From The Vault: Novelias Switch Review

-ThereminGoat, 01/17/21

Putting the last couple of months' worth of content into perspective, it really does feel like all I've been reviewing is linear switches. To be entirely honest, it's really because the community at large seems incapable of exploring much outside of their bubbles of preference in switches which can be constructed, at random, using the following formula:

Step 1: Flip a coin for Durock or JWK as the manufacturer
Step 2: Spin a color wheel for the top housing, stem, and bottom housing
Step 3: Pick polycarbonate or nylon for top and bottom housing
Step 4: Pick a spring weight between 60 and 80g of force
Step 5: Call it something "catchy"

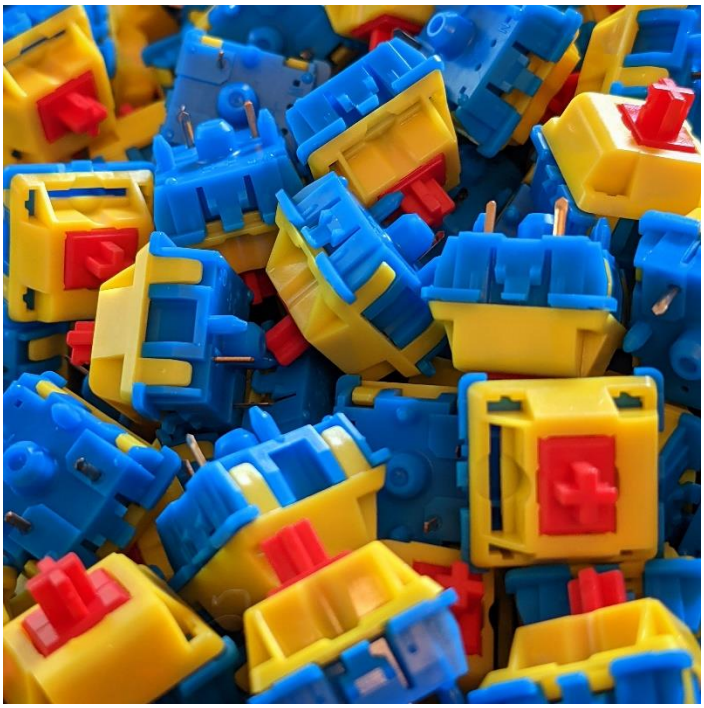

Figure 1: It just fits the meme too perfectly.
(Credit to BOWLER of Switches.mx for the photo!)

All jokes aside, it has been a bit since I've gone really 'out there' with the switches for my review *as well as* dusted off the ol' tried and true 'From The Vault' series. In no uncertain terms, I am quite well aware that this is some of my less viewed content, but I think it is still important to document modern switches that are otherwise ignored or effectively 'forgotten' to time as we pile on more switches to our options out there. In response to that, as well as in response to the completely fair criticism of Vault reviews such as, "Why the hell should I care about Geekmakers, Goat, they're not for sale literally anywhere?", I will be making some changes to these reviews moving forward. Aside small formatting changes that you may or may not have picked up on in previous switch reviews of mine lately, I will now be attempting to "recreate" these switches using modern, more readily available switch components so that the readers can get a taste for some of these 'lost to time' modern switches. This change will be enacted for all From The Vault reviews moving forward, so please let me know what you think about these changes and how they went over!

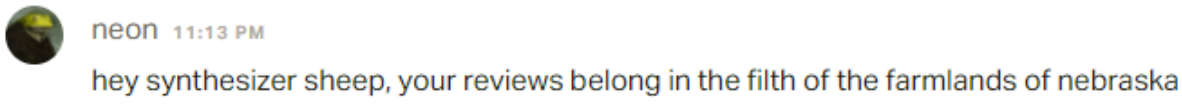

Figure 2: Patreon DMs, for example, are a great place to voice concerns about myself and Nebraska. (Thank you for pitching in on the joke, neon.)

Switch Background

To be entirely honest, part of the reason I've so desperately wanted to do a From The Vault: Novelias review for some time now is that they hold not only an important place in the history of modern, limited run switches, but also an important place in the context of my collection. Zooming all the way back to early June of 2018, Novelkeys announced via Instagram a special, limited time switch known simply as 'Novelias' with very little to no other context about their release. At this time, I had recently purchased my very first switch tester as well a small lot of vintage switches from mechmarket, but hadn't really found myself interested in collecting 'every' new switch that came out. As well, back in mid-2018, alternative switch options with bright colors and limited-time runs were effectively nonexistent in the west, with the only other sale running at the time being Gateron Tangerine V1.5s, following briefly after a V1 run exclusive to China.

Figure 3: Yes, for a short time in 2018 these were your *only* fancy switch options.

Only a few weeks after this initial June 1st announcement, the Novelias switches went up for sale on Novelkeys' website running from mid-June until June 30th at $6.00 per pack of 10 switches. Billed as a collaboration with Olivia, since GMK Olivia R1 was running at this same time, these special edition switches were effectively created from the same molds as Box Royals, but featuring a light pink stem, matching light pink bottom housing, and 90g spring as opposed to the Box Royal's standard 75g bottom out spring. After ending the groupbuy with reasonable but modest by today's standards sales, these switches were shipped out to customers in mid-September of 2018 with them quickly falling out of the public eye.

