
The NACA Centenary
A Symposium on 100 Years of Aerospace Research and Development

1
00:00:06,309 --> 00:00:03,030
well good morning and welcome back to

2
00:00:08,310 --> 00:00:06,319
our first panel session at the naca uh

3
00:00:09,110 --> 00:00:08,320
centennial symposium

4
00:00:11,030 --> 00:00:09,120
um

5
00:00:13,190 --> 00:00:11,040
after that great start which not only

6
00:00:15,669 --> 00:00:13,200
got us ahead of schedule slightly but uh

7
00:00:17,990 --> 00:00:15,679
also it gave us a great introduction to

8
00:00:19,269 --> 00:00:18,000
the nac model of research

9
00:00:21,029 --> 00:00:19,279
we're actually going to take a step

10
00:00:22,790 --> 00:00:21,039
backward for the next hour and a half

11
00:00:25,109 --> 00:00:22,800
for the rest of the morning here and

12
00:00:27,269 --> 00:00:25,119
look at setting the stage

13
00:00:29,109 --> 00:00:27,279

the time before the naca happened and

14
00:00:31,910 --> 00:00:29,119
things that fed into the development of

15
00:00:33,990 --> 00:00:31,920
the naca and how it came about we've got

16
00:00:35,830 --> 00:00:34,000
three really interesting papers today by

17
00:00:37,190 --> 00:00:35,840
three great researchers

18
00:00:39,670 --> 00:00:37,200
and

19
00:00:40,869 --> 00:00:39,680
we'll start with simmons short

20
00:00:42,630 --> 00:00:40,879
simmon actually has an engineering

21
00:00:44,150 --> 00:00:42,640
background before she became an aviation

22
00:00:45,430 --> 00:00:44,160
researcher and historian so she knows of

23
00:00:46,869 --> 00:00:45,440
what she speaks when she talks about

24
00:00:49,510 --> 00:00:46,879
engineering

25
00:00:50,389 --> 00:00:49,520
she's also the co-editor of bungee cord

26
00:00:52,150 --> 00:00:50,399
which

27
00:00:55,270 --> 00:00:52,160
is the vintage sailplane association

28
00:00:57,029 --> 00:00:55,280
magazine which i actually have read so

29
00:00:58,470 --> 00:00:57,039
it's a small circulation magazine but

30
00:00:59,750 --> 00:00:58,480
well worth reading if you're interested

31
00:01:01,910 --> 00:00:59,760
in sail planes

32
00:01:04,229 --> 00:01:01,920
uh and uh her latest book is called

33
00:01:06,469 --> 00:01:04,239
locomotive to aeromotive octave chinoot

34
00:01:08,310 --> 00:01:06,479
and the transportation revolution uh

35
00:01:09,270 --> 00:01:08,320
octave chinook's a specialty version

36
00:01:10,950 --> 00:01:09,280
that's what she's going to be talking

37
00:01:12,870 --> 00:01:10,960
about for us this morning

38
00:01:15,350 --> 00:01:12,880

flight not improbable octave chanute

39
00:01:23,270 --> 00:01:15,360
tackles aeronautics as a civil engineer

40
00:01:23,280 --> 00:01:28,230
do i move forward

41
00:01:32,630 --> 00:01:31,030
i'm reasonably reasonably sure that i do

42
00:01:35,030 --> 00:01:32,640
not have to

43
00:01:37,270 --> 00:01:35,040
explain the name of the person that i'm

44
00:01:38,950 --> 00:01:37,280
going to be talking about but i am

45
00:01:41,830 --> 00:01:38,960
hoping that i will bring you a few

46
00:01:45,429 --> 00:01:41,840
things that you may not know

47
00:01:47,510 --> 00:01:45,439
you all know the united states capital

48
00:01:49,990 --> 00:01:47,520
are you aware of the fact that there's a

49
00:01:53,109 --> 00:01:50,000
freeze around the top

50
00:01:56,069 --> 00:01:53,119
that shows the painting of

51
00:01:59,109 --> 00:01:56,079
what made who may all help make the

52
00:02:01,109 --> 00:01:59,119
united states what it is

53
00:02:04,230 --> 00:02:01,119
and the last picture on the freeze is

54
00:02:07,190 --> 00:02:04,240
the develop the birth of aviation

55
00:02:09,669 --> 00:02:07,200
and i don't have a pointer but

56
00:02:14,070 --> 00:02:09,679
it's just da vinci on the left-hand side

57
00:02:16,070 --> 00:02:14,080
langley and sanut and wilbur and orwell

58
00:02:17,670 --> 00:02:16,080
and i wondered what made him such a

59
00:02:22,229 --> 00:02:17,680
pivotal person in the quest for

60
00:02:24,470 --> 00:02:23,670
okay machine

61
00:02:26,470 --> 00:02:24,480
okay

62
00:02:29,030 --> 00:02:26,480
after chanut finished high school he had

63
00:02:30,229 --> 00:02:29,040

to be deciding what he wanted to do with

64
00:02:32,470 --> 00:02:30,239
his future

65
00:02:33,509 --> 00:02:32,480
he had two choices help dig the area

66
00:02:37,350 --> 00:02:33,519
canal

67
00:02:39,270 --> 00:02:37,360
or help build railroads and he decided

68
00:02:41,670 --> 00:02:39,280
building railroads is probably more a

69
00:02:44,630 --> 00:02:41,680
gentleman job than digging in the mud in

70
00:02:46,790 --> 00:02:44,640
the railroad in the airy canal

71
00:02:49,110 --> 00:02:46,800
but at that time of course nobody knew

72
00:02:53,190 --> 00:02:49,120
which was the choice

73
00:02:57,270 --> 00:02:53,200
of progress in the united states

74
00:03:00,229 --> 00:02:57,280
in 1853 chanute came to illinois with a

75
00:03:01,030 --> 00:03:00,239
strong hope that he would make himself a

76
00:03:06,229 --> 00:03:01,040
name

77
00:03:11,110 --> 00:03:08,229
he helped lay out the road between

78
00:03:14,470 --> 00:03:11,120
chicago and between joliet and lake

79
00:03:18,070 --> 00:03:14,480
station and the purpose was to avoid

80
00:03:21,270 --> 00:03:18,080
paying taxes to the city of chicago

81
00:03:24,070 --> 00:03:21,280
the next job was a chicago alton

82
00:03:26,229 --> 00:03:24,080
and then what made him now as a real

83
00:03:29,270 --> 00:03:26,239
civil engineer he became the chief

84
00:03:32,390 --> 00:03:29,280
engineer of the peoria and aquaculture

85
00:03:37,270 --> 00:03:32,400
going from peru to the indiana state

86
00:03:40,630 --> 00:03:39,350
boston and west had heard

87
00:03:43,990 --> 00:03:40,640
about

88
00:03:46,229 --> 00:03:44,000

cenut and how he did the

89
00:03:49,190 --> 00:03:46,239
union will and

90
00:03:52,070 --> 00:03:49,200
the stockyard in chicago they hired him

91
00:03:55,830 --> 00:03:52,080
for five thousand dollars to build

92
00:03:59,110 --> 00:03:55,840
a railroad across the united states that

93
00:04:01,509 --> 00:03:59,120
would not require transferring the train

94
00:04:03,990 --> 00:04:01,519
and ferry it over the missouri

95
00:04:05,910 --> 00:04:04,000
they wanted a bridge

96
00:04:09,270 --> 00:04:05,920
that's the bridge in kansas city and

97
00:04:12,309 --> 00:04:09,280
i've always found it kind of interesting

98
00:04:15,589 --> 00:04:12,319
when people in the 1860s and 1870s

99
00:04:18,870 --> 00:04:15,599
talked about progress they put in lots

100
00:04:21,189 --> 00:04:18,880
of smoke and black steam and whatever

101
00:04:24,070 --> 00:04:21,199
was needed to show that

102
00:04:26,150 --> 00:04:24,080
this is progress

103
00:04:28,710 --> 00:04:26,160
but this bridge was the very first one

104
00:04:30,950 --> 00:04:28,720
and basically opened up the road to the

105
00:04:32,870 --> 00:04:30,960
west

106
00:04:34,150 --> 00:04:32,880
and that's the bridge and the three

107
00:04:35,909 --> 00:04:34,160
engineers

108
00:04:38,790 --> 00:04:35,919
and i always thought it was kind of

109
00:04:41,270 --> 00:04:38,800
interesting that the lawrence kansas

110
00:04:44,070 --> 00:04:41,280
paper called it all things considered

111
00:04:51,270 --> 00:04:44,080
this bridge is the most splendid triumph

112
00:04:57,270 --> 00:04:54,469
the various forces of nature always

113
00:04:59,590 --> 00:04:57,280

challenged engineers civil engineers

114
00:05:01,590 --> 00:04:59,600
and the kinzu bridge in pennsylvania was

115
00:05:04,070 --> 00:05:01,600
just such a bridge

116
00:05:06,550 --> 00:05:04,080
that was a little bit

117
00:05:09,029 --> 00:05:06,560
trying to tackle all the problems that a

118
00:05:09,830 --> 00:05:09,039
civil engineer had to handle when

119
00:05:13,110 --> 00:05:09,840
they're

120
00:05:16,390 --> 00:05:13,120
dabbling with mother nature

121
00:05:19,590 --> 00:05:16,400
the bridge was built in three months

122
00:05:21,749 --> 00:05:19,600
it was 301 feet high

123
00:05:24,790 --> 00:05:21,759
and 2 000 feet long

124
00:05:26,150 --> 00:05:24,800
and was for a decade the longest and the

125
00:05:27,909 --> 00:05:26,160
highest bridge

126
00:05:30,070 --> 00:05:27,919
in the whole world

127
00:05:31,350 --> 00:05:30,080
the bridge collapsed about a decade

128
00:05:32,629 --> 00:05:31,360
earlier

129
00:05:34,629 --> 00:05:32,639
from today

130
00:05:37,749 --> 00:05:34,639
and it was the

131
00:05:39,909 --> 00:05:37,759
cups that held the foundation to the

132
00:05:43,990 --> 00:05:39,919
to the concrete blocks that chanutz

133
00:05:48,710 --> 00:05:46,870
chinoot's philosophy was rather simple

134
00:05:50,870 --> 00:05:48,720
the busy men who are developing this

135
00:05:53,510 --> 00:05:50,880
country have to keep up with new

136
00:05:55,430 --> 00:05:53,520
discoveries and progress

137
00:05:57,830 --> 00:05:55,440
and the engineers also owed to

138
00:06:00,469 --> 00:05:57,840

themselves to acquaint others with

139
00:06:02,950 --> 00:06:00,479
whatever new facts they have acquired

140
00:06:09,189 --> 00:06:02,960
outside of the routine profession

141
00:06:15,029 --> 00:06:11,749
shannon became interested in

142
00:06:16,870 --> 00:06:15,039
aviation but it was kind of a tacky

143
00:06:18,710 --> 00:06:16,880
situation because

144
00:06:20,870 --> 00:06:18,720
most people thought people that are

145
00:06:22,309 --> 00:06:20,880
interested in aviation and flying are a

146
00:06:24,309 --> 00:06:22,319
little crazy

147
00:06:26,390 --> 00:06:24,319
therefore he decided to become the us

148
00:06:28,230 --> 00:06:26,400
delegate in paris

149
00:06:30,710 --> 00:06:28,240
because he was sure that none of the

150
00:06:32,870 --> 00:06:30,720
neighbors would find out about it and

151
00:06:34,390 --> 00:06:32,880
nobody would point fingers at his family

152
00:06:36,469 --> 00:06:34,400
in the grocery store

153
00:06:39,270 --> 00:06:36,479
and at that meeting he also met gustav

154
00:06:42,150 --> 00:06:39,280
aiple and had started the good working

155
00:06:47,029 --> 00:06:44,550
a friend of chanute was matthias fawning

156
00:06:49,350 --> 00:06:47,039
he bought the american railroad journal

157
00:06:51,350 --> 00:06:49,360
and he wanted to expand his leadership

158
00:06:55,589 --> 00:06:51,360
he suggested to chanute to write

159
00:06:58,309 --> 00:06:55,599
articles about the progress of aviation

160
00:07:00,950 --> 00:06:58,319
the 27 articles were then published as a

161
00:07:03,110 --> 00:07:00,960
book form in book format

162
00:07:06,230 --> 00:07:03,120
and there's no question about it it

163
00:07:08,230 --> 00:07:06,240

became the must read to anybody who was

164
00:07:11,189 --> 00:07:08,240
interested in aviation

165
00:07:14,150 --> 00:07:11,199
and in this book chanut also formalized

166
00:07:16,469 --> 00:07:14,160
the words aeroplane lift drag

167
00:07:18,710 --> 00:07:16,479
and aeronautical engineer

168
00:07:20,230 --> 00:07:18,720
and we all use these words all the time

169
00:07:22,469 --> 00:07:20,240
now

170
00:07:25,270 --> 00:07:22,479
the conference on aerial navigation in

171
00:07:27,589 --> 00:07:25,280
chicago in 1893

172
00:07:29,749 --> 00:07:27,599
was definitely a groundbreaking

173
00:07:31,909 --> 00:07:29,759
conference

174
00:07:33,270 --> 00:07:31,919
and the discussion that followed each of

175
00:07:34,230 --> 00:07:33,280
the papers

176
00:07:37,830 --> 00:07:34,240
was

177
00:07:40,150 --> 00:07:37,840
very exciting and brought out new people

178
00:07:42,710 --> 00:07:40,160
and new topics

179
00:07:45,110 --> 00:07:42,720
and what was important is that chanute

180
00:07:47,670 --> 00:07:45,120
was working with a team of western

181
00:07:50,390 --> 00:07:47,680
society of civil engineers

182
00:07:51,589 --> 00:07:50,400
and approved each paper

183
00:07:53,350 --> 00:07:51,599
if it was

184
00:07:55,670 --> 00:07:53,360
a good paper or if it would have been

185
00:07:57,990 --> 00:07:55,680
better off not to be included because

186
00:08:01,110 --> 00:07:58,000
they were concerned about being called

187
00:08:06,390 --> 00:08:03,670
and that conference chanut also

188
00:08:07,670 --> 00:08:06,400

determined or made it known that

189
00:08:09,110 --> 00:08:07,680
aviation

190
00:08:12,230 --> 00:08:09,120
is actually

191
00:08:14,070 --> 00:08:12,240
ten different problems that have to be

192
00:08:16,150 --> 00:08:14,080
combined into one

193
00:08:18,309 --> 00:08:16,160
which is good for a civil engineer

194
00:08:19,430 --> 00:08:18,319
because a civil engineer ought to be

195
00:08:22,390 --> 00:08:19,440
able to

196
00:08:23,990 --> 00:08:22,400
use his common sense on top of his

197
00:08:25,749 --> 00:08:24,000
knowledge

198
00:08:28,469 --> 00:08:25,759
and these are the ten

199
00:08:33,190 --> 00:08:28,479
solutions that he assumed were an

200
00:08:35,430 --> 00:08:33,200
absolutely necessity to be figuring out

201
00:08:37,430 --> 00:08:35,440
and the maintenance of the equilibrium

202
00:08:38,630 --> 00:08:37,440
number seven he thought was the most

203
00:08:40,790 --> 00:08:38,640
important

204
00:08:46,949 --> 00:08:40,800
and i thought it was kind of cute that

205
00:08:51,350 --> 00:08:48,790
not really knowing what makes an

206
00:08:53,910 --> 00:08:51,360
airplane fly or if it flies and how it

207
00:08:57,430 --> 00:08:53,920
flies he was watching the seagulls and

208
00:09:00,070 --> 00:08:57,440
admired how they were turning and flight

209
00:09:02,630 --> 00:09:00,080
as a civil engineer he assumed it would

210
00:09:03,750 --> 00:09:02,640
be the same as a railroad on a on a

211
00:09:05,829 --> 00:09:03,760
curve

212
00:09:08,949 --> 00:09:05,839
and therefore he thought that one way or

213
00:09:11,030 --> 00:09:08,959

another the new airplane should be

214
00:09:13,590 --> 00:09:11,040
handled that the

215
00:09:18,070 --> 00:09:13,600
wings should be lower on one side and

216
00:09:20,150 --> 00:09:18,080
maybe a break or something like that

217
00:09:22,710 --> 00:09:20,160
the newt began corresponding with

218
00:09:25,350 --> 00:09:22,720
mollyart in 1890

219
00:09:27,430 --> 00:09:25,360
and too late two years later they

220
00:09:28,790 --> 00:09:27,440
applied for patent

221
00:09:32,070 --> 00:09:28,800
including

222
00:09:34,389 --> 00:09:32,080
how to turn the flying machine around

223
00:09:36,630 --> 00:09:34,399
like applying a break to one wing and

224
00:09:39,990 --> 00:09:36,640
going around the curve

225
00:09:44,070 --> 00:09:42,389
aerial navigation was simply an

226
00:09:46,790 --> 00:09:44,080
engineering problem

227
00:09:49,990 --> 00:09:46,800
and for sunu to reach his personal goal

228
00:09:52,310 --> 00:09:50,000
he had to experiment with flying machine

229
00:09:54,389 --> 00:09:52,320
but how do you do that

230
00:09:56,870 --> 00:09:54,399
he came up with three different wing

231
00:09:59,030 --> 00:09:56,880
shapes and asked augustus hearing to

232
00:10:01,750 --> 00:09:59,040
build them and then test them

233
00:10:03,990 --> 00:10:01,760
and he suggested to use a bicycle and

234
00:10:05,030 --> 00:10:04,000
then take a straight road and

235
00:10:12,069 --> 00:10:05,040
to

236
00:10:15,829 --> 00:10:12,079
but he chanut also read about uttar lil

237
00:10:16,630 --> 00:10:15,839
natal and had this particular pamphlet

238
00:10:19,670 --> 00:10:16,640

which

239
00:10:21,910 --> 00:10:19,680
showed how a flying machine ought to be

240
00:10:25,910 --> 00:10:21,920
built

241
00:10:28,470 --> 00:10:25,920
the newt learned from this gentleman

242
00:10:30,230 --> 00:10:28,480
and put down the points that he thought

243
00:10:32,150 --> 00:10:30,240
he learned

244
00:10:33,829 --> 00:10:32,160
and this piece of paper is in the

245
00:10:35,910 --> 00:10:33,839
library of congress and if you look at

246
00:10:39,030 --> 00:10:35,920
the very bottom one

247
00:10:41,110 --> 00:10:39,040
he says there's no mystery about flight

248
00:10:43,350 --> 00:10:41,120
and then see the footnote about the

249
00:10:45,990 --> 00:10:43,360
goose i have no idea what he means with

250
00:10:49,590 --> 00:10:46,000
that but i thought it's kind of cute

251
00:10:51,990 --> 00:10:49,600
after all he was just a human being

252
00:10:55,750 --> 00:10:52,000
the dunes along the southern shore of

253
00:10:58,550 --> 00:10:55,760
lake michigan seemed perfect and remote

254
00:11:01,750 --> 00:10:58,560
for experimenting with colitis

255
00:11:02,949 --> 00:11:01,760
and he came in the june to to fly at

256
00:11:05,430 --> 00:11:02,959
millers

257
00:11:07,670 --> 00:11:05,440
and then in august september in dune

258
00:11:09,670 --> 00:11:07,680
park a little bit further up

259
00:11:11,350 --> 00:11:09,680
for the up north that's what the dune

260
00:11:14,710 --> 00:11:11,360
country looked like

261
00:11:16,150 --> 00:11:14,720
in 1896 the dunes are about a hundred

262
00:11:19,910 --> 00:11:16,160
feet high

263
00:11:23,269 --> 00:11:19,920

and hardly any civilization

264
00:11:26,230 --> 00:11:23,279
herein's leeland type glider was flown

265
00:11:27,590 --> 00:11:26,240
forth but proved rather cranky

266
00:11:31,829 --> 00:11:27,600
and it broke

267
00:11:37,829 --> 00:11:35,030
body shifting just was too dangerous

268
00:11:40,790 --> 00:11:37,839
and chanut wrote in a in his lecture to

269
00:11:43,190 --> 00:11:40,800
sibley at sibley that the machines have

270
00:11:45,590 --> 00:11:43,200
always come to grief for lack of stable

271
00:11:47,269 --> 00:11:45,600
aquapois which the world can do all the

272
00:11:49,430 --> 00:11:47,279
time

273
00:11:51,590 --> 00:11:49,440
simply without assured equilibrium

274
00:11:54,150 --> 00:11:51,600
safety is uncertain and without a

275
00:11:56,310 --> 00:11:54,160
reasonable degree of safety flight

276
00:11:59,590 --> 00:11:56,320
whether for pleasure or business is out

277
00:12:03,670 --> 00:12:01,590
chanut incorporated his knowledge and

278
00:12:05,269 --> 00:12:03,680
bridge building and the research that he

279
00:12:06,389 --> 00:12:05,279
did for the book progress and flying

280
00:12:07,590 --> 00:12:06,399
machine

281
00:12:10,230 --> 00:12:07,600
and used

282
00:12:11,829 --> 00:12:10,240
francis oneham's glider as a starting

283
00:12:13,750 --> 00:12:11,839
point

284
00:12:16,150 --> 00:12:13,760
what is interesting is you to see the

285
00:12:19,269 --> 00:12:16,160
picture on the right on the left hand

286
00:12:22,389 --> 00:12:19,279
side chanut sent that to wenham

287
00:12:25,269 --> 00:12:22,399
and basically asked for his approval

288
00:12:27,110 --> 00:12:25,279

always working with other people and

289
00:12:29,910 --> 00:12:27,120
just you can't just do everything by

290
00:12:34,550 --> 00:12:33,350
in the next half a few months

291
00:12:37,430 --> 00:12:34,560
chanut

292
00:12:39,990 --> 00:12:37,440
altered the glider architecture in the

293
00:12:41,910 --> 00:12:40,000
step-by-step process to ascertain the

294
00:12:44,310 --> 00:12:41,920
most efficient grouping

295
00:12:47,590 --> 00:12:44,320
of the wings to achieve maximum lift and

296
00:12:51,910 --> 00:12:49,190
because many of the pictures are a

297
00:12:53,990 --> 00:12:51,920
little bit odd at least for if you don't

298
00:12:56,230 --> 00:12:54,000
really know what you're looking for a

299
00:12:58,230 --> 00:12:56,240
friend of mine made a drawing and now i

300
00:12:59,910 --> 00:12:58,240
could recognize what he was actually

301
00:13:01,350 --> 00:12:59,920
supposed to be showing

302
00:13:03,590 --> 00:13:01,360
you see six

303
00:13:06,069 --> 00:13:03,600
three sets of two wings

304
00:13:08,949 --> 00:13:06,079
and he played with a position of these

305
00:13:13,350 --> 00:13:11,829
and not having a wind tunnel as people

306
00:13:15,910 --> 00:13:13,360
had a little later

307
00:13:18,550 --> 00:13:15,920
he used feather nouns and put them in

308
00:13:21,190 --> 00:13:18,560
front of the leading edge and see

309
00:13:24,389 --> 00:13:21,200
what the feather downs what how they

310
00:13:30,790 --> 00:13:24,399
were flowing over the the wing and

311
00:13:35,190 --> 00:13:32,790
he started out with four wings in the

312
00:13:37,350 --> 00:13:35,200
front and eight behind

313
00:13:39,110 --> 00:13:37,360

and found this really easier to handle

314
00:13:43,750 --> 00:13:39,120
than the lily tie

315
00:13:48,870 --> 00:13:45,829
and then he took the upper back wings

316
00:13:50,389 --> 00:13:48,880
off and moved to the front and called it

317
00:13:52,550 --> 00:13:50,399
the katy did

318
00:13:54,790 --> 00:13:52,560
and you can see the five sets of wings

319
00:13:55,829 --> 00:13:54,800
now in the front and the tail and the

320
00:13:58,389 --> 00:13:55,839
back

321
00:14:00,230 --> 00:13:58,399
and the beauty of the katy did was and i

322
00:14:02,629 --> 00:14:00,240
don't know exactly if this was

323
00:14:05,030 --> 00:14:02,639
intentional or not on chanute all the

324
00:14:07,430 --> 00:14:05,040
wing surfaces were the same size

325
00:14:13,189 --> 00:14:07,440
therefore you had a good solid

326
00:14:13,199 --> 00:14:18,790
and here's another picture of the did

327
00:14:23,590 --> 00:14:20,230
and the

328
00:14:26,470 --> 00:14:23,600
the best one was by william airway of 78

329
00:14:27,509 --> 00:14:26,480
feet and by herring by 82 and a half

330
00:14:29,269 --> 00:14:27,519
feet

331
00:14:30,870 --> 00:14:29,279
and then they packed up they achieved

332
00:14:33,829 --> 00:14:30,880
what they wanted to achieve and went

333
00:14:35,750 --> 00:14:33,839
back to chicago

334
00:14:38,710 --> 00:14:35,760
a month and a half later

335
00:14:41,350 --> 00:14:38,720
shannon's team went to dune park which

336
00:14:44,710 --> 00:14:41,360
is just a little bit further to the east

337
00:14:45,829 --> 00:14:44,720
a little bit more remote the the dunes

338
00:14:47,110 --> 00:14:45,839

are higher

339
00:14:48,790 --> 00:14:47,120
and also

340
00:14:50,389 --> 00:14:48,800
because they are

341
00:14:52,310 --> 00:14:50,399
like pup shaped

342
00:14:55,430 --> 00:14:52,320
you can catch the north wind a little

343
00:15:01,269 --> 00:14:59,590
the next this machine was a triplane

344
00:15:04,790 --> 00:15:01,279
and there's some of the

345
00:15:06,470 --> 00:15:04,800
engineering numbers that were available

346
00:15:08,069 --> 00:15:06,480
at the library of congress in the

347
00:15:10,150 --> 00:15:08,079
chanute papers

348
00:15:12,949 --> 00:15:10,160
but the bottom ring always got caught in

349
00:15:14,870 --> 00:15:12,959
the sand and therefore it was removed

350
00:15:18,310 --> 00:15:14,880
and then it became

351
00:15:22,629 --> 00:15:20,150
this is probably a little long to read

352
00:15:27,910 --> 00:15:22,639
but it's basically that the sport of

353
00:15:30,710 --> 00:15:27,920
soaring begins in september of 1896.

