

From the Vault: Kailh China-Style Box Switch Review

-ThereminGoat, 04/24/2020

While it has been another couple of relatively uneventful weeks with regards to new switches hitting the market, that does not mean it has been a quiet one overall. Just within the last week both Novelkeys and TKC absolutely demolished their sales for the H1s and C³ Tangerine V2 switches, respectively. As well put by a fellow reviewer, Basecase01, this marks the first time in history that MX switches have been worth more than the barrels of crude oil that they are made out of with the recent tanking of US oil prices to negative dollars per barrel of oil.

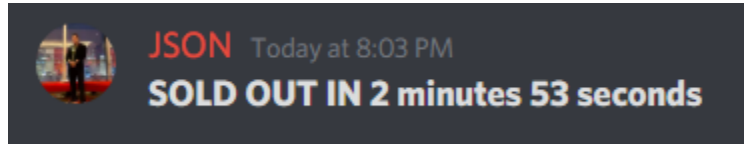


Figure 1: They certainly burned a lot of that cheap oil racing to the end of that restock sale, though.

That is not to say, though, that we do not have any interesting options coming up on the horizon. Relatively soon we will see Novelkeys' Blueberry switches, and new switch designs have either started selling or being hinted at by Gazzew, TKC, Novelkeys, and even ThicThock as of yesterday. Even though I could likely write a document of all of the upcoming pieces alone, I chose to take another dip into the vault and revisit a relatively modern set of switches that have seemingly been erased from existence in the short while that they have been around.

Switch Backgrounds

Starting as a 'viral' photo among the mechanical keyboard community after CES 2019, Kailh quickly announced the beginning of the new "China Style Series" switches, which were a set of four box switches with bright, bold colors and relatively complicated names not otherwise seen from switches before. Unlike many other switch announcements before it, though, the viral photo from CES effectively announcing these switches contained both renders of the switches *as well as* force curves and more information than just spring weights. Introduced by this picture were a set of four brightly colored Box switches – two linear and two clicky switches of differing weights and unique names. The two linear switches were labeled as "Chinese Red" and "Ancient Grey" while the clicky switches were labeled as "Noble Yellow" and "Glazed Green". These odd names and switches were quickly swept up and displayed all over Reddit as well as in a well written article on Keychatter in early of January 2019.

After the initial spread of interest surrounding these switches, they made their debut western sale on Novelkeys around late February to mixed results. Unlike previous switch sales conducted by Kailh and Novelkeys, there was a weird sales requirement in which switches were priced at \$1.00 each for all orders less than or equal to 30 switches. If more than 30 switches were bought, though, the price per switch for all switches dropped to \$0.60 apiece. While this was an obvious ploy on the part of Kailh to try and force more sales of their switches, this didn't exactly do themselves any favors overall with respect to sales of these switches, as they were still being sold through sites like TaoBao and Aliexpress for their \$1.00 per switch price tag regardless of quantity purchased.



Figure 2: CES 2019 Kailh China Style Series display card.

Never quite selling out, these switches saw a decent initial sales day but pretty much faded into obscurity as quickly as they had peaked interests. Having actively collected switches at the time, I was startled to see how immediately these switches dropped out of the public’s eye as I thought they were at least unique when they first came out. Now revisiting these switches for the first time in quite a long time, I finally get to see if it was the odd pricing that turned people sour from the start, or if it was the switches themselves that led to their downfall.

China Box Switch Performance

Due to the fact that these switches came a set of four yet contain two different types of switches, I will break down each of the sections discussing their characteristics into two – one for the linear switches and one for the clicky switches.

Appearance

All four of these switches featured an opaque bottomed, plate mounted housing with a clear top housing with no LED slot. While the top housings were the same clear plastic color across all of the switches, the bottom housings and stems all featured distinctly bright colors corresponding to their names.

