College Physics B: Torque on a Current Loop

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Color coding:

- currents are white
- forces are red
- magnetic field is blue
- torque is yellow

1 Looking from the top of the page

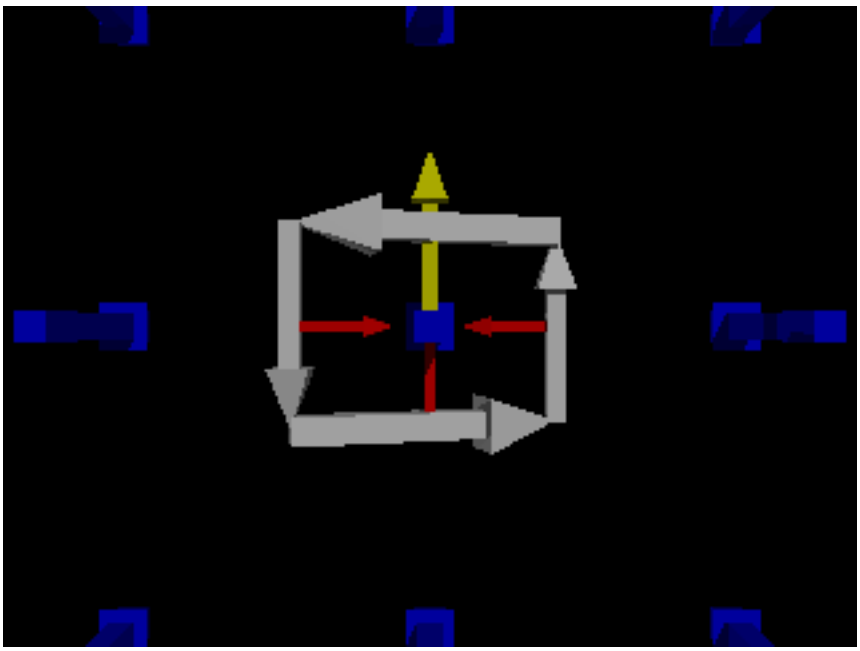

Figure 1: This shows the current loop tilted out of the plane of the page on the left (and into the page on the right). The magnetic field points away from us.

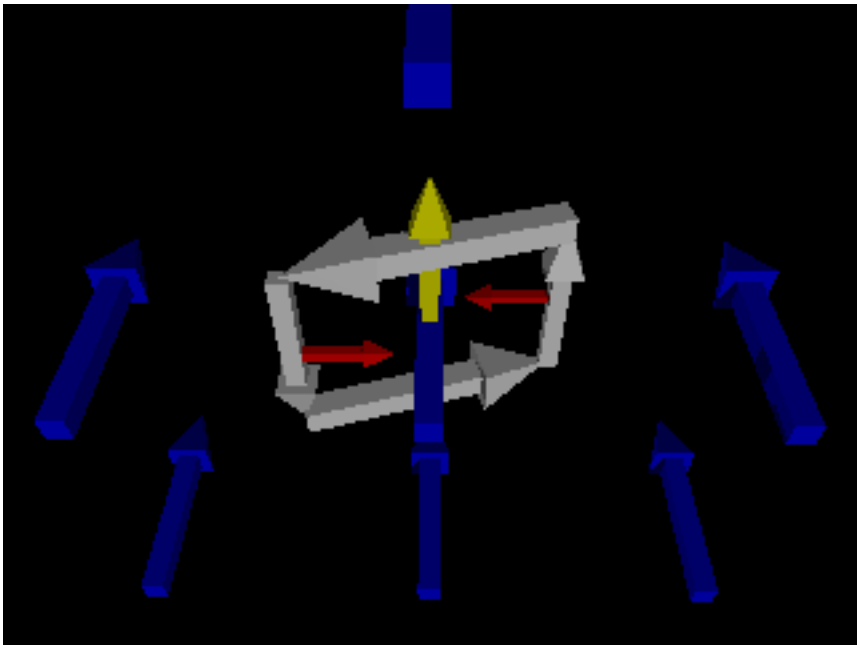

Figure 2: Moving our point of view so we look at the pointy end of the torque vector (yellow).