354
00:15:33,030 --> 00:15:30,720
the reporter from the chicago tribune

355
00:15:35,590 --> 00:15:33,040
wrote one wholly new freak of the air

356
00:15:38,389 --> 00:15:35,600
was experienced by mr herring when his

357
00:15:40,310 --> 00:15:38,399
machine rose was a sudden gust 40 feet

358
00:15:43,030 --> 00:15:40,320
higher than the starting point then

359
00:15:45,590 --> 00:15:43,040
coming to a sudden poise balancing like

360
00:15:47,829 --> 00:15:45,600
a bird swooping at a right angle

361
00:15:50,150 --> 00:15:47,839
traveling a long journey and delighted

362
00:15:54,230 --> 00:15:50,160
grace fully upon the health side

363
00:15:55,430 --> 00:15:54,240

the long journey was about 250 feet

364
00:15:57,110 --> 00:15:55,440
but

365
00:16:00,310 --> 00:15:57,120
just we should mention that that

366
00:16:03,350 --> 00:16:00,320
reporter was allowed to do

367
00:16:05,749 --> 00:16:03,360
his own flight the next day

368
00:16:07,749 --> 00:16:05,759
and so were two other reporters

369
00:16:09,749 --> 00:16:07,759
it was not like he wanted to keep it all

370
00:16:11,590 --> 00:16:09,759
to himself

371
00:16:13,269 --> 00:16:11,600
because most people don't really know

372
00:16:15,110 --> 00:16:13,279
exactly

373
00:16:17,749 --> 00:16:15,120
how many flights were there and there's

374
00:16:19,990 --> 00:16:17,759
no correct number

375
00:16:23,829 --> 00:16:20,000
i'm making the assumption of how many

376
00:16:27,110 --> 00:16:23,839
jumps and flights cheneux did

377
00:16:30,389 --> 00:16:27,120
and chanut clearly differentiates

378
00:16:33,030 --> 00:16:30,399
between a jump and a glide and a flight

379
00:16:37,749 --> 00:16:33,040
but it's about 330 flights were made in

380
00:16:39,509 --> 00:16:37,759
1896 by a variety of people over of

381
00:16:42,629 --> 00:16:39,519
various distances

382
00:16:44,509 --> 00:16:42,639
and the longest flight was by every

383
00:16:48,389 --> 00:16:44,519
oh it's cutting out some of the button

384
00:16:53,430 --> 00:16:48,399
256 flight was everybody watching

385
00:16:56,150 --> 00:16:53,440
and by hearing was almost 360 feet but

386
00:16:58,710 --> 00:16:56,160
in hearing standard fashion nobody was

387
00:17:05,990 --> 00:17:00,870
just to show you that chanute was an

388
00:17:10,549 --> 00:17:08,390

the primitive biplane of chanute

389
00:17:13,110 --> 00:17:10,559
provided better stability and control

390
00:17:16,789 --> 00:17:13,120
than any of its predecessor and it

391
00:17:23,029 --> 00:17:20,390
the leading glider design to start with

392
00:17:26,150 --> 00:17:23,039
and of course people asked

393
00:17:30,710 --> 00:17:26,160
it was weighing 23 pounds only

394
00:17:32,470 --> 00:17:30,720
and had a wingspan of 16 16 feet

395
00:17:35,029 --> 00:17:32,480
some people were wondering could the

396
00:17:37,990 --> 00:17:35,039
chinook glider actually saw

397
00:17:39,430 --> 00:17:38,000
because how else could you fly for 300

398
00:17:40,310 --> 00:17:39,440
some feet

399
00:17:42,789 --> 00:17:40,320
and

400
00:17:46,710 --> 00:17:42,799
l bowers from nasa dryden did the

401
00:17:50,230 --> 00:17:46,720
calculation comparing the 1896 chanute

402
00:17:52,710 --> 00:17:50,240
glider was a 1902 white glider which was

403
00:17:55,270 --> 00:17:52,720
almost the same performance and compared

404
00:18:00,390 --> 00:17:55,280
it with a rogallo and a quicksilver

405
00:18:02,630 --> 00:18:00,400
the hang gliders of choice in the 1970s

406
00:18:04,630 --> 00:18:02,640
so lutz omitted the biplane design for

407
00:18:06,789 --> 00:18:04,640
patent in england together was a

408
00:18:08,310 --> 00:18:06,799
motorized tripline that tearing wanted

409
00:18:11,110 --> 00:18:08,320
patented

410
00:18:13,270 --> 00:18:11,120
and yes chanut believed firmly in

411
00:18:15,669 --> 00:18:13,280
patenting his ideas

412
00:18:18,070 --> 00:18:15,679
because he knew that this was the only

413
00:18:19,830 --> 00:18:18,080

way to make it known throughout the

414
00:18:22,630 --> 00:18:19,840
world because they didn't have an

415
00:18:24,630 --> 00:18:22,640
internet to do what was being done now

416
00:18:27,510 --> 00:18:24,640
and how else would other people know

417
00:18:29,750 --> 00:18:27,520
about it because everybody received the

418
00:18:34,390 --> 00:18:29,760
information from the patent officers

419
00:18:38,310 --> 00:18:36,150
i thought this statement was kind of

420
00:18:40,789 --> 00:18:38,320
nice it is a prospect of a flying

421
00:18:43,029 --> 00:18:40,799
machine that makes flying worthwhile to

422
00:18:45,590 --> 00:18:43,039
search after it is the effortless

423
00:18:47,430 --> 00:18:45,600
soaring of the conda not the fussy

424
00:18:49,750 --> 00:18:47,440
flapping of the sparrow that must be

425
00:18:52,310 --> 00:18:49,760
taken as a model

426
00:18:54,230 --> 00:18:52,320
and in the next decade chanute freely

427
00:18:56,390 --> 00:18:54,240
shared this knowledge in hopes that

428
00:18:58,950 --> 00:18:56,400
someone just anyone

429
00:19:03,029 --> 00:18:58,960
would find the solution to the problem

430
00:19:06,390 --> 00:19:05,029
in the next decade

431
00:19:08,710 --> 00:19:06,400
his design

432
00:19:13,270 --> 00:19:08,720
provided many pilots was a safe starting

433
00:19:18,230 --> 00:19:16,070
the 1897 glider the fireball glider the

434
00:19:19,510 --> 00:19:18,240
archdeacon glider

435
00:19:21,590 --> 00:19:19,520
the white

436
00:19:25,350 --> 00:19:21,600
flyer of 1904

437
00:19:30,630 --> 00:19:25,360
the aea red wing the kodi airplane and

438
00:19:30,640 --> 00:19:34,230

and in closing

439
00:19:38,950 --> 00:19:37,029
sunud was always of the dead of progress

440
00:19:41,350 --> 00:19:38,960
he was one of those whom duties and

441
00:19:44,310 --> 00:19:41,360
fought to the fore were unaided and

442
00:19:46,390 --> 00:19:44,320
lonesome they mocked their landmarks and

443
00:19:49,590 --> 00:19:46,400
begging their fellows to follow

444
00:19:51,190 --> 00:19:49,600
and when the world comes up then and not

445
00:19:53,909 --> 00:19:51,200
until then

446
00:19:56,390 --> 00:19:53,919
their landmarks seem to be true and the

447
00:19:59,029 --> 00:19:56,400
labor found to be worthwhile

448
00:20:00,549 --> 00:19:59,039
always it has been a devoted few who

449
00:20:03,350 --> 00:20:00,559
fought the heart

450
00:20:07,029 --> 00:20:03,360
fight of progress one of these few was

451
00:20:09,270 --> 00:20:07,039
shinood he belonged to the true nobility

452
00:20:11,029 --> 00:20:09,280
of brains

453
00:20:13,029 --> 00:20:11,039
and in closing i'd like to show you the

454
00:20:17,190 --> 00:20:13,039
plug that the western society of

455
00:20:19,669 --> 00:20:17,200
engineer erected in 1936 in the area

456
00:20:20,630 --> 00:20:19,679
where the fourth glider flights took

457
00:20:22,950 --> 00:20:20,640
place

458
00:20:24,630 --> 00:20:22,960
and just called it to shannoud an

459
00:20:26,470 --> 00:20:24,640
eminent engineer

460
00:20:29,750 --> 00:20:26,480
father of aviation

461
00:20:32,310 --> 00:20:29,760
made the first successful

462
00:20:35,110 --> 00:20:32,320
flight and heavier than aircraft from

463
00:20:37,909 --> 00:20:35,120

these dunes in 1896

464
00:20:39,270 --> 00:20:37,919
this boulder was dedicated to him in his

465
00:20:49,830 --> 00:20:39,280
memory

466
00:20:52,549 --> 00:20:51,590
thanks timmy that was great

467
00:20:54,549 --> 00:20:52,559
useful

468
00:20:56,789 --> 00:20:54,559
education about

469
00:20:58,310 --> 00:20:56,799
the very early days

470
00:20:59,510 --> 00:20:58,320
for our next paper we're going to move a

471
00:21:02,630 --> 00:20:59,520
little bit further ahead close to the

472
00:21:04,470 --> 00:21:02,640
beginning of the naca but

473
00:21:06,950 --> 00:21:04,480
what tom krause calls a false start the

474
00:21:09,270 --> 00:21:06,960
langley aerodynamical laboratory 1911

475
00:21:10,710 --> 00:21:09,280
and 1915. now

476
00:21:11,990 --> 00:21:10,720
tom's a guy in this building

477
00:21:13,669 --> 00:21:12,000
particularly probably doesn't need any

478
00:21:15,669 --> 00:21:13,679
introduction at all but i'm going to

479
00:21:17,029 --> 00:21:15,679
give him a little bit one anyway

480
00:21:19,029 --> 00:21:17,039
he's of course the senior curator of

481
00:21:20,549 --> 00:21:19,039
aeronautics here at the smithsonian and

482
00:21:22,470 --> 00:21:20,559
so well known in

483
00:21:23,990 --> 00:21:22,480
the knowledge of early flight that he

484
00:21:25,350 --> 00:21:24,000
was a presidential appointee to the

485
00:21:27,909 --> 00:21:25,360
first flight advisory board for the

486
00:21:30,230 --> 00:21:27,919
centennial flight back in 2003 so

487
00:21:31,510 --> 00:21:30,240
having led that centennial celebration

488
00:21:32,630 --> 00:21:31,520

we've invited him here to talk to us a

489
00:21:45,350 --> 00:21:32,640
little bit about this centennial

490
00:21:45,360 --> 00:21:49,190
thanks bill

491
00:21:54,470 --> 00:21:51,909
those of you who are familiar with the

492
00:21:56,230 --> 00:21:54,480
prehistory of the naca

493
00:21:58,070 --> 00:21:56,240
and i know there are a lot of faces in

494
00:22:00,390 --> 00:21:58,080
the audience who are familiar with the

495
00:22:03,350 --> 00:22:00,400
pre-history of the naca

496
00:22:05,590 --> 00:22:03,360
know what a complicated one might even

497
00:22:09,350 --> 00:22:05,600
say tangled story

498
00:22:13,350 --> 00:22:09,360
it is taking place in a few years with

499
00:22:15,990 --> 00:22:13,360
missteps and and problems and

500
00:22:17,270 --> 00:22:16,000
all sorts of difficulties

501
00:22:20,149 --> 00:22:17,280
and

502
00:22:22,950 --> 00:22:20,159
to trace those takes a very long paper

503
00:22:24,830 --> 00:22:22,960
and i'm never going to be able to get

504
00:22:27,669 --> 00:22:24,840
all of that

505
00:22:29,350 --> 00:22:27,679
into 20 minutes

506
00:22:32,470 --> 00:22:29,360
so

507
00:22:34,870 --> 00:22:32,480
i'm going to start with biography

508
00:22:38,870 --> 00:22:34,880
the fellow you see on the screen

509
00:22:42,230 --> 00:22:38,880
is undeniably the man most responsible

510
00:22:44,630 --> 00:22:42,240
for creating the naca

511
00:22:47,350 --> 00:22:44,640
charles doolittle walcott

512
00:22:49,830 --> 00:22:47,360
he was an extraordinary character sort

513
00:22:53,110 --> 00:22:49,840

of a forgotten figure today

514
00:22:54,470 --> 00:22:53,120
in the history of american science

515
00:22:57,590 --> 00:22:54,480
but absolutely

516
00:22:58,870 --> 00:22:57,600
the leading manager of science in his

517
00:23:00,149 --> 00:22:58,880
own time

518
00:23:02,149 --> 00:23:00,159
he was

519
00:23:05,350 --> 00:23:02,159
um

520
00:23:07,270 --> 00:23:05,360
a self-trained paleontologist and spent

521
00:23:09,750 --> 00:23:07,280
the early part of his career working for

522
00:23:11,750 --> 00:23:09,760
the geological survey

523
00:23:14,310 --> 00:23:11,760
but he contributed during the course of

524
00:23:16,630 --> 00:23:14,320
his career to the establishment of the

525
00:23:18,950 --> 00:23:16,640
u.s reclamation service

526
00:23:21,029 --> 00:23:18,960
the bureau of mines the forest service

527
00:23:22,870 --> 00:23:21,039
the national park service

528
00:23:25,830 --> 00:23:22,880
he was a charter member of the board of

529
00:23:28,630 --> 00:23:25,840
trustees of the carnegie institution of

530
00:23:31,110 --> 00:23:28,640
washington and helped to establish its

531
00:23:33,350 --> 00:23:31,120
research council he was president of the

532
00:23:34,630 --> 00:23:33,360
american association for the advancement

533
00:23:36,549 --> 00:23:34,640
of science

534
00:23:38,950 --> 00:23:36,559
and led the way to the creation of the

535
00:23:41,029 --> 00:23:38,960
washington academy of science

536
00:23:44,310 --> 00:23:41,039
he was a guiding spirit of the national

537
00:23:46,870 --> 00:23:44,320
academy of science serving as treasurer

538
00:23:49,510 --> 00:23:46,880

a member of the council vice president

539
00:23:53,510 --> 00:23:49,520
and president of that organization

540
00:23:55,909 --> 00:23:53,520
with george hillary hale he helped to

541
00:23:58,070 --> 00:23:55,919
create the national research council

542
00:24:01,269 --> 00:23:58,080
during world war one

543
00:24:03,590 --> 00:24:01,279
he was indeed the leading

544
00:24:06,789 --> 00:24:03,600
administrator of science in his

545
00:24:08,070 --> 00:24:06,799
generation and he was interested in

546
00:24:11,669 --> 00:24:08,080
flight

547
00:24:13,669 --> 00:24:11,679
why should someone like a paleontologist

548
00:24:15,510 --> 00:24:13,679
like charles do little walking be

549
00:24:17,669 --> 00:24:15,520
interested in flight

550
00:24:19,909 --> 00:24:17,679
well for the most part

551
00:24:21,990 --> 00:24:19,919
he recognized that

552
00:24:26,950 --> 00:24:22,000
there were real problems in american

553
00:24:29,510 --> 00:24:26,960
aviation by 1910 1911 12 13 the

554
00:24:33,269 --> 00:24:29,520
europeans had forged far ahead of the

555
00:24:34,390 --> 00:24:33,279
americans and for the most part that was

556
00:24:37,350 --> 00:24:34,400
because

557
