
He has the test procedure, he gives the instructions when its appropriate, he makes the appropriate checks and then gives the instructions, and the test proceeds as we go.

1
00:00:26,320 --> 00:00:23,589
I'm Lori Meggs and I'm bill hubscher

2
00:00:27,850 --> 00:00:26,330
welcome to focus on Marshall our mission

3
00:00:29,830 --> 00:00:27,860
is to give you a glimpse into the mini

4
00:00:31,359 --> 00:00:29,840
labs and test facilities that make up

5
00:00:32,830 --> 00:00:31,369
the Marshall Space Flight Center at

6
00:00:34,750 --> 00:00:32,840
Marshall we have the expertise and

7
00:00:38,170 --> 00:00:34,760
capabilities to make it all happen from

8
00:00:39,759 --> 00:00:38,180
labs to groundwork to fly today we're at

9
00:00:41,799 --> 00:00:39,769
the East test area where they have a

10
00:00:43,869 --> 00:00:41,809
variety of test stands and test cells

11
00:00:45,970 --> 00:00:43,879
primarily used for propulsion research

12
00:00:47,500 --> 00:00:45,980
and verification as a matter of fact

13
00:00:49,720 --> 00:00:47,510

they're preparing for one-tenth scale

14
00:00:54,219 --> 00:00:49,730
solid rocket motor firing right now

15
00:00:56,079 --> 00:00:54,229
let's go check it out we're here with

16
00:00:57,549 --> 00:00:56,089
Kylie kellett in the test firing control

17
00:00:58,930 --> 00:00:57,559
room hi kaali thanks for being with us

18
00:01:00,729 --> 00:00:58,940
today tell me what's going on here in

19
00:01:03,340 --> 00:01:00,739
the testing area today we're firing

20
00:01:06,429 --> 00:01:03,350
eight subscales solid rocket motor in

21
00:01:08,830 --> 00:01:06,439
support of the reusable solid rocket

22
00:01:10,780 --> 00:01:08,840
motors it launches a shuttle and this is

23
00:01:14,080 --> 00:01:10,790
just one test that's done in this area

24
00:01:17,050 --> 00:01:14,090
right in the test area yes we support

25
00:01:19,300 --> 00:01:17,060
many different types of tests we do how

26
00:01:21,940 --> 00:01:19,310
to do tests with vacuum chambers we do

27
00:01:26,590 --> 00:01:21,950
cold flow component tests with either

28
00:01:30,250 --> 00:01:26,600
ambient or cryogenic fluids and gases we

29
00:01:33,600 --> 00:01:30,260
do hot fires with full vehicle fuel

30
00:01:36,910 --> 00:01:33,610
systems and the engines what we do

31
00:01:40,120 --> 00:01:36,920
combustion device which is a component

32
00:01:42,250 --> 00:01:40,130
level of those things plus we support

33
00:01:43,960 --> 00:01:42,260
the solid rocket motor so a lot of

34
00:01:45,610 --> 00:01:43,970
capabilities let's talk about the test

35
00:01:48,640 --> 00:01:45,620
in particular today tell me about what

36
00:01:50,080 --> 00:01:48,650
all these people here doing okay steve

37
00:01:53,020 --> 00:01:50,090
allen's and i kind of run this list

38
00:01:57,070 --> 00:01:53,030

together this is a testy test conductors

39
00:01:58,360 --> 00:01:57,080
station he has the test procedure he

40
00:02:00,460 --> 00:01:58,370
gives instructions when it's appropriate

41
00:02:02,260 --> 00:02:00,470
max the appropriate checks and then

42
00:02:06,340 --> 00:02:02,270
gives instructions and the test

43
00:02:08,669 --> 00:02:06,350
procedures would go gets to push the

44
00:02:11,559 --> 00:02:08,679
button that brings us to the control

45
00:02:14,289 --> 00:02:11,569
station here these people are in control

46
00:02:17,740 --> 00:02:14,299
of everything that happens all the

47
00:02:19,960 --> 00:02:17,750
valves all the signals all the triggers

48
00:02:21,940 --> 00:02:19,970
they won't let us engineers push the

49
00:02:24,399 --> 00:02:21,950
button the controlled people like to

50
00:02:28,179 --> 00:02:24,409
keep that to themselves Greg Wirt my man

51
00:02:29,920 --> 00:02:28,189
here he's my button pusher um and which

52
00:02:33,819 --> 00:02:29,930
button is it exactly

53
00:02:36,069 --> 00:02:33,829
oh it says fire too I would know exactly

54
00:02:38,559 --> 00:02:36,079
what to punch as we get ready for this

55
00:02:40,420 --> 00:02:38,569
solid rocket motor test today the one

