



1
00:00:11,910 --> 00:00:09,910
good afternoon and welcome to today's

2
00:00:13,350 --> 00:00:11,920
awards ceremony here at the nasa ames

3
00:00:14,870 --> 00:00:13,360
research center at moffett field

4
00:00:16,630 --> 00:00:14,880
california

5
00:00:18,630 --> 00:00:16,640
for the green flight challenge sponsored

6
00:00:19,910 --> 00:00:18,640
by google it's a great day to have you

7
00:00:22,230 --> 00:00:19,920
all here it's great to have the teams

8
00:00:24,710 --> 00:00:22,240
here and it's a wonderful day to

9
00:00:26,310 --> 00:00:24,720
announce the winner of the first green

10
00:00:27,750 --> 00:00:26,320
flight challenge

11
00:00:29,830 --> 00:00:27,760
before we get to that i'd like to

12
00:00:31,990 --> 00:00:29,840
introduce our host for the day the

13
00:00:41,750 --> 00:00:32,000

deputy acting deputy director of nasa

14

00:00:45,670 --> 00:00:44,470

good afternoon is it afternoon just

15

00:00:48,069 --> 00:00:45,680

lightly

16

00:00:50,869 --> 00:00:48,079

well welcome to ames we are very pleased

17

00:00:52,630 --> 00:00:50,879

to host the green flight challenge expo

18

00:00:54,389 --> 00:00:52,640

uh we want to congratulate all the teams

19

00:00:56,709 --> 00:00:54,399

who participated in the google green

20

00:00:57,750 --> 00:00:56,719

flight challenge in santa rosa this past

21

00:01:01,029 --> 00:00:57,760

week

22

00:01:03,430 --> 00:01:01,039

as you may know air travel is uh

23

00:01:05,590 --> 00:01:03,440

predicted to double in the next 20 years

24

00:01:08,070 --> 00:01:05,600

and because of this we need to find ways

25

00:01:09,990 --> 00:01:08,080

to make aircraft travel more efficient

26
00:01:11,670 --> 00:01:10,000
while maintaining safety

27
00:01:14,070 --> 00:01:11,680
to help achieve that goal we conduct

28
00:01:17,109 --> 00:01:14,080
wind tunnel tests computer modeling and

29
00:01:18,950 --> 00:01:17,119
computational fluid dynamic simulations

30
00:01:20,950 --> 00:01:18,960
nasa ames has a history of always being

31
00:01:22,710 --> 00:01:20,960
at the forefront of cutting-edge

32
00:01:25,190 --> 00:01:22,720
aeronautics technologies starting more

33
00:01:26,630 --> 00:01:25,200
than 70 years ago when ames was founded

34
00:01:28,710 --> 00:01:26,640
as part of the national advisory

35
00:01:31,350 --> 00:01:28,720
committee for aeronautics

36
00:01:33,830 --> 00:01:31,360
people like heinz ersberger came to ames

37
00:01:37,510 --> 00:01:33,840
in 1965 to seek out ways to make air

38
00:01:39,350 --> 00:01:37,520

travel safer and more efficient

39

00:01:42,069 --> 00:01:39,360

erzberger created software tools

40

00:01:44,069 --> 00:01:42,079

designed to help air traffic controllers

41

00:01:46,069 --> 00:01:44,079

better manage traffic flow by providing

42

00:01:48,310 --> 00:01:46,079

them timely information about aircraft

43

00:01:50,230 --> 00:01:48,320

in the system including predictions and

44

00:01:51,910 --> 00:01:50,240

advice on sequencing aircraft and

45

00:01:53,749 --> 00:01:51,920

avoiding conflicts

46

00:01:55,510 --> 00:01:53,759

many of those innovation tools are still

47

00:01:57,670 --> 00:01:55,520

in use today

48

00:01:59,990 --> 00:01:57,680

as we look to the future of aviation

49

00:02:02,069 --> 00:02:00,000

nasa ames research center continues to

50

00:02:04,709 --> 00:02:02,079

conduct advanced aeronautics research

51
00:02:07,270 --> 00:02:04,719
with next-gen and air traffic management

52
00:02:09,430 --> 00:02:07,280
next gen strives to reduce air traffic

53
00:02:11,990 --> 00:02:09,440
emissions while lessening congestion in

54
00:02:13,510 --> 00:02:12,000
the nasa in the nation's airways

55
00:02:21,350 --> 00:02:13,520
thank you for attending and we hope you

56
00:02:25,190 --> 00:02:23,110
thank you deb uh for those of you

57
00:02:27,350 --> 00:02:25,200
watching on television or following us

58
00:02:31,030 --> 00:02:27,360
on the web you can learn more about nasa

59
00:02:35,190 --> 00:02:33,910
ames it's one of our spectacular nasa

60
00:02:37,350 --> 00:02:35,200
centers

61
00:02:40,470 --> 00:02:37,360
it's now my great privilege and honor to

62
00:02:45,670 --> 00:02:40,480
introduce dr brian seeley brian is the

63
00:02:49,589 --> 00:02:47,350

thank you david it's a great pleasure to

64

00:02:51,750 --> 00:02:49,599

be here this culmination of three years

65

00:02:54,390 --> 00:02:51,760

of effort at the cafe foundation to

66

00:02:57,589 --> 00:02:54,400

bring forth the green flight challenge

67

00:02:59,509 --> 00:02:57,599

i'm mainly here to issue thank yous and

68

00:03:02,710 --> 00:02:59,519

i want to be very quick about it but i

69

00:03:06,070 --> 00:03:02,720

first want to say we consider this truly

70

00:03:08,630 --> 00:03:06,080

a pivotal historic event in aviation

71

00:03:10,790 --> 00:03:08,640

and i there's much more time later to

72

00:03:13,430 --> 00:03:10,800

tell you why that's the case but our

73

00:03:15,910 --> 00:03:13,440

vision at cafe is that the green flight

74

00:03:18,550 --> 00:03:15,920

