good afternoon everybody and welcome to NASA's Johnson Space Center for today's post mission management team briefing joining us once again is Leroy Cain he's the deputy manager of the space shuttle program and of course he also chairs the on-orbit mission management team meeting which is joint with the International Space Station program and all the other elements associated with Atlantis's mission to the ISS Leroy will have some opening comments and then we'll take questions here and out on the phone bridge so then I'll turn over Leroy okay
Thank You Kyle it is my pleasure to be back here with you this afternoon and it's also my pleasure to tell you we've had another very good 24 hours in space. The all of the mplm operations went extremely smoothly the crew continues to be ahead of the timeline and pretty much every activity that they're executing on board and of course same thing with the team on the ground the spacewalk is tomorrow of course and we look forward to that and so the crew is finishing it up they'll do their final normal evening before spacewalk kind of preparations on.
board right now in the MMT today was it

was a kind of a big day for us we had a
couple of more significant items to
disposition and then we course got our
overall status in progress of as we
normally do where the plus one day is
concerned the the space station program
did review that in the I am empty this
morning and they brought in the entire
list of activities that they would like
to complete in a plus one day that list
will change the iterate on that but
suffice it to say it is a is a
significant list of activities and it's
it's very clear to see that it will not be a problem for us to keep the crew busy and doing very productive and useful and much-needed work on the station so we reviewed the cryogenics consumables from a shuttle standpoint and with cryo h to be the limiting consumable we are currently a one-day six hours of margin and that margin is expected to continue to grow somewhere in the order of one to two hours a day for the remainder of the dock period so we went around the room and talked to each one of the of the projects and elements and the members of the mission
management team and reviewed the plus one day recommendation and every one was was to add a day I personally didn't have any problem seeing that this is exactly the right thing to do on this mission there's a lot of good work that we can help the space station program with if we had more time to give them we probably would do that as well and so we proved the one the plus one day and so we're currently at thirteen plus zero plus two days is is our mission as it stands today and I expect to have somewhere between six and eight hours of
margin above that by about this time
tomorrow the other item that we talked a lot about was the DAT results the damage assessment team came in and gave us their results and they only had five items a total of five items on the orbiter that they were reviewing and four of those items are associated with blankets and they're very very minor items the one item the one other item was a tile damage site and it was relatively minor also and so they were able to to recommend that we do not need any focused inspection when I was here
yesterday I think I told you that we have the leading edge support system

team the wing leading edge team that is to say the folks that worried about the

wind leading edge and those kept all of the RCC

the things that we inspect on flight day

two they have no issues and so while we did not have our final overall

did not have our final overall

assessment of all of the TPS and the MMT

today I anticipate we'll do that

tomorrow and I'm anticipating no issues

but in the meantime we did approve the

decision for no focused inspection so
there will be no folks focused

00:04:16,160 --> 00:04:20,880
inspection needed and so that's really

00:04:18,108 --> 00:04:22,769
good news and obviously that

00:04:20,879 --> 00:04:32,340
is something that the mission ops team

00:04:22,769 --> 00:04:30,000
well then can can otherwise use that

00:04:24,930 --> 00:04:32,340
time on board the the thing I'd like to

00:04:30,000 --> 00:04:34,259
say I guess at this point is when you

00:04:32,339 --> 00:04:36,750
look at the performance of the vehicle

00:04:34,259 --> 00:04:39,899
to include really all of the STS

00:04:36,750 --> 00:04:42,930
elements on this mission ET 138 our

00:04:39,849 --> 00:04:46,199
final tank and all of the work that has

00:04:42,930 --> 00:04:48,949
gone into the work that we've done on

00:04:46,199 --> 00:04:51,990
the external tank to preclude the

00:04:48,949 --> 00:04:53,819
generation of debris and if you look at

00:04:51,990 --> 00:04:57,750
sort of the proof in the pudding now the
vehicle Atlantis on orbit and the the minimal damage almost can't even say minimal damage because it's it's almost non-existent damage to only have one sight on the on the underside tiles that has any kind of indication at all and in and of itself in his extremely minor I think speaks volumes for the work that this team has done in the last several years and we have been tireless and very committed at ensuring that we continued to improve to evolve we continued to learn and we continued to be determined that each and every
flight was going to be safer than the