00:24:41,669 --> 00:24:37,360
of the problem of investment

558
00:24:44,149 --> 00:24:41,679
by 1913 the united states was 14th among

559
00:24:45,269 --> 00:24:44,159
the world's nations in terms of

560
00:24:47,830 --> 00:24:45,279
investment

561
00:24:50,149 --> 00:24:47,840
private and public in aviation that

562
00:24:52,549 --> 00:24:50,159
meant that countries like chile japan

563
00:24:55,350 --> 00:24:52,559

and china were investing more money in

564
00:24:58,390 --> 00:24:55,360
aviation than the united states was

565
00:25:00,870 --> 00:24:58,400
and a big part of that was an investment

566
00:25:02,789 --> 00:25:00,880
in aeronautical research

567
00:25:04,950 --> 00:25:02,799
by 1913

568
00:25:08,390 --> 00:25:04,960
the major european countries as we'll

569
00:25:09,750 --> 00:25:08,400
see all had research establishments in

570
00:25:11,830 --> 00:25:09,760
aeronautics

571
00:25:14,390 --> 00:25:11,840
and in particular

572
00:25:16,870 --> 00:25:14,400
walcott like so many others was most

573
00:25:20,710 --> 00:25:16,880
impressed by the british advisory

574
00:25:22,630 --> 00:25:20,720
committee for aeronautics which was

575
00:25:24,070 --> 00:25:22,640
focused at the national physical

576
00:25:27,990 --> 00:25:24,080
laboratory

577
00:25:30,310 --> 00:25:28,000
but also was in charge of research at

578
00:25:32,789 --> 00:25:30,320
the royal aircraft factory at

579
00:25:35,669 --> 00:25:32,799
farnborough and other places in england

580
00:25:37,510 --> 00:25:35,679
it was a coordinating planning

581
00:25:39,269 --> 00:25:37,520
organization that helped to prevent

582
00:25:43,830 --> 00:25:39,279
duplication of effort

583
00:25:50,870 --> 00:25:47,830
and it really did impress walcott he had

584
00:25:53,990 --> 00:25:50,880
his own roots in aeronautics as well his

585
00:25:56,070 --> 00:25:54,000
predecessor samuel pierpont langley had

586
00:25:59,190 --> 00:25:56,080
conducted his own flying machine

587
00:26:00,430 --> 00:25:59,200
experiments beginning in 1887

588
00:26:03,909 --> 00:26:00,440

and by

589
00:26:06,390 --> 00:26:03,919
1896 may 6 1896

590
00:26:08,950 --> 00:26:06,400
specifically

591
00:26:11,830 --> 00:26:08,960
langley had flown

592
00:26:13,909 --> 00:26:11,840
one of his steam-powered model ear drums

593
00:26:16,470 --> 00:26:13,919
for a distance of three-quarters of a

594
00:26:19,110 --> 00:26:16,480
mile pretty impressive and two years

595
00:26:21,590 --> 00:26:19,120
later during the spanish-american war

596
00:26:23,990 --> 00:26:21,600
langley actually sat down with walcott

597
00:26:25,830 --> 00:26:24,000
who was a close friend told him he'd be

598
00:26:26,950 --> 00:26:25,840
interested in building a full-scale

599
00:26:29,350 --> 00:26:26,960
aerodrome

600
00:26:31,750 --> 00:26:29,360
and it was in fact wildcat who went to

601
00:26:34,149 --> 00:26:31,760
president mckinley and then assistant

602
00:26:37,029 --> 00:26:34,159
secretary of the navy thomas or theodore

603
00:26:38,870 --> 00:26:37,039
roosevelt and convinced them

604
00:26:43,909 --> 00:26:38,880
to

605
00:26:44,950 --> 00:26:43,919
full-scale eardrum which as all of you

606
00:26:47,990 --> 00:26:44,960
know

607
00:26:52,230 --> 00:26:48,000
was complete by 1903

608
00:26:55,510 --> 00:26:52,240
tried to fly twice and failed twice and

609
00:26:57,350 --> 00:26:55,520
it always bothered walcott that langley

610
00:26:59,029 --> 00:26:57,360
sort of took it on the chin for the

611
00:27:01,510 --> 00:26:59,039
failure of

612
00:27:04,390 --> 00:27:01,520
the aerodrum he was always incredibly

613
00:27:06,310 --> 00:27:04,400

loyal to langley's memory he put a

614
00:27:07,430 --> 00:27:06,320
plaque to langley on the wall of the

615
00:27:09,750 --> 00:27:07,440
castle

616
00:27:12,549 --> 00:27:09,760
at the smithsonian and in washington

617
00:27:14,390 --> 00:27:12,559
every may 6th was langley day the

618
00:27:16,789 --> 00:27:14,400
anniversary of the day when langley had

619
00:27:19,350 --> 00:27:16,799
made the flight with a little model he

620
00:27:24,149 --> 00:27:19,360
established a langley medal that was

621
00:27:28,070 --> 00:27:24,159
given for contributions to aeronautics

622
00:27:29,990 --> 00:27:28,080
he took it so far that as late as 1915

623
00:27:32,710 --> 00:27:30,000
he actually wrote a letter to the

624
00:27:35,590 --> 00:27:32,720
president of the aero club of america

625
00:27:37,830 --> 00:27:35,600
suggesting that since

626
00:27:40,630 --> 00:27:37,840
the word zeppelin was being applied to

627
00:27:43,269 --> 00:27:40,640
all rigid airships these days

628
00:27:45,990 --> 00:27:43,279
maybe we could apply the world langley

629
00:27:48,070 --> 00:27:46,000
to all heavier-than-air flying machines

630
00:27:50,870 --> 00:27:48,080
and i think it was only partly

631
00:27:53,110 --> 00:27:50,880
tongue-in-cheek he really was dedicated

632
00:27:55,590 --> 00:27:53,120
to the memory of

633
00:27:59,110 --> 00:27:55,600
of samuel langley and that was one of

634
00:28:00,830 --> 00:27:59,120
the reasons why he took up the cause of

635
00:28:02,389 --> 00:28:00,840
aeronautical

636
00:28:03,269 --> 00:28:02,399
research

637
00:28:05,669 --> 00:28:03,279
on

638
00:28:08,389 --> 00:28:05,679

february 25th 1910

639
00:28:12,149 --> 00:28:08,399
walcott wrote to albert francis zom

640
00:28:14,389 --> 00:28:12,159
whose picture is on the screen now a

641
00:28:15,669 --> 00:28:14,399
professor of mechanics at catholic

642
00:28:18,470 --> 00:28:15,679
university

643
00:28:20,950 --> 00:28:18,480
and walcott told zom that

644
00:28:23,590 --> 00:28:20,960
the smithsonian had five thousand

645
00:28:26,710 --> 00:28:23,600
dollars that they weren't quite sure

646
00:28:29,909 --> 00:28:26,720
what to do with and he was asking zom

647
00:28:32,310 --> 00:28:29,919
for advice as to what particular line of

648
00:28:33,110 --> 00:28:32,320
aeronautical research the institution

649
00:28:34,710 --> 00:28:33,120
could

650
00:28:36,389 --> 00:28:34,720
profitably

651
00:28:39,350 --> 00:28:36,399
undertake

652
00:28:41,669 --> 00:28:39,360
he said that my own idea of the matter

653
00:28:45,029 --> 00:28:41,679
is to use it for the investigation of

654
00:28:46,950 --> 00:28:45,039
some definite problems or problems

655
00:28:50,630 --> 00:28:46,960
that would be a practical importance for

656
00:28:52,470 --> 00:28:50,640
aerial navigation and to promptly

657
00:28:55,909 --> 00:28:52,480
publish the results

658
00:28:59,909 --> 00:28:55,919
he went to zom because zom

659
00:29:02,789 --> 00:28:59,919
had a long history in aeronautics simon

660
00:29:05,430 --> 00:29:02,799
short just mentioned the fact that he

661
00:29:08,870 --> 00:29:05,440
with octave chanut had planned the

662
00:29:10,149 --> 00:29:08,880
chicago conference in 1893

663
00:29:12,789 --> 00:29:10,159

at the

664
00:29:15,909 --> 00:29:12,799
world's colombian exposition he was a

665
00:29:18,149 --> 00:29:15,919
notre dame graduate bs

666
00:29:21,750 --> 00:29:18,159
cornell graduate with a masters in

667
00:29:23,350 --> 00:29:21,760
engineering and a hopkins graduate 1898

668
00:29:26,870 --> 00:29:23,360
with a phd

669
00:29:29,190 --> 00:29:26,880
in physics as early as his notre dame

670
00:29:32,389 --> 00:29:29,200
career he was making experiments with

671
00:29:36,070 --> 00:29:32,399
flying models and testing a glider on

672
00:29:38,950 --> 00:29:36,080
what we would call a zip line today

673
00:29:41,510 --> 00:29:38,960
as a graduate student at cornell he was

674
00:29:43,669 --> 00:29:41,520
doing pioneering wind tunnel work with a

675
00:29:45,029 --> 00:29:43,679
testing with a variety of instruments

676
00:29:47,029 --> 00:29:45,039
and so on

677
00:29:49,669 --> 00:29:47,039
and while completing his doctorate work

678
00:29:51,350 --> 00:29:49,679
at hopkins he had actually accepted a

679
00:29:55,510 --> 00:29:51,360
post-it catholic

680
00:29:59,830 --> 00:29:55,520
where he would remain until 1913.

681
00:30:01,430 --> 00:29:59,840
and it was in 1899 when an angel sort of

682
00:30:03,590 --> 00:30:01,440
knocked on his door

683
00:30:04,870 --> 00:30:03,600
in the person of a fellow named hugo

684
00:30:06,789 --> 00:30:04,880
moodilov

685
00:30:10,310 --> 00:30:06,799
moodileth was a flying machine

686
00:30:11,750 --> 00:30:10,320
experimenter who had a notion for really

687
00:30:14,310 --> 00:30:11,760
a pretty

688
00:30:15,909 --> 00:30:14,320

incredible elephantine kind of flying

689
00:30:18,310 --> 00:30:15,919
machine that was never going to get off

690
00:30:20,310 --> 00:30:18,320
the ground but he had a lot of money and

691
00:30:23,110 --> 00:30:20,320
he was willing to invest it in

692
00:30:25,110 --> 00:30:23,120
aeronautical research and part of the

693
00:30:27,909 --> 00:30:25,120
money went to build this building on the

694
00:30:31,269 --> 00:30:27,919
catholic university campus it was the

695
00:30:34,230 --> 00:30:31,279
first aeronautical engineering research

696
00:30:37,909 --> 00:30:34,240
separate building in the united states

697
00:30:40,310 --> 00:30:37,919
and as part of it zom was able to build

698
00:30:42,630 --> 00:30:40,320
the first really large wind tunnel in

699
00:30:44,549 --> 00:30:42,640
the united states one of the largest in

700
00:30:45,510 --> 00:30:44,559
the world at the time

701
00:30:47,750 --> 00:30:45,520
and

702
00:30:51,190 --> 00:30:47,760
conducted all sorts of fairly

703
00:30:55,029 --> 00:30:51,200
sophisticated aerodynamic tests of

704
00:30:57,430 --> 00:30:55,039
various sorts mostly relating to

705
00:30:59,590 --> 00:30:57,440
relating to drag

706
00:31:00,710 --> 00:30:59,600
so

707
00:31:02,710 --> 00:31:00,720
he was

708
00:31:05,350 --> 00:31:02,720
a natural

709
00:31:07,509 --> 00:31:05,360
person for

710
00:31:10,470 --> 00:31:07,519
walkett to turn to

711
00:31:12,789 --> 00:31:10,480
in the spring of 1911

712
00:31:15,509 --> 00:31:12,799
the aero club of the aeronautical

713
00:31:16,630 --> 00:31:15,519

society of new york announced that they

714
00:31:19,830 --> 00:31:16,640
were

715
00:31:22,710 --> 00:31:19,840
making uh arrangements for a big banquet

716
00:31:26,789 --> 00:31:22,720
in new york on april 27th and on that

717
00:31:29,590 --> 00:31:26,799
occasion they were going to announce uh

718
00:31:32,470 --> 00:31:29,600
the creation of a national aeronautical

719
00:31:35,509 --> 00:31:32,480
laboratory and the papers picked up the

720
00:31:38,389 --> 00:31:35,519
story and in most of the accounts the

721
00:31:40,549 --> 00:31:38,399
smithsonian was always involved

722
00:31:43,909 --> 00:31:40,559
in one way or another

723
00:31:45,750 --> 00:31:43,919
the military services weren't happy

724
00:31:47,669 --> 00:31:45,760
about it in particular

725
00:31:51,430 --> 00:31:47,679
the folks at the navy yard where they

726
00:31:53,669 --> 00:31:51,440
were constructing hydrodynamic tests and

727
00:31:55,389 --> 00:31:53,679
communicated to the secretary of the

728
00:31:57,750 --> 00:31:55,399
navy that gosh

729
00:32:00,310 --> 00:31:57,760
hydrodynamics and aerodynamics are

730
00:32:02,630 --> 00:32:00,320
obviously connected that's the kind of

731
00:32:05,350 --> 00:32:02,640
thing we could take part in

732
00:32:06,230 --> 00:32:05,360
talk to the president mr secretary

733
00:32:07,990 --> 00:32:06,240
and

734
00:32:10,710 --> 00:32:08,000
make sure this thing gets off on the

735
00:32:13,269 --> 00:32:10,720
right foot well perhaps as a result of

736
00:32:16,149 --> 00:32:13,279
that president taft didn't announce the

737
00:32:19,110 --> 00:32:16,159
creation of a laboratory but

738
00:32:22,149 --> 00:32:19,120

secretary walcott in his remarks that

739
00:32:23,830 --> 00:32:22,159
that evening stood up and talked about

740
00:32:26,070 --> 00:32:23,840
the

741
00:32:27,830 --> 00:32:26,080
importance of creating a laboratory like

742
00:32:30,870 --> 00:32:27,840
the british advisory committee for

743
00:32:32,630 --> 00:32:30,880
aeronautics creating a committee

744
00:32:34,549 --> 00:32:32,640
like the british committee that would

745
00:32:37,269 --> 00:32:34,559
take care of duplication of effort

746
00:32:40,070 --> 00:32:37,279
between the army and the navy and other

747
00:32:42,710 --> 00:32:40,080
folks and simply said why not an

748
00:32:44,549 --> 00:32:42,720
advisory committee on aerial locomotion

749
00:32:46,389 --> 00:32:44,559
appointed by the president of the united

750
00:32:48,789 --> 00:32:46,399
states which would embrace

751
00:32:50,310 --> 00:32:48,799
representatives of the department's

752
00:32:51,990 --> 00:32:50,320
army navy

753
00:32:53,190 --> 00:32:52,000
the weather bureau the bureau of

754
00:32:55,350 --> 00:32:53,200
standards

755
00:32:59,750 --> 00:32:55,360
and so on so forth

756
00:33:03,269 --> 00:32:59,760
it didn't go anywhere immediately

757
00:33:06,549 --> 00:33:03,279
until 1912 when this fellow washington

758
00:33:09,430 --> 00:33:06,559
irving chambers picked up the notion and

759
00:33:13,110 --> 00:33:09,440
in an appendix to the annual report of

760
00:33:14,789 --> 00:33:13,120
the secretary of the navy for 1912.

