

NBC'S MEET THE PRESS

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SPEAKERS: TIM RUSSERT, HOST

MICHAEL GRIFFIN, NASA ADMINISTRATOR

EILEEN COLLINS, SPACE SHUTTLE COMMANDER

RUSSERT: This was the scene on Tuesday: All eyes on the Kennedy Space Center in Florida.

(BEGIN VIDEO CLIP)

ANNOUNCER: ... and lift-off of Space Shuttle Discovery, beginning America's new journey to the moon, Mars and beyond.

(END VIDEO CLIP)

RUSSERT: Just hours ago, a first in the 58-year history of Meet the Press, we spoke to Americans from space. I asked Discovery shuttle commander Eileen Collins what she hopes is achieved by the Discovery mission.

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COLLINS: I'm (inaudible) back in orbit after two and a half years. It's been a huge effort by all those people in the shuttle program and around the country, who have been working hard to get the shuttle back flying.

And I'd have to say, the second thing is getting the international space station resupplied and built. And we're working on that.

RUSSERT: You received a lot of kudos for your backflip maneuver. One long-time observer of NASA said, Big boys, move over, Eileen Collins has just done it.

COLLINS: I think you're talking about the rendezvous pitch-up (ph) maneuver we did on the third day of the flight before we got to the station. It's the first time it's ever been done. We exposed the underside of the shuttle to the space station crew members (inaudible) took pictures of our tiles. And that helped us ensure that we have a good, healthy underside to come home with.

RUSSERT: A question for all three of you. When you learned that foam had broken off the fuel tank again, what was your honest reaction? How fearful were you?

THOMAS: You know, Tim, it wasn't actually a question of fearful. We were disappointed. We were surprised too. We were very surprised. It was very unexpected.

The biggest emotion was one of disappointment, that all of that work that had been done to make sure the foam would not come off had failed to address one critical area where foam was liberated, and it was a great surprise.

We didn't feel it was a threat to us from the point of view our return home and our entry, because it didn't strike us. But nevertheless we're very, very troubled and very disappointed that such a thing could happen.

RUSSERT: Charles Camarda, the same question, any real fear?

CAMARDA: No, I concur with Andy, Tim. We're not fearful. We were surprised, not that little pieces of foam were coming off the tank, but such a large piece came off.

They had been planning to improve several of the sections of the PAL ramp. As you know, they only phased out or resprayed one small section of it. They're going back and they're taking a look at that.

We understand, I believe, what's causing the foam to come off, and they have a team on the ground that's working on it. And hopefully, when we come back, we'll be looking at what's in there.

THOMAS: Tim, if I could follow up on that, the area where the foam came off is an area that was not examined or decisions were made not to look at it and not to check the foam there.

I think we do need to address why was that decision made. Was that decision made out of a concern for damaging the foam? Was there a sound technical reason why they made that decision, or was it subject to cost pressures or schedule pressures? And I think we do need to address the question of why that area was not examined as part of the investigation as to how it came about.

RUSSERT: Commander Collins, are you confident that if for some reason Discovery could not return, that you could spend some time at the space station and that Atlantis could safely come rescue you?

COLLINS: Well, we configured this flight for contingencies such as the seven of our crew members staying on the station. We have brought enough supplies to do that for a short period of time. We can't do that forever.

Now, the situation we had, Atlantis could be launched to bring us back home, but you still have to address the problem of the foam that has fallen off this specific area of the tank that had not been fixed.

COLLINS: And I do want to say -- you know, I'm going to put myself in the middle of this, but I knew that this area of the PAL ramp had not been fixed. We made a decision not to work on that. They did something called non-destructive inspection and looked at this PAL ramp area and did not see any voids or any imperfections underneath. So we didn't think there was going to be any problems with the PAL ramp, so we decided not to fix it and fly.

And again, I was also surprised when I saw the foam fall off, because I was not expecting that to happen.

So we're learning. We're going to learn. We're going to continue to press on. And I do want to say that space exploration's important, so we're going to lick this problem and keep on going.

