

Copper DevOps – QA Findings Report

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Scope: Review of the Copper DevOps preview site based on a guided Scribe session and live browser console logs.

Executive Summary

- Multiple production-blocking routing/state issues trigger the Next.js error overlay during common header interactions.
- Build configuration gaps (missing/invalid imports, manifest metadata) and UI warnings (ref misuse, image sizing) reduce stability and polish.
- A few items are likely environmental/noise (extension messaging). These should be validated in a clean profile before action.

Top Issues & Recommendations

1. Unhandled Runtime Error overlays on navigation

Severity: P0 – Blocks core navigation

Evidence: Scribe shows dev overlay after certain clicks (e.g., pages 3 & 11 show 'Unhandled Runtime Error').

Probable cause: Invalid Link targets or missing error boundaries in the Next.js App Router. Scribe also captured 'missing required error components, refreshing...' implying missing error.tsx/not-found.tsx.

Recommended fixes:

- Audit all <Link> usages; use plain <a> for external protocols (mailto:, tel:, http(s) to other domains). Validate that href is a valid relative or absolute URL.
- Add proper Error Boundaries: app/global-error.tsx and segment-level error.tsx + not-found.tsx.
- Add integration tests for header nav clicks to assert 200/OK and absence of runtime overlays.

2. X-Frame-Options set via <meta> (ineffective)

Severity: P2 – Security header misconfiguration

Evidence: Console: 'X-Frame-Options may only be set via an HTTP header ... It may not be set inside <meta>'.

Probable cause: Attempting to control framing via HTML meta instead of response headers.

Recommended fixes:

- Serve the header from the edge/server. For Next.js, add a headers() config in next.config.js:
- { key: 'X-Frame-Options', value: 'SAMEORIGIN' } // or 'DENY' as policy dictates
- Remove the ineffective <meta http-equiv='X-Frame-Options'> tag.

3. Ref misuse in Button / Radix Slot

Severity: P2 – React runtime warning, potential broken focus/ARIA

Evidence: Console: 'Function components cannot be given refs ... Did you mean to use React.forwardRef()?'. Call stack includes Button → Radix Slot → Dialog → QuoteModal.

Probable cause: Custom Button component not forwarding refs, possibly used with Radix UI's Slot/asChild.

Recommended fixes:

- Wrap Button with React.forwardRef and pass ref to the DOM element.
- When using Radix primitives with asChild/Slot, ensure the child forwards its ref.
- Add unit test: render(<Dialog><Button autoFocus/></Dialog>) and assert focus is applied without warnings.

4. web-vitals import not resolved

Severity: P2 – Non-fatal but noisy; can break perf hooks

Evidence: Console: 'Failed to resolve module specifier "web-vitals" with stack through loadScript.

Probable cause: Bare module specifier in a <script type='module'> or missing dependency; not routed through bundler.

Recommended fixes:

- Install and import through bundler: npm i web-vitals; then import {onCLS,onFCP,onLCP} from 'web-vitals' in client code.
- OR use a fully qualified ESM URL (e.g., CDN) if loading in a raw <script>.
- In Next.js, prefer built-in Web Vitals reporting (export reportWebVitals) instead of ad-hoc scripts.

5. Next/Image aspect-ratio warnings

Severity: P3 – Visual quality/polish

Evidence: Multiple 'Image ... has either width or height modified, but not the other' warnings.

Probable cause: Setting only one dimension via CSS overrides, causing distortion risk.

Recommended fixes:

- Always set both width and height in CSS (or set the counterpart to 'auto') to maintain aspect ratio.
- If using next/image, provide width/height props or use 'fill' with correct container aspect-ratio.

6. Web App Manifest icon purpose invalid

Severity: P3 – PWA installability polish

Evidence: Console: 'Manifest: found icon with no valid purpose; ignoring it.'

Probable cause: Icon entry missing/incorrect 'purpose' (valid: 'any', 'maskable', 'monochrome'), or missing type/sizes.

Recommended fixes:

- Ensure manifest icons include at least: { 'src': '/icons/icon-192.png', 'sizes': '192x192', 'type': 'image/png', 'purpose': 'any maskable' }.
- Validate manifest with Lighthouse.

7. *Deprecated Apple meta*

Severity: P4 – Low priority cleanup

Evidence: Console: '<meta name="apple-mobile-web-app-capable">' is deprecated. Use <meta name="mobile-web-app-capable">.

Probable cause: Legacy PWA meta retained.

Recommended fixes:

- Replace the deprecated meta tag with 'mobile-web-app-capable'.
- Review other PWA-related meta for currency.

8. *Messaging channel closed (likely extension noise)*

Severity: P5 – Validate & ignore if external

Evidence: Repeated: 'A listener indicated an asynchronous response ... message channel closed'.

Probable cause: Commonly emitted by browser extensions/service workers during dev.

Recommended fixes:

- Retest in Incognito with extensions disabled.
- If reproducible on a clean profile, audit service worker/extension messaging in the app.

9. *Contact page map is a placeholder*

Severity: P3 – Missing feature/content

Evidence: Scribe step explicitly clicks 'Map Placeholder' on the Contact page.