761
00:33:15,669 --> 00:33:14,799
chambers did a

762
00:33:54,149 --> 00:33:15,679
a

763
00:33:55,750 --> 00:33:54,159

suggestion

764
00:33:58,870 --> 00:33:55,760
went to the president

765
00:34:02,549 --> 00:33:58,880
and in fact in

766
00:34:05,990 --> 00:34:02,559
december of 1912 suggested that a

767
00:34:08,069 --> 00:34:06,000
an advisory a study panel be created

768
00:34:10,629 --> 00:34:08,079
looking at the the possibility of an

769
00:34:12,550 --> 00:34:10,639
american aeronautical research

770
00:34:15,349 --> 00:34:12,560
organization

771
00:34:17,349 --> 00:34:15,359
the president appointed 19 people to the

772
00:34:19,109 --> 00:34:17,359
commission which came to be called the

773
00:34:21,669 --> 00:34:19,119
woodward commission because it was

774
00:34:24,230 --> 00:34:21,679
headed by r.s woodward who was the

775
00:34:26,790 --> 00:34:24,240
president of the carnegie institution

776
00:34:29,750 --> 00:34:26,800
and the members included walcott and zom

777
00:34:31,669 --> 00:34:29,760
naval officers army officers leading

778
00:34:33,990 --> 00:34:31,679
academics and

779
00:34:35,349 --> 00:34:34,000
the usual government suspects weather

780
00:34:38,950 --> 00:34:35,359
bureau and

781
00:34:40,790 --> 00:34:38,960
and so on and so forth

782
00:34:43,990 --> 00:34:40,800
they met three times the woodward

783
00:34:47,030 --> 00:34:44,000
commission in january and february of

784
00:34:49,430 --> 00:34:47,040
1912 and with only two dissenting votes

785
00:34:51,829 --> 00:34:49,440
the commission recommended the creation

786
00:34:54,790 --> 00:34:51,839
of a laboratory again

787
00:34:57,190 --> 00:34:54,800
located at the smithsonian there were

788
00:34:58,470 --> 00:34:57,200

two dissenters one of them richard

789
00:35:02,390 --> 00:34:58,480
mclaren

790
00:35:04,630 --> 00:35:02,400
who was the president of mit

791
00:35:07,670 --> 00:35:04,640
suggested the obvious problem that the

792
00:35:10,390 --> 00:35:07,680
smithsonian no longer had a strong

793
00:35:12,870 --> 00:35:10,400
engineering lab or tradition

794
00:35:14,710 --> 00:35:12,880
and such a an aeronautical laboratory

795
00:35:17,670 --> 00:35:14,720
ought to be connected to a university

796
00:35:18,870 --> 00:35:17,680
with just such talent experience and

797
00:35:22,390 --> 00:35:18,880
equipment

798
00:35:25,109 --> 00:35:22,400
david w taylor on the left

799
00:35:29,190 --> 00:35:25,119
was a dissenter as well he actually

800
00:35:31,910 --> 00:35:29,200
referred the chambers as a cat's paw of

801
00:35:35,030 --> 00:35:31,920
charles doolittle walcott clearly he saw

802
00:35:36,710 --> 00:35:35,040
walcott as the figure that was pushing

803
00:35:37,910 --> 00:35:36,720
all of this stuff

804
00:35:41,270 --> 00:35:37,920
and

805
00:35:44,470 --> 00:35:41,280
again argued that the smithsonian was

806
00:35:46,950 --> 00:35:44,480
not the best place to establish

807
00:35:49,190 --> 00:35:46,960
such a such a library

808
00:35:50,790 --> 00:35:49,200
the the

809
00:35:51,829 --> 00:35:50,800
members of the commission or some of

810
00:35:54,310 --> 00:35:51,839
them

811
00:35:57,510 --> 00:35:54,320
actually

812
00:35:59,670 --> 00:35:57,520
put in legislation first to create the

813
00:36:02,310 --> 00:35:59,680

commission which had only been appointed

814
00:36:05,030 --> 00:36:02,320
by the president to get congressional

815
00:36:07,270 --> 00:36:05,040
creation and to get congress to pay for

816
00:36:09,990 --> 00:36:07,280
it now the congress sort of went through

817
00:36:12,870 --> 00:36:10,000
the roof you had this commission that

818
00:36:15,829 --> 00:36:12,880
not only met but completed its business

819
00:36:17,030 --> 00:36:15,839
before congress had created it

820
00:36:18,870 --> 00:36:17,040
and

821
00:36:21,510 --> 00:36:18,880
it looked as though these folks had just

822
00:36:23,510 --> 00:36:21,520
sort of run russia over correct

823
00:36:25,270 --> 00:36:23,520
procedures and so on

824
00:36:27,750 --> 00:36:25,280
and so

825
00:36:28,950 --> 00:36:27,760
nothing happened all of the legislation

826
00:36:31,109 --> 00:36:28,960
both

827
00:36:33,750 --> 00:36:31,119
to create and pay the woodward

828
00:36:35,829 --> 00:36:33,760
commission and to create

829
00:36:37,510 --> 00:36:35,839
an aeronautical

830
00:36:40,950 --> 00:36:37,520
advisory board

831
00:36:43,109 --> 00:36:40,960
died with the end of the 62nd congress

832
00:36:46,550 --> 00:36:43,119
undeterred

833
00:36:48,710 --> 00:36:46,560
walcott came up with an alternate plan

834
00:36:53,430 --> 00:36:48,720
at a regular meeting of the board of

835
00:36:55,990 --> 00:36:53,440
regents in february of 1913 he suggested

836
00:36:58,390 --> 00:36:56,000
that the smithsonian just create this

837
00:37:01,349 --> 00:36:58,400
thing on its own it was going to be

838
00:37:04,069 --> 00:37:01,359

named obviously after samuel langley it

839
00:37:06,550 --> 00:37:04,079
was going to be the langley originally

840
00:37:08,310 --> 00:37:06,560
aerodromical laboratory the word that

841
00:37:11,589 --> 00:37:08,320
langley had applied to his flying

842
00:37:13,990 --> 00:37:11,599
machines but common sense prevailed

843
00:37:16,470 --> 00:37:14,000
and the members of the board of regents

844
00:37:19,030 --> 00:37:16,480
convinced him that aerodynamical

845
00:37:21,990 --> 00:37:19,040
laboratory was the word they should use

846
00:37:23,190 --> 00:37:22,000
the board created a three-man committee

847
00:37:26,390 --> 00:37:23,200
to look

848
00:37:30,870 --> 00:37:29,270
walcott's recommendations to create a

849
00:37:36,230 --> 00:37:30,880
smithsonian

850
00:37:39,030 --> 00:37:36,240
laboratory and the laboratory was to be

851
00:37:41,430 --> 00:37:39,040
governed by an advisory board of the

852
00:37:43,510 --> 00:37:41,440
sort that everyone

853
00:37:45,270 --> 00:37:43,520
saw as being necessary

854
00:37:48,150 --> 00:37:45,280
they hoped that

855
00:37:51,589 --> 00:37:48,160
this laboratory would do work for the

856
00:38:01,190 --> 00:37:51,599
army and the navy and everybody else

857
00:38:06,230 --> 00:38:03,589
and board of regents gave langley

858
00:38:07,829 --> 00:38:06,240
permission to go ahead and name an

859
00:38:10,630 --> 00:38:07,839
advisory board to the langley

860
00:38:13,349 --> 00:38:10,640
aerodynamic laboratory and there they

861
00:38:15,510 --> 00:38:13,359
are military officers

862
00:38:18,230 --> 00:38:15,520
walkett was the chairman zom was the

863
00:38:22,150 --> 00:38:18,240

recording secretary

864
00:38:24,950 --> 00:38:22,160
three private members john hayes hammond

865
00:38:27,910 --> 00:38:24,960
orville wright and glenn

866
00:38:30,150 --> 00:38:27,920
hammond curtis how wright and curtis

867
00:38:31,990 --> 00:38:30,160
were who were locked in

868
00:38:35,109 --> 00:38:32,000
a patent suit were supposed to get along

869
00:38:37,030 --> 00:38:35,119
wasn't completely clear and in fact the

870
00:38:38,630 --> 00:38:37,040
two of them only attended the first

871
00:38:42,310 --> 00:38:38,640
meeting together

872
00:38:44,230 --> 00:38:42,320
the first meeting of the advisory board

873
00:38:46,630 --> 00:38:44,240
together

874
00:38:53,910 --> 00:38:46,640
the

875
00:38:55,030 --> 00:38:53,920
laboratory had been

876
00:38:56,390 --> 00:38:55,040
walked

877
00:38:58,310 --> 00:38:56,400
new langley

878
00:39:01,349 --> 00:38:58,320
aerodynamical laboratory was going to

879
00:39:03,030 --> 00:39:01,359
have 16 subcommittees

880
00:39:05,589 --> 00:39:03,040
everything from

881
00:39:08,150 --> 00:39:05,599
hydrodynamic experiments to aircraft

882
00:39:10,710 --> 00:39:08,160
design to

883
00:39:12,150 --> 00:39:10,720
aircraft appliances

884
00:39:15,349 --> 00:39:12,160
mathematics

885
00:39:17,430 --> 00:39:15,359
all sorts of things one of the few

886
00:39:20,150 --> 00:39:17,440
really fruitful

887
00:39:21,190 --> 00:39:20,160
things that occurred early on as a

888
00:39:26,069 --> 00:39:21,200

result

889
00:39:29,109 --> 00:39:26,079
but at least in part of the lang of the

890
00:39:32,310 --> 00:39:29,119
langley lab richard mclaren had

891
00:39:34,790 --> 00:39:32,320
convinced the navy to send jerome

892
00:39:36,390 --> 00:39:34,800
hunsaker the bald fellow in the bottom

893
00:39:39,109 --> 00:39:36,400
middle there

894
00:39:43,030 --> 00:39:39,119
on a research trip to europe to look at

895
00:39:46,230 --> 00:39:43,040
european aeronautical laboratories

896
00:39:48,790 --> 00:39:46,240
and he was at that point an mit graduate

897
00:39:51,270 --> 00:39:48,800
student who mclaren was going to put in

898
00:39:53,670 --> 00:39:51,280
charge of creating an aeronautical

899
00:39:56,870 --> 00:39:53,680
engineering course at mit

900
00:39:59,510 --> 00:39:56,880
walcott was able to

901
00:40:03,109 --> 00:39:59,520
talk everyone into including the langley

902
00:40:06,150 --> 00:40:03,119
lab in this project and zom

903
00:40:07,349 --> 00:40:06,160
went with hunsaker and as you can see

904
00:40:10,230 --> 00:40:07,359
they

905
00:40:12,710 --> 00:40:10,240
visited the major folks in england

906
00:40:15,430 --> 00:40:12,720
france and germany

907
00:40:18,630 --> 00:40:15,440
and it was an extraordinarily important

908
00:40:22,390 --> 00:40:18,640
trip especially for hunsaker and mit

909
00:40:25,030 --> 00:40:22,400
in fact you can practically you can date

910
00:40:27,670 --> 00:40:25,040
the introduction of sophisticated

911
00:40:30,390 --> 00:40:27,680
european aerodynamic theory into the

912
00:40:32,710 --> 00:40:30,400
united states with what hunsaker was

913
00:40:36,550 --> 00:40:32,720

going to do at mit when

914
00:40:42,230 --> 00:40:40,150
the advisory board for the the

915
00:40:43,990 --> 00:40:42,240
langley aerodynamical laboratory only

916
00:40:46,630 --> 00:40:44,000
met three times

917
00:40:49,349 --> 00:40:46,640
uh at the second meeting

918
00:40:52,630 --> 00:40:49,359
walcott actually announced that he was

919
00:40:54,710 --> 00:40:52,640
going to go one step farther and create

920
00:40:56,150 --> 00:40:54,720
an aeronautical bureau at the

921
00:40:59,670 --> 00:40:56,160
smithsonian

922
00:41:03,030 --> 00:40:59,680
and go to congress and request a hundred

923
00:41:06,870 --> 00:41:03,040
thousand dollars ultimately

924
00:41:08,710 --> 00:41:06,880
but money was actually quite short and

925
00:41:11,349 --> 00:41:08,720
that was always one of their one of

926
00:41:15,750 --> 00:41:11,359
their problems at the third meeting of

927
00:41:21,270 --> 00:41:15,760
the advisory board on december 1st 1913

928
00:41:25,510 --> 00:41:23,030
walket uh

929
00:41:28,390 --> 00:41:25,520
decided that

930
00:41:30,710 --> 00:41:28,400
in fact the time had come to to go to

931
00:41:31,990 --> 00:41:30,720
congress and he announced he was going

932
00:41:32,790 --> 00:41:32,000
to do that

933
00:41:39,750 --> 00:41:32,800
and

934
00:41:42,710 --> 00:41:39,760
that was

935
00:41:45,030 --> 00:41:42,720
what he took to or what he was going to

936
00:41:46,790 --> 00:41:45,040
take to

937
00:41:49,750 --> 00:41:46,800
the congress

938
00:41:51,109 --> 00:41:49,760

what happened was that in this

939
00:41:53,109 --> 00:41:51,119
discussion

940
00:41:56,309 --> 00:41:53,119
with government officials about the

941
00:41:58,230 --> 00:41:56,319
expansion of the smithsonian lab

942
00:42:02,470 --> 00:41:58,240
walcott actually discovered that what he

943
00:42:03,510 --> 00:42:02,480
was doing was not legal it was illegal

944
00:42:06,230 --> 00:42:03,520
for

945
00:42:08,870 --> 00:42:06,240
federal officials to serve on a

946
00:42:11,190 --> 00:42:08,880
committee commission not created by the

947
00:42:14,069 --> 00:42:11,200
congress of the united states

948
00:42:17,430 --> 00:42:14,079
and recognizing that problem

949
00:42:19,349 --> 00:42:17,440
walcott stopped the meetings of

950
00:42:22,790 --> 00:42:19,359
the langley advisory board that's why

951
00:42:24,150 --> 00:42:22,800
there are only three he didn't halt

952
00:42:27,270 --> 00:42:24,160
the history of the

953
00:42:29,270 --> 00:42:27,280
work of the laboratory itself

954
00:42:31,829 --> 00:42:29,280
but he did have to halt the commission

955
00:42:35,670 --> 00:42:31,839
he went back to the house appropriations

956
00:42:38,550 --> 00:42:35,680
committee and asked for authorization

957
00:42:40,710 --> 00:42:38,560
to continue operating the langley lab

958
00:42:43,190 --> 00:42:40,720
and he asked for an appropriation

959
00:42:45,270 --> 00:42:43,200
initially of

960
00:42:46,150 --> 00:42:45,280
fifty thousand dollars

961
00:42:49,030 --> 00:42:46,160
the

962
00:42:55,030 --> 00:42:53,109
congress just simply did not take action

963
00:42:58,150 --> 00:42:55,040

on any of it

964
00:43:01,349 --> 00:42:58,160
the langley lab continued to operate for

965
00:43:04,150 --> 00:43:01,359
a while and in fact langley and walcott

966
00:43:07,270 --> 00:43:04,160
were quite convinced that they could

967
00:43:11,670 --> 00:43:07,280
continue to make it go you can see this

968
00:43:16,630 --> 00:43:14,069
frank russell of the bridges company who

969
00:43:19,349 --> 00:43:16,640
wants the langley lab to conduct

970
00:43:23,430 --> 00:43:19,359
aeronautical experiments for him and

971
00:43:26,150 --> 00:43:23,440
what the smithsonian folks are saying is

972
00:43:28,630 --> 00:43:26,160
we can't do it right now but we hope we

973
00:43:30,470 --> 00:43:28,640
will have the equipment even a flying

974
00:43:33,670 --> 00:43:30,480
field and so on so that when those

975
00:43:36,950 --> 00:43:33,680
airplanes are ready we'll be ready to do

976
00:43:38,630 --> 00:43:36,960
the do the test for you the other

977
00:43:40,390 --> 00:43:38,640
unfortunate thing

978
00:43:42,390 --> 00:43:40,400
that the langley

979
00:43:45,750 --> 00:43:42,400
lab

980
00:43:51,829 --> 00:43:49,349
were the tests of the 1914

981
00:43:54,630 --> 00:43:51,839
langley eardrum again

982
00:43:56,470 --> 00:43:54,640
the idea came from glenn hammond curtis

983
00:43:59,190 --> 00:43:56,480
who was locked in a patent suit with the

984
00:44:00,390 --> 00:43:59,200
wright brothers and who thought that if

985
00:44:02,550 --> 00:44:00,400
he could get

986
00:44:04,150 --> 00:44:02,560
rebuild the old langley machine and get

987
00:44:05,910 --> 00:44:04,160
it into the air

988
00:44:08,790 --> 00:44:05,920

he would be able to go back to the

989
00:44:11,910 --> 00:44:08,800
courts and say well you see this machine

990
00:44:14,309 --> 00:44:11,920
which failed to fly was actually capable

991
00:44:16,069 --> 00:44:14,319
of flight and

992
00:44:17,829 --> 00:44:16,079
moved forward from

993
00:44:21,030 --> 00:44:17,839
from there

994
00:44:23,990 --> 00:44:21,040
in fact the smithsonian had actually

995
00:44:27,270 --> 00:44:24,000
refurbished the central fuselage for the

996
00:44:30,150 --> 00:44:27,280
airplane but when it went to hammond's

997
00:44:33,190 --> 00:44:30,160
port curtis had to build the wings and

998
00:44:35,510 --> 00:44:33,200
the tail most of the wooden sections of

999
00:44:37,910 --> 00:44:35,520
the airplane

1000
00:44:39,670 --> 00:44:37,920
alfred zham who went to him in support

1001
00:44:41,030 --> 00:44:39,680
to take commands of this part of the

1002
00:44:44,550 --> 00:44:41,040
operation

1003
00:44:46,870 --> 00:44:44,560
for the smithsonian

1004
00:44:51,349 --> 00:44:46,880
simply was dishonest about the whole

1005
00:44:53,910 --> 00:44:51,359
business he in published accounts would

1006
00:44:56,309 --> 00:44:53,920
note that all curtis did was to

1007
00:44:59,510 --> 00:44:56,319
re-canvas the wings and that kind of

1008
00:45:02,870 --> 00:44:59,520
thing he would say that no substantial

1009
00:45:05,349 --> 00:45:02,880
work had to be done on the old eardrum

1010
00:45:08,470 --> 00:45:05,359
and

1011
00:45:11,190 --> 00:45:08,480
that simply wasn't true the eardrum did

1012
00:45:16,470 --> 00:45:11,200
fly on may 28

1013
00:45:18,790 --> 00:45:16,480

190 1913 1914 rather and flew a couple

1014
00:45:20,550 --> 00:45:18,800
of times after that

1015
00:45:21,349 --> 00:45:20,560
um of course

1016
00:45:32,710 --> 00:45:21,359
the

1017
00:45:36,309 --> 00:45:32,720
in 1927

1018
00:45:39,510 --> 00:45:36,319
and dogging the smithsonian as well

1019
00:45:40,870 --> 00:45:39,520
ultimately just skipping to the end here

1020
00:45:42,630 --> 00:45:40,880
walcott

1021
00:45:45,349 --> 00:45:42,640
walked away from the langley

1022
00:45:47,510 --> 00:45:45,359
aerodynamical laboratory he recognized

1023
00:45:50,710 --> 00:45:47,520
that the best thing to do

1024
00:45:53,670 --> 00:45:50,720
was to create a separate and distinct

1025
00:45:56,390 --> 00:45:53,680
aeronautical research advisory board

1026
00:45:58,550 --> 00:45:56,400
forget the laboratory just the advisory

1027
00:46:01,349 --> 00:45:58,560
board that would sort of reduce

1028
00:46:04,230 --> 00:46:01,359
duplication and set a course for

1029
00:46:05,670 --> 00:46:04,240
aeronautical research in america

1030
00:46:09,030 --> 00:46:05,680
and

1031
00:46:11,750 --> 00:46:09,040
he arranged for the legislation to be

1032
00:46:13,430 --> 00:46:11,760
introduced when it became apparent that

1033
00:46:16,390 --> 00:46:13,440
the congress

1034
00:46:18,630 --> 00:46:16,400
was going to come to an end before that

1035
00:46:21,510 --> 00:46:18,640
legislation could be passed

1036
00:46:26,309 --> 00:46:21,520
the ultimate insider walcott

1037
00:46:30,710 --> 00:46:28,470
the advisory board to be attached to the

1038
00:46:31,670 --> 00:46:30,720

naval appropriations act

1039
00:46:34,390 --> 00:46:31,680
and

1040
00:46:35,829 --> 00:46:34,400
it passed as we all know 100 years ago

1041
00:46:38,630 --> 00:46:35,839
today

1042
00:46:41,109 --> 00:46:38,640
just in closing

1043
00:46:43,430 --> 00:46:41,119
i want to read what hunter duprey

1044
00:46:45,589 --> 00:46:43,440
who was the author of the classic study

1045
00:46:47,510 --> 00:46:45,599
science and the federal government had

1046
00:46:49,270 --> 00:46:47,520
to say about all this

1047
00:46:51,109 --> 00:46:49,280
the national advisory committee for

1048
00:46:53,510 --> 00:46:51,119
aeronautics was the capstone of the

1049
00:46:55,829 --> 00:46:53,520
federal establishment the ancient

1050
00:46:58,470 --> 00:46:55,839
smithsonian sheltered its embryonic

1051
00:47:01,030 --> 00:46:58,480
stages and the long experience of the

1052
00:47:03,589 --> 00:47:01,040
geological survey provided the trick

1053
00:47:06,390 --> 00:47:03,599
that accomplished its creation yet the

1054
00:47:09,589 --> 00:47:06,400
naca was the kind of organization for a

1055
00:47:12,309 --> 00:47:09,599
new problem it was the last product of a

1056
00:47:14,390 --> 00:47:12,319
profoundly peaceful fertile period of

1057
00:47:17,349 --> 00:47:14,400
bureau building and the first war

1058
00:47:18,950 --> 00:47:17,359
research agency of

1059
00:47:21,270 --> 00:47:18,960
world war one

1060
00:47:23,510 --> 00:47:21,280
for all of the problems all of the

1061
00:47:25,349 --> 00:47:23,520
missteps and so on

1062
00:47:28,549 --> 00:47:25,359
it finally came to be

1063
00:47:31,750 --> 00:47:28,559

on march 3rd 1915

1064
00:47:41,750 --> 00:47:31,760
and in large measure that was thanks to

1065
00:47:46,710 --> 00:47:44,150
thanks tom for a fascinating paper on uh

1066
00:47:49,510 --> 00:47:46,720
that early stage

1067
00:47:52,630 --> 00:47:49,520
for the final uh presentation of uh this

1068
00:47:55,349 --> 00:47:52,640
panel on setting the stage for the naca

1069
00:47:57,030 --> 00:47:55,359
we've we go from one of our

1070
00:47:59,030 --> 00:47:57,040
more senior scholars to one of our more

1071
00:48:00,309 --> 00:47:59,040
junior scholars dr larry burke i

1072
00:48:01,670 --> 00:48:00,319
emphasize doctor because he just

1073
00:48:03,990 --> 00:48:01,680
received his doctorate from carnegie

1074
00:48:05,990 --> 00:48:04,000
mellon in december so one of the newest

1075
00:48:07,910 --> 00:48:06,000
doctors we have here

1076
00:48:09,670 --> 00:48:07,920
did his dissertation on history

1077
00:48:11,270 --> 00:48:09,680
technology dissertation on the sources

1078
00:48:13,270 --> 00:48:11,280
of military doctrine

1079
00:48:14,470 --> 00:48:13,280
for the new technology of the airplane

1080
00:48:17,589 --> 00:48:14,480
in the

1081
00:48:19,109 --> 00:48:17,599
early part of the last century

1082
00:48:21,030 --> 00:48:19,119
and he's going to be talking to us about

1083
00:48:35,349 --> 00:48:21,040
the u.s military and the creation of the

1084
00:48:39,670 --> 00:48:36,950
all right

1085
00:48:41,670 --> 00:48:39,680
well uh thank you all for coming out uh

1086
00:48:43,030 --> 00:48:41,680
as you might suspect from my title i'm

1087
00:48:45,270 --> 00:48:43,040
here to tell you about the significant

1088
00:48:47,030 --> 00:48:45,280

influence that the military had on the

1089
00:48:48,230 --> 00:48:47,040
establishment and early shaping of the

1090
00:48:49,510 --> 00:48:48,240
national advisory committee for

1091
00:48:51,829 --> 00:48:49,520
aeronautics

1092
00:48:55,109 --> 00:48:51,839
now i do not intend to

1093
00:48:56,470 --> 00:48:55,119
present any startling information

1094
00:48:58,950 --> 00:48:56,480
i'm not challenging the existing

1095
00:49:00,790 --> 00:48:58,960
narrative of how it came about rather

1096
00:49:02,549 --> 00:49:00,800
what i want to do is tell the story from

1097
00:49:04,390 --> 00:49:02,559
the perspective of the military looking

1098
00:49:06,230 --> 00:49:04,400
not simply at whether or not the

1099
00:49:08,870 --> 00:49:06,240
services supported

1100
00:49:11,430 --> 00:49:08,880
its creation but also why they did or in

1101
00:49:13,109 --> 00:49:11,440
some cases did not do so and i hope that

1102
00:49:15,109 --> 00:49:13,119
my presentation will add context and

1103
00:49:16,870 --> 00:49:15,119
complexity to the existing historical

1104
00:49:18,790 --> 00:49:16,880
narrative as well as the basis for

1105
00:49:20,950 --> 00:49:18,800
deeper understanding of events to be

1106
00:49:22,390 --> 00:49:20,960
addressed in later panels

1107
00:49:24,549 --> 00:49:22,400
now to be clear i'm speaking of the

1108
00:49:26,950 --> 00:49:24,559
military today and i mean both the army

1109
00:49:29,109 --> 00:49:26,960
and the navy but not as monolithic

1110
00:49:32,549 --> 00:49:29,119
blocks rather i will be addressing

1111
00:49:34,950 --> 00:49:32,559
individual officers within the services

1112
00:49:37,670 --> 00:49:34,960
who usually had their own motivations

1113
00:49:39,589 --> 00:49:37,680

for why they did what they did

1114
00:49:41,750 --> 00:49:39,599
usually with the best interests of their

1115
00:49:42,829 --> 00:49:41,760
service at heart at least as they saw

1116
00:49:45,349 --> 00:49:42,839
those

1117
00:49:48,790 --> 00:49:45,359
interests uh now initially i'll be

1118
00:49:51,910 --> 00:49:48,800
talking about some officers who

1119
00:49:55,829 --> 00:49:51,920
saw need for broader government research

1120
00:49:57,910 --> 00:49:55,839
that is not just a military research lab

1121
00:49:59,430 --> 00:49:57,920
later however these men were replaced by

1122
00:50:01,990 --> 00:49:59,440
officers who were a bit more parochial

1123
00:50:03,670 --> 00:50:02,000
in their outlook uh interested in

1124
00:50:06,390 --> 00:50:03,680
capturing this government research for

1125
00:50:09,109 --> 00:50:06,400
the advantage of their own service

1126
00:50:09,910 --> 00:50:09,119
as we shall see however there was danger

1127
00:50:14,870 --> 00:50:09,920
in

1128
00:50:18,790 --> 00:50:15,990
now the first gentleman i want to

1129
00:50:20,150 --> 00:50:18,800
introduce you to if it comes up

1130
00:50:22,549 --> 00:50:20,160
there we go

1131
00:50:24,470 --> 00:50:22,559
uh major later general georgio and

1132
00:50:26,230 --> 00:50:24,480
square now square was a scientist

1133
00:50:28,710 --> 00:50:26,240
inventor serving with the army signal

1134
00:50:31,349 --> 00:50:28,720
corps which quite early on claimed

1135
00:50:33,030 --> 00:50:31,359
aviation square himself had already done

1136
00:50:35,990 --> 00:50:33,040
much important research in electrical

1137
00:50:38,390 --> 00:50:36,000
communications particularly radio

1138
00:50:40,710 --> 00:50:38,400

and began taking an interest in aviation

1139
00:50:42,390 --> 00:50:40,720
in 1906.

