This dialog was furnished by Thomas Bennett, responsible for Quality Control at LAX.
Here is a schematic of LAX (found by Jeffrey Yu).

JY: The FAA uses the NATO phonetic alphabet to make letters and numbers easier to understand on the radio.
(These include "Alpha" for "A", "Yankee" for "Y", "Niner" for "9", etc.)
A whole list of these words can be found here.

TYPICAL TRANSMISSIONS FOR ARRIVALS AT LOS ANGELES TOWER

SWA111/112—Southwest One Eleven/Twelve
LC-2—Local Control Two (North Tower)
GC-2—Ground Control Two (North Ground)
CD—Clearance Delivery

SWA111	Los Angeles Tower, this is Southwest One Eleven five miles out on a visual approach to Runway Two Four Right.
DW: I assume he could be on other than “visual approach.” Would that be “instrument approach”? Others?	
DW: How did he know about “Runway Two Four Right”. Was that given to him by Tracon, by procedure, because he knew the airport, ...?	
Jeffrey Yu: I'm pretty sure that instrument and visual approach are the only two approaches possible. Instrument approach allows the pilot to land without aid from Air Traffic Control. Instrument approach is often used in poor visibility conditions.	
LC-2	Southwest One Eleven, Los Angeles Tower, wind two four zero at six, Runway Two Four Right, cleared to land.
SWA111	Cleared to land, Runway Two Four Right, Southwest One Eleven.
DW: Does the pilot echo all such instructions?	
JY: Yes, the pilot must repeat all instructions so that ATC can confirm the pilot knows and understands what ATC wants the pilot to do.	
LC-2	Southwest One Eleven, at the reverse high-speed, cross Runway Two Four Left, contact ground point six five.
DW: OK. He landed on two four Right and now he’s got to cross two four left. Are you telling him where to cross and at what speed? A lot of lingo in there. What’s “reverse high-speed” and “contact ground point six five”? Were there any options here, like a ground point six six?	

JY:
In the pdf link to the Airport Diagram above, SWA111 will have to cross Runway 24L by using the reverse high-speed.

"High-speed" here refers to a *high speed taxiway*, allowing an aircraft to leave the runway as fast as possible. The aircraft does not have to slow down much to make the turn. "Reverse," means that the taxiway in question is in the opposite direction SW111 is currently traveling (West to East on Runway 24R). That leaves only one option, and that is Taxiway Y, marked in the map.

"Contact ground point six five" refers to the frequencies for LAX ground control. If you note, on the Airport Diagram linked to at the top, the radio frequencies used to contact Ground Control (among others) are in the upper right. You can infer, then, that "point six five" is the frequency used by North Ground Control: in this case, 121.65.

SWA111	Cross the left, contact ground, Southwest One Eleven.

DW: I need to understand the “contact ground” statement here. In the next communication he contacts LA Ground. Is the point here just an affirmation to let LC-2 know that he’s about to contact Ground control? Does LC-2 tell GC-2 anything as a result of the above communication?

JY: SW111 was asked to contact Ground Control at frequency "point six five." He then confirms the change in radio frequency, and changes it as soon as possible. The following may be useful regarding this:

In the FAA's Aeronautical Information Manual, in chapter 4-2-3, section d states, "When advised by ATC to change frequencies, acknowledge the instruction. If you select the new frequency without an acknowledgment, the controller's workload is increased because there is no way of knowing whether you received the instruction or have had radio communications failure."

In section e of the same part, it also states, "When instructed by ATC to change frequencies, select the new frequency as soon as possible unless instructed to make the change at a specific time, fix, or altitude. A delay in making the change could result in an untimely receipt of important information."

Link to sections referenced:
http://www.faa.gov/airports_airtraffic/air_traffic/publications/ATpubs/AIM/Chap4/aim0402.html

SWA111	Los Angeles Ground, this is Southwest One Eleven, crossing Runway Two Four Left at Yankee for Gate Four Alpha.

DW: Yankee? Something to do with “ground point six five”?

