

## Met Media Moments - compiled by Mark Schubin (from a technological viewpoint)

- 1901 January 16 - First non-interfering location recordings (by Met librarian Lionel Mapleson)
- 1903 March 30 - Acousticon electric hearing-aid system demonstrated (25 house seats later wired for it)
- 1908 January 15 - Surveillance microphone sends opera from stage to GM Heinrich Conried's office
- 1910 January 12 - First opera radio broadcast from the stage (partial)
- 1910 January 13 - First complete operas radio broadcast (from the stage)
- 1922 November 11 - Met radio broadcast from Kingsbridge Armory before 15,000 audience in room
- 1927 September 18 - Inaugural broadcast of CBS radio network includes Met-commissioned opera
- 1931 December 25 - First of the regular Saturday-afternoon Met radio broadcasts
- 1933 February 26 - Gatti-Casazza 25<sup>th</sup>-anniversary gala broadcast includes a radio opera
- 1933 December 25 - Canada begins to carry the live Met radio broadcasts
- 1938 January 22 - Live Met radio broadcast staged by marionettes for St. Vincent's Hospital children
- 1940 March 10 - First Met TV is staged concert telecast from NBC studio
- 1940 December 7 - Longest continuous sponsorship in broadcast history begins
- 1948 November 29 - First telecast from the Met stage
- 1949 January 1 - Tape for radio broadcast next day is edited to fix a note, causing a scandal
- 1952 December 11 - First live opera cinema transmission (black & white, mono sound)
- 1954 November 8 - Live cinema transmission creates Met's first multi-opera opening-night gala
- 1958 January 26 - First Met color TV (from NBC studio)
- 1960 December 3 - Metropolitan Opera Radio Network created (by G. H. Johnston for Texaco)
- 1966 September 16 - conductor monitors in new house; first opera house wired for TV production
- 1968 November 7 - Opera videotaped for broadcast in Japan; first color video from the stage; video-controller Matty Randazzo, who worked on that show, still works on Met television projects
- 1973 December 3 - Met low-light-level television experiments begin
- 1973 December 8 - World's first stereo radio network (via AT&T with Siemens equipment)
- 1977 March 15 - First *Live from the Met* TV transmission (audience estimated 18-20 million)
- 1980 March 29 - First Met TV transmission live to Europe
- 1980 December 20 - Met takes over the radio network and begins switch to satellite transmission
- 1983 October 22 - Centennial Gala televised worldwide live for 14 hours (four Emmy awards)
- 1984 - Home-video distribution begins with LaserDisc; VHS added 1985, DVD 1999, Blu-ray 2008
- 1990 December 8 - European Broadcasting Union added to live radio network
- 1990 December 22 - Met's first high-definition (HD) video recording for later broadcast in Japan
- 1991 September 23 - Met's only pay-per-view gala telecast
- 1994 December 10 - Radio broadcasts begin to use digital technology to reach stations
- 1995 March 24 - Met Titles screens on backs of seats offer text; optical filters for personal views
- 2001 September 22 - First Met television plazacast
- 2006 September 25 - Met 24/7 satellite-radio channel, streaming, Times Square and HD plazacasts
- 2006 December 30 - Met begins live international HD cinema transmissions
- 2007 March 24 - First multi-language live television subtitles
- 2008 October 22 - Met Player offers home internet access to HD operas
- 2008 November 7 - Interactive projected computer graphics used on stage
- 2009 January 7 - Engineering Emmy Award for the technology used in *The Met: Live in HD*
- 2010 September 27 - Sound-sensing and motion warping added to stage projected computer graphics
- 2011 October 27 - Depth planes added to stage projected computer graphics for 3D effect

The Met has been telecast longer than *Meet the Press* ("the longest-running show on network TV") with more primetime seasons (& far more hours) than *The Simpsons* (said to hold the record since 2008). Met media have won 17 Emmy, 7 Grammy, and 7 Peabody awards and the International Broadcasting Convention's International Honour for Excellence, their highest award. Three of the awards are for technological developments.

## ***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 (from north of the Arctic Circle to Antarctica) 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 giant Times Square LED 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)
  - Elemnack Spyder dollies 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 live intermission features
- 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 promotional uses
  - 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), [bit.ly/longMet](http://bit.ly/longMet) (long one including both history and *The Met: Live in HD*)
- Library of Congress “No opera, no X-rays!” post: [bit.ly/OperaXray](http://bit.ly/OperaXray); store: [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)