challenge will bring forth future air

75

00:03:19,990 --> 00:03:18,560

vehicles that are quiet that are

76

00:03:21,750 --> 00:03:20,000

emission free

77

00:03:24,149 --> 00:03:21,760

that are very safe

78

00:03:25,350 --> 00:03:24,159

and that can land just about anywhere

79

00:03:27,670 --> 00:03:25,360

essentially

80

00:03:29,270 --> 00:03:27,680

do what birds do

81

00:03:31,350 --> 00:03:29,280

more on that later

82

00:03:32,789 --> 00:03:31,360

our future vision has been helped

83

00:03:34,869 --> 00:03:32,799

tremendously

84

00:03:36,789 --> 00:03:34,879

by the support from everyone but

85

00:03:40,149 --> 00:03:36,799

particularly i want to thank

86

00:03:41,190 --> 00:03:40,159

the amazing diverse skill set of the

87

00:03:43,750 --> 00:03:41,200

cafe

88

00:03:45,589 --> 00:03:43,760

board of directors who who really

89

00:03:47,110 --> 00:03:45,599

brought this together and just put out

90

00:03:51,110 --> 00:03:47,120

tremendously

91

00:03:54,149 --> 00:03:51,120

the eaa chapter 124 volunteers who are

92

00:03:56,550 --> 00:03:54,159

another group of fantastic people the

93

00:03:59,190 --> 00:03:56,560

backbone of our event

94

00:04:00,630 --> 00:03:59,200

the nasa people who worked with us

95

00:04:03,589 --> 00:04:00,640

tirelessly

96

00:04:05,589 --> 00:04:03,599

even on weekends to put things together

97

00:04:07,670 --> 00:04:05,599

and decide things and

98

00:04:09,990 --> 00:04:07,680

get this program together

99

00:04:13,990 --> 00:04:10,000

they've been absolutely great

100

00:04:17,270 --> 00:04:14,000

and i want to particularly thank google

101
00:04:18,789 --> 00:04:17,280
for actually making this possible a cafe

102
00:04:21,349 --> 00:04:18,799
received no

103
00:04:24,150 --> 00:04:21,359
sponsorship for this

104
00:04:24,950 --> 00:04:24,160
until google rescued us

105
00:04:26,870 --> 00:04:24,960
and

106
00:04:29,350 --> 00:04:26,880
not only made it possible but made it

107
00:04:31,909 --> 00:04:29,360
possible to do it up in a very good

108
00:04:34,230 --> 00:04:31,919
fashion made possible the world's first

109
00:04:37,189 --> 00:04:34,240
electric aircraft charging station

110
00:04:38,950 --> 00:04:37,199
powered by clean geothermal energy

111
00:04:41,670 --> 00:04:38,960
and to really

112
00:04:49,909 --> 00:04:41,680
thank google i i want to invite up anita

113
00:04:53,510 --> 00:04:51,749

thank you brian

114

00:04:55,350 --> 00:04:53,520

we're really excited to be here today at

115

00:04:56,870 --> 00:04:55,360

google we're committed to a clean energy

116

00:04:59,510 --> 00:04:56,880

feature and in fact we've been carbon

117

00:05:01,830 --> 00:04:59,520

neutral since 2007

118

00:05:04,710 --> 00:05:01,840

and we've also invested over 850 million

119

00:05:07,029 --> 00:05:04,720

dollars already in the sectors thus far

120

00:05:09,430 --> 00:05:07,039

we believe green transportation is a key

121

00:05:11,029 --> 00:05:09,440

part an important part of this clean

122

00:05:12,150 --> 00:05:11,039

energy future

123

00:05:13,990 --> 00:05:12,160

in fact that's why we've been greeting

124

00:05:15,830 --> 00:05:14,000

our transportations at google for a

125

00:05:17,909 --> 00:05:15,840

while in fact we've had an electric

126
00:05:20,070 --> 00:05:17,919
vehicle program for three years now and

127
00:05:22,390 --> 00:05:20,080
now we have one of the largest electric

128
00:05:23,670 --> 00:05:22,400
vehicle charging stations in the u.s 200

129
00:05:26,390 --> 00:05:23,680
charging stations just down the road

130
00:05:27,830 --> 00:05:26,400
over at mountain view headquarters

131
00:05:29,430 --> 00:05:27,840
so we're that's why work really is

132
00:05:31,110 --> 00:05:29,440
exciting to support this year's green

133
00:05:33,590 --> 00:05:31,120
flight challenge we really believe that

134
00:05:35,189 --> 00:05:33,600
green aviation is the next frontier

135
00:05:37,350 --> 00:05:35,199
we want to issue a

136
00:05:39,350 --> 00:05:37,360
huge congratulations to the teams to

137
00:05:41,830 --> 00:05:39,360
cafe foundation for organizing the event

138
00:05:43,270 --> 00:05:41,840

to nasa for their important support for

139

00:05:44,629 --> 00:05:43,280

this important effort and overall we're

140

00:05:46,550 --> 00:05:44,639

just extremely thrilled to be part of

141

00:05:48,629 --> 00:05:46,560

this in helping usher in a new

142

00:05:55,430 --> 00:05:48,639

generation of emission-free aviation

143

00:05:59,029 --> 00:05:57,350

thank you anita and thank google i've

144

00:06:01,749 --> 00:05:59,039

seen the charging station up in santa

145

00:06:04,070 --> 00:06:01,759

rosa and it's very cool

146

00:06:05,110 --> 00:06:04,080

it's now my honor and privilege to

147

00:06:07,189 --> 00:06:05,120

introduce

148

00:06:09,189 --> 00:06:07,199

eric lindberg eric is going to be giving

149

00:06:12,070 --> 00:06:09,199

out an award for

150

00:06:21,909 --> 00:06:12,080

the quietest aircraft in the competition

151
00:06:25,670 --> 00:06:23,189
thank you

