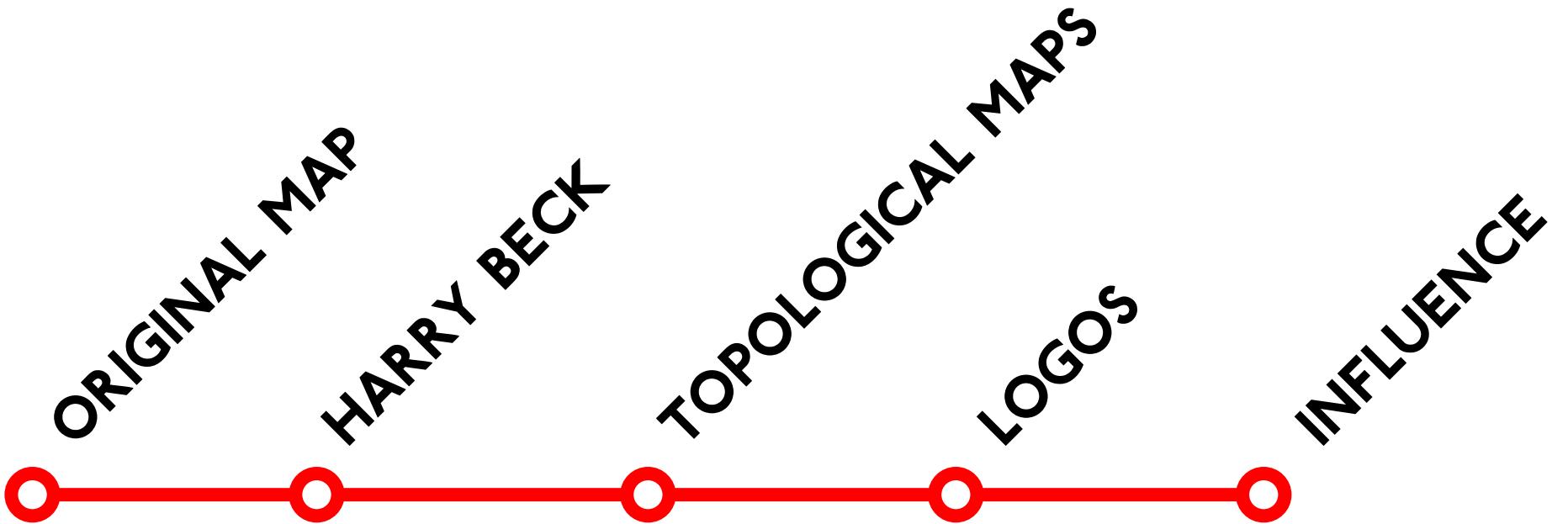


# LONDON UNDERGROUND

Dan Spector & Stephen Costa





# ORIGINAL MAP



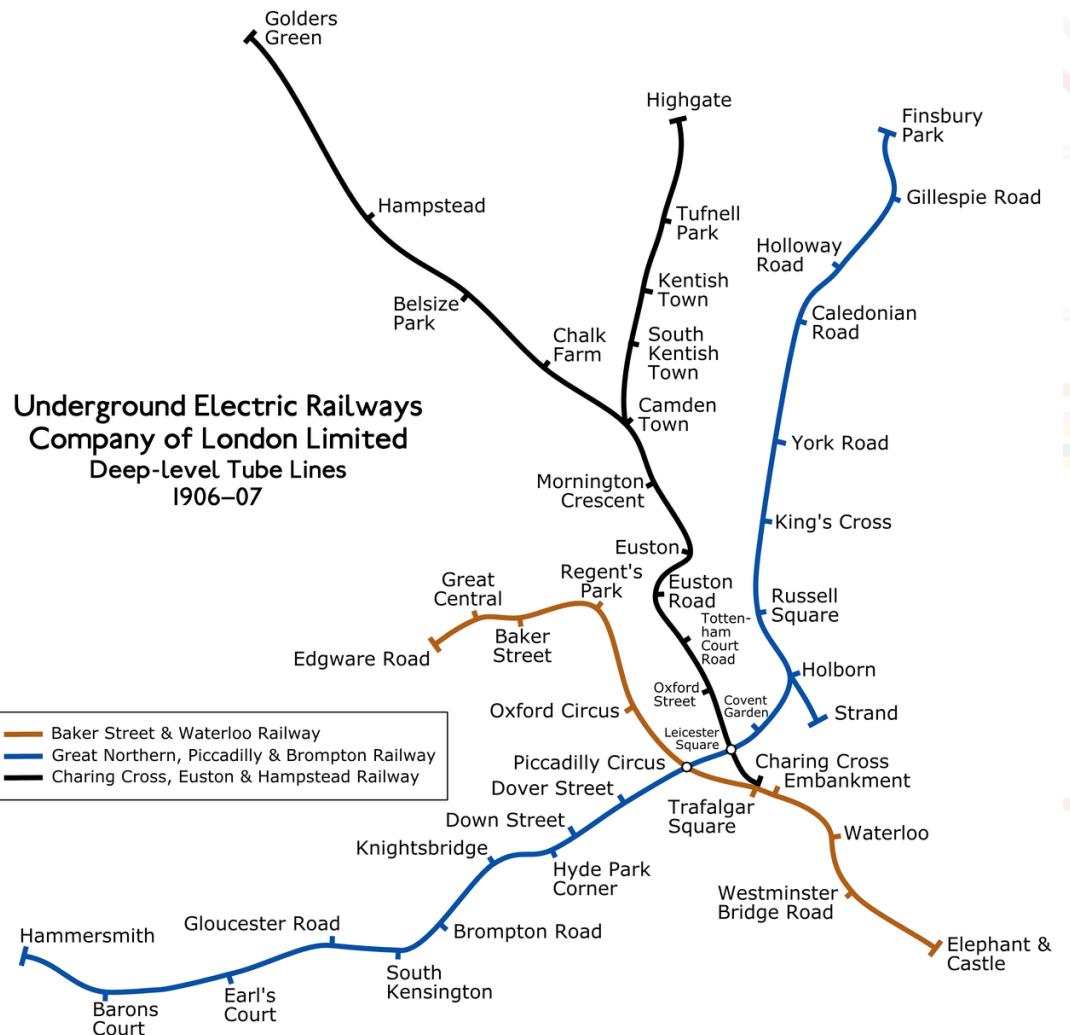
# ORIGINAL MAP DETAILS

- Included geographic information such as streets
- Traces actual routes of the train tracks
- Does not include landmarks as points of reference
- Created in 1908 by the Underground Electric Railways Company of London
- Created inline with other railways using "Underground" branding
  - UERL was attempting to standardize these transit maps across the board