RUSSERT: A question for all of you. Planet Earth in the Milky Way galaxy, Milky Way just one of 100 billion galaxies. Do any of you have any doubt that there's intelligent life beyond earth?

THOMAS: Well, Tim, you're quite right. The universe is a vast ocean, and we are barely wetting our feet in the beach of that ocean. There are huge distances out there. The immensity is almost unimaginable.

Given that, I would say it's highly likely that there's life somewhere out there in some form, probably a form that's not even recognizable to us.

I'm quick to point out that doesn't mean that they're visiting us in UFOs, because I don't believe that to be the case.

But I do believe that out there, deep in the universe somewhere, there may indeed be other sentient life.

RUSSERT: Charles Camarda, same question, intelligent life beyond Earth?

CAMARDA: I would say probably odds are there is intelligent life out there. I think that's one of the reasons why people choose to explore space. That's why we go into space, to explore the unknown.

And it would be great if we could discover that there is life on another planet, and we're working on it. And that's why we're going to the moon and to Mars.

RUSSERT: Eileen Collins, intelligent life beyond Earth? COLLINS: I believe we need to keep on exploring. We're just taking baby steps here with the space shuttle and the space station. We're going to go back to the moon, as part of our country's plan is to get people back to the moon, back onto Mars. We're going to get out there and find out.

I also do believe that. I think it would be kind of unimaginable that, you know, we'd really be alone in this universe. I think that, you know, probably not our generation but future generations of people on Earth will find intelligent life.

RUSSERT: Eileen Collins, you're from Elmira. You have a Buffalo Bills banner up there with you?

COLLINS: I am a fan, that's for sure, but I was limited in the amount of things that I could bring up. So I think what I did was bring up a picture of my daughter's school class.

RUSSERT: All right, all of you, I think you'd -- wave to your families right now. Your husband, Pat, and children, Bridget and Luke; Andy Thomas, your wife, Shannon; Charles Camarda, your wife, Melin (ph), your kids. Let's say hello to all of them today. And we thank you for your bravery.

COLLINS: Thank you very much. And we miss our families. We love them. And we're looking forward to be home here in over a week. Thanks.

RUSSERT: And now, back on Earth, here in Washington is the administrator of NASA, Dr. Michael Griffin.

Welcome to Meet the Press.

GRIFFIN: Thanks, Tim. It's a pleasure to be here.

RUSSERT: The euphoria on Tuesday after the lift-off, and then some concern. And let me show you why. This is the picture. All the world held their breath as we can watch a piece of foam peeling off the fuel tank, and it's quite a size, close to a pound.

Which led to stories all across the country like this: When a piece of insulating foam broke off the Shuttle Discovery's external fuel tank during ascent this week, it not only raised questions about the safety of future shuttle flights, but also called into question the competence and engineering judgment of NASA. Had it broken off 40 seconds earlier, as the foam that doomed the Columbia did, it could have hit the orbiter and poked a hole in the shuttle's fragile protective skin.

Were we just plain lucky?

GRIFFIN: Well, certainly we were lucky. If it had broken off earlier and if it had followed a different trajectory, it could have hit the orbiter, as any piece of foam could, and could have done some damage. That's why we struggled very hard over the last two and a half years to eliminate that problem. We almost got all of it. Almost all of the fixes made to the external tank over that last two and a half years worked, but in three or four spots we didn't get it.

RUSSERT: You heard the astronauts say that they were disappointed, surprised. You heard Andy Thomas say that perhaps it was cost pressures. You heard Eileen Collins say that there was a non-destructive inspection. What was that?

GRIFFIN: Well, a non-destructive inspection is when you use radiographic, if you will, X-ray our other methods, to examine a particular area or a particular thing without tearing it apart to do so. Because I'm sure you appreciate if we tear it apart to verify that it was good, then we have to put a new one on and now we don't know if that's good.

And so we did do an NDI, non-destructive inspection, on the PAL ramps and did not find any faults or voids, and therefore elected to leave them alone.

The concern in that particular area is that that's one of the areas remaining where we've not been yet able to figure out a way to apply the foam robotically -- automatic spray-on techniques that have very little variance.

