WEBVTT

1
00:00:05.385 --> 00:00:06.565
So that was a good presentation.

2
00:00:06.745 --> 00:00:07.805
But there's something I'd like

3
00:00:07.805 --> 00:00:09.045
to bring up at the panel discussion

4
00:00:09.245 --> 00:00:10.325
'cause the regulators are here

5
00:00:10.985 --> 00:00:12.685
and most of the cert we do at

6
00:00:12.685 --> 00:00:14.325
Bombardier is with Transport Canada.

7
00:00:14.705 --> 00:00:18.005
But what we have done in those situations is we've left the

8
00:00:18.005 --> 00:00:21.405
engine at idle and we have a switch in the cockpit

9
00:00:21.435 --> 00:00:24.565
that will essentially break the link between the engines

10
00:00:24.865 --> 00:00:26.725
and the auto throttle will still work.

11
00:00:26.825 --> 00:00:28.645
So we can do it with an engine at idle.

12
00:00:28.645 --> 00:00:31.485
Now, there's system differences to take into account,

13
00:00:32.105 --> 00:00:33.805
but on approach fer our airplanes,

14
00:00:33.805 --> 00:00:35.005
once you start moving the flaps,

15
00:00:35.025 --> 00:00:36.525
you get redundant hydraulics.

16
00:00:36.525 --> 00:00:38.365
So you could take that out.

17
00:00:38.385 --> 00:00:39.805
And so there's an analysis to be done.

18
00:00:39.885 --> 00:00:41.125
I don't disagree for the systems,

19
00:00:41.345 --> 00:00:43.005
but, uh, there's, there's, you know,

20
00:00:43.005 --> 00:00:44.165
different ways to skin the cat.

21
00:00:44.225 --> 00:00:46.725
But it sounds like this could be partly, uh,

22
00:00:47.285 --> 00:00:48.965
a difference in the regulatory

23
00:00:49.405 --> 00:00:50.525
agencies and how they would approach that.

24
00:00:50.545 --> 00:00:52.245
So it'll be a good discussion for the panel discussion.

25
00:00:52.245 --> 00:00:54.605
I'll see if we can pimp the FAA guys on that.

26
00:00:54.915 --> 00:00:58.565
Okay, so next one up is

27
00:00:59.395 --> 00:01:01.805

testing like it's 1959.

28
00:01:02.045 --> 00:01:05.085
A Tragic Tale for Our Future by Kevin Ick.

29
00:01:05.825 --> 00:01:09.925
So Kevin is, uh, CEO of a BN Holdings, Inc.

30
00:01:10.045 --> 00:01:12.325
A US-based corporation with three subsidiaries,

31
00:01:12.685 --> 00:01:14.725
A-B-N-L-L-C-A test

32
00:01:14.865 --> 00:01:18.485
and evaluation engineering service company, level Up LLCA,

33
00:01:18.485 --> 00:01:19.885
technical data analysis company,

34
00:01:19.885 --> 00:01:22.885
and Sapphire Solutions, LLCA, technical test

35
00:01:22.885 --> 00:01:25.085
and evaluation consulting and training firm.

36
00:01:25.635 --> 00:01:29.005
Kevin's a graduate graduate of, uh, NTPS NA

37
00:01:29.105 --> 00:01:30.725
or NA Naval Test Pilot School.

38
00:01:30.985 --> 00:01:32.605
Not to be confused at National Testify School.

39
00:01:33.075 --> 00:01:34.165
Swic served as a member

40
00:01:34.165 --> 00:01:36.805
of the Dodd's acquisition professional community,

41
00:01:37.225 --> 00:01:38.925
the US Navy Space Cadre,

42
00:01:38.925 --> 00:01:42.685
and US Navy's Aerospace Engineering Duty Officer Corps from

43
00:01:42.685 --> 00:01:44.325
86 to 2006.

44
00:01:44.985 --> 00:01:47.845
His 34 year professional testing evaluation experience

45
00:01:47.845 --> 00:01:51.885
includes being an experimental test pilot at US NTPS,

46
00:01:52.625 --> 00:01:55.925
uh, experimental Test Pilot, A-U-S-N-T-P-S instructor,

47
00:01:56.375 --> 00:01:58.685
chief Operational Test Director at VX one

48
00:01:59.105 --> 00:02:00.405
and testing of space systems

49
00:02:00.705 --> 00:02:04.245
and co-creating Navier College of Test and Evaluation.

50
00:02:04.505 --> 00:02:08.245
So come on up, Kevin, for testing, like it's 1959.

51
00:02:18.185 --> 00:02:19.485
All right, good morning everybody.

52
00:02:19.905 --> 00:02:22.165
Um, some of you may have heard this before.

53
00:02:22.165 --> 00:02:23.605
This is the third time I presented this,

54
00:02:23.625 --> 00:02:25.485

so it's a great time for you to go start an early lunch.

55
00:02:26.035 --> 00:02:27.565
It's the same story you've heard before.

56
00:02:28.265 --> 00:02:30.245
Um, and I also just flew home from Hawaii,

57
00:02:30.345 --> 00:02:32.245
so if I stop talking, my brain is frozen.

58
00:02:32.875 --> 00:02:34.045
It's four in the morning for me.

59
00:02:34.385 --> 00:02:37.245
Uh, this is kind of an off kilter kind

60
00:02:37.245 --> 00:02:38.965
of conversation I want to have with you all.

61
00:02:39.275 --> 00:02:40.525
It's not about a lessons learned,

62
00:02:40.525 --> 00:02:42.845
it's about an observation I've made over the last five

63
00:02:42.845 --> 00:02:46.085
years, um, in, in my role as a consultant, as I started

64
00:02:46.085 --> 00:02:48.285
to move from the military side of things more

65
00:02:48.285 --> 00:02:49.285
to the commercial side.

66
00:02:49.785 --> 00:02:52.885
Um, so as, as I call it out there, it's more of a, a call

67
00:02:52.885 --> 00:02:55.165
to action for the flight test community at large.

68
00:02:55.545 --> 00:02:58.245
Um, hoping that it will stimulate some conversations on the

69
00:02:58.245 --> 00:03:00.725
side and, and make you think a little bit deeper about some

70
00:03:00.725 --> 00:03:02.245
of the things we're doing and, and trends

71
00:03:02.245 --> 00:03:04.645
that I'm witnessing that I talking

72
00:03:04.705 --> 00:03:06.925
to my peers are witnessing the same thing.

73
00:03:07.505 --> 00:03:09.565
Um, so something to think about.

74
00:03:09.675 --> 00:03:11.365
This is kind of why I'm here today.

75
00:03:11.745 --> 00:03:13.485
Um, as you heard in my bio, I've been doing this

76
00:03:13.485 --> 00:03:14.925
for almost 35 years now.

77
00:03:15.545 --> 00:03:17.805
Um, early on I was a test pilot,

78
00:03:17.945 --> 00:03:21.405
did test systems on aircraft, uh, satellite systems,

79
00:03:21.475 --> 00:03:23.765
operational tests, developmental tests, uh,

80
00:03:23.945 --> 00:03:25.645
run the whole gamut of the different types

81
00:03:25.645 --> 00:03:26.885

of flight tests that are out there.

82
00:03:27.425 --> 00:03:28.845
But more importantly, I spent a lot

83
00:03:28.845 --> 00:03:30.885
of my career in the instructor space, um,

84
00:03:30.885 --> 00:03:34.445
instructing at TPS instructing for the college of t and e.

85
00:03:34.445 --> 00:03:35.365
I was the original course

86
00:03:35.365 --> 00:03:37.005
developer instructor for five years.

87
00:03:37.125 --> 00:03:38.885
I created their test planning,

88
00:03:38.915 --> 00:03:41.045
test reporting courses 15 years ago

89
00:03:41.465 --> 00:03:42.805
and been teaching it ever since.

90
00:03:43.505 --> 00:03:45.925
Um, but what's unique about my career,

91
00:03:46.255 --> 00:03:49.685
which I leveraged a lot, was along the way, I, I started out

92
00:03:49.685 --> 00:03:53.685
as a tester, but midway through I was transitioned over

93
00:03:53.685 --> 00:03:55.205
to the project management side

94
00:03:55.205 --> 00:03:57.005
of program management side of things for the Navy.

95
00:03:57.505 --> 00:04:00.485
Um, they put me in charge of the MH 60 Romeo program

96
00:04:01.025 --> 00:04:02.325
in the early two thousands.

97
00:04:02.395 --> 00:04:04.085
It's, it was an $11 billion program.