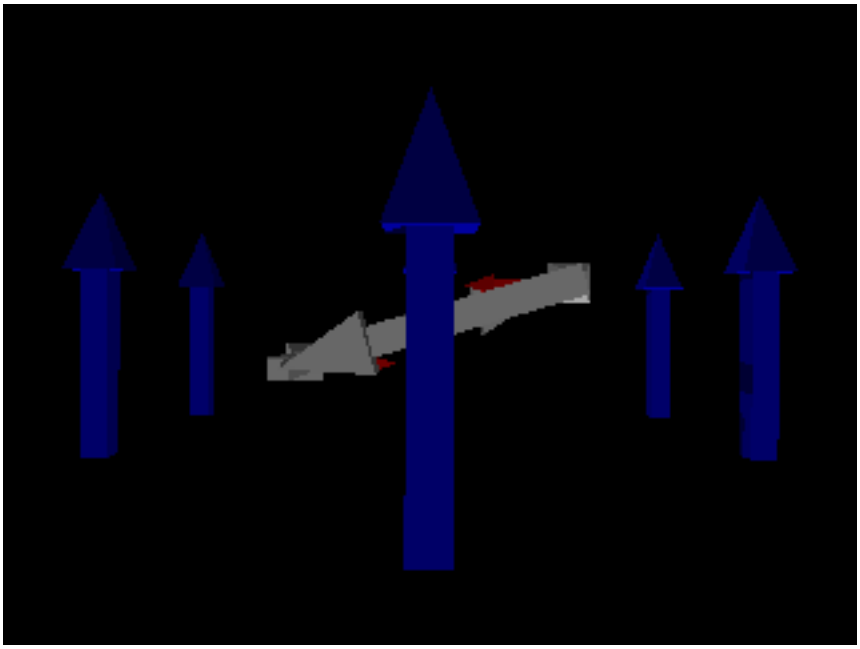

Figure 3: We've now moved 90° from 1 as though we are now looking from what was the top of the page.

2 Looking from the bottom of the page

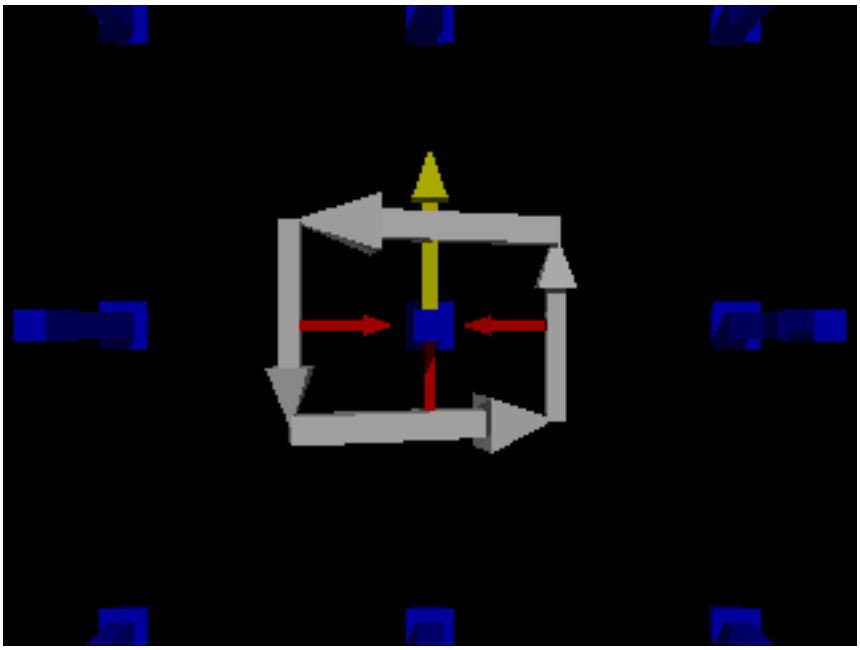

Figure 4: This shows the current loop tilted out of the plane of the page on the left (and into the page on the right). The magnetic field points away from us.

