

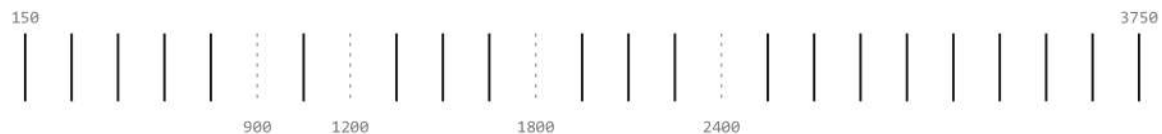
a landline imagining a line probe during a storm

score · Xyh Tamura, 2026

TERMS

GRID = 150 Hz
POSITIONS = 150, 300, 450, ... 3750 Hz
OMITTED = 900, 1200, 1800, 2400 Hz
PROBE = POSITIONS without OMITTED
ANNOUNCE = 2100 Hz, amplitude-modulated at 15 Hz,
reversing phase every 450 ms
CAPABILITY = frequency-shift keying at 300 bit/s

RATES = an ordered list, fastest first, with a minimum
bandwidth and signal-to-noise ratio for each rate.



SCORE / PSEUDOCODE

choose the total duration and every value in brackets.

sound a telephone line for the whole duration,
at the edge of audibility.

its noise consists of band-limited hiss, mains hum,
and *[occasional]* impulses.

as the piece progresses, with fluctuations:
attenuate the line until it carries nothing
attenuate high frequencies more than low frequencies
raise the noise, then hold its level
move a narrow null down through the band

from each attempt, sound only *[a few]* fragments.

for each fragment:

length drawn so short ones dominate,
 none longer than *[about a second]*
source any available one of: announce, probe,
 capability, data
time anywhere within a window *[wider than the*
 interval between attempts]
position between the two ends of the call
level at or below the level of its source

as the piece nears its end: sound fewer, shorter fragments.

EACH ATTEMPT

repeat every *[a few seconds to half a minute]*

for the whole duration:

1 announce

emit ANNOUNCE for *[one to four seconds]*.

2 probe

emit PROBE at equal amplitude.
set its phases to minimise the combined peak.
first *[briefly, raised]*, then *[longer, nominal]*.

3 measure

let RECEIVED = the probe, through the line, plus its noise.

for each f in OMITTED and each midpoint between positions:
noise[f] = power of RECEIVED at f

for each t in PROBE:
snr[t] = power of RECEIVED at t,
 against noise interpolated to t

4 decide

```
USABLE = { t in PROBE : snr[t]  $\geq$  [a threshold] }
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if |USABLE| < 2:
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    RATE = NONE
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else:
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```
    BANDWIDTH = |USABLE|  $\times$  GRID
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    QUALITY    = mean of snr over USABLE
```

```
    RATE = the first r in RATES with
```

```
            BANDWIDTH  $\geq$  r.least_bandwidth and
```

```
            QUALITY     $\geq$  r.least_snr,
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```
    or NONE
```

5 speak

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emit CAPABILITY from both ends, overlapping,  
carrying the measurement.
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if RATE is not NONE:
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    emit data at RATE, shaped to the chosen band,  
    for a time [increasing with RATE].
```