

WEBVTT

1

00:00:00.300 --> 00:00:03.300

Of our presenters in advance. I know that it haven't done

2

00:00:03.300 --> 00:00:07.300

this a few times. It takes an awful lot to put

3

00:00:06.300 --> 00:00:09.300

together a presentation and then get

4

00:00:09.300 --> 00:00:13.600

it approved by your organization and it's no

5

00:00:13.600 --> 00:00:17.200

small effort. So thank you all for bringing your

6

00:00:16.200 --> 00:00:19.700

lessons and information to the

7

00:00:19.700 --> 00:00:23.600

society our next presenter Mr. Jim

8

00:00:22.600 --> 00:00:24.100

acree.

9

00:00:25.800 --> 00:00:26.100

right

10

00:00:27.700 --> 00:00:30.400

I guess I I wondered about that right

11

00:00:30.400 --> 00:00:33.200

like you're as a consultant self-employed. I guess you get

12

00:00:33.200 --> 00:00:35.500

to write it and improve it yourself, right?

13

00:00:36.300 --> 00:00:40.400

That's spectacular. I should try that sometime. I

14

00:00:39.400 --> 00:00:42.800
am always humbled by the by the

15

00:00:42.800 --> 00:00:46.000
resumes of our presenters that you know,

16

00:00:46.600 --> 00:00:50.500
Jim's been 28 years a der experience in

17

00:00:50.500 --> 00:00:54.000
over 200 aircraft and just a

18

00:00:53.500 --> 00:00:56.700
wealth of experience that beyond the

19

00:00:56.700 --> 00:00:59.300
presentation you get here spend some time talking in

20

00:00:59.300 --> 00:01:02.600
the hallways to everybody out there and try to make a

21

00:01:02.600 --> 00:01:05.100
few new friends. So, thank you.

22

00:01:16.100 --> 00:01:16.900
start with a video

23

00:01:23.400 --> 00:01:26.500
That's a caravan. It was a single engine airplane

24

00:01:26.500 --> 00:01:27.700
now. It's a glider.

25

00:01:40.300 --> 00:01:41.400
This will just go for a minute.

26

00:01:43.800 --> 00:01:46.300
It shows a zero oil pressure and

27

00:01:46.300 --> 00:01:47.000

all that good stuff.

28

00:01:48.300 --> 00:01:49.300

Something we do with.

29

00:01:51.100 --> 00:01:52.000

new propellers

30

00:01:55.400 --> 00:01:56.500

have to establish a

31

00:01:58.600 --> 00:01:59.800

Glide number

32

00:02:00.800 --> 00:02:02.600

and this is the only way to get it.

33

00:02:12.800 --> 00:02:14.100

Yes, we were armed.

34

00:02:30.300 --> 00:02:30.900

And that's it.

35

00:02:49.700 --> 00:02:53.200

So I thought I'd bring a different perspective to this being

36

00:02:52.200 --> 00:02:55.900

a flight test safety workshop

37

00:02:55.900 --> 00:02:57.200

with a talk about culture.

38

00:02:57.900 --> 00:02:59.000

culture

39

00:03:01.200 --> 00:03:04.100

I I don't know how to put this in terms of

40

00:03:04.100 --> 00:03:07.200

whether none or all of

41
00:03:07.200 --> 00:03:07.400
them.

42
00:03:08.400 --> 00:03:11.400
I exist as a private entity.

43
00:03:12.000 --> 00:03:12.400
Yet.

44
00:03:13.300 --> 00:03:16.500
I see everybody's culture with all the companies that

45
00:03:16.500 --> 00:03:19.800
that I go work for whether I'm

46
00:03:19.800 --> 00:03:22.200
working for a Boeing or a Textron.

47
00:03:23.500 --> 00:03:26.200
Or whether I'm borrowing an airplane and giving

48
00:03:26.200 --> 00:03:28.600
it back to an individual when I'm done testing it.

49
00:03:29.300 --> 00:03:32.600
You hit both ends of the the Spectrum

50
00:03:32.600 --> 00:03:32.900
on this.

51
00:03:41.200 --> 00:03:43.000
There we go. It went.

52
00:03:46.700 --> 00:03:49.400
There we go. My observations based on

53
00:03:49.400 --> 00:03:52.700
33 years of doing this started as

54
00:03:52.700 --> 00:03:53.800

a Navy pilot.

55

00:03:55.300 --> 00:03:58.100

And Pax River. It's all been fixed wing for me.

56

00:03:58.900 --> 00:04:03.200

Cubs to well Air

57

00:04:02.200 --> 00:04:03.500

Force One

58

00:04:04.900 --> 00:04:05.900

dc-3s

59

00:04:06.900 --> 00:04:09.800

small companies large companies domestic and

60

00:04:09.800 --> 00:04:12.300

international sometimes requiring a permit.

61

00:04:13.500 --> 00:04:16.400

I've even done one test out

62

00:04:16.400 --> 00:04:19.400

of the London Airport from which David just

63

00:04:19.400 --> 00:04:20.800

talked about up there in Canada.

64

00:04:23.700 --> 00:04:27.100

English and other language sometimes comes into play the

65

00:04:26.100 --> 00:04:30.700

airplanes are destined or tested sometimes

66

00:04:29.700 --> 00:04:31.400

equatorial.

67

00:04:32.200 --> 00:04:35.200

And I've done a lot of work with folks that

68

00:04:35.200 --> 00:04:38.800
send airplanes on skis to the Arctic.

69

00:04:39.800 --> 00:04:42.600
That's a test interesting work

70

00:04:42.600 --> 00:04:46.100
in itself a single engine multi-crew company

71

00:04:45.100 --> 00:04:46.700
tests.

72

00:04:48.700 --> 00:04:52.300
What I mean by that is the exploratory or

73

00:04:52.300 --> 00:04:56.100
developmental tests that precede the certification

74

00:04:55.100 --> 00:04:58.600
tests that I do for the FAA.

