Coordinate transformations:

(x,y,xc,yc,alpha) => (xn,yn)

Shift:

* x0 = x – xc, y0 = y – yc

Alpha:

* xn = x0.cos(alpha) + y0.sin(alpha)
* yn = -x0.sin(alpha) + y0.cos(alpha)

The board plane: The zeppelin plane:

So add 180 to the given alpha

Now to get the x right, x = -x