-Linears:

The two linear switches of this lot were the “Chinese Red” and “Ancient Grey” switches. Looking first at the red color of these switches, its immediately clear that these were the most aptly named of the China Style series, as they feature a bright red color that is definitely reminiscent of Chinese New Year’s festivities. As well, the red color was even different than previously sold through Kailh, as the stem and housing of the Chinese Red switch was a noticeably darker shade of red than the Kailh Box Red switches. While the Ancient Grey switch wasn’t egregiously different than the name implied, the grey color is a bit lighter than anticipated with an adjective like “Ancient”. The grey color of these switches is closer to the stem color of the Cherry MX Grey switches than some of the MX Speed Silver line.



Figure 3: Linear switch color comparisons. (Left to Right: Kailh Box Red, Box Chinese Red, Box Ancient Grey, Cherry MX Grey)

-Clickies:

Unlike the linear switches, the “Noble Yellow” and “Glazed Green” switches definitely were a bit rougher on the appearance take. While the Noble Yellow switches aren’t all that bright and stand out-ish now given the popularity of the Gateron Ink and TKC Fruit switch lines, these switches at the time were extremely bright and were the only to feature a bottom housing colored as such. The Glazed Green switches, however, were the biggest disappointments out of the gate.

Featuring a name like Glazed Green, as well as seeing the relatively vibrant rendering in their initial display picture, these switches definitely do not deliver the anticipated ‘green’ color. Featuring more of a turquoise-green color than an actual green, these switches come across closer in shade to a Tealio switch than something like a MOD-SH or FEI Matcha switch, with are both immediately recognizable as green. I personally remember having a relatively strong feeling of disappointment among fellow collectors about how ‘off’ the color of these switches seemed.



Figure 4: Clicky switch color comparisons. (L-R, Top-Bottom: MOD-SH, FEI Matcha V1, Box Glazed Green, Tealio V2, Gateron Ink Yellow, Box Noble Yellow)

Push Feel

-Linears:

Spying the force curves and data from the initial release, the Chinese Red linear switches were listed as having a 45g actuation roughly 1.8 mm into the 3.7 mm travel distance of the stroke, with a bottom out of around 60g. On the heavier side, the Ancient Greys featured a 95g actuation force with a 120g bottom out force at the same distances listed as the Chinese Reds.

Both of these switches feature a noticeable amount of scratch, though it comes in the form of a consistent scratch along the entirety of the stroke rather than a grainy feeling of other scratchy switches, such as recent Gateron linear recolors. The Chinese Red switch definitely has the lesser appealing bottom out feeling of these switches, hitting with an almost hollow plastic-y type feel. The Ancient Grey switches, on the other hand, bottom out with a very firm and resolute thud and actually feel pretty nice as a bottom out. While I remember these Ancient Grey switches impressing me initially in terms of feel and their relatively high bottoming out weight, I can honestly say that I am still impressed with how these feel as a switch, regardless of the minor scratch. The weight of the Ancient Greys really reduces the hollow and airy feeling of the switch and leave it feeling like a decent linear option.

-Clickies:

Spying again to the force curves from the initial release, both of the clicky switches feature a clickbar set to start around 1.6 mm into the stroke and finish around the 1.8 mm range of the stroke. The Noble Yellow switches featured a click stroke of about 65g with a bottom out of around 45g while the Glazed Green switches featured a much more subtle 50g actuation with 45g bottom out force.

The most immediately striking difference in the feel of these switches comes in how the weight of the activation click being so different between these switches makes the click actually feel as if it is activating in two different places. The large weight of the Noble Yellow activation force and immediate ramp up to 65g as the switch stroke begins makes the click feel much earlier on in the stroke than the Glazed Green clicks. Overall, though, these switches do suffer a bit from the scratch issues seen in the Chinese Red and Ancient Grey switches as well as relatively hollow feeling of the bottom out, though the hollowness is not as pronounced as in the Chinese Red switches.

