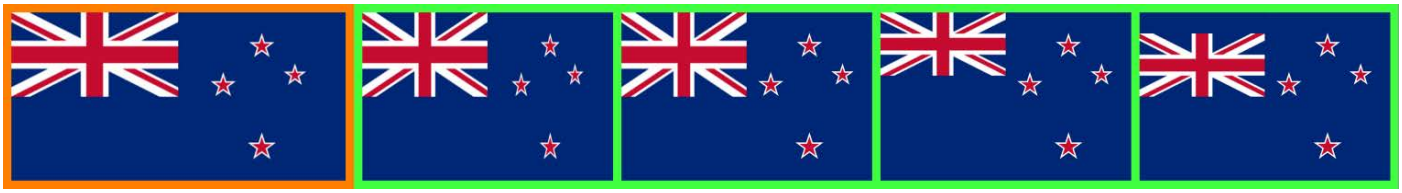
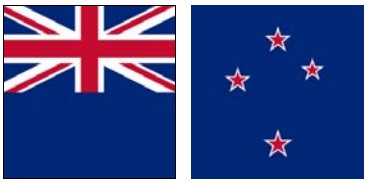
Regarding New Zealand's United Nations ensign newzealand.flagoptions.com

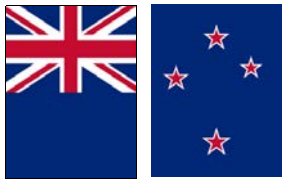
There are many ways to convert any flag with a dimensional ratio of 1:2 into one with a 2:3 ratio.



For reference the current NZ flag is shown at the left above. The four ways that it can actually be transformed into a UN ensign are outlined in green. Think of the NZ flag as having 1000 vertical units and 2000 horizontal units, and think of its UN version as having 1000 vertical units but only 1500 horizontal units (because thinking in terms of percentages is cumbersome, since the vertical dimension of a UN ensign is 66.666666666666666...% of its horizontal dimension, no thank you). Graphics software can independently resize vertical and horizontal dimensions, so one possibility is to keep the 1000 vertical units of the NZ flag but to change the horizontal units from 2000 to 1500. This will laterally 'squeeze' the blue ensign into the first UN ensign outlined in green. Both the Union Jack and the Southern Cross are slightly distorted, but it is a workable method, and one that could be used for any new national flag design if the distortion proves tolerable. The current UN ensign for NZ may actually use this method, but if so it is one of the poorer of the choices.

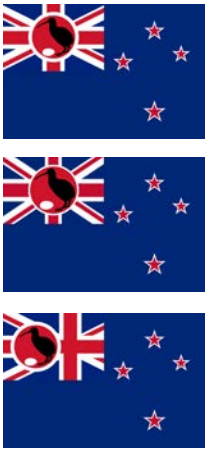


The second UN ensign treats the two halves of the NZ flag separately. The hoist half with the Union Jack starts out 1000 units square, but it is distorted to 1000 vertical units and 750 horizontal units. From the fly half with the Southern Cross, 125 units are truncated from each side, leaving a horizontal dimension of 750 units. When the two halves are joined, only the Union Jack is distorted, not the Southern Cross. This is a method that could be chosen for a new flag design if its entire hoist can be horizontally compressed and still look good. Regardless, the 'truncation' method will always be preferable for the Southern Cross fly, because there is simply no need for it to be distorted, so this is also how the fly is treated in the remaining two examples.



The third UN ensign removes the distortion from the Union Jack as well as the Southern Cross. It does this by proportionally resizing the Union Jack to have 750 horizontal units and 375 vertical units. This method would be a fair choice for a flag design that only has a single canton in its hoist.

The fourth UN ensign avoids distortion by proportionally resizing the entire original hoist and then vertically centring it in the UN hoist. For a single-canton hoist it looks a bit odd, although in this example the Union Jack aligns nicely with the top of the Southern Cross. This method will be the best choice for a two-canton hoist design that cannot tolerate either truncation or distortion.



Would-be New Zealand flag designers should keep the above realities in mind. Wherever possible, cantons and hoists should be purposefully designed to keep all of their essential design character when they are resized for the UN ensign, whether they are resized proportionally or by horizontal distortion or truncation. The concept is illustrated to the left, using the Union Jack of the current NZ flag. Suppose that a canton design for a new flag has a symbol of New Zealand which has been superimposed into the centre of a Union Jack of full width. For the UN version, maybe both sides of the canton can be truncated, leaving the symbol intact, as in the first example. Maybe the canton, in this case the Jack, can be horizontally distorted, with the symbol set anew into its centre, as in the second example. Or maybe the canton can be truncated from one side only, possibly the best approach if the symbol has been positioned at the opposite end of the canton, as in the third example, although here it would be better to distort the full Jack.