98
00:04:04.985 --> 00:04:06.085
Um, my charter was

99
00:04:06.085 --> 00:04:09.085
to deliver 187 new attack helicopters for the Navy.

100
00:04:09.465 --> 00:04:11.805
And my annual budget was somewhere between three

101
00:04:11.805 --> 00:04:14.325
and $500 million a year that I was responsible for

102
00:04:14.965 --> 00:04:16.645
a workforce of 1500 people.

103
00:04:17.345 --> 00:04:19.645
An immensely, immensely challenging

104
00:04:19.645 --> 00:04:21.005
and stressful time in my life.

105
00:04:21.545 --> 00:04:24.205
But I went in there and approached the, the concept

106
00:04:24.345 --> 00:04:26.525
of being a program manager from a test perspective.

107
00:04:27.105 --> 00:04:29.165
And even with that challenge, um,

108
00:04:29.285 --> 00:04:31.445

I found myself quickly ingrained into the

109
00:04:31.445 --> 00:04:32.485
world of program management.

110
00:04:32.485 --> 00:04:35.605
And it's a completely, completely different world.

111
00:04:35.825 --> 00:04:39.125
And, um, one of the quickest things I learned in there is

112
00:04:39.125 --> 00:04:42.485
that the level of stress involved in being a program

113
00:04:42.485 --> 00:04:46.125
management is intense and it kind of makes your brain fry.

114
00:04:46.785 --> 00:04:50.965
Um, and I remember many times being in the Pentagon, one

115
00:04:50.965 --> 00:04:53.325
of my favorite visits was I had got, I got called up,

116
00:04:53.745 --> 00:04:56.085
not me, but me, my boss, my boss's boss,

117
00:04:56.105 --> 00:04:59.325
my boss's boss's boss got called up to visit

118
00:04:59.325 --> 00:05:02.005
with the vice chief of naval operations, the VCNO,

119
00:05:02.005 --> 00:05:03.605
the second admiral in charge of the entire Navy.

120
00:05:04.745 --> 00:05:07.485
And it was coming out of an operational test.

121
00:05:07.505 --> 00:05:09.845
The pro the program, the the test vehicle,

122
00:05:09.945 --> 00:05:12.125
did not do very well for very odd reasons.

123
00:05:12.185 --> 00:05:15.285
And we understood clearly why it went south.

124
00:05:15.385 --> 00:05:17.045
We understood what the root cause was.

125
00:05:17.045 --> 00:05:18.445
We knew how we're gonna correct it.

126
00:05:18.755 --> 00:05:21.205
Some of it was human error, most of it was human error.

127
00:05:21.485 --> 00:05:23.925
A lot of it was training, not training the air crews right

128
00:05:23.945 --> 00:05:25.045
to, to test the system.

129
00:05:26.065 --> 00:05:29.005
But we got called up by the vice CNO, um,

130
00:05:29.115 --> 00:05:30.365
over Christmas no less.

131
00:05:31.065 --> 00:05:32.565
And as we went up there prepared

132
00:05:32.565 --> 00:05:34.805
with this beautiful presentation to explain to him

133
00:05:35.545 --> 00:05:36.845
why things went south

134
00:05:36.845 --> 00:05:38.685
and what we're gonna do to correct it, um,

135
00:05:38.905 --> 00:05:40.885

as we're sitting in his tiny office, I dunno if any

136
00:05:40.885 --> 00:05:41.965
of you been in the Pentagon,

137
00:05:41.965 --> 00:05:43.565
but you would think that this admiral in charge

138
00:05:43.565 --> 00:05:45.245
of the Navy would have a big, beautiful office.

139
00:05:45.545 --> 00:05:47.365
It was a tiny, tiny little crappy office

140
00:05:47.365 --> 00:05:48.405
in the Pentagon, in the corner.

141
00:05:49.065 --> 00:05:52.485
Um, but we sat down with him as we started

142
00:05:52.485 --> 00:05:53.685
to go through the presentation.

143
00:05:53.745 --> 00:05:56.245
We didn't get to the second bullet on the second slide

144
00:05:57.115 --> 00:05:59.965
when the presentation literally flew across the room.

145
00:06:00.755 --> 00:06:02.085
This was Admiral Mullins,

146
00:06:02.085 --> 00:06:04.165
if anybody remembers Admiral Mullins back in the day.

147
00:06:04.165 --> 00:06:05.965
He went on to become the joint chiefs of staff,

148
00:06:06.585 --> 00:06:07.605
um, firecracker.

149
00:06:08.425 --> 00:06:09.725
He didn't want to hear our story.

150
00:06:10.065 --> 00:06:11.965
He brought us up there for one reason, one reason only.

151
00:06:11.965 --> 00:06:14.445
That was the scream at us and scream he did.

152
00:06:14.505 --> 00:06:16.285
And thank God I was the commander in the room.

153
00:06:16.285 --> 00:06:17.525
And I had a captain, an admiral,

154
00:06:17.525 --> 00:06:19.165
and a secretary of the Navy above me

155
00:06:19.165 --> 00:06:20.965
to get yelled at more than I was getting yelled at.

156
00:06:21.425 --> 00:06:22.445
But I was in the line of fire

157
00:06:22.645 --> 00:06:24.485
'cause I was sitting next to him, shoulder to shoulder.

158
00:06:24.545 --> 00:06:26.525
So when everything started flying, I was getting hit.

159
00:06:28.065 --> 00:06:29.485
And his message was very, very clear.

160
00:06:29.485 --> 00:06:30.765
He just, the message was clear

161
00:06:31.745 --> 00:06:33.045
and it went something like this.

162
00:06:33.225 --> 00:06:36.165

He said, gentlemen, what do you not understand?

163
00:06:37.445 --> 00:06:40.405
I need this airplane and I need it today.

164
00:06:41.625 --> 00:06:44.165
You got a four year window to deliver this.

165
00:06:44.665 --> 00:06:47.085
If you don't deliver this aircraft for me, it's gone.

166
00:06:47.275 --> 00:06:48.605
It's dead. Program's canceled.

167
00:06:49.385 --> 00:06:50.565
And what he was referring to

168
00:06:51.265 --> 00:06:53.765
was the politics associated with every program.

169
00:06:54.125 --> 00:06:55.685
Politics is part of the acquisition process.

170
00:06:55.755 --> 00:06:57.045
Love it or hate it. You gotta embrace it.

171
00:06:57.795 --> 00:06:59.925
It's a lot of what program managers have to deal with.

172
00:07:00.585 --> 00:07:02.805
And the goal is dealing with the politics,

173
00:07:02.805 --> 00:07:04.325
but not letting it bleed into the team.

174
00:07:04.985 --> 00:07:06.365
You don't want them to feel the strain

175
00:07:06.365 --> 00:07:07.485
and the pressure that you're feeling.

176
00:07:07.585 --> 00:07:08.685
You gotta shield it from them.

177
00:07:08.805 --> 00:07:11.805
'cause you don't want them making stupid decisions based on

178
00:07:11.865 --> 00:07:13.445
things that are happening up in the hill.

179
00:07:13.445 --> 00:07:14.645
But as a program manager,

180
00:07:14.645 --> 00:07:17.085
you've gotta professionally negotiate your way through this.

181
00:07:18.305 --> 00:07:20.485
And what was happening to me was

182
00:07:20.485 --> 00:07:23.205
that window he was talking about was the F 18, EF

183
00:07:23.205 --> 00:07:24.205
and G just delivered

184
00:07:25.505 --> 00:07:27.645
and the F 35 was coming four years down the road.

185
00:07:28.105 --> 00:07:29.605
He goes, that's your window. You got

186
00:07:29.605 --> 00:07:30.645
four years to deliver this.

187
00:07:30.845 --> 00:07:33.605
You have four years of solid funding that won't be touched.

188
00:07:33.865 --> 00:07:35.045
If you don't deliver in four years,

189
00:07:35.045 --> 00:07:36.725

you're gonna become a bill payer for the next program.

190
00:07:37.745 --> 00:07:40.445
So that was my reality. I had to deliver.

191
00:07:40.865 --> 00:07:42.325
And the program was not doing well.

192
00:07:42.325 --> 00:07:44.365
We were over cost, over budget, behind schedule,

193
00:07:44.365 --> 00:07:45.845
every program in nature, we were there.

194
00:07:47.145 --> 00:07:50.125
So I went back down and I started working with my team

195
00:07:51.105 --> 00:07:52.685
and I said, listen, we really gotta start moving.

196
00:07:52.685 --> 00:07:53.805
How do you, how do you motivate a team

197
00:07:53.805 --> 00:07:55.005
to move faster without telling

198
00:07:55.005 --> 00:07:56.125
them why you have to move faster?