Sound

-Linears:

Much like in the comparison drawn in the Push Feel section, the Ancient Grey switches are definitely the runaway option here. The red switches not only sound hollow to match their bottoming out feel, under high speeds of activation they have a bit of a ‘popping’ sound that is definitely unique among the switches I’ve recalled writing reviews for and/or closely analyzing. As well, these switches suffer heavily from a ping in the spring that is audible even under light activation speeds. While certainly as a result of the light spring weight more so than anything else, these switches sound quite light and high pitched for a linear switch.

The Ancient Greys, on the other hand, sound firm and solid throughout their stroke and have a decently satisfying ‘thud’ sound to their bottom out. In complete contrast to the ‘light’ sounding Chinese Red switches, these have a much deeper sound to them and feel much more solid. Like the Chinese Reds, though, there is a slight bit of a hollow plastic note to the upstroke as well as a ping in the spring, but these are significantly less in magnitude compared to the Chinese Reds and under normal activation force don’t become as noticeable.

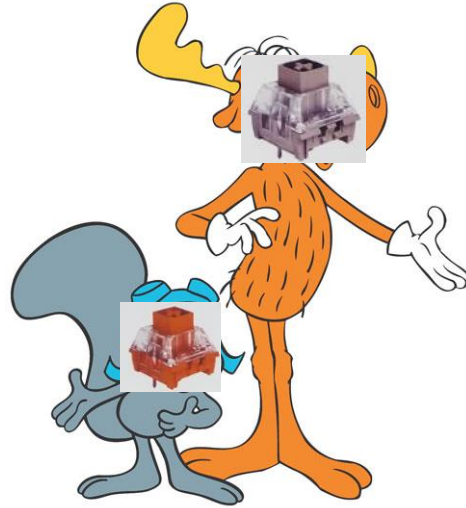


Figure 5: I think this low quality meme does more to capture the difference in sound between these switches than I ever could put to words.

-Clickies:

I've said this before, and I'll say it again – *I am not really a fan of clicky switches at all.* While I have had rare moments before where I may have considered using clicky switches – such as with the Phoenix Stem review that I completed, these switches definitely do not do my overall opinion about clicky switches any favors.

The Noble Yellow downstroke click is a consistent and decently high-pitched click almost reminiscent of a light pen click and is honestly not that bad. However, I've found that by changing the upstroke speed and even where I activate the Noble Yellows, I can get either solid, dull click or an even higher pitched one than the downstroke. The Glazed Greens also suffer from this issue, but it is even more annoying given that their downstrokes are a tinny, high-pitched, and short click sound that is definitely not satisfying to hear.

Wobble

All of these switches have a comparable amount of N/S wobble that definitely will be noticeable with keycaps on, though I don't necessarily feel as if it is something that everyone would dislike about these switches. The E/W wobble, however, is distinctly more noticeable on the Chinese Red and Ancient Grey switches than the Noble Yellow and Glazed Green, which leads me to believe that the arm on the stems used in actuating the click bars helps reduce wobble in this direction ever so slightly.

Comparison Notes to Other Notable Linear Switches

Note – These are not aimed at being comprehensive comparisons between all factors of these switches as this would simply be too long for this writeup. These are little notes of interest I generated when comparing these pieces to the Chinese Red and Ancient Grey switches side by side.



Figure 6: Switches used for comparison. (L-R, Top-Bot: Kailh Box Red, Tealio V2, Alpaca, C³ Tangerine V2 62g.)

Kailh Box Red

- While the Kailh Box Reds definitely have that a bit of a hollow bottom out sound to them, they sound and feel significantly more substantial than the Chinese Reds.
- The smoothness on both the Ancient Grey and Chinese Red, though, is a bit better than the stock Kailh Box Red.
- There is a significant lack of ping in the spring in the Kailh Box Reds compared to the China Style series, even under high speeds of activation, which is a bit surprising to me.