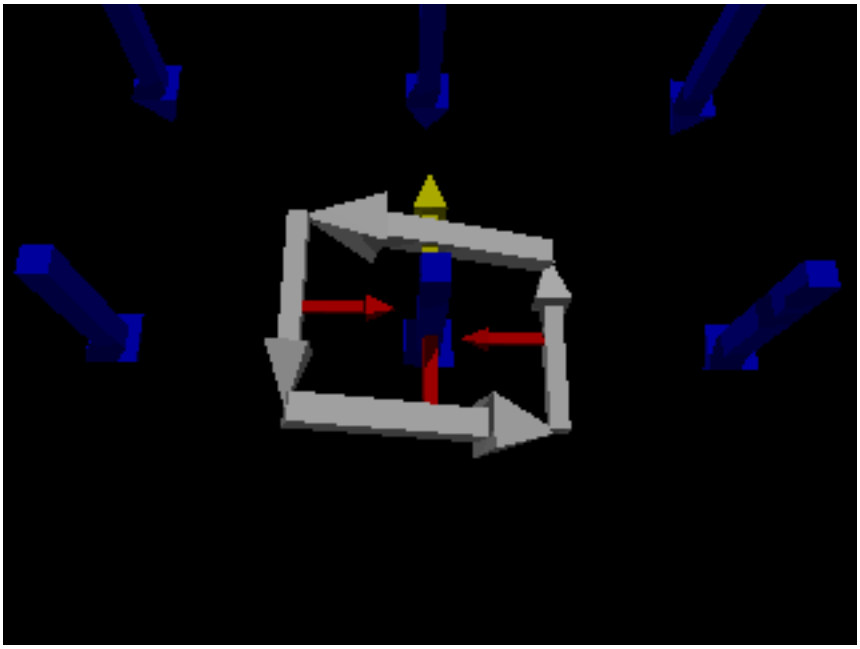

Figure 5: Moving our point of view so we look at the back end of the torque vector (yellow).

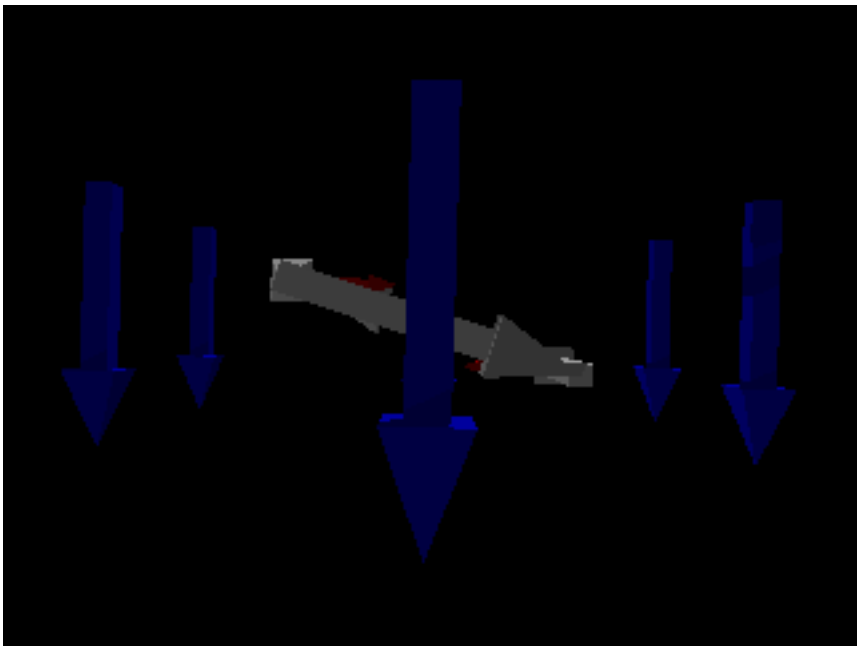

Figure 6: We've now moved 90° from 4 as though we are now looking from what was the bottom of the page.

