

AMERICAN INFORMATION INFRASTRUCTURE: POSTAL SYSTEM, TELEGRAPH, AND TELEPHONE

Megan Finn – Lecture 10 – 27 July 2009

Quiz



- Pick ONE social, political, cultural, or economic institution or “trend” and show how it may or may not have shaped the use or deployment of the telegraph OR telephone OR the postal service. (Bonus: the telegraph!) Use evidence from the readings to support your claims.

Agenda



- Towards Information infrastructure
- Postal Service and the development of modern communication practices
 - ▣ Circulation of “news”
 - ▣ Expectation of availability
- Telegraph and the expectation of “reach” at “speed”
- Telephone industry embedded in business interests

Towards Information Infrastructure



- What constitute infrastructure? *Leigh Star et al* – Infrastructure has the following qualities:
 - ▣ *Embedded*
 - ▣ *Transparent*
 - ▣ *Reach*
 - ▣ *Learned*
 - ▣ *Practice*
 - ▣ *installed base*
 - ▣ *modular increments*

Transparent until breakdown

- **Transparent** (and largely invisible) once established, “reappearing” only at moments of upheaval or breakdown;

YouTube Is Doomed (GOOG)

Benjamin Wayne | Apr. 9, 2009, 6:30 AM | 98

Tags: Media, Google, Big Tech, Video, YouTube, Advertising

YouTube, that incandescent tower of video Babel; monument to the sloughed-off detritus of our exponentially-exploding digital culture; a Technicolor cataract of skateboarding dogs, lip-synching college students, political punditry, and porn; has reached the zenith of its meteoric rise; and Icarus-like, wings melting; is spiraling back to earth. Despite massive growth, ubiquitous global brand awareness, presidential endorsement, and the world's greatest repository of illegally-pirated video content, Google's massive video folly is on life-support, and the prognosis is grave.



public sphere/
infrastructure

Reach

- *Defined by its **reach** beyond particular spatial or temporal locations;*
- The Crimean War: "The press and the telegraph are enemies we had not taken into account but as they are invincible there is no use in complaining to them,"
 - ▣ British foreign secretary, the Earl of Clarendon.
- Fenton's doctored photographs



Learned

- **Learned** as a part of membership within particular professional, social, or cultural communities;
- “As Sidney Aronson has noted, “[T]he inventor and his backers ... faced the formidable task of inventing uses for the telephone and impressing them on others.”
 - Claude Fischer, *America Calling*. 1995

Learned



- “In 1892 the Sunset Telephone Company established the first exchange in Antioch... Dr. George brought the telephone its first recorded notoriety in town with his church concert... By 1903, telephones were sufficiently common in the county to inspire fulmination by the editor of the Contra Costa Gazette: "With a new invention springs up a new crop of fools. A boar is always a boar even at the other end of a telephone line.”
- Claude Fischer, *America Calling*. 1995

Learned: point to point/broadcast

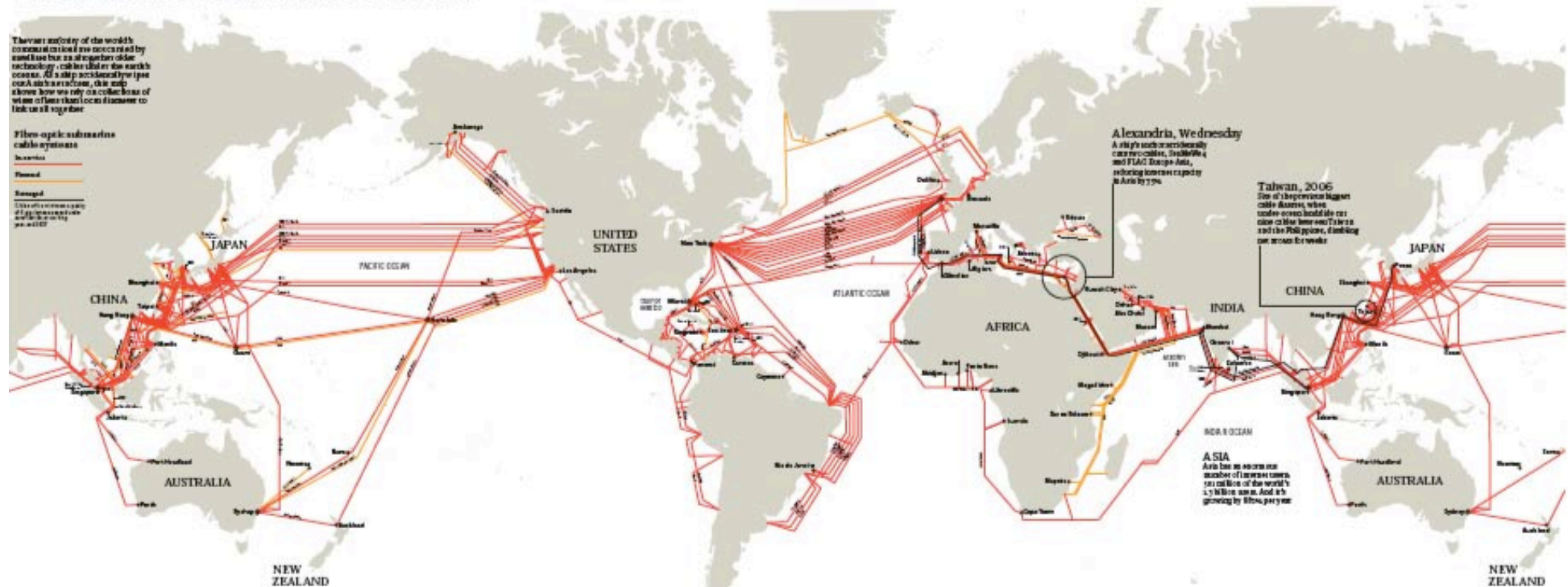


- early uses envisaged for the telephone broadcasting
 - music
 - transmitting sermons
 - broadcasting news
 - providing wake-up calls
 - conferring degrees
 - telephoning in airplanes
 - political ads

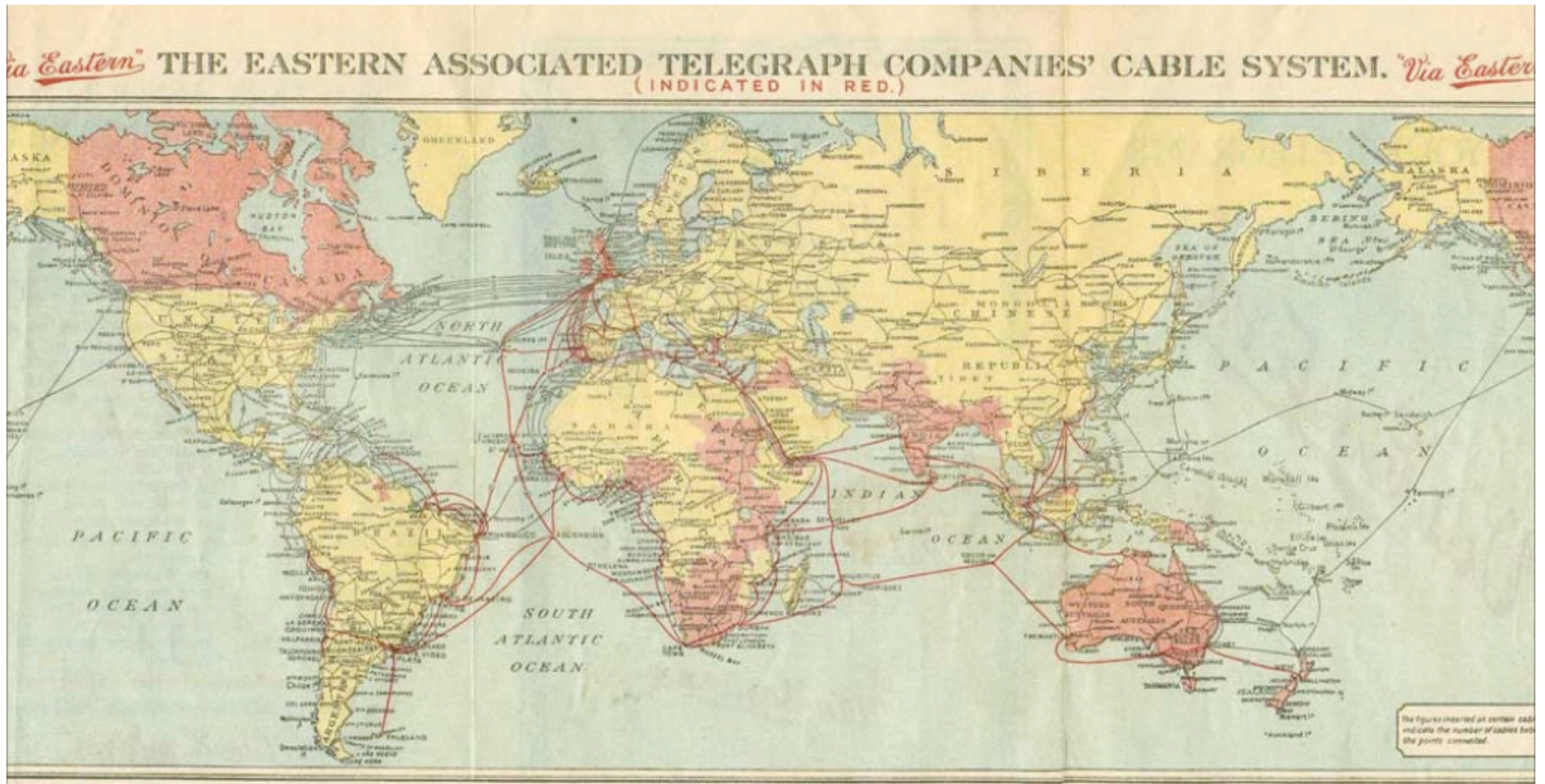
Installed base

- *Built on, shaped and constrained by its relationship to an already **installed base**;*

The internet's undersea world



installed base: telegraph system



Embedded



- ***Embedded in other structures, social arrangements, and technologies***
- "telegraphy grew to accommodate geographic dispersion as well as the increasing number of populations concentrations, thus addressing the twin problems of serving both local and long distance markets"

Modular increments

- *Fixed and changed in **modular increments**, through complex processes of negotiation and mutual adjustment with adjacent systems, structures, and practices*
- “Telephone entrepreneurs in the early years broadcast news, concerts, church services, weather reports, and stores’ sales announcements over their lines. Although these services disappeared quickly in most places, they lingered longer on rural party lines, especially weather reports and emergency news.”
 - ▣ Claude Fischer, *America Calling*. 1995

Practice

- *Deeply linked with conventions of **practice** and other forms of routinized social action;*
- “our pervasive expectations of complete contact, of boundless accessibility, actually link us back tot the cultural moment when ordinary Americans first experience the mail in similar terms.”
 - ▣ Addressibility
 - ▣ Valentines day
 - ▣ Anonymity
 - ▣ Henkin, *The Postal Age*. 2006



Pre-print news networks

Catholic Church

Political authorities of states and principalities.