Tealio V2

- This is probably the first linear review I've done in which the Tealios V2 switches by and large blow out the smoothness of both of the linear switches being reviewed.
- There is also a significantly lesser wobble in both N/S and E/W directions in the Tealios switch.
- While seemingly being constructed out of a similar top housing material, the Tealios have a distinctly different upstroke collision sound with the top housing, sounding a bit more firm than the Chinese Red switches, but a bit louder than the Ancient Grey switches.

Alpaca

- With respect to rapid pressing up and down, the Alpaca switches don't sound all that different to the Ancient Greys on both bottoming out and upstroke noise.
- In a complete lack of quantitative analysis, I'd say the N/S wobble of the Alpacas feels like it is roughly half that of both the Ancient Greys and the Chinese Reds.

C³ Tangerine V2

- Even with a higher spring weight in the Ancient Grey switches helping dampen a bit of the impact force and noise of bottoming out these switches, the Tangerines have a significantly quieter sound to it on all fronts.

- Much like my lack of objectivity with the Alpaca notes, the E/W wobble on the Tangerine V2s, which is the worse axis for wobble, is approximately half that of the E/W wobble on the China Style series switches.
- Definitely notice the factory lubing quality when compared next to switches that definitely don't share that same level of smoothness.

Comparison Notes to Other Notable Clicky Switches

Note – These are not aimed at being comprehensive comparisons between all factors of these switches as this would simply be too long for this writeup. These are little notes of interest I generated when comparing these pieces to the Noble Yellow and Glazed Green switches side by side.



Figure 7: Switches used for comparison. (L-R, Top-Bot: Novelkeys Sherbet, Gateron Ink Blue, Kailh Box Navy, Kailh Box Jade)

Kailh Box Jade

- Being notorious as having one of the higher pitched click noises among mechanical switches, the Box Jades sound is comparable to these switches in terms of depth as Box Navies are comparable to other clicky switches.
- The bump in Box Jades are much crisper and stronger both in terms of feel and in terms of actual sound than the China Box series, with the Noble Yellow being the most comparable of the two.
- While there is still a comparable amount of wobble in the Box Jades in the N/S direction, they have distinctly lesser E/W wobble than both the Noble Yellow and Glazed Green switches.

Kailh Box Navy

- While Box Navies are definitely the peak of the 'deep and solid' sounding click noises, the Noble Yellow switches aren't a bad opposite to these with a relatively light and airy downstroke click as compared to the Box Navies.
- The same wobble notes can be made for the Box Navy as for the Box Jade switches in comparison to the China Style series.
- In my opinion, still the absolute king of clicky switches in terms of both overall feel and sound.

Gateron Ink Blue

- Not even a fair comparison due to the fact that clickjacket style clicky switches have a much worse mechanism for producing good click sounds.
- These have an almost insane amount of spring ping compared to any of the China Style switches, even including the Chinese Red switches under super high activation speeds.

- While these are a much prettier color in terms of switch housings, they are definitely a worse option in terms of a clicky switch than the Noble Yellow or Glazed Green switches.

Novelkeys Sherbet

- While the actuation point in Sherbets still weirds me out like they did in my initial review of them, they definitely do have a relatively sharp and crisp feel to the bump compared to the China Style clickies.
- Definitely have a much quieter overall volume to them as compared to the Noble Yellows and Glazed Greens.
- There is actually more E/W wobble in these switches than in all of the China Style Box switches, throwing a bit of a wrench at my initial guess that the clickbar arm on the stem reduced the wobble.

Final Conclusions

Overall, after having actually spent some time sitting down to review these switches, I understand much more clearly why they fell off of the Earth in the fashion that they did. While the Glazed Greens were upsetting even before touching one of them, the switches all have a culmination of characteristics that made them a questionable option among the switches out at the time and an even more questionable one given the quality of pieces coming out now. That being said, though, I do feel that the Ancient Grey switches deserve a little bit more attention than the rest of these switches, as I feel that they aren't that bad of a linear option and a relatively unique one given the high actuation and bottoming out force. While I'm certain that the fact that these are box switches likely puts the final nail in the coffin for these pieces, I honestly think it'd be interesting seeing more high weight linear options like the Ancient Greys in the future.