next flight and we were very determined
to finish strong and I think at least

for the launch asset and orbit insertion

portion of this mission the performance

itself of the vehicle the systems on

on-orbit now and as well as the teams on

the ground I think speaks volumes for

itself and so a very hearty

congratulations was in order at the MMT

and and so that's some of what I
talked to the team about today I wanted

them to pause and think about all of the

hard work that they put into these
systems in the last several years and
they can feel very very proud of the
performance of this vehicle so with that
we did review a couple other items in
the MMT the SRBs at the Cape they were
experiencing some weather in Florida and
I look out and I see some folks who know
exactly what
talking about the we are having some
rain and some Lightning and so that
delays our operations the slip
operations as well as leading on to open
assessment of the boosters so all of
that has been delayed about a day it was
reported that it's still possible that

00:06:51,149 --> 00:06:55,560 we might get the SRB video data from the

00:06:53,968 --> 00:06:57,300 Boosters sometime tomorrow and of course

00:06:55,560 --> 00:07:00,389 if we do then then we bring that and

00:06:57,300 --> 00:07:01,740 process it and in Kyle and the public

00:07:00,389 --> 00:07:03,658 affairs team will have that available to

00:07:01,740 --> 00:07:05,579 you as soon as they're able to to

00:07:03,658 --> 00:07:07,709 catalogue all that information and get

00:07:05,579 --> 00:07:09,718 it out to you so we're anxious to see it

00:07:07,709 --> 00:07:11,068 and we know that you all are anxious to

00:07:09,718 --> 00:07:13,589 see it as well and get that to you just

00:07:11,069 --> 00:07:15,120 as soon as we can but just a little bit

00:07:13,589 --> 00:07:18,329 of delay there because of because of

00:07:15,120 --> 00:07:20,278 weather I'm much happier to delay

00:07:18,329 --> 00:07:25,889 slip-ups due to weather than then launch
any day so in the area of systems and
just kind of other items we talk about
GPC 3 a little bit and I told you that I
thought that that was going to be a
switch T's kind of item and it turns out
the team brought up the GPC they did a
they did a really just to say they
essentially rebooted it dumped it looked
at all the error logs looked at all the
data and GPC 3 is perfectly healthy
there's nothing wrong with it we don't
consider it an anomaly we're not
tracking it as an anomaly it was a it
was a it was a switch T's item and so
that one's cleared the when

we took the mplm out of the bay there

was a one micro switch on one of the

payload retention latch retention latch

mechanisms and it was a micro switch a

on perla 3 failed to indicate open when

in fact the latch was open and that's a

redundant micro switch there's no

intended use for that micro switch or

that aspect of the latch system for the

remainder of the mission it won't impact

anything when we go to put the the mplm

back in the payload Bay in fact even if

for some far-out contingency reason we
want to do and take it back out of the payload.

if we had a problem with the other micro switch.

the perturbations during rendezvous and docking was playing into that.

and the perturbations during rendezvous and docking was playing into that in fact.

essentially moved the vehicles enough such that there's no issue with the conjunction whatsoever so we don't have

