

**NASA, Manned Spacecraft Center, "Apollo 11 Technical Air-to-Ground Voice transcription," July 1969, pp. 317-19, 375-77, Apollo 11 Files, NASA Historical Reference Collection, NASA Headquarters, Washington, D.C.**

After eight years of all-out effort, nearly \$20 billion expended, and three astronauts' deaths, on 20 July 1969 *Apollo 11* landed on the Moon. The two astronauts who set foot on the surface, Neil A. Armstrong and Edwin E. Aldrin, called it in what later astronauts thought of as an understatement, "magnificent desolation." This document contains the radio transmissions of the landing and Armstrong's first venture out onto the Lunar surface. The "CC" in the transcript is Houston Mission Control, CDR is Neil Armstrong, and LMP is Buzz Aldrin.

04 06 45 52 LMP (EAGLE) 413 is in.

04 06 45 57 CC We copy you down, Eagle.

04 06 45 59 CDR (TRANQ) Houston, Tranquility Base here.

04 06 46 04 CDR (TRANQ) THE EAGLE HAS LANDED. ✓

04 06 46 06 CC Roger, Tranquility. We copy you on the ground. You got a bunch of guys about to turn blue. We're breathing again. Thanks a lot.

04 06 46 16 CDR (TRANQ) Thank you.

04 06 46 18 CC You're looking good here.

04 06 46 23 CDR (TRANQ) Okay. We're going to be busy for a minute.

04 06 46 25 LMP (TRANQ) MASTER ARM, ON. Take care of the ... I'll get this, ...

04 06 46 38 LMP (TRANQ) Very smooth touchdown.

04 06 46 52 LMP (TRANQ) ...

04 06 47 03 LMP (TRANQ) Okay. It looks like we're venting the oxidizer now.

04 06 47 06 CC Roger, Eagle. And you are STAY for - -

04 06 47 08 LMP (TRANQ) ...

04 06 47 09 CC - - T1. Over. Eagle, you are STAY for T1.

04 06 47 12 CDR (TRANQ) Roger. Understand, STAY for T1.

04 06 47 15 CC Roger. And we see you venting the OX.

04 06 47 20 LMP (TRANQ) Roger.

*when did it land  
check this name  
Frank on the moon  
I got a copy in  
didn't know*

*but Buzz Aldrin  
says it was  
Charles Bolden*

*Okay.*

*1315  
A 06  
C 1315  
M 1315*

04 06 47 36 LMP ... circuit breaker.  
(TRANQ)

04 06 48 10 LMP ... copy NOUN 60, NOUN 43. Over.  
(TRANQ)

04 06 48 13 CC Roger. We have it.

04 06 48 14 CMP Houston, how do you read Columbia on the high  
(COLUMBIA) gain?

04 06 48 17 CC Roger - -

04 06 48 18 LMP ...  
(TRANQ)

04 06 48 19 CC - - We read you five-by, Columbia. He has  
landed, Tranquility Base. Eagle is at Tranquil-  
ity. Over.

04 06 48 26 CMP Yes. I heard the whole thing.  
(COLUMBIA)

04 06 48 27 CC ... good show.

04 06 48 31 CMP Fantastic.  
(COLUMBIA)

04 06 48 32 LMP Engine STOP-RESET.  
(TRANQ)

04 06 48 58 CMP Houston, Columbia went UPTelemetry COMMAND,  
(COLUMBIA) RESET, to reacquire on the high gain.

04 06 49 02 CC Copy. Out.

04 06 49 39 CC Eagle, Houston. You loaded R2 wrong. We  
want 10254.

04 06 49 50 LMP Roger.  
(TRANQ)

04 06 50 28 LMP And do you want V horizontal 5515.2?  
(TRANQ)

04 06 50 32 CC That's affirmative.

04 06 50 59 LMP Like - AGS to PGNS align. Over.  
(TRANQ)

04 06 51 04 CC Say again?

04 06 51 08 LMP Like an AGS to PGNS align. Over.  
(TRANQ)

04 06 51 11 CC Roger. We're standing by for it.

04 06 51 41 LMP ... quantity ...  
(TRANQ)

04 06 51 45 CC Eagle, Houston. You are STAY for T2. Over.

04 06 51 50 CC Correction, you're - -

04 06 51 52 CDR Roger. STAY for T2. We thank you.  
(TRANQ)

04 06 51 54 CC Roger, sir.

04 06 53 37 CC Tranquility Base, Houston. We recommend you  
exit P12. Over.

04 06 55 16 CDR Hey, Houston, that may have seemed like a very  
(TRANQ) long final phase. The AUTO targeting was  
taking us right into a football-field size -  
football-field sized crater, with a large num-  
ber of big boulders and rocks for about ...  
one or two crater diameters around it, and it  
required a ... in P66 and flying manually over  
the rock field to find a reasonably good area.

04 06 55 49 CC Roger. We copy. It was beautiful from here,  
Tranquility. Over.

04 06 56 02 LMP We'll get to the details of what's around here,  
(TRANQ) but it looks like a collection of just about  
every variety of shape, angularity, granularity,  
about every variety of rock you could find.  
The colors - Well, it varies pretty much depend-  
ing on how you're looking relative to the zero-  
phase point. There doesn't appear to be too  
much of a general color at all. However, it  
looks as though some of the rocks and boulders,  
of which there are quite a few in the near area,  
it looks as though they're going to have some  
interesting colors to them. Over.

04 06 56 47 CC Roger. Copy. Sounds good to us, Tranquility.  
We'll let you press on through the simulated  
countdown, and we'll talk to you later. Over.