A Bit About My Process

Due to the fact that I receive quite a few DMs from individuals as well as hold plenty of conversations with people about switches daily, I've been asked more than a couple times as to how exactly I test switches for my reviews that I complete. Thus, as a result of this I've chosen to give a little bit of a 'peek behind the curtain' to explain how I come to some of the conclusions that I do. While I am aware right away that this may not seem like a perfect system to everyone, it is the best I am able to do with my current setup and am seeking to improve it whenever I can.

Deciding on a Review

The first step when it comes to any review is typically deciding *what* exactly I will be writing about since not all of my writeups, such as this one, are about new and emerging products. Typically, I try and do writeups of new and released pieces when they come out, such as the Gateron Merlot review I did within a week of their release through Novelkeys and the western markets. However, if switches don't necessarily have any unique differences about them relative to things currently in the market, such as when the Mauve switches released, I choose to not do reviews about those. If I am able to secure samples of prototypes of pieces prior to release – such as with H1s and Marshmallows – and am told I am allowed to write a review from the vendor, I am almost certainly going to jump on the opportunity when I can.

When I don't have new switches to write about and want to put out a review, I choose to explore alternative discussions either about my switch collection or about switches of the past. Being that this is the second installment of the 'From the Vault' style reviews, I plan to do a few more of these as time progresses, though I also have other things I am considering as well. As per my discussions in both Meta Reviews, for example, I have some level of interest in revisiting the GSUS Panda drama at some point in the future.

Testing Switches

All of the testing I do for my reviews is done well in advance of actually approaching a keyboard to type up the review. The main categories I aim to evaluate first of all are appearance, wobble, sound, and push feel – which are all the standard discussion points for my reviews. After reviewing each of these, I then move on and compile a list of comparison notes to other switches of the same type using my collection testers. Once completed, I typically refine all of these and trim down the comparison notes a bit. For details about testing each aspect, refer to their category below:

Appearance

Obviously, this is the most self-explanatory of the categories listed above. While taking notes about the pieces on their own, I typically try and compare their component colors with already existing switches in order to compare and contrast their differences. Additionally, I check for noticeable differences in texture such as glossy vs. rough on the housings and factory lube on the stems in order to try and make guesses as to their production and/or material types.

Wobble

I typically test wobble in two stages – first in hand and then in an acrylic tester using keycaps of various profiles. In hand, I tend to try and ascertain both if the stem wobbles as well as the top housing of the switches. I test wobble in terms of both potential axes of movement and refer to them as N/S and E/W, where North is the switch plate if looking top-down on a switch. Then, placing them in an acrylic tester I typically test the wobble with different cap profiles – such as DSA, GMK, and MT3, all of which are sets

that I regularly use in my daily boards. In the future I am adding KAT, HSA, and SA sets to my testing means, though I try and take a wholistic estimate of wobble with all of these caps rather than separating them by cap type.

Sound

Sound is by far one of the hardest aspects to test and report back in the form of non-onomatopoeia words. While it's easy to just say things like 'Thock' to describe the sounds of switches, I don't feel they do a great objective matter to clarify what a sound *sounds* like. As well, so much of the sound of builds is based on factors outside of the switch, such as plate material, case material, cap profile, foam, films, etc. For this reason, I think that while typing tests are certainly interesting, they do occasionally mislead people into thinking switches *always* sound that way in any case.

To try and circumvent this, I test switches for sound both in hand as well as in my acrylic tester in order to develop the sound profiles I write about. With the tester, I try and test them at normal typing arm's length away, and in hand I test them both at arm's length and right next to the ear. While you don't type with your ears immediately above your board, things like cases and plates can amplify those sounds in full builds and make them more noticeable to someone typing.

