



DARK RIDE

A MOBILE SOUND-ART PERFORMANCE BY RAFAEL LOZANO-HEMMER,
COMMISSIONED TO CELEBRATE LAUMEIER PARK'S 40TH ANNIVERSARY.

RAFAEL LOZANO-HEMMER

CONCEPT



“Dark Ride” is a sound-art performance, inside a darkened bus, that takes passengers between downtown St-Louis and Laumeier Sculpture Park in Sunset Hills, Missouri, with a stopover in an undetermined location. The piece is a 45-minute experience featuring computer and human voices that describe the urban landscape, giving passengers insight on the bus’s real-time location in the city, but without revealing it entirely. The piece uses computer vision, geo-fencing, GPS tracking, neural networks, voice synthesis and other technologies to create an ever-changing multi-channel acoustic environment generated by the driven route. Passengers may try to guess where they are in the city but their actual location

is only revealed when the bus makes a stopover, where people exit the bus for a few minutes to see if their guess was right. The stopover could be anywhere in the city, chosen at random from a variety of neighborhoods, so that the ride is different every time.

Participants enter the Dark Ride Bus after reading and accepting the project’s indications and warnings: 1) The project entails being in the dark for part of the ride, 2) all smartphones must be stored in a locker box at the front of the bus, 3) the ride will take around 45-minutes, depending on the traffic, the route the driver chooses, and the stopover location. Once people take one of

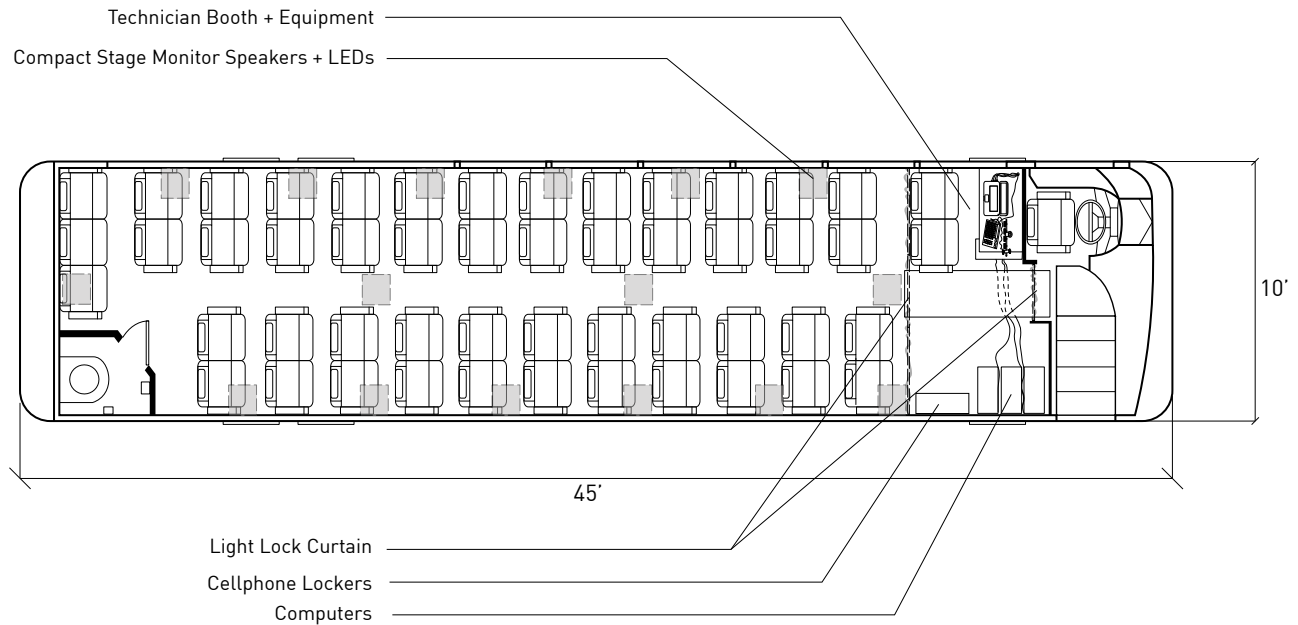


the 44 seats available on the bus, thick curtains close between the driver and the main cabin and the ride begins in silence and darkness.

Passengers gradually start hearing voices and sounds that describe the location of the bus and its surroundings. Each voice comes from one of 16 speakers hung at regular intervals down the sides of the cabin, creating a spatial experience along the bus. Each speaker has a small amber LED fixture that lights up as a voice is played back, glimmering to the sound and turning itself off during silence. The lights give passengers

direct feedback on where the sound is emanating from and create a “firefly-like” effect.

