



1
00:00:05,539 --> 00:00:02,090
who talks it over amongst themselves for

2
00:00:09,140 --> 00:00:05,549
a few minutes and let me hear him call

3
00:00:10,580 --> 00:00:09,150
out engines start and a little bit of

4
00:00:12,169 --> 00:00:10,590
trouble in control technique for the

5
00:00:13,999 --> 00:00:12,179
first few seconds but the kitchen real

6
00:00:17,029 --> 00:00:14,009
quick and boy they really zeroed in on

7
00:00:18,980 --> 00:00:17,039
this earth reference Hyrum call shut

8
00:00:21,560 --> 00:00:18,990
down 14 seconds later we track them

9
00:00:23,150 --> 00:00:21,570
about for about a half hour doggone if

10
00:00:27,230 --> 00:00:23,160
it didn't work there right back within

11
00:00:31,999 --> 00:00:27,240
the capture track that we that we need

12
00:00:33,530 --> 00:00:32,009
for Earth entry now for the next 24

13
00:00:35,270 --> 00:00:33,540

hours the crew doesn't have anything to

14

00:00:37,610 --> 00:00:35,280

do except watch the earth grow larger

15

00:00:39,380 --> 00:00:37,620

and larger and larger and the larger I

16

00:00:41,750 --> 00:00:39,390

wonder how we're going to get them back

17

00:00:43,069 --> 00:00:41,760

through the Earth's atmosphere the basic

18

00:00:45,049 --> 00:00:43,079

problem we have we essentially have

19

00:00:46,819 --> 00:00:45,059

three spacecrafts up there we have the

20

00:00:48,740 --> 00:00:46,829

lunar module we have the command module

21

00:00:49,910 --> 00:00:48,750

which is our reentry and we have the

22

00:00:52,939 --> 00:00:49,920

service model where the explosion

23

00:00:54,049 --> 00:00:52,949

occurred at the very last moment as

24

00:00:56,299 --> 00:00:54,059

we're entering into the Earth's

25

00:00:58,279 --> 00:00:56,309

atmosphere we have to maneuver into an

26

00:01:00,080 --> 00:00:58,289

orientation so he can separate these

27

00:01:02,689 --> 00:01:00,090

three pieces at different times of the

28

00:01:04,460 --> 00:01:02,699

follow different reentry trajectory but

29

00:01:06,230 --> 00:01:04,470

before we do that we have to evacuate

30

00:01:08,510 --> 00:01:06,240

from the lunar module leaving at

31

00:01:11,179 --> 00:01:08,520

controlling orientation get into command

32

00:01:14,510 --> 00:01:11,189

module rapidly and efficiently power of

33

00:01:16,130 --> 00:01:14,520

this guy up initialized computer closed

34

00:01:17,719 --> 00:01:16,140

hatched chick orientation and start

35

00:01:19,820 --> 00:01:17,729

blowing the pieces apart this is a

36

00:01:24,499 --> 00:01:19,830

checklist that will turn out to be about

37

00:01:26,210 --> 00:01:24,509

500 entries long landing minus 24 I walk

38

00:01:28,100 --> 00:01:26,220

over the simulators to find out how the

39

00:01:29,539 --> 00:01:28,110

procedures are going ken Mattingly the

40

00:01:31,190 --> 00:01:29,549

astronauts scrubbed from the mission Tom

41

00:01:33,289 --> 00:01:31,200

Stafford and Gene Cernan been working

42

00:01:37,429 --> 00:01:33,299

these for me and they feel the

43

00:01:38,990 --> 00:01:37,439

procedures already go but Mattingly asks

44

00:01:40,700 --> 00:01:39,000

a very peculiar question he says you

45

00:01:42,530 --> 00:01:40,710

know it's like one thing I'd like to do

46

00:01:45,200 --> 00:01:42,540

is get into a crewman who has never seen

47

00:01:47,780 --> 00:01:45,210

him and go through it a final time and

