



1
00:00:13,249 --> 00:00:09,379
14 13 t minus 10 nine eight seven six

2
00:00:23,380 --> 00:00:13,259
five four we've gone for main engine

3
00:00:27,829 --> 00:00:25,669
when the Space Shuttle returns to flight

4
00:00:30,139 --> 00:00:27,839
later this year its first payload will

5
00:00:33,650 --> 00:00:30,149
be the TRW built tracking and data relay

6
00:00:35,180 --> 00:00:33,660
satellite known it's tedious this will

7
00:00:37,939 --> 00:00:35,190
not be the first time this NASA

8
00:00:39,250 --> 00:00:37,949
satellite has made history it is the

9
00:00:41,600 --> 00:00:39,260
largest and most sophisticated

10
00:00:43,420 --> 00:00:41,610
communication spacecraft ever launched

11
00:00:45,469 --> 00:00:43,430
and provides comprehensive

12
00:00:48,889 --> 00:00:45,479
telecommunication services by relaying

13
00:00:52,280 --> 00:00:48,899

voice television digital and analog

14

00:00:54,380 --> 00:00:52,290

signals here shown undergoing final

15

00:00:56,570 --> 00:00:54,390

integration and test procedures at trw

16

00:00:59,240 --> 00:00:56,580

is the third in a series of these

17

00:01:00,799 --> 00:00:59,250

satellites built by trw Space and

18

00:01:03,799 --> 00:01:00,809

Technology Group in redondo beach

19

00:01:05,509 --> 00:01:03,809

california the first satellite has been

20

00:01:08,690 --> 00:01:05,519

an orbital operation since the summer of

21

00:01:13,340 --> 00:01:08,700

1983 and the second was lost with the

22

00:01:15,140 --> 00:01:13,350

ill-fated challenger in 1986 the mission

23

00:01:17,420 --> 00:01:15,150

of teachers is to provide NASA with

24

00:01:19,160 --> 00:01:17,430

communications and data relay between

25

00:01:21,850 --> 00:01:19,170

its low Earth orbiting satellites

26

00:01:24,560 --> 00:01:21,860

including the shuttle and the ground

27

00:01:27,590 --> 00:01:24,570

tigres is a huge spacecraft weighing

28

00:01:30,080 --> 00:01:27,600

approximately 5,000 pounds when it

29

00:01:32,510 --> 00:01:30,090

reaches its station some 22,000 miles

30

00:01:35,180 --> 00:01:32,520

above the earth it's solar arrays will

31

00:01:40,460 --> 00:01:35,190

be unfolded and extend over 50 feet from

32

00:01:42,920 --> 00:01:40,470

tip to tip the spacecraft operates in

33

00:01:45,130 --> 00:01:42,930

three frequency bands and can handle up

34

00:01:48,590 --> 00:01:45,140

to 26 satellites passing beneath it a

35

00:01:50,830 --> 00:01:48,600

virtual antenna farm with seven antennas

36

00:01:53,630 --> 00:01:50,840

including a 30 element phased array

37

00:01:55,820 --> 00:01:53,640

Tigres is the first telecommunication

38

00:01:59,109 --> 00:01:55,830

satellite able to operate on three

39

00:02:02,480 --> 00:01:59,119

separate frequency bands simultaneously

40

00:02:04,190 --> 00:02:02,490

the satellites high data rate of 300

41

00:02:06,679 --> 00:02:04,200

million data bits of information per

42

00:02:08,270 --> 00:02:06,689

second is capable of relaying the

43

00:02:10,880 --> 00:02:08,280

information packed in one hundred

44

00:02:15,320 --> 00:02:10,890

volumes of an encyclopedia in just one

45

00:02:18,530 --> 00:02:15,330

second trw is building six of these

46

00:02:21,740 --> 00:02:18,540

spacecraft for NASA during September of

47

00:02:23,960 --> 00:02:21,750

1987 the crew of discovery visited trw

48

00:02:27,770 --> 00:02:23,970

to see firsthand the payload they will

49

00:02:29,690 --> 00:02:27,780

be carrying into orbit in the five years

50

00:02:31,670 --> 00:02:29,700

that the flight one spacecraft has been

51

00:02:33,709 --> 00:02:31,680

in operation teachers has been

52

00:02:35,750 --> 00:02:33,719

supporting all shuttle operations as

53

00:02:37,030 --> 00:02:35,760

well as Landsat and other nasa

54

00:02:39,619 --> 00:02:37,040

spacecraft mission

55

00:02:44,089 --> 00:02:39,629

it represents a significant improvement

56

00:02:46,009 --> 00:02:44,099

in utilizing our space resources in the

57

00:02:47,809 --> 00:02:46,019

past orbiting spacecraft could

58

00:02:49,610 --> 00:02:47,819

communicate with earth only when they

59

00:02:52,339 --> 00:02:49,620

were in sight above one of several

60

00:02:54,979 --> 00:02:52,349

ground tracking stations typically less

61

00:02:56,780 --> 00:02:54,989

than one-fifth of the time or the

62

00:02:59,180 --> 00:02:56,790

constellation of three teacher

63

00:03:00,410 --> 00:02:59,190

satellites is completed spacecraft will

64

00:03:02,360 --> 00:03:00,420

be able to communicate with earth

65

00:03:06,319 --> 00:03:02,370

through eighty percent or more of their

66

00:03:09,199 --> 00:03:06,329

orbit as the launch date nears teachers

67

00:03:10,759 --> 00:03:09,209

see will undergo final checkout it will

68

00:03:12,860 --> 00:03:10,769

then go into a protected packing

69

00:03:14,930 --> 00:03:12,870

container for convoy to Los Angeles

70

00:03:25,780 --> 00:03:14,940

International Airport where it's loaded

71

00:03:31,270 --> 00:03:28,330

what impact does teachers have on the

72

00:03:34,569 --> 00:03:31,280

American space program as an example

73

00:03:37,030 --> 00:03:34,579

back in 1983 the crew of the ninth

74

00:03:38,740 --> 00:03:37,040

shuttle flight was the first to relay

75

00:03:42,369 --> 00:03:38,750

their data through the tee dress network

76

00:03:44,110 --> 00:03:42,379

in that single 10-day mission more

77

00:03:47,679 --> 00:03:44,120

information was relayed to the ground