

45 De Nationale Legpuzzles

by Fred Horn



Figure 1. 45 De Nationale Legpuzzles

History

Early January 2013 Rob van Linden put this picture (Figure 1) of an intriguing Dutch puzzle on his website devoted to Dutch Games [2]. Han de Bruin, who has this puzzle in his collection, provided the information for this article. And it appears that this puzzle was also used for the Puzzle Contest at the 16th Dutch Cube Day [1].

The idea of *45 De Nationale Legpuzzles* [2] is interesting: give the puzzler four problems with a final 'liberating' fifth puzzle hidden inside.

Little is known about the manufacturing firm STABO. The HONGS [3] website lists only one other item from this firm: *Spijkertje-vast*. The term "G.R.D.M.", see on the bottom of Figure 1, is part of the code-list, which was used between 1944 and 1950 in the Netherlands for printed items, regulating the price, which was 95 cent. The *45 De Nationale Legpuzzles* must be from the year 1945, because of the way the name was spelled in Dutch, the colours of the national flag, and because 1945 was the Liberation Year.

Beschrijving Nationale Legpuzzles.
 Vormt van de roode, witte, blauwe en oranje stukjes 4 vierkanten, elk van 10 x 10 cm. Als U dit gelukt is, neemt dan van de blauwe 3 stukjes en van de andere kleuren elk 2 stukjes. Deze zijn met een zwarte stip aan de achterzijde gemerkt en U maakt hiervan de
NATIONALE LEGPUZZLE.

Figure 2. Objective (in Dutch) of the 45 De Nationale Legpuzzles

The object of the four puzzles is to make a red, a white, a blue and an orange (10x10) square from the pieces, see Figure 2.

The red and orange squares are already laid out in the proper way, but the blue square needs to be rearranged and the white square is messed up and one piece is obviously missing, see Figure 3.



The fifth puzzle

The fifth puzzle square should be made from the pieces with black dots on the backside, using three blue pieces, plus two pieces each from the other three colours, see Figure 4.



Figure 3. The first four puzzles

It not so easy to solve all four puzzles at first sight because of the imprecise way the cardboard puzzle pieces were punched out, with consequence that the dimensions are not quite what they should be. Also, I was lucky that all the pieces with black dots on the backside were there.

Solution and the right dimensions

Figure 3 shows the solutions for the red and the orange puzzle. Solving the blue puzzle took me several hours. I only had a photograph, from which I made a print-copy. I cut out the pieces to discover that the dimensions of the photographed pieces were distorted and so nothing really fit together at first. And the white puzzle was even worse! With a missing piece and the uncertain shape of the pieces, I could not be certain of the solution.

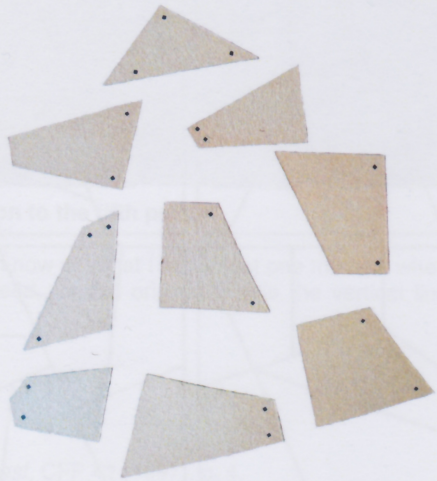


Figure 4. The dotted pieces needed for solving the fifth puzzle

So I started with the fifth square. At one point I realised that one of the red pieces was far too small, but that the arrangement in Figure 5 simply must be the solution!

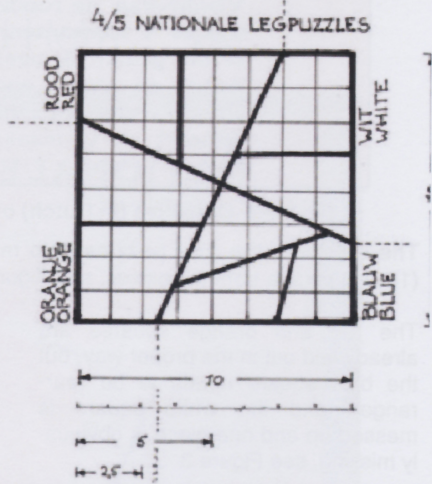
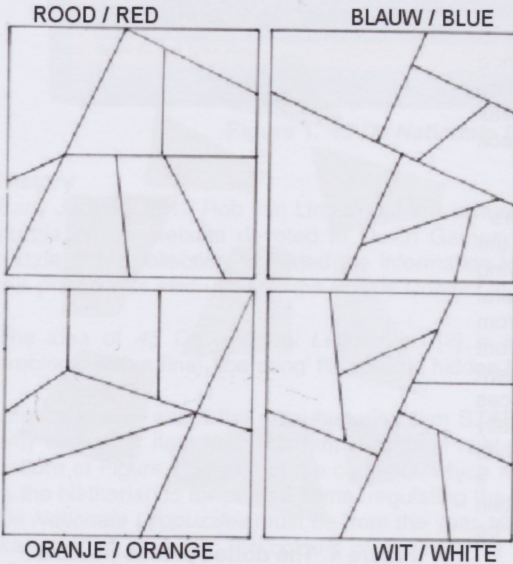