48

00:01:50,300 --> 00:01:47,790

we agree that's a good very very good

49

00:01:53,420 --> 00:01:50,310

cross check so we reset the deadline

50

00:01:56,899 --> 00:01:53,430

back to landing minus eighteen landing

51
00:01:58,639 --> 00:01:56,909
minus eighteen Lee we get the Capcom's

52
00:01:59,929 --> 00:01:58,649
voicing the instructions up to the crew

53
00:02:01,670 --> 00:01:59,939
that's going to be Vance brand and

54
00:02:04,639 --> 00:02:01,680
Charlie Duke or the Capcom's for that

55
00:02:06,590 --> 00:02:04,649
shift my Capcom's Ken Mattingly and

56
00:02:08,960 --> 00:02:06,600
Joker one are standing by listening as

57
00:02:10,490 --> 00:02:08,970
we voice the instructions up we work

58
00:02:13,790 --> 00:02:10,500
with Jack Swigert for about two hours

59
00:02:16,610 --> 00:02:13,800
and he reads back to procedures for us

60
00:02:18,230 --> 00:02:16,620
and we're convinced he understands his

61
00:02:20,360 --> 00:02:18,240
part of the job then we start working

62
00:02:23,020 --> 00:02:20,370
with Fred Haise unknown to us on the

63
00:02:26,180 --> 00:02:23,030

ground fred has uncontrollable shivers

64

00:02:29,270 --> 00:02:26,190

severe dehydration bad urinary infection

65

00:02:31,400 --> 00:02:29,280

body temperatures 102 and increasing but

66

00:02:32,930 --> 00:02:31,410

freddos the guy that has to get the job

67

00:02:35,150 --> 00:02:32,940

done so he work with him until he

68

00:02:36,500 --> 00:02:35,160

understands he's part of the job then we

69

00:02:39,460 --> 00:02:36,510

all go off and get a few hours rest

70

00:02:42,110 --> 00:02:39,470

before we come in for our final shift

71

00:02:45,770 --> 00:02:42,120

we're landing minus eight hours now and

72

00:02:48,710 --> 00:02:45,780

I always have my team's go off get by

73

00:02:51,140 --> 00:02:48,720

themselves get focused upon their role

74

00:02:52,610 --> 00:02:51,150

in this particular shift come back in to

75

00:02:54,620 --> 00:02:52,620

give me a green light indicator when

76
00:02:56,600 --> 00:02:54,630
they're ready when I have an all green

77
00:02:57,890 --> 00:02:56,610
board i send my flight surgeon around to

78
00:02:59,650 --> 00:02:57,900
interview them to see if they're going

79
00:03:02,270 --> 00:02:59,660
mediate a similar to keep them gone

80
00:03:03,440 --> 00:03:02,280
virtually all the controllers refuse are

81
00:03:06,350 --> 00:03:03,450
going to do it on black coffee and

82
00:03:08,510 --> 00:03:06,360
cigarettes I put on the white vest which

83
00:03:11,330 --> 00:03:08,520
has been my team's trademarks it's the

84
00:03:12,920 --> 00:03:11,340
very early days and spaceflight pull the

85
00:03:14,750 --> 00:03:12,930
controllers for the start of the shift

86
00:03:17,060 --> 00:03:14,760
status and they report in their sharp

87
00:03:18,560 --> 00:03:17,070
the crisp they're on top of the job i'm

88
00:03:20,390 --> 00:03:18,570

so damn proud of these kids i could

89

00:03:23,180 --> 00:03:20,400

croak then I get concerned not see

90

00:03:25,670 --> 00:03:23,190

adrenaline we're peaking too soon don't

91

00:03:27,680 --> 00:03:25,680

even have that luxury Jerry Bostick my

92

00:03:29,390 --> 00:03:27,690

trajectory controller comes up to me at

93

00:03:32,300 --> 00:03:29,400

the console leans over and he says

94

00:03:34,699 --> 00:03:32,310

flight I hate to tell you this we're