Commercial banking, trade and manufacturing.

Merchants, peddlers, and traveling entertainers.

“The Trade in News” by John B. Thompson in *Communication in History*.
Crowley and Heyer, eds. 2007.

The Antwerp Exchange



- “We date the start of the commercial and financial press to these humble but significant beginnings at Antwerp around 1540”
- John J. Mccusker, "The Demise of Distance: The Business Press and the Origins of the Information Revolution in the Early Modern Atlantic World," *The American Historical Review* April 2005

The market

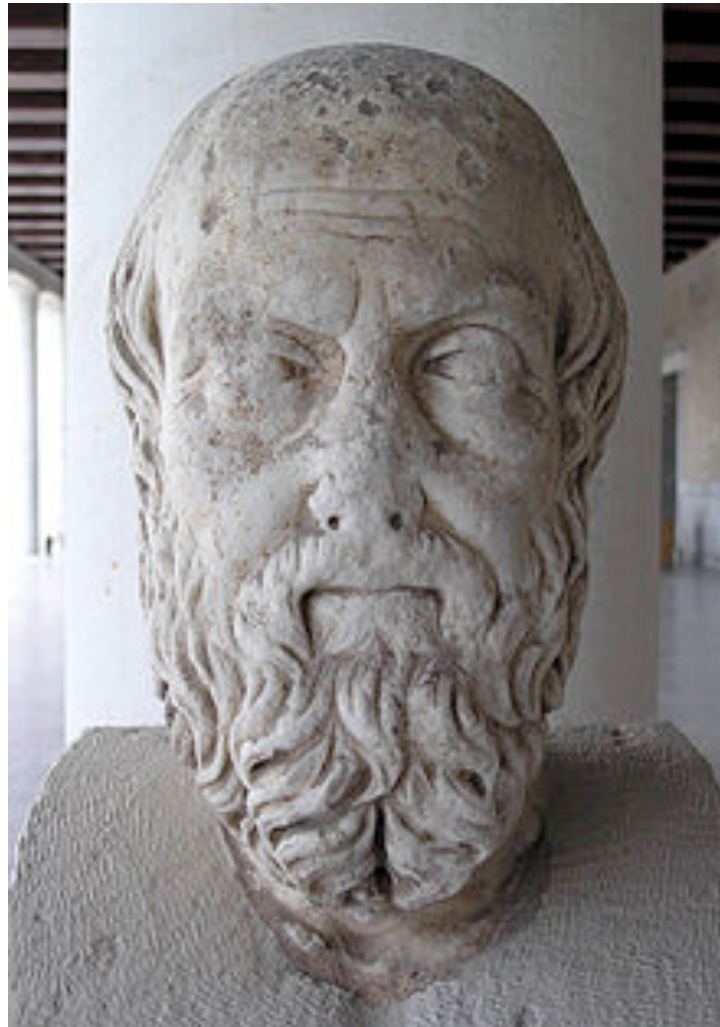


- "What were the characteristics of the first American newspapers, North or South? They began essentially as appendages of the market. Early gazettes contained - aside from news about the metropole - commercial news (when ships would arrive and depart, what prices were current for what commodities in what ports), as well as colonial political appointment, marriages of the wealthy, and so forth"
- *Imagined Communities*, Anderson

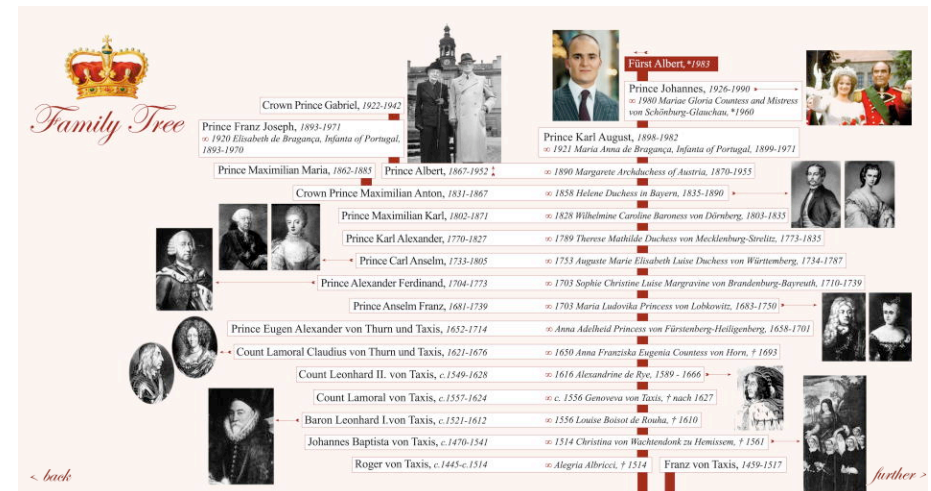


Postal Service

Herodotus



early mail systems



In England...



TRADE BETWEEN LONDON AND
BOSTON, U.S.A., 1765-71 (clxxi. 158).—
In 1775 the postal communication with the
British Dominions in America was by five
packet-boats between Falmouth and New
York, sailing from the former the first Satur-
day, from the latter the second Saturday in
every month, they were,

Halifax, Capt. John Bolderson.

Duke of Cumberland, Capt. John Mitchell.

Lord Hyde, Capt. Norris Goddard.

Harriot, Capt. Geo. Oake.

Mercury, Capt. Rob. Dillon.

The postage between London, and any port
within the British Dominions in America, of
a single letter (i.e., one sheet of paper) was
12d., which covered inland conveyance in the
Dominions up to 60 English miles; from 60 to
100 miles, 6d.; 100 to 200 miles, 8d., not pas-
sing through a chief office; and so in pro-
portion increasing two-pence for any distance
above every 100 miles. All double, treble,



“information systems” themes



- Monopolistic
- Private or government?
- Profitability
- Surveillance

USA Congressional powers

- U.S. Constitution - Article 1 Section 8
- “To establish Post Offices and Post Roads;”



July 26, 1775

Congress establishes U.S. Post Office

On this day in 1775, Congress establishes the United States Post Office and names

Government monopoly for profit...



- “The United States in Congress assembled shall also have the sole and exclusive right and power of ... establishing or regulating post offices from one State to another, throughout all the United States, and exacting such postage on the papers passing through the same as may be requisite to defray the expenses of the said office ...”
- Article 9, “The Articles of Confederation” (Agreed to by Congress November 15, 1777; ratified and in force, March 1, 1781.)

“Two Postal Revolutions”



- First:
- Post Office Act, 1792, “it gave the postal system a radically new purpose. Henceforth, its goal was not to carry official messages or to obtain revenue by to disseminate, in the words of Benjamin Rush, ‘knowledge of every kind... through every part the United States’”
 - ▣ Headrick, *When Information Came of Age*, 2000.

How to disseminate knowledge?



Post Office Act, 1792



- 1. newspapers could be sent for very inexpensive
- 2. public officials are not supposed to spy on the mail
- 3. facilitated the expansion of the postal network

Early post

- Newspapers sent between newspapers were free
- Newspapers to citizens were inexpensive
- Subsidized by the cost of sending letters
- Letter workaround?



"Columbian Centinel" 03-08-1806; Volume: 45; Issue: 4; Page: [1]; Boston, Massachusetts

Other purposes?



Other purposes for the post?

- ❑ Money transfer
- ❑ Public transportation



“In 1857, the Postmaster General began contracting with private stagecoach companies for mail service in the western territories.”

Source <http://www.postalmuseum.si.edu/duty/dangersofthetrail.html>

The growth of the post office



□ By 1840:

- ~4 of every 5 Federal employees worked for the post office
- 13,486 post offices (75 in 1790)
 - 1,087 people served by each office (43,084 per office in 1790)
 - 1 office every 61.4 square miles (1 per 3492.7 square miles in 1790)
- from: Headrick, *When Information Came of Age*, 2000.

Effective at disseminating knowledge?

- 500,000 newspapers sent through the mail in 1790
- 39,000,000 newspapers sent through the mail in 1840
 - ▣ 2.7 newspapers per capita

■ Sited from: Headrick, *When Information Came of Age*, 2000.

Effective?



- 500,000 newspapers sent through the mail in 1790
- 39,000,000 newspapers sent through the mail in 1840
 - ▣ 2.7 newspapers per capita
- **Circulation was high, but did it mean an informed electorate?**



Impacts of the post

The post office as a communication systems was a site to contest what the meaning of the community was.

Two impacts



- “This steady flow of information in turn helped to introduce a widely scattered population to two key ideas: that **the boundaries of the community in which they lived extended** well beyond the confines of their individual locality, state, or region, and coincided more or less with the territorial limits of the United States; and that the **central government might come to shape the pattern of everyday life.**”

□ Richard R. John, *Spreading the News*, 1995

Some bold statements

- “One of the most effective elements of civilization”?
 - Francis Lieber, *Encyclopedia Americana*, 1932
- “mighty arm of civil government”
 - *New York Times*, 1852
- “time and distance are annihilated.... We are *there*”
- “How society in the nineteenth century could exist without mail routes and the regular delivery of letters, it is impossible to conceive..... Particularly the lovers cut off from correspondence, bereft of newspapers, buried alive from the light of intelligence, and the busy stir of the great world! What an appalling picture”
 - James Holbrock, *My Years Amongst the Mailbags*. 1955
 - ▣ Quoted from: John, *Spreading the News*, 1995

Imagined community...



- “No longer did ordinary Americans defer to their betters, as they had during the colonial period; no longer did they stand against the government, as they had in the years immediately preceding the War of Independence. Now, for the first time in American history, a politics of vigilance supplanted a politics of trust and participation became a valued idea.”
- John, *Spreading the News*, 1995.

...of white men



- "... in the very process of incorporating the the citizenry into American public life, postal policy marginalized a number of groups – in particular, women and blacks – and in this way identified the public sphere with free white men..."
- John, *Spreading the News*, 1995.

Mail system constituting American politics



- Social implications of early mail
 - ▣ Invigorating democratic processes
 - ▣ Paradoxically, Postal information system reinforcing social stratification
 - Expense
 - Inclusion
- Nonetheless, providing a site for contesting ideologies

Mail as site of national controversy



- “the national controversy that they inspired are best understood as the response of Southern slaveholders and their Northern antiabolitionist allies to the challenge that the prior expansion of the postal system posed to conventional assumptions regarding the boundaries of American public life.”
 - ▣ John, *Spreading the News*, 1995.

1835 abolitionist mail crisis

- “As Jones’s speech attests, the southern slavocracy viewed the raising of money, the printing of abolitionist papers, and the mailing of them into the South as both an intentional and a coordinated act of aggression. And while his fear of the use of new communication technologies may seem irrational, it may also be viewed as a legitimate response to fears of modernity and the attendant further ebbing of the slaveholders’ ability to control everything and everyone around them.”
- Jennifer R. Mercieca, “The Culture of Honor: How Slaveholders Responded to the Abolitionist Mail Crisis of 1835,” *Rhetoric & Public Affairs* 10 (2007): 51-76.

