1
00:00:02,270 --> 00:00:06,820
Good morning and welcome to today's
International Space Station update.

2
00:00:06,820 --> 00:00:10,430
The crew has been going through
an array of different experiments

3
00:00:10,430 --> 00:00:13,490
and maintenance activities on board the station.

4
00:00:13,490 --> 00:00:17,530
Starting with Monday, Commander
Burbank was working

5
00:00:17,530 --> 00:00:20,850
on something called a Capillary
Flow Experiment which is a suite

6
00:00:20,850 --> 00:00:27,320
of fluid physics research projects that
looks to see how fluids behave when they are

7
00:00:27,320 --> 00:00:33,560
under the influence of gravity and only
using capillary forces to move along.

8
00:00:33,560 --> 00:00:37,740
Anton Shkaplerov worked to relocate
some items in the Russian segment

9
00:00:37,740 --> 00:00:44,160
from the Zarya storage locations and then his
cosmonaut counterpart Anatoly Ivanishin was

10
00:00:44,160 --> 00:00:49,510
replacing some filters and the dust
collectors again in the Zarya module.

11

00:00:49,510 --> 00:00:54,260
The third Russian cosmonaut on
Monday, Oleg Kononenko was working

12
00:00:54,260 --> 00:00:58,020
with the Russian Relaxation experiment
which hopes to determine the effects

13
00:00:58,020 --> 00:01:03,570
of different propulsion systems and their
exhaust on the Earth's upper atmosphere.

14
00:01:03,570 --> 00:01:07,730
Andre Kuipers was working with
the VO2max experiment which looks

15
00:01:07,730 --> 00:01:14,520
to evaluate the astronauts maximal oxygen uptake
in a respiratory performance both before during

16
00:01:14,520 --> 00:01:17,220
and after long-duration spaceflights.

17
00:01:17,220 --> 00:01:21,460
Finally on Monday, Don Pettit was
working with the SLICE experiment

18
00:01:21,460 --> 00:01:24,310
which you will also see him working on today.

19
00:01:24,310 --> 00:01:29,580
SLICE stands for Structure and Liftoff
In Combustion Experiment which looks

20
00:01:29,580 --> 00:01:32,470
to investigate the nature
of flames in microgravity.

21
00:01:32,470 --> 00:01:39,120
Moving now toTuesday, Commander Burbank began

some of the extensive work that's been going

22
00:01:39,120 --> 00:01:44,730
on this week with the Water Recovery System,
removing the gas pocket that are built up inside

23
00:01:44,730 --> 00:01:49,660
of the contingency water container
which the astronauts were using in place

24
00:01:49,660 --> 00:01:54,630
to maintain the system while
it awaited further repairs.

25
00:01:54,630 --> 00:02:02,060
Meanwhile, the Russian cosmonauts Anton
Shkaplerov and Anatoly Ivanishin were involved

26
00:02:02,060 --> 00:02:07,310
in some audits of their photo and video
equipment onboard station and also beginning

27
00:02:07,310 --> 00:02:10,920
to take some footage for a
Russian life on the station video,

28
00:02:10,920 --> 00:02:16,360
which will be seen by audience in Russia.

29
00:02:16,360 --> 00:02:21,050
Meanwhile, the third cosmonaut Oleg Kononenko
worked with the Russian Pneumocard experiment

30
00:02:21,050 --> 00:02:25,570
which is an integrated study to look
into how the astronauts bodies adapt,

31
00:02:25,570 --> 00:02:32,340
specifically their cardiovascular systems
during his long duration spent in microgravity.

32
00:02:32,340 --> 00:02:35,430
Andre Kuipers did some weekly
cleaning activities

33
00:02:35,430 --> 00:02:38,390
which he would continue for a few days.

34
00:02:38,390 --> 00:02:44,240
And then finally, Don Pettit was also doing some
cleanup activities in the deck crew quarters,

35
00:02:44,240 --> 00:02:51,700
focusing on the intake and exhaust docks, also
checking out their fan of airflow sensors.