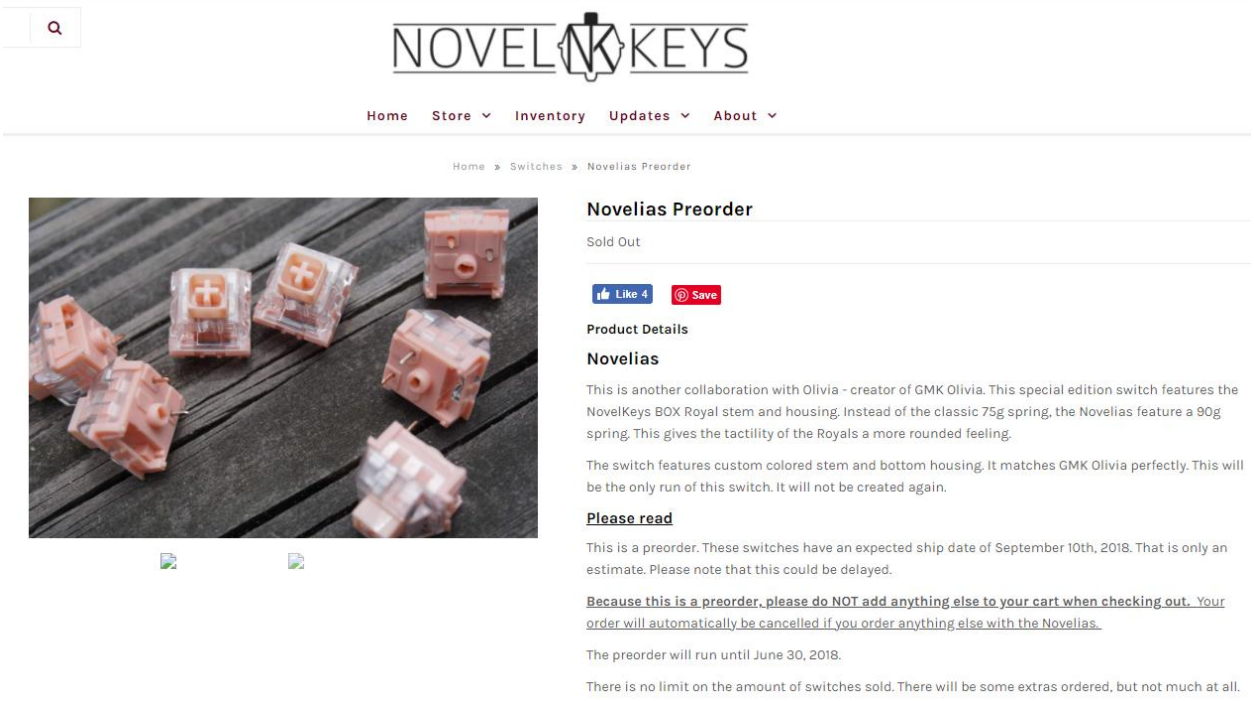

Figure 4: A brief snapshot in time of the Novelkeys sales page for Novelias at release. Really kicks up the nostalgia in me, to be honest.

At this point, newer people to the hobby might be reading the last sentence of that paragraph and scratching their head a bit. In this day and age, the idea of a new, fancy colored switch for effectively the first time ever surely should have wowed the community at large and brought the people out in droves. However, the reason that these did not sell nor stick around as long as they *could* have was due in large part to an old issue with Box switches that still gets mentioned here and there these days: Cap cracking stems. In order to get around to an explanation of cap cracking stems, though, we are going to first break down what actually are Box switches as I've not covered them quite at this depth on the site before now.

Figure 5: A small sampling of ‘traditional’ Box switches available at the time of writing.

Largely recognizable due to their special ‘4 sided dustproof’ stems, Box switches are an MX-mount variant of switches with a slightly different internal structure than other MX switches. Being run nearly exclusively via Kailh, with a slight exception for Input Club’s Hako line, these switches have seen mixed results among the community over their relatively long history. With the most popular of the old, square stemmed Box switches being Box Navy and Box Jade clicky switches, Kailh has moved on from this original design quite recently in mid to late 2020, introducing a round-stemmed set of Box Silent switches as well as teased a new, round-stemmed Box Cream to be released sometime in early 2021.

Figure 6: Kailh Box Silent Pink and Box Silent Brown switches with the new rounded off stems.

While many beginners may immediately jump to point out that these new round-stemmed Box switches shouldn’t be called Box switches because they don’t have the square shaped ‘Box’ stem anymore, herein lies a funny detail that escapes many people in this hobby to the day: Box switches are called Box because of an internal Box-like mechanism around the leaf of the switch, *not because of the shape of the stem*. Opening up an old Novelias switch, this becomes immediately apparent with the white rectangular section permanently fixed over the area where the switch leaf resides.