95

00:03:37,790 --> 00:03:34,709

going to miss the earth we must perform

96

00:03:39,740 --> 00:03:37,800

an emergency maneuver now we have no

97

00:03:43,400 --> 00:03:39,750

choice but to use are very precious

98

00:03:45,350 --> 00:03:43,410

electrical power and we're going to have

99

00:03:48,560 --> 00:03:45,360

to make adjustments power power profile

100

00:03:50,660 --> 00:03:48,570

downstream but we voice the instructions

101
00:03:52,970 --> 00:03:50,670
up to the crew for the maneuver we get

102
00:03:54,770 --> 00:03:52,980
the program 40 loaded on board the limb

103
00:03:56,500 --> 00:03:54,780
guidance computer then we provide the

104
00:03:59,260 --> 00:03:56,510
orientation for the maneuver and

105
00:04:02,479 --> 00:03:59,270
throughout this entire period of time

106
00:04:04,370 --> 00:04:02,489
their guardian angel is Joe Kerwin Joe

107
00:04:06,890 --> 00:04:04,380
is the principal communicator through

108
00:04:09,080 --> 00:04:06,900
these final eight hours and he's a

109
00:04:11,420 --> 00:04:09,090
medical doctor it'll be the first doctor

110
00:04:13,970 --> 00:04:11,430
in space on the Skylab to mission and

111
00:04:15,710 --> 00:04:13,980
his bedside manner not only here but

112
00:04:18,860 --> 00:04:15,720
through the remainder is shift is

113
00:04:20,990 --> 00:04:18,870

absolutely spectacular maneuver is

114

00:04:24,770 --> 00:04:21,000

completed now it's time to jettison the

115

00:04:27,110 --> 00:04:24,780

service module crew calls off service

116

00:04:28,580 --> 00:04:27,120

module jettison and there's about a 45

117

00:04:31,640 --> 00:04:28,590

second cause of the maneuver and

118

00:04:33,650 --> 00:04:31,650

orientation to give us some reports in

119

00:04:35,420 --> 00:04:33,660

them they start okay I've got her all

120

00:04:37,310 --> 00:04:35,430

side of the spacecraft's missing all the

121

00:04:39,650 --> 00:04:37,320

way to the high-gain antenna all side is

122

00:04:40,939 --> 00:04:39,660

missing to the base of the engine he

123

00:04:43,100 --> 00:04:40,949

says yeah it looks like it might have

124

00:04:44,900 --> 00:04:43,110

got the engine also because there's

125

00:04:47,810 --> 00:04:44,910

nothing but a dark brown streak by the

126

00:04:50,450 --> 00:04:47,820

injector and as I'm listening to these

127

00:04:53,060 --> 00:04:50,460

reports I'm thinking about the decision

128

00:04:55,670 --> 00:04:53,070

made almost four days earlier based on

129

00:04:58,040 --> 00:04:55,680

nothing but a gut feeling I cannot

130

00:05:00,260 --> 00:04:58,050

describe to you how intense that feeling

131

00:05:02,180 --> 00:05:00,270

was and there are several people several

132

00:05:03,860 --> 00:05:02,190

controllers of experiences Glen Lonnie

133

00:05:05,540 --> 00:05:03,870

in particular some point where you've

134

00:05:07,340 --> 00:05:05,550

done absolutely the best that you can

135

00:05:08,770 --> 00:05:07,350

for your curl in the mission and it's

136

00:05:10,760 --> 00:05:08,780

time to hand over to a higher authority

137

00:05:14,689 --> 00:05:10,770

bring this mission to its ultimate

138

00:05:17,120 --> 00:05:14,699

conclusion we now start powering up the

139

00:05:19,219 --> 00:05:17,130

command module there's water all over

140

00:05:21,080 --> 00:05:19,229

inside the spacecraft hanging from the