1140
00:50:44,390 --> 00:50:42,400
uh and in fact he went on to serve as

1141
00:50:47,430 --> 00:50:44,400
head of the army's acceptance committee

1142
00:50:51,829 --> 00:50:47,440
for the testing of the baldwin airship

1143
00:50:54,549 --> 00:50:51,839
and wright airplane in 1908 and 1909.

1144
00:50:57,030 --> 00:50:54,559
now in april 1910 uh smithsonian

1145
00:50:59,190 --> 00:50:57,040
secretary charles walcott asked squeer

1146
00:51:01,670 --> 00:50:59,200
alexander graham bell and albert zam to

1147
00:51:03,270 --> 00:51:01,680
discuss research that needed to be done

1148
00:51:05,670 --> 00:51:03,280
in the u.s in order to advance

1149
00:51:07,270 --> 00:51:05,680
aeronautical knowledge the three quickly

1150
00:51:09,190 --> 00:51:07,280
agreed that there was a need for a

1151
00:51:10,470 --> 00:51:09,200
national aeronautical lab as tom

1152
00:51:12,630 --> 00:51:10,480
mentioned

1153
00:51:14,870 --> 00:51:12,640
square himself recommended the existence

1154
00:51:16,549 --> 00:51:14,880
or the creation rather of a committee

1155
00:51:19,030 --> 00:51:16,559
to be operated under the smithsonian

1156
00:51:21,670 --> 00:51:19,040
umbrella to coordinate the research of

1157
00:51:23,430 --> 00:51:21,680
the lab with other labs in the u.s

1158
00:51:25,750 --> 00:51:23,440
now this resembled a similar arrangement

1159
00:51:27,030 --> 00:51:25,760
for research and radio with which we

1160
00:51:29,430 --> 00:51:27,040
would have been very familiar and that

1161
00:51:32,069 --> 00:51:29,440
was u.s board on wireless telegraphy

1162
00:51:34,230 --> 00:51:32,079
which had been established in 1904 as

1163
00:51:35,510 --> 00:51:34,240

well as as has been said the advisory

1164
00:51:37,270 --> 00:51:35,520
committee on aeronautics in great

1165
00:51:40,150 --> 00:51:37,280
britain which had been established the

1166
00:51:41,990 --> 00:51:40,160
year before april 1909

1167
00:51:43,910 --> 00:51:42,000
now with this group's recommendations in

1168
00:51:46,230 --> 00:51:43,920
hand secretary walcott saw a meeting

1169
00:51:48,390 --> 00:51:46,240
with president taft but nothing came of

1170
00:51:50,710 --> 00:51:48,400
it meanwhile square himself was assigned

1171
00:51:52,309 --> 00:51:50,720
to other duties in the signal corps

1172
00:51:54,390 --> 00:51:52,319
and while he continued to take an

1173
00:51:55,510 --> 00:51:54,400
interest in aviation his assignment away

1174
00:51:57,670 --> 00:51:55,520
from

1175
00:51:59,109 --> 00:51:57,680
aviation and eventually washington he

1176
00:52:00,790 --> 00:51:59,119
was sent to london as the military

1177
00:52:03,109 --> 00:52:00,800
attache

1178
00:52:07,349 --> 00:52:03,119
seemed to mark an end to army advocacy

1179
00:52:12,549 --> 00:52:08,870
now the next person i want to talk about

1180
00:52:14,230 --> 00:52:12,559
is captain washington irving chambers

1181
00:52:16,230 --> 00:52:14,240
who is something of a mirror image to

1182
00:52:19,510 --> 00:52:16,240
square not only being a navy officer to

1183
00:52:21,190 --> 00:52:19,520
squares army officer chambers was also

1184
00:52:23,910 --> 00:52:21,200
an inventor but he was much more of a

1185
00:52:26,150 --> 00:52:23,920
practical engineer than square who was

1186
00:52:28,710 --> 00:52:26,160
very much scientifically minded

1187
00:52:30,790 --> 00:52:28,720
in any event in 1910 chambers was

1188
00:52:33,190 --> 00:52:30,800

serving as an assistant to the secretary

1189
00:52:34,950 --> 00:52:33,200
of the navy's aid for material which was

1190
00:52:36,549 --> 00:52:34,960
responsible for supervising the navy's

1191
00:52:38,870 --> 00:52:36,559
technical bureaus

1192
00:52:40,390 --> 00:52:38,880
when in september of 1910 the aero club

1193
00:52:42,950 --> 00:52:40,400
of america wrote to the secretary of the

1194
00:52:45,030 --> 00:52:42,960
navy george von langerke meyer asking

1195
00:52:47,829 --> 00:52:45,040
him for a point of contact within the

1196
00:52:50,150 --> 00:52:47,839
navy on aeronautical issues

1197
00:52:51,990 --> 00:52:50,160
chambers was soon given this assignment

1198
00:52:53,750 --> 00:52:52,000
now chambers himself had no previous

1199
00:52:55,270 --> 00:52:53,760
interest or knowledge of aviation but

1200
00:52:57,349 --> 00:52:55,280
began reading everything he could get

1201
00:52:59,349 --> 00:52:57,359
his hands on in order to better prepare

1202
00:53:01,349 --> 00:52:59,359
himself for these new duties in the

1203
00:53:02,950 --> 00:53:01,359
process he became an enthusiast for

1204
00:53:04,549 --> 00:53:02,960
aviation

1205
00:53:05,990 --> 00:53:04,559
now one month later the chiefs of the

1206
00:53:07,990 --> 00:53:06,000
navy's bureau of engineering and the

1207
00:53:09,510 --> 00:53:08,000
bureau of construction and repair each

1208
00:53:11,589 --> 00:53:09,520
separately requested authority to

1209
00:53:14,069 --> 00:53:11,599
purchase an airplane for the navy

1210
00:53:16,390 --> 00:53:14,079
myers denied both requests but oddly

1211
00:53:18,630 --> 00:53:16,400
ordered both bureaus to coordinate his

1212
00:53:20,710 --> 00:53:18,640
words on aviation developments with

1213
00:53:22,950 --> 00:53:20,720

chambers now this gave chambers some

1214
00:53:24,069 --> 00:53:22,960
vague responsibility and essentially no

1215
00:53:26,790 --> 00:53:24,079
authority

1216
00:53:28,630 --> 00:53:26,800
however chambers leveraged this

1217
00:53:32,230 --> 00:53:28,640
in order to coordinate the first flights

1218
00:53:34,870 --> 00:53:32,240
on and off ships by an airplane uh both

1219
00:53:37,190 --> 00:53:34,880
of these flown by uh curtis pilot eugene

1220
00:53:43,030 --> 00:53:37,200
ely

1221
00:53:44,870 --> 00:53:43,040
him about the possibilities of a job

1222
00:53:46,630 --> 00:53:44,880
with the navy

1223
00:53:49,990 --> 00:53:46,640
and in his response

1224
00:53:52,069 --> 00:53:50,000
chambers actually outlined his ideas for

1225
00:53:53,109 --> 00:53:52,079
a naval aviation organization remember

1226
00:53:55,190 --> 00:53:53,119
there was

1227
00:53:57,670 --> 00:53:55,200
navy did not have its own airplane yet

1228
00:53:59,829 --> 00:53:57,680
all of this was sort of proof of concept

1229
00:54:02,150 --> 00:53:59,839
in any event uh in this letter what is

1230
00:54:03,910 --> 00:54:02,160
of importance today is the statement

1231
00:54:05,589 --> 00:54:03,920
which you can see on the slide which

1232
00:54:07,430 --> 00:54:05,599
indicates that chambers was already

1233
00:54:10,069 --> 00:54:07,440
thinking of the need for some sort of

1234
00:54:11,750 --> 00:54:10,079
experimental work to advance aeronautics

1235
00:54:13,589 --> 00:54:11,760
and his statement that it might not be

1236
00:54:15,510 --> 00:54:13,599
the navy seems to imply that he was

1237
00:54:17,349 --> 00:54:15,520
thinking of the need for a broader

1238
00:54:19,270 --> 00:54:17,359

government lab

1239
00:54:21,270 --> 00:54:19,280
uh in any event soon after this letter

1240
00:54:23,349 --> 00:54:21,280
he did indeed join walcott in supporting

1241
00:54:25,589 --> 00:54:23,359
the reopening of langley's aeronautical

1242
00:54:27,430 --> 00:54:25,599
lab and chambers was apparently the

1243
00:54:30,470 --> 00:54:27,440
author of a proposal reported in the

1244
00:54:32,390 --> 00:54:30,480
papers in april 1911 for the langley lab

1245
00:54:33,750 --> 00:54:32,400
to reopen under bureau of standards

1246
00:54:35,349 --> 00:54:33,760
control

1247
00:54:37,030 --> 00:54:35,359
others in the navy opposed the lab

1248
00:54:39,750 --> 00:54:37,040
however saying that it would duplicate

1249
00:54:41,270 --> 00:54:39,760
the existing navy facilities

1250
00:54:43,670 --> 00:54:41,280
in the bureau of construction repair

1251
00:54:45,670 --> 00:54:43,680
captain david taylor who had recently

1252
00:54:48,150 --> 00:54:45,680
established and was running the model

1253
00:54:50,230 --> 00:54:48,160
basin which would later be named for him

1254
00:54:51,829 --> 00:54:50,240
uh taylor believed that the model basin

1255
00:54:54,230 --> 00:54:51,839
could indeed conduct the necessary

1256
00:54:56,549 --> 00:54:54,240
aeronautical research for the government

1257
00:54:58,230 --> 00:54:56,559
while the bureau of engineering likewise

1258
00:54:59,829 --> 00:54:58,240
arguing that their own experimental

1259
00:55:02,309 --> 00:54:59,839
engine station near annapolis could

1260
00:55:04,390 --> 00:55:02,319
easily expand to research aeronautical

1261
00:55:06,150 --> 00:55:04,400
propulsion and propellers and i

1262
00:55:07,990 --> 00:55:06,160
apologize i cannot get a better picture

1263
00:55:09,829 --> 00:55:08,000

of the building

1264
00:55:11,270 --> 00:55:09,839
uh in any event this dispute was

1265
00:55:12,950 --> 00:55:11,280
referred to president william task

1266
00:55:15,270 --> 00:55:12,960
committee on economy and efficiency in

1267
00:55:17,430 --> 00:55:15,280
the government and this committee sided

1268
00:55:19,510 --> 00:55:17,440
with taylor and in fact drafted an

1269
00:55:21,910 --> 00:55:19,520
executive order saying that the navy's

1270
00:55:24,789 --> 00:55:21,920
model basin should be formally assigned

1271
00:55:26,230 --> 00:55:24,799
to do national aeronautic research

1272
00:55:27,990 --> 00:55:26,240
now with this in mind secretary of the

1273
00:55:30,630 --> 00:55:28,000
navy meyer wrote to his counterpart

1274
00:55:32,309 --> 00:55:30,640
secretary of war jacob dickinson

1275
00:55:34,069 --> 00:55:32,319
suggesting that the two services should

1276
00:55:35,349 --> 00:55:34,079
begin coordinating their aeronautical

1277
00:55:37,589 --> 00:55:35,359
research

1278
00:55:39,030 --> 00:55:37,599
uh dickinson however replied that the

1279
00:55:40,789 --> 00:55:39,040
two services would be better off

1280
00:55:43,829 --> 00:55:40,799
conducting their own experiments he did

1281
00:55:45,109 --> 00:55:43,839
not see the need for this coordination

1282
00:55:47,349 --> 00:55:45,119
now this disagreement between the

1283
00:55:49,670 --> 00:55:47,359
service chiefs may have contributed to

1284
00:55:51,670 --> 00:55:49,680
the idea petering out but whatever the

1285
00:55:54,950 --> 00:55:51,680
reason the idea never got past the

1286
00:55:56,549 --> 00:55:54,960
committee on economy and efficiency

1287
00:55:58,470 --> 00:55:56,559
now despite the setback chambers and

1288
00:56:00,549 --> 00:55:58,480

walcott continued to push for a national

1289
00:56:02,470 --> 00:56:00,559
aeronautical lab of some sort

1290
00:56:03,990 --> 00:56:02,480
they were joined by albert zam who among

1291
00:56:05,670 --> 00:56:04,000
other things was now the consulting

1292
00:56:07,270 --> 00:56:05,680
editor to the euro club of america's

1293
00:56:10,150 --> 00:56:07,280
monthly bulletin

1294
00:56:11,990 --> 00:56:10,160
in 1911 and 1912 zom used this position

1295
00:56:14,710 --> 00:56:12,000
to publish many articles his own and

1296
00:56:16,870 --> 00:56:14,720
others in favor of such a laboratory

1297
00:56:19,270 --> 00:56:16,880
chambers himself penned a main 1912

1298
00:56:22,069 --> 00:56:19,280
article proposing reopening langley's

1299
00:56:23,990 --> 00:56:22,079
lab as the national lab

1300
00:56:25,829 --> 00:56:24,000
uh now interestingly for this group

1301
00:56:28,069 --> 00:56:25,839
sometime after wilbur wright's death on

1302
00:56:29,589 --> 00:56:28,079
may 30th 1912.

