



MY TELEPHONE COMPANY JOURNEY AND A LITTLE HISTORY

DAVID SETZER

- My service was from August 1971 to October 2001
- My non-management job titles included Frameman, Switchman, Marketing Consultant
- Management titles were many and varied as the company constantly renamed positions, but included supervisor, manager, director, etc.
- My career was technical except for a 6 month stint in marketing
- Hired on in Houston and held positions mostly in Dallas with a couple of rotational jobs in St. Louis, MO and Lisle, IL.
- When I took an early retirement in 2001, I was the Director of Central Office Operations for the DFW area which included 180 Central Offices, serving 3.5 million customers and a reporting structure of around 800 employees.



- Major switching technologies that I work on:

1. Step by Step (some corded equipment)

2. No. 5 Crossbar

3. No. 1 ESS

4. No. 1A ESS

5. No. 2, 3 and 4 ESS

6. No. 5 ESS

7. From T-1 digital links to OC-192

8. Northern Telecom DMS-10 and 100



- A little telephone math:
- Copper circuits
- A DS0 voice channel = 64kbs (8bit sampling@ 8khz) PCM
- A T-1 digital line = 24 DS0s = $24 \times 64\text{kbs} + 8\text{kbs}$ for overhead = 1.544KBS
- A T-3 digital line = 3 T-1s + 4.6 kbs
- The above can be sent over copper or microwave
- Fiber Optic Transmissions Systems
- OC-1
- OC-3
- OC-48 74 mbs
- OC-192 296 mbs

And so on

HOW ABOUT A FEW INVENTIONS FROM BELL LABS!

- Facsimile machines 1925
- The transistor 1947
- Light Amplification by Stimulated Emission of Radiation-LASER's 1957
- Solar Cells 1954
- Telstar Communication Satellite-1962 (powered by solar cells)
- Cellular Telephone Technology- late 1970's
- HD Television-I saw it demonstrated in 1988
- Digital Transmission and Switching
- E-911
- Unix Operating System and C Programming Language

AND A FEW MORE

- Touch Tone Telephone (DTMF)
- Use of FSK
- Digital Signal Processors-1979 commonly used in most electronics today
- Long Distance Television Transmission-1927
- Radio Astronomy
- First Binary Digital Computer-1939
- No.1 Electronic Switch System (ESS)- 1965
- Evidence of the Big Bang-Discovery of Cosmic Background Radiation
- Early experiments in Pulswe Code Modulation
- Miniturization and use of MOSFET power amplifiers
- VOIP as a carrier strategy

A FEW STORIES

- E911 Transfer methodology

- Central Office Conversions

<https://www.youtube.com/watch?v=saRir95ilWk> ESS Conversion and Hot Slides

First OC192 Self-healing Transport Network STN for AT&T in Dallas

I BROUGHT A FEW TELEPHONE RELICS

- An AT&T Flashlight from the 1920's
- A few schematic diagrams of parts of a No. 5 Crossbar system
- Test receivers
- Unix Programming Manual from the early 80's
- Understanding Radio manual from the 50's
- Telephone number terminal block from a SXS Office
- A section of multi-mode fiber optic cable than ran to Denton from Dallas
- A cutover souvenir