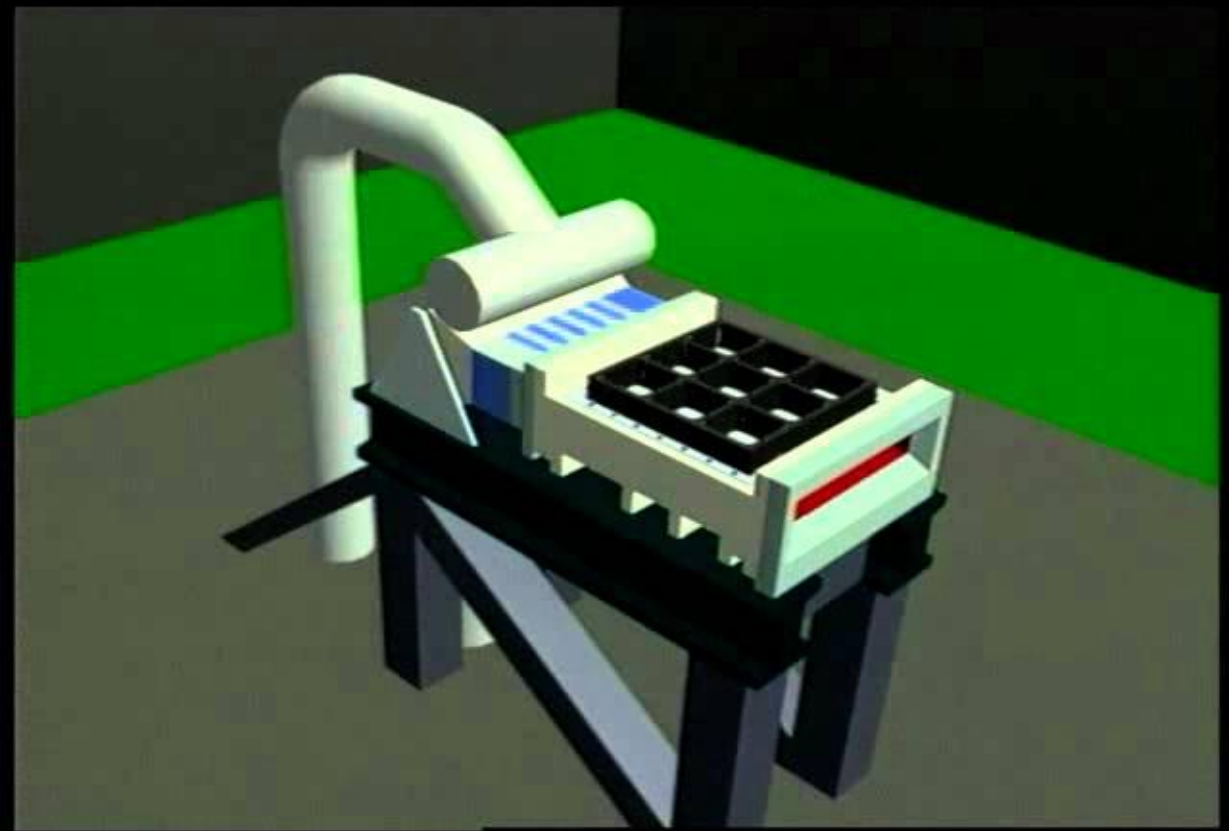

1
00:00:27,750 --> 00:00:24,870
the national aerospace plane or nesp

2
00:00:34,709 --> 00:00:27,760
represents the future in aeronautics and

3
00:00:40,069 --> 00:00:37,270
the x30 space plane will take off from

4
00:00:43,030 --> 00:00:40,079
runways and fly directly into earth

5
00:00:52,790 --> 00:00:43,040
orbit using air breathing engines as its

6
00:00:57,910 --> 00:00:55,670
mask technology will lead to operational

7
00:01:00,790 --> 00:00:57,920
vehicles that will give flexible

8
00:01:02,310 --> 00:01:00,800
efficient access to space in the 21st

9
00:01:04,869 --> 00:01:02,320
century

10
00:01:06,950 --> 00:01:04,879
technology from net is already being

11
00:01:15,030 --> 00:01:06,960
applied in the fields of materials and

12
00:01:20,310 --> 00:01:17,429
the nas program is jointly managed by

13
00:01:22,550 --> 00:01:20,320

nasa and the department of defense

14
00:01:25,270 --> 00:01:22,560
the nas joined program office at wright

15
00:01:27,109 --> 00:01:25,280
patterson air force base selected nasa's

16
00:01:29,990 --> 00:01:27,119
john c stennis space center on the

17
00:01:32,710 --> 00:01:30,000
mississippi gulf coast to conduct high

18
00:01:42,149 --> 00:01:32,720
temperature tests on new materials and

19
00:01:46,149 --> 00:01:44,149
this selection was largely due to

20
00:01:49,109 --> 00:01:46,159
stennis's experience in propulsion

21
00:01:51,910 --> 00:01:49,119
testing over the past three decades the

22
00:01:55,270 --> 00:01:51,920
availability of skilled personnel and

23
00:01:57,429 --> 00:01:55,280
the center's unique facilities

24
00:01:59,990 --> 00:01:57,439
the high heat flux facility being built

25
00:02:02,149 --> 00:02:00,000
at stennis will use rocket engines to

26
00:02:04,550 --> 00:02:02,159
simulate the harsh heating environment

27
00:02:06,550 --> 00:02:04,560
that the nasp will have to endure during

28
00:02:08,710 --> 00:02:06,560
flight

29
00:02:11,190 --> 00:02:08,720
the nasp research vehicle needs new

30
00:02:13,430 --> 00:02:11,200
materials and structural concepts to

31
00:02:15,350 --> 00:02:13,440
handle the heat of combustion in the air

32
00:02:17,430 --> 00:02:15,360
breathing engine and the heat of air

33
00:02:19,589 --> 00:02:17,440
friction during the high-speed flight

34
00:02:21,350 --> 00:02:19,599
within the atmosphere

35
00:02:24,390 --> 00:02:21,360
