



How Difficult is This?

1
00:00:04,940 --> 00:00:02,480
this is the flight path of American

2
00:00:07,909 --> 00:00:04,950
Airlines flight 77 from where it took

3
00:00:09,830 --> 00:00:07,919
off at Washington Dulles Airport to

4
00:00:12,770 --> 00:00:09,840
where it was hijacked turned around flew

5
00:00:16,039 --> 00:00:12,780
back towards Washington and crashed into

6
00:00:17,810 --> 00:00:16,049
the Pentagon now as you can see towards

7
00:00:19,760 --> 00:00:17,820
the end of the flight path there's this

8
00:00:21,800 --> 00:00:19,770
loop and some people said this loop is

9
00:00:26,390 --> 00:00:21,810
kind of suspicious because it looks

10
00:00:28,790 --> 00:00:26,400
people think about flying in loops this

11
00:00:30,380 --> 00:00:28,800
is technically a circuit not a loop a

12
00:00:31,880 --> 00:00:30,390
loop would be vertical but let's go to

13
00:00:33,709 --> 00:00:31,890

loop for now because that's what most

14

00:00:36,410 --> 00:00:33,719

people call it it flies in this

15

00:00:38,330 --> 00:00:36,420

descending circle here so it could

16

00:00:41,060 --> 00:00:38,340

impact the Pentagon which is over here

17

00:00:44,750 --> 00:00:41,070

the reason the pilot did this is that at

18

00:00:46,490 --> 00:00:44,760

this point here presumably where he

19

00:00:48,560 --> 00:00:46,500

decides what he's going to actually fly

20

00:00:50,750 --> 00:00:48,570

into where he sees the Pentagon down

21

00:00:52,610 --> 00:00:50,760

here it's very difficult to fly down a

22

00:00:54,680 --> 00:00:52,620

plane like this at this steep of an

23

00:00:57,049 --> 00:00:54,690

angle so there wasn't enough room for

24

00:00:58,729 --> 00:00:57,059

him to nose down and go straight into

25

00:01:02,139 --> 00:00:58,739

the Pentagon from here so what he did

26
00:01:06,020 --> 00:01:02,149
was a much more gradual quite shallow

27
00:01:08,000 --> 00:01:06,030
ordinary turn to the right and what he

28
00:01:10,130 --> 00:01:08,010
would have done is he would notice what

29
00:01:13,100 --> 00:01:10,140
his heading was here it's basically due

30
00:01:15,620 --> 00:01:13,110
east and he would have just started to

31
00:01:19,010 --> 00:01:15,630
turn and just kept at a constant rate

32
00:01:20,840 --> 00:01:19,020
turn knowing that when he's gone back

33
00:01:22,310 --> 00:01:20,850
around to facing east again he would

34
00:01:24,550 --> 00:01:22,320
have been more or less back where he

35
00:01:26,990 --> 00:01:24,560
started and he doesn't really change

36
00:01:29,090 --> 00:01:27,000
what he would have actually hit if you

37
00:01:31,550 --> 00:01:29,100
look at where on the Pentagon he would

38
00:01:34,819 --> 00:01:31,560

have hit from this position is hitting

39

00:01:37,130 --> 00:01:34,829

over here from down here it would hit

40

00:01:38,569 --> 00:01:37,140

yeah pretty much the same side doesn't

41

00:01:40,969 --> 00:01:38,579

really make any difference he ends up

42

00:01:42,889 --> 00:01:40,979

missing right here and you can see the

43

00:01:45,410 --> 00:01:42,899

memorial here where the flight path is

44

00:01:46,760 --> 00:01:45,420

indicated where it hits the Pentagon so

45

00:01:53,200 --> 00:01:46,770

what I'm going to try and do is

46

00:01:56,060 --> 00:01:53,210

duplicate this in X plane flying from

47

00:01:58,940 --> 00:01:56,070

back over here somewhere

48

00:02:00,530 --> 00:01:58,950

this position here where you can't

49

00:02:02,389 --> 00:02:00,540

actually really see anything so I'm just

50

00:02:04,700 --> 00:02:02,399

