 --> 00:02:11,680

were probably the long poles in the tent

42

00:02:16,070 --> 00:02:13,360

but we worked those hard

43

00:02:17,270 --> 00:02:16,080

even though there was schedule pressure

44

00:02:21,270 --> 00:02:17,280

we were

45

00:02:23,670 --> 00:02:21,280

over two years behind and

46

00:02:25,110 --> 00:02:23,680

anytime you're in that kind of a program

47

00:02:27,350 --> 00:02:25,120

there is going to be

48

00:02:30,229 --> 00:02:27,360

schedule pressure it's always with you

49

00:02:32,630 --> 00:02:30,239

it comes with the territory

50

00:02:33,750 --> 00:02:32,640

but management at that time they treated

51

00:02:35,509 --> 00:02:33,760

it properly

52

00:02:39,030 --> 00:02:35,519

and where there was no other reasonable

53

00:02:41,110 --> 00:02:39,040

alternative they slipped the schedule

54

00:02:42,630 --> 00:02:41,120

about a month before the first flight

55

00:02:43,110 --> 00:02:42,640

john and i were at the kennedy space

56

00:02:45,430 --> 00:02:43,120

center

57

00:02:47,670 --> 00:02:45,440

doing a terminal countdown demonstration

58

00:02:50,309 --> 00:02:47,680

test which is pretty much of a dry run

59

00:02:52,070 --> 00:02:50,319

of what actually goes on when you go

60

00:02:54,949 --> 00:02:52,080

launch the shuttle

61

00:02:55,830 --> 00:02:54,959

test went great john and i climbed out

62

00:02:57,910 --> 00:02:55,840

of the cockpit

63

00:02:59,509 --> 00:02:57,920

went back to the crew quarters at the

64

00:03:00,869 --> 00:02:59,519

onc building

65

00:03:02,790 --> 00:03:00,879

and we were patting each other on the

66

00:03:04,390 --> 00:03:02,800

back said hey we're getting pretty close

67

00:03:06,630 --> 00:03:04,400

to flight

68

00:03:10,710 --> 00:03:06,640

that was when we got the bad news

69

00:03:15,430 --> 00:03:13,750

six technicians had climbed in

70

00:03:16,869 --> 00:03:15,440

the aft end of the vehicle where the

71

00:03:18,869 --> 00:03:16,879

engines are

72

00:03:20,149 --> 00:03:18,879

while it was being purged with pure

73

00:03:21,990 --> 00:03:20,159

nitrogen

74

00:03:23,670 --> 00:03:22,000

to prevent any kind of combustion and

75

00:03:25,270 --> 00:03:23,680

you always do that when you actually go

76

00:03:27,030 --> 00:03:25,280

launch and we did it in this test as

77

00:03:29,190 --> 00:03:27,040

well

78

00:03:30,949 --> 00:03:29,200

when they climbed in five of them

79

00:03:33,350 --> 00:03:30,959

immediately passed out

80

00:03:34,789 --> 00:03:33,360

his sixth thank goodness he saw that

81

00:03:37,350 --> 00:03:34,799

there was a problem

82

00:03:38,550 --> 00:03:37,360

call for help and managed to pull some

83

00:03:41,350 --> 00:03:38,560

of the people out

84

00:03:42,710 --> 00:03:41,360

but john bornstad was pronounced dead on

85

00:03:44,830 --> 00:03:42,720

the scene

86

00:03:46,470 --> 00:03:44,840

and forrest cole later died at the

87

00:03:49,350 --> 00:03:46,480

hospital

88

00:03:53,990 --> 00:03:49,360

senseless loss of life and it was

89

00:03:57,589 --> 00:03:55,270

when john and i climbed out of the

90

00:03:58,869 --> 00:03:57,599

cockpit there was a special test they

91

00:04:00,710 --> 00:03:58,879

wanted to run

92

00:04:02,630 --> 00:04:00,720

so they put in what we at the kennedy

93

00:04:04,630 --> 00:04:02,640

space center call a div or a deviation

94

00:04:07,350 --> 00:04:04,640

to the procedure

95

00:04:09,429 --> 00:04:07,360

they kept that nitrogen purge going on

96

00:04:13,350 --> 00:04:09,439

in the aft in

97

00:04:14,550 --> 00:04:13,360

but somebody said the pad was clear for

98

00:04:17,590 --> 00:04:14,560

work

99

00:04:19,509 --> 00:04:17,600

so these six techs they went ahead and

100

00:04:21,670 --> 00:04:19,519

climbed in the aft in

101  
00:04:23,270 --> 00:04:21,680  
meanwhile the test team that was running

102  
00:04:25,030 --> 00:04:23,280  
the deviation

103  
00:04:26,710 --> 00:04:25,040  
they weren't aware that that was going

104  
00:04:29,909 --> 00:04:26,720  
on

105  
00:04:33,030 --> 00:04:29,919  
it was a horrendous accident and

106  
00:04:34,790 --> 00:04:33,040  
it also proves that there is danger to

107  
00:04:37,270 --> 00:04:34,800  
those of you that are working

108  
00:04:39,110 --> 00:04:37,280  
on hardware and around propellants just

109  
00:04:44,150 --> 00:04:39,120  
as there is danger to the crews that

110  
00:04:47,430 --> 00:04:46,469  
we depend on you the people that are

111  
00:04:49,510 --> 00:04:47,440  
hands on

112  
00:04:51,030 --> 00:04:49,520  
touching the hardware doing the software

113  
00:04:53,430 --> 00:04:51,040

touching the paper

114

00:04:55,430 --> 00:04:53,440

to be our first line and our last line

115