75

00:05:00.200 --> 00:05:03.500
Sometimes you exist as all in

76

00:05:03.500 --> 00:05:07.000
one my first visit to air tractor

77

00:05:06.200 --> 00:05:09.300
many years ago when they brought me on as their

78

00:05:09.300 --> 00:05:12.600
experimental pilot, that's a agricultural airplane and

79

00:05:12.600 --> 00:05:14.100
in Texas.

80

00:05:15.500 --> 00:05:18.100
You go in you brief you walk out to the

81

00:05:18.100 --> 00:05:18.500

line.

82

00:05:19.500 --> 00:05:20.700

And has it been fueled?

83

00:05:21.800 --> 00:05:25.000

And the guy will point to the pump and the

84

00:05:25.000 --> 00:05:25.500

airplane.

85

00:05:26.600 --> 00:05:28.100

and how to turn the pump on

86

00:05:29.900 --> 00:05:30.900

so that's the culture.

87

00:05:31.700 --> 00:05:32.900

at air tractor

88

00:05:33.400 --> 00:05:36.200

you you own the airplane. You take care

89

00:05:36.200 --> 00:05:39.500

of the airplane. There's nobody they're going to help. I

90

00:05:39.500 --> 00:05:42.600

don't want to insinuate that but you get the idea you're

91

00:05:42.600 --> 00:05:45.400

you sometimes you're truly a one-man show.

92

00:05:48.100 --> 00:05:51.400

and you're living outside the glass enclosure and

93

00:05:51.400 --> 00:05:54.400

I mean it was a real transition for me to

94

00:05:54.400 --> 00:05:55.100

go from

95

00:05:56.400 --> 00:05:57.800
you know, let's say a Navy.

96

00:05:58.800 --> 00:06:00.400
with all the support structure

97

00:06:02.100 --> 00:06:03.800
and then going to something like that.

98

00:06:04.800 --> 00:06:07.500
And realizing that oh boy. There's

99

00:06:07.500 --> 00:06:09.200
a there's a whole lot more going on here.

100

00:06:12.500 --> 00:06:15.700
Talk about the history of risk assessment from my perspective.

101

00:06:17.400 --> 00:06:19.800
In the Navy in the 1980s.

102

00:06:21.200 --> 00:06:22.700
I didn't know that we even had.

103

00:06:23.500 --> 00:06:24.400
instructions

104

00:06:25.300 --> 00:06:28.600
regarding such things. I remember sitting down

105

00:06:28.600 --> 00:06:31.600
with some Air Force folks that were talking about their crew

106

00:06:31.600 --> 00:06:34.300
rest requirements, and I thought we have

107

00:06:34.300 --> 00:06:36.800
crew rest requirements who knew

108

00:06:38.300 --> 00:06:41.400

Then the test center late 80s

109

00:06:41.400 --> 00:06:44.100

early 90s. This has been alluded to

110

00:06:44.100 --> 00:06:46.900

already yesterday, but the highest

111

00:06:47.900 --> 00:06:50.900

that my test plans got reviewed.

112

00:06:51.700 --> 00:06:54.400

It went to the level of the chief test pilot

113

00:06:54.400 --> 00:06:57.500

of the local organization the local directorate.

114

00:06:57.500 --> 00:06:59.500

He had a common-sense look at it.

115

00:07:00.400 --> 00:07:03.900

Returned it we went and did the test. There was no SRB.

116

00:07:03.900 --> 00:07:06.700

There was no such no such animal that

117

00:07:06.700 --> 00:07:07.200

came later.

118

00:07:09.600 --> 00:07:12.200

FAA in the in the

119

00:07:12.200 --> 00:07:15.700

90s. I was a FAA certification pilot

120

00:07:15.700 --> 00:07:18.300

upon leaving the Navy for four

121

00:07:18.300 --> 00:07:21.300

years before I moved on to becoming a

122

00:07:21.300 --> 00:07:22.200
designee.

123

00:07:23.200 --> 00:07:25.400
There was no formal program at that time.

124

00:07:26.900 --> 00:07:31.000
I'll jump down the 4040.26c now

125

00:07:30.000 --> 00:07:31.300
that

126

00:07:32.700 --> 00:07:36.000
Rod weightey has really originated for

127

00:07:35.200 --> 00:07:38.900
the FAA that came around the Y2K time

128

00:07:38.900 --> 00:07:41.500
before that. We we didn't really have a formal program

129

00:07:41.500 --> 00:07:44.400
at the FAA if I went out and did a

130

00:07:44.400 --> 00:07:44.700
flight test.

131

00:07:46.100 --> 00:07:49.100
Again, it was almost a solo venture.

132

00:07:50.100 --> 00:07:53.200
I had people that would call me on the

133

00:07:53.200 --> 00:07:56.200
phone. I'm out on site. What are you doing? Well, I'm doing a flight test today.

134

00:07:57.400 --> 00:07:57.900
That's it.

135

00:07:58.900 --> 00:08:01.400

Now it's a it's radically different in a

136

00:08:01.400 --> 00:08:04.600

very good way because that kind of culture was screaming

137

00:08:04.600 --> 00:08:08.000

for a change every time

138

00:08:07.300 --> 00:08:09.600

there's an incident or an accident.

139

00:08:10.400 --> 00:08:13.600

Of course, there's a review and and such and we finally got

140

00:08:13.600 --> 00:08:16.200

to the point where Rod got the

141

00:08:16.200 --> 00:08:18.200

program going and we had a

142

00:08:20.100 --> 00:08:23.800

Well a new culture at the FAA and we

143

00:08:23.800 --> 00:08:26.400

did safety review boards and and all

144

00:08:26.400 --> 00:08:26.700

the such.