Push Feel

Push feel I do in a total of nine different ways – three speeds by three locations. With respect to locations, I test them in hand, in my acrylic tester, and then in one of the hot swap boards I own – either my KBDfans Tofu or my Planck EOTW. With respect to speeds, I test them extremely slowly to try and tease out differences in scratch or spring inconsistencies, at normal typing speed for the obvious reason, and then extremely fast to tease out any differences in bottoming out or upstroke feelings. As mentioned before at the start of this, if I have more than one of the switches for review I will typically test more than one of the switches in these fashion in order to both confirm consistency across switches as well as help better flesh out my ideas.



Figure 8: My testing buddies all posed together. (Acrylic Tester, KBDfans Tofu with MT3 Godspeed, and Planck EOTW with Clear DSA Caps.)

Final Thoughts

While I understand that the system that I've outlined above is far from perfect, I try and do my best to stick to objective reporting of the qualities I observe in person into my reviews rather than a smattering of subjective thoughts. Would this be more ideal if I had a full audio-visual setup and build quantities of everything like TopClack or TaehaTypes? Sure, but that simply isn't a realistic situation that I think I'll ever find myself in and thus I will make do with the means I have currently. I additionally have been considering other formatting suggestions that have been posed to me and may choose to include these changes in the future. I started writing reviews and documents as a want to give back to the community about the knowledge I had accumulated collecting over my brief stint doing such. Know that I will always be looking for better ways and methods to help deliver what I am lucky to see with my testers and collection to you who is continuing to read this long ass writeup.

Further Reading

KeyChatter Kailh China-Style Review

Link: <https://www.keychatter.com/2019/01/11/kaihua-goes-china-style-with-new-box-switches/>

Wayback: <https://web.archive.org/save/https://www.keychatter.com/2019/01/11/kaihua-goes-china-style-with-new-box-switches/>

Novelkeys' China Style Box Release Announcement

Link:

https://www.reddit.com/r/MechanicalKeyboards/comments/avv3dw/novelkeys_updates_china_style_box_switches/

Wayback:

https://web.archive.org/save/https://www.reddit.com/r/MechanicalKeyboards/comments/avv3dw/novelkeys_updates_china_style_box_switches/

KPRepublic Kailh China Box Sales Page

Link: <https://kprepublic.com/products/kailh-box-switch-chinese-style-red-grey-yellow-green-rgb-smd-dustproof-switch-for-mechanical-gaming-keyboard-ip56-waterproof-mx>

Wayback: <https://web.archive.org/save/https://kprepublic.com/products/kailh-box-switch-chinese-style-red-grey-yellow-green-rgb-smd-dustproof-switch-for-mechanical-gaming-keyboard-ip56-waterproof-mx>

Kailh China Style Box Aliexpress Sales Page

Link:

<https://www.aliexpress.com/item/32972512978.html?spm=2114.12010615.8148356.1.24946865eB36MI>

Wayback:

<https://web.archive.org/save/https://www.aliexpress.com/item/32972512978.html?spm=2114.12010615.8148356.1.24946865eB36MI>

u/BSGalaxy's Box Ancient Grey Review

Link:

https://www.reddit.com/r/MechanicalKeyboards/comments/ay8age/china_style_ancient_gray_box_switch_review/

Wayback:

https://web.archive.org/save/https://www.reddit.com/r/MechanicalKeyboards/comments/ay8age/china_style_ancient_gray_box_switch_review/

The Board Podcast Kailh China Style Switch Review

Link: <https://www.youtube.com/watch?v=sSc4xphi0C4>

TabiTabi's Lubed Kailh Box Ancient Grey Typing Test

Link: <https://www.youtube.com/watch?v=PRQNYSHMGY4>

Kiyoboard's Kailh Box Chinese Red Typing Test

Link: <https://www.youtube.com/watch?v=K9PqgcxBdLg>