



1  
00:00:01,320 --> 00:00:06,000

[music]

2  
00:00:06,260 --> 00:00:08,180

NASA's hypersonic flight demonstrator,

3  
00:00:08,340 --> 00:00:10,360

the X-43A, is designed to soar through

4  
00:00:10,360 --> 00:00:11,620

the sky at rocket speeds

5  
00:00:11,620 --> 00:00:14,360

with a non-rocket, air breathing scramjet engine.

6  
00:00:14,600 --> 00:00:16,999

X-43 engine technologies promise to increase

7  
00:00:16,999 --> 00:00:20,020

payload capacity by eliminating the heavy oxygen tanks

8  
00:00:20,020 --> 00:00:21,000

that rockets carry.

9  
00:00:21,500 --> 00:00:22,860

The air-breathing propulsion system

10  
00:00:22,860 --> 00:00:24,060

works by taking oxygen from

11  
00:00:24,060 --> 00:00:25,560

the atmosphere for combustion.

12  
00:00:25,700 --> 00:00:27,380

These 12-foot-long, unpiloted,

13  
00:00:27,380 --> 00:00:29,480

X-43A research aircraft have been

14

00:00:29,520 --> 00:00:31,900

built in support of NASA's Hyper-X program.

15

00:00:32,320 --> 00:00:34,340

Designed to explore alternate technologies

16

00:00:34,340 --> 00:00:35,340

for space access.

17

00:00:36,260 --> 00:00:38,320

Each X-43A vehicle is designed to fly once.

18

00:00:39,320 --> 00:00:40,920

This mission will fly at Mach 7

19

00:00:40,920 --> 00:00:42,740

or seven times the speed of sound.

20

00:00:43,040 --> 00:00:45,080

It will be the first time an air breathing engine

21

00:00:45,080 --> 00:00:47,080

has been integrated and flown on an aircraft.

22

00:00:47,320 --> 00:00:48,660

Langley is the lead NASA center

23

00:00:48,660 --> 00:00:49,840

for the Hyper-X program

24

00:00:49,840 --> 00:00:52,380

and is responsible for hypersonic technology development.

25

00:00:52,980 --> 00:00:54,600

NASA Dryden Flight Research Center

26

00:00:54,600 --> 00:00:56,320

in Edwards, California is responsible

27

00:00:56,320 --> 00:00:58,800

for flight research and will be the flight location.

28

00:00:59,680 --> 00:01:01,600

Well, the X-43A program you could think of

29

00:01:01,700 --> 00:01:03,460

as a first step toward getting a new capability

30

00:01:03,540 --> 00:01:05,620

for space access for the country.

31

00:01:06,160 --> 00:01:07,840

By using an air-breathing engine,

32

00:01:07,900 --> 00:01:09,760

the supersonic combustion ramjet

33

00:01:09,760 --> 00:01:10,960

that powers the X-43A

34

00:01:10,970 --> 00:01:12,820

and what we're really trying to validate

35

00:01:12,820 --> 00:01:14,320

in flight on our next flight

36

00:01:15,320 --> 00:01:17,920

This gives us the opportunity to build a vehicle

37

00:01:17,920 --> 00:01:19,280

that would not have to carry the heavy

38

00:01:19,280 --> 00:01:20,960  
oxidizer onboard but would use the

39

00:01:20,960 --> 00:01:21,780  
oxygen in the air

40

00:01:21,780 --> 00:01:23,240  
while it was flying in the atmosphere.

41

00:01:23,680 --> 00:01:25,200  
It could give us an airplane that could operate

42

00:01:25,200 --> 00:01:27,120  
like an airplane and fly to space

43

00:01:27,200 --> 00:01:28,820  
either a single or two stage system.

44

00:01:29,320 --> 00:01:30,940  
So, we're very excited about the capability

45

00:01:30,940 --> 00:01:32,480  
It could give the nation in the future