going to fly from here east at about

51
00:02:07,719 --> 00:02:04,710
this height then when I get there I'll

52
00:02:10,210 --> 00:02:07,729
make this turn and I will descend in and

53
00:02:13,000 --> 00:02:10,220
and hit the Pentagon in approximately

54
00:02:16,660 --> 00:02:13,010
the same manner that was done so let's

55
00:02:21,990 --> 00:02:16,670
see what happens all right

56
00:02:24,910 --> 00:02:22,000
Here I am flying east from that position

57
00:02:27,490 --> 00:02:24,920
and I'm just gonna basically try to

58
00:02:34,870 --> 00:02:27,500
maintain this altitude of around 8,000

59
00:02:36,850 --> 00:02:34,880
feet until I get a bit closer yeah I see

60
00:02:38,410 --> 00:02:36,860
a freeway over the right I think I'm

61
00:02:42,070 --> 00:02:38,420
gonna do is try to follow that for you I

62
00:02:44,470 --> 00:02:42,080
n I think that freeway is gonna go

63
00:02:46,390 --> 00:02:44,480

towards Washington which is what I was

64

00:02:51,880 --> 00:02:46,400

so I'm just gonna turn a little bit to

65

00:02:54,370 --> 00:02:51,890

the left here although the freeway in

66

00:02:57,220 --> 00:02:54,380

fact I can see some tall buildings just

67

00:02:59,740 --> 00:02:57,230

right in the center of the screen so

68

00:03:03,490 --> 00:02:59,750

narrow I'm going roughly in the right

69

00:03:06,910 --> 00:03:03,500

direction let's increase my speed a

70

00:03:09,309 --> 00:03:06,920

little crease the throttle which will

71

00:03:12,789 --> 00:03:09,319

help maintain my altitude don't want to

72

00:03:16,059 --> 00:03:12,799

get too fast if I get over around 350 it

73

00:03:17,620 --> 00:03:16,069

makes it difficult to make maneuvers I'm

74

00:03:23,400 --> 00:03:17,630

not flying in a perfectly straight line

75

00:03:31,660 --> 00:03:28,840

okay so I'm going towards these tall

76

00:03:42,590 --> 00:03:31,670

buildings not entirely sure where the

77

00:03:49,940 --> 00:03:44,680

you already can't see very much up here

78

00:03:51,170 --> 00:03:49,950

from this distance got nothing to stop

79

00:03:52,390 --> 00:03:51,180

you to have me some binoculars or

80

00:03:54,110 --> 00:03:52,400

something or looking ahead

81

00:03:56,630 --> 00:03:54,120

and of course there would be more than

82

00:04:00,380 --> 00:03:56,640

one person in the cabin which would be

83

00:04:02,870 --> 00:04:00,390

helpful I said I'm not sure about that

84

00:04:15,719 --> 00:04:02,880

hard to check that so anyway heading

85

00:04:22,510 --> 00:04:18,699

can we see the Pentagon I can't we see

86

00:04:32,429 --> 00:04:22,520

to any of the buildings Washington I

87

00:04:40,829 --> 00:04:36,899

oh I see the Pentagon I'm gonna turn

88

00:04:42,839 --> 00:04:40,839

towards the Pentagon alright so now what

89

00:04:45,379 --> 00:04:42,849

I'm gonna do is assume I am too high I'm

90

00:04:47,699 --> 00:04:45,389

gonna reduce the throttle down to zero

91

00:04:49,699 --> 00:04:47,709

see there's pentagon straight ahead

92

00:05:01,049 --> 00:04:49,709

there now what I'm going to do is do a

93

00:05:03,479 --> 00:05:01,059

fixed-rate turn of a two minute oops I

94

00:05:08,939 --> 00:05:03,489

get the turn indicator which is just

95

00:05:10,829 --> 00:05:08,949

above me here on the second pip said

96

00:05:14,519 --> 00:05:10,839

throttle to zero and I'm just going to

97

00:05:18,979 --> 00:05:14,529

turn until I'm facing east again so I'm

98

00:05:23,879 --> 00:05:18,989

turning around now let's say 140 degrees

99

00:05:26,989 --> 00:05:23,889

I'm descending throttles at zero so I'm

