

## Opera & the Media in New York City

NYC has long dealt with both media & opera, e.g., America's first political & illustrated newspapers and its first professional opera performance & dedicated opera house. Some consider NYC the media capital of the world; as for opera, the city has some 65 active companies, others performing here, and Opera America and its National Opera Center. Then there is the joint history of opera and the media here, including the first electronic home entertainment, the first mass medium for music (before the gramophone disc), and the oldest sync-sound movie. NYC-based broadcast networks commissioned many operas for radio and TV. The first "non-visual" and "unstageable" broadcast operas came from New York studios. U.S. Air Force-developed high-sensitivity cameras shooting opera just for local cable TV? It happened here.

Here is a chronology of some moments in the joint histories of opera and media technology in New York City:

- 1598 - Oldest existing opera medium, *libretto* (little book), now at NYPL's Library of the Performing Arts
- 1849 - Opera technical director Antonio Meucci begins work on telephone in Cuba, moves to Staten Island following year (where his house now a museum), and submits patent caveat in 1871
- 1876 - *The New York Times* publishes first prediction of media eating into opera-house attendance
- 1877 - *The Sun* (NY) publishes prediction of opera (picture & sound) transmitted live to theaters worldwide
- 1878 - Marie Rôze records on Edison's tin-foil phonograph first opera aria intended for playback
- 1880 - Edward Fry invents electronic home entertainment (and, probably, first headphone) for opera
- 1894 - William Dickson plays opera music in oldest sync-sound movie known to exist
- 1895 - Frank Chapman patents & uses robotics for viewing remote baseball games live at opera houses
- 1900 - At Metropolitan Opera House Lionel Mapleson makes first non-interfering location recordings
- 1903 - At Metropolitan Opera House Miller Reese Hutchison demos first portable electronic hearing aid
- 1906 - At Telharmonium Hall first synthesizer plays opera music, sends first piped-in restaurant music
- 1907 - First live opera-singer radio broadcast; Caruso records earliest million-seller
- 1910 - First live complete opera broadcast from Metropolitan Opera House
- 1919 - NYC publisher Hugo Gernsback proposes opera movies synchronized to live radio sound
- 1920 - First grid lighting used in Barrymore's *Dr. Jekyll and Mr. Hyde*, shot at Amsterdam Opera House
- 1925 - WEAFF establishes first radio opera company, later taken over by NBC
- 1926 - Vitaphone moves to Manhattan Opera House, now home to Manhattan Center Studios
- 1927 - First CBS broadcast includes Deems Taylor's opera *The King's Henchmen*
- 1928 - African-American composer Harry Freeman's opera *Voodoo* broadcast before stage premiere
- 1932 - NBC commissions first opera for radio, Charles Cadman's *The Willow Tree*
- 1937 - CBS commissions first "non-visual" opera (w/sound effects), Louis Gruenberg's *Green Mansions*
- 1938 - WQXR broadcasts first U.S. edited broadcast, *Carmen*, recorded on Millerfilm
- 1939 - First scheduled FM broadcast includes opera *Francesca da Rimini*; *Carmen* 1<sup>st</sup> opera on U.S. TV
- 1949 - NBC Opera Theatre begins; by its close in 1964, it will have commissioned 13 new operas for television (and inspired CBS to commission another 14, ABC three, and public television [later] five)
- 1951 - NBC commissions first opera for TV: Gian Carlo Menotti's *Amahl and the Night Visitors*
- 1952 - Metropolitan Opera's *Carmen* sent live to 31 cinemas in 27 cities; Cinerama opening has opera
- 1953 - First NTSC color program transmission seen at home is *Carmen* from Colonial Theater (NBC)
- 1954 - DuMont Television moves to Central Opera House, now Fox Television Center
- 1963 - Menotti's *Labyrinth* on NBC uses VFX so is called first "unstageable" opera
- 1964 - New York State Theater is first opera house pre-wired for conductor video monitors
- 1966 - New Metropolitan Opera House is pre-wired for television
- 1971 - *Le coq d'or* is first opera shot under performance conditions and first shown only on cable TV
- 1973 - Metropolitan Opera Radio Network becomes world's first with live stereo sound
- 1976 - *Live from Lincoln Center* operas have 1<sup>st</sup> live TV subtitles and 1<sup>st</sup> nationwide live TV w/stereo sound
- 1991 - New York City Opera's *Madama Butterfly* uses first HD image magnification in the house
- 2006 - Metropolitan Opera first 24-hour satellite opera channel, live HD cinema & plaza transmissions
- 2007 - Metropolitan Opera first live multi-language subtitles transmitted

