1
00:00:07,720 --> 00:00:10,300
\h Mike Ciannilli,Columbia project manager,NASA's Kennedy Space Center: Well recently NASA received

2
00:00:10,300 --> 00:00:17,190
\h the Sheriff's Department in Nacogdoches, Texas, spotting a large metallic object on the shores of Lake

3
00:00:17,190 --> 00:00:22,030
\h So we asked them for a picture. They sent the best photographic evidence they had. We reviewed it.

4
00:00:22,030 --> 00:00:24,410
\h We have a great team of engineers here at the space center.

5
00:00:24,410 --> 00:00:28,350
\h We reviewed the photographs, confirmed it is indeed a piece of Columbia,

6
00:00:28,350 --> 00:00:32,930
\h so now we are formulating a plan to go extract the piece from its current location,

7
00:00:32,930 --> 00:00:38,130
\h do it in a safe manner preserving the integrity of the piece and bring it home.

8
00:00:38,130 --> 00:00:42,350
\h The piece that was recovered was a cryogenic tank from the PRSD,

9
00:00:42,350 --> 00:00:45,200
\h the Power Reactant Storage Distribution System.

10
00:00:45,200 --> 00:00:50,950
\h As you can see on this model, the power reactant storage and distribution system is a series of,

11
00:00:50,950 --> 00:00:53,900
\h in Columbia's case, 18 tanks.

12
00:00:53,900 --> 00:01:00,460
\h We had a series of 10 tanks in the midbody of the vehicle and then we also had a pallet which we call th

13
00:01:00,460 --> 00:01:03,740

\h the Extended Duration Orbiter pallet, which consisted of an additional

14
00:01:03,740 --> 00:01:07,990
\h eight tank in the rear of the cargo bay of the shuttle.

15
00:01:07,990 --> 00:01:10,510
\h That allowed us to stay on orbit longer.

16
00:01:10,510 --> 00:01:15,340
\h STS-107 was a long-duration mission, so that pallet allowed us to stay on orbit

17
00:01:15,340 --> 00:01:18,660
\h operations longer and it's one of those tanks.

18
00:01:18,660 --> 00:01:20,510
\h We get many calls every single year.

19
00:01:20,510 --> 00:01:25,130
\h A majority of the calls do not turn out to be components of Columbia.

20
00:01:25,130 --> 00:01:30,690
\h We really appreciate the citizens that take the time to call us and we take each call very seriously.

21
00:01:30,690 --> 00:01:36,300
\h We ask for photographs. We'll analyze those photographs with the teams that are the experts in those s

22
00:01:36,300 --> 00:01:40,190
\h If it's determined to be a piece of Columbia or likely to be a piece of Columbia,

23
00:01:40,190 --> 00:01:43,860
\h we'll actually have the piece sent in for further study.

24
00:01:43,860 --> 00:01:48,380
\h And occasionally, on average once a month we get a phone call.

25
00:01:48,380 --> 00:01:53,650
\h Our current plan is to bring it back to KSC, however it's going to be a little difficult in this case.

26
00:01:53,650 --> 00:01:59,510
\h In this case it's resting on the shoreline, the new shoreline, of Lake Nacogdoches and with the water rec

27
00:01:59,510 --> 00:02:04,280
\h the ground around it is very soft, as you can imagine so we need to be a little innovative,

28
00:02:04,280 --> 00:02:07,130
\h a little creative, with how we're going to go actually get the piece.

29
00:02:07,130 --> 00:02:10,680
\h It's not accessible to vehicles at this current time with the current soil conditions.

30
00:02:10,680 --> 00:02:13,890
\h So we have to be a little creative and get out there and get the piece.

31
00:02:13,890 --> 00:02:18,130
\h We also want to preserve the integrity of the piece, so we have to be very careful with how we extract it,

32
00:02:18,130 --> 00:02:22,310
\h clean it up and remove it and then transport it to Kennedy Space Center.

33
00:02:22,310 --> 00:02:28,450
\h It's not hazardous at all. Our primary concern is the possibility of exposed sharp metal,

34
00:02:28,450 --> 00:02:30,490
\h so we certainly don't want anybody approaching it.

35
00:02:30,490 --> 00:02:35,490
\h Local authorities are watching over the tank for us and we don't want anybody to get hurt,

36
00:02:35,490 --> 00:02:39,800
\h but there's no hazardous commodities onboard the tank.

37
00:02:39,800 --> 00:02:43,560
\h We recovered approximately 40 percent of the vehicle,

38
00:02:43,560 --> 00:02:49,190

\h which is a very large percentage given the upper atmospheric dynamics of the accident.

39
00:02:49,190 --> 00:02:51,630
\h So we do have a large percentage of the vehicle. However,

40
00:02:51,630 --> 00:02:58,370
\h it's very hard for us to estimate how much is left in the field and pieces do continue to come in.

41
00:02:58,370 --> 00:03:03,030
\h We make a very strong effort to recover all of Columbia, ever since the accident.

42
00:03:03,030 --> 00:03:08,860
\h We have in a repository over 84,000 pieces of Columbia that are housed in the Vehicle Assembly Buildi

43
00:03:08,860 --> 00:03:11,290
\h They're part of a very extensive loan program,

44
00:03:11,290 --> 00:03:16,470
\h so education facilities and researchers around the country can request pieces for loan and use those

45
00:03:16,470 --> 00:03:22,920
\h pieces to continue research for more stronger spacecraft for future operations,

46
00:03:22,920 --> 00:03:27,380
\h and also as an educational platform for students to learn about failure analysis,

47
00:03:27,380 --> 00:03:31,390
\h science, engineering and physics in the upper atmosphere.

48
00:03:31,390 --> 00:03:36,460
\h So, much like the 107 mission was a mission of research, we like to continue and honor the legacy of