
TDRS

1
00:00:06,130 --> 00:00:03,030
Music

2
00:00:06,150 --> 00:00:09,170
Thirty years ago, NASA launched

3
00:00:09,190 --> 00:00:12,280
into a new era of high
bandwidth, continuous

4
00:00:12,300 --> 00:00:15,310
space communication with the
Tracking and Data Relay

5
00:00:15,330 --> 00:00:18,450
Satellite, TDRS...

6
00:00:18,470 --> 00:00:21,480
Music

7
00:00:21,500 --> 00:00:24,590
Today, NASA is

8
00:00:24,610 --> 00:00:27,760
continuing this legacy by
launching the first of the next
generation of

9
00:00:27,780 --> 00:00:30,870
satellites, TDRS-K. (countdown
10, 9 ..)

10
00:00:30,890 --> 00:00:33,890
At Cape Canaveral, the TDRS-K
spacecraft sits (countdown 8,
7, 6 ...)

11
00:00:33,910 --> 00:00:36,950
atop an Atlas 5 rocket ready

for launch... (countdown 5. 4.
3 ...)

12
00:00:36,970 --> 00:00:40,000
(countdown 2, 1, and)

13
00:00:40,020 --> 00:00:43,050
(countdown LIFT OFF! of the
Atlas 5 rocket carrying)

14
00:00:43,070 --> 00:00:46,210
(the next generation of
Tracking and Data Relay)

15
00:00:46,230 --> 00:00:49,240
(Satellites - TDRS-K) After a
4-minute burn

16
00:00:49,260 --> 00:00:52,370
the Atlas 5 main engine
separates from

17
00:00:52,390 --> 00:00:55,540
the Centaur engine, and drops
back to Earth.

18
00:00:55,560 --> 00:00:58,660
Shortly after separation of the
main engine,

19
00:00:58,680 --> 00:01:01,680
the protective shield that
covers the payload, called the

20
00:01:01,700 --> 00:01:04,760
fairing, separates to reveal
the TDRS-K spacecraft.

21
00:01:04,780 --> 00:01:07,930
After boosting the spacecraft

22
00:01:07,950 --> 00:01:10,990
to geosynchronous transfer
orbit, the TDRS

23
00:01:11,010 --> 00:01:14,150
spacecraft separates from the
Centaur engine.

24
00:01:14,170 --> 00:01:17,200
Shortly after this separation,
the two folded

25
00:01:17,220 --> 00:01:20,360
Single Access antenna
reflectors are released to take

26
00:01:20,380 --> 00:01:23,370
their natural parabolic shape.

27
00:01:23,390 --> 00:01:26,470
Over the next 11 days, through
a series of engine firings

28
00:01:26,490 --> 00:01:29,650
the TDRS on board rocket guides
the

29
00:01:29,670 --> 00:01:32,680
spacecraft to its final
location in geosynchronous
orbit.

30
00:01:32,700 --> 00:01:35,730
Once arriving at this orbit,

31
00:01:35,750 --> 00:01:38,780
the spacecraft starts its
deployment sequence by unfolding

32
00:01:38,800 --> 00:01:41,830
the first solar array. Next,

33
00:01:41,850 --> 00:01:44,860
the two single access antennas
are deployed and locked

34
00:01:44,880 --> 00:01:48,000
into position. These antennas
are designed

35
00:01:48,020 --> 00:01:51,030
to track and communicate with
low-Earth orbit satellites.

36
00:01:51,050 --> 00:01:54,140
After the single access
antennas are

37
00:01:54,160 --> 00:01:57,180
secured into place, the second
solar array starts to

38
00:01:57,200 --> 00:02:00,230
unfold and the SGL

39
00:02:00,250 --> 00:02:03,370
and Omni antennas are deployed.

40
00:02:03,390 --> 00:02:06,440
Once TDRS-K

41
00:02:06,460 --> 00:02:09,610
completes this deployment
sequence, its now ready for

42
00:02:09,630 --> 00:02:12,650
a 3 month period of testing
calibration before being placed

43
00:02:12,670 --> 00:02:15,770
into service. With this
addition of

44
00:02:15,790 --> 00:02:18,800
TDRS-K and the upcoming
launches of

45
00:02:18,820 --> 00:02:21,910
TDRS-L and M, NASA has

46
00:02:21,930 --> 00:02:25,090
assured the future of
continuous Space to Ground

47
00:02:25,110 --> 00:02:28,240
Communication.