145

00:08:29.400 --> 00:08:29.600

so

146

00:08:31.900 --> 00:08:34.600

You know that the terms we talk about the functional

147

00:08:34.600 --> 00:08:36.600

hazard assessment and the functional.

148

00:08:37.900 --> 00:08:41.600

Or the test ready reviews those are common terminologies

149

00:08:40.600 --> 00:08:41.900

now.

150

00:08:42.600 --> 00:08:45.400

20 25 years ago, I'd never heard of such

151

00:08:45.400 --> 00:08:48.700

a thing and we went out and did our tests at I'd say

152

00:08:48.700 --> 00:08:49.500

much greater risk.

153

00:08:52.400 --> 00:08:54.200

So, how about a hammock program?

154

00:08:55.800 --> 00:08:58.200

We have advanced planning pre-flight, which

155

00:08:58.200 --> 00:09:00.300

is short-term flying and then the post flight.

156

00:09:03.400 --> 00:09:04.000

Which will be test.

157

00:09:04.800 --> 00:09:07.700

What can we analyze and not test should we

158

00:09:07.700 --> 00:09:10.500

have some should we have a simulators? Should

159

00:09:10.500 --> 00:09:13.300

we train the pilot? Maybe I should get some time in

160

00:09:13.300 --> 00:09:16.100

the airplane before I actually go fly it.

161

00:09:16.700 --> 00:09:18.500

Do we want to look at some cfd's?

162

00:09:19.300 --> 00:09:22.100

What instrumentation how big is the test team?

163

00:09:22.100 --> 00:09:25.400

How about physiological requirements? Do I

164

00:09:25.400 --> 00:09:28.100

need to go do an altitude chamber before we go

165

00:09:28.100 --> 00:09:29.000

do something like this?

166

00:09:33.200 --> 00:09:36.700

Okay, so I'm gonna throw some examples up. Here's a

167

00:09:36.700 --> 00:09:38.000

DC3.

168

00:09:39.600 --> 00:09:42.500

On skis headed to the Arctic. It's got

169

00:09:42.500 --> 00:09:45.200

that long pole sticking out the front under the

170

00:09:45.200 --> 00:09:49.100

nose. It's got a lidar and

171

00:09:48.100 --> 00:09:51.200

a radar array. You can see

172

00:09:51.200 --> 00:09:52.500

that hanging on the belly.

173

00:09:53.300 --> 00:09:54.700

multiple

174

00:09:56.200 --> 00:09:58.900

instrumentation devices hanging out on the wings

175

00:10:00.400 --> 00:10:02.600

and that's actually in Canada.

176

00:10:03.700 --> 00:10:06.200

At the time and we did this program

177

00:10:06.200 --> 00:10:09.300

has been in fact, it's still active.

178

00:10:10.200 --> 00:10:13.300

They continually add things or subtract things

179

00:10:13.300 --> 00:10:16.800

from the airframe and we go up and we have a look. So what

180

00:10:16.800 --> 00:10:19.200

are we going to do? What are we going to test? Are we

181

00:10:19.200 --> 00:10:20.900

going to look at single engine qualities?

182

00:10:21.800 --> 00:10:22.900

We're going to dive it.

183

00:10:23.700 --> 00:10:26.400

Are we going to take it to the ice what needs

184

00:10:26.400 --> 00:10:28.600

to be done? And what do we have to do?

185

00:10:29.500 --> 00:10:31.300

To get the customer the right product.

186

00:10:32.200 --> 00:10:35.300

But without elevating the risks the test team

187

00:10:35.300 --> 00:10:36.100

and the exposure.

188

00:10:37.200 --> 00:10:41.000

to going to all these radical flight extremes

189

00:10:42.400 --> 00:10:43.300
for what it's worth.

190
00:10:44.300 --> 00:10:44.600
that airplane

191
00:10:46.300 --> 00:10:49.400
flew great. It wasn't much different

192
00:10:49.400 --> 00:10:52.900
from the basic DC3. The

193
00:10:52.900 --> 00:10:55.100
only thing is that long pole out the

194
00:10:55.100 --> 00:10:57.400
front definitely reduce the

195
00:10:58.500 --> 00:11:01.400
static directional stability

196
00:11:02.400 --> 00:11:05.200
I think he must be can see that now that a lot

197
00:11:05.200 --> 00:11:10.200
of thought goes into this. This was mostly non-certification.

198
00:11:11.100 --> 00:11:14.200
It was just a feel-good for the teams that were

199
00:11:14.200 --> 00:11:15.300
going to the Arctic.

200
00:11:18.600 --> 00:11:19.400
We conducted.

201
00:11:21.300 --> 00:11:24.000
high altitude Runway tests because

202
00:11:25.100 --> 00:11:29.500
who knew that the Antarctic ice cap is is

203

00:11:28.500 --> 00:11:30.900
at 14,000 feet.

204

00:11:34.100 --> 00:11:35.000
Just another program.

205

00:11:36.500 --> 00:11:39.500
Same folks wires flapping away.

206

00:11:39.500 --> 00:11:42.500
Yes. They're rather close to the propellers always

207

00:11:42.500 --> 00:11:43.200
a concern.

208

00:11:45.500 --> 00:11:47.500
We had definite.

209

00:11:49.200 --> 00:11:52.100
How do you plan for that you you don't have a

210

00:11:52.100 --> 00:11:53.200
lot of cfd?

211

00:11:54.500 --> 00:11:56.300
This is not Boeing. This is

212

00:11:57.600 --> 00:12:00.300
guys in the field trying to do the best they can

213

00:12:00.300 --> 00:12:04.100
and how do you take off and plan

214

00:12:03.100 --> 00:12:06.300
for immediate return if this does not

215

00:12:06.300 --> 00:12:06.700
go well.

216

00:12:07.600 --> 00:12:10.700
And what those are multiple wires

217
00:12:10.700 --> 00:12:13.300
strung around the airplane to do?