152
00:06:26,950 --> 00:06:25,680
our mission at leap is to stimulate

153
00:06:29,189 --> 00:06:26,960
innovation

154
00:06:31,029 --> 00:06:29,199
for a resilient future we do that

155
00:06:33,189 --> 00:06:31,039
through offering prizes

156
00:06:35,110 --> 00:06:33,199
and focusing on the electric aircraft

157
00:06:36,790 --> 00:06:35,120
industry advancing the development of an

158
00:06:38,790 --> 00:06:36,800
industry that has the potential to

159
00:06:39,749 --> 00:06:38,800
revolutionize the way we move about the

160
00:06:42,070 --> 00:06:39,759
planet

161
00:06:44,629 --> 00:06:42,080
we've also formed an electric aircraft

162
00:06:46,390 --> 00:06:44,639
development alliance to help work on

163
00:06:49,589 --> 00:06:46,400

safety and regulations and

164

00:06:51,510 --> 00:06:49,599

standardization to help again advance

165

00:06:53,990 --> 00:06:51,520

the development of the industry

166

00:06:55,670 --> 00:06:54,000

we also have an amazing

167

00:06:57,670 --> 00:06:55,680

youth education program where high

168

00:06:59,990 --> 00:06:57,680

school teams are are going out and

169

00:07:02,870 --> 00:07:00,000

filming short video documentaries on

170

00:07:04,710 --> 00:07:02,880

solutions to problems innovators really

171

00:07:07,189 --> 00:07:04,720

focusing on innovators and then sharing

172

00:07:09,189 --> 00:07:07,199

that information as wide as possible in

173

00:07:10,950 --> 00:07:09,199

order to solve all of the problems that

174

00:07:12,870 --> 00:07:10,960

we're facing today

175

00:07:15,589 --> 00:07:12,880

we need to create a whole generation who

176

00:07:18,550 --> 00:07:15,599

are incentivized to go out seek out

177

00:07:20,710 --> 00:07:18,560

problems as potential opportunities to

178

00:07:23,110 --> 00:07:20,720

move their forward in their college and

179

00:07:25,990 --> 00:07:23,120

their work careers

180

00:07:27,510 --> 00:07:26,000

but we're here today because

181

00:07:29,430 --> 00:07:27,520

really

182

00:07:32,150 --> 00:07:29,440

one of the largest threats to the future

183

00:07:33,990 --> 00:07:32,160

of aviation and general aviation

184

00:07:35,749 --> 00:07:34,000

which is

185

00:07:38,550 --> 00:07:35,759

closer to my heart than flying in the

186

00:07:41,029 --> 00:07:38,560

back of a transport category aircraft

187

00:07:42,629 --> 00:07:41,039

aviation is threatened

188

00:07:45,670 --> 00:07:42,639

biggest one of the biggest threats is

189

00:07:47,670 --> 00:07:45,680

noise and so

190

00:07:49,909 --> 00:07:47,680

we're here to announce the the lindbergh

191

00:07:52,309 --> 00:07:49,919

prize for quietest aircraft and i want

192

00:07:53,430 --> 00:07:52,319

to say that we're very fortunate to have

193

00:07:55,430 --> 00:07:53,440

um

194

00:07:57,990 --> 00:07:55,440

had a generous ten thousand dollar

195

00:08:00,710 --> 00:07:58,000

donation from a private citizen

196

00:08:01,909 --> 00:08:00,720

jeannie schultz whose husband charles m

197

00:08:03,670 --> 00:08:01,919

schultz

198

00:08:05,510 --> 00:08:03,680

the airport at santa rosa was named

199

00:08:08,390 --> 00:08:05,520

after so jeannie donated ten thousand

200

00:08:11,110 --> 00:08:08,400

dollars so that we could award that

201
00:08:13,990 --> 00:08:11,120
with the quietest aircraft prize

202
00:08:16,629 --> 00:08:14,000
the aircraft that won

203
00:08:20,230 --> 00:08:16,639
the prize this first quietest aircraft

204
00:08:23,990 --> 00:08:20,240
prize had a dba a really a noise

205
00:08:31,510 --> 00:08:27,909
standpoint of 56 to 62

206
00:08:34,630 --> 00:08:31,520
dba so very quiet for an example that's

207
00:08:37,269 --> 00:08:34,640
16 times less noise than a than a

208
00:08:38,469 --> 00:08:37,279
turbofan aircraft and and on our way

209
00:08:41,110 --> 00:08:38,479
down

210
00:08:43,509 --> 00:08:41,120
to the bay area in the rental car we had

211
00:08:46,790 --> 00:08:43,519
a little app on our phone that said

212
00:08:48,949 --> 00:08:46,800
67 dba so it was a whole lot louder

213
00:08:51,590 --> 00:08:48,959

inside the car and it bumped up to 87

214

00:08:52,870 --> 00:08:51,600

when i started talking so i'll shut up

215

00:08:54,870 --> 00:08:52,880

soon

216

00:08:56,550 --> 00:08:54,880

so the lindbergh prize for quietest

217

00:09:00,870 --> 00:08:56,560

aircraft

218

00:09:16,870 --> 00:09:00,880

is awarded to e-genius led by

219

00:09:23,190 --> 00:09:19,430

on behalf of my entire team who i won't

220

00:09:25,750 --> 00:09:23,200

mention individually i got very thankful

221

00:09:27,590 --> 00:09:25,760

to receive this award and

222

00:09:29,509 --> 00:09:27,600

it's been a lot of work

223

00:09:32,710 --> 00:09:29,519

what i've thought that just occurred to

224

00:09:34,949 --> 00:09:32,720

me is people expect progress

225

00:09:37,030 --> 00:09:34,959

through the passage of time as if in the

226

00:09:38,470 --> 00:09:37,040

future there will be electric koi

227

00:09:41,350 --> 00:09:38,480

electric aircraft

228

00:09:42,949 --> 00:09:41,360

