

Mobile receiver site and transmitter voting.

* System Components:

1. *PSAP*: Pike County E911 Center.
2. *ELDR*: Pike County Rural Water Tower west of the US54/IL106 'Y'.
3. *GRGS*: Griggsville City Water Tower.
4. *HULL*: Hull City Water Tower.
5. *PRDG*: Pike County Rural Water Tower southeast of Pleasant Hill on Pea Ridge.
6. *PITF*: Pittsfield 'Old Town' Water Tower.

* Radio Equipment

1. Full Receivers: ELDR, GRGS, HULL, PRDG
 - A. LAW, ALPHA and BRAVO.
2. Special Receivers:
 - A. PITF: Legacy LAW only.
 - B. ELDR: Page store and forward automatic replay system
3. Repeaters/Transmitters: ELDR, GRGS, HULL, PRDG
 - A. Law, ALPHA, BRAVO and PAGE
 - B. All transmitters have 95+% mobile coverage and 85+% portable coverage.
4. Voting Comparators; three Raytheon/JPS SNV-12s located at ELDR: *VOTER*
5. Automatic/Manual 'forced' voting control on the PSAP console

* EMS/FIRE PAGES

1. *Automatic replay recording starts with first tone sent and records everything that follows.*
2. Single icon sends all necessary tones.
 - A. Selecting a second icon duplicates some alerting tones and is redundant.
 - B. 3G12/13/17 ALS page tones are contained in ALL pages.
 - C. 3G11/14/15 BLS tone sequences also include ALS tones.
 - D. Fire and 1st responder tone sequences also contain ALS and BLS tones.
3. PSAP operator selects appropriate PAGE transmitter for the primary department paged.
 - A. ELDR: ALS, BAYL, BRRY, EPKE, PITF
 - B. GRGS: 3G11, GRGS, NFPD
 - C. PRDG: 3G14, PHFD, SCFD
 - D. HULL: 3G15, HULL, NCFD
4. PSAP sends audio information:
 - A. Department(s) paged.
 - B. 10-33 or 10-40.
 - C. Nature of incident.
 - D. General location, and 911 or city address.
 - E. "Respond on channel (ALPHA or BRAVO)"
 - F. Time of page.
5. Automatic replay system at ELDR stores all tones and PSAP audio.
 - A. Automatic replay system timer starts at end of last transmission.
 - i) Timer waits 30 seconds. Any additional transmissions are added to the replay stream and reset the 30-second timer.
 - ii) Timer expires; Automatic system replays all tones and PSAP audio information from ELDR.
 - B. All department response, mobile-mobile enroute coordination, first responder condition reports and medical instruction, and other communications between mobile assets and/or the PSAP and/or Department house take place on (ALPHA or BRAVO).
 - i) After the 'cutoff' date (about April 1st), mobile assets will no longer transmit anything on PAGE.
 - ii) All PSAP // mobile traffic will take place on ALPHA or BRAVO.
 - iii) Any asset using a PAGE repeater for routine traffic will have their traffic replayed by the Automatic Replay System.

*** Operations on LAW, ALPHA and BRAVO (3 identical, independent systems)**

1. The VOTER automatically selects the best quality mobile audio from all receive sites and the best audio is sent via microwave to the PSAP.
2. The received audio voting also determines the mobile repeater / PSAP transmit site.
3. Voting is 'held' for 10 seconds, or until the voter hears better audio on a different site.
4. The PSAP transmits from ELDR by default, unless
 - A. manually 'forced', or
 - B. if transmitting within 10 seconds after any mobile transmits, the PSAP response is automatically steered back to the site the mobile was 'voted' on..
5. PSAP can manually 'force' transmit to any of the 4 transmitter sites.
 - A. Manual selection 'forces' PSAP transmit to the selected site.
 - B. Manual selection also 'forces' all received mobile audio to the selected repeater site. This does not affect voting for received audio, only transmitter selection.
 - C. 'Forced' selection remains until manually placed back in 'AUTO'.

*** Normal procedure, Call originated by PSAP:**

1. PSAP calls a mobile and transmits from ELDR by default.
2. Mobile responds;
3. VOTER selects best location based on mobile audio; that site is 'voted'.
 - A. Voted audio is simultaneously heard at the PSAP and transmitted from the voted site repeater. A 10-second timer starts.
 - B. PSAP response within 10 seconds is transmitted from the voted site (timer restarts). Procedure loops until conversation ends or timer expires.
 - C. Should the mobile move or the VOTER detects better audio from a different site, voting is automatically changed, including a change of transmitter.
4. After 10 seconds of channel inactivity, the PSAP will no longer automatically transmit on the voted site and the next PSAP transmission defaults to ELDR.

*** Normal procedure, Call originated by Mobile:**

1. Mobile transmits;
 - A. VOTER selects best location based on mobile audio; that site is 'voted'.
 - B. Voted audio is simultaneously heard at the PSAP and transmitted from the voted site repeater. A 10-second timer starts.
2. Second mobile responds:
 - A. VOTER selects best location based on mobile audio; that site is 'voted'.
 - B. Voted audio is simultaneously heard at the PSAP and transmitted from the voted site repeater. 10-second timer restarts.
3. PSAP responds within 10 seconds: PSAP audio is transmitted from the voted site (timer restarts). Procedure loops until conversation ends or timer expires.
 - A. Should the mobile move or the VOTER detects better audio from a different site, voting is automatically changed, and a new transmitter is selected.
4. After 10 seconds of channel inactivity, the PSAP transmission defaults to ELDR.

*** CHARLIE UHF Repeater**

1. All UHF traffic on CHARLIE is always heard by the PSAP on LAW and repeated on both CHARLIE and LAW from ELDR
2. All VHF LAW traffic voted to ELDR is repeated on both CHARLIE and LAW from ELDR
3. VHF LAW traffic not voted to ERDR is not replayed on CHARLIE
4. Manual forced LAW voting to ELDR causes all LAW and CHARLIE traffic to be repeated on both CHARLIE and LAW from ELDR.