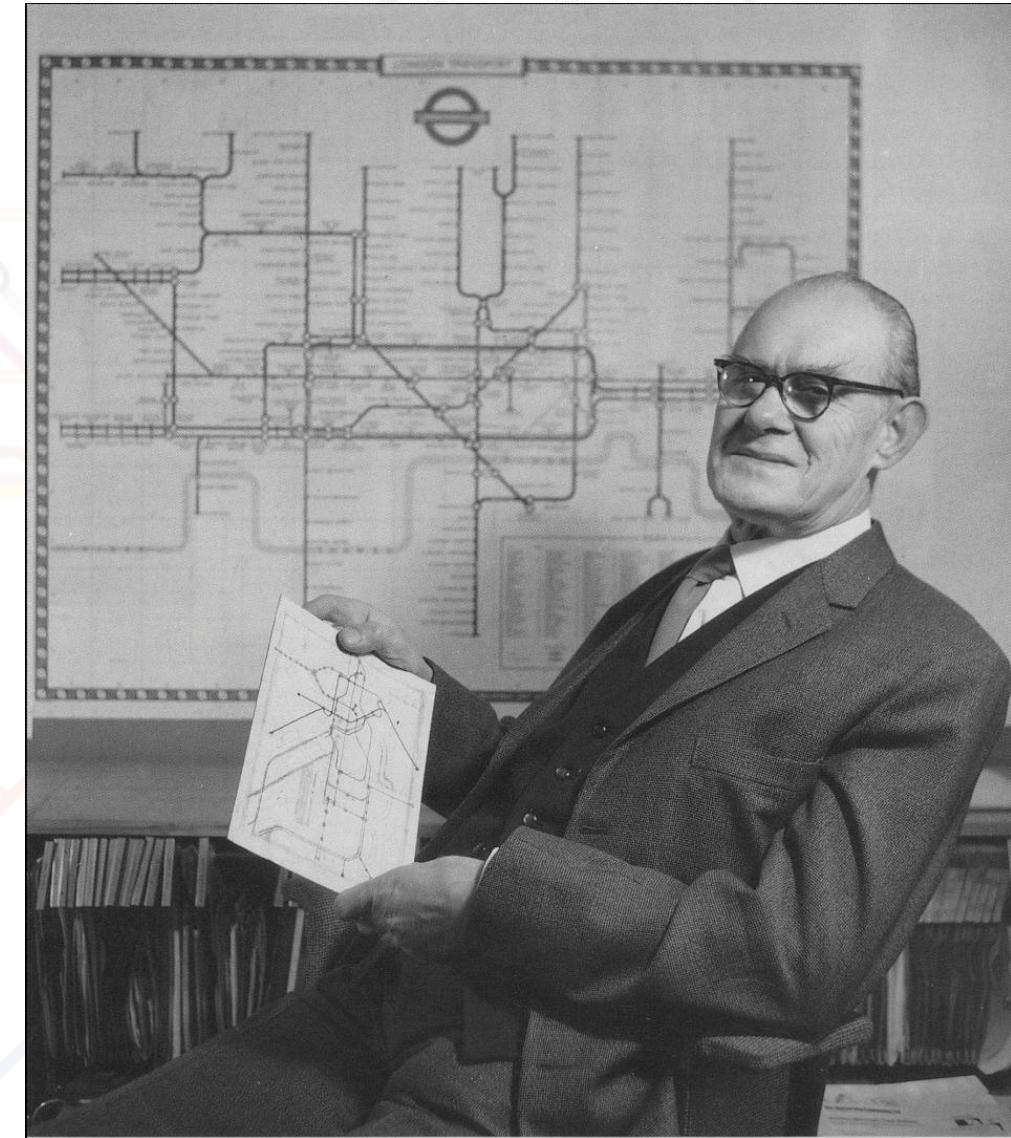


# UERL | UNDERGROUND ELECTRIC RAILWAYS COMPANY OF LONDON

- Established in 1902
- Holding company of the three deep-level “tube” lines that opened in London in 1906 and 1907
- Acquired bus and tram lines, and established commuter rails into the suburbs
- “Pirate” bus lines hurt business, so eventually the entire industry was regulated and restructured as the public London Passenger Transport Board
- Ancestor of today’s Transport for London



# HARRY BECK

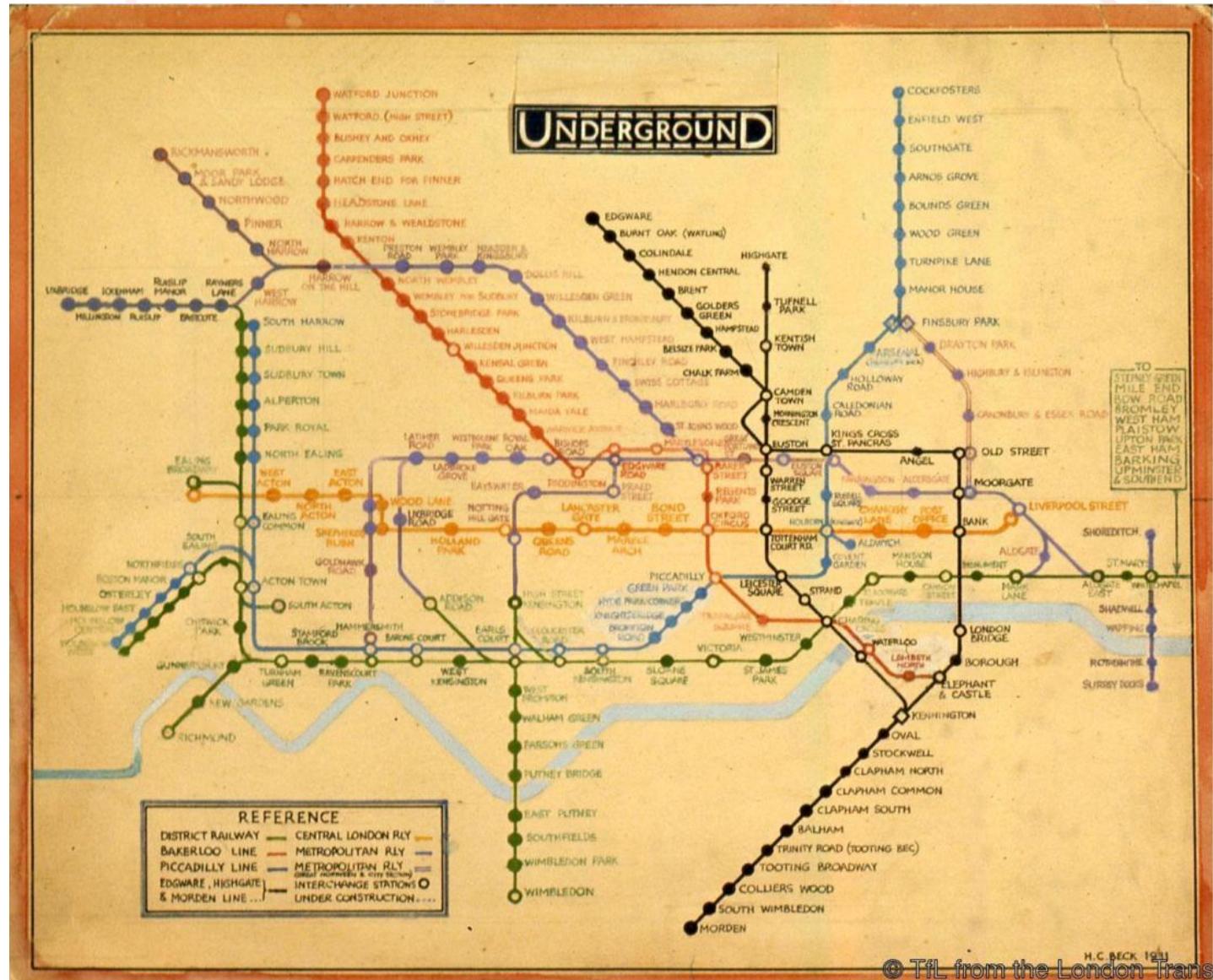


# ABOUT HARRY

- 4 June 1902 - 18 September 1974
- Technical draughtsman
- Created the London Underground map in 1931
  - His version of the Underground map was known as a topologic map
    - These maps are created to only display vital information
- His map was controversial at first, but was immediately popular when released to the public