and it's really been slow in coming and

229

00:09:45,829 --> 00:09:42,959

what we really need

230

00:09:47,509 --> 00:09:45,839

is support for the engineers which often

231

00:09:49,430 --> 00:09:47,519

the engineers are very modest and not

232

00:09:51,590 --> 00:09:49,440

publicity seeking so

233

00:09:53,590 --> 00:09:51,600

they don't tend to get the support so

234

00:09:55,430 --> 00:09:53,600

especially in this area silicon valley

235

00:09:57,190 --> 00:09:55,440

where there's so much innovative

236

00:09:59,670 --> 00:09:57,200

thinking i would really encourage people

237

00:10:02,949 --> 00:09:59,680

to support the engineers that are

238

00:10:05,269 --> 00:10:02,959

working hard often unnoticed and

239

00:10:06,310 --> 00:10:05,279

not just necessarily the pilots for

240

00:10:18,069 --> 00:10:06,320

example

241

00:10:21,430 --> 00:10:19,990

uh thank you and congratulations eric

242

00:10:23,430 --> 00:10:21,440

any genius

243

00:10:25,670 --> 00:10:23,440

we're now going to see a brief video

244

00:10:27,750 --> 00:10:25,680

that captures some of the highlights of

245

00:10:54,069 --> 00:10:27,760

the green flight challenge as seen over

246

00:10:57,829 --> 00:10:55,990

the dream i guess of everyone for a long

247

00:10:59,670 --> 00:10:57,839

time is going to have a flying car

248

00:11:01,990 --> 00:10:59,680

and if we can have electric flying cars

249

00:11:03,670 --> 00:11:02,000

that'd be wonderful

250

00:11:05,030 --> 00:11:03,680

it really is the dawn of a new era for

251
00:11:09,350 --> 00:11:05,040
aviation

252
00:11:12,230 --> 00:11:09,360
electric aircraft

253
00:11:15,110 --> 00:11:12,240
they'll be cheap simple easy to fly

254
00:11:17,269 --> 00:11:15,120
renewable energies quiet

255
00:11:19,110 --> 00:11:17,279
that's what we need to revitalize the

256
00:11:22,350 --> 00:11:19,120
aviation industry

257
00:11:25,030 --> 00:11:22,360
this challenge is uh for a total of

258
00:11:26,870 --> 00:11:25,040
1.65 million dollars

259
00:11:28,150 --> 00:11:26,880
we'll use it for further aircraft

260
00:11:31,030 --> 00:11:28,160
development

261
00:11:33,590 --> 00:11:31,040
just bigger and better faster onward and

262
00:11:36,790 --> 00:11:35,030
we want to fly something or build

263
00:11:37,990 --> 00:11:36,800

something that's just as efficient as a

264

00:11:40,470 --> 00:11:38,000

prius

265

00:11:42,630 --> 00:11:40,480

this is our more cosmic entrance the

266

00:11:45,350 --> 00:11:42,640

hybrid gas electric battery powered

267

00:11:46,710 --> 00:11:45,360

airplane which is the first of its kind

268

00:11:48,630 --> 00:11:46,720

aviation is definitely one of the most

269

00:11:49,590 --> 00:11:48,640

pollutant transportation industries out

270

00:11:51,030 --> 00:11:49,600

there so

271

00:11:53,350 --> 00:11:51,040

trying to move towards a greener and

272

00:11:55,350 --> 00:11:53,360

healthier mode of propulsion it's

273

00:11:57,030 --> 00:11:55,360

definitely where we're all headed

274

00:11:59,030 --> 00:11:57,040

they all have to fly on an average of

275

00:12:02,629 --> 00:11:59,040

100 miles per hour or greater

276

00:12:04,150 --> 00:12:02,639

they require uh 200 miles per gallon per

277

00:12:06,389 --> 00:12:04,160

seat so with a two-seater we have to

278

00:12:08,310 --> 00:12:06,399

average 100 miles per gallon at 100

279

00:12:10,870 --> 00:12:08,320

miles per hour and there's no gasoline

280

00:12:12,389 --> 00:12:10,880

engine that can do that the other thing

281

00:12:14,949 --> 00:12:12,399

is sound so you want to be able to fly

282

00:12:18,550 --> 00:12:14,959

these at 78 decibels basically the sound

283

00:12:20,230 --> 00:12:18,560

of a dishwasher measured at 250 feet

284

00:12:22,230 --> 00:12:20,240

two years ago they came out with a

285

00:12:24,710 --> 00:12:22,240

proposal for this i laughed because it

286

00:12:26,389 --> 00:12:24,720

was impossible it just couldn't be done

287

00:12:28,310 --> 00:12:26,399

and yet in two years

288

00:12:30,470 --> 00:12:28,320

there's at least two airplanes here that

289

00:12:31,910 --> 00:12:30,480

i know of that electric that i think can

290

00:12:33,670 --> 00:12:31,920

meet the criteria

291

00:12:35,269 --> 00:12:33,680

it's happening and it's happening

292

00:12:37,430 --> 00:12:35,279

exponentially

293

00:12:40,069 --> 00:12:37,440

the batteries get better

294

00:12:42,069 --> 00:12:40,079

these airplanes are going to get better

295

00:12:43,829 --> 00:12:42,079

and when we see that

296

00:13:03,350 --> 00:12:43,839

it's going to start to change the way we

297

00:13:08,550 --> 00:13:05,829

today's prize prize purse is being

298

00:13:11,269 --> 00:13:08,560

provided by nasa through a nasa program

299

00:13:14,629 --> 00:13:11,279

called the centennial challenges program

300

00:13:17,269 --> 00:13:14,639

that program is a program that offers

301
00:13:18,790 --> 00:13:17,279
prize purses to technology challenges

302
00:13:21,269 --> 00:13:18,800