“Two Postal Revolutions”: the second



- 1845 and 1851:
 - ▣ Lower the rates for letters
 - ▣ Pay by weight instead of by the sheet
- 1854: prepayment only
- What does Henkin say happens?

Modern communication practices



- Expectation of “boundless accessibility”
 - ▣ “Americans on the move formed a defining context for the newly accessible postal system.”
- The Dead Letter Office
 - ▣ Addressability: “To the big-faced Butcher, with a big wart on his nose – Cleveland, Ohio”
 - ▣ “Appearance on a list of undelivered mail raised the specter of ultimate disappearance”
- From: Henkin, *The Postal Age*. 2006

Modern communication practices

- “Calling Congressional attention to the volume of salacious literature, obscene photographs, and sexual paraphernalia that passed through the mail, Comstock’s crusade reflected the new power and priorities of an evangelical preoccupation with sexual vice”
- “junk” mail
 - ▣ “circulars” for “advertising, propaganda, fund-raising”
 - ▣ “frauds, swindles, schemes”
 - ▣ “an enterprising teenaged boy sent multiple handwritten copies of a letter stating he had ‘received a package of paper for you with six shillings charges thereon – on receipt of which amount the parcel will be sent to you...’”
- From: Henkin, *The Postal Age*. 2006

“a festival of the mail system”

- On Valentine's Day people explored the potential for anonymity
- Mock Valentine
 - ▣ “Don't look at each other so cross and so cold/ You can't have a baby, you're getting too old/ So it's no use of fretting each other insane/ You're rocking that old empty cradle in vain”
- Demonstrated the demand for cheap postage
- Henkin, *The Postal Age*. 2006



I dreamt last night a drunken sot
Had very, very tipsy got, ---
And, waking, hear a tale too true
Which made me think that out was you;
For day by day and night by night,
Drinking you make your sole delight
Porter and brandy, rum and gin
All in excess are taken in --
Glass after glass each day you swallow,
And then in drunkenness you wallow,
No drunkard ever shall be mine,
You don't deserve a Valentine.

[Black Valentines (London, c.1850)]
Source: Monash University Library
[http://www.lib.monash.edu.au/
exhibitions/recent-acquisitions4/virtual/
photos/photo6.html](http://www.lib.monash.edu.au/exhibitions/recent-acquisitions4/virtual/photos/photo6.html)



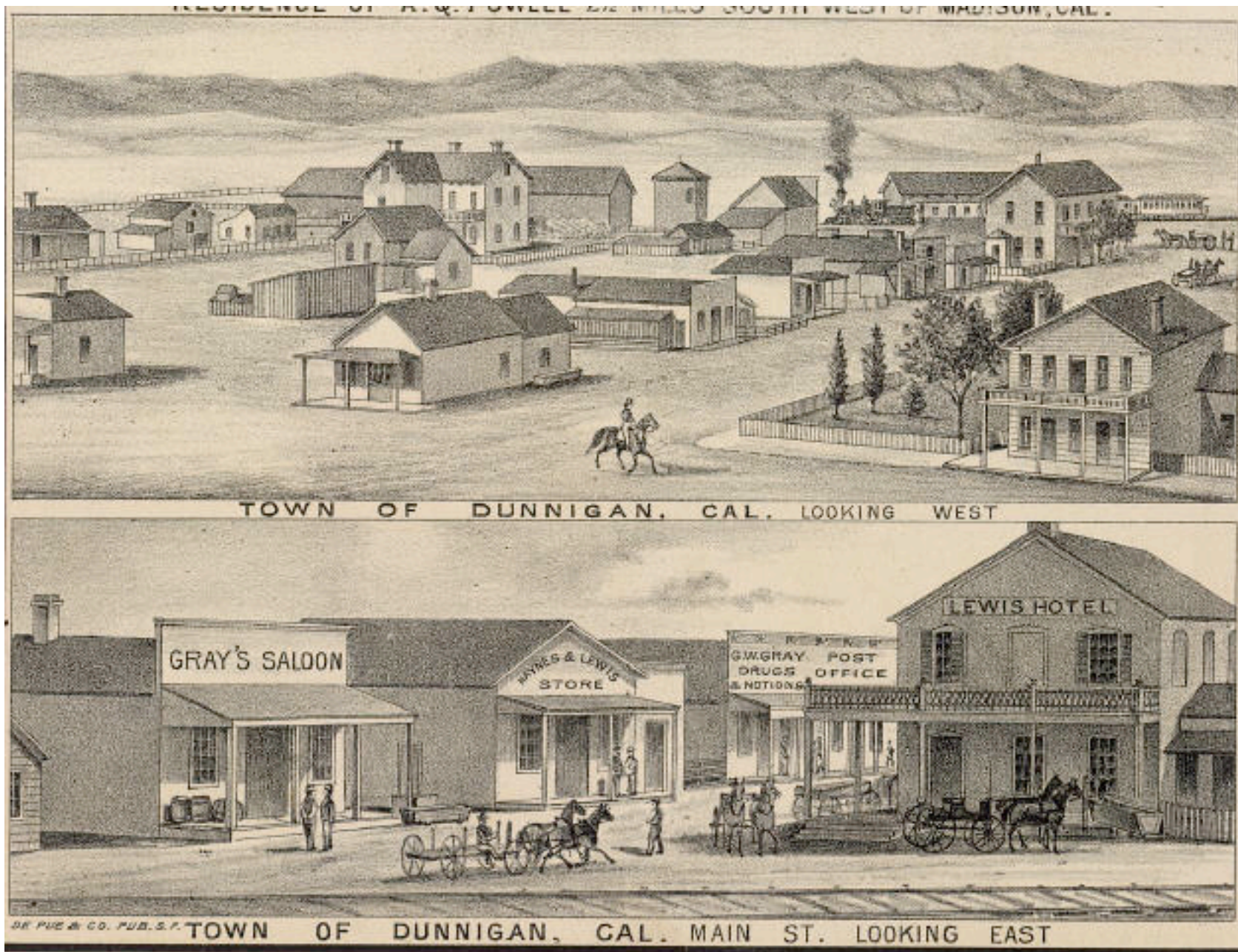
California!

“Nowhere was the arrival of the mail more eagerly awaited than in San Francisco during the opening months of the California gold rush.”

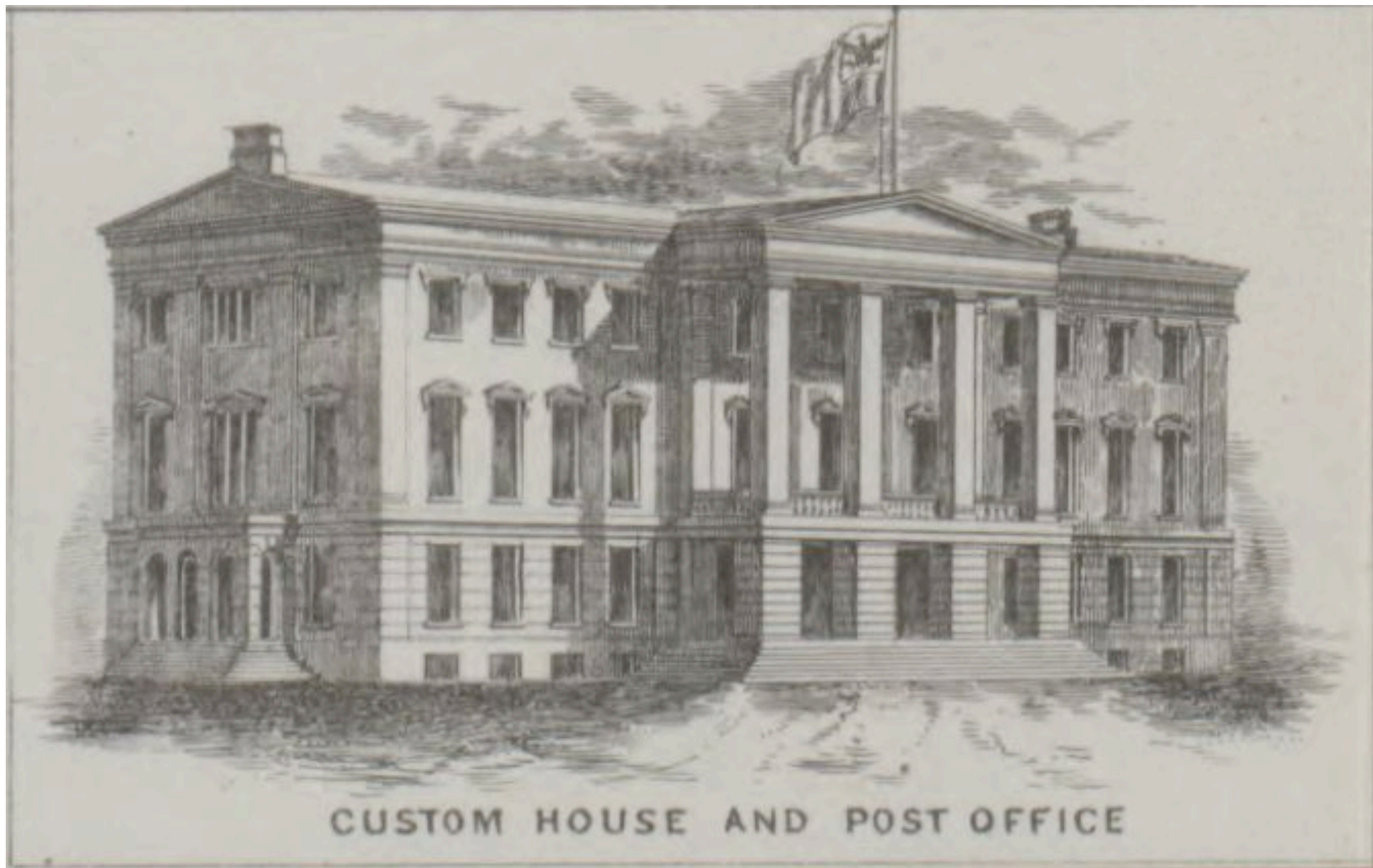
Spreading the News by Richard John



“Post Office, San Francisco, California,” Cox, H. F., artist (artist) Wm. Endicott & Co. (active ca. 1849-ca. 1852), [18--] BANC PIC 1963.002:0558



De Pue & Company; Galloway, W. T. (William T.) 1879 "Dunnigan, Winters, Madison farm. Publisher:"De Pue & Company San Francisco



‘Public buildings, San Francisco [California]’

Creator/Contributor: Britton & Rey (active 1851-1902), lithographer and publisher (lithographer and publisher) [18--] Identifier: BANC PIC 1963.002:0562--C

<http://content.cdlib.org/ark:/13030/tf2g5007sn/thumbnail>

1857 information infrastructure

According to the *State Register* of California for 1857

91 different newspapers and periodicals published in the State of California (Aggregate circulation is about 18 million sheet annually)

- ▣ 25 are daily
- ▣ 7 in non-English
- ▣ 23 democrat; 9 “American”; 8 Republican; 33 independent
- ▣ 9 are religious