199
00:07:56.375 --> 00:07:59.325
Right? And my chief test pilot came to me

200
00:08:00.105 --> 00:08:02.165
and we were getting ready for our final exam,

201
00:08:02.185 --> 00:08:04.125
the operational test opera, op valor,

202
00:08:04.245 --> 00:08:05.485
IOT and E, whatever you want to call it.

203
00:08:06.585 --> 00:08:09.445
And it for us, the Navy, that final pre-test

204
00:08:09.465 --> 00:08:11.605
to the test was called technical evaluation.

205
00:08:12.345 --> 00:08:16.555
And we were planning that out. And I thought I was on plan.

206
00:08:16.715 --> 00:08:18.595
I had everything laid out, everything was squared away.

207
00:08:18.595 --> 00:08:20.275
I was gonna, I was not gonna get yelled at again

208
00:08:20.905 --> 00:08:22.115
when my chief test pilot came.

209
00:08:22.115 --> 00:08:24.035
And he one day and, and he just kind of looked at me calmly

210
00:08:24.035 --> 00:08:26.755
and he just said, Hey, things are not going well.

211
00:08:27.335 --> 00:08:29.955
I'm a little concerned. And I'm like, okay, okay Jim.

212
00:08:29.955 --> 00:08:32.795
Yeah, just figure it out. Make it happen. You know?

213
00:08:33.015 --> 00:08:35.915
And finally he literally got up on my desk,

214
00:08:36.285 --> 00:08:38.755
stood up on my desk, leaned over me,

215
00:08:38.855 --> 00:08:40.595
and screamed at me from the top of my head.

216
00:08:40.595 --> 00:08:43.315

He said, Kevin, you're going to fail.

217
00:08:44.375 --> 00:08:46.155
And all the blood rushed down in my head.

218
00:08:46.355 --> 00:08:48.555
'cause all I could think about was my next trip to the VCNO

219
00:08:48.555 --> 00:08:51.195
and the next as chewing I was gonna get.

220
00:08:51.195 --> 00:08:55.565
Right? So then, uh, now I gotta renegotiate the schedule.

221
00:08:55.665 --> 00:08:57.165
So I went through the whole gyrations

222
00:08:57.165 --> 00:08:59.565
of renegotiating everything I need six months

223
00:08:59.625 --> 00:09:00.805
to, to mature the system.

224
00:09:00.905 --> 00:09:03.045
The system what it was. The system was not mature for tests.

225
00:09:03.625 --> 00:09:04.965
How many programs have been thrown?

226
00:09:05.155 --> 00:09:07.645
Systems have been thrown into test immature.

227
00:09:07.785 --> 00:09:09.405
And when it gets into tests and it starts failing

228
00:09:09.745 --> 00:09:12.005
and you start discovering things, you all getting yelled at

229
00:09:12.025 --> 00:09:13.885
for finding things right?

230
00:09:14.505 --> 00:09:16.045
That's one of the things we live with.

231
00:09:17.065 --> 00:09:18.685
So I renegotiated the whole thing.

232
00:09:18.945 --> 00:09:21.565
Jim turned over to my friend Woody Jeff Danielson,

233
00:09:21.565 --> 00:09:23.965
who was also, I deployed with him in Desert Storm.

234
00:09:23.985 --> 00:09:26.645
So we were very close. So I was very comfortable in sharing

235
00:09:26.675 --> 00:09:29.525
with him the truth, what's really going on,

236
00:09:29.525 --> 00:09:30.645
and asking him to help me

237
00:09:30.905 --> 00:09:33.245
so I wouldn't find myself in a hospital with a heart attack.

238
00:09:34.185 --> 00:09:38.205
As we're walking through this whole thing, he came

239
00:09:38.205 --> 00:09:40.125
to me one day, he was executing the test plan

240
00:09:40.125 --> 00:09:41.525
that Jim had created for tech eval,

241
00:09:41.525 --> 00:09:42.805
which literally was three inches thick.

242
00:09:44.105 --> 00:09:45.405
The system was very complex.

243
00:09:45.425 --> 00:09:47.005

We were delivering all kinds of mission systems.

244
00:09:47.745 --> 00:09:50.045
And when we were with the vice CNO, he was kinda like, Hey,

245
00:09:50.605 --> 00:09:51.605
I need this airplane.

246
00:09:51.665 --> 00:09:53.445
If something's not working, take it off.

247
00:09:53.705 --> 00:09:55.605
If the radar's not working, take it off.

248
00:09:55.785 --> 00:09:57.645
If the SMS not working, take it off.

249
00:09:57.665 --> 00:09:59.525
If the weapon system's not working, take it off.

250
00:09:59.805 --> 00:10:02.405
I need this airplane deliver me something.

251
00:10:03.225 --> 00:10:04.365
So we're pushing forward

252
00:10:04.565 --> 00:10:05.605
'cause I want to deliver the whole package.

253
00:10:05.665 --> 00:10:08.605
And I'm pushing Woody hard, hard, hard.

254
00:10:08.605 --> 00:10:10.485
He's executing the tech eval tax plan.

255
00:10:10.485 --> 00:10:12.285
And one day he just looks at me in frustration.

256
00:10:12.285 --> 00:10:15.645
He said to me, Kevin, you want, you want everything fast,

257
00:10:16.185 --> 00:10:18.765
you want everything cheap and you want everything right?

258
00:10:20.135 --> 00:10:22.395
But I can only give you two to three. Which two do you want?

259
00:10:23.635 --> 00:10:26.095
And I was say, I want those Oh, oh s**t moments again.

260
00:10:26.095 --> 00:10:28.175
Right? So, ugh, okay, you're right.

261
00:10:28.275 --> 00:10:30.055
You know, this is what I'm trying

262
00:10:30.055 --> 00:10:31.535
to put my tester hat back on

263
00:10:31.535 --> 00:10:33.175
and look at things from his perspective,

264
00:10:33.175 --> 00:10:35.455
because this is the reality of the world

265
00:10:35.685 --> 00:10:37.335
that we live in, right?

266
00:10:37.395 --> 00:10:39.775
We as testers, we live on the, uh, right hand side.

267
00:10:40.075 --> 00:10:42.375
We live in this world of safe, efficient, effective tests.

268
00:10:42.765 --> 00:10:45.215
Give a question, I'll give you an answer efficiently

269
00:10:45.235 --> 00:10:46.335
as effectively as I can,

270
00:10:46.595 --> 00:10:48.215

and I'll make sure everybody stays safe.

271
00:10:48.355 --> 00:10:49.655
I'm gonna hurt somebody or break something.

272
00:10:50.085 --> 00:10:52.135
Program manager, they live on the other side.

273
00:10:52.925 --> 00:10:54.655
They don't care about your safe, efficient effect.

274
00:10:54.655 --> 00:10:56.575
They're worried about performance costs and schedule.

275
00:10:56.575 --> 00:10:59.615
And now cyber right? Throw that monkey on your shoulders.

276
00:11:00.075 --> 00:11:02.055
That's the world they live in. That's the world of politics.

277
00:11:02.055 --> 00:11:03.655
They gotta balance these three things

278
00:11:03.795 --> 00:11:07.615
and deliver a system, something for the taxpayer

279
00:11:07.715 --> 00:11:08.775
or for the investor.

280
00:11:09.355 --> 00:11:10.655
And it's a much different world

281
00:11:10.715 --> 00:11:12.095
and the pressures are much different.

282
00:11:12.095 --> 00:11:15.015
So it's a, a very healthy and constructive tension,

283
00:11:15.115 --> 00:11:16.535
but it can go south fast.

284
00:11:17.275 --> 00:11:19.495
And a lot of us find ourselves in situations

285
00:11:19.495 --> 00:11:21.455
where the tension between the program management side

286
00:11:21.715 --> 00:11:23.455
and the test side is unhealthy.

287
00:11:24.155 --> 00:11:26.335
And it boiled over in the late two thousands

288
00:11:26.335 --> 00:11:29.495
inside the Pentagon such that the head tester,

289
00:11:29.515 --> 00:11:30.935
the acquisition lead for the Navy,

290
00:11:31.685 --> 00:11:34.255
chartered an old gray beer team to go out

291
00:11:34.715 --> 00:11:37.855
and investigate why test, literally the, the charter was,

292
00:11:38.015 --> 00:11:40.655
I want you to find out why TE is always taking too long,

293
00:11:40.805 --> 00:11:42.775
costing too much, and gold plating everything.

294
00:11:43.195 --> 00:11:45.735
Why is test broken? And if you want

295
00:11:45.735 --> 00:11:46.895
to copy this paper, I got it.

