1
00:00:01,446 --> 00:00:06,356
[Dan Huot] Joining me now on console here in
Mission Control Houston is Michael Ferullo,

2
00:00:06,476 --> 00:00:09,846
the Lead Inventory and Storage
Officer for ATV-3.

3
00:00:09,846 --> 00:00:12,246
Michael, thank you so much
for being here today with us.

4
00:00:12,636 --> 00:00:13,426
[Michael Ferullo] Thank you
it's good to be here.

5
00:00:14,866 --> 00:00:18,616
[Dan] Now as I mentioned, the cargo
transfer can be very complicated

6
00:00:18,616 --> 00:00:22,076
and usually requires quite
a few hours for the crew.

7
00:00:22,076 --> 00:00:27,106
So why don't you tell us a little bit about just
the basic process of taking all this cargo off.

8
00:00:27,106 --> 00:00:31,606
I mean, how do you guys track and, you know,
maintain a list of everything that's on board.

9
00:00:32,666 --> 00:00:36,876
[Michael] Well first of all we have a piece of
software called the Inventory Management System

10
00:00:37,346 --> 00:00:41,186
and that's basically something that we view
on the ground here and the crew has on orbit

11
00:00:41,586 --> 00:00:45,246
and that keeps an electronic copy of
where everything is located on station.

12
00:00:45,966 --> 00:00:51,386
When things are manifested in the ATV
itself we build an un-packing list,

13
00:00:51,766 --> 00:00:55,926
basically an Excel spreadsheet that the
crew can work off of and transfer cargo

14
00:00:55,926 --> 00:00:59,136
from the ATV to its proper locations on ISS.

15
00:00:59,226 --> 00:01:03,296
It's a little bit complicated because some

16
00:01:03,296 --> 00:01:05,946
of the cargo has certain
constraints that need to be followed.

17
00:01:06,066 --> 00:01:07,726
There's certain foam that's packed in there.

18
00:01:07,726 --> 00:01:12,466
So what we try to do to be efficient is we
try to unpack the bags and leave the foam

19
00:01:12,466 --> 00:01:14,606
and the packing material within the ATV.

20
00:01:15,026 --> 00:01:21,066
Obviously, when we did the speedy
unload on Saturday we just basically had

21
00:01:21,066 --> 00:01:24,956
to grab what we could priority-wise
and move that over to the ISS.

22
00:01:25,856 --> 00:01:30,516
[Dan] Okay, we have some video that was just
sent down of the crew as they were entering

23
00:01:30,516 --> 00:01:36,756
into ATV-3 taking a look at all the cargo
once they first got a chance to go inside.

24
00:01:37,236 --> 00:01:43,486
You can see here and once they get inside,
I mean, there is quite a bit of cargo.

25
00:01:43,486 --> 00:01:47,716
And you mentioned that since it was
kind of some speedy activity you had

26
00:01:47,716 --> 00:01:49,476
to write up a prioritization list.

27
00:01:50,046 --> 00:01:54,266
Now, what item's on board, how do you
determine what takes priority over other items?

28
00:01:55,416 --> 00:01:58,746
[Michael] Well basically Friday night it
was determined that we were going to go in

29
00:01:58,746 --> 00:02:01,396
and unload this vehicle based on crew time.

30
00:02:01,886 --> 00:02:07,246
Between the time when we started
operations and the time when we would've had

31
00:02:07,246 --> 00:02:12,396
to possibly undock there was about 30
crew hours in there so the program came

32

00:02:12,396 --> 00:02:15,126
up with a priority list,
a transfer priority list.

33
00:02:15,496 --> 00:02:19,146
We set priorities for cargo
one through seven and items one

34
00:02:19,146 --> 00:02:20,976
through three were deemed important.

35
00:02:21,436 --> 00:02:24,896
So we attacked the cargo that we
could within the crew time allotted

36
00:02:25,056 --> 00:02:28,706
and put that into a supplemental list
that the crew could just work off

37
00:02:28,706 --> 00:02:30,446
of for the expedited cargo transfer.

38
00:02:32,066 --> 00:02:37,076
[Dan] Okay, and I mean the numbers we were
given it says there's about two-and-a-half tons

39
00:02:37,076 --> 00:02:42,286
of dry cargo just onboard and that's said
to include experiment hardware, spare parts,

40
00:02:42,286 --> 00:02:43,856
food, clothing, things like that.

41
00:02:44,256 --> 00:02:48,616
Generally, which of those items fall into
that priority list, that high-priority list?

42
00:02:48,616 --> 00:02:51,906
[Michael] The number one priority
for this mission was food.

43
00:02:52,526 --> 00:02:56,216
There were some medical supplies,
some payloads and some large ORUs

44
00:02:56,216 --> 00:02:58,556
and spare parts, orbital replacement units.

45
00:02:58,976 --> 00:03:05,216
But food was the most important, reason being
is that the ATV was the largest food shipment

46
00:03:05,216 --> 00:03:07,556
and was supposed to be the
big food supply for the year.

47
00:03:07,926 --> 00:03:12,756
So we weren't expected to see a large
supply of food for another year from now.

48
00:03:13,506 --> 00:03:13,996
[Dan] Okay.

49
00:03:13,996 --> 00:03:18,726
And let's talk a little about how much space
is actually onboard the station as well.

50
00:03:18,726 --> 00:03:23,446
I know, you know back with 135 they got
a whole bunch of stuff that was supposed

51
00:03:23,446 --> 00:03:25,346
to keep them resupplied for a year.

52
00:03:25,806 --> 00:03:28,736
So how much space is actually
available on station

53
00:03:28,806 --> 00:03:31,176

to just take all the stuff
and find it a quick home?