23 libraries which are non-private

2 telegraph lines – California State Line; Alta Telegraph Line
– both “organized” in 1852

1857 Post office

According to the *State Register* of California for 1857

Number of post-offices in California: 256; length of routes, 2,332 miles; cost of transportation, \$127,515. Total receipts of mail for year ending June 30th, 1855, \$234,591

Statement of the number of Letters sent and received in the California Mails, and the Postage paid on the same:

- ▣ Year ending June 30th 1852 — Number of Letters: 1,495,537;
- ▣ Year ending June 30th 1853 — Number of Letters: 2,707,533;
- ▣ Year ending June 30th 1854 — Number of Letters: 2,958,681
- ▣ Year ending June 30th 1856 — Number of Letters: 2,365,902

1857 Post office

According to the *California Pictorial Almanacs*

1858: statement of letters sent “From the Post Office, San Francisco, Cal., to the Atlantic States from Jan. 5th to Nov. 5th 1857”

- January 5; John L. Stephens [boat] sent 45,942 letters
- ▣ Dates of departure: 22
- ▣ Sent: Total registered and valuable letters: 9,743
- ▣ Sent: Total no. Of letters: 832,102
- ▣ Received: Total: 6113 “bags of mail matter”

1857 Post office



Schedule of Mail departures From Post Office at San Francisco, California

- ▣ “Atlantic States, via Panama, 5th and 20th of every month.
- ▣ San Diego and Salt Lake 3rd and 18th of every month.
Oregon and Washington Territories, taking mails also for the Northern Coast, 1st and 21st every month.
- ▣ San Jose, 8 A. M., ever day.”....
- ▣ ”Ship Mails are despatched by every opportunity for the Sandwich Islands, Society Islands, Australia, and China.
Postage on Letters to all parts of the Pacific, by ship, to be prepaid.”

1858 – first overland trip



- Leaving St. Louis September 16, and arriving in San Francisco October 10,
- Volume of mail increases very quickly –
 - ▣ 896 letter received on the first northern route trip in September 1858 –
 - ▣ October 1859 there are 18,149 letters received
 - ▣ October 1859 there are 27,851 letters sent.

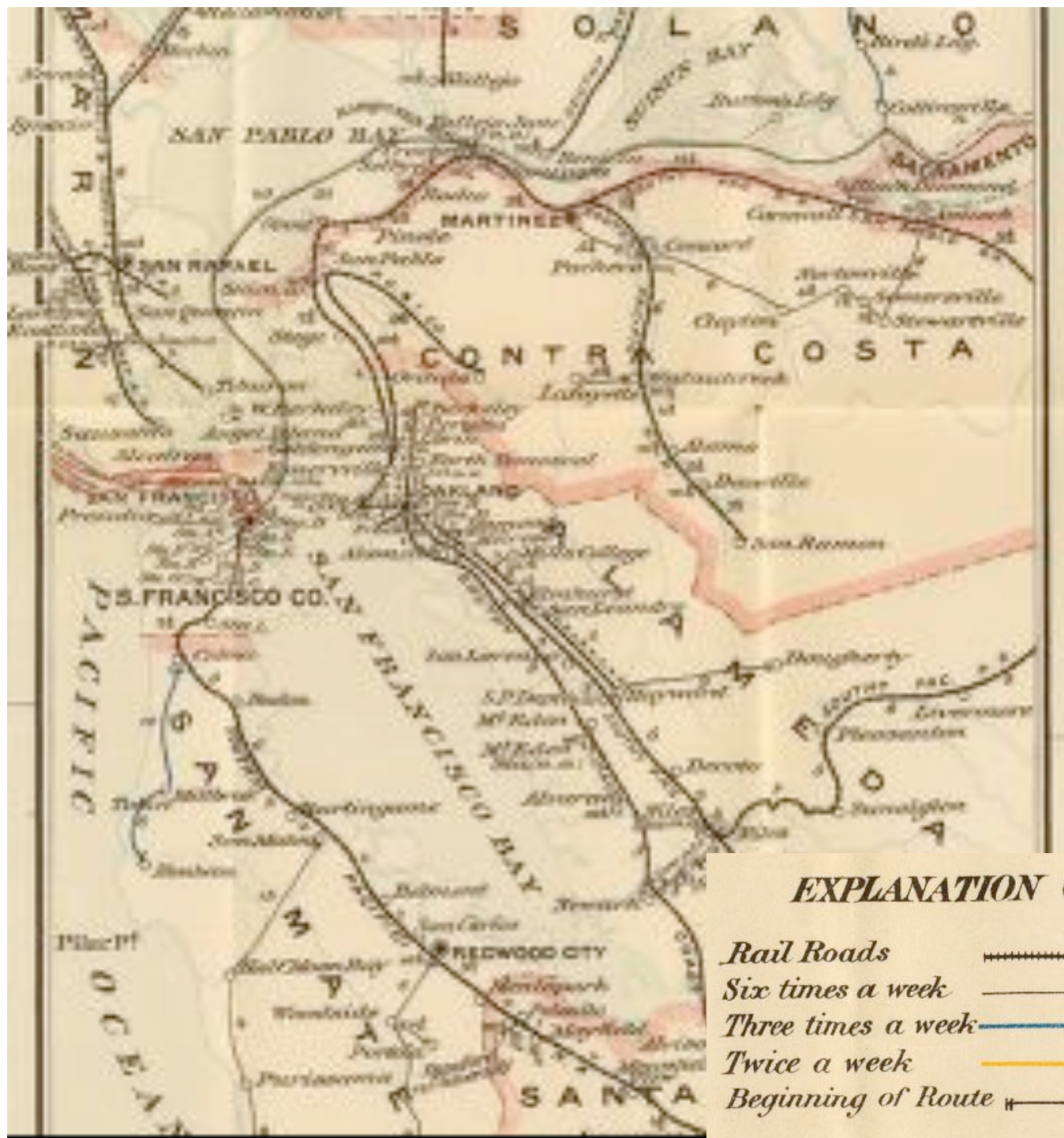


United States. Post
Office Dept.; Von
Haake, A.

Date:
1896

“Composite: California,
Nevada.”

Publisher:
U.S. Post Office
Washington



The gold rush mail



- Contact with women (remember ~5k women in the state according to the 1850 census)
- Daguerreotypes, descriptions of physical self
- Letters and envelopes with images of California
- Sending money or financial situation



Scene at the San Francisco Post Office,
— SHOWING —
HOW WE GET OUR LETTERS.

The above illustration will be recognized as a correct Post-Office scene upon the arrival of the mails from the Atlantic. An interval of two weeks elapsing from the arrival of one mail to another, creates an anxiety to hear from home, that can scarcely be comprehended by other than residents of California. At an early hour of the morning on which it is announced the mails will be ready for delivery, anxious faces commence forming in the lines leading to the different deliveries; and by 8 o'clock the whole interior of the spacious building is completely jammed with persons, as well as the streets adjoining. The letters are generally delivered with all possible dispatch, yet evening will often find the different lines but little shortened; and the wait sometimes continues for three days.

Persons in the Atlantic States will readily understand the disappointment a friend here experiences at being told at the window, after undergoing for three or four hours the persecution of being jammed and jostled by an anxious crowd, exposed to a burning sun, or the freezing and disagreeable winds which at seasons sweep round the corners of our streets carrying with them clouds of dust—yes, at being told by the clerk that there is nothing for him. The announcement falls harshly upon his ear, and with the speed of thought settles upon his countenance a shade of gloom and disappointment. On the other hand, should a letter be handed him, it is refreshing to note the gleam of joy that sparkles in his eyes, and the smile of thankfulness that beams upon his face, as he places the sacred epistle in his pocket, and walks hurriedly away. Friends in the Atlantic States, could they but for a moment witness the scene so perfectly represented by the artist in the sketch above, and watch the anxiety depicted in the features of each figure slowly working his way to the delivery, we think they would be more punctual in their correspondence, for it would be no pleasing sight to notice the disappointment of a husband, a father, a brother or a friend, caused perhaps, by their negligence.

Published by LELAND & McCOMBE, Post Office, Building, San Francisco. Engraved expressly for the Publishers, by ANTHONY & BAKER.

Title:

Scene at the San
Francisco Post Office
showing how we get our
letters [California]

Creator/Contributor:

-Anthony & Baker (active
1850s), engraver
(engraver)

-Leland & McCombe,
publisher (publisher)

-A B [monogram],
undetermined

(undetermined):

[1854]

BANC PIC

1963.002:0137--A



“The above illustration will be recognized as a correct post-office scene upon the arrival of the mails from the Atlantic. An interval of two weeks elapsing for the arrival of one mail to another, creates an anxiety to hear form home that can scarcely be comprehended by other than residents of California. At an early hour of the morning on which it is announce the mails will be ready for delivery, anxious faces commence forming the the lines leading to the different deliveries, and by 8 o'clock the whole interior of the spacious building is completely jammed with persons, as well as the streets adjoining. The letters are generally delivered with all possible dispatch, yet evening will often find the different lines but little shortened; and the RUSH sometimes continues for three days.”



“Persons in the Atlantic states will readily understand the disappointment a friend here experiences at being told at the window after undergoing for three or four hours the persecution of being jammed and jostled by and anxious crowd, exposed to a burning sun the freezing and disagreeable winds which at seasons swap round the corners of our streets carrying with them clouds of dust -- yes, at being told by the clerk that there is nothing for him. The announcement fall harshly upon his ear, and with the speed of thought settles upon his countenance a shade of gloom and disappointment. On the other hand, should a letter be handed him, it is refreshing to note the gleam of joy that sparkles in his eyes, and the smile of thankfulness that beams upon his face, as he places the sacred epistle in his pocket, and walks hurriedly away. Friends in the Atlantic States, could they but for a moment witness the scene so perfectly represented by the artist in the sketch above, and watch the anxiety depicted in the features of each figure slowly working his way to the delivery, we think they would be more punctual in their correspondence, for it would be no pleasing sight to notice the disappointment of a husband, a father, a brother or a friend, caused perhaps, by their negligence.”

Mission of Santa Clara
July 29, 1850

Dear Brother

I write you again thinking you might like to hear something of my movements. I believe I told you in the letter I wrote about a fortnight ago that I went to San Francisco, and I did leave a day or two afterwards, with the intention of going to San José. I found there were two ways of getting there, by the stage for twenty dollars and by vessel to the Embarcadero, eight miles from San José. I chose to go by the vessel as it was cheapest. I got on board a sloop of nine tons and at 11 o'clock in the day we started. There were five passengers besides myself one of whom was a boy. The sloop being deeply laden with lumber, when the afternoon wind sprang up the spray dashed over us and water came up to our knees and the sea was so rough that we were all sea-sick. The hills on the shores of the bay had the appearance of being sandy and barren, but they were covered with wild oats which are now ripe. At 5 o'clock we entered the mouth of a small crooked cove and after sailing up it for an hour we reached the Embarcadero. This was a swamp in which there was about a dozen houses the occupants of which are engaged in carting lumber to the capital. I spread my bed in the house of a Mr. Richett

Mr. Robert Briggs
Malden
Mass.