296
00:11:47.015 --> 00:11:48.695
'cause it's not re it's not out there a lot.

297
00:11:48.845 --> 00:11:52.255

It's hard to find. But what they came back

298
00:11:52.255 --> 00:11:54.845
with was a simple, instead of a hundred page report on

299
00:11:54.845 --> 00:11:56.285
how bad test was broken, they came back

300
00:11:56.285 --> 00:11:57.365
with a three page paper

301
00:11:57.905 --> 00:11:59.605
and it simply says, test is not broken.

302
00:12:00.945 --> 00:12:02.485
What's broken is the relationship

303
00:12:02.485 --> 00:12:04.125
between the acquisition community,

304
00:12:04.125 --> 00:12:05.925
the requirements community, and the test community.

305
00:12:06.345 --> 00:12:09.405
And they outlined different things that they said we need

306
00:12:09.405 --> 00:12:10.485
to work on and fix

307
00:12:10.505 --> 00:12:13.605
and be able to, to bring the cohesion back

308
00:12:13.605 --> 00:12:15.285
to get it from an unhealthy tension back

309
00:12:15.285 --> 00:12:16.605
to a, a healthy tension.

310
00:12:18.585 --> 00:12:22.165
So one day I found myself moving from the military side.

311
00:12:22.205 --> 00:12:25.005
I got a phone call from Google X, uh,

312
00:12:25.135 --> 00:12:26.325
three days before Christmas.

313
00:12:26.545 --> 00:12:28.925
And they said, Hey, um, we have a, we have,

314
00:12:30.345 --> 00:12:31.485
we need some help and we're

315
00:12:31.485 --> 00:12:32.525
here that you're the person to call.

316
00:12:33.005 --> 00:12:35.685
I was shocked. I was like, okay, sounds good to me.

317
00:12:35.715 --> 00:12:37.725
I'll be right there. And I went out

318
00:12:37.785 --> 00:12:39.245
and they were working on this super

319
00:12:39.245 --> 00:12:40.525
high altitude balloon program.

320
00:12:40.585 --> 00:12:41.845
It was called Project Loon.

321
00:12:41.845 --> 00:12:44.565
So X is their RDT and E company inside the Google structure.

322
00:12:44.565 --> 00:12:47.285
And now the alphabet structure, they had like 15 different

323
00:12:48.125 --> 00:12:49.325
research programs going on.

324
00:12:49.405 --> 00:12:52.005

Seven of 'em were classified, the rest were unclassed.

325
00:12:52.005 --> 00:12:53.125
You could find 'em out on the web.

326
00:12:53.715 --> 00:12:55.485
This was one of their unclassified ones.

327
00:12:55.485 --> 00:12:57.565
And their goal here, their mission was they were gonna take

328
00:12:57.565 --> 00:13:00.725
the top of a cell phone tower, connect it to the bottom

329
00:13:00.745 --> 00:13:03.525
of a super high altitude balloon, launch it,

330
00:13:03.905 --> 00:13:05.885
and have a whole series of these rotating

331
00:13:05.885 --> 00:13:07.325
around the earth at any given time

332
00:13:07.345 --> 00:13:09.205
so they could bring internet to the parts

333
00:13:09.205 --> 00:13:10.405
of the world where it didn't exist.

334
00:13:11.185 --> 00:13:12.765
So this was a long time ago, right?

335
00:13:13.425 --> 00:13:16.365
Um, so for them, it was a very noble mission.

336
00:13:16.915 --> 00:13:18.325
They asked us to come help them

337
00:13:18.325 --> 00:13:19.645
because what they were struggling

338
00:13:19.645 --> 00:13:20.925
with is they were a software company

339
00:13:20.925 --> 00:13:22.285
developing a hardware solution.

340
00:13:22.985 --> 00:13:25.405
And the chief engineer has come to me was, it's,

341
00:13:25.515 --> 00:13:27.565
it's interesting watching what's going on.

342
00:13:27.925 --> 00:13:29.645
'cause everybody's passionate about the mission,

343
00:13:30.145 --> 00:13:32.085
but it's like watching a little kid's soccer game

344
00:13:32.815 --> 00:13:35.645
every time a problem pops up, everybody runs to the ball

345
00:13:36.665 --> 00:13:38.565
and he goes, we need a little bit of help here.

346
00:13:39.845 --> 00:13:41.165
'cause for us, speed is life, right?

347
00:13:41.165 --> 00:13:44.565
When I went to the, instead of for us, my goal on the

348
00:13:45.125 --> 00:13:46.925
military side was not to get the program canceled.

349
00:13:47.035 --> 00:13:50.445
That was my stress. Don't get the program canceled for them.

350
00:13:50.615 --> 00:13:53.165
Their theirs is make sure you got the money

351
00:13:53.185 --> 00:13:54.245

to make it to the end goal.

352
00:13:54.245 --> 00:13:56.005
So speed is life, speed to market is life.

353
00:13:56.305 --> 00:13:58.085
You gotta make this project successful.

354
00:13:58.485 --> 00:14:00.165
A much different approach, but it's similar concept.

355
00:14:01.305 --> 00:14:02.765
But when they came in, they said, Hey,

356
00:14:02.765 --> 00:14:03.885
what we really need your help

357
00:14:03.885 --> 00:14:06.765
with is we need a little bit more structured process in the

358
00:14:06.765 --> 00:14:09.045
way we approach engineering systems engineering.

359
00:14:09.665 --> 00:14:11.685
And we also need to put a little more discipline

360
00:14:11.685 --> 00:14:12.725
into the way we approach things.

361
00:14:13.545 --> 00:14:15.325
But you're not allowed to use the word process

362
00:14:15.905 --> 00:14:16.965
and you're not allowed to word,

363
00:14:16.985 --> 00:14:18.805
use the word discipline when you talk to routines.

364
00:14:18.925 --> 00:14:20.725
'cause those two words mean slowing down.

365
00:14:20.745 --> 00:14:22.365
And we're not allowed to slow down.

366
00:14:23.225 --> 00:14:24.605
So can you bring us process

367
00:14:24.785 --> 00:14:27.085
and discipline without slowing us down?

368
00:14:27.105 --> 00:14:29.725
And for God's sake, don't tell them you're from the DOD,

369
00:14:29.725 --> 00:14:30.965
they'll kick you outta the building.

370
00:14:31.555 --> 00:14:33.365
That was a quote. They really did say that.

371
00:14:33.905 --> 00:14:35.485
Um, and also they said, dress down,

372
00:14:36.105 --> 00:14:37.605
go barefoot and wear t-shirts.

373
00:14:37.675 --> 00:14:39.125
Half the people in the building were barefoot.

374
00:14:39.945 --> 00:14:43.325
Um, so can you do that without saying these two words?

375
00:14:43.865 --> 00:14:45.605
And of course the answer's yes, right?

376
00:14:45.905 --> 00:14:48.085
So I said, sure, we can do that. And we did. We got them.

377
00:14:48.085 --> 00:14:49.525
They were successful. They launched a

378
00:14:49.525 --> 00:14:50.605

commercial company out of it.

379
00:14:51.185 --> 00:14:53.405
It didn't go anywhere because Starling came around

380
00:14:53.465 --> 00:14:55.685
and took the market away, speed to life, right?

381
00:14:55.715 --> 00:14:57.085
They didn't get there fast enough.

382
00:14:57.905 --> 00:15:00.365
But what I've discovered since then is I've been able

383
00:15:00.365 --> 00:15:02.365
to consult with other commercial companies.

384
00:15:02.875 --> 00:15:04.285
Most of the companies that call me

385
00:15:04.285 --> 00:15:06.445
and ask for my help are new startup companies.

386
00:15:07.115 --> 00:15:09.565
They're new to the game in the aviation world.

387
00:15:10.505 --> 00:15:12.765
And every single one of 'em find me a program

388
00:15:12.795 --> 00:15:14.525
that doesn't have immense schedule pressure.

389
00:15:14.525 --> 00:15:16.365
And I'll find you a unicorn, right?

390
00:15:16.465 --> 00:15:17.765
We all live under this world.

391
00:15:18.185 --> 00:15:21.885
And as testers, it really goes deeply against our,

392
00:15:21.985 --> 00:15:23.525
our culture, our mandate

393
00:15:24.105 --> 00:15:26.325
of making sure we're safe, efficient, effective.

394
00:15:26.325 --> 00:15:28.485
The concept of a no vote, right?

395
00:15:28.515 --> 00:15:31.365
Slowing things down, just stopping all the horses, right?