218
00:12:15.100 --> 00:12:18.400
Looking for minerals in the earth creates a

219
00:12:18.400 --> 00:12:21.300
magnetic field. It's it's all magic to

220
00:12:21.300 --> 00:12:24.700
me, but we have to make sure that the airplane was wasn't

221
00:12:24.700 --> 00:12:26.100
going to shake itself to death.

222
00:12:27.200 --> 00:12:31.200
And we would launch there out of Northern, Ontario,

223
00:12:30.200 --> 00:12:31.700
Canada.

224
00:12:33.400 --> 00:12:37.100
Sometimes turn immediately downwind and land

225
00:12:36.100 --> 00:12:39.600
as the airplane was shaking itself

226
00:12:39.600 --> 00:12:41.800
to death with those wires flapping away.

227
00:12:43.300 --> 00:12:46.700
So value of cfd wish we

228
00:12:46.700 --> 00:12:47.200
had some.

229
00:12:48.400 --> 00:12:51.300
you don't always have those that you don't always have the benefit of

230
00:12:53.500 --> 00:12:56.100
of having such things instrumentation

231
00:12:58.200 --> 00:13:01.600
Let's see. That was a extra 300 with a

232
00:13:01.600 --> 00:13:02.900
propeller to be tested.

233
00:13:04.100 --> 00:13:05.800
and pretty basic

234
00:13:08.200 --> 00:13:11.400
determine this that we don't that honestly, we don't determine this

235
00:13:11.400 --> 00:13:14.100
stuff the day of the test. Of course, we look at it.

236
00:13:14.900 --> 00:13:17.600
Way in advance check it out. Make sure

237
00:13:17.600 --> 00:13:20.300
it's safe and doesn't interfere with controls and

238
00:13:20.300 --> 00:13:23.200
all that good stuff a lot of thought.

239
00:13:24.300 --> 00:13:25.700
Into making it safe.

240
00:13:27.400 --> 00:13:29.900
There's the flip side. Yeah. Those are my knees. That's

241
00:13:31.500 --> 00:13:32.700
an armed air tractor

242
00:13:34.100 --> 00:13:34.900
Took that photo.

243

00:13:36.100 --> 00:13:39.500
I think I knew what most of those most of those switches do.

244
00:13:40.800 --> 00:13:42.400
And I sure hope that's not classified.

245
00:13:47.200 --> 00:13:48.600
But that takes time in the airplane.

246
00:13:49.900 --> 00:13:52.400
You want to be safe? You don't want to just jump in

247
00:13:52.400 --> 00:13:53.600
and go. Yeah, I can do this.

248
00:13:54.400 --> 00:13:57.100
That that's a lot to absorb when you're not

249
00:13:57.100 --> 00:13:59.200
used to Flying that airplane every day.

250
00:14:00.300 --> 00:14:01.400
My day job is

251
00:14:03.600 --> 00:14:05.800
American Airlines, I'm a 737 pilot.

252
00:14:06.500 --> 00:14:09.500
And I do this for well fun.

253
00:14:13.400 --> 00:14:14.200
a test team

254
00:14:16.300 --> 00:14:19.600
I've got several programs still active that

255
00:14:19.600 --> 00:14:21.100
Air Force and Navy.

256
00:14:22.300 --> 00:14:24.700
That involve a multitude of folks.

257
00:14:25.400 --> 00:14:28.200
And all the assets that come along with it

258
00:14:28.200 --> 00:14:30.600
cfd and everything for support.

259
00:14:31.800 --> 00:14:34.300
Or in this case again. It was

260
00:14:34.300 --> 00:14:38.100
Hartselle propellers on an mu-2 aircraft and

261
00:14:37.100 --> 00:14:41.500
there you're looking at the testing myself the

262
00:14:40.500 --> 00:14:43.400
other pilot the engineer and

263
00:14:43.400 --> 00:14:44.100
the mechanic.

264
00:14:44.700 --> 00:14:45.300
That's it.

265
00:14:46.500 --> 00:14:49.500
So when we have a safety review board,

266
00:14:49.500 --> 00:14:49.800
it's

267
00:14:50.900 --> 00:14:52.200
short and sporty

268
00:14:54.900 --> 00:14:58.000
extra 300 with a propeller. There's

269
00:14:57.400 --> 00:14:59.100
me with all my friends.

270

00:15:01.100 --> 00:15:05.000
out of an Austin Airport borrowed the

271
00:15:04.000 --> 00:15:05.200
airplane

272
00:15:06.800 --> 00:15:08.000
do our tests.

273
00:15:08.800 --> 00:15:10.100
Then return it to the customer.

274
00:15:11.500 --> 00:15:14.700
And I don't mind saying a lot. There's a

275
00:15:14.700 --> 00:15:16.800
lot of pressure involved knowing that.

276
00:15:18.100 --> 00:15:19.600
It's somebody else's airplane.

277
00:15:21.500 --> 00:15:22.600
And somebody else's airspace.

278
00:15:23.700 --> 00:15:27.300
and if if I do take somebody along for data

279
00:15:26.300 --> 00:15:27.400
taking

280
00:15:28.900 --> 00:15:31.000
it's somebody else's life as well.

281
00:15:31.800 --> 00:15:34.100
So there's a lot there's a lot to think about

282
00:15:34.100 --> 00:15:37.600
and this case the slide. I've titled

283
00:15:37.600 --> 00:15:38.100
IT training.

284
00:15:39.500 --> 00:15:43.000
You don't just jump out of a 737 and say well I

285
00:15:42.100 --> 00:15:45.200
got this now you go up with

286
00:15:45.200 --> 00:15:48.400
the customer you get checked out you get

287
00:15:48.400 --> 00:15:49.300
a few Landings.

288
00:15:50.300 --> 00:15:51.300
You decide you're safe.

