Field Notes on Kettle Design

A short document that exercises everything the exporter handles — headings, emphasis, links, lists, quotes, tables, code and images. Edit it, or select all and start over.

Why the whistle matters

The whistle is not decoration. It is the only part of the kettle that reports **state** without being looked at, which makes it the single most useful component in the object. Remove it and you have built a pot.

> A tool that cannot tell you what it is doing is a tool you have to watch. Watching is work. The whistle is the kettle doing that work for you.

Three things follow from that:

1. The signal must be **unambiguous** — one sound, one meaning.
2. It must arrive *before* the failure state, not during it.
3. It must be possible to ignore deliberately, but not accidentally.

Materials, briefly

- **Stainless steel** — forgiving, dull, will outlive you
- **Copper** — beautiful, needy, conducts far better than it looks
- **Enamel over steel** — chips at the rim, always at the rim
  - Reglazing is possible but rarely worth it
  - Assume a five-year life in daily use

Measurements

Vessel	Capacity	Time to boil	Whistle
Stovetop, steel	1.7 L	8 min 20 s	Yes
Stovetop, copper	1.2 L	5 min 40 s	Yes
Electric, plastic	1.7 L	3 min 10 s	No
Electric, glass	1.0 L	2 min 45 s	No

Electric wins on time and loses on everything else. Note what happens to the whistle column as speed goes up.

A model of the thing

```
// Whistling starts once the vapour rate clears the aperture threshold.
function whistleState({ tempC, volumeL, apertureMm }) {
  if (tempC < 100) return 'silent'
```

```
  const vapourRate = (tempC - 99) * (1 / volumeL) * 40
  const threshold = apertureMm * 1.8
  return vapourRate > threshold ? 'whistling' : 'building'
}

console.log(whistleState({ tempC: 100.4, volumeL: 1.2, apertureMm: 6 }))
```

The threshold term is why a wide spout on a small kettle never quite sings: the vapour escapes faster than it can build pressure. Use `apertureMm` under 7 for anything below 1.5 litres.

Checklist before you buy

- [x] Pick it up empty — the handle tells you most of what you need
- [x] Check the lid seats without force
- [ ] Fill it at the tap; a bad spout reveals itself immediately
- [ ] Listen to one boil before committing

Further reading

- The Design of Everyday Things — the standard reference
- Anything by ~~Dieter~~ ~~Rams~~ **Dieter Rams**, repeatedly

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