56
00:02:41,470 --> 00:02:40,430
question that i have is are we safe in

57
00:02:44,589 --> 00:02:41,480
this building tell me about this

58
00:02:46,149 --> 00:02:44,599
building sure if you look at the walls

59
00:02:49,800 --> 00:02:46,159
around us you notice a very small

60
00:02:51,879 --> 00:02:49,810
windows there about eight inches thick

61
00:02:54,339 --> 00:02:51,889
for lack of a better term bulletproof

62
00:02:57,369 --> 00:02:54,349
glass the walls and says are 18 inches

63
00:03:00,009 --> 00:02:57,379

thick reinforced concrete it will stand

64
00:03:02,409 --> 00:03:00,019
for psi pounds per square inch over

65
00:03:05,500 --> 00:03:02,419
pressure which is like a bomb goes off

66
00:03:07,059 --> 00:03:05,510
outside without effect inside so that's

67
00:03:09,309 --> 00:03:07,069
why this we call the blockhouse why it's

68
00:03:11,800 --> 00:03:09,319
very expensive the bill but is necessary

69
00:03:15,970 --> 00:03:11,810
to meet safety requirements ok anything

70
00:03:18,399 --> 00:03:15,980
else wanna tell us I'm just not you've

71
00:03:35,240 --> 00:03:18,409
got a very well alright well can push

72
00:03:41,720 --> 00:03:37,640
then take us down and show us what's

73
00:03:44,780 --> 00:03:41,730
starting here what is it sir okay this

74
00:03:47,300 --> 00:03:44,790
shop there's a nozzle can swing around

75
00:03:49,870 --> 00:03:47,310
Levin that's a nozzle which is just a

76
00:03:51,910 --> 00:03:49,880
way to control the point

77
00:03:53,920 --> 00:03:51,920
flame coming out and that's a heat

78
00:03:55,620 --> 00:03:53,930
shield we don't really care about the

79
00:03:57,810 --> 00:03:55,630
nozzle on this motor

80
00:04:00,270 --> 00:03:57,820
the heat shield merely for catch the

81
00:04:03,690 --> 00:04:00,280
instrumentation on the dome that's where

82
00:04:06,270 --> 00:04:03,700
those four three candidate materials in

83
00:04:08,970 --> 00:04:06,280
the one baseline material are insulating

84
00:04:11,300 --> 00:04:08,980
the inside you can play my off the metal

85
00:04:14,570 --> 00:04:11,310
to support that test

86
00:04:18,050 --> 00:04:14,580
we have two lengths of motor which gives

87
00:04:22,099 --> 00:04:18,060
a long scholar l / d length / diameter

88
00:04:27,620 --> 00:04:22,109

of the more of the propellant versus the

89
00:04:30,980 --> 00:04:27,630
link so more length in a fixed nozzle

90
00:04:34,190 --> 00:04:30,990
means our thrust and or longer duration

91
00:04:36,350 --> 00:04:34,200
depending on a match the two together so

92
00:04:39,830 --> 00:04:36,360
sometimes we do a single link in this

93
00:04:41,840 --> 00:04:39,840
case we did a double in what says we

94
00:04:44,600 --> 00:04:41,850
have further down here no this is one of

95
00:04:46,280 --> 00:04:44,610
the actual test facility you're right

96
00:04:49,100 --> 00:04:46,290
this is obviously for the length of the

97
00:04:52,070 --> 00:04:49,110
propellant other players the red is ours

98
00:04:53,930 --> 00:04:52,080
this is thrust measurement right here we

99
00:04:55,730 --> 00:04:53,940
have three load cells when this fires

100
00:04:58,340 --> 00:04:55,740
and pushes this way we can tell how hard

101
00:05:02,030 --> 00:04:58,350
it pushes so this is kind of a versatile

102
00:05:05,570 --> 00:05:02,040
test and we may fire the hope to fire

103
00:05:07,550 --> 00:05:05,580
the crew escape motor is sort of round

104
00:05:10,400 --> 00:05:07,560
and sort of long it kind of fits so

105
00:05:13,159 --> 00:05:10,410
we're ninety-five percent ready to test

106
00:05:15,650 --> 00:05:13,169
it as we're configured we'll just have

107
00:05:17,210 --> 00:05:15,660
to let Arthur and way to me for a while

108
00:05:18,350 --> 00:05:17,220
while we do that something tells me

109
00:05:20,000 --> 00:05:18,360
we'll be back out here to visit you

110
00:05:22,190 --> 00:05:20,010
again with it would that goes oh and I'd

111
00:05:24,260 --> 00:05:22,200
be great okay thanks a lot for having us

112
00:05:26,120 --> 00:05:24,270
out here it was a blast okay so to speak