3 Moving left to circle all the way around

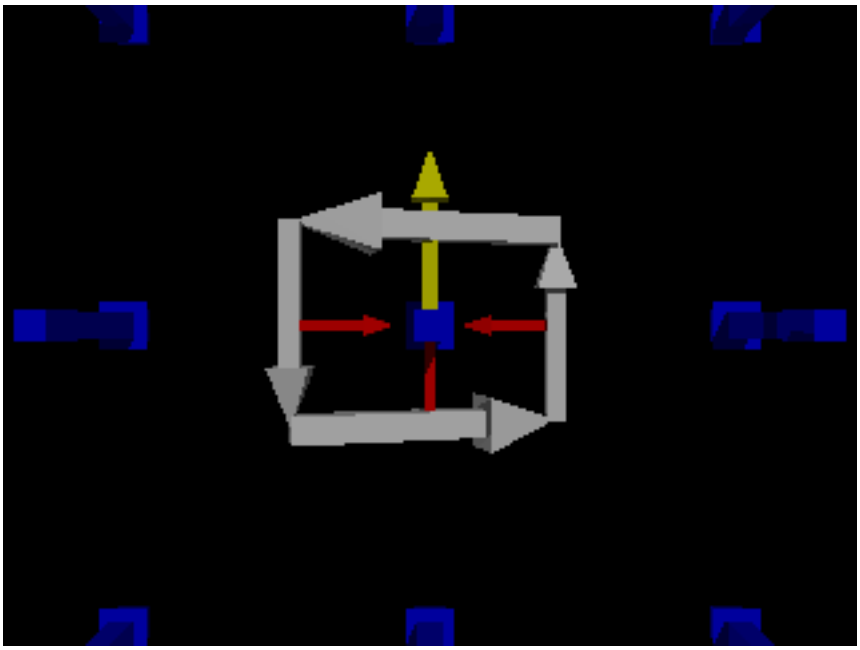

Figure 7: This shows the current loop tilted out of the plane of the page on the left (and into the page on the right). The magnetic field points away from us.

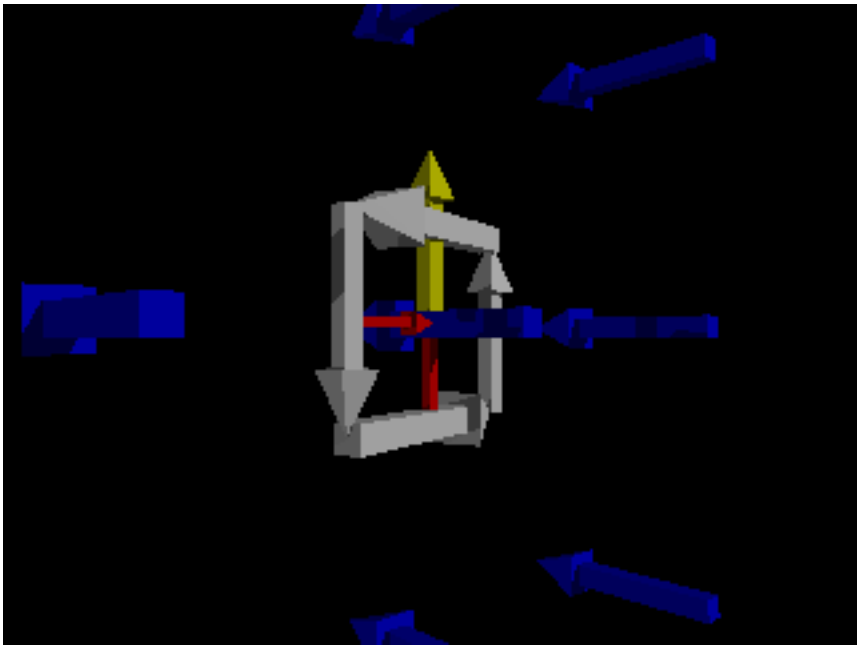

Figure 8: Moving our point of view toward what was the left edge of the picture in 7.