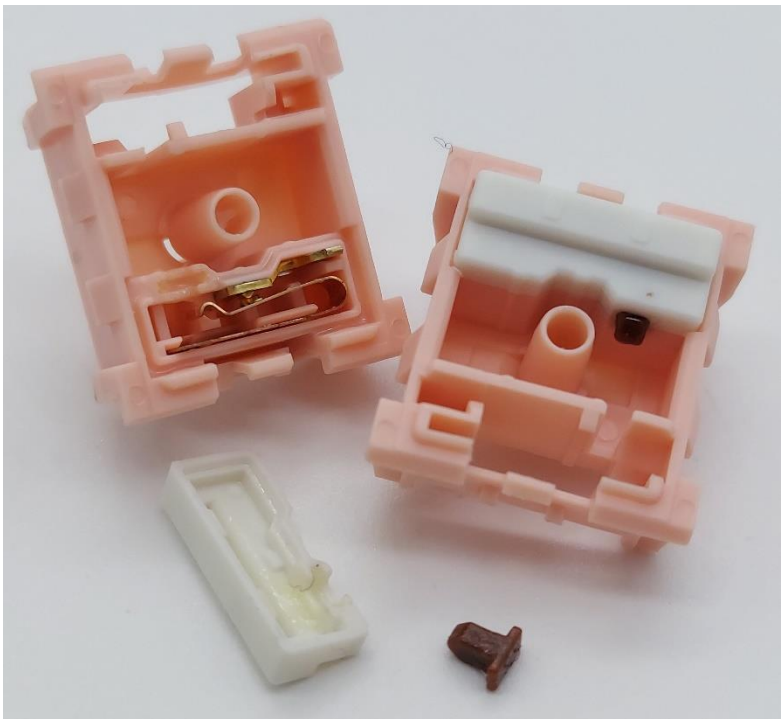

Figure 7: Picture of the internal 'box' mechanism of Box switches in constructed and deconstructed format.

With the leaves of Box switches being built in a horizontal fashion rather than the vertical fashion that we're accustomed to seeing in MX style switches before, they are activated by a small lever that is pushed by the stem of the switch rather than the stem directly. As well, rather than having an entire protruding leg that activates this lever as in normal stems, you'll note that these Box switches have relatively tiny 'stem legs' that interact with the Box mechanism lever to produce a tactile feeling in these Novelias. While I am personally uncertain as to why these design changes were sought out in opposition to standard MX-style construction, the mechanism itself actually works fairly well mechanically to this day. Much to the surprise of many, then, this relatively complex internal mechanism structure was *not* the issue that old Box switches struggled with the most. In fact, the most prevalent and concerning issue came in the most simple of places – the keycap mounting stem.

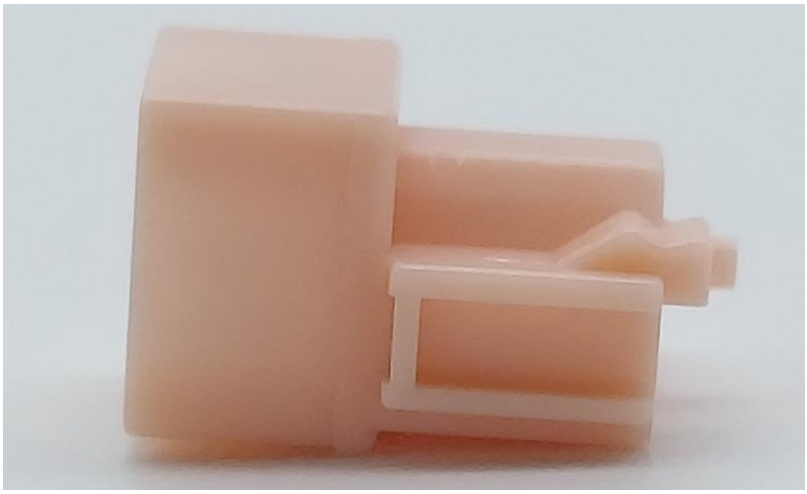

Figure 8: Side profile of Novelia stem showing off the small tactile stem leg.

Sometime throughout the history of Box switches, which is admittedly well before my time and not necessarily in the ‘well documented’ era of the hobby, people began intermittently experiencing issues in which the stems of the keycaps they were using on keyboards with Box switches in them would crack or split causing them to not work on other switches or being ‘loose’. Photos from a Geekhack thread started in mid-2018 about the keycap cracking issues showed that old Box switches, such as the Hako True pictured on the right, featured a set of four extra-thick horizontal bands that were believed to be the cause of these issues. Coincidentally, these photos also have Novelia switch on the left-hand side, showing an updated mold set which removed these horizontal stem bands.