00:04:57,990 --> 00:04:55,440

of defense

116

00:04:59,510 --> 00:04:58,000

if you see something that is not growing

117

00:05:02,710 --> 00:04:59,520

right

118

00:05:06,230 --> 00:05:02,720

please please bring it

119

00:05:07,670 --> 00:05:06,240

to management's attention stop the work

120

00:05:10,070 --> 00:05:07,680

one of the biggest problems we have at

121

00:05:13,189 --> 00:05:10,080

nasa sometimes is our can-do attitude

122

00:05:15,270 --> 00:05:13,199

we're known for it that's one of our

123

00:05:16,870 --> 00:05:15,280

greatest assets but it's also one of our

124

00:05:20,070 --> 00:05:16,880

greatest liabilities

125

00:05:20,390 --> 00:05:20,080

the secret is knowing when can do is too

126  
00:05:23,189 --> 00:05:20,400  
much

127  
00:05:24,469 --> 00:05:23,199  
and is pushing too hard management and

128  
00:05:26,469 --> 00:05:24,479  
leadership

129  
00:05:27,990 --> 00:05:26,479  
need to keep their fingers on the pulse

130  
00:05:29,909 --> 00:05:28,000  
of the program

131  
00:05:31,670 --> 00:05:29,919  
i advise you to get out of your office

132  
00:05:33,029 --> 00:05:31,680  
get out of the conference room

133  
00:05:35,590 --> 00:05:33,039  
go out where the people are doing the

134  
00:05:36,469 --> 00:05:35,600  
work that's where you can get the best

135  
00:05:39,029 --> 00:05:36,479  
sense

136  
00:05:39,909 --> 00:05:39,039  
that something is amiss and if somebody

137  
00:05:42,150 --> 00:05:39,919  
brings

138  
00:05:43,830 --> 00:05:42,160

it to your attention or you notice

139

00:05:47,029 --> 00:05:43,840

something that's not right

140

00:05:47,909 --> 00:05:47,039

call a timeout now that's not easy to do

141

00:05:50,390 --> 00:05:47,919

always

142

00:05:52,150 --> 00:05:50,400

because there is schedule pressure it

143

00:05:55,110 --> 00:05:52,160

will always be there

144

00:05:56,309 --> 00:05:55,120

but schedule pressure is not worth

145

00:05:58,629 --> 00:05:56,319

compromising

146

00:06:00,870 --> 00:05:58,639

the safety of the people working on it

147

00:06:03,350 --> 00:06:00,880

and the vehicle itself

148

00:06:04,309 --> 00:06:03,360

we depend on you to make sure that

149

00:06:07,029 --> 00:06:04,319

happens

150

00:06:08,550 --> 00:06:07,039

and to do that communication is

151  
00:06:10,710 --> 00:06:08,560  
extremely important

152  
00:06:11,670 --> 00:06:10,720  
you need to talk to the people that are

153  
00:06:13,590 --> 00:06:11,680  
doing the work

154  
00:06:14,870 --> 00:06:13,600  
and they need to talk to you

155  
00:06:18,390 --> 00:06:14,880  
communication

156  
00:06:20,150 --> 00:06:18,400  
is a two-way street i've seen several

157  
00:06:22,390 --> 00:06:20,160  
accidents in my life

158  
00:06:23,749 --> 00:06:22,400  
and they are usually not caused by a

159  
00:06:26,550 --> 00:06:23,759  
single event

160  
00:06:27,430 --> 00:06:26,560  
they're caused by a chain of events and

161  
00:06:30,150 --> 00:06:27,440  
all we need

162  
00:06:31,990 --> 00:06:30,160  
is one person to break that chain and

163  
00:06:35,909 --> 00:06:32,000

you can prevent the accident

164

00:06:37,670 --> 00:06:35,919

so each of you needs to be diligent

165

00:06:39,430 --> 00:06:37,680

follow the processes which are so

166

00:06:40,070 --> 00:06:39,440

critical but you need to have a bigger

167

00:06:43,830 --> 00:06:40,080

view

168

00:06:48,070 --> 00:06:46,790

i've seen the shuttle program from a

169

00:06:51,510 --> 00:06:48,080

unique perspective

170

00:06:53,189 --> 00:06:51,520

i was around when we were first

171

00:06:55,510 --> 00:06:53,199

doing the initial requirements working

172

00:06:57,830 --> 00:06:55,520

in the astronaut office

173

00:06:59,749 --> 00:06:57,840

i had an opportunity to fly four of the

174

00:07:01,589 --> 00:06:59,759

initial flights

175

00:07:04,070 --> 00:07:01,599

then i got involved in space shuttle

176

00:07:05,430 --> 00:07:04,080

management ended my nasa career at the

177

00:07:08,309 --> 00:07:05,440

kennedy space center

178

00:07:09,589 --> 00:07:08,319

as the center director and then out in

179

00:07:12,469 --> 00:07:09,599

industry running one of the

180

00:07:14,309 --> 00:07:12,479

major contractors for the space shuttle

181

00:07:15,749 --> 00:07:14,319

space shuttle program is very dear to my

182

00:07:19,589 --> 00:07:15,759

heart

183

00:07:23,990 --> 00:07:21,990

we are depending on you i know you

184

00:07:26,150 --> 00:07:24,000

wanted to have the same

185

00:07:28,710 --> 00:07:26,160

kind of phenomenal lending as the

186

00:07:32,150 --> 00:07:28,720

phenomenal start it had

187

00:07:35,670 --> 00:07:32,160

we depend on you for a strong safe

188

00:07:35,680 --> 00:07:39,589

main gear touchdown