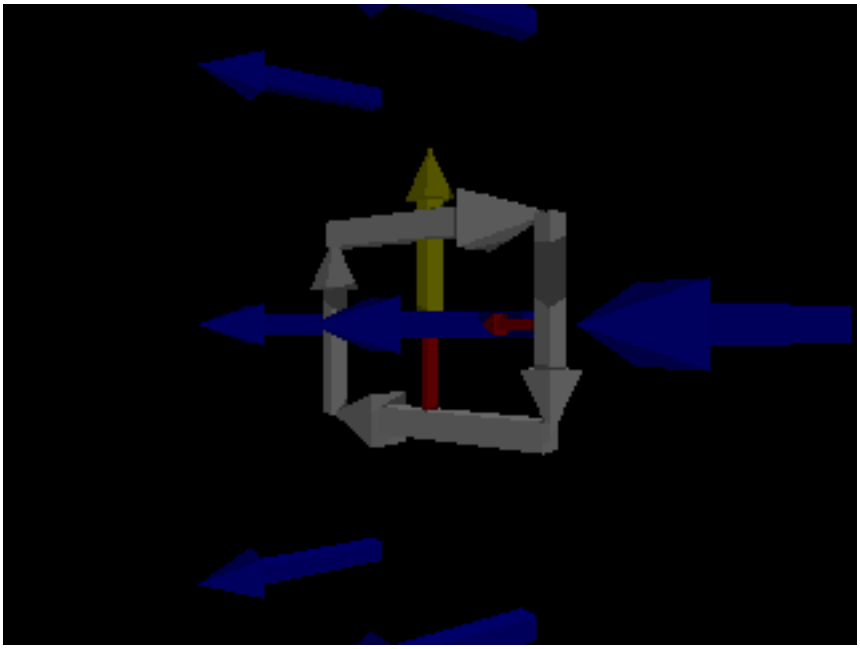

Figure 9: Moving on around toward looking from what was the back side of the screen in 7

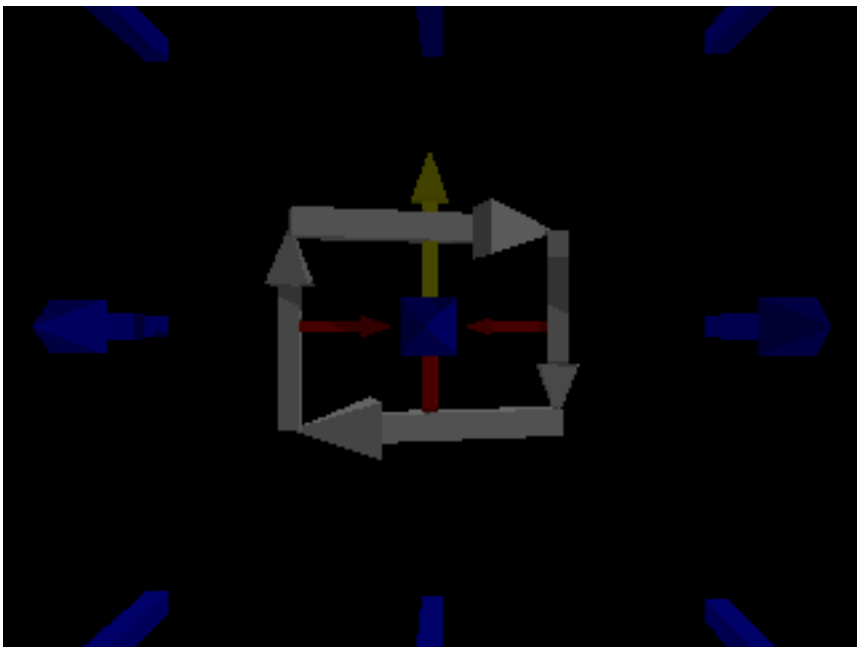

Figure 10: We've now moved around 180° from figure 7.

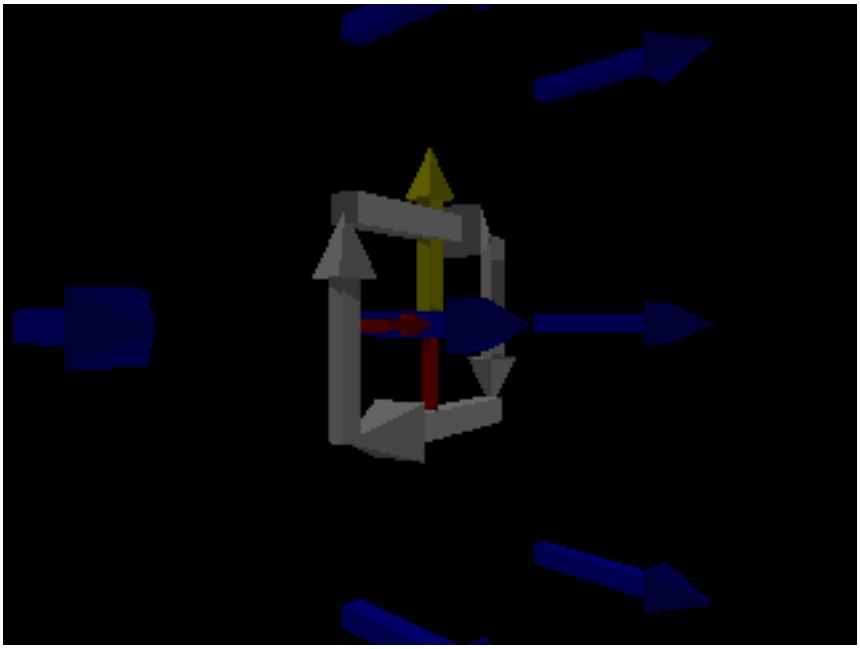

Figure 11: Moving past 180° from 7 to complete the circle.