396
00:15:32.505 --> 00:15:35.605
So as I started working with these commercial companies,

397
00:15:35.625 --> 00:15:36.725
all of them had the same thing.

398
00:15:37.075 --> 00:15:38.725
They were under immense schedule pressure.

399
00:15:39.795 --> 00:15:41.525
They, they, most

400
00:15:41.525 --> 00:15:43.845
of these new startups I discovered were being run

401
00:15:43.845 --> 00:15:45.845
by non-aviation ca CEOs.

402
00:15:45.845 --> 00:15:47.325
They were running a aviation startup,

403
00:15:48.425 --> 00:15:50.405
but they had no aviation experience at all.

404
00:15:51.305 --> 00:15:54.245
And they were hiring us professional flight test engineers,

405
00:15:54.245 --> 00:15:55.525

professional test pilots to come in

406
00:15:55.525 --> 00:15:56.725
and put together a test plan.

407
00:15:57.505 --> 00:15:59.005
And we started talking to them about

408
00:15:59.315 --> 00:16:00.365
test flight, test culture.

409
00:16:00.925 --> 00:16:02.445
I mean, we talked this morning

410
00:16:02.445 --> 00:16:03.605
about the three pillars, right?

411
00:16:03.665 --> 00:16:07.445
The tools, the um, culture and our,

412
00:16:07.465 --> 00:16:09.725
and our competence in the way we do things, right?

413
00:16:10.355 --> 00:16:11.765
They didn't want to hear about the culture.

414
00:16:11.765 --> 00:16:13.765
Culture costs money, culture takes time.

415
00:16:13.825 --> 00:16:15.165
We don't want to hear about that stuff.

416
00:16:15.705 --> 00:16:17.285
But you gotta move faster and faster.

417
00:16:17.385 --> 00:16:19.045
In fact, one of the companies when I went

418
00:16:19.045 --> 00:16:22.205
and visited them, the chief director of ops

419
00:16:22.205 --> 00:16:24.605
and the chief test pilot said to me, Hey, one

420
00:16:24.605 --> 00:16:26.765
of the CEO was walking the floor yesterday

421
00:16:28.185 --> 00:16:30.685
and one of the technicians made the mistake of walking up

422
00:16:30.705 --> 00:16:34.605
and telling the CEO about their concern, the hazard

423
00:16:35.195 --> 00:16:37.165
that they observed that would slow things down.

424
00:16:37.505 --> 00:16:39.045
The next day, that technician was gone

425
00:16:40.025 --> 00:16:41.325
and it put a buzz,

426
00:16:41.385 --> 00:16:43.965
it put the fear into every single technician on the floor.

427
00:16:43.965 --> 00:16:46.165
They said literally everybody in this building is afraid

428
00:16:46.165 --> 00:16:47.445
to speak up or they'll get fired.

429
00:16:48.235 --> 00:16:50.965
Talk about killing a culture overnight, right?

430
00:16:51.105 --> 00:16:53.125
And I've, this is not just unique to them.

431
00:16:53.345 --> 00:16:54.805
I'm hearing this from other companies,

432
00:16:54.805 --> 00:16:55.805

even European companies.

433
00:16:55.845 --> 00:16:56.965
I was over in Europe helping a company

434
00:16:57.545 --> 00:17:00.565
and as I was talking to 'em, uh, they say, Hey,

435
00:17:00.565 --> 00:17:02.445
can you come in here and help us establish a culture,

436
00:17:02.445 --> 00:17:04.845
establish the process, this brand new flight test team,

437
00:17:04.865 --> 00:17:06.565
get us together, speak the same language.

438
00:17:07.225 --> 00:17:08.805
And I said, sure, I'd be happy to do that.

439
00:17:08.805 --> 00:17:11.165
And they said, but number one thing we gotta do is we gotta

440
00:17:11.445 --> 00:17:13.765
convince the boss that it's worth the investment.

441
00:17:14.465 --> 00:17:16.405
Can you help us do that? And I'm like,

442
00:17:16.405 --> 00:17:17.565
sure, I can help you do that.

443
00:17:17.765 --> 00:17:20.205
I I was a program manager, I understand their stress,

444
00:17:20.325 --> 00:17:21.925
I can help translate the two together.

445
00:17:22.585 --> 00:17:25.325
And my message to 'em is I brought 'em, I sat, I sat down

446
00:17:25.325 --> 00:17:27.245
with the CEOs for all these companies.

447
00:17:27.285 --> 00:17:28.285
I said, Hey, you know, there,

448
00:17:28.285 --> 00:17:29.925
there's a uniqueness to what we do.

449
00:17:30.665 --> 00:17:32.085
And that uniqueness is real

450
00:17:32.115 --> 00:17:35.645
because it's a, it's a concept that we, we have to take time

451
00:17:35.645 --> 00:17:37.405
to really critically think through what we're gonna do.

452
00:17:37.565 --> 00:17:38.445
'cause we, you don't want us

453
00:17:38.445 --> 00:17:39.845
hurting somebody or breaking anything.

454
00:17:39.865 --> 00:17:42.005
You don't want USA today

455
00:17:42.145 --> 00:17:45.325
or CNN reporting on a mishap to come outta your company.

456
00:17:45.565 --> 00:17:47.045
'cause you don't wanna talk about slowing down things.

457
00:17:47.385 --> 00:17:49.190
That's the number one thing that's gonna get you.

458
00:17:50.585 --> 00:17:51.805
So I start off

459
00:17:51.805 --> 00:17:55.645

and I tell him this, the story, one of my old mentors, um,

460
00:17:55.955 --> 00:17:59.085
he's since retired, he once told me a story

461
00:17:59.085 --> 00:18:00.325
that when he was six years old,

462
00:18:00.345 --> 00:18:02.685
his dad was an original flight test engineer for Navara,

463
00:18:02.685 --> 00:18:05.205
the, for the Navy back at Pax River in, in the late fifties.

464
00:18:06.425 --> 00:18:07.805
And he says, I was six years old,

465
00:18:07.885 --> 00:18:09.005
I was sitting at the dinner table

466
00:18:09.985 --> 00:18:12.285
and my, uh, my dad came home

467
00:18:12.285 --> 00:18:13.845
to dinner late, we're already at the dinner table.

468
00:18:13.865 --> 00:18:15.805
He came home late, he sat down

469
00:18:15.985 --> 00:18:18.285
and he just started pushing his food around the plate.

470
00:18:19.305 --> 00:18:20.445
And my mom finally looked

471
00:18:20.445 --> 00:18:21.605
at him and said, honey, what's wrong?

472
00:18:21.605 --> 00:18:22.845
And my dad looked up and

473
00:18:22.845 --> 00:18:24.605
with a tear in his eye, he said, he started crying.

474
00:18:24.605 --> 00:18:26.165
He said, I killed somebody today.

475
00:18:28.265 --> 00:18:29.765
And that test engineer said that,

476
00:18:29.765 --> 00:18:31.005
that was the moment I decided I was

477
00:18:31.005 --> 00:18:32.085
gonna be a flight test engineer.

478
00:18:32.465 --> 00:18:33.965
And he goes, and that has driven everything

479
00:18:33.965 --> 00:18:35.205
I've done through my entire career.

480
00:18:35.785 --> 00:18:37.205
And I thought, thought that was interesting.

481
00:18:37.365 --> 00:18:39.045
'cause when I graduated from test pilot school, one

482
00:18:39.045 --> 00:18:40.885
of the lead test engineers was handing out these mugs

483
00:18:41.345 --> 00:18:44.845
and it says, protected pilot at all costs at all times.

484
00:18:45.465 --> 00:18:47.085
And when we got the mugs, I looked at him

485
00:18:47.085 --> 00:18:48.405
and said, what, what's up with this?

486
00:18:48.425 --> 00:18:49.565

He goes, I just want you to know

487
00:18:49.565 --> 00:18:51.445
that my number one job is to keep you alive.

488
00:18:52.935 --> 00:18:56.895
I was like, whoa. Please do. My wife would like that.

489
00:18:56.895 --> 00:18:59.095
Thank you. But you know, it's the same story.

490
00:18:59.095 --> 00:19:00.255
So I, I would tell these stories

491
00:19:00.275 --> 00:19:02.495
to these CEOs thinking this will move them,

492
00:19:02.545 --> 00:19:04.255
right Doug, at the heartstrings.

493
00:19:04.675 --> 00:19:06.855
And then I would start talking about the discipline.

494
00:19:06.875 --> 00:19:09.615
You know, test planning is all about taking the time

495
00:19:09.635 --> 00:19:12.055
to think through things upfront, critically, think through

496
00:19:12.055 --> 00:19:13.975
what it is we're going to do before we do it.