conjunction whatsoever so we don't have
a conjunction anymore

00:09:07,960 --> 00:09:11,980 it's it's off of our radar screen in

00:09:10,779 --> 00:09:15,610 terms of anything that we need to go

00:09:11,980 --> 00:09:18,519 work or worry about for for tomorrow so

00:09:15,610 --> 00:09:19,750 in summary as I said the the crew on

00:09:18,519 --> 00:09:21,429 orbit the team on the ground are

00:09:19,750 --> 00:09:22,840 continuing to perform at a very high

00:09:21,429 --> 00:09:24,669 level I couldn't be more pleased in

00:09:22,840 --> 00:09:27,850 terms of the progress of the mission so

00:09:24,669 --> 00:09:29,649 far and the results and of course

00:09:27,850 --> 00:09:35,139 the performance of all of the hardware

00:09:29,649 --> 00:09:35,139 and the systems in the vehicle is again

00:09:31,840 --> 00:09:37,060 a huge tribute to the team around the

00:09:35,139 --> 00:09:39,189 country that has worked so hard on these

00:09:37,059 --> 00:09:45,489 vehicles during the course of this
program the two items that we talked about from the MMT the two major items of course we approve the +1 day and there's no focused inspection required and so with that we are looking forward to the spacewalk tomorrow and another great great day in orbit so I'd be happy to answer any questions ok as usual we'll start here and then go out to the other centers and phone bridge and you'll have to come up to the microphone so everybody out on the network and hear you and we'll start with mark oh thank you mark Errol for Aviation Week I think
I can add but one day is probably all

gina sincerely ABC News so what will you

do the crew do with that extra day I

mean where they're already backed up as

it was what will happen on that day gina

they were not backed up in fact they've

been ahead of the timeline of course we

haven't really started the transfer

activities in earnest we just now had to

impale him onboard the station we have

the hatch open we had the crew beginning

to work those the preliminary aspects of
the transfers from the mplm we had done

several hours of mid-deck transfer by this time

by the time of the MMT today but there are additional

unstow unpack and then put in the right place on station kind of activities that will be very helpful for the space

station they have a couple of systems items that they're going to ask for some help working they have their constituents analyzer that's had a failure and they're gonna ask for some help working on that and in
fact we have an entire list most of it

is in space station systems kind of

language that I'm not as well-versed in

as some other people are but we can

certainly publish that for folks and

show you the kinds of things that we're

planning to work on but as I talked

about yesterday

it's certainly some some some unpacking

stowage on the station side items and

and set up in configuration of some of

the cargo that we're bringing up it's

certainly some some systems some of the

smaller systems but certainly in any

case items if they want to work off in
the near term in addition to some general jobs are items on the space station that they could use some help with before our four-person crew leaves so they had some 70 items in total and so they are off prioritizing that list with the Mission Operations team and the crew onboard and by the time we get to the point where those things would be implemented we'll have a very good prioritized list and as I was yesterday I'm I'm even more confident today if that's possible that we won't have any trouble at all keeping our crew busy
Phillips loss with NASA Space Flight

comm just to follow Mark's question a little bit

how closely would you get in in terms of car margins to how close would you approach to an additional day or are you expecting to sort of stabilize at some point what I expect is will end up toward the end of the dock mission

somewhere just maybe above a half of a day so we're not going to be anywhere near being able to go an additional day

you know between now and when we undock

and so I feel very fortunate we were
able to get this day it required us to launch on time essentially on the it's a launch attempt it required us to have our power predictions be pretty much right down the line in terms of what we were expecting and as you can see we knew we were going to be close to a day and given that we're into our fourth day third or fourth day on orbit and we're only six hours above that the predicts were pretty good so I don't expect much more than about another half a day by the time we undock maybe slightly more than that
thanks and then for the end emission

329 00:13:40,330 --> 00:13:44,139 opportunities on the 21st

330 00:13:42,190 --> 00:13:46,120 do you know looking ahead might be

331 00:13:44,139 --> 00:13:47,080 looking at a little bit too far but do

332 00:13:46,120 --> 00:13:49,210 you know if there's going to be any

333 00:13:47,080 --> 00:13:51,070 orbit adjust that you'd need to do to

334 00:13:49,210 --> 00:13:53,139 bring in like cross-range or anything

335 00:13:51,070 --> 00:13:55,870 like that at a Kennedy preliminarily

336 00:13:53,139 --> 00:13:57,460 there isn't but we'll let the flight

337 00:13:55,870 --> 00:13:59,649 dynamics team evaluate that over the

338 00:13:57,460 --> 00:14:01,790 course of the next week I can tell you

339 00:13:59,649 --> 00:14:05,769 that the first opportunity on the 24 on

340 00:14:01,790 --> 00:14:09,190 the 21st is just a few minutes before 6

341 00:14:05,769 --> 00:14:10,809 a.m. Eastern Time and at 4 Kennedy Space

342 00:14:09,190 --> 00:14:13,060 Center Landing first opportunity and
that would be I think it's somewhere on