Figure 5. Solution to the fifth puzzle

Figure 6. Creation method fifth puzzle

With the white pieces in the correct position in the fifth, it again took me several hours to get a proper solution for the white (10×10) square.

But I still had no idea of the real dimensions. Yet by trial and error, and after having measured all the sides and angles of the pieces, I got an idea of how the pieces were chosen and how the actual puzzle was probably created.



How the puzzle was created

The (10×10) square is divided into a 'grid' of 16×16 small squares. The fifth puzzle has two lines that cross under an angle of 90 degrees that divide the four colours, see Figure 6.

Using the same 'grid' for the other four puzzles, I first put the pieces (with the black dots at the backside) into their proper position. This resulted in the following solutions for the four colours, see Figure 7.

Figure 7. Solutions to the four puzzles

I sent my solution to Han de Bruin and he answered:

"Looking at the original pieces the 'punching' is much better than what you realised by copying and cutting out. I did lay out the fifth puzzle and this is the result, see Figure 8. Anyhow you did a nice piece of work!"

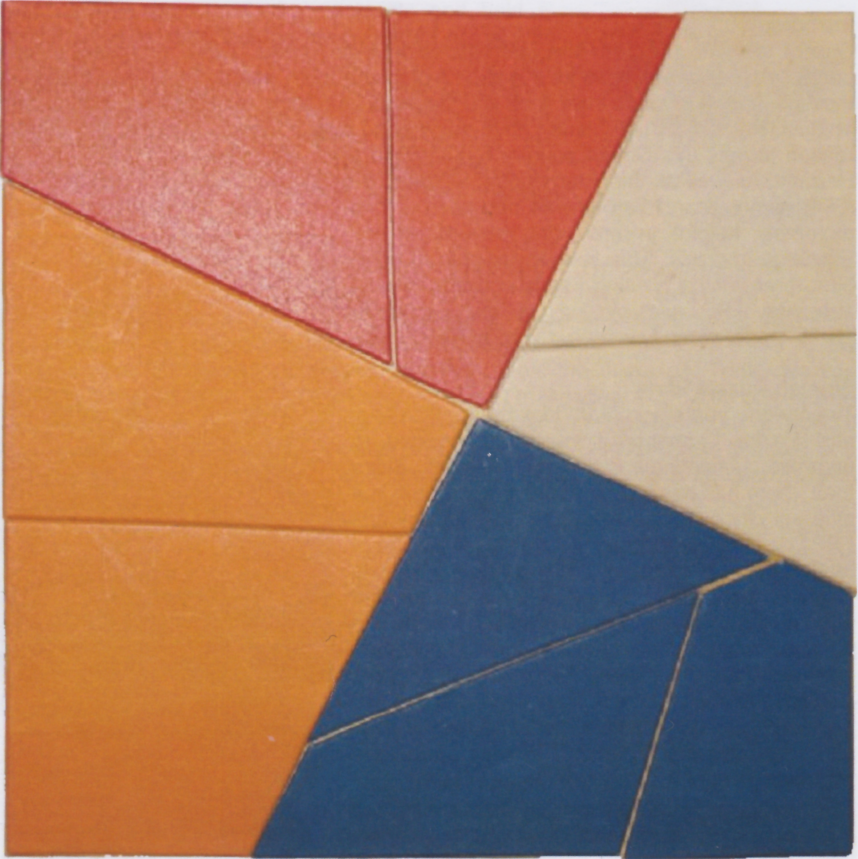


Figure 8. Solution to the fifth puzzle

With a better picture at my disposal I can now see that I made just one mistake when 'slicing' the two red puzzle pieces. Indeed, for the original puzzle the vertical line should be $1/16$ th to the right!

But let the way I did it be My Variant!

References

- [1] Theo Geerinck, *DCD 16 Puzzle Contest*, CFF 42 (1997), p. 4.
- [2] <http://hong.vlinden.com/index.asp?u=&z=nationale%20legpuzzle>.
- [3] HONGS: Historisch Overzicht Nederlandse Gezelschaps Spellen.