497
00:19:13.975 --> 00:19:14.975
So we don't hurt something.

498
00:19:15.235 --> 00:19:16.575
You want us to answer the question.

499
00:19:16.635 --> 00:19:18.495
You want us to answer the right question as efficiently,

500
00:19:18.495 --> 00:19:19.495
as effectively as possible,

501
00:19:19.915 --> 00:19:21.775
but we can't hurt anything along the way.

502
00:19:22.115 --> 00:19:24.375
And that takes time upfront to really think through

503
00:19:24.375 --> 00:19:26.255
what we're going to do before we execute it.

504
00:19:26.595 --> 00:19:29.335
And when I teach my test planning courses, one

505
00:19:29.335 --> 00:19:30.815
of the things I, I kind of emphasize

506
00:19:30.835 --> 00:19:33.895
to the team is test planning should be the exciting part.

507
00:19:34.085 --> 00:19:35.815
Test execution should be boring.

508
00:19:35.815 --> 00:19:38.335
If text execution gets exciting, something's bad's going on.

509
00:19:38.875 --> 00:19:42.135
You don't want that. So test planning, get excited about it.

510
00:19:42.155 --> 00:19:45.495
And oh, by the way, one of the things we tell people is kind

511
00:19:45.495 --> 00:19:46.815
of a, a moniker is

512
00:19:47.115 --> 00:19:49.575
for every flight test hour you think you're gonna execute

513
00:19:49.595 --> 00:19:51.295

you, you should be spending about 10 hours

514
00:19:51.395 --> 00:19:53.215
of thinking, planning for that one hour.

515
00:19:53.555 --> 00:19:54.615
That's kind of the ratio

516
00:19:54.615 --> 00:19:56.215
of time you should spend between the two.

517
00:19:56.715 --> 00:19:59.055
So here I am with a CEO of a commercial company

518
00:19:59.055 --> 00:20:01.375
with no aviation background saying, Hey, we're gonna have

519
00:20:01.375 --> 00:20:03.375
to take a lot of time thinking so

520
00:20:03.375 --> 00:20:04.495
that we can execute faster.

521
00:20:05.845 --> 00:20:07.735
They don't wanna hear that, right?

522
00:20:07.925 --> 00:20:09.695
Like, well, why can't you just get in

523
00:20:09.695 --> 00:20:12.335
and start executing now and forget the thinking part?

524
00:20:12.855 --> 00:20:14.135
I was like, that kind of breaks the culture.

525
00:20:14.395 --> 00:20:15.935
It kind of breaks the discipline, right?

526
00:20:16.315 --> 00:20:18.855
So I walk 'em through the whole art of flight test

527
00:20:18.855 --> 00:20:20.095
and the art of critical thinking

528
00:20:20.095 --> 00:20:21.695
and how we, we work our way

529
00:20:21.695 --> 00:20:23.855
through the critical thinking concepts on

530
00:20:23.855 --> 00:20:25.495
development of a test plan.

531
00:20:26.035 --> 00:20:27.855
And this is a great resource for you.

532
00:20:27.855 --> 00:20:29.815
If you ever wanted to think about connecting

533
00:20:29.815 --> 00:20:31.295
test planning to critical thinking.

534
00:20:31.405 --> 00:20:33.055
This was written by a Navy test pilot.

535
00:20:33.055 --> 00:20:34.935
That's why I used it as my primary reference.

536
00:20:35.395 --> 00:20:37.655
Um, it's a very clear and simple linkage.

537
00:20:37.715 --> 00:20:39.455
I'm not gonna walk through all these slides with you.

538
00:20:39.485 --> 00:20:41.975
This is a separate lecture. Take time to do this.

539
00:20:41.995 --> 00:20:43.935
If you want to hear more about, just reach out to me.

540
00:20:43.935 --> 00:20:46.375

You got my contact information, I'd be happy

541
00:20:46.375 --> 00:20:49.445
to share my thoughts on the linkage between the art of

542
00:20:50.165 --> 00:20:51.405
critical thinking and flight test

543
00:20:51.425 --> 00:20:54.485
and how the two pieces really marry themselves together.

544
00:20:54.585 --> 00:20:58.965
But the, the key message was you have to afford us the time

545
00:20:58.985 --> 00:21:00.285
to think through what we're gonna do.

546
00:21:01.385 --> 00:21:04.485
If you do that, we'll execute faster and cleaner and safer.

547
00:21:05.305 --> 00:21:07.245
But you gotta give that to us. That's part of the culture.

548
00:21:07.265 --> 00:21:10.005
And oh, by the way, as we go into execution, the no vote,

549
00:21:10.145 --> 00:21:11.525
you, you can't be firing people.

550
00:21:11.525 --> 00:21:12.565
If somebody says, wait a minute,

551
00:21:12.995 --> 00:21:14.525
something doesn't feel right,

552
00:21:15.065 --> 00:21:16.605
can we just slow down and think about it?

553
00:21:18.025 --> 00:21:20.445
So I walk through all this with them thinking, uh, you know,

554
00:21:20.445 --> 00:21:22.285
I'm, I'm going to solve the world hunger here

555
00:21:22.625 --> 00:21:24.405
and I'm not gonna bore you with all these slides

556
00:21:24.605 --> 00:21:26.165
'cause I'm sure I'm getting close to my time.

557
00:21:26.625 --> 00:21:31.265
How am I doing on time? Oh, by the way,

558
00:21:31.265 --> 00:21:32.465
whoever's scoring these things,

559
00:21:32.575 --> 00:21:34.105
give me an F 'cause I'm gonna go over.

560
00:21:36.285 --> 00:21:37.865
He said, just, just put your pen down.

561
00:21:38.005 --> 00:21:40.105
I'm not gonna win the award. Don't waste your time.

562
00:21:41.255 --> 00:21:43.705
Give me an A for looks an F for time.

563
00:21:45.445 --> 00:21:47.665
Um, but I, I walked them through

564
00:21:47.665 --> 00:21:49.705
and I said, listen, this whole idea of flight tests,

565
00:21:50.265 --> 00:21:53.185
a plastic test plan format is we, we critically think

566
00:21:53.185 --> 00:21:57.065
through what we're gonna do and we walk through our writing,

567
00:21:57.085 --> 00:21:59.025

our test plan to capture our critical thoughts.

568
00:21:59.445 --> 00:22:01.985
And at the end of the day, the test plan is really not just

569
00:22:02.025 --> 00:22:04.225
a document and you have to get through to get into tests.

570
00:22:04.295 --> 00:22:05.785
It's actually a critical thinking tool.

571
00:22:06.645 --> 00:22:08.705
If it's structured right and it's used right

572
00:22:09.605 --> 00:22:12.905
and you approach it from the right perspective as you walk

573
00:22:12.905 --> 00:22:14.905
through the different sections of your test plan,

574
00:22:14.975 --> 00:22:16.985
it's actually walking you through the critical thinking

575
00:22:16.985 --> 00:22:18.745
milestones, the critical thinking process.

576
00:22:19.775 --> 00:22:21.545
It's kind of cool how that linkage works.

577
00:22:22.365 --> 00:22:25.065
And, and, and sorry Jeff, when I say this, I'm gonna,

578
00:22:25.615 --> 00:22:27.745
when I hear people tell you they're gonna use AI

579
00:22:28.045 --> 00:22:30.985
to do the critical thinking for them, it just freaks me out.

580
00:22:31.895 --> 00:22:33.465
It's okay to use it to get you started,

581
00:22:33.565 --> 00:22:35.585
but don't let it be your brain.

582
00:22:36.545 --> 00:22:37.665
Goodness sake. Don't let it be your brain.

583
00:22:37.705 --> 00:22:39.065
I hear people in the Pentagon actually saying,

584
00:22:39.065 --> 00:22:40.665
we're gonna write test plans with AI

585
00:22:40.965 --> 00:22:42.425
and throw critical thinking out the window

586
00:22:42.445 --> 00:22:43.505
and say, oh, here we go.

587
00:22:43.505 --> 00:22:47.345
Testing. Like it's 1959. Why 1959?

588
00:22:47.545 --> 00:22:49.825
'cause that's when my friend's dad came home from

589
00:22:49.885 --> 00:22:52.305
and said, you know, we don't wanna go back to the days

590
00:22:52.305 --> 00:22:54.345
where we go home from work and say, I killed somebody today.

591
00:22:55.665 --> 00:22:56.705
I don't know that the rest of you,

592
00:22:56.725 --> 00:22:59.625
but in my first 10 years, I've lost at least 10 friends

593
00:22:59.625 --> 00:23:01.985
and peers in flight tests in my career.