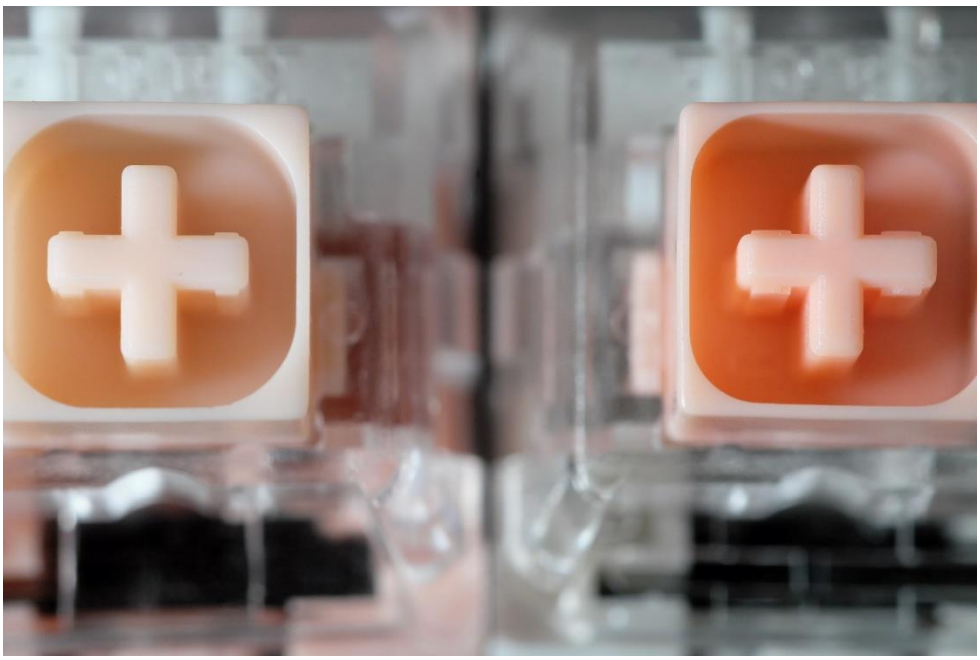

Figure 9: Picture showing differences in Box stem molds. Left are Novelias and Right are old Hako Trues.

While this photo taken in October of 2018 effectively absolves Novelias of having the stem mold issues believed to crack keycap stems, it was all too late to salvage their reputation. In mid-2018 when these switches were on sale, the craze about the Box switch issue was at an absolute fever pitch and many people in the community had simply sworn off Box switches altogether, regardless of efforts by some members to create tools such as “stemshavers” to manually retool old Box stems. In fact, this sentiment does still remain intact in some parts of the community, and will occasionally be mentioned on mechmarket posts selling “old” or “pre-retool” Box switches. Even though future iterations of Box switches would no longer have these issues due to stem changes as first seen in the Novelias switches, it simply was “too soon” for these switches to be welcomed into the community.

Figure 10: Picture of one of the few 'stem shaver' tools designed for fixing old Box switch stems.

Novelias Switch Performance

Appearance

As you can already parse out from the photos above, the Novelias are a BOX switch coming with a clear, wing-latch style top housing and a ‘rose-gold’ colored bottom housing and stem. While seemingly more pink than rose-gold, these switches were colored to match GMK Olivia R1, which they sold alongside. Internally, the box mechanism of the Novelias were a white color with a brown stem-to-leaf lever and they featured a 90g bottom-out, silver colored spring.

Looking past the obvious characteristics of Novelias, some trivially interesting points about the various switch components that make them up standout. First, the actual top housings of these switches do not allow for LED compatibility, with the LED region being completely closed off with plastic. The strange part about this closed off region, though, is that it is done with a stepped plastic piece as if the smaller middle portion would have been punched out for LEDs eventually. In other LED non-compatible switches, this region tends to be covered with a single, thin sheet of plastic.

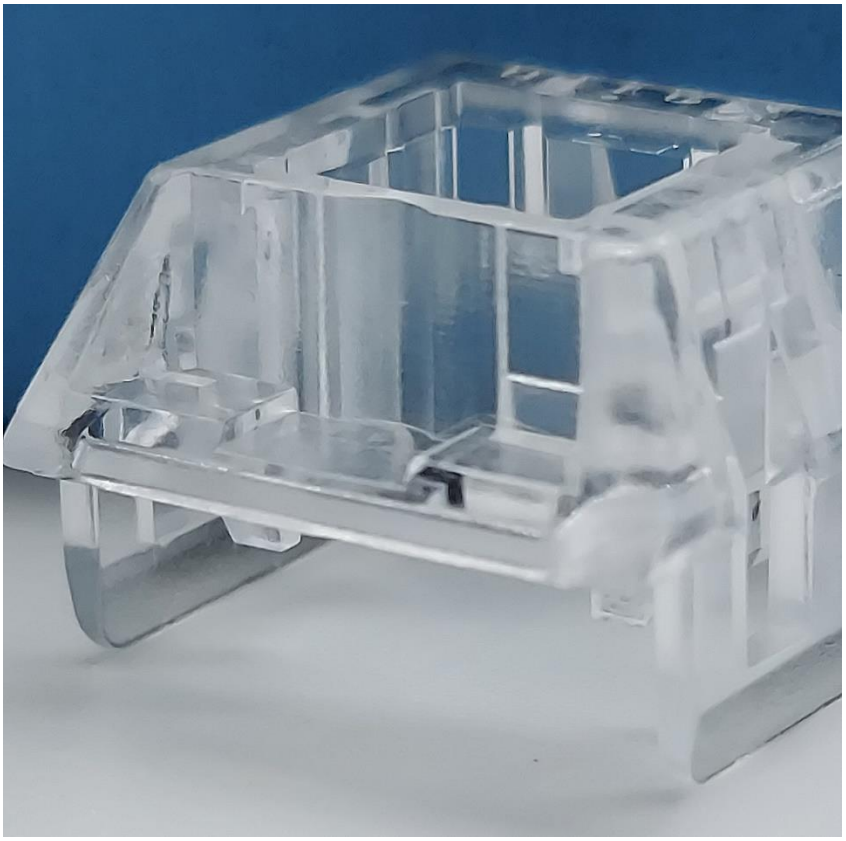

Figure 11: Picture of the 'stepped' LED slot on Novelias top housings.

Moving on to the stem of these switches, in addition to the keycap mounting post of the switches being enclosed, the internal-to-switch center pole is also enclosed entirely. To the best of my knowledge, this isn’t seen in quite this fashion in any other modern, non-Box switch with the only semi-related mechanism being Taiwan Jet Axis switches, although those are inverted from this design.