# BECK'S MAP

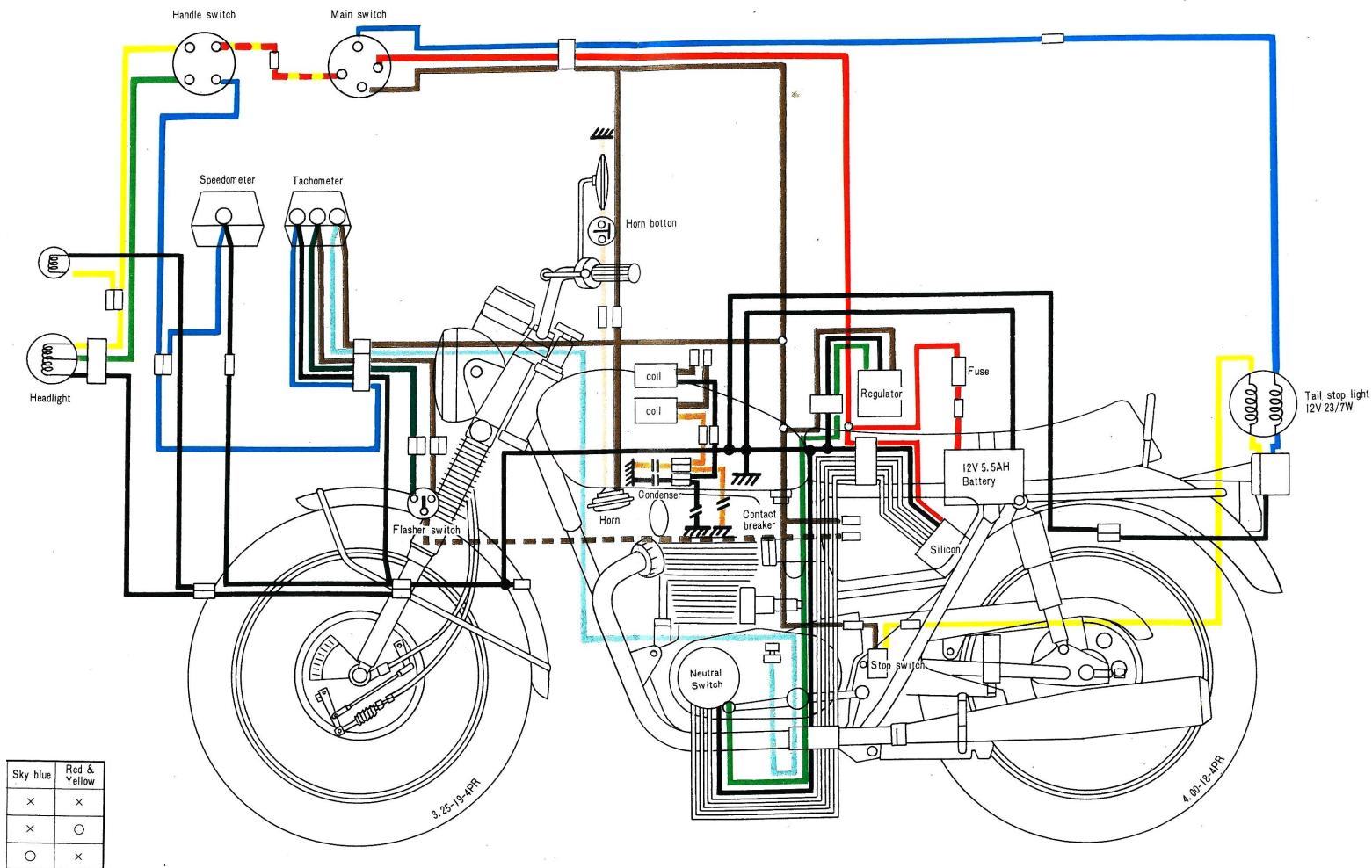
- Beck's version of the map used only 90 and 45 degree angles
- Limited use of geographical information
- Included the Thames River as a point of reference for the map
- based upon the concept of an electrical schematic rather than a geographic map