1303
00:56:31,270 --> 00:56:29,599
coming up there we go

1304
00:56:33,030 --> 00:56:31,280
uh chambers drafted a proposal

1305
00:56:35,430 --> 00:56:33,040
apparently intended to be inserted in a

1306
00:56:37,829 --> 00:56:35,440
secretary of the navy's speech to name a

1307
00:56:39,109 --> 00:56:37,839
research building at the langley lab for

1308
00:56:40,630 --> 00:56:39,119
wilbur wright

1309
00:56:42,829 --> 00:56:40,640
apparently in an attempt to get public

1310
00:56:45,990 --> 00:56:42,839
support behind the national laboratory

1311
00:56:48,150 --> 00:56:46,000
proposal now i don't know if myers ever

1312
00:56:49,910 --> 00:56:48,160
indeed included this in any of his

1313
00:56:52,069 --> 00:56:49,920

speeches but i could find no further

1314
00:56:53,510 --> 00:56:52,079
mention of the idea which given

1315
00:56:54,870 --> 00:56:53,520
langley's role in the later

1316
00:56:58,230 --> 00:56:54,880
long-standing right smithsonian

1317
00:57:01,190 --> 00:56:58,240
disagreement is probably just as well

1318
00:57:04,950 --> 00:57:01,200
in any event uh as tom has told us

1319
00:57:06,950 --> 00:57:04,960
chambers fiscal year 1912

1320
00:57:08,309 --> 00:57:06,960
uh report on aviation concluded with a

1321
00:57:11,109 --> 00:57:08,319
seven page

1322
00:57:13,589 --> 00:57:11,119
uh outline of an idea for a national

1323
00:57:15,430 --> 00:57:13,599
aeronautical lab this would include not

1324
00:57:16,230 --> 00:57:15,440
only a physical laboratory which would

1325
00:57:19,349 --> 00:57:16,240
do

1326
00:57:21,109 --> 00:57:19,359
standards as well as basic research

1327
00:57:22,950 --> 00:57:21,119
but also a council to establish and

1328
00:57:25,430 --> 00:57:22,960
monitor a program of research to be

1329
00:57:27,030 --> 00:57:25,440
executed by the lab this council would

1330
00:57:28,390 --> 00:57:27,040
include representatives the army and

1331
00:57:30,069 --> 00:57:28,400
navy along with other government

1332
00:57:31,270 --> 00:57:30,079
departments having aeronautical

1333
00:57:33,030 --> 00:57:31,280
interests

1334
00:57:36,230 --> 00:57:33,040
and despite chambers extensive

1335
00:57:37,829 --> 00:57:36,240
recommendations in this uh report he

1336
00:57:39,270 --> 00:57:37,839
concluded with a suggestion that the

1337
00:57:40,710 --> 00:57:39,280
president should appoint a commission to

1338
00:57:44,950 --> 00:57:40,720

review the issue

1339
00:57:49,510 --> 00:57:47,109
now the fiscal year at the time ended in

1340
00:57:52,549 --> 00:57:49,520
the middle of the summer so fy 1912

1341
00:57:54,870 --> 00:57:52,559
ended on june 30th 1912. thus chambers

1342
00:57:56,390 --> 00:57:54,880
report on the fiscal year was submitted

1343
00:57:57,990 --> 00:57:56,400
late in the year

1344
00:57:59,829 --> 00:57:58,000
secretary of the navy meyer quickly

1345
00:58:00,870 --> 00:57:59,839
forwarded chambers report to president

1346
00:58:06,230 --> 00:58:00,880
taft

1347
00:58:08,069 --> 00:58:06,240
the 19-member national aeronautic

1348
00:58:10,309 --> 00:58:08,079
laboratory commission under leadership

1349
00:58:11,349 --> 00:58:10,319
of dr robert s woodward the woodward

1350
00:58:13,190 --> 00:58:11,359
commission

1351
00:58:14,950 --> 00:58:13,200
it included two officers each from the

1352
00:58:16,390 --> 00:58:14,960
army and navy on the commission and

1353
00:58:18,230 --> 00:58:16,400
interestingly the two navy

1354
00:58:21,349 --> 00:58:18,240
representatives were the opponents on

1355
00:58:23,030 --> 00:58:21,359
this issue chambers and taylor

1356
00:58:24,950 --> 00:58:23,040
uh now the woodward commission had

1357
00:58:27,030 --> 00:58:24,960
something of a sort of damocles hanging

1358
00:58:29,109 --> 00:58:27,040
over it and that was that it was

1359
00:58:31,030 --> 00:58:29,119
endangered by a law which congress had

1360
00:58:32,870 --> 00:58:31,040
passed a few years earlier which

1361
00:58:34,630 --> 00:58:32,880
prohibited presidential commissions from

1362
00:58:37,109 --> 00:58:34,640
using public funds or government

1363
00:58:38,390 --> 00:58:37,119

employees to support their work unless

1364
00:58:40,950 --> 00:58:38,400
the commission had congressional

1365
00:58:43,589 --> 00:58:40,960
approval which as we've already heard

1366
00:58:45,270 --> 00:58:43,599
the woodward commission did not

1367
00:58:47,430 --> 00:58:45,280
nevertheless the commission met on

1368
00:58:49,190 --> 00:58:47,440
january 23 and over the next two days

1369
00:58:51,270 --> 00:58:49,200
hammered out a proposal for a national

1370
00:58:54,069 --> 00:58:51,280
lab in washington along the line

1371
00:58:55,589 --> 00:58:54,079
suggested in chamber's 1912 report

1372
00:58:57,829 --> 00:58:55,599
the one exception to this was a

1373
00:59:00,390 --> 00:58:57,839
modification written written by army

1374
00:59:02,390 --> 00:59:00,400
officer chief signal officer james allen

1375
00:59:05,270 --> 00:59:02,400
which was that this laboratory was to be

1376
00:59:07,270 --> 00:59:05,280
independent of both the smithsonian and

1377
00:59:08,950 --> 00:59:07,280
the bureau of standards

1378
00:59:10,710 --> 00:59:08,960
now i believe alan was perhaps beginning

1379
00:59:12,470 --> 00:59:10,720
to see the possibilities of capturing

1380
00:59:15,109 --> 00:59:12,480
the work of this lab for the army

1381
00:59:17,030 --> 00:59:15,119
benefit and that this would be easier to

1382
00:59:19,430 --> 00:59:17,040
do if it was not associated with either

1383
00:59:21,589 --> 00:59:19,440
of these organizations

1384
00:59:23,990 --> 00:59:21,599
when draft legislation circulated a few

1385
00:59:26,069 --> 00:59:24,000
days later however it omitted

1386
00:59:28,390 --> 00:59:26,079
this independence wording

1387
00:59:30,789 --> 00:59:28,400
and on february 5th when a quorum of 10

1388
00:59:33,030 --> 00:59:30,799

members met again to discuss the issue

1389
00:59:34,630 --> 00:59:33,040
they voted to add wording back into it

1390
00:59:37,349 --> 00:59:34,640
this time however putting the national

1391
00:59:38,950 --> 00:59:37,359
lab specifically under the smithsonian

1392
00:59:42,390 --> 00:59:38,960
the remaining three members of this

1393
00:59:44,150 --> 00:59:42,400
committee at this meeting abstained

1394
00:59:46,309 --> 00:59:44,160
uh in any event the woodward commission

1395
00:59:47,910 --> 00:59:46,319
fell apart partly because of the law and

1396
00:59:50,230 --> 00:59:47,920
partly over the issue of tying the

1397
00:59:51,910 --> 00:59:50,240
national lab to the smithsonian

1398
00:59:54,309 --> 00:59:51,920
taylor still felt that the navy model

1399
00:59:56,230 --> 00:59:54,319
basin could do the work stratton wanted

1400
00:59:58,069 --> 00:59:56,240
it in his own bureau of standards and

1401
00:59:59,349 --> 00:59:58,079
mclaren wanted it near an engineering

1402
01:00:01,829 --> 00:59:59,359
school like

1403
01:00:04,069 --> 01:00:01,839
mit for instance and we will undoubtedly

1404
01:00:05,510 --> 01:00:04,079
hear more about this in the next session

1405
01:00:07,430 --> 01:00:05,520
now the bill was submitted to congress

1406
01:00:11,030 --> 01:00:07,440
but faced opposition in both chambers

1407
01:00:13,750 --> 01:00:12,309
now while the woodward commission was

1408
01:00:15,270 --> 01:00:13,760
falling apart walcott went to the

1409
01:00:17,030 --> 01:00:15,280
smithsonian regions to get them to

1410
01:00:19,750 --> 01:00:17,040
reopen the langley aeronautical

1411
01:00:21,270 --> 01:00:19,760
laboratory as described by tom crouch

1412
01:00:23,109 --> 01:00:21,280
now i won't go over this again the

1413
01:00:25,430 --> 01:00:23,119

important part to my narrative is that

1414
01:00:26,950 --> 01:00:25,440
the langley lab was expected to only do

1415
01:00:28,470 --> 01:00:26,960
u.s government work

1416
01:00:30,710 --> 01:00:28,480
and since the army and navy were the

1417
01:00:32,390 --> 01:00:30,720
biggest government users two officers

1418
01:00:34,950 --> 01:00:32,400
from each service would serve on the

1419
01:00:36,870 --> 01:00:34,960
advisory committee guiding the research

1420
01:00:38,549 --> 01:00:36,880
once again we see chambers for the navy

1421
01:00:40,549 --> 01:00:38,559
this time along with naval constructor

1422
01:00:42,549 --> 01:00:40,559
holden richardson from the bureau of

1423
01:00:44,150 --> 01:00:42,559
construction repair

1424
01:00:46,150 --> 01:00:44,160
from the army the new chief signal

1425
01:00:47,910 --> 01:00:46,160
officer general george scriven and the

1426
01:00:49,990 --> 01:00:47,920
new head of the aeronautical division

1427
01:00:51,829 --> 01:00:50,000
major edgar russell

1428
01:00:54,390 --> 01:00:51,839
now the langley lab disbanded in may

1429
01:00:56,470 --> 01:00:54,400
1914 for problems which tom has already

1430
01:00:58,069 --> 01:00:56,480
talked about so we can move on

1431
01:01:00,950 --> 01:00:58,079
in any event by this time there had been

1432
01:01:02,549 --> 01:01:00,960
a change in naval aviation leadership

1433
01:01:04,309 --> 01:01:02,559
chambers himself had been plucked that

1434
01:01:07,109 --> 01:01:04,319
is forcibly retired in the summer of

1435
01:01:08,309 --> 01:01:07,119
1913 for lack of time and sea going

1436
01:01:10,150 --> 01:01:08,319
command

1437
01:01:12,150 --> 01:01:10,160
following this plucking however the navy

1438
01:01:14,630 --> 01:01:12,160

had no one to replace him

1439
01:01:17,349 --> 01:01:14,640
as head of naval aviation and so is

1440
01:01:20,549 --> 01:01:17,359
essentially forced to ask him to stay on

1441
01:01:23,030 --> 01:01:20,559
in an active duty but retired status

1442
01:01:24,950 --> 01:01:23,040
uh this changed again in january 1914

1443
01:01:27,829 --> 01:01:24,960
when admiral bradley fisk the aid for

1444
01:01:29,829 --> 01:01:27,839
operations took over naval aviation

1445
01:01:31,750 --> 01:01:29,839
although fisk kept chambers on staff he

1446
01:01:34,150 --> 01:01:31,760
replaced him as director of naval

1447
01:01:36,230 --> 01:01:34,160
aviation while chambers would remain

1448
01:01:38,710 --> 01:01:36,240
active in research

1449
01:01:40,549 --> 01:01:38,720
in aviation for the navy this move

1450
01:01:42,470 --> 01:01:40,559
finished chamber's influence within the

1451
01:01:45,750 --> 01:01:42,480
navy leaving him no more standing to

1452
01:01:47,349 --> 01:01:45,760
push for a national lab

1453
01:01:50,390 --> 01:01:47,359
now at the start of world war one in

1454
01:01:51,670 --> 01:01:50,400
august 1914 walcott decided that it was

1455
01:01:53,750 --> 01:01:51,680
time to make another attempt at

1456
01:01:56,150 --> 01:01:53,760
establishing this lab he believed that

1457
01:01:57,910 --> 01:01:56,160
the need for u.s preparedness in case we

1458
01:01:59,510 --> 01:01:57,920
should get into the war might tip the

1459
01:02:01,109 --> 01:01:59,520
political skills in favor of his

1460
01:02:02,789 --> 01:02:01,119
proposal this time

1461
01:02:04,789 --> 01:02:02,799
he led a subcommittee of smithsonian

1462
01:02:06,789 --> 01:02:04,799
research in creating draft legislation

1463
01:02:09,190 --> 01:02:06,799

which followed the forum established by

1464
01:02:11,589 --> 01:02:09,200
the various previous proposals this time

1465
01:02:13,270 --> 01:02:11,599
however walcott chose to concentrate on

1466
01:02:15,109 --> 01:02:13,280
the advisory committee to guide and

1467
01:02:18,069 --> 01:02:15,119
coordinate research and eliminate

1468
01:02:20,390 --> 01:02:18,079
duplication downplaying need for

1469
01:02:22,230 --> 01:02:20,400
independent laboratory facilities

1470
01:02:25,349 --> 01:02:22,240
the regents approved this draft bill on

1471
01:02:27,349 --> 01:02:25,359
january 1915 and with approval from

1472
01:02:29,190 --> 01:02:27,359
acting secretary of the navy franklin d

1473
01:02:31,190 --> 01:02:29,200
roosevelt the bill was quickly

1474
01:02:33,829 --> 01:02:31,200
introduced into the house and senate

1475
01:02:35,270 --> 01:02:33,839
naval affairs committees the reason for

1476
01:02:36,870 --> 01:02:35,280
this is because these committees were

1477
01:02:38,789 --> 01:02:36,880
known to be friendly to the bill and

1478
01:02:40,710 --> 01:02:38,799
indeed the bill quickly passed the floor

1479
01:02:41,910 --> 01:02:40,720
in both chambers

1480
01:02:43,990 --> 01:02:41,920
uh

1481
01:02:45,430 --> 01:02:44,000
to in order to beat the end of the 63rd

1482
01:02:47,430 --> 01:02:45,440
congress which would have happened on

1483
01:02:49,349 --> 01:02:47,440
march 4th the bill was attached to the

1484
01:02:53,109 --> 01:02:49,359
naval appropriations bill which has

1485
01:02:55,190 --> 01:02:53,119
already been said past march 3rd 1915

1486
01:02:57,430 --> 01:02:55,200
now as it was passed there was no money

1487
01:02:58,789 --> 01:02:57,440
for any lab facilities or any laboratory

1488
01:03:00,150 --> 01:02:58,799

operations

1489
01:03:02,069 --> 01:03:00,160
the bill uh

1490
01:03:03,029 --> 01:03:02,079
concentrated on the establishment of the

1491
01:03:05,430 --> 01:03:03,039
committee

1492
01:03:07,510 --> 01:03:05,440
of up to 14 members which would be two

1493
01:03:09,270 --> 01:03:07,520
members each from the army and navy

1494
01:03:11,270 --> 01:03:09,280
one each from the smithsonian the bureau

1495
01:03:13,589 --> 01:03:11,280
standards and the weather bureau and the

1496
01:03:14,710 --> 01:03:13,599
remaining seven members from men

1497
01:03:16,630 --> 01:03:14,720
acquainted with the needs of

1498
01:03:19,589 --> 01:03:16,640
aeronautical science or skilled in

1499
01:03:21,029 --> 01:03:19,599
aeronautical engineering

1500
01:03:22,870 --> 01:03:21,039
now assistant secretary of the navy

1501
01:03:24,710 --> 01:03:22,880
roosevelt convinced wilson to only

1502
01:03:26,549 --> 01:03:24,720
nominate 12 members of this committee

1503
01:03:28,309 --> 01:03:26,559
that is only five members from civil

1504
01:03:30,549 --> 01:03:28,319
life so that the government retained a

1505
01:03:31,990 --> 01:03:30,559
slight majority

1506
01:03:33,750 --> 01:03:32,000
now while the bill created what was

1507
01:03:36,069 --> 01:03:33,760
simply known as the advisory committee

1508
01:03:37,589 --> 01:03:36,079
for aeronautics the specifics of how the

1509
01:03:38,950 --> 01:03:37,599
new committee would work had yet to be

1510
01:03:41,109 --> 01:03:38,960
determined

1511
01:03:44,150 --> 01:03:41,119
now the army had been at best lukewarm

1512
01:03:46,789 --> 01:03:44,160
to previous proposals but with the aca

1513
01:03:48,710 --> 01:03:46,799

becoming more possibility chief signal

1514
01:03:51,510 --> 01:03:48,720
officer scriven began working to attempt

1515
01:03:53,109 --> 01:03:51,520
to mold the organization to his ideas

1516
01:03:54,390 --> 01:03:53,119
before the bill passed he had a

1517
01:03:56,710 --> 01:03:54,400
suggestion that the committee should

1518
01:03:58,950 --> 01:03:56,720
consist only of five members two from

1519
01:04:01,109 --> 01:03:58,960
the army two from the navy and one from

1520
01:04:02,950 --> 01:04:01,119
private life knowing this he was opposed

1521
01:04:05,589 --> 01:04:02,960
by the army chief of staff who believed

1522
01:04:09,349 --> 01:04:05,599
that the proposed aca should not only be

1523
01:04:13,829 --> 01:04:11,029
once the bill passed however scriven

1524
01:04:16,150 --> 01:04:13,839
continued to uh work on the rest of the

1525
01:04:18,150 --> 01:04:16,160
committee in fact on april 16th before

1526
01:04:19,510 --> 01:04:18,160
the committee met for the first time

1527
01:04:20,950 --> 01:04:19,520
scrivens sent a letter to the other

1528
01:04:22,549 --> 01:04:20,960
committee members

1529
01:04:24,789 --> 01:04:22,559
among other things he wanted this new

1530
01:04:26,950 --> 01:04:24,799
committee to use whatever authority it

1531
01:04:29,430 --> 01:04:26,960
might have to endorse sufficient

1532
01:04:30,150 --> 01:04:29,440
aeronautical appropriations for the army

1533
01:04:32,230 --> 01:04:30,160
and

1534
01:04:34,950 --> 01:04:32,240
the navy if they had to

1535
01:04:36,950 --> 01:04:34,960
uh but he also proposed an organization

1536
01:04:39,270 --> 01:04:36,960
for this new aca

1537
01:04:40,789 --> 01:04:39,280
he specified only three boards there

1538
01:04:42,710 --> 01:04:40,799

would be an administrative board made up

1539
01:04:44,549 --> 01:04:42,720
of the government representatives a

1540
01:04:46,710 --> 01:04:44,559
scientific board made up of the civilian

1541
01:04:48,150 --> 01:04:46,720
scientists and an executive council

1542
01:04:49,829 --> 01:04:48,160
which would handle the day-to-day

1543
01:04:51,349 --> 01:04:49,839
business of the group

1544
01:04:53,109 --> 01:04:51,359
now the committee met for the first time

1545
01:04:54,470 --> 01:04:53,119
on april 23rd

1546
01:04:56,390 --> 01:04:54,480
1915

1547
01:04:58,230 --> 01:04:56,400
significantly in the office of the

1548
01:04:59,670 --> 01:04:58,240
secretary of war

1549
01:05:01,589 --> 01:04:59,680
now the group agreed that charles

1550
01:05:03,670 --> 01:05:01,599
walcott deserved to be chair of this new

1551
01:05:04,710 --> 01:05:03,680
committee but walcott was absent he was

1552
01:05:06,390 --> 01:05:04,720
out of town attending his

1553
01:05:08,630 --> 01:05:06,400
father-in-law's funeral

1554
01:05:11,109 --> 01:05:08,640
and scriven the senior army officer was

1555
01:05:12,630 --> 01:05:11,119
elected temporary chair

1556
01:05:14,630 --> 01:05:12,640
uh now the first thing they did was

1557
01:05:16,230 --> 01:05:14,640
formally change the name to the national

1558
01:05:17,910 --> 01:05:16,240
advisory committee for aeronautics in

1559
01:05:20,789 --> 01:05:17,920
order to avoid confusion with the

1560
01:05:22,230 --> 01:05:20,799
british organization

1561
01:05:24,150 --> 01:05:22,240
now the second thing that happened was

1562
01:05:27,270 --> 01:05:24,160
to decide on the form of this new

1563
01:05:29,990 --> 01:05:27,280

committee walcott was known to desire uh

1564
01:05:32,309 --> 01:05:30,000
subcommittees to be created as needed

1565
01:05:35,589 --> 01:05:32,319
which would be open to outside members

1566
01:05:37,670 --> 01:05:35,599
but chaired by members of the naca

1567
01:05:39,349 --> 01:05:37,680
scriven as evidenced by the earlier

1568
01:05:42,230 --> 01:05:39,359
letter was diametrically opposed to

1569
01:05:45,029 --> 01:05:42,240
these ideas he believed in only the

1570
01:05:47,349 --> 01:05:45,039
three subcommittees and with no outside

1571
01:05:50,069 --> 01:05:47,359
members on those committees he believed

1572
01:05:52,309 --> 01:05:50,079
that the naca would become too diffused

1573
01:05:54,230 --> 01:05:52,319
and not get anything done if it followed

1574
01:05:55,990 --> 01:05:54,240
walcott's plans

1575
01:05:58,789 --> 01:05:56,000
scriven succeeded in getting the rest of

1576
01:06:01,029 --> 01:05:58,799
the group to vote for his proposal in

1577
01:06:02,470 --> 01:06:01,039
this first meeting however walcott

1578
01:06:05,670 --> 01:06:02,480
successfully appealed to president

1579
01:06:08,150 --> 01:06:05,680
wilson before he signed off on the

1580
01:06:10,470 --> 01:06:08,160
organizational paperwork and got him to

1581
01:06:15,829 --> 01:06:10,480
restore the provisions for subcommittees

1582
01:06:19,109 --> 01:06:17,190
now one event demonstrates the

1583
01:06:22,230 --> 01:06:19,119
possibility of too much capture of the

1584
01:06:24,150 --> 01:06:22,240
naca in september 1915 wilson's

1585
01:06:26,549 --> 01:06:24,160
secretary of the navy josephus daniel

1586