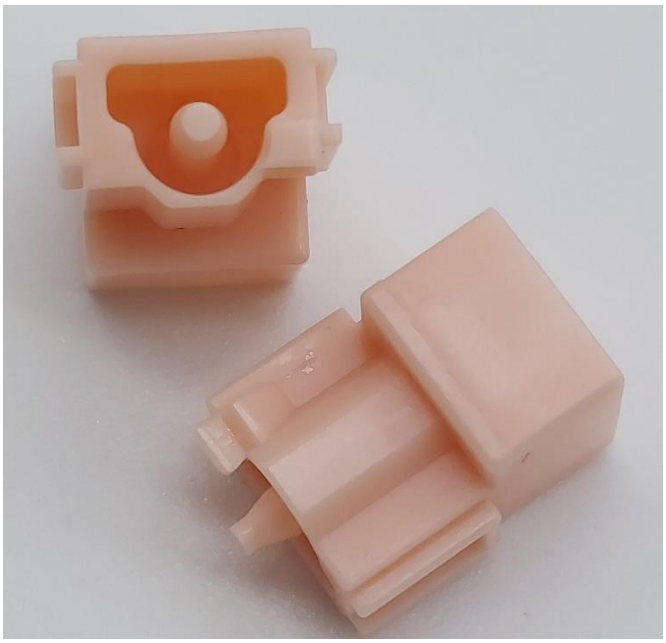

Figure 12: Side and bottom view of particular oddities in tactile Box stems.

The final pair of trivially interesting points about the design of these switches are both found on the bottom housing of the switches. Although modeled after Box Royals, which are tactile switches, it can be seen from the front side of the bottom housings that these molds still do allow for a clickbar mechanism to be inserted into these to effectively create ‘clicky Novelias’ if the stem were compatible. The open slot on the right-hand side would be where the small stem leg would activate the clickbar stretching across this open gap and seated in the leftmost pocket, as seen compared next to a Novelkeys Sherbet switch. The second point of interest on the bottom side of these switches is the ‘reinforcement’ patch that sits just to the left of the central pole area. Due to the open nature of the center hole, this reinforcement is in place to likely improve the bottoming out of this switch which collides entirely on the small, tactile-event stem leg.

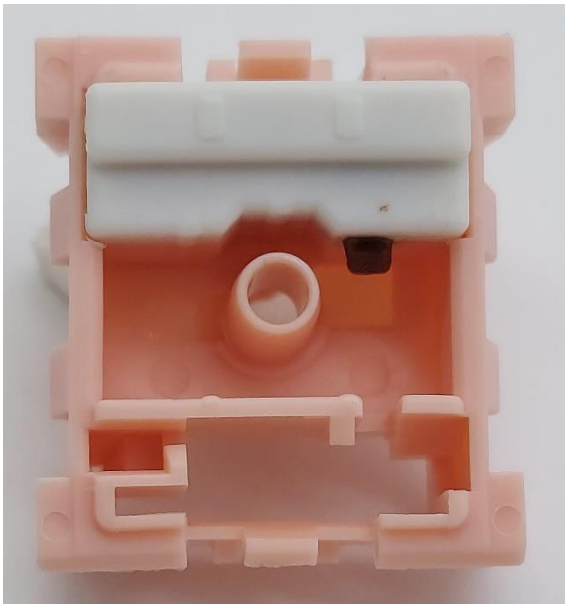

Figure 13: Top-down view of bottom housing showing the slots in the front of the housing for a nonexistent clickbar.

Figure 14: Reinforcement patch on bottom side of Novelia bottom housings.

Push Feel

Starting off with a half-millimeter, noticeable linear pre-travel region, the Novelias feature what would have been a highly tactile bump upon their release but is now considered closer to a mid to high tier tactile bump. Situated roughly 1/3rd of the way through the stem travel of these switches, the tactile bump is fairly rounded with a relatively long feeling that helps to dampen the strong force of a 90g weighted spring. That is not to say, though, that these switches are *not* snappy. Even with a fairly well distributed tactile bump that takes some sharpness off of the tactility, these still do have a slight bit of a 'bite' to them.

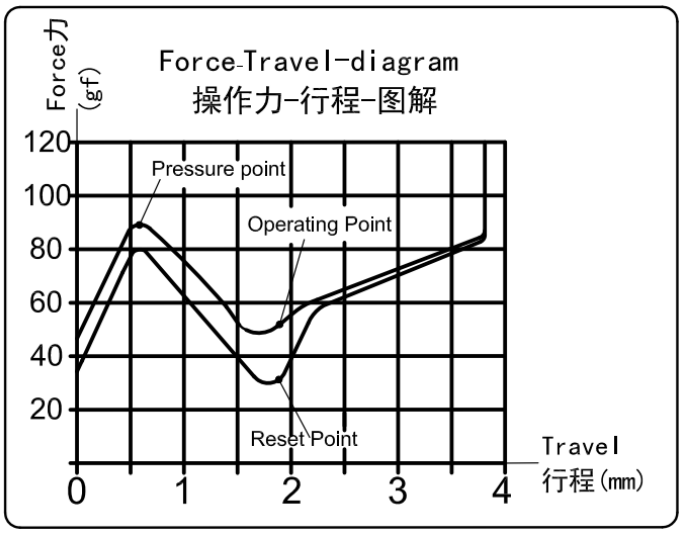

Figure 15: Novelia force curve showing its linear pre-travel region as well as shortened bottom out.