289
00:15:52.300 --> 00:15:55.400
Before you're going to go up and over speed it.

290
00:15:56.400 --> 00:15:57.400
Check the Glide.

291
00:15:58.100 --> 00:15:58.600
restart

292
00:15:59.600 --> 00:16:02.600
and all that other stuff all the exposure as

293
00:16:02.600 --> 00:16:03.200
I call it.

294
00:16:04.100 --> 00:16:07.500
In in the world of flight test that we try to minimize or

295
00:16:07.500 --> 00:16:08.700
at least try to mitigate.

296
00:16:12.300 --> 00:16:15.300
All right, we get close to close to the test

297

00:16:15.300 --> 00:16:18.300
short-term planning. I call it PreFlight. Not it

298
00:16:18.300 --> 00:16:20.100
not as in PreFlight the same day but

299
00:16:20.800 --> 00:16:22.600
immediately prior to flying

300
00:16:23.500 --> 00:16:25.500
schedules the biggest

301
00:16:26.500 --> 00:16:30.000
you always get the squeeze at the end of a program every year

302
00:16:29.300 --> 00:16:32.200
you're getting the airplane late customers still

303
00:16:32.200 --> 00:16:34.400
wants his his airplane out on time.

304
00:16:35.700 --> 00:16:38.500
That's a that's a real driver and

305
00:16:41.200 --> 00:16:44.300
Have to look at the loading recency of weight and balances

306
00:16:44.300 --> 00:16:47.500
ballasting. You don't want to let these things go they're very

307
00:16:47.500 --> 00:16:47.600
important.

308
00:16:48.800 --> 00:16:51.200
You're looking at minimum crew you're looking at

309
00:16:51.200 --> 00:16:54.600
any any meetings that have to happen between everybody

310
00:16:54.600 --> 00:16:56.000
that's got a stake in this.

311
00:16:57.300 --> 00:16:58.000
and of course

312
00:16:59.700 --> 00:17:02.400
you're going to have surprises before you even start the program.

313
00:17:02.400 --> 00:17:05.300
Well instrumentation couldn't do

314
00:17:05.300 --> 00:17:05.500
this.

315
00:17:06.300 --> 00:17:09.400
Or you couldn't quite get the ballast that you want it.

316
00:17:09.400 --> 00:17:13.000
It's just unachievable and you're making a decisions

317
00:17:12.500 --> 00:17:15.400
PreFlight. And and is

318
00:17:15.400 --> 00:17:18.200
it still safe? And are you going to get what you want out of

319
00:17:18.200 --> 00:17:18.200
it?

320
00:17:20.300 --> 00:17:23.100
There's the weighing of a DC-3. How do you do that?

321
00:17:23.100 --> 00:17:26.600
Well, it's got to be in a level flight attitude. So

322
00:17:26.600 --> 00:17:29.600
you're doing it literally with fish scales rather than sitting

323
00:17:29.600 --> 00:17:30.500
on scales.

324

00:17:34.300 --> 00:17:35.100
ballasting

325
00:17:36.300 --> 00:17:37.700
Well, you're part of the crew.

326
00:17:38.500 --> 00:17:39.700
I'm going to spend half a day.

327
00:17:40.600 --> 00:17:44.200
Throwing a 25,000 pounds worth

328
00:17:44.200 --> 00:17:47.800
of sandbags on it on a this and

329
00:17:47.800 --> 00:17:51.100
this was a Canadian 737. We

330
00:17:50.100 --> 00:17:53.300
were doing some speed mods on it. This

331
00:17:53.300 --> 00:17:54.500
was just a few months ago.

332
00:17:58.600 --> 00:18:01.400
Again, ballasting there's the 10 tanker.

333
00:18:02.100 --> 00:18:02.400
for

334
00:18:03.500 --> 00:18:06.100
dropping a slurry and water on fires.

335
00:18:08.800 --> 00:18:11.900
Program we did not domestically

336
00:18:11.900 --> 00:18:15.900
but that was a DC3 fire

337
00:18:15.900 --> 00:18:16.300
bombing.

338
00:18:17.800 --> 00:18:20.400
Program several years ago went to

339
00:18:20.400 --> 00:18:21.600
Southeast Asia.

340
00:18:28.100 --> 00:18:31.500
Finally you're there. It's flight time is the airplane ready?

341
00:18:32.800 --> 00:18:33.800
You've got a brief.

342
00:18:34.400 --> 00:18:37.700
You've got inspections that need to happen. You've got the flight. You've

343
00:18:37.700 --> 00:18:38.900
got the daily debrief.

344
00:18:40.900 --> 00:18:42.100
Is the airplane ready?

345
00:18:42.900 --> 00:18:45.400
We'll look at that that's inside of a casa.

346
00:18:46.400 --> 00:18:47.500
Again, thanks rod.

347
00:18:51.200 --> 00:18:54.300
You're told to be there airplanes ready? We're brief. We're ready to

348
00:18:54.300 --> 00:18:54.300
go.

349
00:18:55.100 --> 00:18:55.800
You show up.

350
00:18:56.800 --> 00:18:59.400
And there's your airplane. Well, you're not going today.

351

00:19:00.500 --> 00:19:00.600

So

352

00:19:01.700 --> 00:19:04.300

we'll try again tomorrow and the next day

353

00:19:04.300 --> 00:19:08.000

and the next day and this was

354

00:19:07.300 --> 00:19:09.500

one of Rod's programs and we

355

00:19:10.800 --> 00:19:13.000

We maximized our crew rests that week.

356

00:19:17.200 --> 00:19:18.000

ballasting

357

00:19:19.200 --> 00:19:22.700

Inspection of everything to be in place. That's a

358

00:19:22.700 --> 00:19:25.100

DC-3 we used water ballast.

359

00:19:25.900 --> 00:19:29.100

So that that blue container weighs

360

00:19:28.100 --> 00:19:30.100

about 500 pounds.