04 06 57 00 CDR Roger.  
(TRANQ)

04 13 18 14 CDR That's okay?  
(TRANQ)

04 13 18 15 LMP That's good. You've got plenty of room to your  
(TRANQ) left. It's a little close on the \*\*\*.

04 13 18 28 CDR How am I doing?  
(TRANQ)

04 13 18 29 LMP You're doing fine.  
(TRANQ)

04 13 18 51 LMP Okay. Do you want those bags?  
(TRANQ)

04 13 18 53 CDR Yes. Got it.  
(TRANQ)

04 13 19 16 CDR Okay. Houston, I'm on the porch.  
(TRANQ)

04 13 19 20 CC Roger, Neil.

04 13 19 36 LMP Okay. Stand by, Neil.  
(TRANQ)

04 13 19 37 CC Columbia, Columbia, this is Houston. One minute  
and 30 seconds to LOS. All systems GO. Over.

04 13 19 46 CMP Columbia. Thank you.  
(COLUMBIA)

04 13 19 47 LMP Stay where you are a minute, Neil.  
(TRANQ)

04 13 19 48 CDR Okay. Need a little slack?  
(TRANQ)

04 13 20 38 CDR You need more slack, Buzz?  
(TRANQ)

04 13 20 40 LMP No. Hold it just a minute.  
(TRANQ)

04 13 20 41 CDR Okay.  
(TRANQ)

04 13 20 56 LMP Okay. Everything's nice and straight in here.  
(TRANQ)

\*\*\* Three asterisks denote clipping of word and phrases.

04 13 20 58 CDR Okay. Can you pull the door open a little more?  
(TRANQ) *883 on The Combs*

04 13 21 00 LMP All right.  
(TRANQ)

04 12 21 03 CDR Okay.  
(TRANQ)

04 13 21 07 LMP Did you get the MESA out?  
(TRANQ)

04 13 21 09 CDR I'm going to pull it now.  
(TRANQ)

04 13 21 18 CDR Houston, the MESA came down all right.  
(TRANQ)

04 13 21 22 CC This is Houston. Roger. We copy. And we're  
standing by for your TV.

04 13 21 39 CDR Houston, this is Neil. Radio check.  
(TRANQ)

04 13 21 42 CC Neil, this is Houston. Loud and clear. Break.  
Break. Buzz, this is Houston. Radio check, and  
verify TV circuit breaker in.

04 13 21 54 LMP Roger, TV circuit breaker's in, and read you  
(TRANQ) five-square.

04 13 22 00 CC Roger. We're getting a picture on the TV.

04 13 22 09 LMP You got a good picture, huh?  
(TRANQ)

04 13 22 11 CC There's a great deal of contrast in it, and cur-  
rently it's upside-down on our monitor, but we can  
make out a fair amount of detail.

04 13 22 28 LMP Okay. Will you verify the position - the opening  
(TRANQ) I ought to have on the camera?

04 13 22 34 CC Stand by.

04 13 22 48 CC Okay. Neil, we can see you coming down the ladder  
now.

04 13 22 59 CDR Okay. I just checked getting back up to that first  
(TRANQ) step, Buzz. It's - not even collapsed too far, but  
it's adequate to get back up.

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check this name  
- Frank on the moon  
- 4 x 4 up in  
detour taking*

*but Buzz Aldrin  
says it was  
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*Handwritten scribbles and notes at the bottom right, including "A O C 13 5" and other illegible marks.*



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now.

04 13 22 59 CDR Okay. I just checked getting back up to that first  
(TRANQ) step, Buzz. It's - not even collapsed too far, but  
it's adequate to get back up.

04 13 23 10           CC           Roger. We copy.

04 13 23 11           CDR  
(TRANQ)       It takes a pretty good little jump. \*

04 13 23 25           CC           Buzz, this is Houston. F/2 - 1/160th second  
for shadow photography on the sequence camera.

04 13 23 35           LMP  
(TRANQ)       Okay.

04 13 23 38           CDR  
(TRANQ)       I'm at the foot of the ladder. The LM footpads  
are only depressed in the surface about 1 or  
2 inches, although the surface appears to be very,  
very fine grained, as you get close to it. It's  
almost like a powder. Down there, it's very fine.

04 13 23 13           CDR  
(TRANQ)       I'm going to step off the LM now. *9 42 on counter*

04 13 24 48           CDR  
(TRANQ)       THAT'S ONE SMALL STEP FOR MAN, ONE GIANT LEAP  
FOR MANKIND. *feet*

04 13 24 48           CDR  
(TRANQ)       And the - the surface is fine and powdery. I  
can - I can pick it up loosely with my toe.  
It does adhere in fine layers like powdered  
charcoal to the sole and sides of my boots. I  
only go in a small fraction of an inch, maybe an  
eighth of an inch, but I can see the footprints  
of my boots and the treads in the fine, sandy  
particles.

04 13 25 30           CC           Neil, this is Houston. We're copying.

04 13 25 45           CDR           There seems to be no difficulty in moving around  
as we suspected. It's even perhaps easier than  
the simulations at one-sixth g that we performed  
in the various simulations on the ground. It's  
actually no trouble to walk around. Okay. The  
descent engine did not leave a crater of any size.  
It has about 1 foot clearance on the ground.  
We're essentially on a very level place here. I  
can see some evidence of rays emanating from the  
descent engine, but a very insignificant amount.

04 13 26 54           CDR           Okay, Buzz, we ready to bring down the camera?

04 13 26 59           LMP           I'm all ready. I think it's been all squared away  
and in good shape.

04 13 27 03           CDR           Okay.