Letter from George H. Briggs to his brother Robert Briggs concerning trip from San Francisco to Mission Santa Clara, July 29, 1850
Collection: History San José Silicon Valley History Online collection
<http://content.cdlib.org/ark:/13030/kt567nc4pq/hi-res>

Daguerreotype

Joseph Sharp, with a pick axe,
pan and gun. Bancroft Library.
<http://content.cdlib.org/ark:/13030/tf3b69n709/?brand=calisphere>



San Francisco [California] in 1851. Illustration by Peirce, Joshua H. (active 1850s), American?, lithographer (lithographer) and Peregoy, Charles E. (active 1850-1851), printer (printer) BANC PIC 1963.002:0134—B

View from Nob Hill looking down California Street; harbor packed with ships; Yerba Buena Island and bay at distance; Telegraph Hill. Handwritten letter dated 1851 on recto and verso. Blind stamp (UC). Enclosed is original envelope of lettersheet.



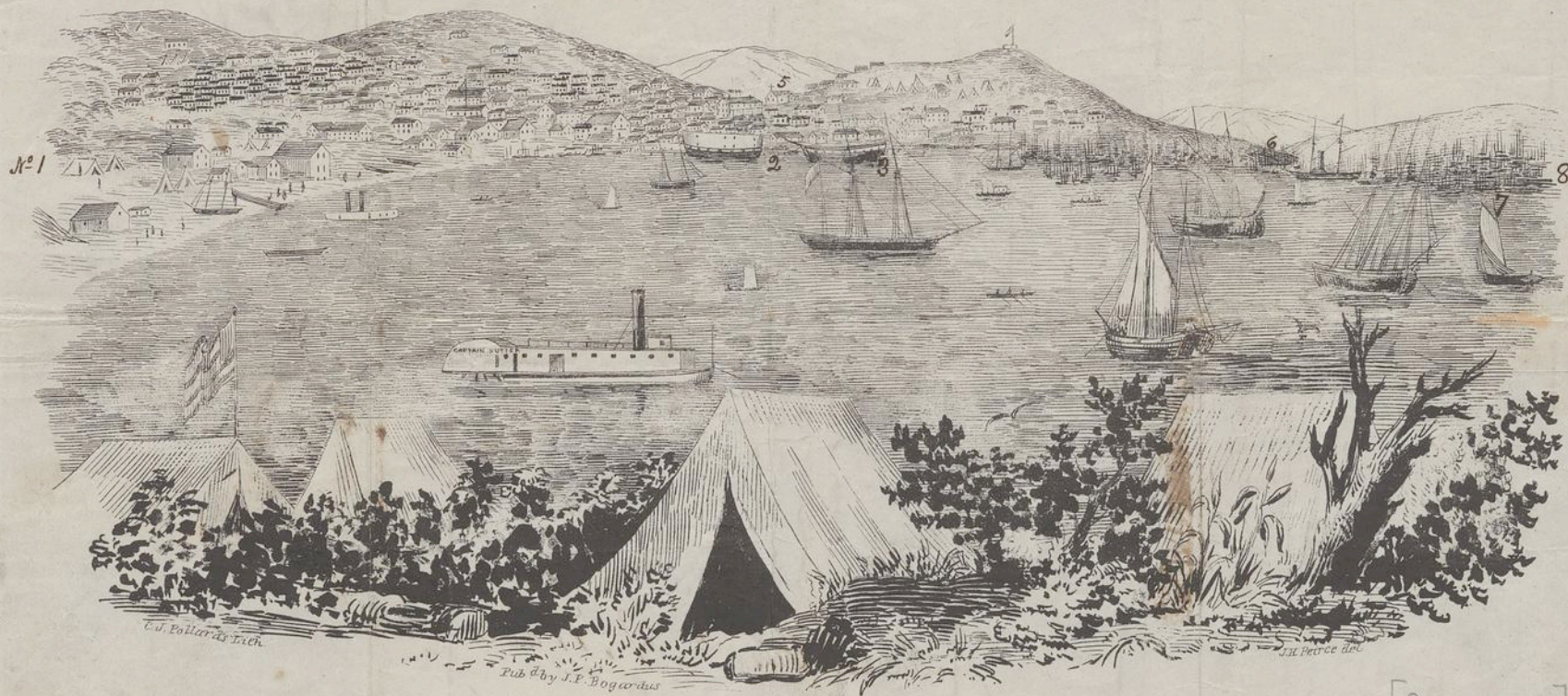
SAN FRANCISCO IN 1851

San Francisco, Cal. I send to you an extremely rough sketch of this city
 March 15, 1851. with its harbor. Its wharves are altogether more densely
 crowded than the harbor which is very justly represented, so
 far as the shipping is concerned. Many of the buildings here would be an ornament to Boston
 in New York. Its beautiful iron buildings particularly attract the eye of the stranger. Its
 streets are well graded & paved with plank laid with a convex surface. Its population swarms in
 the streets every day, all sizes, all colors, all costumes, all distinctive manners & languages (almost) without number.
 The form of the city is a crescent the back round rising into numerous high hills. The Telegraph



<http://content.cdlib.org/ark:/13030/tf558009p1/?brand=calisphere> San Francisco [California]

from Rincon Point By Peirce, Pollard, C. J Bogardus, [1850] Bancroft Library.



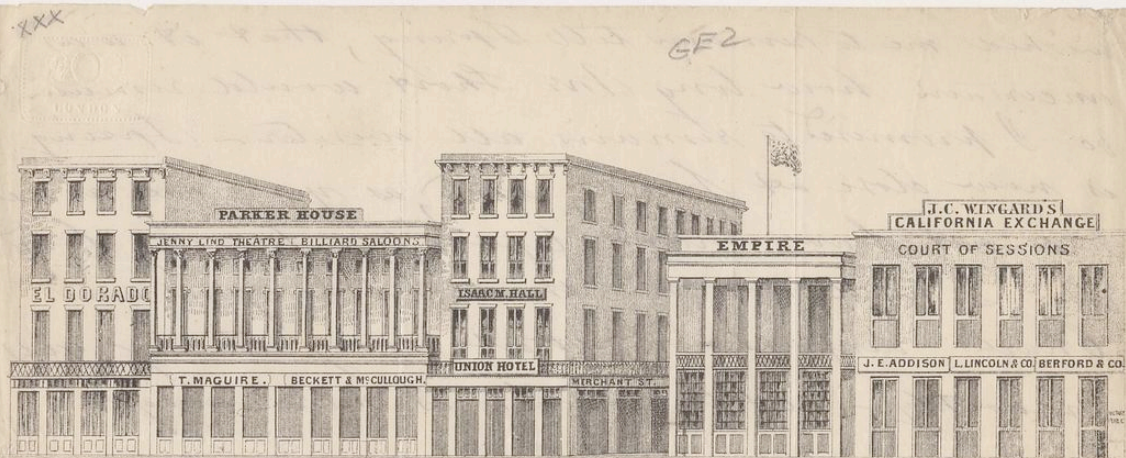
SAN FRANCISCO, FROM RINCON POINT.

[Chas a Wood]

San Francisco Wednesday March. 28. 1850

To my Dear little Mary—

You have above a picture of the place where I am now writing Rincon Point, is the southern extremity of a cove called Yerba Buena or in english good grass cove the hills to the left as also the one with a flag staff are laid out with streets & all the land back to the left as far as the mission 3 miles from here, are offered in lots for sale N.º 1 is happy Valley N.º 2 Central wharf & store ship Apollo N.º 3 Prison ship N.º 5 catholic church N.º 6 Clarks point N.º 7 where we lay N.º 8 Launcelota where they get water for ships we enter the harbour from behind the hills at the left & go between the catholic church you see & the hill beyond & round the hill with the flag staff & so between Clarks point & Launcelota to the shipping the steamers anchor off Rincon Point. Chas. A. Wood



East side of Portsmouth Square.

T. J. A. CHAMBERS, JAS JOHNSTON, J. W. MC CABE, F. C. GRAY, Proprietors.	JENNY LIND THEATRE, JAS STARK Manager. T. MAGUIRE, Proprietor.	BECKETT and MC CULLOUGH'S Club Rooms.	UNION HOTEL, Under the management of Isaac M. Hall. Late of the Eagle Hotel, Rochester, N.Y. A. A. SELOVER, of Ohio, J. MIDDLETON, of New York, E. V. JOICE, of N.Y., Proprietors.	I. F. RYAN, Oyster Saloon.	BERFORD & CO'S California & United States Express. J. E. ADDISON, L. LINCOLN & CO. County Clerk, Exchange Office. J. C. WINGARD, J. C. HACKETT, California Exchange, Notary Public. COURT OF SESSIONS. R. N. MORRISON, E. M. GOWAN, H. S. BROWN, Judges.
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San Francisco, Feb. 15th 1851

Dear Sir

I have wanted to address you before now, but hoped that this mail would bring the information that were now on the way - Such not being the case, I take a moment to write though this is the busiest day of the season. I came into this office the last time, with the understanding that I was to take charge of the news paper department, and would receive at least \$200 per month. Other arrangements being made, I spoke with you on the subject previous to your leaving, and as you said your

<http://content.cdlib.org/ark:/13030/tf6j49p522/?brand=calisphere>

Title:

East side of Portsmouth Square
[San Francisco, California]

Creator/Contributor:

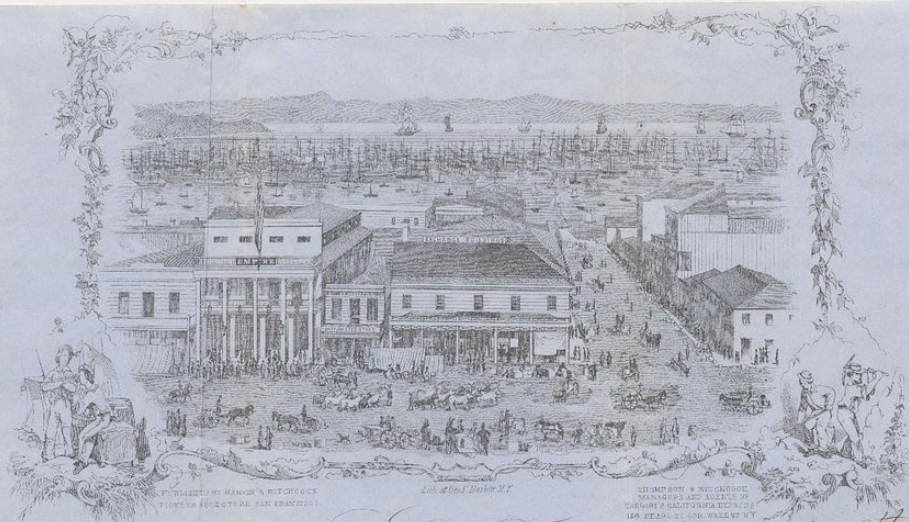
Butler, B. F. (active ca. 1851-ca. 1852), lithographer

Date:

[1851]

Contributing Institution:

Bancroft Library.