the order of 40 minutes before sunrise

and there will be a second opportunity

that day as well and neither of those I

think at this time we think we need an

orbiter just to bring in and across

range is good thanks yeah David Hirsh

with NHK could you in practical terms

give an idea of why the cryogenics is a

constraining factor when considering

adding a day and how you do your

calculations sure I'd be happy to

cryogenics of course the consumable that

we use to provide power basically a
reactants that allow the fuel cell to run and the fuel cells provide power to the to the buses on orbit for the shuttle power systems the they are consumable we have other consumables we have the lie of the co2 scrubbing consumable we have in - we have Bo - in this case we have h2 is the limiting consumable and the cryogenics and so we know how much power therefore reactants required to generate that power we need for the systems that we plan to have operating for the remainder of our time on over
or docked and so we can compute exactly how much reactants we're going to need and when we run that out to include the use of the plus two days at the end of the mission so we were at twelve plus zero plus two that cryogenic calculation the consumables calculation assumes that we have those two days of what as well of course because we need to have those two days in the bank and so it's just a pure straight consumables calculation based on if you think about a spreadsheet that shows you which systems are powered on when and for hot water
duration and what their kilowatt hour

386
00:16:04,539 --> 00:16:09,969
requirements are and then have that for

387
00:16:07,929 --> 00:16:11,588
each day of the mission and then it's

388
00:16:09,970 --> 00:16:13,360
simply a matter of calculating that the

389
00:16:11,589 --> 00:16:18,490
cryogenics required to generate that

390
00:16:13,360 --> 00:16:20,589
much power in the fuel cells Danberg on

391
00:16:18,490 --> 00:16:22,720
with USA Today you talked a little bit

392
00:16:20,589 --> 00:16:24,070
about what orbital adjustment may or may

393
00:16:22,720 --> 00:16:25,060
not be needed for the extra day could

394
00:16:24,070 --> 00:16:26,709
you just go a little more detail about

395
00:16:25,059 --> 00:16:28,838
what sort of planning takes place now

396
00:16:26,708 --> 00:16:30,189
give it an extra day is it already

397
00:16:28,839 --> 00:16:31,510
mostly done and you just have to fill in

398
00:16:30,190 --> 00:16:34,180
some blanks or is there a bit of a

399
00:16:31,509 --> 00:16:37,360
scramble to account for all that sure
it's well won't be a scramble because the teams plan for this eventualities in this case this is something we were hoping to be able to do before we launch
so what you'll see happen now is the flight planners will generate the plus
one day flight plan this day will be added after what what was and what will remain fly day eight in this flight plan and you'll see a few items move ahead of that and a few items moving behind it as a function of which tasks on the space station program list that we implement on which days in exactly what the
priority of those are so there will be

some puts and takes to that there will be some iteration of that but certainly

the initial publication of the quote

plus one day timeline is I'd be surprised if not already being reviewed by the flight control team for for uplink to the crew for consideration so again it'll be iterated on but we iterate on the nominal timeline every day and so it's really not a big Delta for the team in particular in this case they had an expectation it was coming so they were already looking
ahead at which days we would slightly
move which things around which things
might move ahead of the what was Friday
in which things might go on the other
side of it so it's a fairly
straightforward thing that team is very
well versed in doing this and and so it
should go about like that over the
course of the next couple days
Eric Berger with the Houston Chronicle
you've used the word flawless a couple
times to talk about this mission and
really from the launch day forward it's
just been really smooth you had the
lightning strike issue that you were

