



## The Tenor Nyckelharpa – a new presence in the nyckelharpa world

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In this article I describe the tenor nyckelharpa, how it came to be and the thoughts behind it. I hope to offer inspiration to other nyckelharpa players and builders, and to prompt others' ideas and thoughts, whether sympathetic to mine or not.

As its name suggests, the tenor nyckelharpa is larger than the ordinary chromatic nyckelharpa, with a lower tonal range. It has a working string length of 440 mm and is tuned  $e^1$ , a, d, G. Its construction is significantly different from the common chromatic nyckelharpa's. The tenor was conceived and designed by me and built by Peder Källman, nyckelharpa maker and master violin maker in Falun. Peder is the right person for this assignment, with many years of experience making both violins and nyckelharpas and great insight into the art of instrument construction.

The tenor is one part of a larger, ongoing project to develop the nyckelharpa in several different dimensions, with the goal of extending its range of expression and areas of use. A brief background history shall describe how the tenor came to be.

I have had a close relationship with the nyckelharpa since 1982, and have worked since 1993 as a professional nyckelharpist. I was neither born in nor grew up in Uppland province, the nyckelharpa's "home territory." I come from Småland, farther south, and thus have acquired my nyckelharpa tradition from a distance. When I was twelve, my father made my first nyckelharpa and I began to play the tunes the local fiddlers played, tunes not customarily played on nyckelharpa. During several years of study at Kapellsbergs



School of Music I was exposed to a range of musical styles, and I began to use the nyckelharpa in a baroque ensemble, a folk music band (Sälta), and free improvisation.

From 1993 through 1995 I worked at EMI in New York, as a musician in a folk and pop band that toured England and much of the U.S. On these extended tours I began to imagine a larger instrument. I wanted to play in a lower register, to play accompaniment or harmony well below the melody. Toward this end, my father and I built our "octave nyckelharpa," tuned an octave below the common chromatic nyckelharpa. It is essentially a chromatic nyckelharpa, built on a larger scale and with heavier strings.

The octave nyckelharpa's tonal range, so far below the chromatic nyckelharpa's, left me wanting something in between, and I began to ponder an alto model. How would one tune such an instrument? Tuning it an octave below the violin seemed logical, since it would facilitate playing the common fiddle repertoire. Like the chromatic nyckelharpa, the alto had three rows of keys, for its E, A, and D strings, and the lowest note of its range was D. The violin range, however, extends down to G, so the alto turned out to be insufficient for many traditional tunes. I addressed this by adding a fourth row of keys for the G string, extending the tonal range downward by a fifth. This configuration became the tenor nyckelharpa.

On the way to this larger nyckelharpa there were tradeoffs intrinsic to the instrument's design. There is a conflict between the strength of tone in the lower registers, which favors a large instrument body, and the physical constraints of holding and bowing the instrument, for which a smaller, lighter body is helpful. To play with the longest possible bow, one holds the instrument as high as possible, but holding the instrument down low spares one's back from having to support the weight of the right (bow) arm. And the more extensive the tonal range, the heavier the instrument. Knowing of challenges, I wanted to find solutions that would lead to a satisfactory instrument. The following describes some significant aspects of the tenor nyckelharpa.

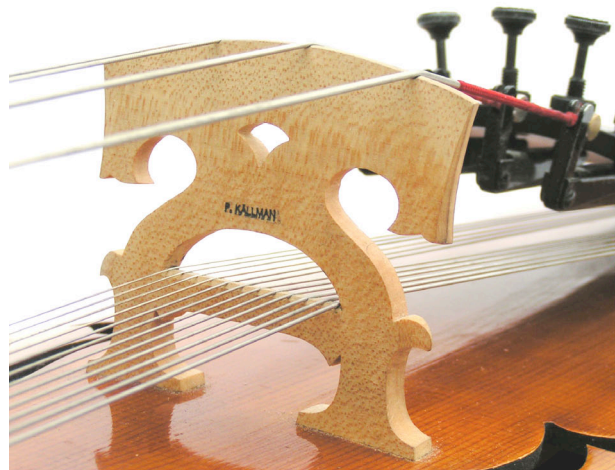
## Weight

I believe that an instrument should be trim and light. The nyckelharpa hangs around one's neck and one rests one's arm on it, so minimizing its weight is paramount. I have taken inspiration from the nyckelharpa's variants over time, and also from other instruments, primarily the viola da gamba and viola d'amore.

