

NOAA's NWS Forecast Office Operations: *How communications, instruments, and technology have changed over time.*



John Jones
NOAA's National Weather Service Deputy Director
NOAA Heritage Week
February 9, 2005

NWS History

- **NWS Celebrates 135th Anniversary on Feb. 9, 2005**
- **1870 President Ulysses Grant Signs Joint Resolution Creating Weather Service**
- **1870-1891 Division of War Department; 1891 to 1940 Division of Department of Agriculture; 1940 to Present Division of Department of Commerce**



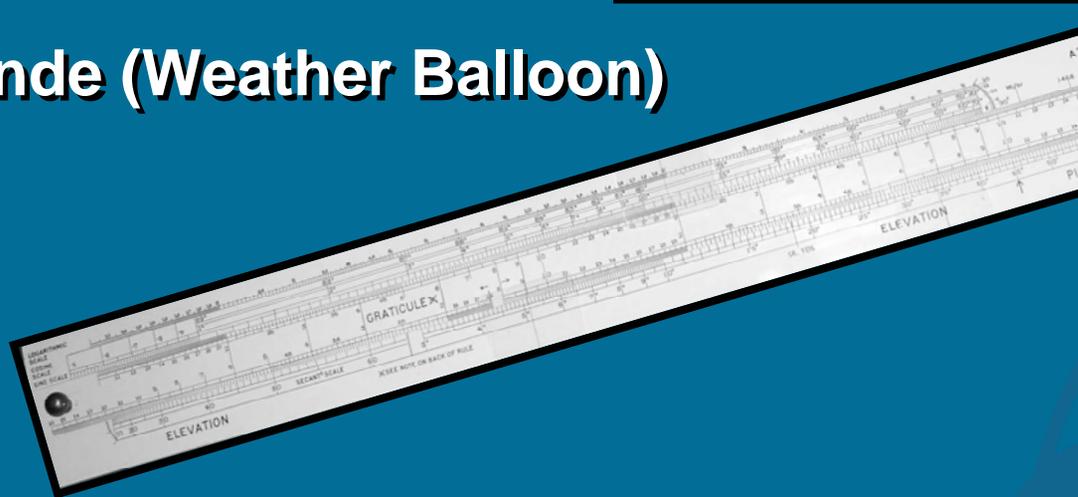
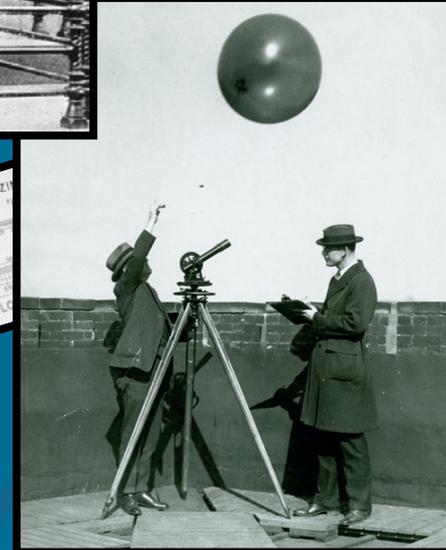
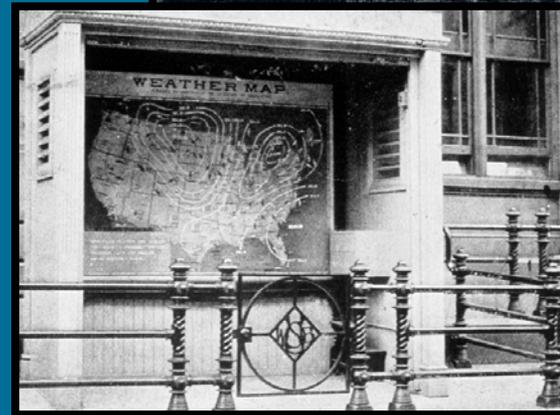
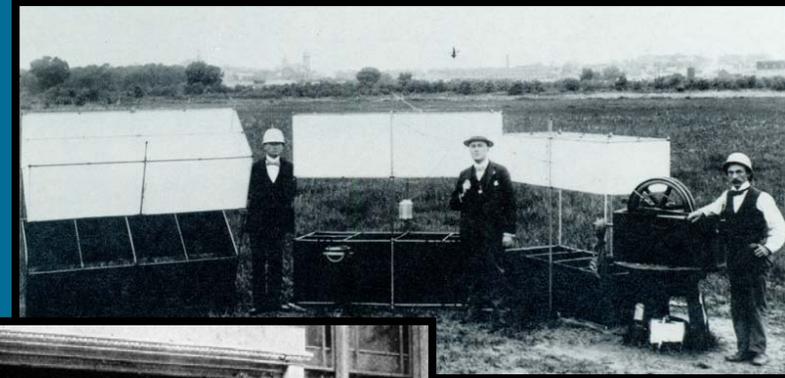
Early NWS Weather Forecast Office Operations