361

00:19:31.300 --> 00:19:34.900

And you see some ballast blocks on

362

00:19:34.900 --> 00:19:37.400

the floor there that's for a forward center of gravity

363

00:19:37.400 --> 00:19:37.700

clearly.

364

00:19:43.500 --> 00:19:45.800

okay, we have the expected here's

365
00:19:48.200 --> 00:19:51.300
Brake changes this is for brake tests.

366
00:19:52.200 --> 00:19:54.500
it looks like this one was a

367
00:19:55.700 --> 00:19:56.500
Dash 8

368
00:19:59.200 --> 00:20:02.300
We expect to do this expect to do it safely.

369
00:20:03.400 --> 00:20:07.000
You put time in the schedule during the day to continually

370
00:20:06.300 --> 00:20:08.000
change the brakes.

371
00:20:09.900 --> 00:20:11.900
And you don't want to don't want to rush them.

372
00:20:12.900 --> 00:20:15.000
And I'll take a pause on that.

373
00:20:16.800 --> 00:20:19.200
We always say we don't

374
00:20:19.200 --> 00:20:19.600
rush.

375
00:20:20.700 --> 00:20:23.700
But you're always get there to that point where

376
00:20:23.700 --> 00:20:26.300
everybody's in a rush and sometimes you

377
00:20:26.300 --> 00:20:27.200
have to be the guy.

378

00:20:28.300 --> 00:20:31.200

Who says that's it, you know and you almost have

379

00:20:31.200 --> 00:20:35.300

to walk away to get everybody the impression that nobody's standing

380

00:20:35.300 --> 00:20:36.600

over the folks.

381

00:20:37.500 --> 00:20:40.500

Waiting for that airplane to come up. That's that would

382

00:20:40.500 --> 00:20:40.500

be

383

00:20:41.700 --> 00:20:44.100

I think one of the most unsafe scenarios in the

384

00:20:44.100 --> 00:20:44.800

middle of tests.

385

00:20:45.700 --> 00:20:48.800

is rushing things along and it's easy

386

00:20:48.800 --> 00:20:51.000

for me to say I get paid by the hour, but

387

00:20:53.600 --> 00:20:56.600

You're always you're always up against that that sort

388

00:20:56.600 --> 00:20:58.400

of a scenario every program.

389

00:21:00.300 --> 00:21:02.700

Unexpected that's a break fire.

390

00:21:05.200 --> 00:21:08.400

Again deal with it pause the test. Why

391

00:21:08.400 --> 00:21:09.900

did you have it review it?

392

00:21:11.500 --> 00:21:13.300

Get the airplane fixed and go out again.

393

00:21:15.400 --> 00:21:17.300

That's an armed air tractor again.

394

00:21:21.900 --> 00:21:22.600

post flight

395

00:21:23.900 --> 00:21:25.800

Objectives did we meet them?

396

00:21:26.400 --> 00:21:29.000

Did we have the deviate because we didn't plan correctly.

397

00:21:30.100 --> 00:21:33.400

Did we have to add test points? And can we just do that? Can

398

00:21:33.400 --> 00:21:36.000

we just go out there and ADD test points? No, not really.

399

00:21:37.300 --> 00:21:38.800

Stick to the plan.

400

00:21:41.200 --> 00:21:44.000

And then go into our lessons learned phase.

401

00:21:45.900 --> 00:21:48.100

Objectives well that we provide the

402

00:21:48.100 --> 00:21:50.700

customer with a good product. There's the

403

00:21:52.200 --> 00:21:55.200

from the first video. There's the rockets on

404

00:21:55.200 --> 00:21:55.200

the

405

00:21:56.300 --> 00:21:58.300
Caravan that went to the Middle East

406
00:22:01.700 --> 00:22:02.600
Lessons Learned

407
00:22:04.600 --> 00:22:05.200
resources

408
00:22:06.100 --> 00:22:07.400
One year solo act.

409
00:22:08.500 --> 00:22:09.200
What do you do?

410
00:22:10.100 --> 00:22:13.700
You know, I go to the secp library. I looked

411
00:22:13.700 --> 00:22:16.500
to see if anybody's done this before. How silly would

412
00:22:16.500 --> 00:22:19.600
I feel if I go out to scare myself because I uncovered something

413
00:22:19.600 --> 00:22:22.300
to go back in the literature and find out that

414
00:22:22.300 --> 00:22:23.700
somebody already found that out.

415
00:22:24.800 --> 00:22:27.000
I'd feel I'd feel like the idiot.

416
00:22:28.700 --> 00:22:31.800
Defining risk levels and the value of mitigating efforts.

417
00:22:31.800 --> 00:22:34.400
How far are you going to take that how much time are

418
00:22:34.400 --> 00:22:37.600
you going to spend making sure that you've

419
00:22:37.600 --> 00:22:40.400
truly mitigated this down to the lowest

420
00:22:40.400 --> 00:22:41.600
level that you can achieve?

421
00:22:44.400 --> 00:22:47.600
Again, sometimes it's a solo act if it's

422
00:22:47.600 --> 00:22:49.000
a Air Force program.

423
00:22:50.400 --> 00:22:53.200
I'm not hitting the Air Force here. But if it's an Air

424
00:22:53.200 --> 00:22:54.400
Force program, we're going to have

425
00:22:55.300 --> 00:22:58.500
A lot of people involved you're going to have a lot of people at

426
00:22:58.500 --> 00:23:02.000
the briefs. You're going to have to have a lot of reviews you're going

427
00:23:01.100 --> 00:23:03.500
to have these things that are called.

428
00:23:04.400 --> 00:23:06.200
critical design reviews and

429
00:23:07.700 --> 00:23:09.300
trrs and such

430
00:23:11.200 --> 00:23:14.400
and then you've got the other end when you go out and you are looking

431
00:23:14.400 --> 00:23:16.200
at a Hartzell propeller.