and innovation challenges that are of

303
00:13:23,509 --> 00:13:21,279
benefit to nasa and to the nation

304
00:13:26,150 --> 00:13:23,519
and to industry

305
00:13:28,550 --> 00:13:26,160
it's a program that encourages inventors

306
00:13:29,350 --> 00:13:28,560
citizen inventors students and teams

307
00:13:31,829 --> 00:13:29,360
from

308
00:13:33,590 --> 00:13:31,839
all walks of life to compete to win a

309
00:13:35,030 --> 00:13:33,600
purse prize the government doesn't

310
00:13:37,910 --> 00:13:35,040
actually pay

311
00:13:40,470 --> 00:13:37,920
until a goal is met that program is

312
00:13:43,430 --> 00:13:40,480
overseen by the space technology program

313
00:13:45,430 --> 00:13:43,440

at nasa which oversees nasa's technology

314

00:13:47,990 --> 00:13:45,440

and innovation development for future

315

00:13:51,030 --> 00:13:48,000

missions which in turn is part of our

316

00:13:52,870 --> 00:13:51,040

office of the chief technologist

317

00:13:55,110 --> 00:13:52,880

we're lucky to have with us today our

318

00:13:57,030 --> 00:13:55,120

acting chief technologist joe parrish

319

00:14:06,949 --> 00:13:57,040

who is going to announce the winners of

320

00:14:10,710 --> 00:14:08,790

thank you david it's a wonderful day

321

00:14:12,389 --> 00:14:10,720

today i'd like to make a couple of brief

322

00:14:13,990 --> 00:14:12,399

acknowledgments and then i have a couple

323

00:14:15,590 --> 00:14:14,000

of brief thoughts also before we

324

00:14:17,110 --> 00:14:15,600

announce the winners

325

00:14:18,870 --> 00:14:17,120

i'd like to acknowledge a few

326

00:14:21,030 --> 00:14:18,880

individuals some of whose names you've

327

00:14:23,670 --> 00:14:21,040

heard already but some you have not

328

00:14:25,750 --> 00:14:23,680

mark moore and bruce holmes at nasa

329

00:14:27,670 --> 00:14:25,760

langley are actually responsible for the

330

00:14:29,269 --> 00:14:27,680

original idea for the green flight

331

00:14:31,910 --> 00:14:29,279

challenge and they came up with this

332

00:14:34,470 --> 00:14:31,920

idea back in 2005 and we've been working

333

00:14:36,550 --> 00:14:34,480

toward this end ever since then so we're

334

00:14:38,949 --> 00:14:36,560

grateful for them for having such an

335

00:14:40,870 --> 00:14:38,959

innovative idea and setting us on the

336

00:14:42,870 --> 00:14:40,880

path to get us where we are today i'd

337

00:14:45,030 --> 00:14:42,880

like to also acknowledge sam ortega and

338

00:14:46,389 --> 00:14:45,040

larry cooper from nasa the centennial

339

00:14:48,790 --> 00:14:46,399

challenges program they have been

340

00:14:50,550 --> 00:14:48,800

shepherding this this effort along for

341

00:14:52,629 --> 00:14:50,560

months and months and months they must

342

00:14:54,470 --> 00:14:52,639

think it's years and years and years and

343

00:14:55,829 --> 00:14:54,480

this is also a culmination of their

344

00:14:58,389 --> 00:14:55,839

their hard effort

345

00:15:01,189 --> 00:14:58,399

to dr brian seely and his colleagues his

346

00:15:03,750 --> 00:15:01,199

all-volunteer team at cafe and his

347

00:15:06,150 --> 00:15:03,760

colleagues from from the eaa chapter at

348

00:15:07,590 --> 00:15:06,160

the sonoma airport they are just

349

00:15:10,949 --> 00:15:07,600

terrific and they've been a wonderful

350

00:15:12,949 --> 00:15:10,959

allied organization to nasa to execute

351

00:15:15,269 --> 00:15:12,959

this program i'd like to also thank

352

00:15:17,670 --> 00:15:15,279

google for sponsoring this expo for

353

00:15:19,189 --> 00:15:17,680

installing the cafe installing the the

354

00:15:20,629 --> 00:15:19,199

charging station at sonoma county

355

00:15:22,310 --> 00:15:20,639

airport and for their support to the

356

00:15:23,990 --> 00:15:22,320

cafe foundation

357

00:15:26,470 --> 00:15:24,000

and then thank and finally i'd like to

358

00:15:28,790 --> 00:15:26,480

thank nasa ames for hosting us today and

359

00:15:30,710 --> 00:15:28,800

providing the wonderful flight line for

360

00:15:32,310 --> 00:15:30,720

the demonstration of the aircraft and

361

00:15:35,990 --> 00:15:32,320

the facilities that we're using right

362

00:15:37,110 --> 00:15:36,000

now so thanks to everyone for that

363

00:15:40,230 --> 00:15:37,120

there are

364

00:15:42,069 --> 00:15:40,240

three teams that qualified for the green

365

00:15:44,870 --> 00:15:42,079

flight competition the first one is the

366

00:15:47,269 --> 00:15:44,880

e-genius team led by eric raymond

367

00:15:48,870 --> 00:15:47,279

the next one is the phoenix air team led

368

00:15:50,310 --> 00:15:48,880

by jim lee

369

00:15:53,670 --> 00:15:50,320

and the third is the langeland

370

00:15:55,670 --> 00:15:53,680

aeronautics llc pipedrill usa team led

371

00:15:57,749 --> 00:15:55,680

by jack langeline

372

00:16:00,310 --> 00:15:57,759

in addition flying in exhibition mode

373

00:16:02,310 --> 00:16:00,320

was the echo eagle from embryo riddle

374

00:16:05,110 --> 00:16:02,320

aeronautical university it was fantastic