01:06:27,990 --> 01:06:26,559
asked his own naval consulting board for

1587
01:06:30,150 --> 01:06:28,000
its opinion on establishing an

1588
01:06:31,430 --> 01:06:30,160

experimental research lab for naval

1589
01:06:33,510 --> 01:06:31,440
aviation

1590
01:06:34,950 --> 01:06:33,520
the board responded that such a lab was

1591
01:06:38,630 --> 01:06:34,960
needed but that it should be for the

1592
01:06:40,870 --> 01:06:38,640
whole navy not just naval aviation

1593
01:06:42,870 --> 01:06:40,880
this eventually led to what's now known

1594
01:06:45,190 --> 01:06:42,880
as the naval research lab

1595
01:06:47,270 --> 01:06:45,200
meanwhile army officer scriven had seen

1596
01:06:49,990 --> 01:06:47,280
daniel's letter to the

1597
01:06:53,190 --> 01:06:50,000
naval consulting board and cited it in

1598
01:06:55,109 --> 01:06:53,200
his own proposal to the naca in october

1599
01:06:57,589 --> 01:06:55,119
suggesting that the naca should request

1600
01:07:00,150 --> 01:06:57,599
money for its own lab

1601
01:07:02,230 --> 01:07:00,160
now since the naca had been authorized

1602
01:07:03,670 --> 01:07:02,240
under a naval appropriations act it

1603
01:07:05,829 --> 01:07:03,680
submitted its funding request for

1604
01:07:07,990 --> 01:07:05,839
laboratories back to daniels

1605
01:07:09,910 --> 01:07:08,000
now daniels believed that the naca

1606
01:07:12,230 --> 01:07:09,920
should not continue funding through the

1607
01:07:14,309 --> 01:07:12,240
navy bills that it should be separate

1608
01:07:15,910 --> 01:07:14,319
he was worried generally that the naca

1609
01:07:17,510 --> 01:07:15,920
was hurting navy requests for other

1610
01:07:20,390 --> 01:07:17,520
money particularly in a year that he

1611
01:07:22,309 --> 01:07:20,400
wanted uh to ask for funding for the

1612
01:07:24,230 --> 01:07:22,319
navy research lab

1613
01:07:26,150 --> 01:07:24,240

uh but he was also concerned that with

1614
01:07:28,789 --> 01:07:26,160
such a move that the naca was moving

1615
01:07:31,430 --> 01:07:28,799
beyond its advisory status

1616
01:07:33,270 --> 01:07:31,440
and rejected the naca request

1617
01:07:35,109 --> 01:07:33,280
walcott and stratton however met with

1618
01:07:37,510 --> 01:07:35,119
daniels and convinced him to change his

1619
01:07:40,309 --> 01:07:37,520
mind and the funding for the naca was

1620
01:07:42,309 --> 01:07:40,319
eventually approved for fiscal year 1917

1621
01:07:43,910 --> 01:07:42,319
in the naval appropriations bill

1622
01:07:48,390 --> 01:07:43,920
although it would be years before this

1623
01:07:52,309 --> 01:07:50,309
thus we can see that the final form of

1624
01:07:54,789 --> 01:07:52,319
the naca as well as the timing of its

1625
01:07:56,630 --> 01:07:54,799
establishment was strongly influenced by

1626
01:07:58,789 --> 01:07:56,640
the military even if not always in the

1627
01:08:00,549 --> 01:07:58,799
ways the military expected

1628
01:08:02,549 --> 01:08:00,559
soon after the army purchased its first

1629
01:08:03,990 --> 01:08:02,559
airplane george owen square recognized

1630
01:08:05,670 --> 01:08:04,000
the need for the government to support

1631
01:08:07,349 --> 01:08:05,680
fundamental research

1632
01:08:10,069 --> 01:08:07,359
research that would benefit the aviation

1633
01:08:11,670 --> 01:08:10,079
industry broadly not just the army

1634
01:08:13,190 --> 01:08:11,680
square proposed the committee to guide

1635
01:08:14,950 --> 01:08:13,200
research at a national aeronautical

1636
01:08:17,669 --> 01:08:14,960
laboratory drawing on his own knowledge

1637
01:08:19,590 --> 01:08:17,679
of other scientific advisory committees

1638
01:08:21,590 --> 01:08:19,600

independently navy officer washington

1639
01:08:23,590 --> 01:08:21,600
irving chambers also saw the need to do

1640
01:08:25,269 --> 01:08:23,600
fundamental research in aviation even

1641
01:08:26,470 --> 01:08:25,279
before the navy had purchased its first

1642
01:08:28,229 --> 01:08:26,480
plane

1643
01:08:30,229 --> 01:08:28,239
like square chambers modeled his own

1644
01:08:31,990 --> 01:08:30,239
proposal for a national aeronautical lab

1645
01:08:33,349 --> 01:08:32,000
on the uk's advisory committee for

1646
01:08:35,269 --> 01:08:33,359
aeronautics

1647
01:08:37,189 --> 01:08:35,279
along with walcott and alfred zham

1648
01:08:39,430 --> 01:08:37,199
chambers became a prime promoter of some

1649
01:08:41,030 --> 01:08:39,440
sort of national lab serving as one of

1650
01:08:42,789 --> 01:08:41,040
the navy representatives on both the

1651
01:08:44,550 --> 01:08:42,799
board of woodward commission and the

1652
01:08:45,749 --> 01:08:44,560
short-lived langley labs advisory

1653
01:08:47,510 --> 01:08:45,759
committee

1654
01:08:49,269 --> 01:08:47,520
chambers and square both considered the

1655
01:08:51,510 --> 01:08:49,279
needs of the country ahead of the needs

1656
01:08:53,110 --> 01:08:51,520
of their own services though it is true

1657
01:08:56,070 --> 01:08:53,120
that the military would benefit greatly

1658
01:08:57,590 --> 01:08:56,080
from such a national lab

1659
01:08:59,269 --> 01:08:57,600
now with the reassignment of square in

1660
01:09:00,630 --> 01:08:59,279
chambers walcott became the driving

1661
01:09:03,030 --> 01:09:00,640
force in the creation of a national

1662
01:09:04,950 --> 01:09:03,040
aeronautic lab while other officers in

1663
01:09:07,030 --> 01:09:04,960

the services with more parochial

1664
01:09:09,430 --> 01:09:07,040
attitudes became increasingly interested

1665
01:09:10,950 --> 01:09:09,440
in capturing the work of such a lab

1666
01:09:12,470 --> 01:09:10,960
david taylor for instance wanted the

1667
01:09:14,470 --> 01:09:12,480
model basin he had built to have the

1668
01:09:15,829 --> 01:09:14,480
prestige and the budget of being the

1669
01:09:17,430 --> 01:09:15,839
national lab

1670
01:09:19,269 --> 01:09:17,440
general scriven on the other hand likely

1671
01:09:21,269 --> 01:09:19,279
saw the benefits of having a lab working

1672
01:09:23,189 --> 01:09:21,279
for the army without the expense coming

1673
01:09:25,030 --> 01:09:23,199
out of the army budget

1674
01:09:27,189 --> 01:09:25,040
secretary of the navy josephus daniels

1675
01:09:29,269 --> 01:09:27,199
was on the other side of this equation

1676
01:09:31,349 --> 01:09:29,279
he was worried that the naca budget was

1677
01:09:33,110 --> 01:09:31,359
in fact coming out of the navy's pockets

1678
01:09:35,749 --> 01:09:33,120
and that the navy was thus subsidizing

1679
01:09:37,669 --> 01:09:35,759
the army and private industry

1680
01:09:39,590 --> 01:09:37,679
in the end the naca budget did not take

1681
01:09:42,070 --> 01:09:39,600
away from daniel's naval research lab

1682
01:09:43,430 --> 01:09:42,080
and the naca eventually did begin to get

1683
01:09:45,590 --> 01:09:43,440
funding separate from the navy's

1684
01:09:47,349 --> 01:09:45,600
appropriations

1685
01:09:48,709 --> 01:09:47,359
so as a final thought i hope i have

1686
01:09:50,229 --> 01:09:48,719
convinced you that while military

1687
01:09:51,669 --> 01:09:50,239
interest alone was not enough to bring

1688
01:09:53,829 --> 01:09:51,679

about the creation of the national

1689
01:09:55,430 --> 01:09:53,839
advisory committee for aeronautics said

1690
01:09:57,750 --> 01:09:55,440
interest is important to understanding

1691
01:10:00,070 --> 01:09:57,760
how and why the naca came about when it

1692
01:10:09,669 --> 01:10:00,080
did taking the forum that it did

1693
01:10:13,270 --> 01:10:11,189
well thank you very much to all three of

1694
01:10:15,189 --> 01:10:13,280
our panelists um and now

1695
01:10:16,709 --> 01:10:15,199
time for some questions and answers if

1696
01:10:19,030 --> 01:10:16,719
you're interested there on any of the

1697
01:10:20,790 --> 01:10:19,040
three papers or general topics about the

1698
01:10:22,229 --> 01:10:20,800
setting of the stage for the

1699
01:10:23,590 --> 01:10:22,239
national advisory committee foreign i

1700
01:10:24,630 --> 01:10:23,600
remind you that

1701
01:10:27,430 --> 01:10:24,640
you should please walk up to the

1702
01:10:28,790 --> 01:10:27,440
microphone there to ask questions and

1703
01:10:30,070 --> 01:10:28,800
because we're taping this and

1704
01:10:32,149 --> 01:10:30,080
broadcasting it there'll be a release

1705
01:10:33,830 --> 01:10:32,159
format you need to sign to do as well so

1706
01:10:34,630 --> 01:10:33,840
expect a little bit of paperwork

1707
01:10:36,630 --> 01:10:34,640
but

1708
01:10:37,910 --> 01:10:36,640
welcome company

1709
01:10:42,470 --> 01:10:37,920
and ask whatever questions you might

1710
01:10:46,229 --> 01:10:43,990
and we're going to start with a question

1711
01:10:48,149 --> 01:10:46,239
from our online audience

1712
01:10:50,790 --> 01:10:48,159
uh the question is why did the langley

1713
01:10:52,390 --> 01:10:50,800

aerodrome fail twice

1714
01:10:54,470 --> 01:10:52,400
why did the langley airdrome fail on

1715
01:10:55,830 --> 01:10:54,480
this flight she wants the

1716
01:10:59,030 --> 01:10:55,840
the language

1717
01:11:00,229 --> 01:10:59,040
aerodrome failed twice oh

1718
01:11:04,229 --> 01:11:00,239
um

1719
01:11:05,510 --> 01:11:04,239
that's actually in the paper as well

1720
01:11:08,630 --> 01:11:05,520
it failed

1721
01:11:11,030 --> 01:11:08,640
because of structural frailty

1722
01:11:13,910 --> 01:11:11,040
for years the argument went back and

1723
01:11:16,950 --> 01:11:13,920
forth was it capable wasn't it capable

1724
01:11:20,470 --> 01:11:16,960
in fact at one point walcott even

1725
01:11:23,110 --> 01:11:20,480
uh sort of twisted david taylor and and

1726
01:11:25,590 --> 01:11:23,120
ames arms to do

1727
01:11:27,510 --> 01:11:25,600
a report that said well

1728
01:11:30,149 --> 01:11:27,520
the rights were the first to fly but

1729
01:11:32,310 --> 01:11:30,159
langley was close behind they

1730
01:11:35,750 --> 01:11:32,320
sort of ignored the issue

1731
01:11:38,870 --> 01:11:35,760
but it was really only over the past two

1732
01:11:42,070 --> 01:11:38,880
decades that engineers have taken a hard

1733
01:11:45,590 --> 01:11:42,080
look at whether or not it was capable of

1734
01:11:46,630 --> 01:11:45,600
flight i think the bottom line is in

1735
01:11:50,310 --> 01:11:46,640
a

1736
01:11:53,350 --> 01:11:50,320
toronto

1737
01:11:55,430 --> 01:11:53,360
an engineering dissertation but it's on

1738
01:11:57,910 --> 01:11:55,440

the whole question of the capability of

1739
01:12:00,550 --> 01:11:57,920
the langley era drone to fly

1740
01:12:03,910 --> 01:12:00,560
and the bottom line that the student

1741
01:12:07,030 --> 01:12:03,920
came up with was that it was not capable

1742
01:12:09,350 --> 01:12:07,040
of flight and that was because of

1743
01:12:10,950 --> 01:12:09,360
again the structural basic structural

1744
01:12:18,550 --> 01:12:10,960
weakness of uh

1745
01:12:18,560 --> 01:12:24,310
roger please hi i'm roger lanius

1746
01:12:27,510 --> 01:12:25,350
langley

1747
01:12:29,590 --> 01:12:27,520
got some money from the war department

1748
01:12:32,550 --> 01:12:29,600
to do the aerodrome

1749
01:12:36,070 --> 01:12:32,560
50k something like that

1750
01:12:37,510 --> 01:12:36,080
and it was a failure

1751
01:12:39,830 --> 01:12:37,520
the

1752
01:12:42,709 --> 01:12:39,840
mythology and maybe it's just mythology

1753
01:12:45,030 --> 01:12:42,719
is that this so turned off

1754
01:12:47,750 --> 01:12:45,040
the government in terms of funding any

1755
01:12:49,350 --> 01:12:47,760
other activities that it really wasn't

1756
01:12:51,590 --> 01:12:49,360
until you get

1757
01:12:53,270 --> 01:12:51,600
into the naca arena where they're

1758
01:12:55,990 --> 01:12:53,280
starting to talk about an advisory

1759
01:12:57,990 --> 01:12:56,000
committee that that there was a desire

1760
01:12:59,830 --> 01:12:58,000
or even any kind of willingness to

1761
01:13:01,830 --> 01:12:59,840
continue to support

1762
01:13:04,709 --> 01:13:01,840
aeronautical research

1763
01:13:06,149 --> 01:13:04,719

how true or false is that how widespread

1764
01:13:09,110 --> 01:13:06,159
was the

1765
01:13:13,189 --> 01:13:09,120
animosity toward government investment

1766
01:13:15,910 --> 01:13:13,199
through that 10 to 12 year period

1767
01:13:18,390 --> 01:13:15,920
well roger's right of course the

1768
01:13:21,270 --> 01:13:18,400
board of ordinance and fortification

1769
01:13:23,750 --> 01:13:21,280
had in fact given langley when the day

1770
01:13:27,430 --> 01:13:23,760
was done fifty thousand dollars

1771
01:13:31,189 --> 01:13:27,440
to uh spend on the great eardrum and the

1772
01:13:32,870 --> 01:13:31,199
smithsonian both from the hodgkin's fund

1773
01:13:35,910 --> 01:13:32,880
and from other

1774
01:13:38,070 --> 01:13:35,920
trust funds in the smithsonian coffers

1775
01:13:40,149 --> 01:13:38,080
put in even more money

1776
01:13:42,790 --> 01:13:40,159
for the air drone and of course the

1777
01:13:44,470 --> 01:13:42,800
failure of the eardrum

1778
01:13:47,110 --> 01:13:44,480
you know was in front of the new york

1779
01:13:47,990 --> 01:13:47,120
times and everyone langley as i said

1780
01:13:49,990 --> 01:13:48,000
really

1781
01:13:53,350 --> 01:13:50,000
took it on the chin

1782
01:13:56,229 --> 01:13:53,360
and so it's really

1783
01:14:00,070 --> 01:13:56,239
when the wright brothers come back

1784
01:14:02,310 --> 01:14:00,080
beginning in 1907 looking to sell their

1785
01:14:05,350 --> 01:14:02,320
aerodrome

1786
01:14:08,630 --> 01:14:05,360
the war department gets a letter on pale

1787
01:14:11,350 --> 01:14:08,640
blue stationary with a bicycle on top

1788
01:14:14,310 --> 01:14:11,360

from these two guys who say they've done

1789
01:14:16,950 --> 01:14:14,320
it they can provide you with an airplane

1790
01:14:19,350 --> 01:14:16,960
and here's what it'll do and so on

1791
01:14:21,510 --> 01:14:19,360
what hadn't occurred to the rights is

1792
01:14:24,630 --> 01:14:21,520
that that letter was going to land on

1793
01:14:26,310 --> 01:14:24,640
the same desk that had funded the

1794
01:14:31,510 --> 01:14:26,320
langley eardrum

1795
01:14:33,750 --> 01:14:31,520
and so um at least initially 1907-1908

1796
01:14:36,550 --> 01:14:33,760
there was a reluctance on the part of

1797
01:14:41,350 --> 01:14:36,560
the army to um

1798
01:14:44,149 --> 01:14:41,360
invest in aeronautics to that extent

1799
01:14:46,470 --> 01:14:44,159
the problem though um

1800
01:14:48,790 --> 01:14:46,480
is deeper than that obviously the

1801
01:14:49,590 --> 01:14:48,800
military the army and the navy got over

1802
01:14:52,870 --> 01:14:49,600
their

1803
01:14:54,790 --> 01:14:52,880
reluctance to spend money on aviation

1804
01:14:56,470 --> 01:14:54,800
the real problem

1805
01:14:58,950 --> 01:14:56,480
um

1806
01:15:02,310 --> 01:14:58,960
the real reason that american

1807
01:15:03,669 --> 01:15:02,320
aeronautics was as i said it

1808
01:15:05,510 --> 01:15:03,679
really isn't

1809
01:15:08,390 --> 01:15:05,520
even the right patent suit it is the

1810
01:15:10,630 --> 01:15:08,400
whole question of investment

1811
01:15:13,270 --> 01:15:10,640
with war on the horizon the european

1812
01:15:16,790 --> 01:15:13,280
nations are investing in aeronautics the

1813
01:15:18,470 --> 01:15:16,800

united states just absolutely is not

1814
01:15:20,550 --> 01:15:18,480
and um

1815
01:15:24,390 --> 01:15:20,560
you know as the character and the right

1816
01:15:25,189 --> 01:15:24,400
stuff says no bucks no buck rogers and

1817
01:15:28,550 --> 01:15:25,199
that

1818
01:15:31,590 --> 01:15:28,560
really is what sets the stage for

1819
01:15:34,070 --> 01:15:31,600
everyone's recognition of the need for a

1820
01:15:35,430 --> 01:15:34,080
national advisory board in the national

1821
01:15:37,910 --> 01:15:35,440
laboratory

1822
01:15:39,750 --> 01:15:37,920
if i can just jump in briefly from the

1823
01:15:41,750 --> 01:15:39,760
the government perspective

1824
01:15:43,590 --> 01:15:41,760
uh certainly the the board of ordinance

1825
01:15:44,470 --> 01:15:43,600
and fortification was

1826
01:15:46,070 --> 01:15:44,480
uh

1827
01:15:47,750 --> 01:15:46,080
certainly a little bit gun shy having

1828
01:15:50,070 --> 01:15:47,760
taken a shellacking from the public in

1829
01:15:52,470 --> 01:15:50,080
congress over spending all of this money

1830
01:15:54,470 --> 01:15:52,480
which was about equivalent of a quarter

1831
01:15:57,590 --> 01:15:54,480
of their year budget

1832
01:15:59,350 --> 01:15:57,600
on such an obvious failure failure

1833
01:16:01,110 --> 01:15:59,360
the second crash occurred

1834
01:16:03,270 --> 01:16:01,120
just outside of washington here and it

1835
01:16:04,630 --> 01:16:03,280
was a field day everyone went down to

1836
01:16:06,149 --> 01:16:04,640
see it happen

1837
01:16:08,390 --> 01:16:06,159
um

1838
01:16:10,870 --> 01:16:08,400

interestingly uh looking through the

1839
01:16:13,590 --> 01:16:10,880
board of ordnance fortification records

1840
01:16:16,630 --> 01:16:13,600
uh they are less gun shy

1841
01:16:18,950 --> 01:16:16,640
about uh further investment in this the

1842
01:16:20,470 --> 01:16:18,960
problem is they sort of stepped up what

1843
01:16:21,990 --> 01:16:20,480
they needed to see before they were

1844
01:16:24,870 --> 01:16:22,000
willing to

1845
01:16:26,470 --> 01:16:24,880
spend any more money and as you say the

1846
01:16:28,149 --> 01:16:26,480
interesting thing is this pale blue

1847
01:16:29,350 --> 01:16:28,159
letter appears

1848
01:16:31,350 --> 01:16:29,360
the rights

1849
01:16:33,590 --> 01:16:31,360
were interested in preserving their

1850
01:16:35,590 --> 01:16:33,600
their intellectual property rights and

1851
01:16:36,870 --> 01:16:35,600
did not want to give much away

1852
01:16:38,630 --> 01:16:36,880
and the interesting thing is when you

1853
01:16:40,390 --> 01:16:38,640
compare that to the other letters that

1854
01:16:42,149 --> 01:16:40,400
were landing on the board of ordinances

1855
01:16:43,750 --> 01:16:42,159
fortifications

1856
01:16:45,990 --> 01:16:43,760
table at the time

1857
01:16:47,510 --> 01:16:46,000
and there's really nothing to say that

1858
01:16:48,630 --> 01:16:47,520
no these two wright brothers had

1859
01:16:52,229 --> 01:16:48,640
something

1860
01:16:54,709 --> 01:16:52,239
the the rights as larry knows would not

1861
01:16:55,910 --> 01:16:54,719
even send a photograph of their airplane

1862
01:16:58,709 --> 01:16:55,920
in the air

1863
01:17:04,310 --> 01:16:58,719

just the letters saying here's what we

1864
01:17:07,830 --> 01:17:06,070
hi i'm glenn bugos um i'd like to ask

1865
01:17:10,709 --> 01:17:07,840
the three speakers to comment on the

1866
01:17:12,070 --> 01:17:10,719
tension between secrecy and openness it

1867
01:17:13,750 --> 01:17:12,080
doesn't seem to have been an issue when

1868
01:17:15,590 --> 01:17:13,760
you were talking about the military

1869
01:17:17,910 --> 01:17:15,600
interest in the naca but ximena i'd like

1870
01:17:20,229 --> 01:17:17,920
to start with you because octavia nude

1871
01:17:22,390 --> 01:17:20,239
especially seems to be swimming against

1872
01:17:24,310 --> 01:17:22,400
the tide of very private personal action

1873
01:17:25,270 --> 01:17:24,320
in the development of flight that might

1874
01:17:26,709 --> 01:17:25,280
be

1875
01:17:28,630 --> 01:17:26,719
evident in his correspondence with the

1876
01:17:30,630 --> 01:17:28,640
wright brothers but you said that he

1877
01:17:32,870 --> 01:17:30,640
insisted to always share what you know

1878
01:17:35,669 --> 01:17:32,880