Bottoming out at roughly 3.8mm in depth and directly onto the small leg protrusion from the stem, these switches have a solid yet pointed bottoming out feeling. Rather than having a relatively larger area of impact such as the bottom of the center stem pole or the slider rails, this small leg brings a bit of a sharpened, pointed bottoming out feeling that still manages to feel somewhat solid and firm due to the

reinforcement to the bottom housing in this area. In contrast, the topping out feels very ‘wide and thin’ with the tops of the slider rails making contact with the relatively thin top housing.

Sound

As able to be noted in the few existing typing tests of these switches linked below, Novelias are quite loud for switches billed as tactiles. Drawing a connection to the present but unused clickbar slot on the bottom housings, these switches almost sound like slightly muted clicky switches, with the internal lever arm acting to produce a sound in the same short, sharp burst as a clickbar but in an ultimately more dampened fashion. Otherwise speaking, the relatively thin topping out sound as well as the fairly solid bottoming out to these switches is otherwise masked by the sound of the tactile event.

Interestingly, in addition to the fact that these switches are quite loud already in a stock format, tactile Box switches do have an interesting feature to them in that they “turn clicky” over time. With use, the very minor factory lubing somewhere on this small stem to leaf lever will eventually wear off and end up producing a louder tactile event over time. (Note that the use of the word ‘feature’ in this description is more like a Bethesda Games ‘feature’ than it is the strict denotative definition.)

Wobble

Coming as absolutely not a shocker to anyone who has ever used clamshell top housings prior, these switches have absolutely no top housing wobble to speak of. Moving away from this trite comedic break, the Novelias have a fair amount of stem wobble that is definitely noticeable with higher profile caps such as MT3 or SA and not so much with lower profile ones like KAM or DSA. While it’s definitely arguable, I do feel like there is ever so slightly more E/W direction stem wobble than the N/S direction, though ultimately, I don’t think this will be something that really matters in terms of overall stem wobble.

Other

As promised above in a break from normalcy, in this section I’m going to attempt to recreate these switches as best as possible using modern, currently available components since they are very hard to come by in their own right. (That is, unless you feel like trying to hunt them down on mechmarket somehow.) The entirety of these test switches comes from my very deep box of extras and test switches which I’ve cultivated with fine levels of overspending over my few years of collecting.

First Component: SPRiT 90g Kailh Box Stainless Steel Springs

In order to replicate the relatively high spring weight of the Novelias, rated at 90g of bottoming out force, I used SPRiT’s 90g Kailh Box Stainless Steel Springs. I first tested these in Novelias switches and didn’t notice any real difference in performance, sound, or any other performance metrics letting me know that these were in fact the components to move forward with.

Second Component: Kailh Box Royal Stem

The most obvious choice in modern stem replacements for these switches would be Box Royals given that they were marketed as using the same molds as Box Royals, originally. However, in order to test if Box Royals were truly the one and only option, I opened and compared the stems of Novelias to both Box Royals as well as Kailh Box Burnt Orange, which are another tactile BOX switch. Upon comparing them, it does appear that the tactile bumps between the Box Royal and Novelia were more comparable, with the Box Burnt Orange appearing slightly less tactile. In order to further verify this, upon

testing the 90g springs in the Burnt Orange switch, there was a noticeably less snappy and strong tactile bump.

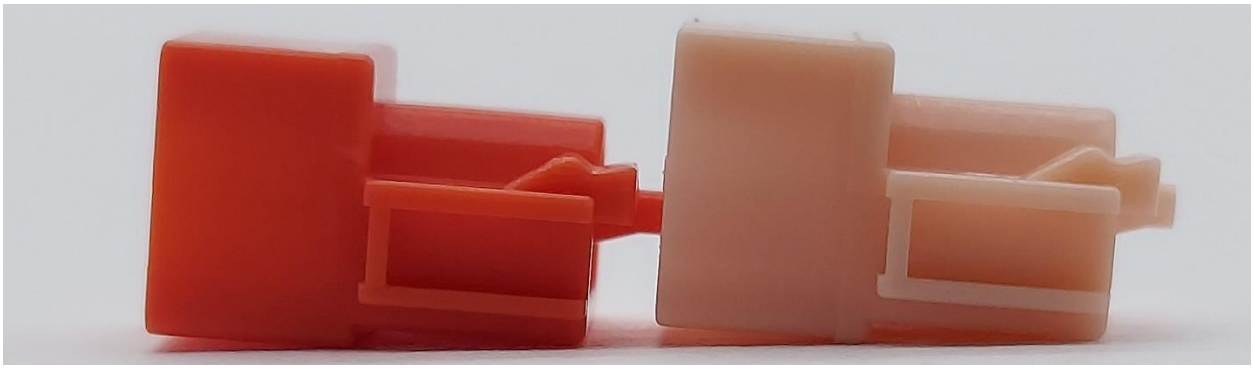

Figure 16: Side by side stem comparison of the Box Burnt Orange (Left) and Novelia (Right).

Third Component: Opaque Kailh tactile Box bottom housing

While it is again an obvious choice to proceed forward with Box Royal bottom housings for our 'modern replacement switches', I wanted to test out if Novelias were still able to perform with the same level of tactility in any BOX switch since it only interacts with this small lever. Surprisingly, it appears that the lever mechanism in tactile BOX switches is actually uniquely specifically to tactile switches. Besides the fact that this lever mechanism is Brown colored, whereas it is lime green colored in linear and clicky switches, it appears to have some sort of different shape or interaction that is required in order to produce the tactile event. It does not appear though that it matters *what* tactile Box switch that this mechanism comes from.