The timing and “narrative” of the performance is given by sound sources triggered manually by a performer who sits at the front of the bus and by automatic sounds that play back as the driver enters specific neighborhoods. The audio mix is a gradual crescendo that has several “movements” and has a coda right before the reveal of the stopover. The sounds come from the following sources:



Dark Ride - Mobile Sound Art Piece Plan Drawing

Rafael Lozano-Hemmer
Antimodular Studio

LIVE MICROPHONES

Two microphones, one on the front and one on the side of the bus, pipe the live sounds from the city into the bus.

ARTIFICIAL GUIDANCE VOICES

Artificial guidance voices —like Siri, Cortana, Waze and Google Voices, give navigation directions such as “In 300 feet, turn right”, “Turn left at the roundabout”, or “A car crash has been reported ahead”.

FAKE ARTIFICIAL GUIDANCE VOICES

Artificial guidance voices will be pre-recorded with subtle poetic and paradoxical comments, such as Siri saying “Please never turn left on the next street”, “This area of town is unmapped”, or “Rage against the dying of the light”.

GEO-FENCED LIBRARY

Pre-recorded voices of residents speaking about their community form a vast library, a portrait of St-Louis. As soon as the bus enters a particular neighborhood or is in the proximity of a landmark, the GPS system automatically plays back voices that speak specifically about those areas or features. For example, one might hear the voice of an elder saying he grew-up in that house which now is a restaurant, or a child might say that she likes that school because it has the fastest computers. Hundreds of statements and observations of people from diverse backgrounds give bus passengers a social, personal, historical, critical, poetic picture of the area the bus is driving through. The statements are carefully chosen so they do not completely reveal the location and the reveal can thus be a surprise.

NEURAL TALK

There are four digital cameras on the front, back and sides of the bus and these live feeds are constantly being analyzed by an advanced neural network artificial intelligence which “interprets” what the cameras see. The AI uses a powerful Jetson GPU computer so that the cameras can be analyzed in real-time and produce up to eight simultaneous, different synthespian voices using text-to-speech technology. The voices describe the scenes around the bus: “A man is holding a kite while skateboarding”, “Two women are playing chess in front of a pizzeria”, “A yellow car is towing a boat”, “Birthday party on a lawn” and so on. These statements tend to be absurd and are used sparingly, providing a counter-narrative to the mostly rational description made by the geo-fenced library.



Kyle McDonald - Computer Vision

ELECTROMAGNETIC SIGNALS

There will be a winradio frequency scanner which can capture any electromagnetic signal from 150kHz to 1.5GHz. This means the mix can include air-traffic control, shortwave broadcasts, taxi dispatch, radio stations and any other signals tunable with a radio scanner.



WinRadio Scanner

“Dark Ride” is a unique immersive acoustic performance that provides free public transport between Laumeier Park and downtown. The soundscape features hundreds of voices of residents of St Louis, mixed with hundreds of synthespian voices, that partially describe the city, creating a different “portrait” with every ride. At heart the piece relies on the dramatic tension of the “reveal” where the bus stops and everyone gets out to see if their estimation of where they are is indeed accurate or if they are actually in a completely different part of town.

As the performance vehicle moves through the city the concert of synthetic navigator voices creates a complex soundscape of the journey that is at once familiar, disorienting, absurd, musical and unexpected.

LOGISTICS

One or two buses will be rented and adapted for the piece. The adaptation involves covering all windows with opaque black vinyl (which can be easily removed), placing all the control gear in the front two rows of seats, hanging 16 small speakers, hanging two sets of black curtains on the front to create a light-lock and attaching microphones and cameras on the outside of the bus. The adaptation should take around 2-3 days for 5 people and can be removed in half a day by two people.

If there are two buses available, then the schedule will be every hour on the hour a bus will depart the Park and another one depart downtown. If only one bus is adapted, then the departures will be every even hour on the hour from downtown and every odd hour on the hour from the Park. The daily schedule can depend on demand, cost of bus rental and day of the week; however, because of the time and cost of adaptation, it is not feasible to rent a new bus on demand but rather use one that can keep the adaptation throughout the season of performances. A project run of 2 months may be cost effective, with rides during the park opening hours. So if there is only one

bus then the first departure would be downtown at 8AM and then leave the Park at 9AM. The last departure from downtown would be at 4PM and from the Park at 5PM when it closes. With this schedule 440 people a day can experience the piece, unless some passengers use the service as a return ride, which is quite possible, so perhaps the number of participants would go down to 300 per day, assuming 140 of them take a return ride. That throughput would be scalable to 600 per day if we add a second bus.