594
00:23:02.145 --> 00:23:04.385

I stopped counting at 10. I don't know how many

595
00:23:04.385 --> 00:23:06.025
of you guys have lost people along the way.

596
00:23:08.405 --> 00:23:10.185
But it's the whole idea that, you know, as you walk

597
00:23:10.185 --> 00:23:12.545
through designing your test, figuring out

598
00:23:12.545 --> 00:23:14.105
what assumptions you make, assumptions

599
00:23:14.105 --> 00:23:15.425
or risks, risks, result

600
00:23:15.425 --> 00:23:17.625
and hazards, hazard results in the development

601
00:23:17.625 --> 00:23:19.625
of your hazardous take tpha ths

602
00:23:20.085 --> 00:23:22.105
and documenting your whole thing in your test plan.

603
00:23:22.845 --> 00:23:24.145
Um, and it's a thinking tool.

604
00:23:24.145 --> 00:23:25.145
And I, I go to the CEO

605
00:23:25.245 --> 00:23:27.185
and say, you, you gotta give us time to do this.

606
00:23:28.345 --> 00:23:30.795
This is the culture. And they have to be trained to do this.

607
00:23:31.855 --> 00:23:33.115
And it's a fundamental culture.

608
00:23:33.255 --> 00:23:35.035
But depending on where people come from,

609
00:23:35.345 --> 00:23:37.875
different organizations, army, Navy, air Force,

610
00:23:37.875 --> 00:23:39.595
commercial Company X, company y

611
00:23:40.215 --> 00:23:41.635
we get trained differently to do this.

612
00:23:41.635 --> 00:23:43.715
So if you're gonna pull people together into a new team,

613
00:23:44.255 --> 00:23:47.565
you gotta get them working from a same language, a frame,

614
00:23:47.595 --> 00:23:49.805
same technology taxonomy,

615
00:23:50.025 --> 00:23:51.325
and the same way of doing business.

616
00:23:51.345 --> 00:23:53.245
You gotta bring 'em together. And that was my role, was

617
00:23:53.245 --> 00:23:56.565
to bring everybody together and make them a new team

618
00:23:56.585 --> 00:23:58.445
and not 10 people from 10 different teams

619
00:23:58.445 --> 00:23:59.685
doing 10 different ways of business.

620
00:24:03.575 --> 00:24:05.625
Because it's, this is kind of the discipline

621
00:24:05.625 --> 00:24:06.705

that drives everything, right?

622
00:24:07.185 --> 00:24:08.865
'cause it, it's really designed to prevent

623
00:24:09.695 --> 00:24:10.945
unfortunate incidents.

624
00:24:11.445 --> 00:24:13.625
You know? And we always can look back on all the mishaps.

625
00:24:13.625 --> 00:24:14.905
I've been associated with quite a few.

626
00:24:14.905 --> 00:24:15.745
You look back and you're just like,

627
00:24:15.745 --> 00:24:16.945
man, why didn't we see that coming?

628
00:24:17.725 --> 00:24:18.945
We should have been smarter than that.

629
00:24:19.445 --> 00:24:23.705
We are smarter than that. What happened, right?

630
00:24:24.605 --> 00:24:26.385
So I'd go through this whole story with 'em and,

631
00:24:26.525 --> 00:24:27.825
and it never moved them.

632
00:24:28.885 --> 00:24:29.925
I did not move the needle.

633
00:24:30.405 --> 00:24:32.245
I was a program manager talking to a program manager.

634
00:24:32.385 --> 00:24:33.645
I'm like, man, this stuff's important.

635
00:24:33.665 --> 00:24:35.885
You gotta pay attention to didn't work.

636
00:24:37.145 --> 00:24:38.205
One of the company I was working with,

637
00:24:38.205 --> 00:24:39.205
the entire test team quit.

638
00:24:41.115 --> 00:24:43.005
They all walked out. They couldn't take it anymore.

639
00:24:43.825 --> 00:24:46.125
The other one, fortunately they replaced the CEO

640
00:24:46.125 --> 00:24:47.325
with an aviation CEO

641
00:24:47.325 --> 00:24:49.325
that CEO did not have a flight test background,

642
00:24:49.325 --> 00:24:50.485
but he was an aviation CEO

643
00:24:50.485 --> 00:24:51.805
and he's taking this stuff seriously.

644
00:24:52.625 --> 00:24:53.765
And they've, they've made a,

645
00:24:53.765 --> 00:24:55.205
they've made a tremendous bend in the curve

646
00:24:55.205 --> 00:24:56.445
and they're doing things much different

647
00:24:56.445 --> 00:24:57.525
than they were a year ago.

648
00:24:59.755 --> 00:25:01.255

So I was sitting there going, what am I missing?

649
00:25:01.355 --> 00:25:04.695
And this goes back to part of, out of this is I joined the,

650
00:25:04.715 --> 00:25:07.135
uh, flight Society of Flight Test Engineers,

651
00:25:07.195 --> 00:25:08.415
um, training committee.

652
00:25:08.795 --> 00:25:11.215
And we're gonna be talking about the last conversation we're

653
00:25:11.215 --> 00:25:12.015
have today is talking about

654
00:25:12.015 --> 00:25:13.255
what's going on with the training committee.

655
00:25:13.355 --> 00:25:14.375
I'm part of that team now.

656
00:25:14.895 --> 00:25:16.815
'cause I want to bring this message to our community.

657
00:25:17.135 --> 00:25:19.215
I don't want us going back to 1959.

658
00:25:19.915 --> 00:25:21.015
And the part that I finally

659
00:25:21.015 --> 00:25:22.295
thought through is, and what am I missing?

660
00:25:22.885 --> 00:25:25.895
It's this idea of credibility and trust.

661
00:25:26.805 --> 00:25:29.015
It's not that my message was wrong, it wasn't,

662
00:25:29.015 --> 00:25:31.895
my message wasn't meaningful, it's just I'm talking

663
00:25:31.895 --> 00:25:33.415
to someone who doesn't know who I am.

664
00:25:33.895 --> 00:25:37.535
I have no credibility with this person. They don't trust me.

665
00:25:37.535 --> 00:25:39.615
People do business with people they know, like, and trust.

666
00:25:39.615 --> 00:25:42.975
They don't even know me. Nevermind like me or trust me.

667
00:25:43.395 --> 00:25:44.815
No wonder why I didn't move the needle.

668
00:25:46.315 --> 00:25:47.975
So if you're going to, part of what we need to do

669
00:25:47.975 --> 00:25:49.135
as a flight test community, especially

670
00:25:49.135 --> 00:25:50.815
as you get senior in your career, we need

671
00:25:50.815 --> 00:25:52.215
to develop and learn soft skills.

672
00:25:52.675 --> 00:25:54.575
We gotta understand the program management side.

673
00:25:54.575 --> 00:25:57.175
We gotta understand the customer. We gotta understand

674
00:25:57.175 --> 00:25:58.215
what they do day in,

675
00:25:58.215 --> 00:25:59.455

day out and the pressures they live under.

676
00:25:59.475 --> 00:26:01.055
And we gotta be part of the solution,

677
00:26:01.715 --> 00:26:02.855
not a thorn in their side.

678
00:26:04.275 --> 00:26:06.295
So it's idea of creating credibility

679
00:26:06.315 --> 00:26:09.095
and trust between the flight test team and the project team

680
00:26:09.675 --> 00:26:10.735
and the engineering team.

681
00:26:11.475 --> 00:26:13.015
And a lot of the stress you're probably feeling

682
00:26:13.015 --> 00:26:14.655
and scheduled pressures that you're feeling is

683
00:26:14.655 --> 00:26:16.535
because that hasn't been established properly.

684
00:26:17.065 --> 00:26:20.495
Frank Kendall was, um, the head of the Secretary of Defense

685
00:26:20.635 --> 00:26:21.695
for all acquisitions.

686
00:26:21.705 --> 00:26:23.935
Every, everything the DOD was buying, he was in charge,

687
00:26:23.935 --> 00:26:24.975
but he came from industry.

688
00:26:25.395 --> 00:26:27.655
But he, he wrote this the most amazing article,

689
00:26:28.155 --> 00:26:29.895
and if you want it again, email me, I'll send it to you.

690
00:26:29.895 --> 00:26:31.735
It was back about 15, 16 years ago.

691
00:26:32.195 --> 00:26:34.575
He called it ethics and acquisition Professionalism.

