# Shaving Edge Retention in High-End Knives

Tests on high-end knives performed by **Nathan Stuart –** the all-Australian record holder of the sharpest knife in both non-kitchen and kitchen categories.
Formula of Nathan's record = brains + persistence + quality sharpening equipment + sharpness tester.

The Testing can be watched on the **Nathan's** YouTube Channel >>
This test cutting routine consists of 2 cuts across 80 gsm print paper, then 5 more cuts of the 80 gsm print paper, followed by sequence of 2 cuts of twin-core (double-ply) cardboard till the sharpness score goes beyond the forearm shaving range of 160 BESS. Nathan selected the latter as a cut-off value for his testing, as the high-end knives stay around 200 BESS sharp for too long to be practical to test them further.

Added at the bottom are test data for a Victorinox professional boning knife NSF 6.6603.15, sharpened at 12 dps, to give a reference to the mainstream s/s knives.
Note that Nathan knives are sharpened at 16-17 dps (only the M4 at 13 dps), while I gave the Victorinox the best performing edge angle for this steel, to maximize its performance in the cutting test. Also note that Nathan hones all the knives in the test on a fine hard ceramic stone.

Sharpness is given in BESS; 50 on the BESS scale is a disposable shaving razor sharpness (e.g. Gillette), and 500 BESS is a dull knife. See our Sharpness Chart

| **KNIFE STEEL** | **INITIAL** BESS | **PRINT PAPER** | | **TWIN-CORE (DOUBLE-PLY) CARDBOARD** | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 2 cuts | 7 cuts total | 2 cuts | 4 cuts total | 6 cuts | 8 cuts | 10 cuts total | 20 cuts total | 30 cuts total | 40 cuts | 50 cuts | 60 cuts | 70 cuts | 80 cuts | 90 cuts | 100 cuts total |
| **CPM 4V** | 40 | 100 | 150 | 85 | 100 | 95 | 140 | 95 | 85 | 90 | 125 | 140 | 160 | 160 | 180 | | |
| **M390** | 40 | 90 | 120 | 110 | 120 | 130 | 140 | 120 | 145 | 135 | 165 | 190 | | | | | |
| **CPM S110V** | 65 | 90 | 105 | 95 | 135 | 155 | 130 | 150 | 145 | 210 | | | | | | | |
| **CPM S90V** | 60 | 70 | 75 | 85 | 110 | 105 | 135 | 125 | 190 | | | | | | | | |
| **CPM M4** | 45 | 60 | 90 | 105 | 120 | 100 | 120 | 120 | 135 | 195 | | | | | | | |
| **CTS-XHP** | 60 | 70 | 100 | 130 | 100 | 90 | 135 | 140 | 140 | 170 | | | | | | | |
| **CPM S30VN** | 50 | 85 | 115 | 125 | 125 | 155 | 170 | 195 | | | | | | | | | |
| **CPM S35VN** | 75 | 95 | 100 | 130 | 130 | 170 | | | | | | | | | | | |
| **8Cr13MoV** | 75 | 100 | 115 | 150 | 140 | 90 | 210 | | | | | | | | | | |
| **14C28N** | 30 | 130 | 135 | 140 | 190 | | | | | | | | | | | | |
| **VG10** | 30 | 130 | 135 | 190 | | | | | | | | | | | | | |
| VICTORINOX | 62 | 95 | 110 | 120 | 175 | 185 | 170 | 275 | 275 | 255 | 265 | 280 | 290 | 305 | 315 | 330 | 320 |

**CONCLUSIONS**

We can draw the following conclusions from the numbers in the table:

1. Wear-resistance ratings of the knife blade material do not translate to the edge apex strength in a direct fashion.

2. Supersteel knives do not hold a very sharp edge much longer than mainstream, but only very sharp.

3. Supersteel knives win over mainstream in retention of the "working sharp" edge.

4. A mainstream knife sharpened to a lower edge angle can retain a very sharp edge near as good as a supersteel knife sharpened at a more obtuse angle.

5. There is a difference in retaining a "very sharp" edge versus "working sharp".