141

00:05:23,090 --> 00:05:21,090

switches circuit breakers light bulbs

142

00:05:24,740 --> 00:05:23,100

globes of condensed moisture as big as a

143

00:05:26,960 --> 00:05:24,750

silver dollar floating free in the air

144

00:05:28,790 --> 00:05:26,970

but as each one of these systems come

145

00:05:30,350 --> 00:05:28,800

alive the control teams absolutely

146

00:05:32,240 --> 00:05:30,360

astounded because the spacecraft was

147

00:05:34,339 --> 00:05:32,250

never designed to be put into a deep

148

00:05:36,230 --> 00:05:34,349

freeze initialized computer is

149

00:05:38,659 --> 00:05:36,240

integrating the proper trajectory back

150

00:05:40,760 --> 00:05:38,669

down to earth and now in this final hour

151

00:05:42,290 --> 00:05:40,770

you can feel the emotional content of

152

00:05:45,379 --> 00:05:42,300

that room building up because these

153

00:05:47,300 --> 00:05:45,389

controllers are sensing victory but they

154

00:05:49,490 --> 00:05:47,310

also know how fragile this victory is I

155

00:05:53,240 --> 00:05:49,500

got to hang in there and the emotional

156

00:05:54,710 --> 00:05:53,250

content of this room peaks at the time

157

00:05:57,140 --> 00:05:54,720

we jettisoned the lunar module because

158

00:05:59,960 --> 00:05:57,150

we start speaking to it and we say

159

00:06:03,080 --> 00:05:59,970

farewell Aquarius we thank you you were

160

00:06:04,640 --> 00:06:03,090

one hell of a good ship then we blow the

161

00:06:06,320 --> 00:06:04,650

explosive bolts it's going to tumble

162

00:06:09,589 --> 00:06:06,330

this and it disintegrate before it hits

163

00:06:11,420 --> 00:06:09,599

the Pacific now it's time for me to pull

164

00:06:14,150 --> 00:06:11,430

my controllers for the final time to

165

00:06:17,360 --> 00:06:14,160

give the go for entry and just as I

166

00:06:18,950 --> 00:06:17,370

start my pole I'm interrupted controller

167

00:06:20,540 --> 00:06:18,960

comes to mean he's just like we got to

168

00:06:23,750 --> 00:06:20,550

get the crew quick battery she's failing

169

00:06:25,310 --> 00:06:23,760

we need power for those parachutes so he

170

00:06:26,839 --> 00:06:25,320

voiced the instructions up to Prudhoe

171

00:06:28,939 --> 00:06:26,849

pulled this battery see offline

172

00:06:30,500 --> 00:06:28,949

redistribute batteries a and B across

173

00:06:33,710 --> 00:06:30,510

the buses so we got powers for the

174

00:06:35,270 --> 00:06:33,720

chutes and it's now time the entire

175

00:06:40,430 --> 00:06:35,280

world's listening to what's going on

176

00:06:42,680 --> 00:06:40,440

it's now time to say adieu to this crew

177

00:06:44,960 --> 00:06:42,690

and the rookie asked not Jax we're that

178

00:06:46,400 --> 00:06:44,970

Slayer calls down he says you know all

179

00:06:48,040 --> 00:06:46,410

of us up here want to thank you guys

180

00:06:50,360 --> 00:06:48,050

down there for the great job you did

181

00:06:52,040 --> 00:06:50,370

didn't we get out of boy from both

182

00:06:54,680 --> 00:06:52,050

Louisville and Hayes we get a little bit

183

00:06:56,780 --> 00:06:54,690

of more chitchat I to get a call flight

184

00:06:59,870 --> 00:06:56,790

we've had loss of signal word and block

185

00:07:01,730 --> 00:06:59,880

up now blacked out is the time period

186

00:07:03,680 --> 00:07:01,740

where the fire of entry prevented