© TfL from the London Trans

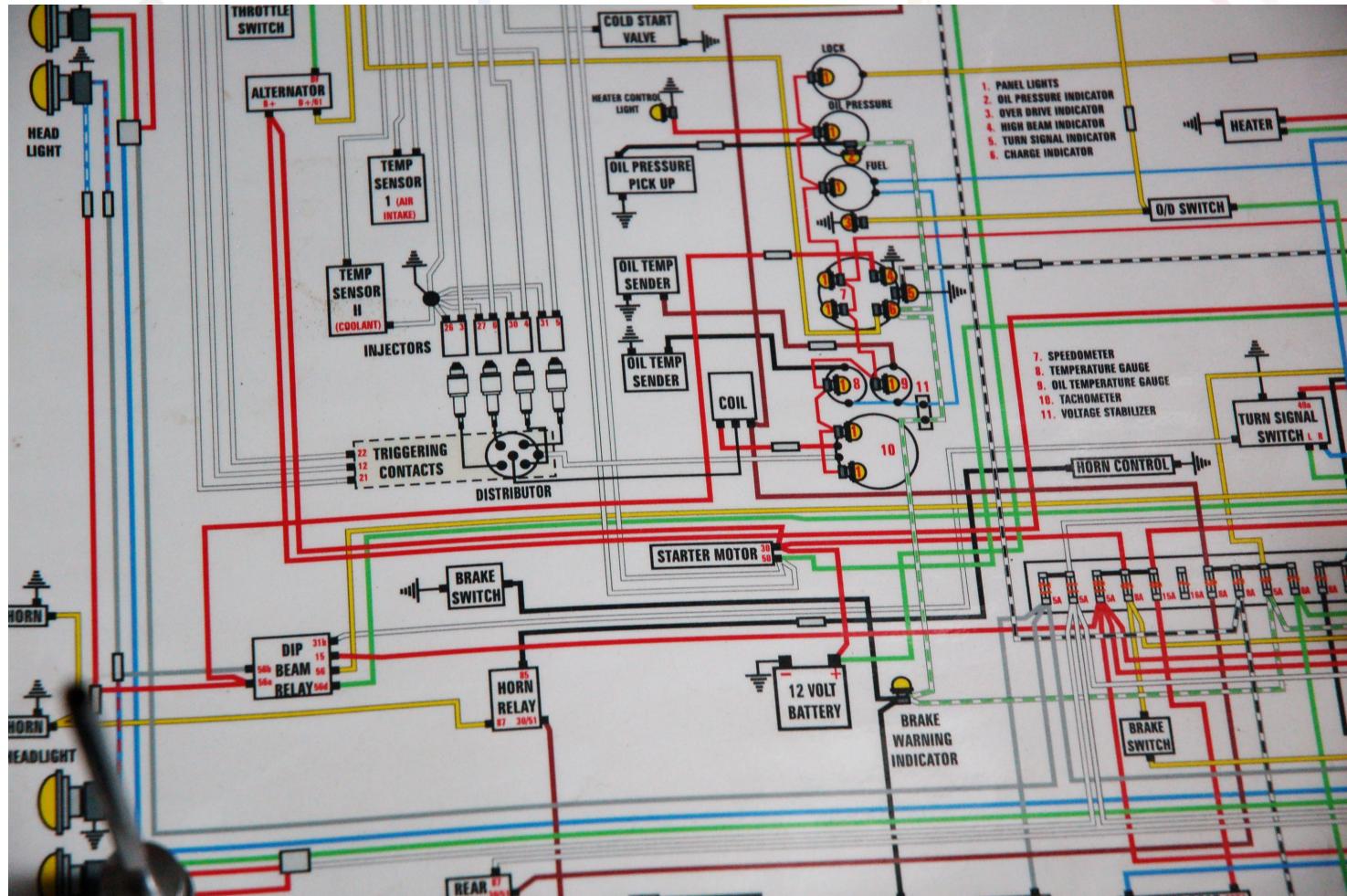
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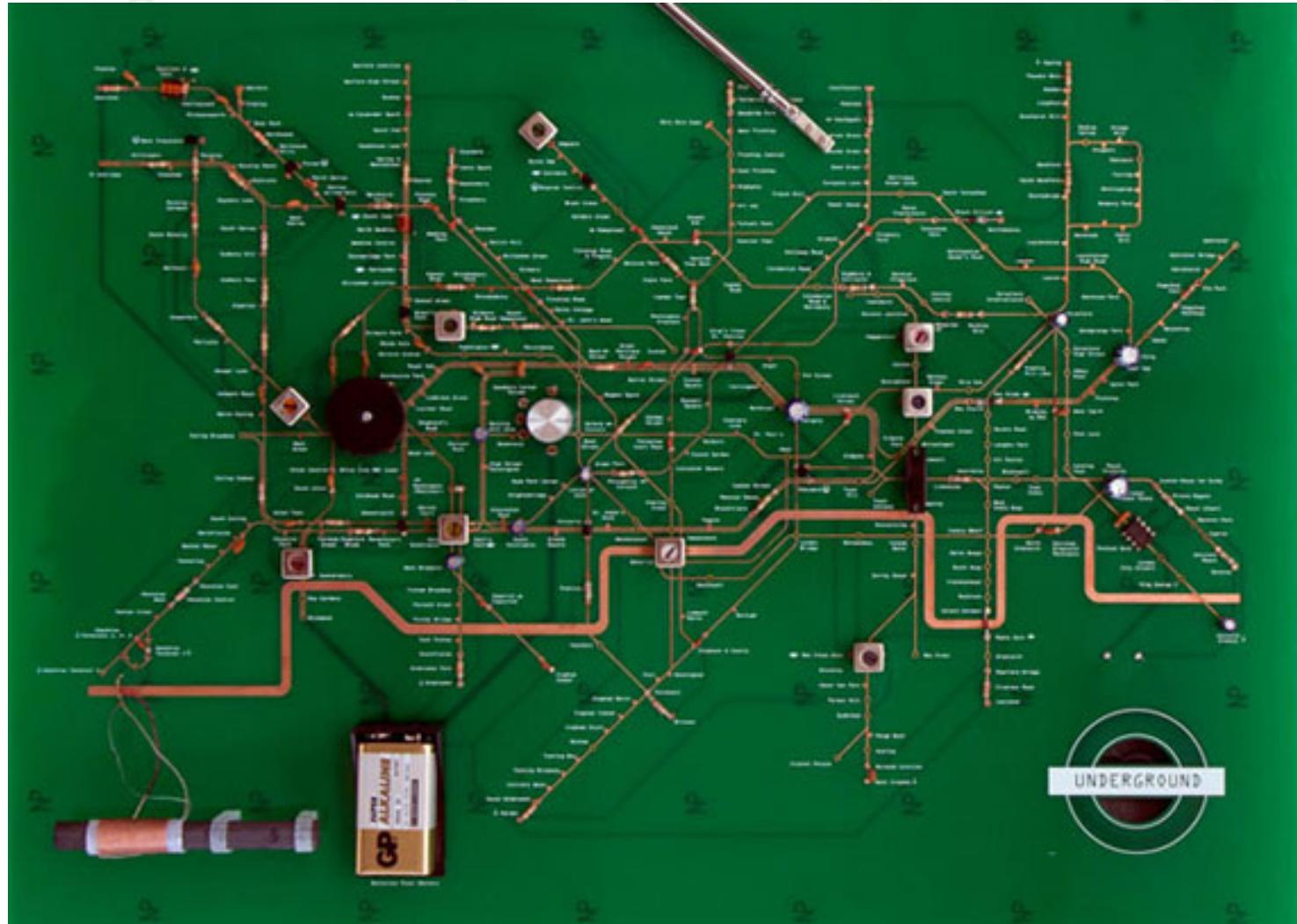
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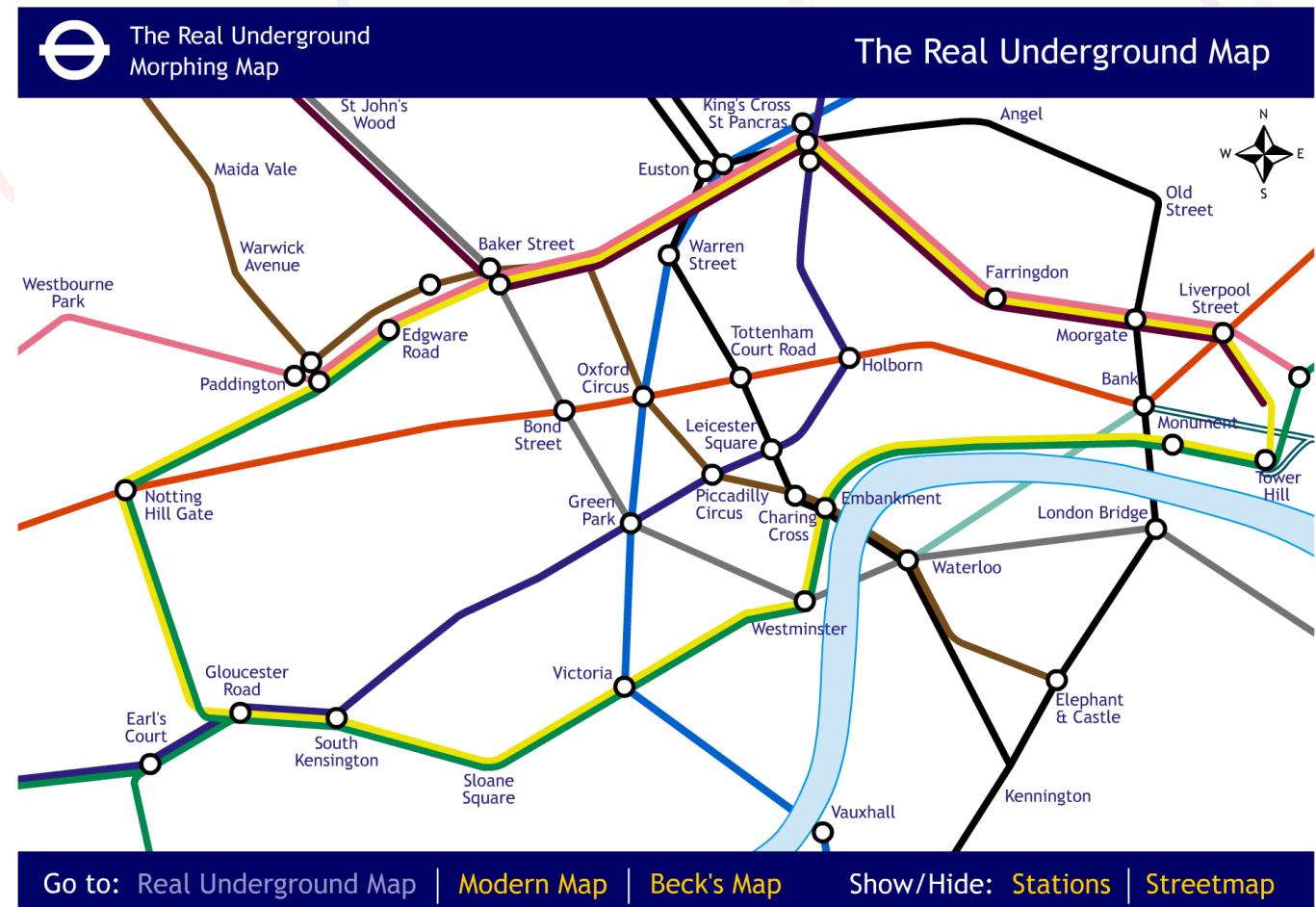
# 1908-1999