Dear Father, Mother, Sister & Brother
 San Francisco December 1st 1850

Well here I am once more in the city of San Francisco, having lost my all on the Stanislaus river, which so discouraged me that I have left the mines, to which I shall never return. I have worked like a cart horse all the time from sunrise until sun set, with the exception of a couple of hours during the heat of the day. As yet we have had but very little rain & the Indians prophesy a dry winter as this is the seventh year. There will be a great deal of suffering in this country during the winter as the mines are rapidly becoming exhausted, but there will be a few lucky ones who will strike a pile while thousands scarcely earn their board although they work very hard. It is impossible for any person to imagine this country in its true light, unless he has been here to see that monstrous Elephant. As Anthony has said the miner gains nothing, but the speculator all. I have learnt much of mankind since I left home, having had a better opportunity to study them in this far off country than I had at home. I left Charlie Pierce in the mines, he was

<http://content.cdlib.org/ark:/13030/tf2m3nb41s/?brand=calisphere>

San Francisco [California]
 Creator/Contributor:
 G.F. Nesbitt & Co., lithographer
 Marvin & Hitchcock (active ca.
 1852), publisher
 [1850]
 Bancroft Library.

December 9, 1850

Dear Father, Mother, Lishes[?] and Brother

Well here I am once more in the city of San Francisco having lost my all on the Hamolaus[?] river, which so discouraged me that I have left the mines, so which I shall never return. I have worked like a cart horse all the time from sun rise until sunset with the exception of a couple of hours during the heat of the day. As yet we have had but very little rain and the Indians prophesy a dry winter as this is the seventh year. There will be a great deal of suffering this country during the winter as the mines are rapidly becoming exhausted but there will be a few lucky ones who will strike a pile[?] while thousands scarcely earn their board although they work very hard. It is impossible for my person to imagine this country in ids[?] free light unless he had been here to see that monstrous Elephant. As Anthony has said the miner gains nothing but the speculator all. I have learnt much of mankind since I left home having had a better opportunity to study them in this far off country than I had at home. I left Charlie Pierce in the mines....

and, all is in

in this time

Elephant

Telegraph!

Optical to electrical



STANDARD WIRELESS KEY.

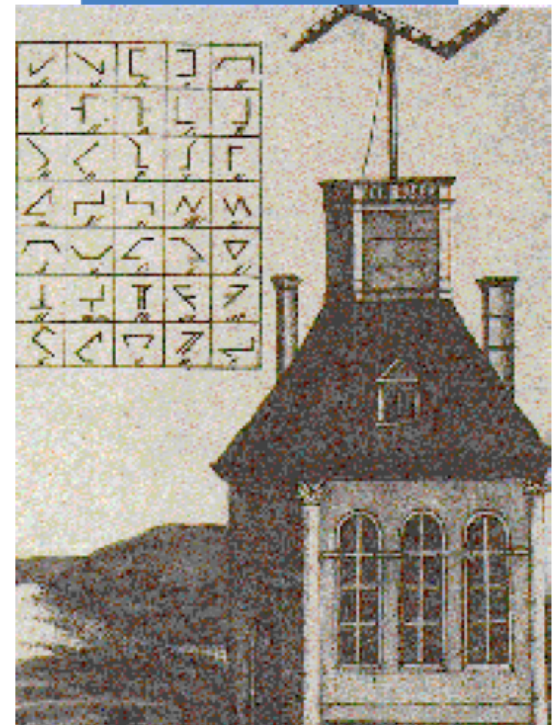
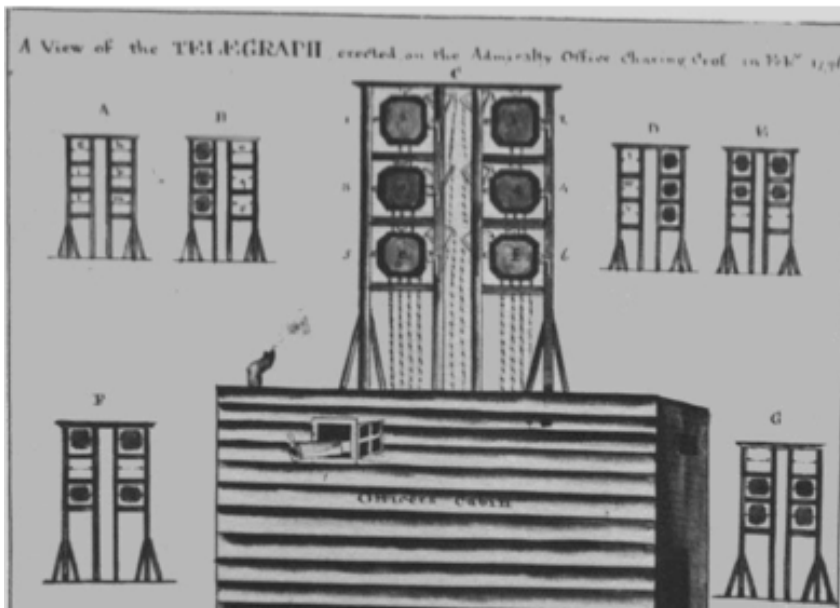


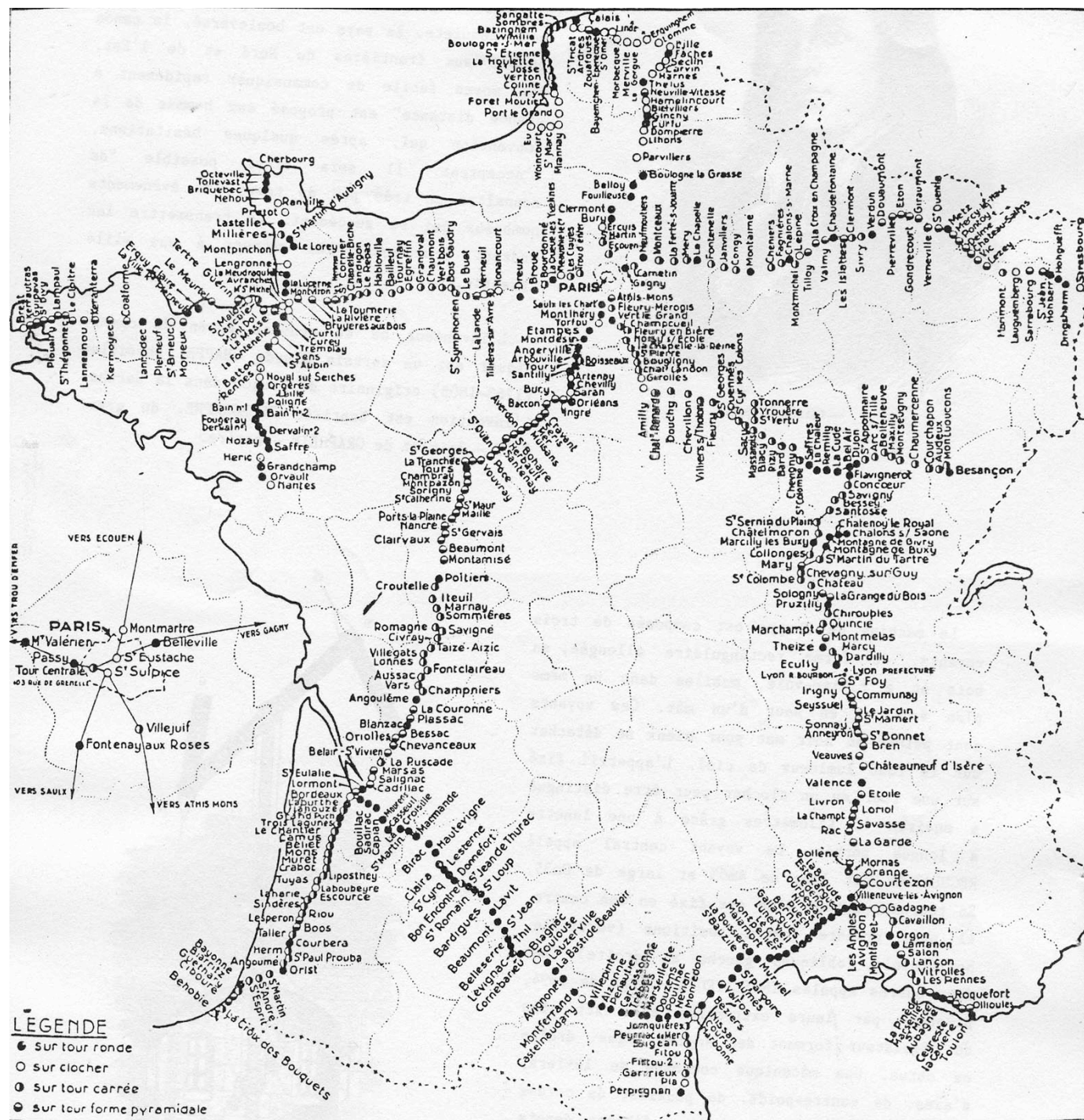
The Chappe Semaphore

- "[B]y the telegraph [man] renders himself as it were present in the same moment at distant places."
Monthly Review



Claude Chappe
(1763–1805)





“What Hath God Wrought?”

Sheet 1. 3 Sheets
S. F. B. Morse.
Telegraph Signs.
Nº 1647. *Patented Jun. 20, 1840.*

Example 1st *1st For Numerals*

1	2	3	4	5	6	7	8	9	0
1	2	3	4	5	6	7	8	9	0
1	2	3	4	5	6	7	8	9	0
1	2	3	4	5	6	7	8	9	0

Example 2^d *For Compound Numerals*
Showing the numerals combined together

1	2	3	4	5	6	7	8	9	0
1	2	3	4	5	6	7	8	9	0
1	2	3	4	5	6	7	8	9	0
1	2	3	4	5	6	7	8	9	0

Example 3^d *2^d For Letters*

a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p
q	r	s	t	u	v	w	x								

The System of Type

Example 4th *1st For Numerals*

Fig. 1.

1	2	3	4	5	6	7	8	9	0
1	2	3	4	5	6	7	8	9	0

Fig. 2.

1	2	3	4	5	6	7	8	9	0	Long	Rest	Change	Stop
1	2	3	4	5	6	7	8	9	0	Long	Rest	Change	Stop

- Patent filed in 1837
- Morse as “inventor” of the telegraph is dubious: Wheatstone and Cooke were working on the same thing in England as was Schilling in Germany
- Morse code patented in 1840 (binary)
- Senate demonstration in 1844

Deployment in the US

- First electric telegraph in the USA: 1845-7 operated by the post office
- Congress and the Postal Service lacked interest and telegraphy became a private enterprise in 1848
- 1850s - extreme instability - "frequent breakdowns, lawsuits, rate wars, duplicate services, and ruinous competition" p12
 - ▣ Amy Friedlander, Natural Monopoly and Universal Service: Telephones and Telegraphs in the U.S. Communications Infrastructure, 1837-1940. 1995

Western Union



Interior of the Western Union building from Chicago office. The operators occupy the ninth and tenth floors of the Western Union building. The rooms are 46 x 213 feet, and accommodations are provided for 580 operators. The number of messages handled here average 2,127,438 a month.