There are many approaches to instrument construction, and each has its advantages. In the tenor nyckelharpa, the ribs are bent to shape rather than sawn to shape or carved, together with the back, from a single solid block of wood. This approach, used in violin construction and the Mora harpa, minimizes the instrument's weight. By contrast, hollowing out the body from a single block offers great freedom to shape the instrument in all dimensions. That technique was common in the traditional nyckelharpa models of the 1700's and 1800's. The tenor nyckelharpa's ribs are 2 mm thick, with corner blocks like the violin's. Linings at the edges reinforce the ribs and provide an increased gluing surface against the top and back.

The sympathetic strings are placed under the keybox to make the neck as slender as possible, an approach found in older nyckelharpa types. This is both an aesthetic issue and a means of minimizing weight: the neck and pegbox are lighter and the keys are shorter and therefore also lighter.

The neck is angled slightly downward, as in the modern violin. This angles the strings more where they cross the nut and also necessitates making the bridge higher.



As a result, the sympathetic strings, though positioned under the keybox, pass over the bridge at a good angle. But the main strings as well cross the bridge at a sharper angle, resulting in greater force against the top. This is undesirable; to compensate, I use lighter-gauge strings, which keeps the string force against the bridge about the same as it would be with a straight neck. Reducing the string tension allows all the instrument's load-bearing parts to be smaller, thus making the harpa lighter. The lighter strings also have a beneficial effect on the instrument's sound; this is discussed in more detail below.

## Design

The nyckelharpa's traditional peghead has become a pegbox reminiscent of the violin's. The horizontal pegs easily find a place in the narrow neck where vertical pegs would not, and the pegbox's shape continues the arrow-like form of the instrument as a whole. This is a major break with tradition: nyckelharpa pegs have consistently been placed vertically through the instrument's history. But the tenor nyckelharpa diverges from nyckelharpa convention in many ways, and this is one more.

The tailpiece's design comes from the viola da gamba. Its shape, which narrows toward the end of the instrument, mirrors that of the keybox, and its design avoids a problem with the traditional nyckelharpa tailpiece, in which a protruding tab rests against the end of the body and bears the



tension of the strings. Because of the orientation of the grain along the length of the tailpiece, this tab is a weak point, prone to breakage. The gamba approach uses a rectangular peg, dovetailed into the end of the body, that projects up above the belly. The tailpiece, with a rectangular hole, hooks onto the peg and is held firmly by the tension of the strings.

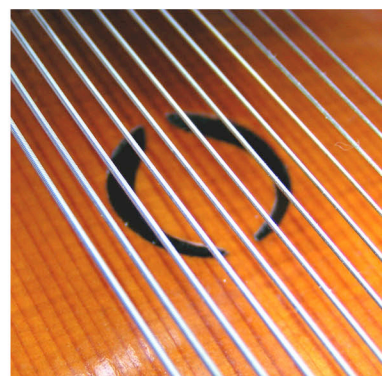
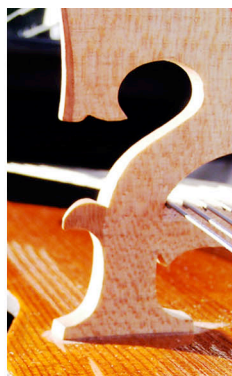
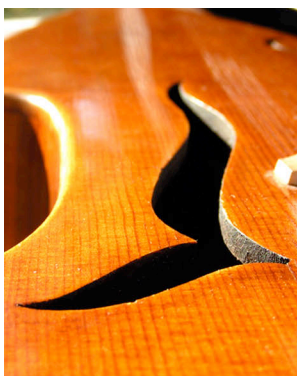
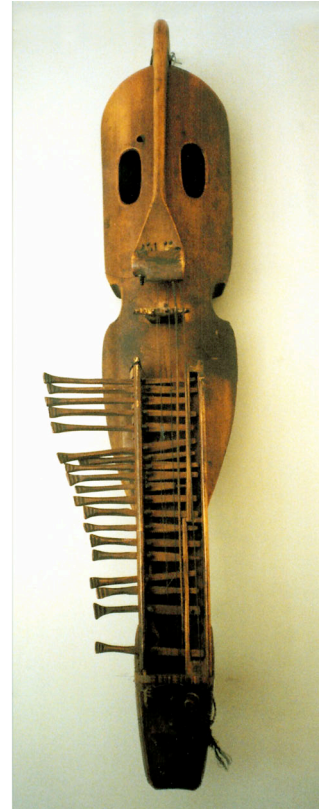