- **“Observer Sergeants” of Army Signal Service took the first systematized weather observations in 1870**
- **Hand drawn service analysis was the primary method to forecast weather at the turn of the century**
- **Families of Meteorologist-In-Charge often lived in the same building that housed the forecast office**
- **Major influx of women into the Weather Bureau occurred during WWII**



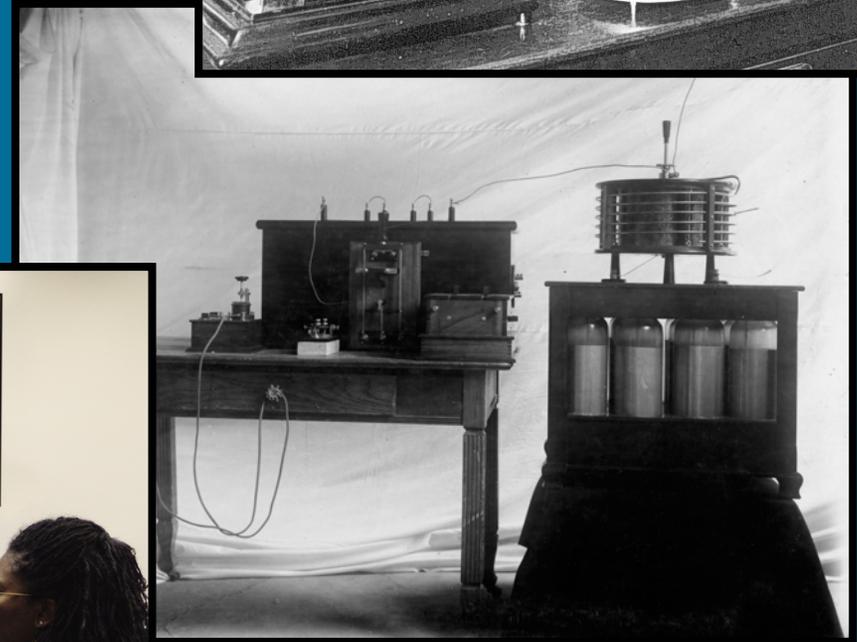
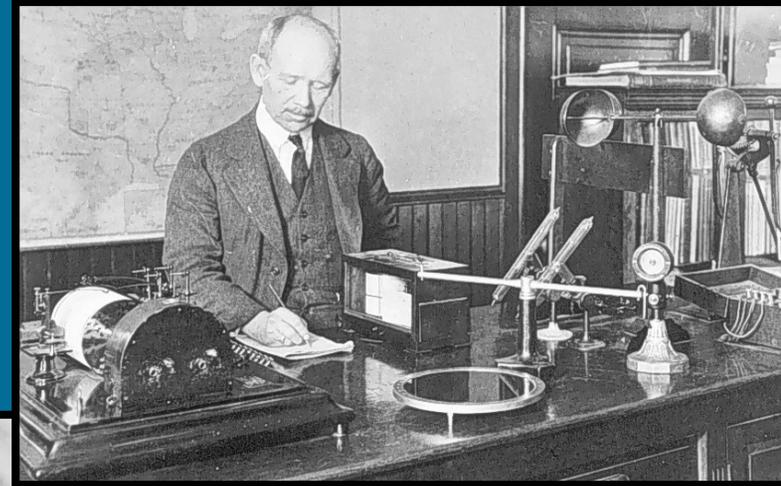
Early Technology/Instruments