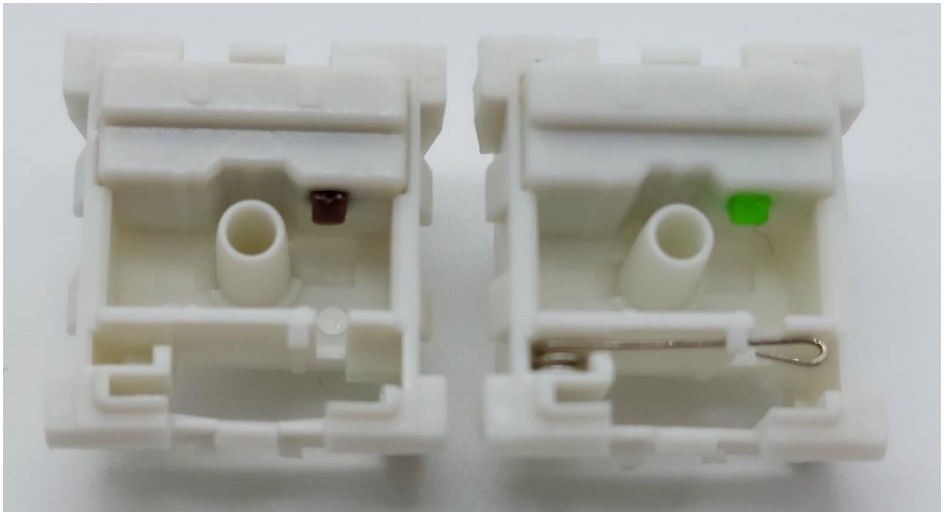

Figure 17: Difference in color in lever mechanisms between Tactile Box switches (Left) and Clicky/Linear Box switches (Right).

The final specification for the bottom housings of these switches is that they have to be opaque, such as the white, plate mount versions available. While more modern Crystal Box Royals exist with a clear top and clear bottom housing, trying out the aftermarket springs in them produced a noticeably higher pitched and thinner sounding switch than the opaque bottom housings.

Comparison Notes to Other Notable Tactile 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 the Novelias to other tactile switches in preparation for this writeup.

Figure 18: Switches for comparison. (L-R, Top-Bot: Zealio V2 (78g), C3 Kiwi, Gateron Kangaroo Ink, Massdrop x Invyr Holy Panda, Moyu Black, Kailh Box Brown)

Zealio V2 (78g)

- The most immediately noticeable feature about the Zealio V2s when compared next to the Novelias is simply how 'early' the tactile bump of the Zealios are. They quite literally are at the very top of the downstroke and have no linear pretravel to them whatsoever.
- While not by much, there is a bit less stem wobble in the Zealios than the Novelias switches.
- The Zealios V2 feature a much more 'traditionally desirable' tactile event than the Novelias in that it is early set in the downstroke, quite strong, and produces a comparatively deeper sounding bump. The Novelias, on the other hand, are a more centered, sharp, and higher pitched tactile bump than the Zealios.

C3 Kiwi

- While the C3 Kiwi switches are still a bit stronger than the Novelias in terms of tactile bump strength, it is noticeably closer to the Novelias than the Zealios were.
- The tactile bump, bottoming out, and topping out of the C3 Kiwi switches are noticeably deeper and more muted at each of those places as compared to the Novelias switches.
- C3 Kiwis, though, do suffer compared to the Novelias when discussing top housing wobble. Even before opening the Kiwis, there is an ever so slight give in the top housing in the E/W direction that simply isn't there in the clamshell top housings.

Gateron Kangaroo Ink

- While these two switches have a comparable strength of tactile bump, the inclusion of the lever arm in the Novelias does make its tactile bump feel a bit less defined and crunchier, especially in switches that have been used for some time.
- The Gateron Kangaroo Inks do have a tiny bit more stem wobble in both the N/S and E/W directions as compared to the Novelias switches.
- In terms of overall volume, the Gateron Kangaroo Inks absolutely blow out Novelias at all points.

Massdrop x Invyr Holy Panda

- The most surprising comparison note between the tactile event of these two switches is that they feel relatively similar in length as each other. Both of these tactile events are still strong while yet maintaining that relatively 'rounded' feel that Holy Pandas are loved for.
- Overall, at tactile event, at bottom out, and even at topping out, the Holy Pandas are significantly quieter and more muted than the Novelias switches.
- Much like with the Zealio V2 switches used above, these Holy Pandas have just a hair bit less stem wobble in both directions than the Novelias switches.

Moyu Black

- Not to really anyone's surprise based on the comparisons you've already read through to get to this point, the ultra-strong tactile bump of the Moyu Blacks is both noticeably stronger and sharper than the Novelias switches.
- While firmness is often the name of the game when it comes to bottoming out, I personally find the softer bottoming out of the Novelias much more preferable to the harsh, stem pole-based bottoming out of the Moyu Blacks.
- The Moyu Blacks are noticeably better with respect to stem wobble in both the N/S and E/W directions as compared to the Novelias switches.