- Here you can see the map over time starting with UERL's **Geographic Map** and transitioning to Beck's Topological Map



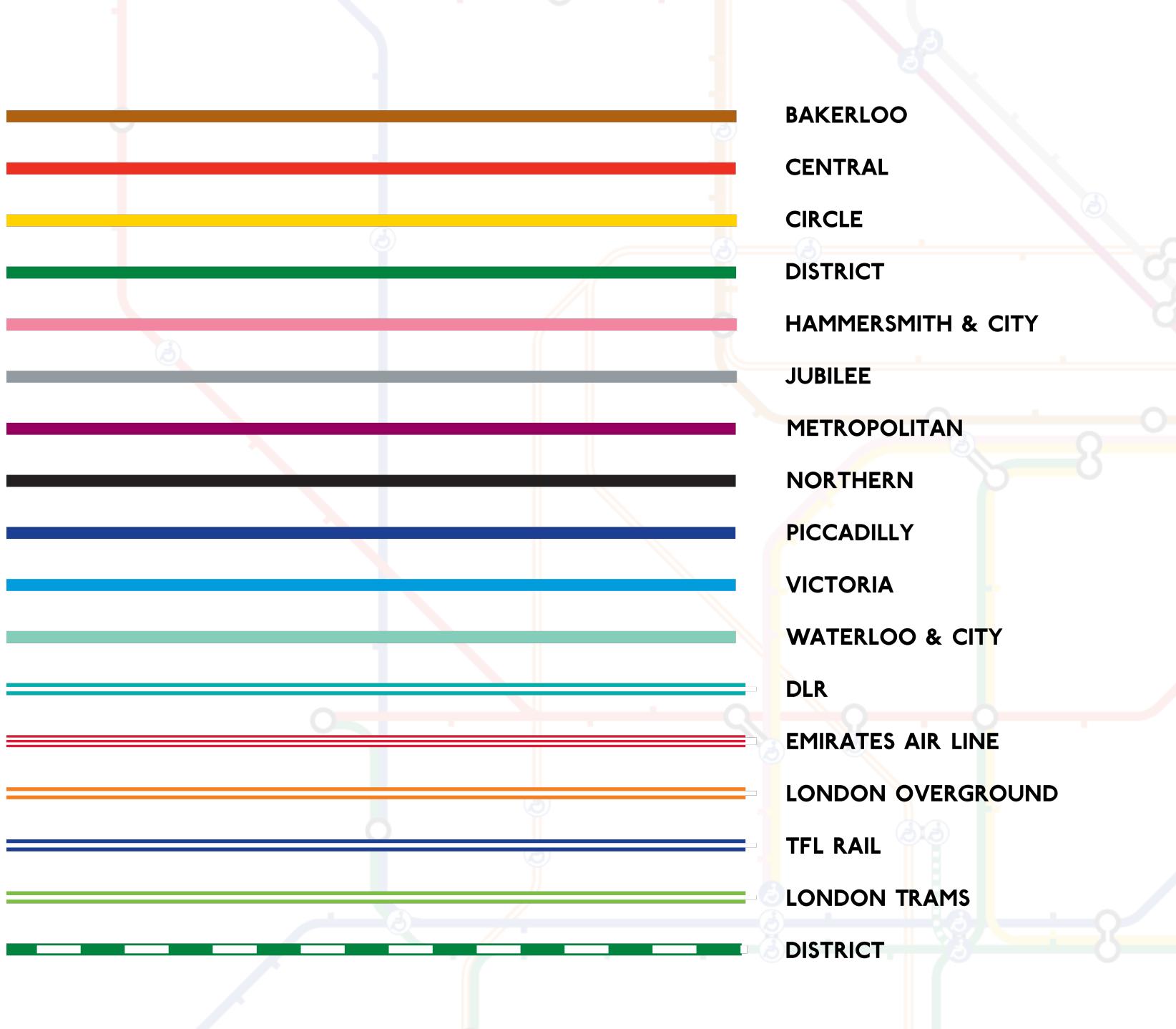
# THE UNDERGROUND MORPHING MAP

- This flash animation spotlights the differences between historical maps of the Underground
- <http://fourthway.co.uk/realunderground/>



# COLORS

- The London Underground is ranked the **4<sup>th</sup> most complex public transit system in the world**
- This is demonstrated by the complicated color legends needed to explain the map
- Note the need for patterns & secondary lines to continue differentiation

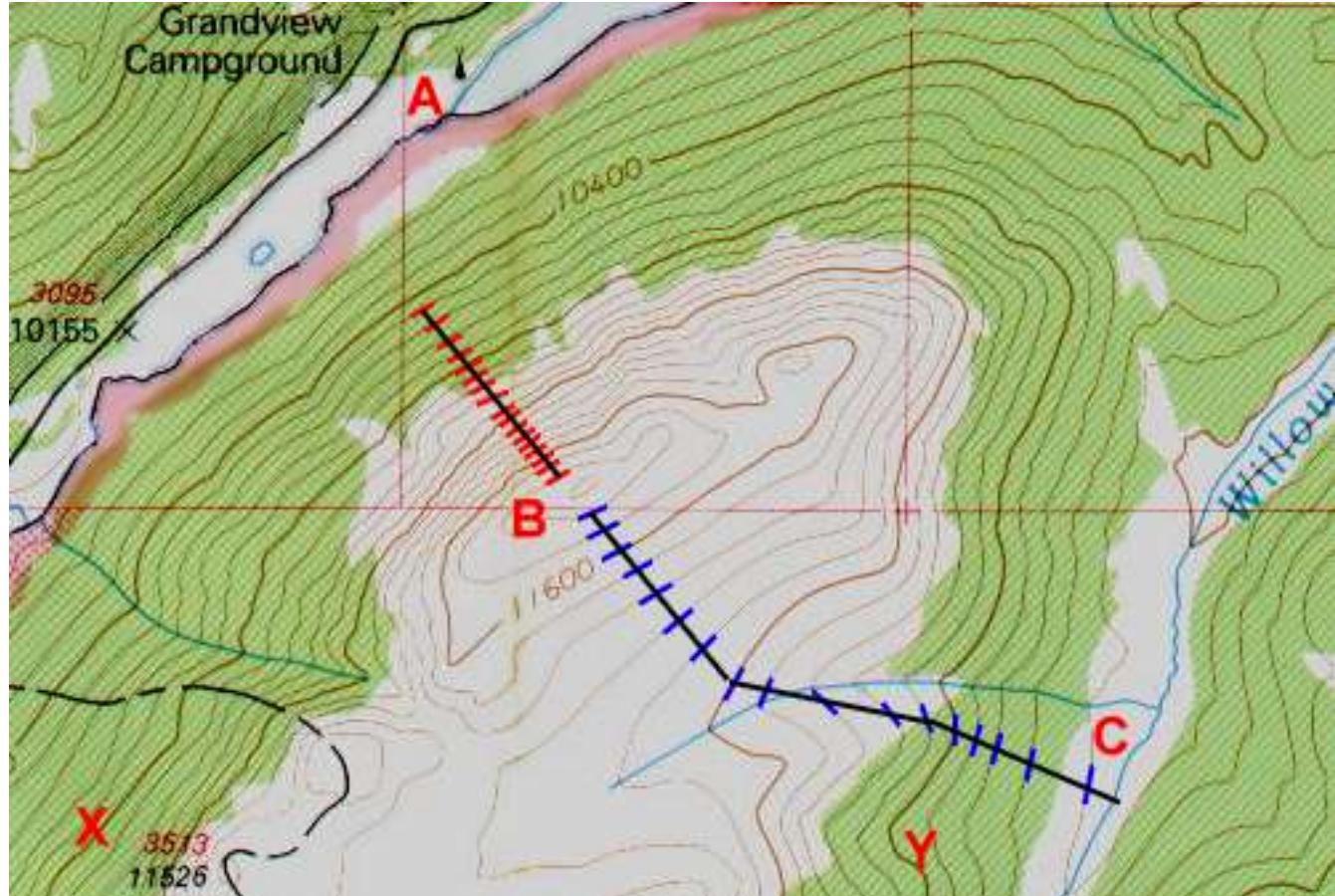


# TOPOLOGICAL MAPS



# WHAT IS A TOPOLOGICAL MAP?

- A simplified diagram that retains only necessary information
- Removes superfluous detail (*cartographic generalization*)
- *Topology*: the field of mathematics studying the properties of objects that do not change as the object is deformed