GRIFFIN: In the areas where we did that, the tank held up very well. Where there's a hand application, it's always a question.

But we did look at it, and our judgment at the time was that it was OK. As everyone has said without any attempt to hide it, we goofed on that one.

RUSSERT: The task force established by NASA to monitor the agency's safety improvements after the 2003 disaster concluded on June 28th, about a month ago, that the agency, quote, did not meet the requirements of a team of accident investigators; that the agency, quote, eliminate all debris shedding.

It noted pointedly that the external fuel tank attached by metal struts to the shuttle during its violent launch, quote, still shreds debris that could potentially cripple an orbiter.

Having gotten that report from the task force, why take a chance?

GRIFFIN: Well, I think you have to look at the literal words of the accident investigation board, the Columbia accident investigation board, and the literal words in that report, which were to eliminate all debris shedding from the tank.

And then the independent task group, the Stafford-Covey Return-To-Flight Task Group, which I'll just call the task group after this -- the task group was given a very strict charter: evaluate how well NASA does in meeting the exact words and exact recommendations of the accident investigation board.

We have not -- and I have said and others have said -- we cannot eliminate all debris from coming off of the tank. So our more realistic goal became that of reducing the size and nature of the debris to very small particles.

We thought we had accomplished that. We really did. And so when Andy and Eileen and Charlie said we were surprised -- well, count me among them. I was surprised to see a large chunk of foam come off the tank. I think everyone was.

RUSSERT: When you make a decision like that, how much risk is acceptable in your calculation?

GRIFFIN: Well, we had calculated as best we could -- and, again, we didn't get it right -- we had calculated that the risk of damage due to foam coming off the tank was no higher than other risks we have to accept in space flight.

Let me give you a couple of examples.

There is some probability, as with any turbo machinery -- a large jet engine or a rocket engine or anything like that -- there is some probability that the turbines internal to the shuttle main engines will shed a blade and blow up an engine. We don't expect it, but there is some probability that can occur.

There is some probability, one in a couple of hundred, that a piece of orbital debris or a micrometeorite will strike the shuttle or the station while they are in orbit right now and destroy them. It's a bit of a dangerous environment.

When we reduce the risk of foam shedding down to a level where it's comparable to the other risks that we must assume to do space flight at all, then we say, OK, we've done enough.

Am I -- does that give you a feel for it?

RUSSERT: Yes. Let me pursue that a little bit and, again, cite a New York Times editorial.

If the foam had hit the orbiter and made a hole in the shuttle, the astronauts would have been in grave peril. They would have been unable to fly back through Earth's atmosphere, lest superheated gases penetrate the hole and destroy the shuttle, as happened to Columbia.

They would have been able to try to repair the damage with the tools and materials they are scheduled to test on this flight, but nobody considers those repair kits ready for real use.

Alternatively, the astronauts could have taken refuge on the space station and waited to be rescued by another shuttle, which would itself face a risk of foam damage.

When will you be absolutely confident that it is safe for Discovery to return home?

GRIFFIN: When Eileen has Discovery stopped on the runway and is ready to be towed off. There is no elimination of all risk. There is no absolute confidence.

GRIFFIN: One of the first lessons -- I happen to be a flight instructor as a spare-time hobby, although I don't have much of that anymore. One of the first lessons we teach a student pilot just starting out in the game that Eileen has reached the pinnacle of is that no flight is over until the airplane is tied down and the engine is turned off.

RUSSERT: When will you make a decision that you're going to try to bring Discovery home?

GRIFFIN: Well, right now, as I've said and as has been said several times, Discovery is the cleanest bird we've had on orbit in recent memory. So we think Discovery is safe to bring home, so that's not a decision.

We have approximately one-sixth the number of scars on this orbiter, by actual count, as compared to the average over the last 113 flights before Discovery. So almost everything we did to fix the tank worked.

We're working a couple of issues on Discovery right now, but we have -- we think we have work-arounds (ph). We think Discovery is safe to bring home.