00:18:16,730 --> 00:18:20,900
able to investigate very quickly and

00:18:18,440 --> 00:18:23,240
clear that when in the past that's taken

00:18:20,900 --> 00:18:24,800
more time and you had a clean launch and

00:18:23,240 --> 00:18:27,170
it just seems like the shuttle program

00:18:24,799 --> 00:18:29,710
is really a well-oiled machine right now

00:18:27,170 --> 00:18:31,820
it looks like that from the outside

00:18:29,710 --> 00:18:35,420
maybe you could talk a little bit about

00:18:31,819 --> 00:18:37,519
the mood among your team or among the

00:18:35,420 --> 00:18:39,259
you know the people a lot of whom are

00:18:37,519 --> 00:18:41,660
going to be losing their jobs is this

00:18:39,259 --> 00:18:43,879
bittersweet that you sort of built the

00:18:41,660 --> 00:18:45,590
program up to this point where it it's

00:18:43,880 --> 00:18:46,760
really moving along very efficiently

00:18:45,589 --> 00:18:49,129
you're getting the cleanest vehicles
ever you know you're doing these long complex missions and you know you forming them like and outside observers

it looks easy to us talk about the mood

of people sort of dealing with those two situations okay sure

it is true of course just on launch a day alone we had the the weather that we

were challenged with we had to Cox vent

hood had told us at 31 seconds and the

team did an outstanding job working

through that and and allowing us to have

enough launch window and performance

remaining to be able to go fly Friday we
had several balloon issues that as it turns out many more than then we've had on some previous launch attempts every single item while in and of itself may not have been all that significant could have potentially kept us from launching on Friday but the team worked through all these things seamlessly and that continues to be the case through our time on orbit here as we sit here in flight day for the the team is has been I mentioned very committed to this idea of finishing strong and it's not just a mantra for us it if you look at the
performance of this vehicle and of the

previous several vehicles you can see

that it's proof in the pudding that

we've been putting our nose to the

grindstone and trying to make good on

our word of finishing strong and I think

maybe more importantly than then then

the the mood right now which is

certainly very much I cannot tell a

difference when I walk around the

control room line when I'm in the

mission management team and when we're

executing I cannot tell a difference in

that any of this is is going on relative

00:20:28,128 --> 00:20:33,528
to a last mission kind of scenario I

undoubtedly will be able to post will

stuff and and that is to be expected

these are we're all human beings and

there are aspects of our lives that that

that will affect us in ways that will be

in different for individuals but I think

again more importantly what I would say

is that this team has a tremendous

amount of momentum right now and our

intention is to to leverage that

momentum leverage the skill base that we

have leverage the lessons that we will

take away from the shuttle program and

play those things forward in a very big
pronounced way as we move forward and in the development of a new spacecraft and new rocket new capabilities and new systems and new infrastructure to go around that I feel very optimistic about our ability to do that the team is is obviously committed to the task at hand and that is the mission that we have on orbit right now but when we're done I think one of the things that is going to benefit the agency a great deal and benefit the nation is we're going to seed out this shuttle team into the other activities in the space community
whether it be commercial whether it be the things in internal to NASA that the agency has put forward as the next step for us to do and the overall agency vision having this shuttle team be seated out and and immersed in all of those activities I think is going to pay huge dividends to our ability to go forward and succeed on those respective endeavors I feel very strongly about that I know the team members are looking forward to that as well and I think that is gonna that is the thing that that's
on my mind when I'm not thinking about

the mission that we have in orbit right now so it's not on my mind very much

right now but it will be on my mind post will stop and it will be my intent to do

everything I can to help us take this team and push it out into the various aspects of the ongoing development

activities that we have both in and outside the agency and I think that is going to be a huge part of the reason

