



# Apollo 13

1  
00:00:06,720 --> 00:00:14,410  
again please

2  
00:00:18,550 --> 00:00:16,070  
[Music]

3  
00:00:20,550 --> 00:00:18,560  
it was plagued by

4  
00:00:22,150 --> 00:00:20,560  
uh bad omens

5  
00:00:27,670 --> 00:00:22,160  
and bad luck

6  
00:00:27,680 --> 00:00:45,670  
looks good here flight good agreement

7  
00:00:50,630 --> 00:00:47,910  
years before the flight

8  
00:00:52,069 --> 00:00:50,640  
when the spacecraft was being built

9  
00:00:54,150 --> 00:00:52,079  
a damaged

10  
00:00:57,110 --> 00:00:54,160  
liquid oxygen tank

11  
00:00:58,869 --> 00:00:57,120  
was installed in the spacecraft the tank

12  
00:01:01,270 --> 00:00:58,879  
had been

13  
00:01:03,670 --> 00:01:01,280

dropped on the factory floor

14

00:01:07,270 --> 00:01:03,680

a little piece of plumbing and prevented

15

00:01:09,510 --> 00:01:07,280

the normal procedure for removing oxygen

16

00:01:12,469 --> 00:01:09,520

after a routine test

17

00:01:14,469 --> 00:01:12,479

prior to the flight and then on the day

18

00:01:17,109 --> 00:01:14,479

before flight

19

00:01:18,310 --> 00:01:17,119

we filled up the tank again with liquid

20

00:01:20,390 --> 00:01:18,320

oxygen

21

00:01:36,950 --> 00:01:20,400

and it was a bomb

22

00:01:41,670 --> 00:01:38,390

and get back

23

00:01:44,870 --> 00:01:43,109

actually it was the end of the work day

24

00:01:47,030 --> 00:01:44,880

we were fixing to go to bed after we did

25

00:01:49,109 --> 00:01:47,040

a few things to clean up and the next

26

00:01:51,429 --> 00:01:49,119

morning going to luna orbit and get

27

00:01:55,350 --> 00:01:51,439

ready to land and then it was a large

28

00:01:57,510 --> 00:01:55,360

bang when the explosion first occurred

29

00:01:59,910 --> 00:01:57,520

we didn't know what happened

30

00:02:03,030 --> 00:01:59,920

and that just rang through the metallic

31

00:02:06,709 --> 00:02:04,789

i was in the lunar module and then i

32

00:02:07,830 --> 00:02:06,719

went down to the command module we may

33

00:02:09,270 --> 00:02:07,840

have had an instrumentation problem

34

00:02:11,270 --> 00:02:09,280

flight raj

35

00:02:13,750 --> 00:02:11,280

and we had a pretty large bank

36

00:02:15,670 --> 00:02:13,760

associated with the crushing and warning

37

00:02:17,830 --> 00:02:15,680

there we started the look at the

38

00:02:20,869 --> 00:02:17,840

instrument panels one of the quantity

39

00:02:22,550 --> 00:02:20,879

cages of one of the tanks was zero that

40

00:02:25,270 --> 00:02:22,560

was the tank that had blew

41

00:02:27,510 --> 00:02:25,280

i then looked out the window

42

00:02:30,229 --> 00:02:27,520

and saw escaping at a high rate of speed

43

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

a gaseous oxygen because the explosion

44

00:02:35,430 --> 00:02:32,640

occurred on the first the damage tank

45

00:02:37,750 --> 00:02:35,440

but that also ruptured the second tank

46

00:02:39,509 --> 00:02:37,760

just blew the entire side of the

47

00:02:41,670 --> 00:02:39,519

spacecraft off

48

00:02:43,190 --> 00:02:41,680

my immediate feeling was just a sick

49

00:02:44,550 --> 00:02:43,200

feeling of pit of my stomach or

50

00:02:46,710 --> 00:02:44,560

disappointment

51  
00:02:48,150 --> 00:02:46,720  
i knew we had lost the landing

52  
00:02:50,710 --> 00:02:48,160  
and from then on

53  
00:02:54,150 --> 00:02:50,720  
it was not a third letting on the moon

54  
00:02:55,509 --> 00:02:54,160  
but a survival of how to get home

55  
00:02:56,949 --> 00:02:55,519  
okay i want you to double check my

56  
00:02:58,390 --> 00:02:56,959  
arithmetic to make sure we've got a good

57  
00:03:00,630 --> 00:02:58,400  
towards the line

58  
00:03:01,670 --> 00:03:00,640  
go fly how's the arithmetic standby

59  
00:03:06,630 --> 00:03:01,680  
we're checking

60  
00:03:10,229 --> 00:03:08,710  
we were handling something that we knew

61  
00:03:12,229 --> 00:03:10,239  
was

62  
00:03:14,790 --> 00:03:12,239  
out of control and

63  
00:03:18,070 --> 00:03:14,800

every team that came on was dealing with

64

00:03:20,550 --> 00:03:18,080

a major set of problems to deal with

65

00:03:22,309 --> 00:03:20,560

they just uh jumped to the task and they

66

00:03:24,550 --> 00:03:22,319

knew what they had to do

67

00:03:26,789 --> 00:03:24,560

okay now let's everybody keep cool we

68

00:03:29,830 --> 00:03:26,799

got limbs still attached the lemon

69

00:03:31,750 --> 00:03:29,840

spacecraft's good so if we need uh to

70

00:03:37,830 --> 00:03:31,760

get back home we got a limb to do a good

71

00:03:42,630 --> 00:03:40,309

one of the biggest things we had to do

72