375

00:16:06,710 --> 00:16:05,120

to have four aircraft flying in

376

00:16:08,710 --> 00:16:06,720

in california this week and

377

00:16:13,269 --> 00:16:08,720

demonstrating the wonders of electric

378

00:16:14,710 --> 00:16:13,279

and hybrid flight and clean flight

379

00:16:17,030 --> 00:16:14,720

there were tremendous accomplishments

380

00:16:18,870 --> 00:16:17,040

made in aerodynamics aircraft

381

00:16:21,590 --> 00:16:18,880

configuration design

382

00:16:23,910 --> 00:16:21,600

power plant design and integration and

383

00:16:26,389 --> 00:16:23,920

flight path planning

384

00:16:28,389 --> 00:16:26,399

these aircraft are five to ten times

385

00:16:31,670 --> 00:16:28,399

more efficient than conventional

386

00:16:33,590 --> 00:16:31,680

aircraft and in fact they're even three

387

00:16:36,949 --> 00:16:33,600

times more efficient than

388

00:16:38,949 --> 00:16:36,959

large transport aircraft it was not

389

00:16:41,030 --> 00:16:38,959

possible to win the green flight

390

00:16:43,590 --> 00:16:41,040

challenge with an existing aircraft

391

00:16:47,509 --> 00:16:43,600

design innovation was required in order

392

00:16:51,990 --> 00:16:49,590

lighter batteries more compact and

393

00:16:53,670 --> 00:16:52,000

powerful electric motors sleeker and

394

00:16:55,430 --> 00:16:53,680

lighter

395

00:16:58,230 --> 00:16:55,440

structures are going to benefit more

396

00:16:59,910 --> 00:16:58,240

than just the aerospace community

397

00:17:01,910 --> 00:16:59,920

they're going to usher in technologies

398

00:17:03,030 --> 00:17:01,920

that are useful in the automotive

399

00:17:05,669 --> 00:17:03,040

industry

400

00:17:06,870 --> 00:17:05,679

in mass transit in the green energy

401
00:17:09,189 --> 00:17:06,880
industries

402
00:17:10,949 --> 00:17:09,199
and we are extremely impressed by the

403
00:17:13,029 --> 00:17:10,959
ingenuity and the inventiveness that

404
00:17:15,029 --> 00:17:13,039
have been shown by the participants in

405
00:17:16,549 --> 00:17:15,039
the green flight challenge the folks who

406
00:17:20,470 --> 00:17:16,559
produce these innovative aircraft

407
00:17:25,350 --> 00:17:22,309
i hope to be looking back on this day

408
00:17:27,590 --> 00:17:25,360
from the not too fast distant future and

409
00:17:30,789 --> 00:17:27,600
talking about how the dawn of practical

410
00:17:32,870 --> 00:17:30,799
electric flight broke today

411
00:17:34,630 --> 00:17:32,880
just as the ortega prize was won by

412
00:17:35,669 --> 00:17:34,640
charles lindbergh and the spirit of st

413
00:17:37,350 --> 00:17:35,679

louis

414

00:17:39,350 --> 00:17:37,360

that one showed that airplanes could be

415

00:17:42,870 --> 00:17:39,360

used to fly long distances with

416

00:17:43,830 --> 00:17:42,880

reliability and the ansari x prize

417

00:17:46,710 --> 00:17:43,840

showed

418

00:17:48,870 --> 00:17:46,720

heralded in a new private space flight

419

00:17:50,470 --> 00:17:48,880

industry

420

00:17:53,510 --> 00:17:50,480

we hope that the green flight challenge

421

00:17:56,390 --> 00:17:53,520

will inspire a renaissance in aviation a

422

00:17:58,630 --> 00:17:56,400

new breed and a new industry in fact of

423

00:18:00,710 --> 00:17:58,640

hyper-efficient airplanes ranging from

424

00:18:02,470 --> 00:18:00,720

aircraft of the size that we've seen

425

00:18:05,909 --> 00:18:02,480

flying in the competition today all the

426
00:18:07,510 --> 00:18:05,919
way up to large passenger transports

427
00:18:10,150 --> 00:18:07,520
before i announce the winner of the

428
00:18:13,350 --> 00:18:10,160
prize i'd like to mention that nasa and

429
00:18:15,029 --> 00:18:13,360
the american taxpayers are also winners

430
00:18:17,110 --> 00:18:15,039
through prize competitions like the

431
00:18:19,669 --> 00:18:17,120
green flight challenge nasa has turned

432
00:18:21,669 --> 00:18:19,679
the technology development cost equation

433
00:18:23,830 --> 00:18:21,679
on its head

434
00:18:25,669 --> 00:18:23,840
in this case instead of contracting for

435
00:18:28,470 --> 00:18:25,679
tens of millions of dollars

436
00:18:29,669 --> 00:18:28,480
for a concept that might or might not

437
00:18:31,270 --> 00:18:29,679
work

438
00:18:33,430 --> 00:18:31,280

nasa is paying only one and a half

439

00:18:38,230 --> 00:18:33,440

million dollars and we only pay if it

440

00:18:38,240 --> 00:18:46,070

considering that

441

00:18:50,310 --> 00:18:47,990

so every once in a while we seem smart

442

00:18:51,669 --> 00:18:50,320

don't we

443

00:18:53,909 --> 00:18:51,679

considering that over four million

444

00:18:56,310 --> 00:18:53,919

dollars was uh was was spent by the

445

00:18:58,230 --> 00:18:56,320

competitors on the way to this prize we

446

00:19:00,150 --> 00:18:58,240

think this is a fantastic deal for for

447

00:19:01,909 --> 00:19:00,160

the american taxpayer

448

00:19:03,830 --> 00:19:01,919

and nasa is absolutely committed to

449

00:19:06,230 --> 00:19:03,840

fostering innovative solutions through