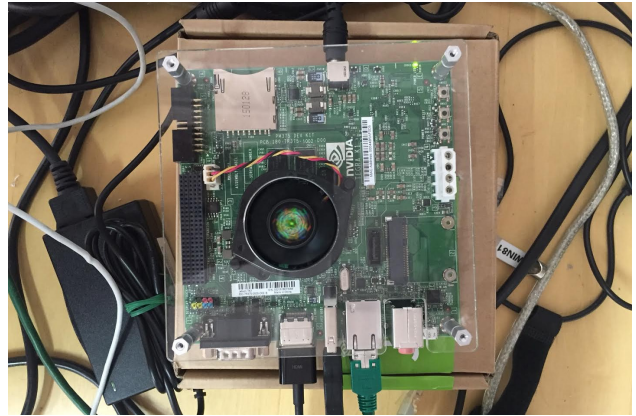
Even though the performance is free it will be a ticketed event, with reservations available through Eventbrite or a similar online service. A number of tickets, or even complete rides, will be made available to different communities, students, press or project stakeholders.

The staff required for the project is 3: the bus driver, the performer who controls the technology and an attendant who helps people in and out, checks for tickets, stores their smartphone in a locker, gives a brief presentation and answers questions.

TECHNOLOGY

Most of the control gear will be installed in the front of the bus, close to the smartphone locker, and between two thick curtains that provide a light-lock. There are many technologies used to create the piece, here is a breakdown:

- A custom-made digital mixer with 16 input and 16 output channels. The mixer will be programmed by Antimodular Inc and include a variety of bespoke functions such as caching, buffering, queuing, delay and EQ of live and recorded samples, 3D pan output effects, sequencer, discrete and absolute volumes and other functions. The mixer will include a physical control surface, a touch screen interface and a rack of digital IO.
- A custom-made content management system with geo-fencing programmed by Antimodular. Basically this is a sampler with the pre-recorded voices of all community participants, but the available sounds become available only when a GPS unit detects that a memory is within its corresponding geo-fence, e.g. if a recording relates to Concordia Seminary it will only be available for playback when the bus drives through the DeMun district.
- A set of bespoke interfaces to a variety of GPS and radio scanning gear. Interfaces will be developed and programmed so that a wide variety of navigational voices and radio signals can be used in the mix. Several iPhone and Android phones will be used, as well as a winradio frequency scanner controlled over USB.
- Four Axis PTZ cameras that are in



Custom Digital Mixer - Nvidia Jetson GPU



4 axis Camera Controller

weatherproof enclosures will be attached to the roof of the bus and networked via Ethernet to the central controllers. These feeds will be analyzed by deep learning neural talk algorithms which attempt to describe the videos in real time, producing written descriptions around every second. The analysis takes place in a fast NVidia Jetson GPU computer. Once the text is output it gets converted to speech by several text-to-speech engines that give diverse synthespian voices.

- Each speaker will have an independent custom-circuit board with a 2,700K white LED light in a custom, frosted reflector. Each light will be activated with the volume of the sound emitted by its speaker, so it will be off when there is silence and then the brightness will be proportional to the sound amplitude.



4 axis Outdoor PTZ Camera



Compact Studio Monitor Speaker

PRECEDENTS

“Dark Rides”, “ghost trains” or “tunnels of love” (for small boats) have existed as amusement rides since the late 19th Century. A salient pioneering Dark Ride was “A Trip to the Moon” at the Pan-American Exposition in Buffalo in 1901, which was the first to be electrified and carried over 400,000 people.

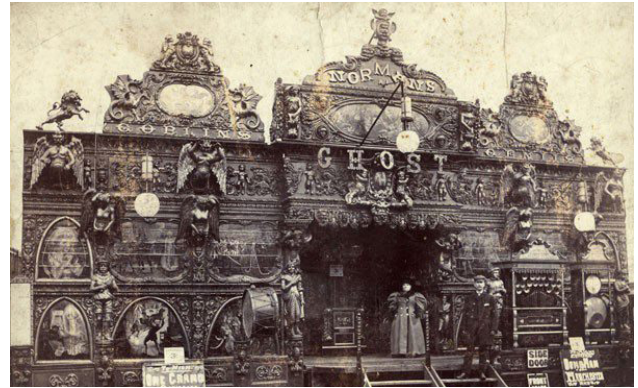
Cars, buses and public transport in general quickly became an important subject in early Modern avant-garde movements around the World. While there are too many examples to mention, Lozano-Hemmer is particularly inspired by the Mexican Estridentista movement in the 1920’s, which lauded buses as a communal site far away from the “perfumed bourgeoisie”. The film “Subida al Cielo” by Luis Buñuel, is also an inspiration as it shows the protagonist having two or three simultaneous “trips” in the same bus ride, in a great, dark comedy filmed in Mexico in 1952.