JY: As stated earlier, ground point six five is a radio frequency. Yankee is marked Y on the Airport Diagram. The fact SW111 mentions the Yankee taxiway confirms the fact that the "reverse high-speed" mentioned earlier was indeed Taxiway Y.	
GC-2	Southwest One Eleven, Los Angeles Ground, taxi via Echo, Sierra, Delta to the gate, pass behind a heavy Boeing Seven-Forty-Seven at Delta Ten.
DW: I know he's headed for Gate 4 Alpha. But what are Echo, Sierra, Delta? Delta Ten?	
JY: Again, I'll refer to the Airport Diagram. From Taxiway Y, he goes on to Taxiway E (Echo), which runs alongside runway 24L. Moving East along Taxiway E, SW111 will encounter Taxiway S (Sierra) and will turn right. It will then make a quick left and turn into Taxiway D (Delta). Taxiway D runs alongside E on the east end of it. Delta 10 is marked as D10, which is perpendicular to D, and leads into the gates. In the Google Map I made, I have outlined the path SWA111 takes. Use it with the Airport Diagram to see where the plane goes.	
SWA111	Taxi via Echo, Sierra, Delta to the gate, pass behind the heavy at Delta Ten, Southwest One Eleven.

TYPICAL TRANSMISSIONS FOR DEPARTURES AT LOS ANGELES TOWER

SWA112	Los Angeles Clearance, this is SWA112 on Gate Four Alpha, requesting clearance to Seattle.
DW: So now the call number has changed from SWA11 to SWA112. I assume each flight has a unique call number.	
JY: Correct, each flight has its own unique flight number within the airline.	
CD	Southwest One Twelve, Los Angeles Clearance, cleared to the Seattle Airport via the Ventura Five Departure, San Marcos Transition, then as filed, maintain five thousand, departure frequency one two five point two, squawk four seven six six.
DW: I assume all this information comes from the paper strip. Is the Ventura Five Departure one of those arrows that Tony showed on the Departure pattern slides? What's the San Marcos Transition?	
DW: Can you tell me a bit about the departure frequency and squawk? Are those just radio settings?	
JY: A site with all the arrival and departure procedures for LAX can be found here: http://www.laartcc.org/airport_charts/KLAX Ventura Five is one of those procedures: http://www.laartcc.org/charts/LAX-DP-VTU5.PDF	

It's possible that they meant San Marcus mentioned in the Ventura Five pdf linked above.
(Therefore, SWA112 is cleared to go from Ventura marked in Ventura Five to San Marcus.)

The diagram is not to scale. I have made a Google Map using the Longitude and Latitude in the Ventura Five diagram to give you an idea of the air corridor the pilot has been cleared to fly.

JY: Departure frequency is the radio frequency used, in this case 125.2.
Squawk actually refers to the aircraft transponder. The transponder sends out a series of numbers allowing the air traffic controller to identify the craft on his radar screen. SWA112 will set his transponder to 4-7-6-6, and then send out that code. The craft that sends out code 4-7-6-6 on the radar can be identified as SWA112.
If you recall, the ground radar in the power point showed had no real identification features as to which plane is which.
The transponder essentially puts labels on each of the radar "blips"

Here is the related Wikipedia article for further reading.

SWA112	Four seven six six, Southwest One Twelve.
CD	Southwest One Twelve, readback correct, current ATIS Bravo.

DW: ATIS Bravo?

JY: I had to look up ATIS, and it seems that Wikipedia ended up being the easiest to understand.
http://en.wikipedia.org/wiki/Automatic_Terminal_Information_Service
The article is the only source I saw that explains the "Bravo" following ATIS.

In short, it is a channel with a pre-recorded voice that provides the pilot with basic information such as weather (visibility, windspeed, wind direction, etc.) It can also be used to notify the pilot of things such as runway closures and the like. ATIS exists so that Air Traffic Controllers don't always have to repeat such information to every pilot.
When information is changed, the change is reflected in the letter designation. In this case, ATIS "Bravo" means the information in ATIS has changed once. (from A to B)

SWA112	We'll get Bravo, Southwest One Twelve.
SWA112	Los Angeles Ground, this is Southwest One Twelve on Gate Four Alpha, requesting push-back for Seattle.

DW: I believe push-back means that the plane needs a ground vehicle to ferry it from the gate to the alleyway? I assume that it's completely up to the pilot to manage this.