RUSSERT: What would happen, God forbid, if you made a decision that it was not? Take us through that scenario.

GRIFFIN: Well, the scenario that we had worked out ahead of time was, as Eileen said earlier in her interview with you, they did bring extra food. We think we can sustain the folks on board the station for a couple of months, a little bit short of a couple of months, while we roll out Atlantis, which has been prepared for flight.

We would make the decision to launch Atlantis, rescue the crew. And if we actually thought Discovery was not safe to enter, we would put it on automatic entry and destroy it over an ocean.

GRIFFIN: But Atlantis could have that same foam problem?

RUSSERT: It would be a judgment we would have to make as to what we would do about the PAL ramp foam. Now, maybe we would simply take the foam off and put something else on. That's way down the road. We don't have, at this point, a plan for that. We did not expect this.

And I have to end this question by saying, again, we think Discovery is just fine.

GRIFFIN: The Russians have volunteered that they would use their Soyuz to help rescue our astronauts if need be, and yet there are now reports that the cosmonaut Russian outfits are different than the American astronauts and that they're not compatible.

Could the Russians help rescue, if need be?

GRIFFIN: I think there's some help that could be supplied. It's true that our suits are different, but I'm not sure that matters, strictly speaking, for launch and entry.

RUSSERT: There had been some debate, I understand, about the number of people to go up on the Discovery because, now with the crew of seven plus the two on the space station, we would have nine people on the space station. It had been recommended by some that only four go on this flight; in case of a rescue, it would be a lot easier.

Is that true, and why did you choose to send seven?

GRIFFIN: Well, it's surely true that if you have fewer people they're easier to rescue.

RUSSERT: Yes, but was there a debate as to limit the number?

GRIFFIN: I don't know if there was or not. I've been on this job for about three months, and the decision on crew size would have been made a couple of years ago.

But to illustrate the factors that would go into that, I don't know if you spend a lot of time watching the mission timeline unfold, but if you have, you've noticed that everyone's been quite busy. They are bringing new equipment up to the space station. They are taking old equipment and, frankly, trash off of the space station.

They've done considerable use of the robotic arm to -- this is again a test flight, the first of two test flights. They've made extensive use of the robotic arm to scan the bottom of Discovery. Everybody has been real busy.

If we had only chosen to fly four people we would have agreed to do a lot less. And if we agreed with ourselves that we were going to do a lot less, we wouldn't be able to accomplish all the things we really feel we need to accomplish with this mission.

RUSSERT: It has been announced that the shuttle has been grounded. How long do you think that grounding will last?

GRIFFIN: Grounding was a media term. What we said was we wouldn't fly another mission until we understand the PAL ramp foam and how to protect that from coming off again.

Right now we're focused on, you know, the inspections and analysis of Discovery -- as you said yourself, making sure that it's safe to enter.

We have convened what I've called a Tiger Team of exceptional engineers within the agency to begin looking at exactly the questions Andy raised and that Eileen raised: What did we miss? Why did we miss it?

RUSSERT: Were there cost and schedule pressures?

GRIFFIN: I'm sure that there were not, because we spent quite a lot of money, and we took all the time we needed to fix this orbiter

GRIFFIN: I absolutely believe that when folks did the non- destructive inspection that Eileen referred to, that a reasonable engineering decision was made, Let's leave it alone. We might make it worse instead of better.

Now, that decision in retrospect was clearly wrong, but I am certain it was not made out of schedule or cost pressure justifications.

RUSSERT: If you can solve the foam problem, how many more shuttle flights would you like between now and 2010?

GRIFFIN: We would like 19 or 20, because that would allow us to complete the international space station in accordance with our objectives and our obligation to our international partners, but also allow us a flight to be able to repair the Hubble. So we would like to get 19 or 20.

We'll get what we get. We're retiring the shuttle in 2010. The administration, NASA, have worked out an orderly plan to retire the shuttle and move on to its successor.

By the time we retire the shuttle, it will have been in service for nearly 30 years. That's a long time for something which is fundamentally an experimental vehicle. The shuttle has been a step along the road to allowing humans routine access to space. But it did not reach that goal; we need to keep at it.