Kailh Box Brown

- While the housings for these Kailh Box Browns would be great in recreating a modern Novelia switch, simply compared next to each other in stock form these Kailh Box Browns are significantly weaker than the Novelias.
- The Kailh Box Browns do have marginally greater stem wobble in both directions than the Novelias, but its marginal enough that it could easily be attributed to the difference in spring weights between the two.
- In stock, not used form, the Kailh Box Browns do feel a bit louder than the Novelias switches.

Scores and Statistics

Note – These scores are not necessarily completely indicative of the nuanced review above. If you've skipped straight to this section, I can only recommend that you at least glance at the other sections above in order to get a stronger idea of my opinion about these switches.

Novelia		
26	/35	Push Feel
16	/25	Wobble
4	/10	Sound
11	/20	Context
5	/10	Other
62	/100	**Total**

Push Feel
While the tactile bump on these switches is fairly strong with a complementary solid bottoming out due to the high spring weight, this switch ultimately loses a lot its positives to the lever-arm mechanism of Box switches over time.

Wobble
With the high spring weight likely helping to reduce the stem wobble as compared to other Box switches, there is still a fair amount of stem wobble in both N/S and E/W directions of these stems. The clamshell top housing, on the other hand, is completely rock solid.

Sound
While these switches don't start out sounding too loud for a tactile switch, the slow conversion of these switches into 'almost clicky' territory in terms of noise really does take away from the overall sound of these switches with respect to them being tactiles.

Context
Even though these switches are no longer available and are probably going to be decently difficult to find, they represent not only the first modern switch to be colored to match a keycap set but also historically represent an inflection point in the quality of Box switches stems and a move away from the 'cap cracking concerns' of older Box switches.

Other
Even though these switches may not necessarily perform the best, as well as can be easily replicated with more modern switch components, they're legacy lives on in some of the changes they helped usher in. These definitely stand as interesting historical foot note in the history of modern switches, but truthfully not much more.

Statistics

Average Score			Novelia		
25.6	/35	Push Feel	26	/35	Push Feel
15.9	/25	Wobble	16	/25	Wobble
5.9	/10	Sound	4	/10	Sound
11.8	/20	Context	11	/20	Context
6	/10	Other	5	/10	Other
65.1	/100	**Total**	62	/100	**Total**

Novelia Overall Rank	#30/52 (62/100)
Novelia 'Hard' Rank	T-#27/52 (46/70)
Novelia 'Soft' Rank	T-#33/52 (16/30)

Final Conclusions

In total transparency, one of the biggest reasons that I was super excited to get around to writing about Novelias is that it holds a fair bit of sentimental value with me in addition to the historical interests I discussed above. Not only was it one of the first custom switch groupbuys that I bought into, but it was also the first set of switches I built my Planck (my first 'custom' keyboard) with a handful of years ago. It really does put into my perspective, at least, how far both the collection has come as well as how far the quality of switches has progressed in such a short amount of time. While I still do think they're fun switches to use, comparing them next all of the modern options and in the scope of my collection now I realize they don't quite stack up to the performance standards that I remember them once having. However, that is not to say that this review was a complete loss. Getting to go back and see the historical junction at which these switches sat in terms of 'recolors', Box switches, and even the modern scene in general really makes me realize how important these switches are, even if only a very minor importance at that. So, on a relatively subdued note, I recognize that not many people necessarily care about this switch nor think that it is something really worth mentioning in 2021. That being said though, sometimes it is worth dusting off old switches from the vault, even if it is just to visit a little historical footnote along an ever-evolving switch world that is still growing to this day.

Further Reading

Novelkeys' Original Novelias Sales Page
Link: https://web.archive.org/web/20180717210916/https://novelkeys.xyz/products/novelias-preorder

Novelkeys' Novelias Instagram Teaser
Link: https://www.instagram.com/p/Bjc9wFCHBXA/?hl=en

Jae's E6V2 Build with Box Novelias
Link: https://www.youtube.com/watch?v=UciGPSHUPDI&ab_channel=JaeKeebs

Cjanzen's Iris with Novelias Sound Test
Link: https://www.youtube.com/watch?v=_N3n5rVZD5Q&ab_channel=ChristopherJanzen

u/Veryfancydoily's K-Type with Novelias Reddit Post
Link: https://www.reddit.com/r/MechanicalKeyboards/comments/aq2i18/ktype_with_novelias/
Wayback:
https://web.archive.org/web/20210117030138if_/https://www.reddit.com/r/MechanicalKeyboards/comments/aq2i18/ktype_with_novelias/

'Kailh Box Switches Crack and Stress Keycap' Geekhack Thread
Link: https://geekhack.org/index.php?topic=96323.350
Wayback:
https://web.archive.org/web/20210117030230/https://geekhack.org/index.php?topic=96323.350

"Stemshaver" Box stem fixer
Link: https://imgur.com/a/zgmJw6z#kggaoO9
Wayback: https://web.archive.org/web/20210117030615/https://imgur.com/a/zgmJw6z#kggaoO9

Box Switch Tolerance Reddit Update from Novelkeys
Link:
https://www.reddit.com/r/MechanicalKeyboards/comments/935f6l/box_switch_updates_from_novelkeys/

Wayback:
https://web.archive.org/web/20190413235924if_/https://www.reddit.com/r/MechanicalKeyboards/comments/935f6l/box_switch_updates_from_novelkeys/

u/TheRancidOne's Homebrew Novelias Reddit Post
Link: https://www.reddit.com/r/MechanicalKeyboards/comments/8qczd5/homebrew_novelias/
Wayback:
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