# LONDON UNDERGROUND

# PARIS METRO

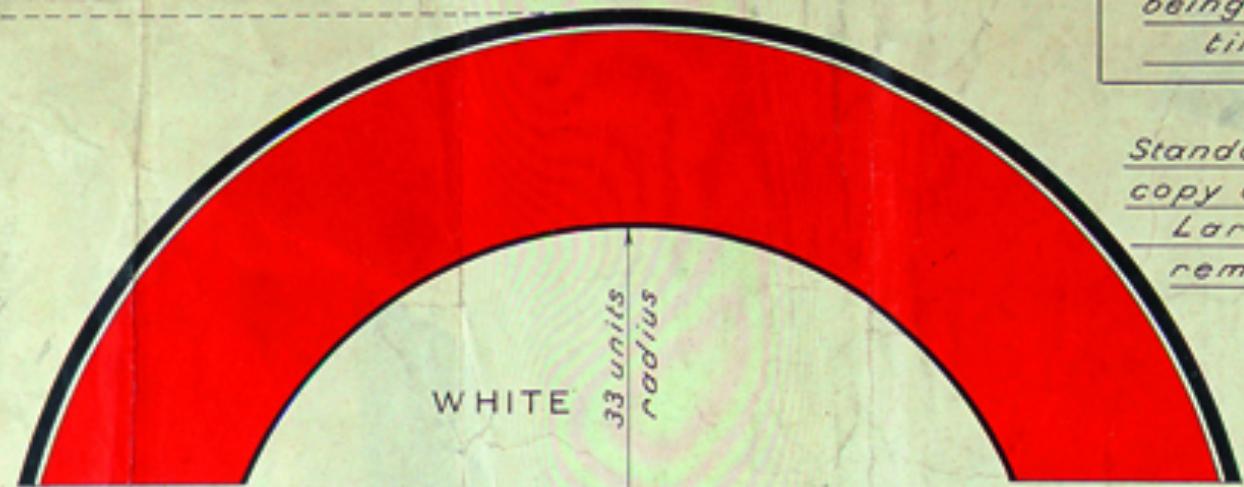
# NYC SUBWAY



# THE LOGO

# PROPORTIONS OF STANDARD BULLSEYE DESIGN.

100 units on this drawing are equal  
to      on drawing No.       
being actually an enlargement of  
times, the design shown hereon.



Standard "Underground" lettering,  
copy of alphabet on application.  
Large "U" & "D" 19 units high :  $2\frac{1}{2}$  thick;  
remaining letters 10 units high,  $1\frac{1}{2}$ " .



White legend on  
dark blue ground.



$\frac{1}{2}$  unit white  
1 " black  
15 units bright red  
 $\frac{1}{2}$  unit black.

FILING ROOM  
DRAWER No. 88282

# EDWARD JOHNSTON

- Famous for designing typeface used in the London Underground
- Johnston typeface was redesigned in 1980 but retained many of the original qualities
- Also responsible for designing the London Underground's "roundel" logo that was used throughout the Underground as branding, as well as way-finding