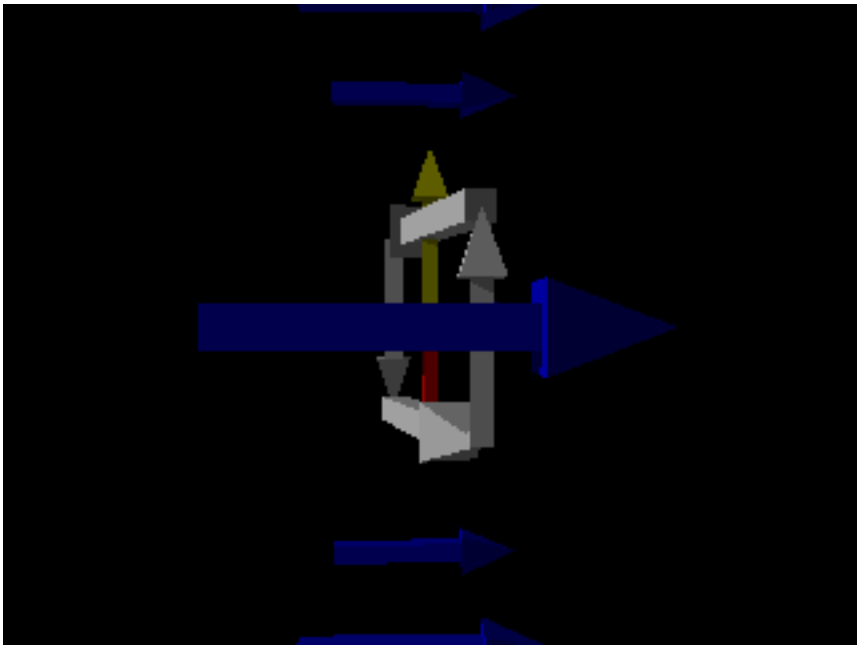

Figure 12: Continuing around the figure - now 180° from 7.

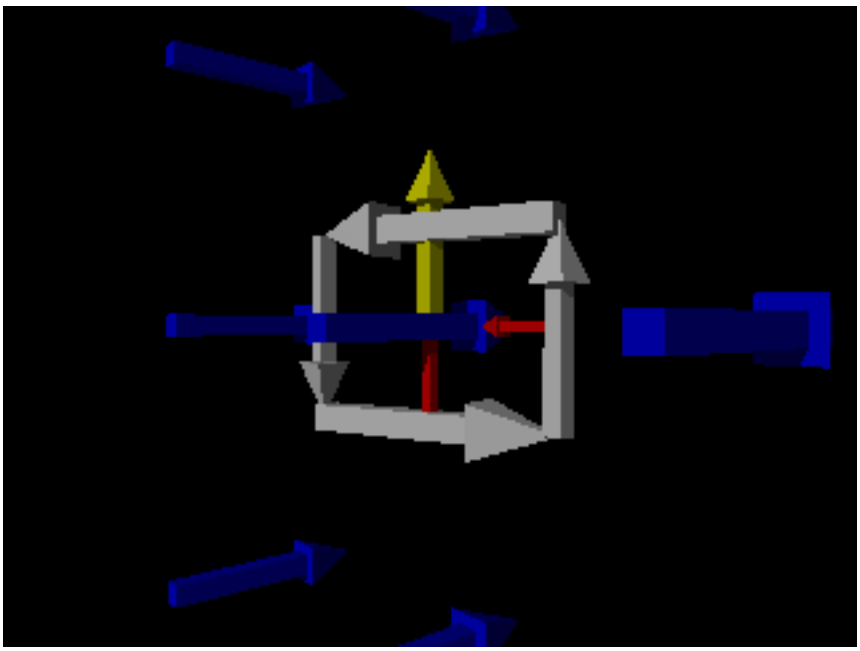

Figure 13: Finally, we've walked almost all the way around the current loop and are almost back to our position in fiugre 7.