36
00:02:51,700 --> 00:02:57,880
Moving on to Wednesday, we marked the first
day of our robotic refueling operations,

37
00:02:57,880 --> 00:03:03,650
the first item on the list is a
three-day, first three days that were spent

38
00:03:03,650 --> 00:03:08,630
on manipulating this payload which
arrived on the station back on last July.

39
00:03:08,630 --> 00:03:13,520
All the operators down here on the ground
went through a series of tool checkouts,

40
00:03:13,520 --> 00:03:18,990
again this is the first of three days, they
continued on Thursday and Friday as well.

41
00:03:18,990 --> 00:03:20,990
Commander Burbank continued his work

42

00:03:20,990 --> 00:03:25,190
on the Water Recovery System
replacing a multi-filtration unit

43
00:03:25,190 --> 00:03:27,430
with an on-orbit replacement unit.

44
00:03:27,430 --> 00:03:33,260
He was assisted throughout
that day with by Don Pettit.

45
00:03:33,260 --> 00:03:38,270
Meanwhile, Anton Shkaplerov was doing some
routine light replacement throughout the Russian

46
00:03:38,270 --> 00:03:43,970
segment and Anatoly Ivanishin got some time
to work with the which Matryeshka experiment

47
00:03:43,970 --> 00:03:48,430
which is a mannequin sized doll
on board the station with an array

48
00:03:48,430 --> 00:03:53,070
of sensors throughout it that's used
to gather data on radiation levels

49
00:03:53,070 --> 00:03:59,490
that the astronauts are experiencing
during their stints on board the station.

50
00:03:59,490 --> 00:04:05,450
Meanwhile, Oleg Kononenko was replacing some
integration panels inside of the Poisk module,

51
00:04:05,450 --> 00:04:11,100
or the mini research module 2, and also
loading some hardware for eventual disposal

52
00:04:11,100 --> 00:04:15,040

onto the Progress 46 resupply craft.

53
00:04:15,040 --> 00:04:20,990
Andre Kuipers was working to do some fire
detection and suppression checkouts verifying

54
00:04:20,990 --> 00:04:23,560
that some of the firefighting
gear on board the station,

55
00:04:23,560 --> 00:04:28,910
including portable fire extinguishers extension
hoses and different breathing apparatuses,

56
00:04:28,910 --> 00:04:33,540
were all free from damage to
insure their functionality.

57
00:04:33,540 --> 00:04:39,390
Moving onto Thursday, we have the second
day of robotic refueling mission activities,

58
00:04:39,390 --> 00:04:41,950
robotic ground controllers released five

59
00:04:41,950 --> 00:04:46,050
of the seven multifunction tool
adapter receptacle launch locks

60
00:04:46,050 --> 00:04:51,840
on board using the multifunction tool in
conjunction with space station's robotic arm.

61
00:04:51,840 --> 00:04:56,160
Specifically using the Dexter, or the
special purpose dexterous manipulator,

62
00:04:56,160 --> 00:04:59,800
portion of the robotic arm.

63
00:04:59,800 --> 00:05:06,990
Meanwhile, Dan Burbank continued to move and
replace some items in the Water Recovery System,

64
00:05:06,990 --> 00:05:13,740
getting that failed catalytic reactor out, and
installing a temporary catalytic reactor filter,

65
00:05:13,740 --> 00:05:16,900
before eventually stowing the full replacement.

66
00:05:16,900 --> 00:05:20,830
And again, as he was on Wednesday,

67
00:05:20,830 --> 00:05:26,520
he was assisted with all those
activities by Don Pettit.

68
00:05:26,520 --> 00:05:29,840
Russian cosmonauts were involved
in a number experiments.

69
00:05:29,840 --> 00:05:35,680
Anton Shkaplerov was working with the
Uragan Earth observation project which looks

70
00:05:35,680 --> 00:05:40,890
to monitor different areas where natural and
man-made disasters are forecasted to occur,

71
00:05:40,890 --> 00:05:45,820
using the space station's unique vantage
point to provide controllers on the ground

72
00:05:45,820 --> 00:05:48,910
with data they wouldn't otherwise have.