RUSSERT: If, in fact, you cannot satisfactorily solve the foam problem, what then? Would we give the space station and control of it to the Russians and pull out of the project?

GRIFFIN: Well, I don't think we would just give it to the Russians and pull out of the project. I think we would clearly have to work with our partners to figure out a way to sustain the station until we could get a new vehicle in flight.

The way you posed the question really leaves me only one possible answer. If we cannot fix the foam, then we'll have to figure out a different path to sustain the space station until we can get a new vehicle.

RUSSERT: When will that be?

GRIFFIN: Well, we're currently, as a matter of fact, doing design studies on just such things right now. I don't have the answers for you today, but we are working vigorously on it.

RUSSERT: The new space vehicles that will be used for the moon and for Mars will be reconfigured so that the fuel tank will not be on the side but on the bottom?

GRIFFIN: I strongly doubt that NASA ever again will design a manned spacecraft that places the crew in a position where anything can fall on them.

RUSSERT: Mars and the moon. Gallup pollsters asked the American people about Mars and would they favor or oppose the United States setting aside money for such a project. Funding a manned mission to mars: favor, 40 percent; opposed, 58 percent.

It's now estimated that it would cost over \$200 billion between now and 2025. Fifty-eight percent of the Americans opposed. NASA has a large job ahead of itself to try to convince the American people that it is in their financial and fiscal interest to pursue Mars.

GRIFFIN: Well, when you poll and ask the question that way, you can get almost any answer you like. It's very close to those have you stopped beating your wife? questions. If I ask the question a different way, I might get a very different answer.

The way I would ask it is: NASA will spend about 5 percent or less of the money which is spent on national defense each year for the next 20 years. What would you like to see done with that money? Given that we're going to spend that money on the American space program, what would you like to see done with it? And then list various options: returning to the moon, eventually going to Mars, exploring the asteroids and other planets. Or would you rather that the United States space program be confined to lower earth orbit, as we have been for the last 30 years?

And I strongly suspect that if confronted with choices, if confronted with the knowledge that we're going to be spending money on space and confronted with choices about where we should spend that money, that those poll results would change dramatically.

RUSSERT: There may be debate about priority. Should you spend money in space at all or use it for domestic needs?

GRIFFIN: But the reality is that if we spent -- the average American spends less than 15 cents per day on the space program, less than \$60 per year on the space program. If you took all of that money, \$60 a day (sic) wouldn't get the average American through very many meals.

The space program is an investment in America's future. It's actually an investment in humanity's future, but it's important to me that America lead that way.

Now, as with all investments that have a great future return but a risky return, we can only invest -- we can only afford to invest a small portion of our national wealth in those things.

GRIFFIN: And that's fine. But we are only investing a small portion of our annual wealth.

The average American's tax bill every year is something close to \$10,000, about \$8,000 or so dollars. That's the average tax bill every year. Of that, you know, a little bit is spent for space, a very small amount.

RUSSERT: Do you think that the Chinese and the Russians will race us to Mars?

GRIFFIN: I don't think we're going to have a race, but I think what is very clear is that space will be explored, exploited, settled. Humans will not be confined to this planet forever.

And the question I always ask myself is, if I believe that that's true -- and I absolutely do -- which humans do we want to be there? I think obviously we want all humans to be there with us, but we don't want others to be there without us.

And if we, the United States, back away from space exploration, other people will be there and we won't. And I find that to be unacceptable alternative.

RUSSERT: The same question I asked the astronauts: Do you believe that there's intelligent life beyond Earth?

GRIFFIN: I think there must be. I would find it more surprising if, among 400 billion stars in this galaxy and 100 billion galaxies -- and this is only an average galaxy -- if among all those different places that we were the only evolved intelligent species, I would find that an incredibly remarkable circumstance.

RUSSERT; Dr. Michael Griffin, we thank you for joining us. And we hope and pray for the successful return of the Discovery crew.

GRIFFIN: Thank you, and as do we.