TABLES OF DISTANCES

FOR THE

REGULATION AND ADJUSTMENT

OF

TELEGRAPHIC RATES FOR GOVERNMENT MESSAGES.

COMPILED BY THE

TOPOGRAPHER OF THE POST-OFFICE DEPARTMENT.

“Tables of distances for the regulation and adjustment of telegraphic rates for government messages.”

United States. Post Office Dept.
Washington: Gov't print. off.,
1873.

[http://name.umd.umich.edu/
aeu0149.0001.001](http://name.umd.umich.edu/aeu0149.0001.001)

TABLE OF DISTANCES.

Place, County, and State.	Distance from Washington.	Distance from New York.
	<i>Miles.</i>	<i>Miles.</i>
Abbeville C. H., Abbeville, S. C.....	610	838
Aberdeen, Monroe, Miss.....	941	1,169
Abingdon, Knox, Ill.....	919	1,057
Abingdon, Washington, Va.....	369	597
Abington, Plymouth, Mass.....	479	251
Ackley, Hardin, Iowa.....	1,094	1,223
Ada, Hardin, Ohio.....	549	678
Adams, Berkshire, Mass.....	400	172
Adams, Jefferson, N. Y.....	492	314
Adams' Run, Colleton, S. C.....	603	831
Addison, Steuben, N. Y.....	325	301
Adrian, Lenawee, Mich.....	591	720
Afton, Union, Iowa.....	1,163	1,288
Aiken, Barnwell, S. C.....	609	837
Akron, Summit, Ohio.....	423	548
Albany, Dougherty, Ga.....	823	1,052
ALBANY, Albany, N. Y.....	373	145

TWENTIETH CENTURY MANUAL OF RAILWAY COMMERCIAL AND WIRELESS TELEGRAPHY

FRED. L. MEYER

Ovr—Over.	T—The.
Ofr—Offer.	Tt—That.
Opr—Operator.	Tf—Tariff.
OS—Order Sheet.	Toda—Today.
Pa—Pay.	Tng—Thing.
Pd—Paid.	Tk—Take.
P O—Post Office.	Tak—Tank.
Pla—Please.	Tnx—Thanks.
Passgr—Passenger.	Tm—Them.
Pt—President.	Ti—Time.
Qk—Quick.	Tn—Then.
Rite—Right.	Tr—There.
Rpt—Report.	Ts—This.
Rtn—Return.	Twu—Town.
Rlf—Relief.	Ty—They.
Sa—Say.	Tel—Telegraph.
Shld—Should.	Tno—Though.
Sch—Such.	Thot—Thought.
Sm—Some.	Tmw—Tomorrow.
Sn—Soon.	Tru—Through.
Ses—Says.	Tkt—Ticket.
St—Street.	Tm—Train.
So—South.	U—You.
SF B—Stop for Break- fast.	Ur—Your.
SF D—Stop for Dinner.	Cx—Underline.
Sfn—Stop for night.	Und or 13—Understand.
Sig—Signature.	Vy—Very.
Sm1—Small.	W1—With.
Stk—Stock.	Wa—Way.
Smtg—Something.	WB—Waybill.
Supt—Superintendent.	Wh—Which.
	Wld—Would.

Decentralized population

Centralized “information flows”



- “centralized information flows helped to consolidate key urban and commodities markets.... also allowed businesses to decentralize internal operations... cotton agents could buy the crop virtually off the farm while remaining in communication with the home office”

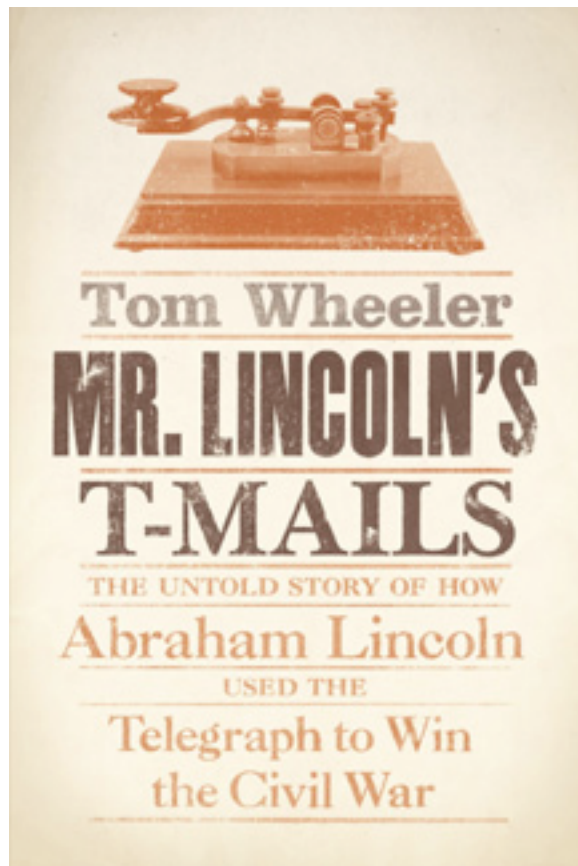
- Amy Friedlander, *Natural Monopoly and Universal Service: Telephones and Telegraphs in the U.S. Communications Infrastructure, 1837-1940*. 1995

Pioneering vertical integration



- “There were wholesale fruit stores, where a pocketful of apples was sometimes to be had for the prompt delivery of a message; bakers and confectioners’ shops where sweet cakes were sometimes given to him. He met very kind men of whom he looked up with respect; they spoke a pleasant word and complimented him on his promptness, perhaps asking him to deliver a message on the way back to the office. I do not know a situation in which a boy is more apt to attract attention, which is all a really clever boy requires in order to rise”
 - ▣ Andrew Carnegie on being a telegraph messenger boy.

Telegraph... centralization?



- “Throughout the entire history of armed conflict, the ability to have a virtually instantaneous exchange between a national leader at the seat of government and his forces in the field had been impossible. As a result, field commanders had been the closest things to living gods.”

We intend to begin unrestricted submarine warfare on

<div style="display: flex; justify-content: space-between;"> <div style="width: 40%;"> <p>CLASS OF SERVICE INDICATOR</p> <p>Post Day Message <input checked="" type="checkbox"/></p> <p>Day Letter <input type="checkbox"/></p> <p>Night Message <input type="checkbox"/></p> <p>Night Letter <input type="checkbox"/></p> <p><small>For Telegrams, please indicate if you wish the message to be sent by day or night. If you wish the message to be sent by day or night, it will be transmitted as a Day or Night Message.</small></p> </div> <div style="width: 50%; text-align: center;"> <h1 style="margin: 0;">WESTERN UNION</h1> <h2 style="margin: 0;">TELEGRAM</h2> <p style="font-size: small; margin: 0;">NEWSPERS: GAILTON, PRESIDENT</p> </div> <div style="width: 10%; text-align: right;"> <p>DATE</p> <p>TIME</p> </div> </div>	
<p>Send the following telegram, subject to the terms on back hereof, which are hereby agreed to:</p>	
<p>GERMAN LEGATION</p> <p>MEXICO CITY</p>	<p>via Galveston</p>
<p>130 13042 13401 8501 115 3528 416 17214 6491 11310</p> <p>18147 18222 21500 10247 11518 23677 13605 3494 14936</p> <p>98092 5905 11311 10392 10371 0302 21290 5161 39695</p> <p>23571 17504 11269 18276 18101 0317 0228 17694 4473</p> <p>22284 22200 19452 21589 07893 5569 13918 8958 12137</p> <p>1333 4725 4458 5905 17106 13851 4458 17149 14471 6706</p> <p>13850 12224 6929 14991 7382 15857 67893 14218 36477</p> <p>1870 17553 67003 5870 5454 16102 15217 22801 17132</p> <p>21001 17308 7410 23638 18222 6719 14331 15021 23845</p> <p>3100 23552 22096 21604 4797 9497 22401 20855 4377</p> <p>23010 18140 22200 5905 13347 20420 39689 13732 20667</p> <p>6929 5078 18507 52202 1340 22049 13339 11265 22295</p> <p>10439 14814 4178 6992 8784 7632 7357 6926 52262 11267</p> <p>21100 21272 9346 9559 22404 15874 18502 18500 15857</p> <p>2128 5376 7381 98092 16127 13486 9350 9220 76036 14219</p> <p>5144 2831 17926 11347 17142 11264 7667 7762 15099 9110</p> <p>10482 97556 3569 3070</p>	

Please call the President's attention to the fact that the unrestricted employment of our submarines now offers the prospect of compelling England to make peace within a few months. Acknowledge receipt.

Zimmermann

“telegraph reporters”

- Associated Press formation 1846-8
 - James Gordon Bennet, *New York Herald*
 - James Webb, *Courier & Enquirer*
 - Gerald Hallock, *Journal of Commerce*
 - Horace Greely, *Tribune*
 - Moses Beach, *New York Sun*
 - Eustace Brooks, *New York Express*

PUBLICATION OFFICE:
104 Sacramento street, (Alta California
Building.)

From our Evening Edition of Yesterday.

EARTHQUAKE.—There was a slight shock of an earthquake this morning, about 8 o'clock. A small wooden building at the junction of Market and California streets, was thrown down.

FROM HUMBOLDT.—We are indebted to Wells, Fargo & Co. for Humboldt papers of Dec. 27th. They contain no news of interest.

BY MAGNETIC TELEGRAPH.

SACRAMENTO, January 9.

DEMOCRATIC CAUCUS—FIVE HALLOTINGS.—Gwin, 28; Latham, 23; McCorkle, 10; Washington, 8; Field, 5. A severe shock of an earthquake was felt here this morning.

Daily Alta California

By Magnetic
Telegraph:
Sacramento,
January 9:

“A severe shock of
an earthquake
was felt here this
morning”

Daily Record EXTRA.

BY TELEGRAPH!

Partial Accounts

—OF THE—

EARTHQUAKE !!

QUITE A NUMBER REPORTED
KILLED AND WOUNDED.

The Estimated Cost of the Destruction of Property in San Francisco will exceed \$1,000,000

SACRAMENTO.

The heaviest shock of Earthquake ever experienced in this city occurred this morning at five minutes to eight o'clock. Apart from the falling of a little plaster in some three or four buildings, no other damage has been reported.

At 20 minutes to 11 o'clock, a second shock, much lighter than the first, was felt here.

SAN FRANCISCO.

SAN FRANCISCO, Oct. 21st.

Shocks of earthquake occurred at five minutes before 8 o'clock this morning. Several persons are reported killed and a number wounded by falling walls. Heyman's building, on California street, is destroyed. Many others are seriously injured.

SECOND DISPATCH.