Politically, the bus ride is a central trope of the Civil Rights Movement (for example Rosa Parks iconic refusal to give up her seat in 1955 and the subsequent Montgomery bus boycott, the Freedom Rides of 1961, or Spike Lee’s 1996 film “Get on the Bus”). In general, public transport is a key infrastructure to create a truly democratic city.

Culturally, bus rides were fundamental to Ken Kesey’s Merry Pranksters’ hippie escapades (documented by Tom Wolfe in The Electric Kool-Aid Acid Test), and an ongoing symbol of the dream of getting away from it all, as celebrated in Simon and Garfunkel’s 1968 song “America.” The Beatles’ “Magical Mystery Tour” was a final popularization of performative rock bus rides.

There are many precedents for contemporary artists taking over buses or public transport:

Seminal media artist Lynn Hershman’s “Dream Weekend” project included a shuttle bus tour of display homes in Melbourne Australia in 1977,



'Ghost Ride', 19th Century



'A Trip to the Moon', Frederic Thompson, 1901



'Mexican Estridentista Movement', 1921

intended to air “the problems of the Suburban Sprawl”. In 1980 Bill Seaman and Carlos Hernandez performed “Architectural Hearing Aids (AHA)” an “architectural tour of San Francisco” with an original score by Seaman playing on an elaborate sound system and photography by Hernandez shown in a map illumination system. Later at New Music America 1983, Seamen presented his video “S.HE”, which was shot at many of the same locations that were passed on the journey and then presented in ultra-slow motion on an Amtrak train from Providence to NYC on multiple video units. “Nightrippers” by Kaylynn Sullivan and Henry Threadgill commissioned by Creative Time in 1984, featured live avant-garde jazz music in a darkened bus with secret locations around Manhattan.

In the “The Limousine project” by Antoni Muntadas, presented in 1990 by the Public Art Fund, a stretch limo was animated with four projectors with words from media and political slogans, as it drove throughout NYC. Barbara Kruger’s “Bus” (1997) installation, traveling between Manhattan and Queens, likewise used appropriated mass media motifs to transform a bus using large-scale vinyl prints. “Teach 4 Amerika” was a traveling show in a limousine painted as a school bus, by the Bruce High Quality Foundation 2011, that invited people to discuss the future of art schools among other issues in Education, throughout 11 cities across the USA.

Several curatorial interventions exist for art in public transport including “Out the Window” in LA and MTA Arts and Design projects in NYC. Grassroots proposals include La Pocha Nostra “Mexican Bus Tour” of the Mission district in San Francisco, with performance artists Guillermo Gómez-Peña and Violeta Luna guiding the 2007 tour.



‘Coney Island’, Reginald Marsh, 1938



‘Love Ride’, 1943



‘Subida al Cielo’, Luis Buñuel, 1952

Many theatrical or performance artists have taken over bus rides, such as Forced Entertainment's "Nights in the City" site-specific coach tour and installation from 1995, which took passengers through trips of Sheffield (and later Rotterdam) with tour guides that "avoided facts in search of a different truth". A more recent example is William Mackrell's "Gaps, Glitches and Speedbumps" that traveled London in 2015.

Perhaps the best know recent contemporary art ride is Doug Aitken's "Station to Station" train which traveled across the US during 2013, featuring performances by 42 artists and musicians.

Among the new "augmented reality" experiences on a bus is NYC's "The Ride" a commercial interactive entertainment experience aboard a \$1.5 million tour bus with lateral seats, lights, screens and live performers. There is also Lockheed Martin's virtual reality "Mars Experience", which simulates a ride on Mars' terrain presented as a STEM educational project by the well-known weapons manufacturer. Finally, there is the Rimini Protokoll's art project "Truck Tracks Ruhr", which uses similar seat disposition as "The Ride" but with quality contemporary music for a changing urban landscape and performance.



'Montgomery Bus Boycott', Rosa Parks, 1955



'Merry Pranksters', Ken Kesey, 1967



'Magical Mystery Tour', The Beatles, 1967



'The Limousine Project', Antoni Muntadas, 1990



'Bus', Barbara Kruger, 1997



'Nights in the City', 1995



'Mexican Bus Tour', Guillermo Gomez-Pena & Violeta Luna, 2007



'Get on the Bus', Spike Lee, 1996



'Teach 4 Amerika', Bruce High Quality Foundation, 2011



'Out the Window', MTA Arts and Design, 2011



'Truck Tracks Ruhr', Rimini Protokoll, 2016



'Station to Station', Doug Aitken, 2013



'The Ride', New York City, 2016



'Gaps, Glitches and Speedbumps', William Mackrell, 2015