during tests of the high heat flux

36
00:02:26,790 --> 00:02:24,400
facility structural panels representing

37
00:02:29,430 --> 00:02:26,800
large pieces of the engine wings or

38
00:02:32,070 --> 00:02:29,440

fuselage will be exposed to the flame of

39
00:02:42,550 --> 00:02:32,080
rocket engines to reach temperatures of

40
00:02:46,949 --> 00:02:45,270
beginning in the fall of 1993

41
00:02:49,030 --> 00:02:46,959
this facility will provide these

42
00:02:51,910 --> 00:02:49,040
well-controlled high temperatures for

43
00:02:58,150 --> 00:02:51,920
extended durations to test nasp

44
00:03:02,229 --> 00:02:59,910
it will also provide high pressure

45
00:03:04,309 --> 00:03:02,239
liquid or gases or test article

46
00:03:10,470 --> 00:03:04,319
conditioning at variable temperatures

47
00:03:14,949 --> 00:03:12,790
the high heat flux facility is unique in

48
00:03:17,350 --> 00:03:14,959
the united states and providing the

49
00:03:19,990 --> 00:03:17,360
combined environment capability of

50
00:03:23,110 --> 00:03:20,000
exposing the nas materials to both high

51
00:03:24,949 --> 00:03:23,120
temperatures and sound waves

52
00:03:27,830 --> 00:03:24,959
the facility will provide the nas

53
00:03:29,910 --> 00:03:27,840
program the ability to evaluate various

54
00:03:32,070 --> 00:03:29,920
materials under simulated flight

55
00:03:34,869 --> 00:03:32,080
conditions

56
00:03:39,190 --> 00:03:34,879
this data will reduce program risk

57
00:03:40,949 --> 00:03:39,200
thereby reducing total cost

58
00:03:43,430 --> 00:03:40,959
tests conducted at the high heat flux

59
00:03:45,509 --> 00:03:43,440
facility will be a vital link in the

60
00:03:48,710 --> 00:03:45,519
technology development phase of the

61
00:03:51,110 --> 00:03:48,720
national aerospace plane program

62
00:03:53,270 --> 00:03:51,120
later the facility will be expanded to

63
00:03:56,229 --> 00:03:53,280

accommodate larger test panels and

64
00:03:59,589 --> 00:03:56,239
longer test durations to better simulate

65
00:04:02,390 --> 00:03:59,599
the nasp flight profile

66
00:04:04,710 --> 00:04:02,400
this will further advance technology and

67
00:04:08,229 --> 00:04:04,720
make a very positive contribution to the

68
00:04:11,270 --> 00:04:08,239
nas program and america's preeminence

69
00:04:14,149 --> 00:04:11,280
and aerospace research

70
00:04:17,270 --> 00:04:14,159
america's national aerospace plane