which seems to reflect very well

1879
01:17:38,709 --> 01:17:35,679
what we know about the naca and its uh

1880
01:17:41,590 --> 01:17:38,719
publications and outreach program

1881
01:17:42,790 --> 01:17:41,600
well chanute's philosophy as civil

1882
01:17:46,709 --> 01:17:42,800
engineer

1883
01:17:52,070 --> 01:17:49,430
training at the university or whatever

1884
01:17:52,950 --> 01:17:52,080
he knew that the only way for him to

1885
01:17:55,350 --> 01:17:52,960
learn

1886
01:17:57,669 --> 01:17:55,360
was to pick somebody else's brain who

1887
01:18:00,470 --> 01:17:57,679
knew more than he did

1888
01:18:03,910 --> 01:18:00,480

and throughout his life he

1889
01:18:04,870 --> 01:18:03,920
stayed with that because he wanted other

1890
01:18:07,990 --> 01:18:04,880
people

1891
01:18:11,270 --> 01:18:08,000
to know what he knew so that they cannot

1892
01:18:13,110 --> 01:18:11,280
take it to the next level

1893
01:18:16,149 --> 01:18:13,120
and therefore to him that was just

1894
01:18:18,390 --> 01:18:16,159
something very natural and there came a

1895
01:18:20,709 --> 01:18:18,400
blue letter to his house

1896
01:18:21,830 --> 01:18:20,719
and when he came back home and opened

1897
01:18:23,910 --> 01:18:21,840
the mail

1898
01:18:24,709 --> 01:18:23,920
okay there was another guy that wanted

1899
01:18:28,630 --> 01:18:24,719
help

1900
01:18:29,910 --> 01:18:28,640
i to give it to him simple as that

1901
01:18:32,790 --> 01:18:29,920
why are you tom do you want to comment

1902
01:18:35,830 --> 01:18:32,800
on this uh yeah certainly from the uh

1903
01:18:38,229 --> 01:18:35,840
the military perspective uh

1904
01:18:40,709 --> 01:18:38,239
at least up until world war one whether

1905
01:18:44,229 --> 01:18:40,719
you count 1914 or

1906
01:18:46,229 --> 01:18:44,239
1917 when the us gets into the war

1907
01:18:48,070 --> 01:18:46,239
yeah there's there's not much of a

1908
01:18:50,470 --> 01:18:48,080
concern about secrecy

1909
01:18:52,950 --> 01:18:50,480
with aeronautical research and i think a

1910
01:18:55,669 --> 01:18:52,960
big part of that is that

1911
01:18:58,470 --> 01:18:55,679
both services recognize that

1912
01:19:03,750 --> 01:18:58,480
they're not going to be making any of

1913
01:19:07,830 --> 01:19:06,470

industry the way that they do today

1914
01:19:10,070 --> 01:19:07,840
they don't have that they did not have

1915
01:19:11,990 --> 01:19:10,080
that sort of control over what aviation

1916
01:19:15,830 --> 01:19:12,000
industry existed at the time

1917
01:19:18,630 --> 01:19:15,840
and so uh the only way to improve things

1918
01:19:20,310 --> 01:19:18,640
was for this research to be uh given as

1919
01:19:21,990 --> 01:19:20,320
broadly as possible at least within the

1920
01:19:23,510 --> 01:19:22,000
u.s

1921
01:19:25,910 --> 01:19:23,520
they were not terribly concerned about

1922
01:19:27,590 --> 01:19:25,920
this research going overseas but neither

1923
01:19:29,430 --> 01:19:27,600
were they interested in promoting that i

1924
01:19:38,950 --> 01:19:29,440
think

1925
01:19:40,950 --> 01:19:38,960
one of the interesting things that

1926
01:19:42,709 --> 01:19:40,960
separated the rights from their friend

1927
01:19:44,550 --> 01:19:42,719
octave chanut

1928
01:19:48,149 --> 01:19:44,560
is um

1929
01:19:51,189 --> 01:19:48,159
their attitude toward protecting

1930
01:19:53,189 --> 01:19:51,199
their invention protecting their data

1931
01:19:54,790 --> 01:19:53,199
but you know it's not that difficult to

1932
01:19:56,709 --> 01:19:54,800
understand after all they're the ones

1933
01:19:58,310 --> 01:19:56,719
who had actually done it

1934
01:20:01,189 --> 01:19:58,320
and um

1935
01:20:04,630 --> 01:20:01,199
you know they sort of um

1936
01:20:06,870 --> 01:20:04,640
believe that that entitles them to

1937
01:20:08,229 --> 01:20:06,880
a reward and

1938
01:20:12,709 --> 01:20:08,239

that's the

1939
01:20:17,110 --> 01:20:14,390
thanks

1940
01:20:18,870 --> 01:20:17,120
peter please yeah um so there's a lot of

1941
01:20:20,470 --> 01:20:18,880
in these discussions about

1942
01:20:23,270 --> 01:20:20,480
a national lab

1943
01:20:24,790 --> 01:20:23,280
uh and i'm interested in how

1944
01:20:26,390 --> 01:20:24,800
that transition was made from the

1945
01:20:29,110 --> 01:20:26,400
national advisory committee for

1946
01:20:31,430 --> 01:20:29,120
aeronautics to eventually an operating

1947
01:20:33,270 --> 01:20:31,440
agency which is a pretty big shift in

1948
01:20:34,709 --> 01:20:33,280
function and yes you have the langley

1949
01:20:36,310 --> 01:20:34,719
lab and i guess

1950
01:20:38,390 --> 01:20:36,320
lawrence you mentioned that

1951
01:20:40,709 --> 01:20:38,400
secretary of navy daniels

1952
01:20:42,149 --> 01:20:40,719
made that kind of language

1953
01:20:44,709 --> 01:20:42,159
possible but if you two could maybe

1954
01:20:46,790 --> 01:20:44,719
elaborate on how that

1955
01:20:48,550 --> 01:20:46,800
happened how it made that shift from an

1956
01:20:49,990 --> 01:20:48,560
advisory committee to

1957
01:20:51,750 --> 01:20:50,000
this major

1958
01:20:52,870 --> 01:20:51,760
operating organization

1959
01:20:55,110 --> 01:20:52,880
like that

1960
01:20:57,350 --> 01:20:55,120
um

1961
01:20:59,510 --> 01:20:57,360
so the the thing in all of the proposals

1962
01:21:02,709 --> 01:20:59,520
that sort of precede what becomes the

1963
01:21:07,590 --> 01:21:05,110

really the lab is central

1964
01:21:09,830 --> 01:21:07,600
in all of those it's not until you get

1965
01:21:13,030 --> 01:21:09,840
to walcott's

1966
01:21:14,470 --> 01:21:13,040
subcommittee of the regents and walcott

1967
01:21:16,390 --> 01:21:14,480
says let me change this up a little

1968
01:21:18,229 --> 01:21:16,400
let's concentrate on

1969
01:21:21,350 --> 01:21:18,239
the committee

1970
01:21:22,790 --> 01:21:21,360
to supervise and and eliminate

1971
01:21:24,709 --> 01:21:22,800
duplication

1972
01:21:26,950 --> 01:21:24,719
uh which you know this is this is the

1973
01:21:28,550 --> 01:21:26,960
beginning of the uh the efficiency

1974
01:21:31,430 --> 01:21:28,560
movement

1975
01:21:34,229 --> 01:21:31,440
the the drive to eliminate duplication

1976
01:21:35,910 --> 01:21:34,239
and save money thereby

1977
01:21:40,950 --> 01:21:35,920
terribly important in the federal

1978
01:21:44,390 --> 01:21:42,550
so

1979
01:21:46,310 --> 01:21:44,400
the i the idea of the laboratory is

1980
01:21:50,070 --> 01:21:46,320
still there they sort of get around it

1981
01:21:53,110 --> 01:21:50,080
there um and i

1982
01:21:54,550 --> 01:21:53,120
i think there's an element when daniels

1983
01:21:56,470 --> 01:21:54,560
goes to

1984
01:21:59,270 --> 01:21:56,480
the naval consulting board headed by

1985
01:22:00,790 --> 01:21:59,280
thomas edison

1986
01:22:02,470 --> 01:22:00,800
and says

1987
01:22:03,510 --> 01:22:02,480
what you know what do you guys think

1988
01:22:06,229 --> 01:22:03,520

about

1989
01:22:07,750 --> 01:22:06,239
a laboratory for naval aviation

1990
01:22:10,470 --> 01:22:07,760
and the board comes back and says we

1991
01:22:12,950 --> 01:22:10,480
need a laboratory for the whole navy

1992
01:22:16,629 --> 01:22:12,960
that the the initial request do does the

1993
01:22:17,990 --> 01:22:16,639
navy need its own uh aviation laboratory

1994
01:22:18,790 --> 01:22:18,000
scriven

1995
01:22:20,629 --> 01:22:18,800
uh

1996
01:22:23,910 --> 01:22:20,639
you know partly from

1997
01:22:25,350 --> 01:22:23,920
that inter-service rivalry but partly

1998
01:22:26,709 --> 01:22:25,360
recognition that

1999
01:22:28,310 --> 01:22:26,719
hey if there's going to be a government

2000
01:22:30,790 --> 01:22:28,320
laboratory let's have it be a government

2001
01:22:32,629 --> 01:22:30,800
laboratory not just a navy laboratory

2002
01:22:35,030 --> 01:22:32,639
and once again pushes that idea through

2003
01:22:36,629 --> 01:22:35,040
the naca

2004
01:22:38,470 --> 01:22:36,639
the

2005
01:22:42,149 --> 01:22:38,480
that's absolutely true

2006
01:22:45,990 --> 01:22:42,159
the the notion of the laboratory was

2007
01:22:48,390 --> 01:22:46,000
actually always there until walcott's

2008
01:22:50,950 --> 01:22:48,400
uh final drive to

2009
01:22:53,510 --> 01:22:50,960
create what became the naca but it's

2010
01:22:54,950 --> 01:22:53,520
also true that if you look at the roots

2011
01:22:57,590 --> 01:22:54,960
of all this

2012
01:23:00,070 --> 01:22:57,600
what impressed all of these people was

2013
01:23:02,149 --> 01:23:00,080

the british experience was the

2014
01:23:04,229 --> 01:23:02,159
experience of the british advisory

2015
01:23:08,149 --> 01:23:04,239
committee for aeronautics

2016
01:23:13,350 --> 01:23:10,550
the impact that it had on british

2017
01:23:14,390 --> 01:23:13,360
research and it does i mean connect to

2018
01:23:16,790 --> 01:23:14,400
those

2019
01:23:19,510 --> 01:23:16,800
progressive values of the taft and

2020
01:23:22,149 --> 01:23:19,520
wilson administration you know

2021
01:23:24,229 --> 01:23:22,159
reduce duplication of effort increase

2022
01:23:26,229 --> 01:23:24,239
efficiency

2023
01:23:27,990 --> 01:23:26,239
do some planning here

2024
01:23:30,629 --> 01:23:28,000
and this is a

2025
01:23:33,830 --> 01:23:30,639
role that the government should play

2026
01:23:35,590 --> 01:23:33,840
and so when walker does come back he

2027
01:23:37,510 --> 01:23:35,600
does mention the possibility of a

2028
01:23:40,550 --> 01:23:37,520
laboratory down the road

2029
01:23:44,550 --> 01:23:40,560
but his request is for the advisory

2030
01:23:47,990 --> 01:23:46,390
please

2031
01:23:49,510 --> 01:23:48,000
building on what tom just talked about

2032
01:23:52,229 --> 01:23:49,520
with the british

2033
01:23:55,270 --> 01:23:52,239
was there an impetus in europe because

2034
01:23:56,470 --> 01:23:55,280
we know the the early aeronautics in the

2035
01:24:00,390 --> 01:23:56,480
late

2036
01:24:02,229 --> 01:24:00,400
uh early teens shifted to europe

2037
01:24:04,790 --> 01:24:02,239
that the competition between the

2038
01:24:06,629 --> 01:24:04,800

countries over there the blerio flight

2039
01:24:10,070 --> 01:24:06,639
across the english channel

2040
01:24:13,830 --> 01:24:10,080
the the looking at maybe this is a race

2041
01:24:15,990 --> 01:24:13,840
to develop aeronautics in europe led to

2042
01:24:18,790 --> 01:24:16,000
the european countries being much more

2043
01:24:20,629 --> 01:24:18,800
proactive the british and others whereas

2044
01:24:21,990 --> 01:24:20,639
we were sitting here

2045
01:24:23,990 --> 01:24:22,000
and

2046
01:24:26,390 --> 01:24:24,000
we had the belmont races we had

2047
01:24:27,910 --> 01:24:26,400
everything internal we had no external

2048
01:24:30,070 --> 01:24:27,920
competition we saw that happen in the

2049
01:24:32,790 --> 01:24:30,080
50s with the space race as soon as we

2050
01:24:35,669 --> 01:24:32,800
got a race we turned on but but did that

2051
01:24:37,030 --> 01:24:35,679
play a big role in why they were so far

2052
01:24:38,870 --> 01:24:37,040
ahead of us and why it took so long to

2053
01:24:41,669 --> 01:24:38,880
get the committee going

2054
01:24:43,510 --> 01:24:41,679
sure they had war on the horizon

2055
01:24:45,510 --> 01:24:43,520
and in the

2056
01:24:49,830 --> 01:24:45,520
written version of the paper

2057
01:24:51,510 --> 01:24:49,840
i actually provide investment numbers

2058
01:24:54,550 --> 01:24:51,520
and it's incredible the level of

2059
01:24:55,669 --> 01:24:54,560
investment in europe relatively speaking

2060
01:24:57,270 --> 01:24:55,679
for this

2061
01:25:00,870 --> 01:24:57,280
technology

2062
01:25:04,390 --> 01:25:00,880
which will have some military

2063
01:25:05,590 --> 01:25:04,400

implications but who knows exactly what

2064
01:25:08,709 --> 01:25:05,600
um

2065
01:25:11,110 --> 01:25:08,719
is really striking and stunning and

2066
01:25:13,910 --> 01:25:11,120
it's just it's both public and private

2067
01:25:14,950 --> 01:25:13,920
investment and it's also the research

2068
01:25:18,709 --> 01:25:14,960
component

2069
01:25:22,229 --> 01:25:18,719
and when people like walcott and scriven

2070
01:25:25,270 --> 01:25:22,239
as well and especially in scrivens 1913

2071
01:25:28,149 --> 01:25:25,280
report to the congress on aviation i

2072
01:25:30,629 --> 01:25:28,159
mean that's what's right up front uh

2073
01:25:32,629 --> 01:25:30,639
that whole notion of these people are

2074
01:25:36,149 --> 01:25:32,639
investing in something that's going to

2075
01:25:38,629 --> 01:25:36,159
be important to the national defense

2076
01:25:40,550 --> 01:25:38,639
yeah there's there's also uh

2077
01:25:41,990 --> 01:25:40,560
in in looking at the army and navy

2078
01:25:45,270 --> 01:25:42,000
looking at what's going on in europe

2079
01:25:47,830 --> 01:25:45,280
1913 and especially in 1914 1915

2080
01:25:49,510 --> 01:25:47,840
uh there's a recognition in europe the

2081
01:25:51,590 --> 01:25:49,520
distances are so small that even though

2082
01:25:53,590 --> 01:25:51,600
airplanes can't go very far

2083
01:25:55,590 --> 01:25:53,600
it's very easy for them to fly into

2084
01:25:57,189 --> 01:25:55,600
another country and do something and the

2085
01:25:58,870 --> 01:25:57,199
army and navy are very aware that all

2086
01:26:00,950 --> 01:25:58,880
these advances are going on and they're

2087
01:26:03,910 --> 01:26:00,960
kind of like well we'll watch them we'll

2088
01:26:06,830 --> 01:26:03,920

let them expend the effort

2089
01:26:08,870 --> 01:26:06,840
to to develop this

2090
01:26:10,310 --> 01:26:08,880
um so

2091
01:26:12,229 --> 01:26:10,320
very conscious of the fact that that's

2092
01:26:13,830 --> 01:26:12,239
going on over there whereas they very

2093
01:26:15,430 --> 01:26:13,840
explicitly state

2094
01:26:17,189 --> 01:26:15,440
this will not be a problem for the u.s

2095
01:26:19,270 --> 01:26:17,199
for a while let's sit back and see

2096
01:26:20,709 --> 01:26:19,280
what's going on in europe stand closer

2097
01:26:22,629 --> 01:26:20,719
okay sure

2098
01:26:24,709 --> 01:26:22,639
all right next hey jack sure hi i'm

2099
01:26:26,629 --> 01:26:24,719
adrian provenzano and i actually flew

2100
01:26:28,550 --> 01:26:26,639
out of the indianapolis airport and

2101
01:26:30,470 --> 01:26:28,560
active chinood is well known because of

2102
01:26:32,790 --> 01:26:30,480
his testing and there's a

2103
01:26:35,669 --> 01:26:32,800
there are two three-dimensional murals

2104
01:26:37,910 --> 01:26:35,679
and he is shown hanging onto his glider

2105
01:26:40,310 --> 01:26:37,920
so he is represented but i do have a

2106
01:26:42,390 --> 01:26:40,320
question for simone which is was there

2107
01:26:45,270 --> 01:26:42,400
any later direct connection between

2108
01:26:47,430 --> 01:26:45,280
chanute and the naca did people look to

2109
01:26:50,229 --> 01:26:47,440
what he did in particular was he in any

2110
01:26:52,629 --> 01:26:50,239
way invited to participate was he even

2111
01:26:54,629 --> 01:26:52,639
still alive at that point

2112
01:26:57,590 --> 01:26:54,639
well i'm sure that he would have loved

2113
01:26:59,590 --> 01:26:57,600

to be part of it except god took him in

2114
01:27:03,030 --> 01:26:59,600
november 1910

2115
01:27:05,669 --> 01:27:03,040
but i when we first talked about me

2116
01:27:08,149 --> 01:27:05,679
coming here i looked at the list of the

2117
01:27:10,870 --> 01:27:08,159
people that were on the committee

2118
01:27:13,590 --> 01:27:10,880
and chanute corresponded almost with

2119
01:27:15,669 --> 01:27:13,600
every one of them and especially charles

2120
01:27:18,950 --> 01:27:15,679
marvin and zam

2121
01:27:21,350 --> 01:27:18,960
they were very familiar what he had done

2122
01:27:22,950 --> 01:27:21,360
and therefore i'm sure that

2123
01:27:24,550 --> 01:27:22,960
he looked down and

2124
01:27:27,430 --> 01:27:24,560
sent us brainwaves

2125
01:27:29,270 --> 01:27:27,440
that's great thank you all i can say

2126
01:27:31,270 --> 01:27:29,280
thank you

2127
01:27:33,430 --> 01:27:31,280
okay well um

2128
01:27:35,350 --> 01:27:33,440
okay one more just a brief a brief ad

2129
01:27:36,070 --> 01:27:35,360
that i know you're well well aware of

2130
01:27:37,910 --> 01:27:36,080
but

2131
01:27:40,390 --> 01:27:37,920
pearl young who is mentioned in roger

2132
01:27:42,310 --> 01:27:40,400
lania's

2133
01:27:45,430 --> 01:27:42,320
keynote this morning who was so

2134
01:27:47,910 --> 01:27:45,440
important for the the nac publication

2135
01:27:50,470 --> 01:27:47,920
series pearl young was

2136
01:27:52,870 --> 01:27:50,480
not only a fan of octave she was a

2137
01:27:55,430 --> 01:27:52,880
serious student of octave chanu not not

2138
01:27:57,990 --> 01:27:55,440

directly but she was she put materials

2139
01:27:59,990 --> 01:27:58,000
together to write a biography of chanut

2140
01:28:01,350 --> 01:28:00,000
which i don't think it never got done

2141
01:28:03,590 --> 01:28:01,360
but i think the young pearl young

2142
01:28:06,470 --> 01:28:03,600
materials got to the denver was it the

2143
01:28:08,709 --> 01:28:06,480
denver library library yeah

2144
01:28:10,950 --> 01:28:08,719
so it's an interesting connection the

2145
01:28:12,070 --> 01:28:10,960
the philosophy of chanute in terms of

2146
01:28:14,229 --> 01:28:12,080
open

2147
01:28:16,229 --> 01:28:14,239
distribution and sharing of knowledge

2148
01:28:18,870 --> 01:28:16,239
and then the person who is so enamored

2149
01:28:20,149 --> 01:28:18,880
of pearl young of shin becomes the

2150
01:28:22,390 --> 01:28:20,159
person that's instrumental in the

2151
01:28:25,510 --> 01:28:22,400
creation of the naca publication series

2152
01:28:27,830 --> 01:28:25,520
so that's that's worth mentioning

2153
01:28:29,590 --> 01:28:27,840
and simmon and i i know who both use

2154
01:28:31,990 --> 01:28:29,600
those pearl young

2155
01:28:34,790 --> 01:28:32,000
things in the denver public library well

2156
01:28:37,189 --> 01:28:34,800
and even the library of congress has the

2157
01:28:39,350 --> 01:28:37,199
ias papers which my husband and i

2158
01:28:41,590 --> 01:28:39,360
checked yesterday and some of paul

2159
01:28:43,910 --> 01:28:41,600
young's material is in there as well i

2160
01:28:47,270 --> 01:28:43,920
mean it's all all over the world i think

2161
01:28:49,669 --> 01:28:47,280
i told you my copy my personal copy of

2162
01:28:51,830 --> 01:28:49,679
chanute's progress in flying machines

2163
01:28:53,110 --> 01:28:51,840

was pro young's copy which is kind of

2164
01:28:54,550 --> 01:28:53,120
nice

2165
01:28:56,310 --> 01:28:54,560
there are all kinds of interesting

2166
01:28:57,430 --> 01:28:56,320
connections between all these characters

2167
01:28:58,950 --> 01:28:57,440
and the developments that happened a

2168
01:29:00,310 --> 01:28:58,960
century ago and

2169
01:29:01,750 --> 01:29:00,320
i think this is a fascinating i'd like

2170
01:29:08,149 --> 01:29:01,760
to ask you to join me in thanking our

2171
01:29:11,270 --> 01:29:09,830
and thank all of you for joining us this

2172
01:29:12,870 --> 01:29:11,280
morning i will be taking a break for

2173
01:29:15,030 --> 01:29:12,880
lunch uh until one o'clock we'll

2174
01:29:16,550 --> 01:29:15,040
reconvene back here at one o'clock uh

2175
01:29:19,110 --> 01:29:16,560
for a panel on the early history of the

2176
01:29:21,430 --> 01:29:19,120
naca we'll hear many more things about

2177
01:29:23,030 --> 01:29:21,440
mit and other places like that

2178
01:29:24,390 --> 01:29:23,040
have a good