JY: I don't know everything, so I had to look this one up too.

Wikipedia:

Pushbacks at busy [airports] are usually subject to controller clearance to facilitate ground movement on taxiways. Once clearance is obtained, the pilot will communicate with the pushback tractor driver (or a ground handler walking alongside the aircraft in some cases) to start the pushback. To [facilitate communication between the pilot and the driver], a headset may be connected near the nose gear.

Since the pilots cannot see what is behind the aircraft, *steering is done by the pushback truck driver and not by the pilots.*"

GC-2	Southwest One Twelve, Los Angeles Ground, Runway Two Four Left, wait for your company into Gate Two, then push.

DW: Need detail on “wait for your company into Gate Two”. Does GC2 want him to be towed from Gate Four Alpha to Gate 2? Maybe you could help with the gate designations? Why does one term have an “Alpha” and the other is just Gate 2?

JY: I can't for the life of me find Gate 2. The Terminal maps I have found show Gate 1 and it skips to Gate 3. The Terminal Maps I have found useful are here:
http://www.ifly.com/los-angeles-international-airport/terminal-map
http://www.nwa.com/travel/trave/airports/LAX.shtml

The Northwest Map fills in the blanks for Terminal 2 and the Regional Terminal that isn't connected to the Main Terminals at LAX.

Looking through the maps, you'll notice that some gates have letters and some don't. For example, Gate 1 in terminal 1 is followed by Gate 3A and 3B. It is rather arbitrary, which gates have letters, and I assume this is due to multiple terminal redesigns more than anything else.

SWA112	Wait for company into two then push, Southwest One Twelve.

DW: I assume “company” refers to whoever is responsible for the ground-vehicle.

JY: I assume that is correct.

SWA112	Ground, Southwest One Twelve’s at the top of Delta Eight, ready for taxi.

DW: It looks like the pilot is telling GC-2 that the ferrying is complete. I assume Delta Eight is a designation similar to the Delta Ten we saw earlier. How did SWA112 get it? [Sorry for sounding dense, but whenever a new term pops up, I assume the sender knows it from procedure, reads it from a map, sees it painted on the ground, or something. The origin of that information is important to me.]

JY: Right, like Delta 10, Delta 8 is taxiway D8, which can be found on the Airport Diagram east of D10. In real-life, these taxiways are also clearly labeled. I'd like to add "ready to taxi" means that the pilot is ready to taxi, or move the aircraft on the ground under its own power. (i.e. without the assistance of a vehicle, the "company" mentioned earlier)	
GC-2	Southwest One Twelve, wait for U S Air at Delta, then follow American on Echo for Runway Two Four Left.
SWA112	Wait for U S Air, then follow American, Southwest One Twelve.
DW: Did the LC-2 hear this transmission? If not, how did he know to contact 112 in the next one? Did a paper strip get passed to him?	
JY: I am pretty sure that only GC-2 heard this, as this is a confirmation statement. What I am not sure about is how the pilot knew to change channels. I assume that once he was on the runway, he changed to LC-2.	
LC-2	Southwest One Twelve, L A Tower, Runway Two Four Left, position and hold, traffic will cross downfield.
DW: I assume the traffic is other planes from Two Four Right crossing Two Four Left as SWA112 is in “position and hold” waiting for clearance.	
JY: Yes. Looking at the map, you notice that multiple taxiways cross Runway 24L, namely BB, AA, Z, Y (SWA111 crossed this at landing), and W.	
SWA112	Position and hold Runway Two Four Left, Southwest One Twelve.
LC-2	Southwest One Twelve, wind two five zero at four, Runway Two Four Left, cleared for takeoff.
SWA112	Cleared for takeoff, Southwest One Twelve.
LC-2	Southwest One Twelve, contact So Cal Departure, good day.
SWA112	Contact Departure, Southwest One Twelve, good day.
DW: With these two final messages, I assume the pilot is to contact TRACON?	
JY: That's right, Terminal Radar Approach Control (TRACON) is also known as Departure Control and Arrival Control.	

Notes

Jeff Yu, 06 Mar 2008
I have added information answering most of Prof. Wilczynski's questions.