54
00:03:32,016 --> 00:03:34,446
[Michael] There's not a lot
of easy space available.

55
00:03:34,446 --> 00:03:40,066
So it's a little bit of a challenge where we
have to take what cargo we have on station,

56
00:03:40,066 --> 00:03:46,376
try to compact it down, take out things we
don't need, put those into bags for trash

57
00:03:46,376 --> 00:03:48,286
and we stage those for the
next vehicle to leave.

58
00:03:48,286 --> 00:03:52,266
So there's a lot of rearranging, kind of
how you would at home in your own house

59
00:03:52,346 --> 00:03:54,236
to clean up and organize your closet.

60
00:03:54,556 --> 00:03:58,346
And we find that when you
organize stuff we gain space.

61
00:03:58,736 --> 00:04:05,216
So when a new vehicle is coming we try to do
you know row 2 activities to clean up the PMM

62
00:04:05,216 --> 00:04:10,286
and other modules on the ISS to receive the
cargo that's coming from the new vehicle.

63
00:04:11,436 --> 00:04:16,566
[Dan] Okay and right now we're getting a look

at the crew as they move inside of ATV-3,

64
00:04:16,566 --> 00:04:19,156
or "Edoardo Amaldi," for the first time.

65
00:04:19,426 --> 00:04:24,146
It's currently docked to the Zvezda service
module onboard the International Space Station.

66
00:04:24,896 --> 00:04:26,816
Now you see them wearing the gas mask.

67
00:04:26,816 --> 00:04:31,266
They have to generally, you know, make sure
that the air filters and everything are turned

68
00:04:31,696 --> 00:04:34,506
on before it just becomes
kind of an extra living space.

69
00:04:36,456 --> 00:04:40,836
So, I saw a number of the bags
just have numbers on them.

70
00:04:40,836 --> 00:04:44,706
Is there like a barcode system or anything
electronically to keep track of these

71
00:04:45,066 --> 00:04:47,326
or is that kind of all just crew input?

72
00:04:48,436 --> 00:04:51,826
[Michael] No, there is barcodes
and serial numbers on the bags.

73
00:04:52,236 --> 00:04:56,366
If you can see the bags basically
have large sharpied numbers on them.

74

00:04:56,366 --> 00:04:57,486
Those are the serial numbers.

75
00:04:57,786 --> 00:05:00,906
That's for the crew to be
able to see bags very quickly.

76
00:05:01,246 --> 00:05:03,006
There's also barcodes that are on there.

77
00:05:03,336 --> 00:05:07,456
So the crew can use the barcode
scanner and that interfaces directly

78
00:05:07,456 --> 00:05:10,766
with the Inventory Management System
database that I talked about earlier.

79
00:05:11,196 --> 00:05:15,806
So the crew has two choices to either call
down updates or they can scan those items

80
00:05:15,806 --> 00:05:17,496
and it goes right into the database.

81
00:05:18,056 --> 00:05:22,836
[Dan] Okay so far more difficult than
just, you know, unloading groceries

82
00:05:22,836 --> 00:05:24,576
out of the back of your car that's for sure.

83
00:05:26,696 --> 00:05:32,056
Okay well about how, do you know,
you know off the top of your head

84
00:05:32,056 --> 00:05:35,576
about how much cargo the crew got through
or how much you guys hoped to get off

85
00:05:35,576 --> 00:05:38,216
in case there was going to
be an undocking on Monday?

86
00:05:39,306 --> 00:05:40,966
[Michael] Well the crew is extremely efficient.

87
00:05:41,536 --> 00:05:48,166
We scheduled about 15 hours
prior to the power up of the ATV

88
00:05:48,166 --> 00:05:51,846
and if that failed we had another
15 hours before we needed to undock.

89
00:05:51,846 --> 00:05:56,016
And the crew actually ended up completing
all 30 of those hours prior to the power up.

90
00:05:56,486 --> 00:05:58,926
So they were able to get very far ahead.

91
00:05:59,086 --> 00:06:03,326
They transferred about 1391 kilograms of cargo.

92
00:06:03,396 --> 00:06:10,806
And volume-wise we estimate that
to be 161 CTBE and CTB equivalent.

93
00:06:10,976 --> 00:06:16,896
If you can see on the screen right now
that behind our crew member is a 2.0 CTB,

94
00:06:17,186 --> 00:06:20,556
so half of that volume there would be a 1 CTBE.

95
00:06:21,186 --> 00:06:21,356
[Dan] Okay.

96
00:06:22,556 --> 00:06:26,436
Well again some really cool video.

97
00:06:26,436 --> 00:06:29,646
Some of the first looks inside
of ATV-3 as it is docked

98
00:06:29,646 --> 00:06:33,156
to the International Space Station
when it arrived last Wednesday.

99
00:06:34,776 --> 00:06:40,446
Well, Mike really appreciate you coming in
and given us kind of a real good overview

100
00:06:40,446 --> 00:06:42,926
of how the crew, and the crew interacts

101
00:06:42,926 --> 00:06:46,226
with all these cargo deliveries onboard
the International Space Station.

102
00:06:46,466 --> 00:06:49,066
As you can see it's quite
a bit of stuff on there.

103
00:06:49,066 --> 00:06:52,796
And as you mention there's not the most space

104
00:06:52,796 --> 00:06:55,526
in the world right now onboard
the International Space Station.

105
00:06:55,526 --> 00:06:59,096
So they'll have to work pretty
hard to find some spots for it.

106
00:06:59,096 --> 00:07:00,666
Well Michael thanks again.

107
00:07:00,666 --> 00:07:02,866
Thanks for joining me today.