# APPLICATION OF THE BRAND



# APPLICATION OF THE BRAND

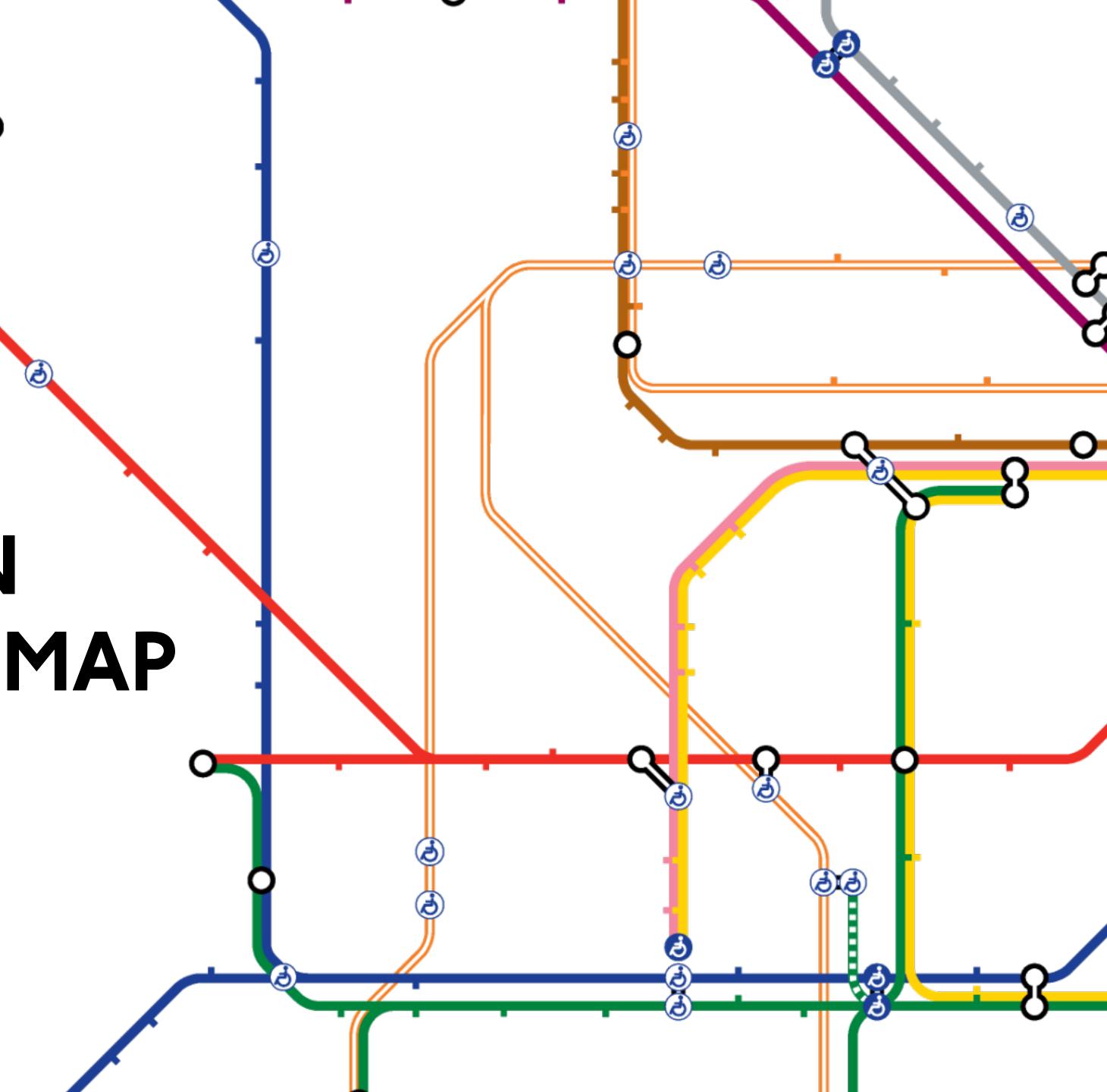




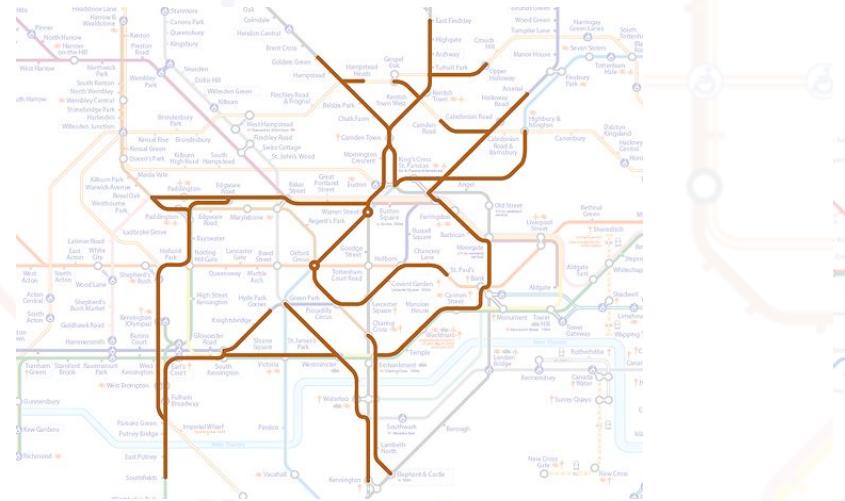
# INFLUENCE

# THE LEGACY OF THE LONDON UNDERGROUND MAP

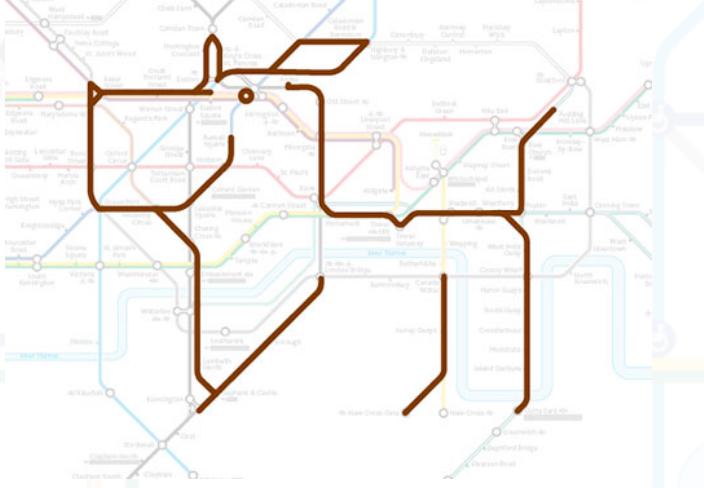
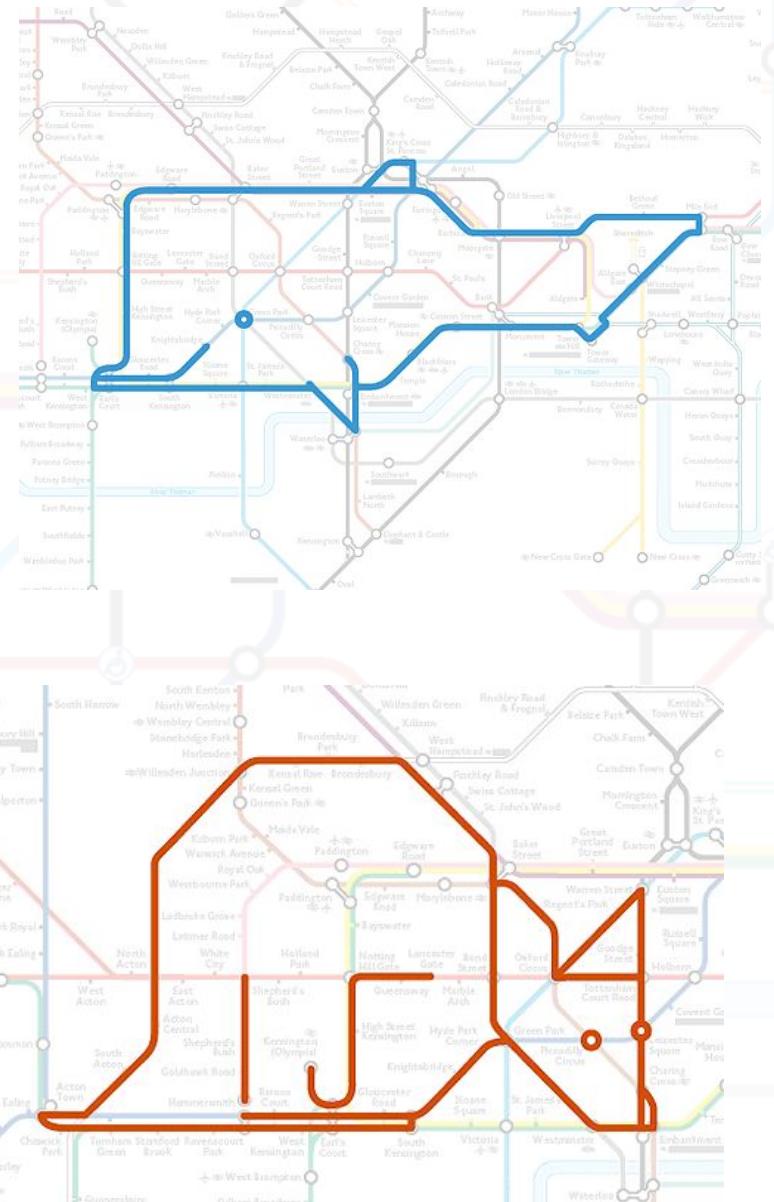
- Informed countless subway and bus maps throughout the world
- Digitized and overlaid with other types of data, such as time
- Countless cultural appropriations!