450

00:19:07,909 --> 00:19:06,240

innovative mechanisms

451
00:19:09,350 --> 00:19:07,919
okay now to the announcement that you've

452
00:19:11,510 --> 00:19:09,360
all been waiting for

453
00:19:13,029 --> 00:19:11,520
the judges from cafe and nasa have

454
00:19:14,630 --> 00:19:13,039
totaled the scores from this week's

455
00:19:17,029 --> 00:19:14,640
competition

456
00:19:19,750 --> 00:19:17,039
i'm pleased to announce that two teams

457
00:19:22,070 --> 00:19:19,760
have met or exceeded the 200 passenger

458
00:19:23,990 --> 00:19:22,080
mile per gallon standard and they've

459
00:19:25,909 --> 00:19:24,000
exceeded them by a very large margin

460
00:19:29,110 --> 00:19:25,919
i'll tell you the the buy how large a

461
00:19:31,830 --> 00:19:30,310
to give you just a little bit of

462
00:19:33,110 --> 00:19:31,840
suspense i will announce the second

463
00:19:35,669 --> 00:19:33,120

place

464

00:19:37,669 --> 00:19:35,679

winner first and then on to the first

465

00:19:39,350 --> 00:19:37,679

place and i'll invite both teams to come

466

00:19:40,870 --> 00:19:39,360

up and receive their checks and then the

467

00:19:43,669 --> 00:19:40,880

first place winner will have some some

468

00:19:45,270 --> 00:19:43,679

remarks to make

469

00:19:48,270 --> 00:19:45,280

in second place

470

00:19:52,549 --> 00:19:48,280

with a score of

471

00:19:56,070 --> 00:19:52,559

375.8 miles per gallon

472

00:20:01,029 --> 00:19:56,080

is the e genius team led by eric raymond

473

00:20:05,350 --> 00:20:03,669

taking a prize of

474

00:20:07,190 --> 00:20:05,360

120

475

00:20:10,310 --> 00:20:07,200

dollars

476

00:20:10,320 --> 00:20:24,310

please stay with me for a moment

477

00:20:27,149 --> 00:20:25,990

so you had to do

478

00:20:29,590 --> 00:20:27,159

better than

479

00:20:31,350 --> 00:20:29,600

385 miles per gallon to win this

480

00:20:33,590 --> 00:20:31,360

competition

481

00:20:37,990 --> 00:20:33,600

in first place with a passenger miles

482

00:20:44,390 --> 00:20:41,430

is the langeland aerospace llc pipedrill

483

00:20:45,950 --> 00:20:44,400

usa team led by jack langlin

484

00:20:54,549 --> 00:20:45,960

your prize is

485

00:20:54,559 --> 00:20:58,789

yeah congratulations

486

00:21:16,789 --> 00:21:00,390

please give them your applause they've

487

00:21:20,950 --> 00:21:18,149

i hope they'll let me take this home on

488

00:21:26,470 --> 00:21:22,470

uh before i really get started i'd like

489

00:21:28,630 --> 00:21:26,480

my team to stand up pippistralusa.com

490

00:21:30,870 --> 00:21:28,640

you will be hard pressed to find a

491

00:21:46,950 --> 00:21:30,880

better group of engineers and pilots

492

00:21:50,789 --> 00:21:48,390

and also the people that are not here

493

00:21:52,149 --> 00:21:50,799

but helped enormously along the way uh

494

00:21:53,830 --> 00:21:52,159

the aerospace engineering department at

495

00:21:56,630 --> 00:21:53,840

penn state my department head george

496

00:21:59,190 --> 00:21:56,640

lucert for all his support along the way

497

00:22:03,830 --> 00:21:59,200

we could have done it without everybody

498

00:22:05,070 --> 00:22:03,840

so many many years ago on december 17th

499

00:22:09,190 --> 00:22:05,080

in uh

500

00:22:10,470 --> 00:22:09,200

1903 orville wright flew 120 feet in 12

501
00:22:12,789 --> 00:22:10,480
seconds

502
00:22:14,310 --> 00:22:12,799
only two years later at huffman prairie

503
00:22:16,789 --> 00:22:14,320
near what is now wright-patterson air

504
00:22:18,549 --> 00:22:16,799
force base they were flying more than 20

505
00:22:21,029 --> 00:22:18,559
miles in flights that were lasting more

506
00:22:22,710 --> 00:22:21,039
than 30 minutes this is incredible

507
00:22:24,950 --> 00:22:22,720
progress

508
00:22:27,029 --> 00:22:24,960
in 2008 at the experimental aircraft

509
00:22:28,630 --> 00:22:27,039
association convention

510
00:22:30,789 --> 00:22:28,640
at oshkosh larry fishman's

511
00:22:32,950 --> 00:22:30,799
battery-powered electrifly rc was first

512
00:22:34,870 --> 00:22:32,960
flown publicly this airplane could fly

513
00:22:36,710 --> 00:22:34,880

70 miles an hour it could fly for about

514

00:22:39,110 --> 00:22:36,720

45 minutes or so

515

00:22:40,470 --> 00:22:39,120

now at the green flight challenge

516

00:22:43,110 --> 00:22:40,480

two airplanes

517

00:22:45,029 --> 00:22:43,120

were able to fly more than 200 passenger

518

00:22:47,669 --> 00:22:45,039

miles per gallon at more than 100 miles

519

00:22:50,310 --> 00:22:47,679

an hour the e-genius and the pipistrel

520

00:22:51,990 --> 00:22:50,320

taurus g4 four people aboard the taurus

521

00:22:53,669 --> 00:22:52,000

g4

522

00:22:55,990 --> 00:22:53,679

and our average energy consumption was

523

00:23:06,830 --> 00:22:56,000

over 400 passenger miles per gallon this

524

00:23:11,669 --> 00:23:09,669

years together we have all shown that

525

00:23:13,830 --> 00:23:11,679

electricity is not only a viable but in

526

00:23:16,070 --> 00:23:13,840