## *The Metropolitan Opera: Live in HD*

“a new art form” - *Los Angeles Times*  
“a landmark triumph” - Garrison Keillor

- began with 2006-7 season (the Met’s first HDTV production was in 1990)
- more than 2000 cinema screens in more than 60 countries on all seven continents and 19 ships at sea
- #1 alternative content for cinema worldwide, as high as #9 in U.S. weekend cinema box-office grosses
- opening nights to 32’ screen on front of Met (4 x 25,000-lumen projection) & 15 Times Square screens (each Times Square screen requiring a different transmission path and delay)
- transmission via fiber and satellite with geographically-diverse, weather-protected uplinks
- satellites changed as necessary due to constant NYC construction and *Fashion Week* needs
- transmission encoded at the Met, decoded at the cinemas; all between is in the bit-rate-reduced domain
- network doesn’t exist until two hours before air time; testing designed for busy projectionists; exit lighting provided as part of transmission
- first multi-language live subtitling system (beginning 2007); receivers now catching up to standard used
- Engineering Emmy Award, IBC International Honour for Excellence (top award), Peabody Award
- production facilities provided by All Mobile Video, occupying every legal parking space on three blocks
- everything shot during a live performance before a paying audience that must not be disturbed
- can be live for more than six hours without a break (1983 centennial global broadcast live for 14 hours)
- cameras: up to 15 Sony HDC-2000/2500 (separate from house surveillance [HD & hyper-sensitive] & conductor cameras used by the TV production team)
- special mounts (needed in part because camera setup time often less than two hours):
  - house-built no-obstruction aisle sleds (with up to 99x8.4 lenses)
  - Elemack Spyderys that can roll into unmodified seat rows (with up to 99x8.4 lenses)
  - robotic pan-tilt-zoom-focus (with up to 42x9.7 lenses) sometimes suspended on stage pipes
  - robotic 24-foot-extension towers (weighing about 800 lbs.)
  - robotic track across the stage lip with 360-degree panning capability
- intermission cameras frequently relocated: backstage, above the stage, under the stage, rehearsal rooms, dressing rooms, offices, outdoors, in tunnels, even inside the truck control room, all live
- Steadicam moves include ~300’ backwards at high-speed, cabled, with crew not in the shot
- cabling must avoid stage “wagons” weighing up to 45 tons each
- two TV directors/associate directors per transmission: one for the opera, the other for the intermissions
- wireless mics on working stage crew for intermissions
- recordings on videotape (HDCAM SR), hard disk drives (DNxHD and ProRes), and solid-state drives
  - with or without subtitles, act titles
  - with stereo, discrete surround, encoded surround, and isolated audio tracks
  - up to 128 audio tracks recorded on different-brand systems (in case of software failures)
  - isolated recordings provide more close-ups for later TV, internet, and home-video releases
  - review recordings for lighting, music mix, video, director, & camera conference
  - “lighting test” needs to be as-is for lighting/video review but high-quality for promotion
  - camera conferences review all-camera multi-view, high-sensitivity wide shot, line cut, conductor

### **Useful links** (case matters):

- *Fandom of the Opera* lectures: [bit.ly/FandomLOC](http://bit.ly/FandomLOC) (good audience), [bit.ly/FandomNYU](http://bit.ly/FandomNYU) (good slides)
- “No opera, no X-rays!” store (all profits go to Opera America): [bit.ly/OperaX-ray](http://bit.ly/OperaX-ray)
- Watching Baseball at the Opera House lecture: [bit.ly/BaseballOpera](http://bit.ly/BaseballOpera)
- Discussions from the LinkedIn “Media-Technology and Opera History” group: [bit.ly/MediaTechOpera](http://bit.ly/MediaTechOpera)
- List of NYC opera companies: [bit.ly/NYCCoc](http://bit.ly/NYCCoc)

NYCPPNews In-Person Series, Showbiz Café, 2013 March 26: Mark Schubin’s “The Fandom of the Opera”