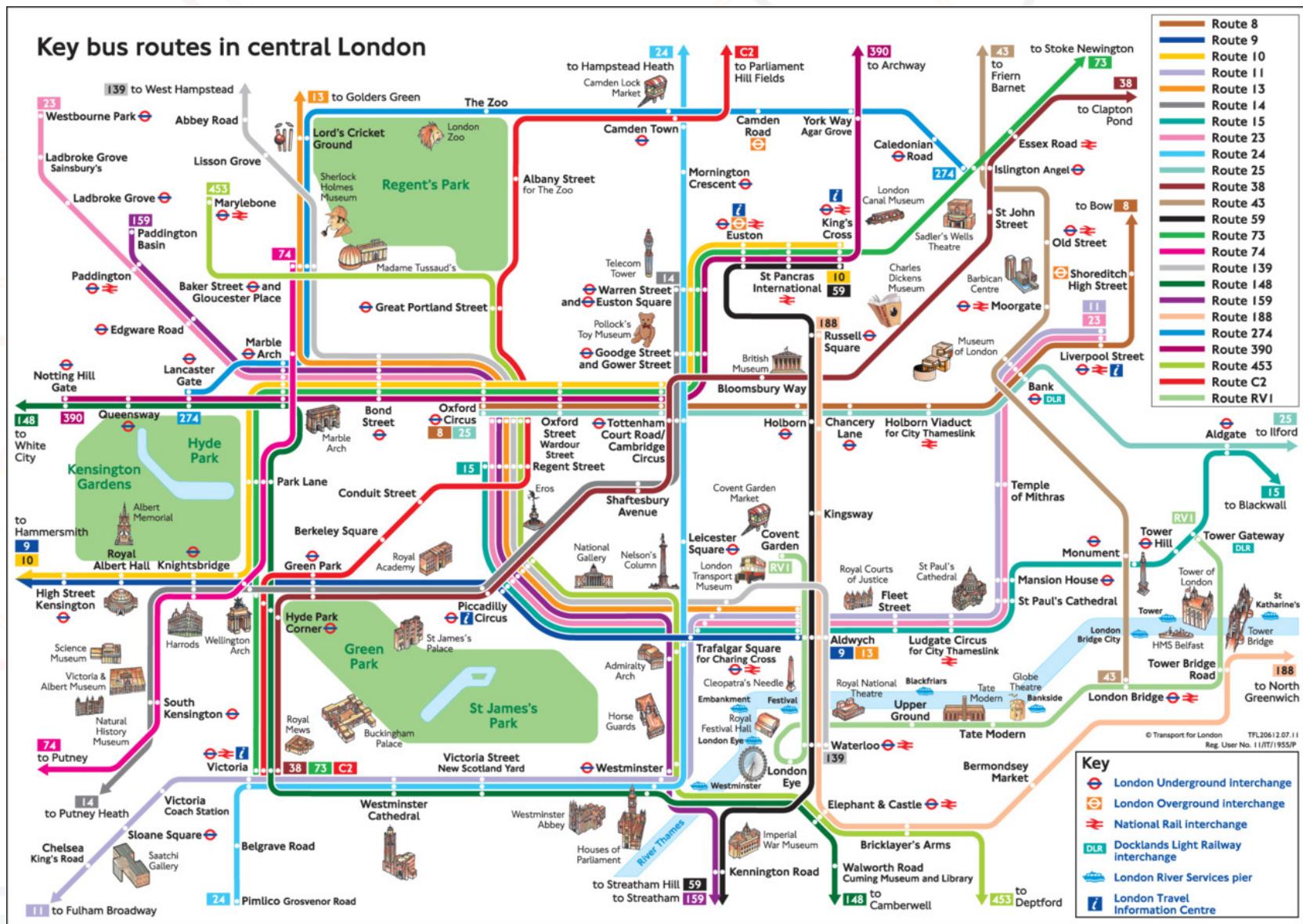
# ANIMALS ON THE UNDERGROUND



Hammersmith

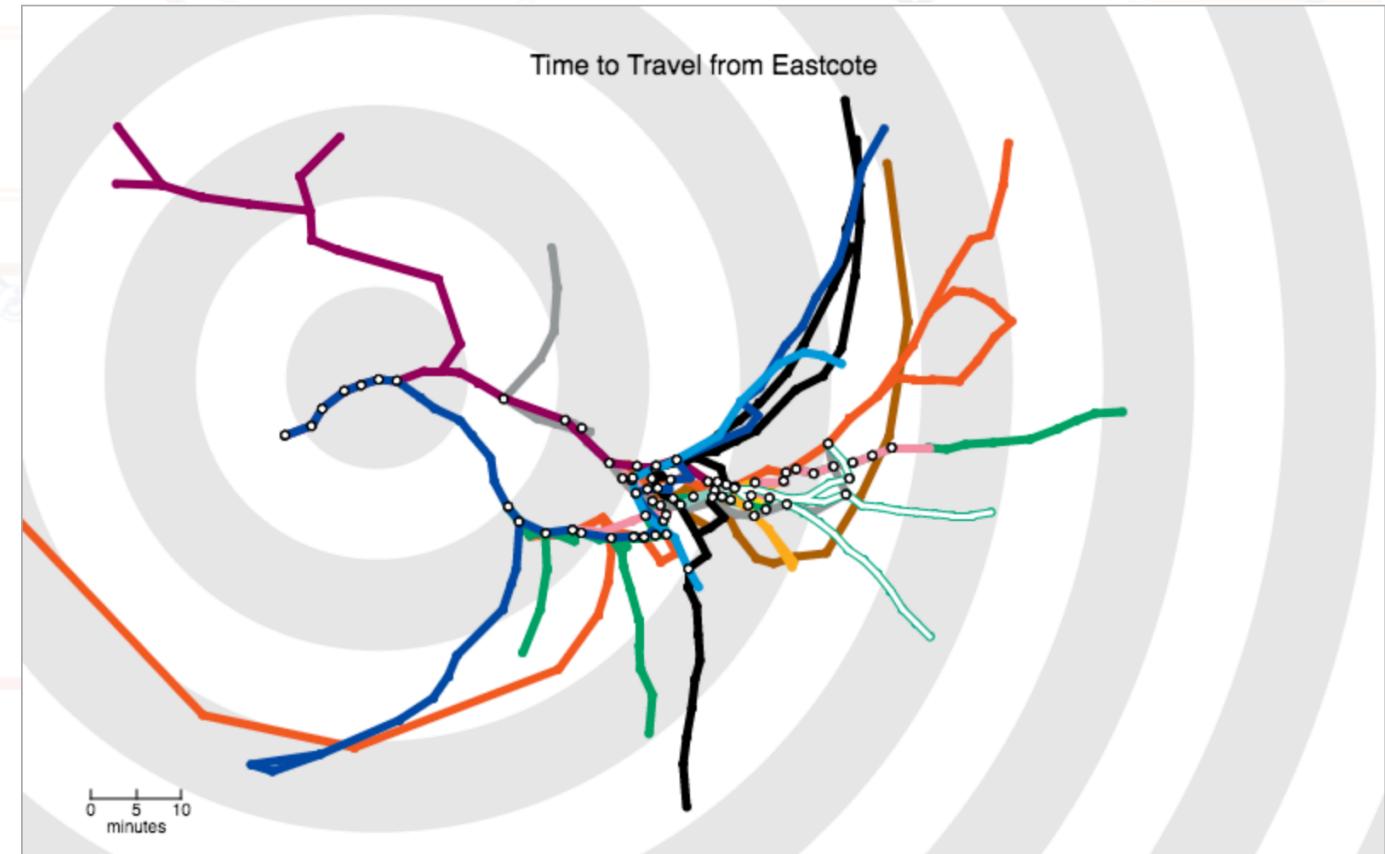


# LONDON BUS SPIDER MAP



# TIME TRAVEL TUBE MAP

[http://www.tom-  
carden.co.uk/p5/tube\\_  
map\\_travel\\_times/app  
let/](http://www.tom-carden.co.uk/p5/tube_map_travel_times/applet/)



# SOURCES

- <https://tfl.gov.uk/modes/tube/>
- [http://www.slate.com/blogs/the\\_eye/2013/09/17/london\\_underground\\_logo\\_a\\_brief\\_history\\_of\\_the\\_iconic\\_design.html](http://www.slate.com/blogs/the_eye/2013/09/17/london_underground_logo_a_brief_history_of_the_iconic_design.html)
- <https://www.citylab.com/transportation/2016/02/most-complex-transit-subway-maps-world-tokyo-new-york-paris/470565/>
- <http://fourthway.co.uk/realunderground/>
- [https://en.wikipedia.org/wiki/Topological\\_map](https://en.wikipedia.org/wiki/Topological_map)
- [https://en.wikipedia.org/wiki/Underground\\_Electric\\_Railways\\_Company\\_of\\_London](https://en.wikipedia.org/wiki/Underground_Electric_Railways_Company_of_London)
- <http://www.animalsontheundeground.com>
- [http://www.tom-carden.co.uk/p5/tube\\_map\\_travel\\_times/applet/](http://www.tom-carden.co.uk/p5/tube_map_travel_times/applet/)