why we will succeed in those subsequent activities I mean thoughts with Reuters

I'm speaking out future systems can you
just give us a little inventory of what

557 00:23:14,250 --> 00:23:19,019 is what's available from shuttle program

558 00:23:17,039 --> 00:23:21,599 that you're not retiring that you're

559 00:23:19,019 --> 00:23:24,599 keeping for a possible use with a for

560 00:23:21,599 --> 00:23:26,129 the SLS and and also if the decision is

561 00:23:24,599 --> 00:23:28,529 made to go with the system like that and

562 00:23:26,130 --> 00:23:30,420 you're going to use these these um

563 00:23:28,529 --> 00:23:32,879 shuttle main engines does does that mean

564 00:23:30,420 --> 00:23:36,060 that you're going to restart production

565 00:23:32,880 --> 00:23:38,790 of tanks and where do you what do you

566 00:23:36,059 --> 00:23:43,379 see some of this migration from existing

567 00:23:38,789 --> 00:23:46,490 system to next generation thanks okay I

568 00:23:43,380 --> 00:23:51,480 mean it's very much a work in progress

569 00:23:46,490 --> 00:23:53,400 there are some items of the STS system

570 00:23:51,480 --> 00:23:56,339 you mentioned the spatial domain engines
that we envision being part of at least the initial phases of the future development programs and so all along that's one item that that we kind of anticipated might be used in next-generation vehicle development and so we've kind of planned for them to be to be preserved in that regard the Space Shuttle main engines and their associated ground support equipment and and spares and things of that nature now we have had to stop asking the vendors to make parts and spares and that kind of thing
but there's a lot of spatial domain

engine logistical support available to

us just as we know it today on the shelf

so to speak and so that's one area where

we're preserving and going to be able to

play forward the main engines in some

way shape or form there are other main

propulsion system elements subsystems

plumbing parts valves things of that

nature that we're anticipating will be

asked to to keep in a preserved state if

you will and so those items we're

continuing to build a spreadsheet for

all of those things in the booster world
obviously there's a lot of discussion about the next generation vehicles and the utilization of similar booster hardware and so similarly some of the things that we have that we use to process some of the booster hardware you know we're going to preserve until further notice and to the extent we're able to until things get more firmed up in terms of the architecture going forward so I can't give you an exact list today quite frankly because it is a moving target but there's a whole group of folks that are working on that it is
in fact what they are working on day and

614
00:25:59,319 --> 00:26:04,809
day out and they will be for the next

615
00:26:01,450 --> 00:26:06,190
several months and so in the meantime we

616
00:26:04,809 --> 00:26:08,169
have identified the things that we're

617
00:26:06,190 --> 00:26:10,809
absolutely not going to use going

618
00:26:08,170 --> 00:26:14,340
forward and those would be very shuttle

619
00:26:10,809 --> 00:26:17,349
in orbit or specific items that that

620
00:26:14,339 --> 00:26:18,369
you're mostly aware of already and if

621
00:26:17,349 --> 00:26:19,509
you think about things here at the

622
00:26:18,369 --> 00:26:22,589
Johnson Space Center that we're very

623
00:26:19,509 --> 00:26:26,019
shuttle orbiter and and

624
00:26:22,589 --> 00:26:28,309
orbiter specific if you will like

625
00:26:26,019 --> 00:26:30,109
simulators and

626
00:26:28,309 --> 00:26:31,309
Subsystem trainers and things that you

627
00:26:30,109 --> 00:26:33,939
would only use if you were going to
train somebody to fly the space show

obviously those things are being accessed and and we're trying to make the best use of those by getting them out to the academic world in some cases to industry in some cases to you

cases to industry in some cases to you

know areas where folks can do evaluation

and test and they can learn they can be used as learning instruments so it's a wide range it's a very very gangly topic

because the shuttle program is huge and

but to your specific question I hope

I've answered it with respect to some of the things that we think we are going to
be asked to continue to preserve and

we'll we'll know more about that in in

the next few months I think

thanks just one quick follow-up I think

with one of the pretty much press

conferences I'm sorry I can't remember

who was telling us this but there was a

letter or something that the shuttle

Atlantis was not to be dispensed the

barrel was pending a letter I don't

remember which way the action went but

what is the status of for Atlantis and

also I'm sorry I meant endeavour for

endeavour and also for Atlantis when it
returns as far as it being released to

the museums that they've been promised
to it is endeavour and there was some
discussion and some some requests back

