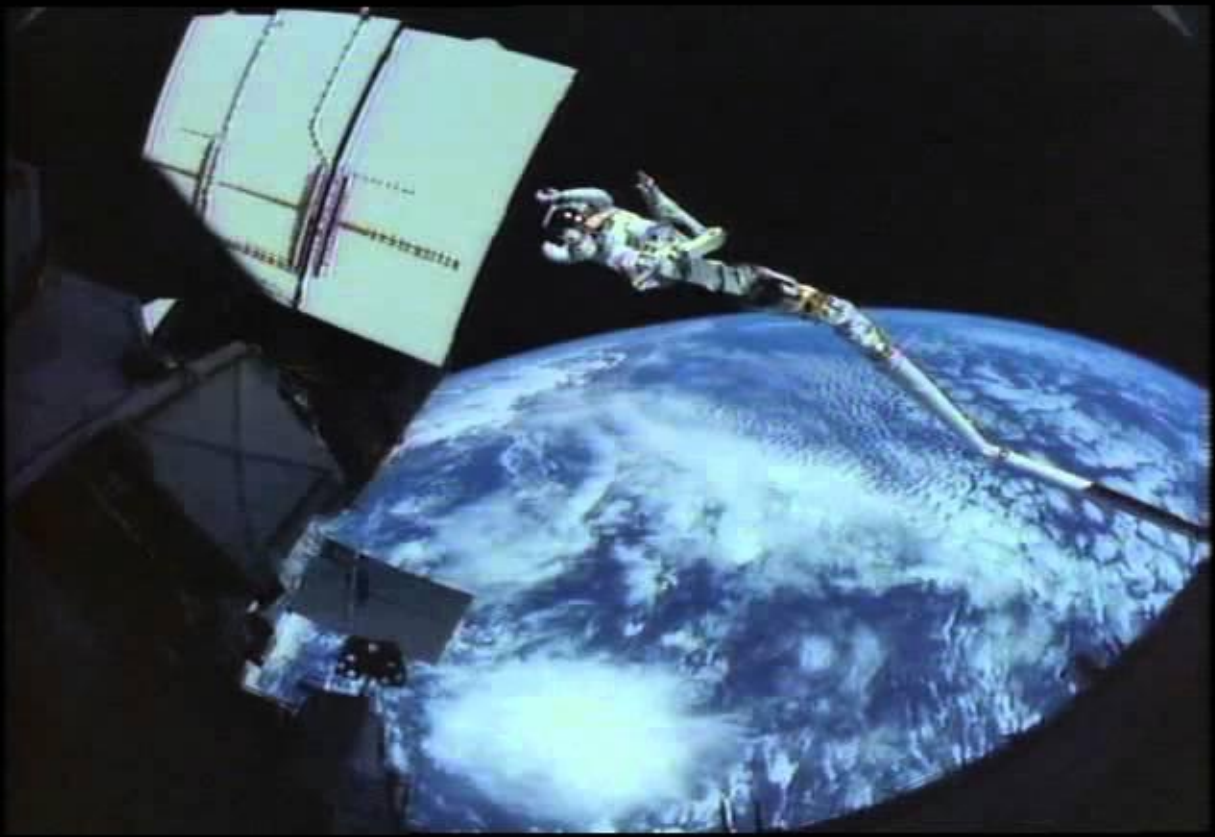

1
00:00:23,769 --> 00:00:18,230
an imaginative world they've come in all

2
00:00:31,880 --> 00:00:28,750
it doesn't sink in let's go back at Emma

3
00:00:34,040 --> 00:00:31,890
but most present-day robots have far

4
00:00:37,729 --> 00:00:34,050
less personality than their fictional

5
00:00:40,100 --> 00:00:37,739
counterparts in a kind of mechanical

6
00:00:43,819 --> 00:00:40,110
ballet these computer controls

7
00:00:46,250 --> 00:00:43,829
industrial automaton tirelessly go about

8
00:00:49,580 --> 00:00:46,260
their business often performing tasks

9
00:00:52,020 --> 00:00:49,590
too dangerous or monotonous for human

10
00:00:56,979 --> 00:00:54,729
nASA has been involved in robotics

11
00:01:01,619 --> 00:00:56,989
research for years developing

12
00:01:03,729 --> 00:01:01,629
sophisticated vision systems and sensors

13
00:01:06,760 --> 00:01:03,739

today at the Marshall Space Flight

14
00:01:09,850 --> 00:01:06,770
Center in Alabama robots do a variety of

15
00:01:11,889 --> 00:01:09,860
jobs including blasting layers of old

16
00:01:15,010 --> 00:01:11,899
thermal protection material from the

17
00:01:17,080 --> 00:01:15,020
shuttles external tanks but now

18
00:01:18,940 --> 00:01:17,090
researchers at Marshall are focusing

19
00:01:22,800 --> 00:01:18,950
their attention on using computerized

20
00:01:26,169 --> 00:01:22,810
machines like these elsewhere in space

21
00:01:28,419 --> 00:01:26,179
one robotic device the shuttles remote

22
00:01:31,180 --> 00:01:28,429
manipulator arm has already made its

23
00:01:33,760 --> 00:01:31,190
mark doing everything from dropping off

24
00:01:36,190 --> 00:01:33,770
scientific payloads to serving as a

25
00:01:38,590 --> 00:01:36,200
platform for astronauts outside the

26
00:01:42,550 --> 00:01:38,600
shuttle but even with the help of the

27
00:01:44,529 --> 00:01:42,560
arm working in space is difficult one

28
00:01:47,020 --> 00:01:44,539
application that holds a lot of promise

29
00:01:50,260 --> 00:01:47,030
for robotic workers is the retrieval and

30
00:01:51,490 --> 00:01:50,270
repair of satellites shuttle crews have

31
00:01:53,949 --> 00:01:51,500
demonstrated that they can make

32
00:01:56,889 --> 00:01:53,959
successful service calls on disabled

33
00:01:58,929 --> 00:01:56,899
spacecraft but it's not easy this is

34
00:02:01,749 --> 00:01:58,939
where the orbital maneuvering vehicle or

35
00:02:04,389 --> 00:02:01,759
omv under study at Marshall would be

36
00:02:07,840 --> 00:02:04,399
extremely useful essentially a large

37
00:02:10,210 --> 00:02:07,850
space truck the omv could fly away from

38
00:02:13,440 --> 00:02:10,220

the shuttle rendezvous with the disabled

39
00:02:16,150 --> 00:02:13,450
satellite and bring it back for repair

40
00:02:18,599 --> 00:02:16,160
onboard cameras allow an operator to

41
00:02:21,370 --> 00:02:18,609
control it from inside the mothership

42
00:02:23,530 --> 00:02:21,380
the people at Marshall are also working

43
00:02:26,860 --> 00:02:23,540
on robotic devices that could repair a

44
00:02:29,620 --> 00:02:26,870
satellite in orbit using sophisticated

45
00:02:32,580 --> 00:02:29,630
claws these machines change out

46
00:02:35,110 --> 00:02:32,590
defective parts

47
00:02:37,000 --> 00:02:35,120
advanced robots could be a great help in

48
00:02:39,610 --> 00:02:37,010
assembling this country space station

49
00:02:42,039 --> 00:02:39,620
and once the space station is up and

50
00:02:44,739 --> 00:02:42,049
running robots will continue to play an