00:03:43,670 --> 00:03:42,640

in the dying moments of the electrical

73

00:03:47,350 --> 00:03:43,680

system

74

00:03:49,750 --> 00:03:47,360

and the command module was to transfer

75

00:03:53,110 --> 00:03:49,760

the guidance system

76  
00:03:56,630 --> 00:03:53,120  
and transfer the angle numbers from the

77  
00:03:59,030 --> 00:03:56,640  
command module to the lunar module

78  
00:04:02,149 --> 00:03:59,040  
and we only had about 15 minutes to do

79  
00:04:05,509 --> 00:04:04,149  
about 20 minutes after the explosion it

80  
00:04:06,309 --> 00:04:05,519  
was obvious

81  
00:04:07,750 --> 00:04:06,319  
that

82  
00:04:09,190 --> 00:04:07,760  
we weren't coming

83  
00:04:11,030 --> 00:04:09,200  
to a landing in the moon we were going

84  
00:04:13,910 --> 00:04:11,040  
to go around it glenn had already been

85  
00:04:16,949 --> 00:04:13,920  
down in the trench with trajectory guys

86  
00:04:19,030 --> 00:04:16,959  
and came up with five trajectory return

87  
00:04:21,110 --> 00:04:19,040  
to earth options so we would not we

88  
00:04:23,350 --> 00:04:21,120

would have missed the earth had we done

89

00:04:25,189 --> 00:04:23,360

nothing so the first thing was to get us

90

00:04:26,469 --> 00:04:25,199

in the right direction to go around the

91

00:04:28,469 --> 00:04:26,479

moon

92

00:04:30,550 --> 00:04:28,479

and that was the first maneuver

93

00:04:32,150 --> 00:04:30,560

we made we used the landing engine the

94

00:04:44,550 --> 00:04:32,160

engine we normally would land it on the

95

00:04:50,550 --> 00:04:46,629

everybody seemed to be moving in the

96

00:04:52,870 --> 00:04:50,560

right directions without being directed

97

00:04:54,469 --> 00:04:52,880

everybody had a sense of what had to be

98

00:04:56,550 --> 00:04:54,479

done the training guys brought the

99

00:04:58,230 --> 00:04:56,560

simulators up over there and the crews

100

00:04:59,990 --> 00:04:58,240

were over in the simulators tracking

101  
00:05:02,790 --> 00:05:00,000  
virtually everything they were doing

102  
00:05:05,350 --> 00:05:02,800  
there every configuration change

103  
00:05:07,029 --> 00:05:05,360  
that was proposed to be done was already

104  
00:05:09,350 --> 00:05:07,039  
being worked over in the simulators

105  
00:05:13,560 --> 00:05:09,360  
there so you start getting answers from

106  
00:05:25,270 --> 00:05:13,570  
all these various directions

107  
00:05:29,749 --> 00:05:27,350  
the command module was very wet there

108  
00:05:31,670 --> 00:05:29,759  
was water everywhere on every in the

109  
00:05:33,110 --> 00:05:31,680  
limb there's no inner walls

110  
00:05:35,510 --> 00:05:33,120  
so you can see water on all the

111  
00:05:38,629 --> 00:05:35,520  
connectors wire bundles

112  
00:05:40,310 --> 00:05:38,639  
plumbing every turn of global water

113  
00:05:41,749 --> 00:05:40,320

and command module we actually had to

114

00:05:43,270 --> 00:05:41,759

get towels out to wipe off the

115

00:05:45,749 --> 00:05:43,280

instrument panel

116

00:05:48,070 --> 00:05:45,759

to see the instruments we copied that

117

00:05:51,590 --> 00:05:48,080

report uh from jim lovell of service

118

00:05:54,070 --> 00:05:51,600

module separation at 138 hours

119

00:05:55,270 --> 00:05:54,080

and there's one whole side of that

120

00:05:57,670 --> 00:05:55,280

this one

121

00:06:00,870 --> 00:05:57,680

is that right

122

00:06:00,880 --> 00:06:05,430

farewell aquarius thank you

123

00:06:09,350 --> 00:06:07,270

so it was a question of getting this

124

00:06:11,189 --> 00:06:09,360

entire world

125

00:06:15,110 --> 00:06:11,199

geared and oriented

126  
00:06:17,029 --> 00:06:15,120  
to one single job get the crew home

127  
00:06:18,629 --> 00:06:17,039  
teamwork was necessary

128  
00:06:20,950 --> 00:06:18,639  
good leadership

129  
00:06:22,950 --> 00:06:20,960  
initiative to think out outside of the

130  
00:06:25,590 --> 00:06:22,960  
box when things go wrong how do we

131  
00:06:28,230 --> 00:06:25,600  
repair them those are the three things

132  
00:06:29,749 --> 00:06:28,240  
that were absolutely necessary

133  
00:06:31,270 --> 00:06:29,759  
i was most

134  
00:06:33,110 --> 00:06:31,280  
proud of

135  
00:06:35,830 --> 00:06:33,120  
being in this team

136  
00:06:38,629 --> 00:06:35,840  
that knew what they had to do

137  
00:06:39,830 --> 00:06:38,639  
and there was no doubt about it

138  
00:06:42,150 --> 00:06:39,840

the team

139

00:06:45,590 --> 00:06:42,160

completely faced up to what had to be

140

00:06:48,629 --> 00:06:45,600

done in this case it was a survival

141

00:06:50,390 --> 00:06:48,639

challenge that we were faced with so