432

00:23:16.800 --> 00:23:19.500
And you go to Hartselle and there's the

433
00:23:19.500 --> 00:23:22.600
airplane there's the propeller a handshake and the

434
00:23:22.600 --> 00:23:23.100
key to the airplane.

435
00:23:24.500 --> 00:23:26.400
No SRB, none of that.

436
00:23:27.400 --> 00:23:30.200
If you're doing it for the FAA and it's

437
00:23:30.200 --> 00:23:33.500
a formal test the faas involved you have

438
00:23:33.500 --> 00:23:36.400
your your srbs and everything gets covered.

439
00:23:37.300 --> 00:23:38.400
but oftentimes

440
00:23:39.800 --> 00:23:43.000
With the developmental testing which precedes that?

441
00:23:43.900 --> 00:23:46.600
It's really up to you. It's a it's a

442
00:23:46.600 --> 00:23:49.800
one-man effort until you're making

443
00:23:49.800 --> 00:23:52.700
it an official check and an official

444
00:23:52.700 --> 00:23:53.800
certification flight.

445
00:23:56.100 --> 00:23:59.100
involvement early in all levels these all go without saying

446

00:24:01.400 --> 00:24:03.500

here's a point which

447

00:24:04.700 --> 00:24:08.000

which I've seen my my whole career is who

448

00:24:07.300 --> 00:24:10.400

has who has the ability to call

449

00:24:10.400 --> 00:24:11.600

an abort?

450

00:24:12.800 --> 00:24:15.200

And I'm on kind

451

00:24:15.200 --> 00:24:17.300

of on the fence on that one. I know I'm

452

00:24:18.800 --> 00:24:21.400

taking a chance talking about this. You never want

453

00:24:21.400 --> 00:24:24.500

to tell anybody that they can't call an abort.

454

00:24:24.500 --> 00:24:27.100

You never want to be there on the

455

00:24:27.100 --> 00:24:27.600

other hand.

456

00:24:29.300 --> 00:24:31.700

It's indicative of poor organization.

457

00:24:32.600 --> 00:24:35.300

when that's the only thing that said

458

00:24:36.300 --> 00:24:40.100

You know, here's the here's the airplane. Here's what we're going to go.

Do anybody can

459

00:24:39.100 --> 00:24:41.000
call a board go.

460

00:24:42.300 --> 00:24:45.700
That just opens the door to people who haven't

461

00:24:45.700 --> 00:24:48.300
been informed who aren't up to date on

462

00:24:48.300 --> 00:24:50.200
what has been done. What hasn't been done.

463

00:24:51.700 --> 00:24:54.200
And it's screaming for somebody who's going

464

00:24:54.200 --> 00:24:55.200
to call an abort?

465

00:24:55.900 --> 00:24:58.000
And then a post-flight review that's going to

466

00:24:58.200 --> 00:25:01.500
say. Oh, well, I just didn't know this was already covered.

467

00:25:01.500 --> 00:25:05.000
So I called the abort that sort of thing again. It's

468

00:25:04.700 --> 00:25:08.000
indicative of a poor organization in my

469

00:25:07.400 --> 00:25:10.600
view where that's all that said

470

00:25:10.600 --> 00:25:14.200
having said that yes, anybody anybody

471

00:25:13.200 --> 00:25:16.400
needs to have everybody needs

472

00:25:16.400 --> 00:25:19.200

to have the ability to call an abort because God knows I

473

00:25:19.200 --> 00:25:22.600

don't want to be up there and somebody somebody has something

474

00:25:22.600 --> 00:25:25.200

to say about it. I want to know that we need to

475

00:25:25.200 --> 00:25:26.200

stop and review.

476

00:25:27.100 --> 00:25:28.200

Just a thought on that.

477

00:25:29.500 --> 00:25:32.300

schedule flexibility you need to build some

478

00:25:32.300 --> 00:25:35.400

time in because it's never going to go according to plan and I

479

00:25:35.400 --> 00:25:35.700

say never

480

00:25:37.100 --> 00:25:38.000

stick to the plan.

481

00:25:38.800 --> 00:25:39.600

and again

482

00:25:41.800 --> 00:25:44.300

that that and schedule

483

00:25:44.300 --> 00:25:47.300

you can't you can't deviate you have

484

00:25:47.300 --> 00:25:47.600

to move.

485

00:25:49.400 --> 00:25:50.400

with the plan

486
00:25:51.200 --> 00:25:54.300
or take a pause and figure out why the plans

487
00:25:54.300 --> 00:25:54.900
not working.

488
00:25:56.800 --> 00:25:59.600
Learn from mistakes that that's obvious

489
00:25:59.600 --> 00:26:02.200
but past the word. There's somebody

490
00:26:02.200 --> 00:26:03.400
else that needs to know this.

491
00:26:04.500 --> 00:26:07.100
That's about the getting the Lessons Learned out there.

492
00:26:08.600 --> 00:26:09.600
complacency

493
00:26:11.400 --> 00:26:15.200
Has been the only thing you know in flying 40

494
00:26:14.200 --> 00:26:17.100
years now, I can say

495
00:26:17.100 --> 00:26:20.400
that the only time I've ever scared myself. I've been

496
00:26:20.400 --> 00:26:20.700
lucky.

497
00:26:21.900 --> 00:26:24.300
Is every time I've scared myself it was

498
00:26:24.300 --> 00:26:28.000
due to being somebody on the team being complacent or

499
00:26:27.400 --> 00:26:30.100

myself being completely complacent.

500

00:26:30.900 --> 00:26:33.300

and that speaks to good planning, but

501

00:26:35.100 --> 00:26:37.900

They're a moaning up to to my mistakes.