- Kites (upper air observations)
- Weather Maps
- Weather Vane
- Pilot Balloon Slide Rule
- Mercury Barometer-Thermometer
- Radiosonde (Weather Balloon)



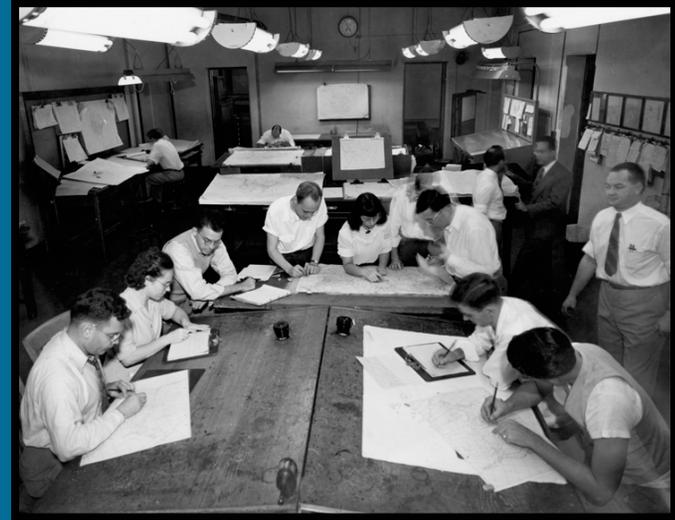
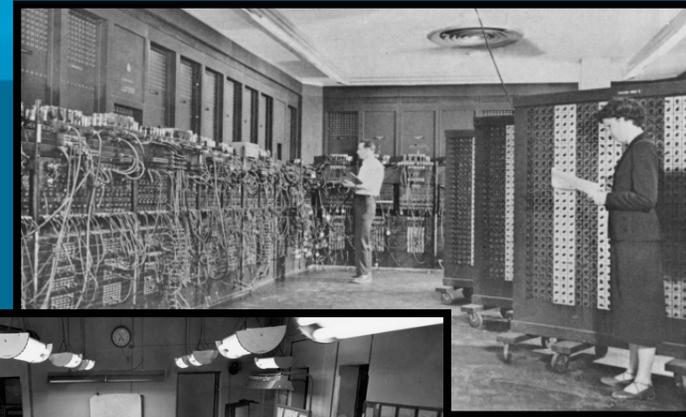
Communication

- Telegraph to Teletype
- Typewriters
- Telewriters
- Telephones
- AFOS to AWIPS



Computers

- Before computer models, forecasts were produced by hand (first operational numerical weather prediction model produced in May 1955)
- Forecasters began using computer-generated numerical forecasts as one tool to enhance their own forecast skill (mid-late 60s)
- As forecasters' skill improved, numerical forecasts increasingly supplanted human forecasts (70s- 80s)



Observing Systems

- **1925: First routine Weather Bureau airplane observation (with Navy's cooperation)**
- **1931: Weather Bureau began replacing kite stations with airplane stations**
- **1960: U.S. launched the world's first weather satellite, TIROS (Television and InfraRed Observation Satellite)**
- **1975: NASA launched the first Geostationary Operational Environment Satellite (GOES) for NOAA**



NWS Today and into the Future:

- **Radar**
- **Satellites**
- **AWIPS**
- **ASOS**
- **Super Computers**
- **Dedicated Staff**