and forth from headquarters for us to

not go beyond down Mission processing on

endeavour until we we had such memo I
don't think we've gotten that yet but I

think we've gotten word that we should

expect it and so we intend that we're
going to be able to go beyond on mission

processing and into the preparation for

the museum where endeavour is concerned

Atlantis of course will go into the
normal down mission processing it will

671
00:28:35,390 --> 00:28:40,790
be saved and then it'll go right into

672
00:28:37,509 --> 00:28:42,740
its preparation for exhibit at the

673
00:28:40,789 --> 00:28:44,059
Kennedy Space Center in the in the

674
00:28:42,740 --> 00:28:46,970
Visitor Center area that they have

675
00:28:44,059 --> 00:28:50,960
established there so that's the status

676
00:28:46,970 --> 00:28:53,200
of those vehicles and again I think at

677
00:28:50,960 --> 00:28:56,269
this point we're fully anticipating that

678
00:28:53,200 --> 00:28:58,279
once we get to the point of being at the

679
00:28:56,269 --> 00:28:59,990
end of down mission processing for 105

680
00:28:58,279 --> 00:29:02,299
we'll continue right on beyond that just

681
00:29:02,299 --> 00:29:06,769
as what it had originally been intent

682
00:29:06,769 --> 00:29:08,419
intended for us to do okay let's go to

683
00:29:08,420 --> 00:29:11,480
the Kennedy Space Center well we'll come

684
00:29:14,300
back bill if you want okay let's go to
KSC for I think there's one question or two down at the Kennedy Space Center.

one question this is Marsha Dunn of The Associated Press you mentioned and it's been pretty apparent that the crew has been running ahead of schedule almost since they got into orbit yet it's the smallest crew in decades for the shuttle.

I'm just wondering how you reconcile that how can four people be ahead of schedule when it usually takes a crew 6 or 7 I don't know. I am very happy about it obviously and it will require some some post mission
debriefing for us to totally put that story together of course in all seriousness Marsha part of the answer is

the mission design was done with

with the understanding that it would be four people versus six or seven so it's not as though in all of the activities that the four-person crew is doing on board you know they're doing everything literally that a six or seven person crew is doing that just isn't the case but at any rate I'm very happy about it and I guess the truth is I probably don't have to reconcile it but
we'll just take it as it is and and