Probable cause: Map embed not yet implemented.

Recommended fixes:

- Embed a live map (Google Maps iframe or Mapbox) centered on the address.
- Add accessibility attributes (title) and fallback content.

10. *Testimonials / About / All Services not stable*

Severity: P1 – Core content pages intermittently error

Evidence: Scribe shows clicks on 'About' and 'All Services' followed by 'missing required error components, refreshing...'.

Probable cause: Routes missing error boundaries or throwing during data fetch/render.

Recommended fixes:

- Add error.tsx/not-found.tsx per route; implement defensive data loading with skeleton/error states.
- Track route-level exceptions with monitoring (e.g., Sentry) and write minimal smoke tests.

Quick Action Checklist (copy/paste into your tracker)

- ☐ Add app/global-error.tsx, route-level error.tsx, and not-found.tsx; wire to header/nav.
- ☐ Audit <Link> vs <a> across header/footer; fix external protocol handling.
- ☐ Install and integrate 'web-vitals' via bundler or remove ad-hoc script; prefer Next.js reportWebVitals.
- ☐ Replace meta X-Frame-Options with server header in next.config.js.
- ☐ Update PWA manifest icons with valid purpose/sizes/type.
- ☐ Fix image sizing to keep aspect ratio (set both dimensions or use 'auto').
- ☐ Convert Button to React.forwardRef and verify Radix Slot/asChild patterns.
- ☐ Replace deprecated Apple meta; re-run Lighthouse.
- ☐ Implement Contact page live map embed.
- ☐ Re-test on a clean browser profile to rule out extension noise.

Reproduction Notes (from Scribe session)

- Home → clicking certain header items leads to an 'Unhandled Runtime Error' overlay (see pages 3 & 11).
- Contact page shows a 'Map Placeholder' rather than an actual map embed (page 4).
- Navigating to 'About' and 'All Services' surfaces 'missing required error components, refreshing...' (pages 8–9).

Appendix A — Raw Console Excerpts

```
(index):1 X-Frame-Options may only be set via an HTTP header sent along with a document. It may
not be set inside <meta>.

react-dom.development.js:38560 Download the React DevTools for a better development experience:
https://reactjs.org/link/react-devtools

app-index.js:33 Warning: Function components cannot be given refs. Attempts to access this ref
will fail. Did you mean to use React.forwardRef()?

Check the render method of `Primitive.button.SlotClone`.

at Button (webpack-internal:///app-pages-browser)/./components/ui/button.tsx:40:11)
at eval (webpack-internal:///app-pages-browser)/./node_modules/@radix-ui/react-slot/dist/index.
mjs:44:13)
at eval (webpack-internal:///app-pages-browser)/./node_modules/@radix-ui/react-slot/dist/index.
mjs:20:13)
at eval (webpack-internal:///app-pages-browser)/./node_modules/@radix-ui/react-dialog/node_modu
les/@radix-ui/react-primitive/dist/index.mjs:38:13)
at eval (webpack-internal:///app-pages-browser)/./node_modules/@radix-ui/react-dialog/dist/inde
x.mjs:99:13)
at Provider (webpack-internal:///app-pages-browser)/./node_modules/@radix-ui/react-dialog/node_
modules/@radix-ui/react-context/dist/index.mjs:34:15)
at Dialog (webpack-internal:///app-pages-browser)/./node_modules/@radix-ui/react-dialog/dist/in
dex.mjs:61:13)
at QuoteModal (webpack-internal:///app-pages-browser)/./components/quote-modal.tsx:16:11)
at Header (webpack-internal:///app-pages-browser)/./components/header.tsx:66:88)
VM1193:12 Uncaught (in promise) TypeError: Failed to resolve module specifier 'web-vitals'
at <anonymous>:12:17
at loadScript (script.js:140:19)
at eval (script.js:227:17)
at commitHookEffectListMount (react-dom.development.js:21102:23)
warn-once.js:16 Image with src ".../assets/67f1cf57...PNK.png" has either width or height
modified, but not the other.
warn-once.js:16 Image with src ".../assets/67f1d013...MSFT.png" has either width or height
modified, but not the other.
warn-once.js:16 Image with src ".../assets/67f1d0d7...Concentric.png" has either width or height
modified, but not the other.
warn-once.js:16 Image with src ".../assets/67f1d254...C24.png" has either width or height
modified, but not the other.
```

warn-once.js:16 Image with src ".../assets/67f1d187...ALLIED.png" has either width or height modified, but not the other.

warn-once.js:16 Image with src ".../assets/67db4599...Play.webp" has either width or height modified, but not the other.

site.webmanifest:1 Manifest: found icon with no valid purpose; ignoring it.

site.webmanifest:1 Manifest: found icon with no valid purpose; ignoring it.

(index):1 <meta name="apple-mobile-web-app-capable" content="yes"> is deprecated. Please include <meta name="mobile-web-app-capable" content="yes">

(index):1 Uncaught (in promise) Error: A listener indicated an asynchronous response by returning true, but the message channel closed before a response was received (repeated)