692
00:26:34.755 --> 00:26:36.655
But what it really was is a four page paper

693
00:26:37.595 --> 00:26:39.295
on the importance of credibility

694
00:26:39.315 --> 00:26:40.735
and trust in everything we do.

695
00:26:41.515 --> 00:26:42.695
And without it, you're lost.

696
00:26:42.795 --> 00:26:46.125
And one of my bosses once said to me, Kevin Credibility's,

697
00:26:46.125 --> 00:26:47.405
the only thing I got, once I lose

698
00:26:47.405 --> 00:26:48.445
it, I might as well go home.

699
00:26:49.465 --> 00:26:50.805
So why didn't I move the needle?

700
00:26:51.525 --> 00:26:52.685
'cause I hadn't taken the time

701
00:26:52.705 --> 00:26:54.845
to establish this with that CEO.

702
00:26:54.905 --> 00:26:57.445

Had I done that, taken time to get to know 'em, take 'em out

703
00:26:57.445 --> 00:27:00.405
to it for a beer, develop some kind of rapport with them,

704
00:27:00.405 --> 00:27:03.485
they might be more willing to listen to me.

705
00:27:04.115 --> 00:27:06.765
Because if you figure out, you know, what is trust, right?

706
00:27:06.765 --> 00:27:07.965
Here's a simple trust equation.

707
00:27:07.965 --> 00:27:09.205
There's a thousand of 'em on the internet.

708
00:27:09.205 --> 00:27:11.285
They pick one, this one's the easiest to understand.

709
00:27:12.375 --> 00:27:13.405
Trust is developed.

710
00:27:13.405 --> 00:27:16.005
Credibility is when someone looks at you as a person,

711
00:27:16.075 --> 00:27:18.125
your character, your a good guy,

712
00:27:18.905 --> 00:27:20.285
and they look at your competence.

713
00:27:20.285 --> 00:27:21.445
And Jeff mentioned this morning as one

714
00:27:21.445 --> 00:27:22.965
of the three pillars, our technical competence.

715
00:27:23.485 --> 00:27:25.605
I, they, they're, they know I know

716
00:27:25.605 --> 00:27:27.995
what I'm doing and I'm a good guy.

717
00:27:28.305 --> 00:27:29.955
Then I have credibility with that person.

718
00:27:30.375 --> 00:27:31.955
That's what establishes credibility.

719
00:27:32.615 --> 00:27:34.795
That's why competence in our role is so important.

720
00:27:35.655 --> 00:27:36.795
You take credibility

721
00:27:36.815 --> 00:27:38.555
and you gotta add in that piece of connection.

722
00:27:38.555 --> 00:27:40.235
Connection takes time. You gotta build a

723
00:27:40.235 --> 00:27:41.915
relationship that takes time.

724
00:27:42.625 --> 00:27:43.635
Once you have credibility

725
00:27:43.635 --> 00:27:45.595
and you build that personal relationship,

726
00:27:45.785 --> 00:27:47.915
then they'll finally look at you and say, I trust you.

727
00:27:48.575 --> 00:27:49.955
And the ultimate goal is for them

728
00:27:49.955 --> 00:27:51.315
to consider you a raving fan.

729
00:27:51.995 --> 00:27:53.395

I know that person. I like that person.

730
00:27:53.475 --> 00:27:56.315
I trust that person and he's, he's the best test pilot

731
00:27:56.375 --> 00:27:57.515
or that best flight test.

732
00:27:57.935 --> 00:27:59.315
I'm a raving fan of that person.

733
00:27:59.775 --> 00:28:01.635
That's the ultimate goal when you reach that.

734
00:28:02.015 --> 00:28:04.075
You could go in there and say, Kevin, I need six months

735
00:28:04.075 --> 00:28:06.515
to mature the system before I go into test and here's why.

736
00:28:07.415 --> 00:28:09.875
And they'll listen to you and they'll understand

737
00:28:09.875 --> 00:28:11.635
and then they'll go off and play politics

738
00:28:11.635 --> 00:28:12.755
and negotiate everything

739
00:28:12.755 --> 00:28:14.235
with the investors to get what you know.

740
00:28:14.665 --> 00:28:16.595
They'll, they'll take on that pain.

741
00:28:18.095 --> 00:28:19.315
But if they don't trust you,

742
00:28:19.315 --> 00:28:20.675
they're not gonna take that pain on.

743
00:28:20.855 --> 00:28:23.075
And then you're gonna find yourself being under more stress.

744
00:28:24.335 --> 00:28:26.115
So people will only change when the pain

745
00:28:26.115 --> 00:28:28.235
of not changing exceeds the pain of change.

746
00:28:28.235 --> 00:28:31.795
Right. Tony Robbins. So the message is real simple.

747
00:28:34.175 --> 00:28:36.705
There's, there's an ecosystem that's created right now.

748
00:28:37.185 --> 00:28:39.025
I call it the new aviation startups.

749
00:28:39.715 --> 00:28:41.785
Quite a few of those companies are being run by people

750
00:28:41.785 --> 00:28:43.145
who have no aviation background.

751
00:28:43.965 --> 00:28:46.945
The teams I'm running into are under the flight test teams

752
00:28:46.945 --> 00:28:49.705
are under a lot of stress because there's a misunderstanding

753
00:28:49.705 --> 00:28:51.545
of what the importance of flight test culture is.

754
00:28:52.765 --> 00:28:56.105
And we need to be aware of that as an overarching community

755
00:28:56.485 --> 00:28:59.305
and arm those people with the information

756
00:28:59.325 --> 00:29:00.345

and the tools they need.

757
00:29:00.365 --> 00:29:02.985
So part of the, we're gonna create in the training committee

758
00:29:03.045 --> 00:29:06.065
for Society of Flight Test Engineers is the art

759
00:29:06.065 --> 00:29:07.105
of critical thinking is gonna

760
00:29:07.105 --> 00:29:08.145
be part of the course material.

761
00:29:08.685 --> 00:29:11.225
And I'm hoping we can add some soft skill training in there.

762
00:29:11.445 --> 00:29:13.865
How do you talk to a program manager?

763
00:29:13.885 --> 00:29:15.465
How do you convince them you need more time

764
00:29:15.465 --> 00:29:16.625
without causing stress?

765
00:29:17.045 --> 00:29:18.705
How do you make them the hero of their journey?

766
00:29:18.735 --> 00:29:20.865
This is, this is the ultimate goal, right?

767
00:29:21.085 --> 00:29:22.825
We want to help them be successful.

768
00:29:23.645 --> 00:29:25.065
We don't want to be a thorn in their side.

769
00:29:25.065 --> 00:29:26.145
We want them to be a hero.

770
00:29:27.085 --> 00:29:29.225
How do we convince them through credibility

771
00:29:29.225 --> 00:29:31.305
and trust that we're there to help them,

772
00:29:32.485 --> 00:29:34.465
but we have certain things that we have to do

773
00:29:34.565 --> 00:29:36.545
to make sure we don't hurt somebody along the way.

774
00:29:37.525 --> 00:29:39.745
Um, as I started working with these companies,

775
00:29:39.745 --> 00:29:41.565
the hairs on the back of my neck started going up.

776
00:29:41.665 --> 00:29:42.765
I'm like, I gotta speak up.

777
00:29:43.725 --> 00:29:45.285
I could probably get in trouble for what I'm doing.

778
00:29:46.025 --> 00:29:47.085
Non attribution, right?

779
00:29:47.265 --> 00:29:48.485
Is that kind of what we're doing here?

780
00:29:49.505 --> 00:29:53.045
Um, but that's my message. Hope it generates some thoughts.

781
00:29:53.045 --> 00:29:54.285
There's probably a few of you in the audience

782
00:29:54.285 --> 00:29:55.445
going, yeah, I'm living that dream right now.

783
00:29:56.005 --> 00:29:57.525

I feel what you're talking about every day.

784
00:29:58.305 --> 00:30:02.485
Um, but that's my message. So thank you for your time.

785
00:30:04.795 --> 00:30:06.605
Silence in the room. You're either really hungry

786
00:30:06.745 --> 00:30:07.765
or I'm making you think.

787
00:30:09.505 --> 00:30:10.125
Any questions?

788
00:30:16.505 --> 00:30:19.485
Am I on time? A little bit over. Oh, okay.

789
00:30:19.485 --> 00:30:23.845
I got my FI succeeded. No questions. Good.

790
00:30:24.895 --> 00:30:26.165
Thank you. Uh, don't

791
00:30:26.165 --> 00:30:27.165
Go to the panel. Discussion

792
00:30:27.165 --> 00:30:28.405
will be made. So

793
00:30:28.825 --> 00:30:29.485
Am I on the panel?