fact a beautiful way of powering these

527

00:23:18,710 --> 00:23:16,080

airplanes when our airplanes fly

528

00:23:19,669 --> 00:23:18,720

overhead 2 000 feet up we cannot hear

529

00:23:22,470 --> 00:23:19,679

them

530

00:23:24,390 --> 00:23:22,480

when they fly by they are no emissions

531

00:23:26,549 --> 00:23:24,400

the power to recharge your batteries

532

00:23:28,470 --> 00:23:26,559

came from a geothermal plant powered by

533

00:23:30,630 --> 00:23:28,480

geysers near santa rosa

534

00:23:32,230 --> 00:23:30,640

this is absolutely incredible i pay

535

00:23:34,149 --> 00:23:32,240

about eight cents a kilowatt hour for

536

00:23:36,710 --> 00:23:34,159

electricity in state college okay so

537

00:23:39,510 --> 00:23:36,720

that means to fly the taurus g4 for two

538

00:23:41,750 --> 00:23:39,520

hours cost me about seven dollars

539

00:23:43,750 --> 00:23:41,760

compare that with the cost of flying a

540

00:23:45,510 --> 00:23:43,760

standard four passenger airplane for two

541

00:23:46,630 --> 00:23:45,520

hours that's an awful lot of aviation

542

00:23:49,190 --> 00:23:46,640

gasoline

543

00:23:51,190 --> 00:23:49,200

compare the environmental impact of our

544

00:23:53,110 --> 00:23:51,200

electricity with environmental impact of

545

00:23:55,669 --> 00:23:53,120

all those gallons of aviation gasoline

546

00:23:57,750 --> 00:23:55,679

onboard the the standard airplanes

547

00:24:00,549 --> 00:23:57,760

we're at the point where personal air

548

00:24:02,830 --> 00:24:00,559

travel is becoming both affordable and

549

00:24:05,190 --> 00:24:02,840

truly green this is absolutely

550

00:24:06,549 --> 00:24:05,200

incredible there are many many people

551
00:24:08,470 --> 00:24:06,559
out there now building electrically

552
00:24:09,830 --> 00:24:08,480
powered airplanes in startup companies

553
00:24:12,310 --> 00:24:09,840
and small businesses and in their

554
00:24:13,830 --> 00:24:12,320
garages we have to encourage this to

555
00:24:16,510 --> 00:24:13,840
continue and we have to continue to

556
00:24:18,149 --> 00:24:16,520
drive the technology

557
00:24:19,909 --> 00:24:18,159
teampipistralusa.com believes that

558
00:24:22,470 --> 00:24:19,919
technological progress comes from both

559
00:24:25,110 --> 00:24:22,480
bold vision and from grand challenges

560
00:24:26,789 --> 00:24:25,120
and because of that pipistrelle if nasa

561
00:24:29,269 --> 00:24:26,799
google and the cafe foundation accept

562
00:24:30,630 --> 00:24:29,279
the challenge pipistrel will donate 100

563
00:24:32,390 --> 00:24:30,640

000

564

00:24:34,470 --> 00:24:32,400
to the first electrically powered

565

00:24:41,430 --> 00:24:34,480
airplane that can fly faster than the

566

00:24:46,789 --> 00:24:44,149
we fully expect that somebody will win

567

00:24:48,950 --> 00:24:46,799
this award within the next five years

568

00:24:51,110 --> 00:24:48,960
so we are going to go from the first

569

00:24:54,549 --> 00:24:51,120
flight of a battery-powered airplane to

570

00:24:58,789 --> 00:24:54,559
supersonic flight within one decade that

571

00:25:00,950 --> 00:24:58,799
is going to be absolutely amazing

572

00:25:02,630 --> 00:25:00,960
we're all incredibly proud of what we

573

00:25:04,549 --> 00:25:02,640
what we've done here and we expect it to

574

00:25:06,549 --> 00:25:04,559
be enormous changes in aviation over the

575

00:25:08,230 --> 00:25:06,559
couple of years to come we congratulate

576
00:25:10,390 --> 00:25:08,240
all of the teams and their achievements

577
00:25:12,470 --> 00:25:10,400
and we thank nasa google and the cafe

578
00:25:14,149 --> 00:25:12,480
foundation for enabling this historic

579
00:25:16,549 --> 00:25:14,159
competition and we're all looking

580
00:25:19,590 --> 00:25:16,559
forward to the future of electric

581
00:25:26,870 --> 00:25:19,600
aviation with enormous anticipation

582
00:25:35,669 --> 00:25:31,990
thank you jack

583
00:25:36,630 --> 00:25:35,679
surprise for you to help close the show

584
00:25:40,390 --> 00:25:36,640
today

585
00:25:43,269 --> 00:25:40,400
uh our folks at cafe have something to

586
00:25:46,549 --> 00:25:43,279
uh give you to commemorate today's

587
00:25:48,789 --> 00:25:46,559
uh winning of the green flight challenge

588
00:25:50,549 --> 00:25:48,799

uh bringing it up the aisle here is

589

00:25:54,870 --> 00:25:50,559

actually the sculptor

590

00:25:57,909 --> 00:25:54,880

ralph carlson from sebastopol california

591

00:25:57,919 --> 00:26:01,830

green flight challenge

592

00:26:01,840 --> 00:26:25,029

trophy

593

00:26:28,549 --> 00:26:26,710

congratulations to our winners and

594

00:26:29,990 --> 00:26:28,559

everybody who participated in the green

595

00:26:31,830 --> 00:26:30,000

flight challenge

596

00:26:34,070 --> 00:26:31,840

thank you for joining us here at nasa's

597

00:26:35,669 --> 00:26:34,080

ames research center for today's awards

598

00:26:37,269 --> 00:26:35,679

for more information about the green

599

00:26:39,909 --> 00:26:37,279

flight challenge in nasa visit