502

00:26:39.300 --> 00:26:43.100

Being the weather guy. Sometimes you have to be that guy you hate

503

00:26:42.100 --> 00:26:45.600

doing it, but you brief

504

00:26:45.600 --> 00:26:48.800

you're ready. Everybody's ready to walk and you

505

00:26:48.800 --> 00:26:49.100

have to say

506

00:26:50.400 --> 00:26:53.300

now it's not good. We're gonna we're just gonna hold off

507

00:26:53.300 --> 00:26:53.900

and wait.

508

00:26:56.200 --> 00:27:00.100

I've had conversations with folks over the

509

00:27:00.100 --> 00:27:03.200

years. I can think of two people that have made

510

00:27:03.200 --> 00:27:04.300

a difference in my life.

511

00:27:05.100 --> 00:27:06.000

flying wise

512

00:27:08.300 --> 00:27:10.200

that I always think before every program.

513

00:27:11.200 --> 00:27:13.300
when moving forward on an issue

514

00:27:14.300 --> 00:27:18.500
You have to think what would the mishap mishap board?

515

00:27:18.500 --> 00:27:20.100
What would they have said?

516

00:27:22.500 --> 00:27:23.300
and the other thing is

517

00:27:24.500 --> 00:27:26.700
if you don't like people check in your work.

518

00:27:27.800 --> 00:27:29.000
You're in the wrong line of work.

519

00:27:30.300 --> 00:27:33.800
You need to need to know that somebody's always checking six.

520

00:27:34.600 --> 00:27:35.000
because

521

00:27:36.300 --> 00:27:38.500
That's what's going to keep you going.

522

00:27:40.800 --> 00:27:42.400
I'll take some questions in a minute.

523

00:27:44.300 --> 00:27:46.200
and run last video

524

00:27:55.800 --> 00:27:56.500
try that again.

525

00:28:03.100 --> 00:28:03.300
No.

526

00:28:05.100 --> 00:28:06.400

Claude how do I make that run?

527

00:28:07.700 --> 00:28:08.200

There we go.

528

00:28:10.200 --> 00:28:13.600

This was in Cranbrook Canada an elf

529

00:28:13.600 --> 00:28:15.100

there El 19 bird dog.

530

00:28:20.200 --> 00:28:20.700

short spin

531

00:28:22.200 --> 00:28:24.200

yes that snow and yes, that's Canada.

532

00:28:29.400 --> 00:28:30.700

That's it. I'll take questions.

533

00:28:40.500 --> 00:28:41.300

a lot of development

534

00:28:50.300 --> 00:28:50.700

has one

535

00:28:54.900 --> 00:28:55.600

failure

536

00:29:02.600 --> 00:29:03.500

Department it sounds like you

537

00:29:04.700 --> 00:29:05.100

that a lot.

538

00:29:05.600 --> 00:29:08.200

So if you can offer what will be another place.

539

00:29:10.300 --> 00:29:11.500

for avoid

540
00:29:14.800 --> 00:29:17.500
failure to understand the system under test

541
00:29:18.300 --> 00:29:21.900
well sounds to me like a schedule squeeze and

542
00:29:21.900 --> 00:29:23.700
people coming in at the last minute.

543
00:29:26.500 --> 00:29:28.100
Is that where we're headed on this?

544
00:29:32.800 --> 00:29:35.100
We simply not time to evaluate the system

545
00:29:35.100 --> 00:29:38.800
or because it's developmental. You don't have the

546
00:29:38.800 --> 00:29:41.300
detailed documents to even describe the system.

547
00:29:42.100 --> 00:29:46.800
You know or the hey, this is mod 3.7. You

548
00:29:45.800 --> 00:29:48.700
know, we just made some wiring changes

549
00:29:48.700 --> 00:29:51.300
to the system and you know,

550
00:29:51.300 --> 00:29:55.000
so you do you're not really sure what you're testing that day. And

551
00:29:54.200 --> 00:29:57.200
it sounds to me like you have Min time to go

552
00:29:57.200 --> 00:30:00.300
out and test all these aircraft. So I don't

553
00:30:00.300 --> 00:30:03.100

want to give the impression that I rush into something or not.

554

00:30:03.100 --> 00:30:07.500

I can talk examples. Maybe this helps there

555

00:30:06.500 --> 00:30:10.300

was a time when we were updating a

556

00:30:09.300 --> 00:30:10.900

navigation.

557

00:30:12.300 --> 00:30:12.900

globally

558

00:30:13.700 --> 00:30:16.300

with the airlines, you know GPS was fairly

559

00:30:16.300 --> 00:30:18.500

new things were happening. This was the 90s.

560

00:30:19.200 --> 00:30:22.000

I took the liberty of sending myself to

561

00:30:24.300 --> 00:30:28.200

to one of the avionics manufacturers and

562

00:30:27.200 --> 00:30:30.300

spent three days there going over all

563

00:30:30.300 --> 00:30:33.900

their systems before I jumped in the airplane and evaluated

564

00:30:33.900 --> 00:30:34.400

the system.

565

00:30:35.800 --> 00:30:37.200

So prep work.

566

00:30:39.600 --> 00:30:40.500

Is Paramount?

567

00:30:42.400 --> 00:30:45.300

Yeah, as opposed to hey here. I am there's the airplane.

568

00:30:45.300 --> 00:30:48.500

I'll just jump in and go that that's rather unprofessional.

569

00:30:49.400 --> 00:30:50.400

You need some.

570

00:30:51.900 --> 00:30:54.100

Some lead in on all that. Is that answer

571

00:30:54.100 --> 00:30:54.400

the question?

572

00:30:55.500 --> 00:30:58.100

It's all about schedule. You know, somebody's getting

573

00:30:58.100 --> 00:31:01.300

the squeeze. Somebody's not ready. That's just an unsafe situation.

574

00:31:07.600 --> 00:31:10.200

All right. Thank you.