73
00:05:48,910 --> 00:05:52,430
Anatoly Ivanishin immediately

upon wakeup Thursday,

74
00:05:52,430 --> 00:05:58,390
was involved with the Sptut-2 experiment which
looks to investigate the unfavorable impact

75
00:05:58,390 --> 00:06:02,570
of zero gravity on how well
the astronauts stay hydrated.

76
00:06:02,570 --> 00:06:08,810
Oleg Kononenko was involved in some
more Progress 46 stowage activities,

77
00:06:08,810 --> 00:06:14,810
unloading some cargo and moving some disposable
items into the craft, as it will be burned

78
00:06:14,810 --> 00:06:19,520
up in the Earth's atmosphere upon its
undocking and reentry later this year.

79
00:06:19,520 --> 00:06:26,200
And then Andre Kuipers spent his time working
with the Integrated Cardiovascular experiment,

80
00:06:26,200 --> 00:06:32,330
which looks to study the heart muscle atrophy,
or the weakening and lessening in size

81
00:06:32,330 --> 00:06:35,470
of the heart muscle, which
occurs during spaceflight

82
00:06:35,470 --> 00:06:40,360
and these microgravity environment conditions
that the astronauts are exposed too.

83
00:06:40,360 --> 00:06:47,120
And then finally this week, we move onto

today, where we will have the last day

84
00:06:47,120 --> 00:06:52,110
of robotic refueling mission activities, where
controllers both here at mission control Houston

85
00:06:52,110 --> 00:06:57,070
and at the Goddard Space Flight Center, will
continue to release some of the launch locks

86
00:06:57,070 --> 00:07:03,440
and then move onto using the wire cutting
tool on two test wires if time permits.

87
00:07:03,440 --> 00:07:06,740
Commander Burbank will spend
his entire day finishing up with

88
00:07:06,740 --> 00:07:10,210
that Water Recovery System removal
and replacement repair work,

89
00:07:10,210 --> 00:07:15,520
installing a new catalytic reactor and taking
the failed one and inspecting for the leak

90
00:07:15,520 --> 00:07:21,320
for some time, before moving it for long-term
stowage in order to preserve the option

91
00:07:21,320 --> 00:07:27,370
of a potential future repair
reinstallation of the failed device.

92
00:07:27,370 --> 00:07:31,940
Meanwhile, Anton Shkaplerov and Anatoly
Ivanishin will spend a good portion

93
00:07:31,940 --> 00:07:37,210
of their day working on the Russian BAR

experiment which looks to determine selection

94
00:07:37,210 --> 00:07:43,030
and testing methods in order
to detect any depressurization

95
00:07:43,030 --> 00:07:48,310
that may happen inside the
International Space Station's modules.

96
00:07:48,310 --> 00:07:53,700
While they're doing this, Oleg Kononenko will
be working with the Russian RUSALKA test,

97
00:07:53,700 --> 00:07:58,650
and this looks to develop some procedures
for determining the carbon dioxide

98
00:07:58,650 --> 00:08:01,840
and methane content in the
Earth's atmosphere in order

99
00:08:01,840 --> 00:08:04,890
to better understand the role natural processes

100
00:08:04,890 --> 00:08:10,990
and human activity on the
content of these gases.

101
00:08:12,010 --> 00:08:18,250
Andre Kuipers will be assisting Don Pettit
with his own Integrated Cardiovascular scan,

102
00:08:18,250 --> 00:08:23,980
he did that a little earlier today, and will
also be assisting and doing some cleanup work,

103
00:08:23,980 --> 00:08:29,800
stowing all the tools the necessary for the
Water Recovery System work, also cleaning up one

104
00:08:29,800 --> 00:08:34,690
of the corridors leading to the Permanent
Multipurpose module, or Leonardo.

105
00:08:34,690 --> 00:08:40,640
And our final Expedition 30 crew member, Don
Pettit is returning to the work that he did

106
00:08:40,640 --> 00:08:43,310
on Monday with the SLICE experiment.

107
00:08:43,310 --> 00:08:47,830
Again SLICE standing for Structure
and Liftoff In Combustion Experiment,