we'll hope it continues through the rest

of the mission

anything else Marsha no that's it thank

you okay

let's see I think Todd are you on the

phone bridge from Florida today yes I am

thanks a lot Kyle

I was just wondering Leroy what your

thoughts are

as you approach what will be the last

DVA act in the shuttle era even though

it's being done by folks on from the

station it is the last EBA of the

00:30:28,579 --> 00:30:32,779
we'll just take it as it is and and

00:30:30,650 --> 00:30:35,200
we'll hope it continues through the rest

00:30:32,779 --> 00:30:35,200
of the mission

00:30:37,308 --> 00:30:44,690
anything else Marsha no that's it thank

00:30:43,700 --> 00:30:46,519
you okay

00:30:44,690 --> 00:30:50,899
let's see I think Todd are you on the

00:30:50,898 --> 00:30:55,329
phone bridge from Florida today yes I am

00:30:52,339 --> 00:30:57,259
I was just wondering Leroy what your

00:30:55,329 --> 00:31:00,619
thoughts are

00:30:57,259 --> 00:31:06,048
as you approach what will be the last

00:31:00,619 --> 00:31:08,388
DVA act in the shuttle era even though

00:31:06,048 --> 00:31:11,480
it's being done by folks on from the

00:31:08,388 --> 00:31:14,359
station it is the last EBA of the

00:31:11,480 --> 00:31:17,929
shuttle era and how far you guys have

728
00:31:14,359 --> 00:31:21,528
come since the beginning of station

729
00:31:17,929 --> 00:31:26,389
assembly and in fact preparation for the

730
00:31:21,528 --> 00:31:30,470
beginning this station assembly well

731
00:31:26,388 --> 00:31:33,829
Todd I similar to my thoughts and my

732
00:31:30,470 --> 00:31:35,720
sentiments as we we you know did the

733
00:31:33,829 --> 00:31:38,509
final launch and the final rendezvous

734
00:31:35,720 --> 00:31:44,360
and proximity operations and docking and

735
00:31:38,509 --> 00:31:46,749
the payload the mplm berthing tomorrow

736
00:31:44,359 --> 00:31:49,519
will be you know the final planned

737
00:31:46,749 --> 00:31:51,200
spacewalk that we do with an orbiter

738
00:31:49,519 --> 00:31:54,798
president albeit with the station crew

739
00:31:51,200 --> 00:31:57,048
as you mentioned I just continue to feel

740
00:31:54,798 --> 00:31:58,999
a great sense of accomplishment for this

741
00:31:57,048 --> 00:32:00,950
team and and that's what I tried to
reiterate and pass on to the team in the
mission management team today and in
that case it was reflecting on the
performance of the vehicle and and
there's many more things beyond that
that they should and our deserving of
feeling a great sense of accomplishment
for so that's my take on it and there
are no surprises here and again it's
it's a tribute to the team that that
were able to to execute in this fashion
and the vehicle performance has been as
good as it is because of the preparation
of the vehicles on the ground no doubt
and so you know we have come a long ways since we first started doing spacewalks in the Assembly of the space station and that's the other thing that I would say in terms of playing things forward from the shuttle program as we wind down the program there are a lot of lessons learned from the shuttle that I intend and I think the agency can get great benefit from as we move forward and so a lot of folks like to look back way way back before the shuttle first flew and talk about you know it was it was billed as a cheap routine frequent
access to low-earth orbit and to include

assembly of a space station and to

include some other things of course

those folks only knew what they knew

then they were at a certain place on a

learning curve with respect to operating

in low-earth orbit and nothing can be

taken away from them they were they were

making plans based on their best

experience and of course we know a lot

more now than then what we did 135

flights ago certainly than what we did

before STS 1 and we can talk about a lot

of different aspects of lessons learned
from the shuttle as we go forward I've

heard also some discussion over the

years about in other areas of
development you know we don't want to do

it like shuttle and I would I would my

comment to that is is primarily that

there's a lot to be learned from shuttle

and we ought to take the things that we

know and understand work well and we

ought to build on those things and and

that is absolutely I think what we

intend to do and for my party that that

would certainly be my focus is to take

as much of the benefit of what we

learned going forward it's not really
just about the shuttle it's about the capability that was provided you can talk about the operations of the shuttle you can talk about what we've learned in terms of operating the shuttle and operating around complex robotic and spacewalk operations at the Space Station you can talk about how we evolved this shuttle to use it not only as a platform for science for Space Lab and Space Lab etc but the way we evolved it to fly missions to to deploy satellites to capture satellites and repair them and redeploy them to to
assemble a space station the benefit

that we got in terms of the MIR docking

and the MIR missions that we did most of

which Atlantis did by the way there's a

whole realm of lessons that we have very

well documented and I think you know we

will absolutely get the greatest benefit

from those and that will be part of the

greatest benefit that the shuttle

provides going forward is as being able

to launch off of those of those lessons

learned and and being able to really

leverage that in new development of new

capability so finally Todd we certainly
have come a long way since the first spacewalk that we did in the station assembly mission it would take me much longer to go into the details of all of those areas but I hope I've answered your question in terms of in general kind of the sentiment in that regard yeah thanks very much Leroy that's all for Miko okay thanks we're back here for any Wrath House bill do you still have a question okay anybody else all right a couple of quick programming notes the crew heads to bed again about six o'clock today we'll start the flight day
highlights package at 8:00 p.m. central

and on the hour every hour as usual

we'll also replay the launching our

dream space shuttle program video if you

haven't seen that that'll air at 10 p.m.

Central Time and of course the lone

planned spacewalk that Leroy outlined

for you begins about 7:45 a.m. tomorrow

and it's a six and a half hour planned

spacewalk and that will be followed by a

mission status briefing following the

spacewalk with the flight director on

the station side and EBA officer to
detail what happened
during the EBA that's at 3:30 tomorrow
afternoon and of course all that's on
the television schedule and we're
working feverishly to build a new TV
schedule with the extra day added into
it that will be revision II so look for
that either late tonight or first thing
in the morning with that well thankfully
right we'll be back later in the flight
with another mmt briefing when we get
closer to focused our late inspection
activities and thank everybody for
coming we'll head back to Mission
Control and back to space thanks hi I'm
Josh Keeley I'm Billy Eichner I'm enn
Chandan and I'm Bobby Jarvis we are the

team 3e comms on the final shuttle

mission and you're watching NASA TV

you