A severe shock of earthquake was felt here at five minutes before eight o'clock this morning. Several buildings were destroyed, including the Livingston block, consisting of a row of one-story brick buildings on

the south side of California street, below Sansome. Most of the buildings in the vicinity were injured, and their foundations rested upon made ground. Several lives are reported lost. A number of people were injured, principally by falling fire-walls and by runaway teams. The City Hall, which was seriously damaged in 1865 is now in an unsafe condition, and no business will be transacted there to-day. The people are utterly demoralized and panic-stricken. The first shock was from east to west, and was prolonged beyond any previously felt here. It was followed by about a dozen light shocks, terminating with a heavy shock—about as heavy as the great shock of 1865. Business is generally suspended on Front street. Advices from Oakland report the long ferry pier damaged, so that cars will not be able to run upon it for several days.

THIRD DISPATCH.

City wild with excitement. The Bank of California, Merchants' Exchange and Hayward's new building greatly damaged.

Upwards of one million dollars' worth of property destroyed. The number of lives lost is unknown.

SAN LEANDRO.

SAN LEANDRO, Oct. 21st.

Our Court House is down, and Deputy Sheriff Josselyn killed. All the prisoners still in cells, as the keys are still in the safe, where they cannot be got at. The other adobe buildings are down; also warehouses and mill at Hayward's.

The ground opened at San Lorenzo, and water came up.

SAN JOSE.

SAN JOSE, Oct. 21st.

A heavy shock of earthquake was felt in this city this morning. Many buildings were injured. The Masonic Hall building is badly shaken.

Exciting!

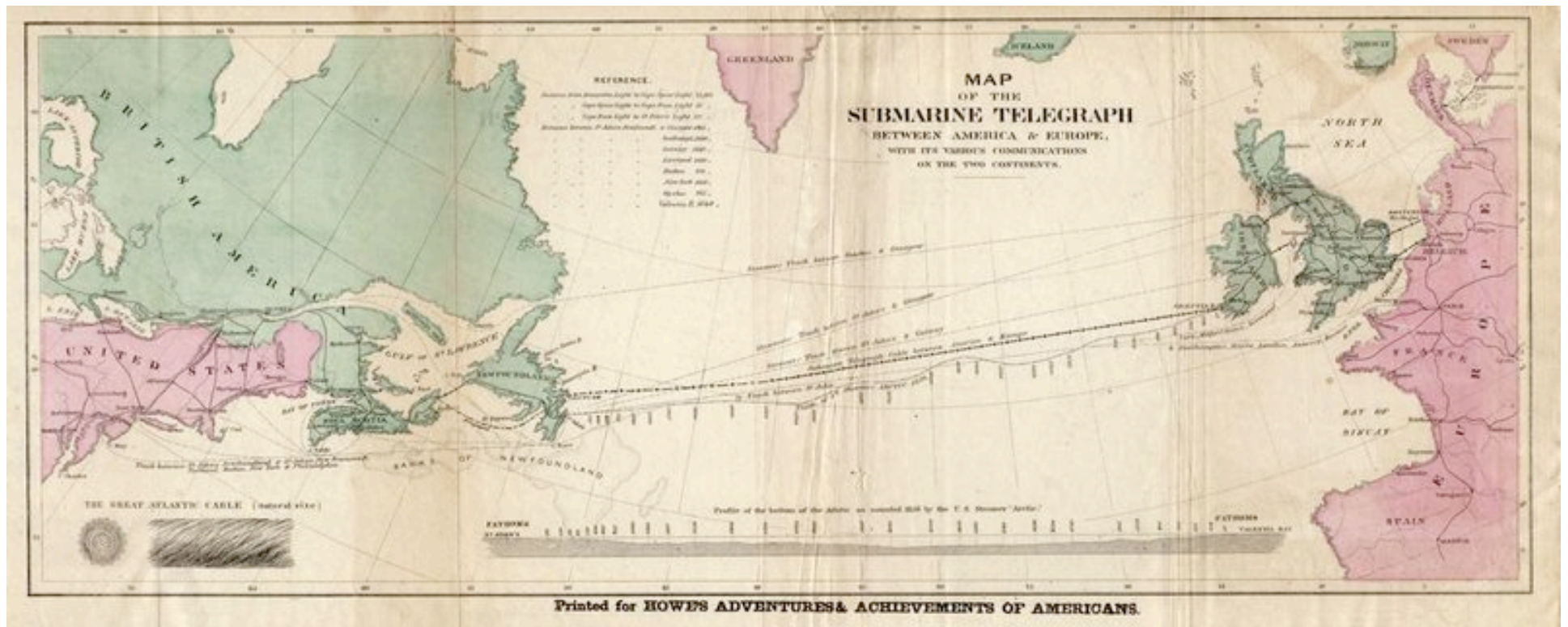
Daily Record, Sacramento, Calif.

Telegraphs are dated October 21st 1868

PF870
E2D3



Crossing the Atlantic



Divine connection

- "May the Atlantic telegraph, under the blessing of heaven, prove to be a bond of perpetual peace and friendship between the kindred nations, and an instrument destined by Divine Providence to diffuse religion, liberty, and law throughout the world."
 - ▣ President Buchanan, 1858
- "Tomorrow the hearts of the civilized world will beat in a single pulse, and from that time forth forevermore the continental divisions of the earth will, in a measure, lose those conditions of time and distance which now mark their relations. ... The Atlantic has dried up and we become in reality as well as wish, one country."
 - ▣ *Times of London*. 1858

World peace

- “Of all the marvelous achievements of modern science the electric telegraph is transcendently the greatest and most serviceable to mankind ... The whole earth will be belted with the electric current, palpitating with human thoughts and emotions ... How potent a power, then, is the telegraphic destined to become in the civilization of the world! This binds together by a vital cord all the nations of the earth. It is impossible that old prejudices and hostilities should longer exist, while such an instrument has been created for an exchange of thought between all the nations of the earth.”
 - ▣ Charles Briggs & Augustus Maverick, *The Story of the Telegraph*, 1858
- "Steam was the first olive branch offered to us by science. Then came the still more effective olive branch—this wonderful electric telegraph, which enables any man who happens to be within reach of a wire to communicate instantaneously with his fellow men all over the world."
 - ▣ *Ambassador Thornton*, 1858

Moral progress

- "facilitating Human Intercourse and producing Harmony among Men and Nations ... [I]t may be regarded as an important element in Moral Progress"
 - ▣ *Daily Chronicle [Cincinnati] 1847*
- *"the great chain that will bring all civilized nations into instantaneous communication ... the most potent of all the means of civilization, and the most effective in breaking down the barriers of evil prejudice and custom"*
 - ▣ *Hunt's Merchants' Magazine, 1868*
- *"the hand of progress beckons a rivet is loosened from the chains of the oppressed"*
 - ▣ *Commercial and Financial Chronicle, 1865*
 - ▣ *"Making a better machine cannot make men better." Emile Zola*

Down the rabbit hole....

- Two deterministic accounts: "The war machine of Virilio and the love machine of McLuhan create quite different kinds of worlds: contest or contact."
 - ▣ McLuhan and Baudrillard By Gary Genosko
- "Electric circuitry has overthrown the regime of 'time' and 'space' and pours upon us instantly and continuously concerns of all other men. It has reconstituted dialogue on a global scale. Its message is Total Change, ending psychic, social, economic, and political parochialism. . . . Ours is a brand-new world of allatonceness. 'Time' has ceased, 'space' has vanished. **We now live in a global village . . . a simultaneous happening.**"
 - ▣ *Marshall McLuhan et al., Medium is the Massage, 1967*
- "Everything in this new warfare becomes a question of time won by man over the fatal projectiles toward which his path throws him.. it is the permanence of the war of Time that creates total peace, the peace of exhaustion humanity will divide into "hopeful population" - "who are allowed the hope that they will reach, in the future someday, the speed that they are accumulating, which will give them access to the possible -- that is, to the project, the decision, the infinite: speed is the hope of the West...We have to face the facts: **speed is war, the last war**"
 - ▣ Paul Virilio, *Speed and Politics*. 1977

Summing up... briefly



- “telegraph” first used by the French with the Semaphore system
- electronic telegraph was “invented” around 1837
- Big implications for:
 - ▣ Press
 - ▣ Military
 - ▣ Spying/surveillance
 - ▣ Business

Telephone!

"When offered the Bell patents for \$100,000 in 1876, Western Union turned them down" - Friedlander





How does business shape early telephone use?

The Guilded era and today?

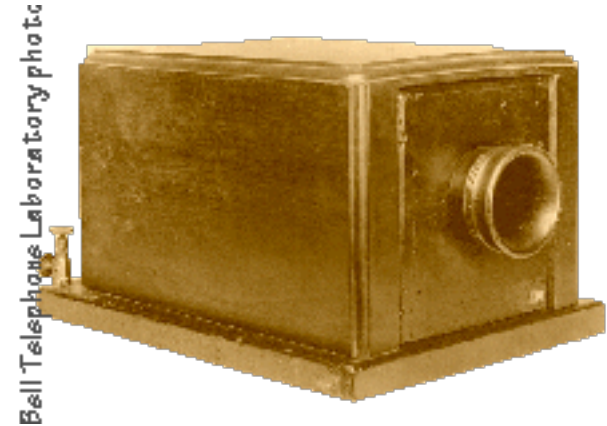
Peace, goodwill again



- "Someday we will build up a world telephone system, making necessary to all peoples the use of a common language or common understanding of languages, which will join all the people of the earth into one brotherhood. There will be heard throughout the earth a great voice coming out of the ether which will proclaim, 'Peace on earth, good will towards men'".
 - John J. Carty, AT&T, 1891

Reality: private interests

- 1876-1893: Monopoly
 - Selling boxes plus the connections
 - Not interested in “universal” services
 - Difficult to manage
 - Not profitable (economies of scale yet to be understood)
 - Not clear how the phone would be used



Business



- "Businessmen relied on letters and telegrams, often with complex codes, to produce written records of their transactions ... voice transmission, scratchy and often indistinct, could be an adjunct at best"
 - ▣ Claude Fischer, *America Calling* 1992

Monopoly



- "When the competing telephone exchange closed in San Francisco in 1880, the Bell local raised its charges from \$40 to \$60 a year. The local manager justified the move: ... 'The public always expects to be "cinched" when opposing corporations consolidate and it was too good an opportunity to lose"

□ Fischer

Competition era – 1894-WWI

- Bell's patents expire in 1894
- More options for customers from thousands of new companies
- Competition drives lower prices
- 1913 Kingsbury Commitment



WWI - 1940: industry consolidation

- Government takeover of telcos during WWI made nationalization seem like a bad idea
- Regulators persuaded of the advantages of natural monopoly
- Many households disconnected during the depression era





Availability, speed, competition

The making of modern telecom

Some closing themes



- Who is controlling the infrastructure?
 - ▣ Government or private corporations?
 - ▣ “natural” monopoly of infrastructure?
- What are the practices that are part of the infrastructure?
 - ▣ Change without technical change?
- Point to point or broadcast?
- Speeding up what?
 - ▣ Humans?