INTRODUCTION

HP EliteBook x360 1040 G5 Repairability Assessment performed October 2018.
Step 1 — HP EliteBook x360 1040 G5 Repairability Assessment

- Exterior reference photos.

- The laptop isn't ingress-proofed, so many gaps in the keyboard and lower case, including ports, vents, speaker grilles etc. may allow water damage or particle buildup.
Step 2

- The lower case is secured by a few Torx screws, most of which are removable.
- The upper Torx screw is captive, as long as you don’t unscrew it too far.
- The case can then easily be pried off the laptop.
- The case contains no major components, making for easy replacement, and the laptop itself has a flat construction that allows access to most components at this stage.

Step 3

- The battery is immediately accessible and can be removed after a couple standard screws. No adhesive holds it down.
- A laptop battery is consumable—even if it's kept in mint condition, the battery will wear down and need replacing. An easily accessible battery is very important for the life of the device, as well as its end-of-life recycling.
Step 4

- The SSD is readily accessible upon rear case removal, making for easy upgrades.
  - This a nice improvement over last year's shielding-tape-covered swap.

- Another upgrade from last year: the speaker cable routing has been improved to allow immediate speaker replacement.

- The speakers are secured with standard fasteners and a small amount of tape to aid in cable management.

- On the down side, the speakers are now a single assembly increasing replacement cost and the chance of throwing away a partially working module.
Step 5

- The heatsink assembly contains two fans, each with separate connectors, and strangely, different connector styles.

- The right fan (during normal operation, in this image it's on the left) connector slides out of its socket parallel to the motherboard. The left fan connector lifts straight up out of its socket. Relatively minor, but it could serve as an unnecessary stumbling block during repair.

- On a quality note, and this may be a post-posting non-functioning unit, but the "BACKLIT" ZIF connector has some badly mashed pins.
Step 6

- The heatsink is also immediately accessible. Its screws are captive making for easier reassembly, but the unit is a large assembly.

  i The shielding sticker need not be removed to access the heat management assembly, flaps conveniently allow access to the heat sink screws.

- The heat management system includes heat pipes, thermal paste area, and two fans. Replacing a loud or broken fan will require replacing the whole unit.
Step 7

- After the battery is removed the following components are accessible:
  - The trackpad assembly. The solid assembly is secured with standard screws and no glue.
  - The fingerprint reader, including the metal bracket. Secured with a single standard screw.
  - The NFC module. Secured with some truly wicked adhesive. Unlikely to need replacement, and unlikely to be damaged during removal, but definitely a challenge.
Step 8

- The adhered foil shield covering the power button connector is easy to remove and replace—better than copper tape sometimes seen for this purpose.

- The display cable connector partially covers the headphone jack board cable, which isn't strictly a problem, but again isn't the smoothest path to repair.
Step 9

- The motherboard is removable after the heat sink assembly, and after some (mostly labeled) connectors are disconnected.

- The motherboard contains the CPU, memory, (newly surface mounted)wireless card, volume buttons, and ports.
  - Soldered components minimize the opportunity for upgrades, keeping the computer stuck in the past and reducing useful life.
  - High-wear components like ports and buttons make for very expensive replacement when they're soldered to the motherboard.

- The motherboard removal was hampered in this model by the dummy SIM tray. We were unable to eject the tray, and the plastic housing securing it is glued to the bottom of the motherboard.

- Pulling the motherboard away from the trapped SIM tray was enough to pull the housing away, freeing the board, and bending the SIM tray in the process.
Step 10

- The display assembly is finally removable. While not all components will need to be stripped out as shown, the device layering could be altered to improve serviceability of high wear components such as the hinges.

💡 The display can actually be pried out without removing the assembly from the laptop, however access to prying areas is more limited when it's attached.

- The final components in the rear case can be removed without display removal, including the power button, and headphone jack (as well as the volume rocker cover, not pictured).
Prying the display out of its housing is extremely challenging and likely to damage the screen itself.

It is designed such that the top should be freed first, then levered down. However the only purchase we were able to get was near the hinges, resulting in the destruction of some plastic clips.

The cabling has been much improved, such that, once the adhesive is defeated, opening is very straightforward.
After removing (and probably breaking the display) you can replace:

- Upper sensor assembly (on a very fragile board)
- Several antennas secured by less copper tape than last time, which is admirable
- And the hinges. The plugs are plastic this time, and conveniently labeled left and right.
- Ideally the antennas won’t fail, but their cables run through the hinges, which means some stress over time. The copper tape will complicate replacement.
- Most of the sensor assembly is a single unit, increasing replacement cost.
While the keyboard is probably technically removable, it has far too many screws hiding under an adhered backlight layer, so we deem this a single assembly. A component this complex will cost more, either in time or money.
Step 14

- The HP EliteBook x360 1040 G5 earns a **6 out of 10** on our repairability scale (10 is the easiest to repair):
  - SSD and battery are easily accessible and removable.
  - Manufacturer provides free user-accessible repair documentation.
  - All screws are standard Phillips and Torx.
  - Overall mostly modular, but the keyboard, heatsink, display, and motherboard are all large assemblies, which will make repairs more expensive.
  - The device relies heavily on tapes, adhesives and fragile clips to secure components, complicating repairs.
  - The processor and RAM are soldered to the motherboard, eliminating the opportunity for upgrade.