define $O(x, y, z, \bar{x}, \bar{y}, \bar{z}, w, \bar{w}, m, MP, SP, H, R) = (a, b, c, d, e, f, h, MP_l, SP_l)$.

$$e = \mathbb{1}\{5 \le R < 20\} + 2 * \mathbb{1}\{20 \le R < 40\} + 3 * \mathbb{1}\{40 \le R < 60\}$$
$$+ 4 * \mathbb{1}\{60 \le R < 80\} + 5 * \mathbb{1}\{R \le 100\}$$

Here $\lfloor 5.4 \rfloor = 5$ means round down.

$f = 0$ if $MP \ge g((x + 0.25z)w, yw, w) - 5.5w + g(x + 0.25z, y, w) + 4 + \left\lfloor \dfrac{R}{10} \right\rfloor$

and if $MP \ge g((\bar{x} + 0.25\bar{z})\bar{w}, \bar{y}\bar{w}, \bar{w}) - 5.5\bar{w} + g(\bar{x} + 0.25\bar{z}, \bar{y}, \bar{w}) + 4 + \left\lfloor \dfrac{R}{10} \right\rfloor$

otherwise,

$$f = \begin{cases} 1 & \frac{g(x+0.25z,y,w)-5.5w}{g((x+0.25z)w,yw,w)-5.5w+g(x+0.25z,y,w)} \ge \frac{g(\bar{x}+0.25\bar{z},\bar{y},\bar{w})-5.5\bar{w}}{g((\bar{x}+0.25\bar{z})\bar{w},\bar{y}\bar{w},\bar{w})-5.5\bar{w}+g(\bar{x}+0.25\bar{z},\bar{y},\bar{w})} \\ 2 & \frac{g(x+0.25z,y,w)-5.5w}{g((x+0.25z)w,yw,w)-5.5w+g(x+0.25z,y,w)} < \frac{g(\bar{x}+0.25\bar{z},\bar{y},\bar{w})-5.5\bar{w}}{g((\bar{x}+0.25\bar{z})\bar{w},\bar{y}\bar{w},\bar{w})-5.5\bar{w}+g(\bar{x}+0.25\bar{z},\bar{y},\bar{w})} \end{cases}$$

$$c = 2 \quad \text{if } f = 1 \text{ or } f = 2$$
$$c = 0 \quad \text{otherwise}$$

$$d = \left\lfloor \frac{MP - e}{3} \right\rfloor \quad \text{if } m = 1 \text{ and } f = 0 \text{ for previous 4 sequential turns}$$
$$d = 0 \quad \text{otherwise}$$

$$h = MP - e \quad \text{if } m = 0 \text{ and } f = 0 \text{ for previous 4 sequential turns}$$
$$h = 0 \quad \text{otherwise}$$

$$a = g((\bar{x} + 0.25\bar{z})\bar{w}, \bar{y}\bar{w}, \bar{w}) \quad \text{if } f = 1$$
$$a = g((x + 0.25z)w, yw, w) \quad \text{if } f = 2$$
$$a = 0 \quad \text{if } f = 0$$

$$b = MP - a \quad \text{if } f = 1 \text{ or } f = 2$$
$$b = 0 \quad \text{if } f = 0$$

g is defined below:

$$g(i, j, t) = 5.5t + 2i + 3j$$

$$SP_l = SP - c$$

$$SP_l = SP - a - b - 2d - e$$