187

00:07:06,080 --> 00:07:03,690

communication to the spacecraft at this

188

00:07:07,880 --> 00:07:06,090

stage in the space program we could nail

189

00:07:10,850 --> 00:07:07,890

it within a second we've never missed

190

00:07:13,340 --> 00:07:10,860

and blackout is very difficult time for

191

00:07:14,780 --> 00:07:13,350

everyone of the controllers because

192

00:07:15,950 --> 00:07:14,790

there's only one thought in mind it I

193

00:07:17,780 --> 00:07:15,960

give you the car everything he needed to

194

00:07:20,110 --> 00:07:17,790

and was my data right because from now

195

00:07:22,970 --> 00:07:20,120

on crews on their own they'll give back

196

00:07:24,590 --> 00:07:22,980

and watch all the clocks in the wild

197

00:07:27,170 --> 00:07:24,600

counting down to zero and when I finally

198

00:07:29,690 --> 00:07:27,180

hit zero blackout should be over and I

199

00:07:32,540 --> 00:07:29,700

say okay Joe give a call kerwin calls

200

00:07:33,950 --> 00:07:32,550

Odyssey Houston standing by there's no

201
00:07:37,100 --> 00:07:33,960
response from the crew all you hear is

202
00:07:38,630 --> 00:07:37,110
static and we call again and again it's

203
00:07:40,220 --> 00:07:38,640
now one minute and literally every

204
00:07:41,630 --> 00:07:40,230
controller and that confer room is

205
00:07:43,970 --> 00:07:41,640
standing up staring at those clocks

206
00:07:45,620 --> 00:07:43,980
wondering what the hell went wrong but

207
00:07:47,540 --> 00:07:45,630
in our business we have never surrender

208
00:07:49,280 --> 00:07:47,550
we keep calling keep working one minute

209
00:07:51,710 --> 00:07:49,290
27 seconds after he should have heard

210
00:07:53,540 --> 00:07:51,720
get array hope gun range aircraft cows

211
00:07:56,360 --> 00:07:53,550
out or I afore has acquisition of signal

212
00:07:58,280 --> 00:07:56,370
and the aircraft carrier ports radar

213
00:07:59,720 --> 00:07:58,290

contact and they report the sonic boom

214

00:08:01,090 --> 00:07:59,730

and then admission control we see the

215

00:08:03,860 --> 00:08:01,100

beautiful picture of the spacecraft

216

00:08:05,480 --> 00:08:03,870

under these three retinoid parachutes

217

00:08:07,940 --> 00:08:05,490

and the emotional release at that

218

00:08:10,550 --> 00:08:07,950

instant is so intense that literally

219

00:08:12,440 --> 00:08:10,560

everyone is standing crying and you're

220

00:08:13,970 --> 00:08:12,450

frankly embarrassed by your loss of

221

00:08:16,580 --> 00:08:13,980

composure you pull yourself together

222

00:08:19,220 --> 00:08:16,590

spacecraft hits the water remains

223

00:08:21,170 --> 00:08:19,230

upright iwo jima circles deploys more

224

00:08:23,900 --> 00:08:21,180

helicopters a pair of jumpers go on the

225

00:08:25,340 --> 00:08:23,910

water to assist this crack and this crew

226

00:08:29,210 --> 00:08:25,350

that had been living in a meat locker

227

00:08:31,580 --> 00:08:29,220

temperatures ranged between 37 and about

228

00:08:33,440 --> 00:08:31,590

41 degrees for the best part of four

229

00:08:35,779 --> 00:08:33,450

days extremely humid and all they had

230

00:08:37,820 --> 00:08:35,789

were the light cotton coveralls and

231

00:08:41,060 --> 00:08:37,830

three to four pairs of underwear they

232

00:08:43,130 --> 00:08:41,070

all put on but now these guys are in the