That the neck and the keybox narrow toward the pegbox is primarily an aesthetic consideration, but this also makes the instrument lighter. Because the strings vibrate the most in the middle and the least near the nut, the neck can be narrow and the keybox's dimensions smaller near the pegbox, without causing interference with the vibrating strings.

Although I consider the traditional upper body shape of older nyckelharpas to be very tasteful, I have changed this for an S-shape for playability,

discussed in more detail below.

It might seem natural to model the nyckelharpa's sound holes on the violin's f-hole shape, but this choice is not to be made lightly. The violin has graceful, rounded shapes consistently, in the arching of the top, the bouts, the scroll, the tuning pegs, and the f-holes as well. In contrast, the older nyckelharpas have shapes that are longer, less acutely curved.



*The S-shape*





Nyckelharpa center bouts are shallower, the lower body almost straight, the upper body curved no more than necessary. And in profile, the neck extends from the body at a slight downward angle,

then bows upward at the peghead, but with a curve far less sharp than that of the violin's scroll. If one is to use f-holes on a nyckelharpa, their form must be carefully adapted to be a harmonious part of the instrument as a whole.

The tenor's sound hole design comes from the viola d'amore and other baroque-era instruments. Its arrow-like shape, gently wavy, echoes the shape of the whole instrument. The traditional third sound hole, visible under the key box, has two curved slots that together form a circle and leave between them an onion-dome shape reminiscent of both the harpa's upper body and the area between the main sound holes.

The sides lean slightly outwards as in traditional nyckelharpas. Aesthetically, this suggests a ship's form; practically, this simplifies gluing the top by making the joint between top and sides more of a right angle. This issue is specific to the nyckelharpa; other instruments' tops, flat at the periphery, naturally meet the sides at right angles.

A common theme for the tenor nyckelharpa is simplicity, clean lines, no detailed ornamentation. There are but two consistent, recurring themes, the S-shape and the C-shape





## Sound

The instrument is tuned an octave below the violin, or a fourth below the chromatic nyckelharpa; its working string length is 40 mm (10%) longer than the chromatic harpa's. The neck is angled downward and the bridge raised so that the strings make a sharper angle across the bridge, raising their force against the top and allowing the use of thinner, lighter strings. This results in lower string tension, giving a softer tone and offering the player more opportunities to influence the sound.

## Playability

All four main strings are equipped with keys. The two lower strings' keys cover an octave range; the two upper strings' keys extend over an octave and a fourth. This supports playing chords and double-stops in all positions. Eight additional keys play quarter-tones and are placed where quarter-tones commonly occur in traditional Scandinavian folk music.

The comparatively slack strings have a relatively large extent of vibration, so the keys' tangents must be placed farther from the strings so as not to interfere. The key action is thus less quick and precise compared to the chromatic nyckelharpa, but the degradation is relatively small. Another advantage of these slacker strings is that they are easy to "bend" – to change the pitch by means of force on the key – so it is easier to achieve perfect intonation when playing. And the placement of the

sympathetic strings under the keys, away from the main strings, facilitates playing pizzicato.

## Body form

The body shape allows the player to reach the keys without interference. My own playing makes much use of bar chords and double- or triple-stops in higher positions. With the traditional upper-body form changed to an S-shape, whose contour follows that of the key heads, the player's hand has unencumbered room to play along the full range of keys and can run along the edge of the neck and body as a guide.

## Realization

The tenor nyckelharpa's development took place during the period from 1996 to 2001. Two instruments were built, in which the design of the second incorporated what was learned from experience with the first.

Katrineholm 2004  
Johan Hedin

For further information

- [www.johanhedin.com](http://www.johanhedin.com)
- The Nyckelharpa – Present and Past / Nyckelharpan nu och då (Ling/Ahlbäck/Fredelius 1991)
- Nyckelharpan (Jan Ling 1962)



*The C-shape*