100

00:05:30,869 --> 00:05:26,999

just gonna be sinking through the air

101
00:05:35,459 --> 00:05:30,879
using my forward velocity and my height

102
00:05:37,109 --> 00:05:35,469
still maintain speed dropping down fifty

103
00:05:40,589 --> 00:05:37,119
three hundred feet just fifty two

104
00:05:42,389 --> 00:05:40,599
hundred feet and I try to keep my turn

105
00:05:45,839 --> 00:05:42,399
rate constant which means I will go in a

106
00:05:48,299 --> 00:05:45,849
circle it's not very hard you know I

107
00:05:51,869 --> 00:05:48,309
just turned the the yoke to the right

108
00:05:54,269 --> 00:05:51,879
and look at my turn right indicator make

109
00:06:00,049 --> 00:05:54,279
sure it's on the second mark there we

110
00:06:09,239 --> 00:06:06,899
and it's quite a slow procedure yeah the

111
00:06:10,619 --> 00:06:09,249
hijacker may well have to a little bit

112
00:06:14,309 --> 00:06:10,629
faster than this but I'm just gonna do

113
00:06:17,459 --> 00:06:14,319

this cuz this is what you would be

114

00:06:19,519 --> 00:06:17,469

trained to do you don't want to go too

115

00:06:21,149 --> 00:06:19,529

fast you don't want to mess things up

116

00:06:23,809 --> 00:06:21,159

it's not going to make much difference

117

00:06:28,299 --> 00:06:23,819

if you do a two minute turn or a

118

00:06:33,999 --> 00:06:30,609

you see I came around to the freeway cam

119

00:06:40,989 --> 00:06:34,009

240 degrees so it's kind of facing west

120

00:06:45,479 --> 00:06:40,999

now turning around towards the north at

121

00:06:47,409 --> 00:06:45,489

270 degrees yep turning a bit too fast

122

00:06:54,699 --> 00:06:47,419

don't want the wings to fall off the

123

00:06:57,999 --> 00:06:54,709

plane okay 220 degrees my problem when

124

00:06:58,989 --> 00:06:58,009

flying was always shaking everything

125

00:07:00,279 --> 00:06:58,999

he's supposed to check all the

126
00:07:01,749 --> 00:07:00,289
instruments and sequence to make sure

127
00:07:04,839 --> 00:07:01,759
everything's there so you know check the

128
00:07:06,399 --> 00:07:04,849
heading indicator the altitude the turn

129
00:07:13,179 --> 00:07:06,409
rate indicator the vertical speed

130
00:07:15,699 --> 00:07:13,189
indicator your your speed indicator all

131
00:07:17,789 --> 00:07:15,709
right I'm at now 330 degrees so coming

132
00:07:21,459 --> 00:07:17,799
around towards North so coming back

133
00:07:23,439 --> 00:07:21,469
around towards we shouldn't go fast

134
00:07:27,369 --> 00:07:23,449
enough otherwise I'll end up too far to

135
00:07:30,819 --> 00:07:27,379
the north can we rent facing north so

136
00:07:33,759 --> 00:07:30,829
soon I will be able to see the Pentagon

137
00:07:38,589 --> 00:07:33,769
again I'll get a visual light and you

138
00:07:39,969 --> 00:07:38,599

see I've dropped down and I think I can

139

00:07:43,419 --> 00:07:39,979

stick the notes down a bit here because

140

00:07:48,279 --> 00:07:43,429

I'm losing air speed another of my

141

00:07:54,040 --> 00:07:48,289

problems gonna fly try to get back to

142

00:07:59,410 --> 00:07:56,780

when you get into a thousand feet level

143

00:08:03,410 --> 00:07:59,420

that means you get pretty much you're

144

00:08:07,130 --> 00:08:03,420

close to the ground okay so coming back

145

00:08:13,540 --> 00:08:07,140

around to the east and we see all the

146

00:08:17,660 --> 00:08:13,550

buildings again you have to start

147

00:08:20,140 --> 00:08:17,670

remember where the Pentagon was just the

148

00:08:26,950 --> 00:08:20,150

end of this freeway so I'm gonna

149

00:08:31,850 --> 00:08:26,960

straighten out aim towards Pentagon

150

00:08:33,200 --> 00:08:31,860

getting some warnings now all right you

151
00:08:37,190 --> 00:08:33,210
can see the Washington Monument just

152
00:08:44,209 --> 00:08:37,200
there left to Center there and going to

153
00:08:50,780 --> 00:08:48,410
they want to drop too much speed just

154
00:08:52,850 --> 00:08:50,790
push the nose down goes increasing their

155
00:09:00,600 --> 00:08:52,860
speed tends to make the nose want to

156
00:09:06,059 --> 00:09:02,729
all right I'm very fast now so I need to

157
00:09:08,460 --> 00:09:06,069
avoid making any sudden movements I'm

158
00:09:11,989 --> 00:09:08,470
gonna I also want to get down low enough

159
00:09:15,869 --> 00:09:11,999
so I hit it getting an over speed

160
00:09:17,729 --> 00:09:15,879
indicator yeah apparently I have the

161
00:09:24,150 --> 00:09:17,739
landing gear down don't know how that

162
00:09:27,780 --> 00:09:24,160
happened I'm probably going to break the

163
00:09:36,359 --> 00:09:27,790

plane up if I keep this up okay going a

164

00:09:40,139 --> 00:09:36,369

little high and bam all right so let me

165

00:09:44,220 --> 00:09:40,149

juggle the recording mode and back out

166

00:09:46,919 --> 00:09:44,230

again see you know the problem with

167

00:09:51,389 --> 00:09:46,929

explain is it keeps the smoke which is

168

00:09:59,129 --> 00:09:51,399

very annoying let me do a different view

169

00:10:06,150 --> 00:09:59,139

here and play this so full speed back

170

00:10:11,309 --> 00:10:06,160

hello let's back out a bit and then fly

171

00:10:14,789 --> 00:10:11,319

back in again the smoke should have

172

00:10:17,069 --> 00:10:14,799

cleared you can see this smoking here

173

00:10:18,929 --> 00:10:17,079

because the engine has exceeded its

174

00:10:21,960 --> 00:10:18,939

structural limits so actually showing

175

00:10:23,340 --> 00:10:21,970

this some damage because I'm flying in a

176

00:10:36,350 --> 00:10:23,350

straight line I didn't actually lose

177

00:10:43,679 --> 00:10:40,049

not actually that hard coming in at a

178

00:10:46,169 --> 00:10:43,689

steeper angle here but it wouldn't be

179

00:10:50,460 --> 00:10:46,179

that hard to come in until a less steep

180

00:10:55,139 --> 00:10:50,470

angle shift to anterior view here I was

181

00:10:57,539 --> 00:10:55,149

going at 413 knots which isn't too far

182

00:11:00,049 --> 00:10:57,549

off what the actual plane was doing I

183

00:11:02,069 --> 00:11:00,059

think it was four hundred and something

184

00:11:04,619 --> 00:11:02,079

finally something we can do is have a

185

00:11:07,350 --> 00:11:04,629

look at the map of the route which was

186

00:11:09,689 --> 00:11:07,360

recorded in explain and here's the

187

00:11:11,669 --> 00:11:09,699

Potomac here here is my flight in and

188

00:11:13,199 --> 00:11:11,679

here is the turn I made you can see I

189

00:11:13,510 --> 00:11:13,209

did a little bit of a tighter turn it

190

00:11:15,160 --> 00:11:13,520

was

191

00:11:18,940 --> 00:11:15,170

a perfect circle but it's more or less

192

00:11:22,120 --> 00:11:18,950

the same scale as the actual flight 77

193

00:11:24,280 --> 00:11:22,130

turning path and the result was more or

194

00:11:26,410 --> 00:11:24,290

less the same so here's the actual

195

00:11:29,560 --> 00:11:26,420

flight path in Google Earth and here's

196

00:11:30,880 --> 00:11:29,570

my flight path overlay to scale you can

197

00:11:33,010 --> 00:11:30,890

see the more or less the same type of