

1. turn 0

- (a) Deploy: Turret and upgrade at  $\{[3,12],[24,12],[10,10],[17,10]\}$ ; Wall at  $\{[2,12],[2,13],[4,12],[23,12],[24,13],[25,12]\}$ .
- (b) Delete:  $\{[2,12],[2,13],[4,12],[23,12],[24,13],[25,12]\}$

2. turn 1

- (a) Deploy: Wall at  $\{[1,13],[2,12],[3,13],[24,13],[25,12],[26,13]\}$ , Support at  $[17,6]$ , **7** scout at  $[20,6]$ .
- (b) Delete:  $\{[1,13],[2,12],[3,13],[24,13],[25,12],[26,13],[17,6]\}$ .

3. turn 2

- (a) Deploy: Wall at  $\{[4,11],[5,10],[6,9],[7,8],[8,7],[9,6],[10,5],[11,4],[12,3],[13,2],[14,2]\}$ ,  $\{[15,3],[16,4],[17,5],[18,6],[19,7],[20,8]\}$ ,  $\{[0,13],[1,13],[2,13],[26,13],[27,13]\}$ . Interceptor at  $\{[22,8],[23,9]\}$ .
- (b) Delete:  $\{[0,13],[1,13],[2,13],[26,13],[27,13],[10,10],[17,10]\}$ .

4. turn 3

- (a) Deploy: Wall at  $[0,13],[1,13],[2,13],[4,13],[24,13],[25,13],[26,13],[27,13]$ ,  $\{[4,12],[21,12],[22,12],[23,12],[19,9],[19,10],[20,10]\}$ . Turret at  $\{[20,9],[22,11]\}$  **2** Interceptor at  $[22,8]$ .
- (b) Delete:  $\{[0,13],[1,13],[2,13],[4,13],[24,13],[25,13],[26,13],[27,13]\}$ ,  $\{[4,12],[21,12],[22,12],[23,12],[19,9],[19,10],[20,10]\}$ ,  $\{[20,9],[22,11]\}$ .

5. turn 4

- (a) Deploy: Turret and upgrade at  $[20,9]$ . Turret at  $[22,11]$ . wall at  $\{[0,13],[1,13],[2,13],[4,13],[24,13],[25,13],[26,13],[27,13]\}$ ,  $\{[4,12],[23,12]\}$ . **2** Interceptor at  $[22,8]$ .
- (b) Delete:  $\{[0,13],[1,13],[2,13],[4,13],[24,13],[25,13],[26,13],[27,13]\}$ ,  $\{[4,12],[23,12]\}$ .

6. Deploy strategy starting from turn 5

- (a) self repair 7(a) to 7(f).
- (b) 9(a) to 9(b) to determine offense or not, active defense or not.

- (c) Define  $S(MP_l, SP_l, H, MP_o, SP_o, Ho) = MP_r$ .  $MP_l, SP_l, H$  are my MP left, SP left and health(defined in step 9),  $MP_o, SP_o, Ho$  are opponents' MP,SP and health.  $MP_r$  is the MP used for more construction, the order of construction is in 7(g).

7. Static Defense starting from turn 5

- (a) self-repair-1: make sure those walls exist and delete those with less than half life and rebuild it next turn:(equally important)  
 $\{[4,11],[5,10],[6,9],[7,8],[8,7],[9,6],[10,5],[11,4],[12,3],[13,2],[14,2]\}$ ,  
 $\{[15,3],[16,4],[17,5],[18,6],[19,7],[20,8]\}$
- (b) self-repair-2: make sure those walls exist and delete those with less than half life and rebuild it next turn:(equally important, if resources is limited, build them with un-upgraded one, if resources is still limited, build them with walls)  
 $\{[3,12],[24,12]\}$
- (c) self-repair-3: make sure those walls exist and delete those with less than half life and rebuild it next turn:(equally important, if resources is limited, build them with un-upgraded one, if resources is still limited, build them with walls)  
 $\{[20,9],[22,11]\}$
- (d) build wall and delete them:(turn 5 - 20)  
 $\{[2,13],[3,13],[24,13],[25,13]\}$  ,  $\{[4,12],[23,12]\}$ .
- (e) build wall and self-repair-4:(21-50)  
 $\{[2,13],[3,13],[24,13],[25,13]\}$  ,  $\{[4,12],[23,12]\}$ .
- (f) build wall upgraded and self-repair-4:(51-100)  
 $\{[2,13],[3,13],[24,13],[25,13]\}$  ,  $\{[4,12],[23,12]\}$ .
- (g) build and self-repair-5 if we have extra resources:(turn 5-100) the following is in order  
 wall  $\{[19,11],[20,11]\}$   
 Turret  $[20,10]$   
 Turret  $[19,10]$   
 Turret upgrade  $[20,10]$   
 Turret upgrade  $[19,10]$   
 wall upgrade  $\{[19,11],[20,11]\}$   
 Turret  $[22,12]$

Turret update[22,12]  
Wall {[4,13],[5,13],[6,13],[17,12],[18,12],[19,12],[17,11][18,11]}  
Wall upgrade {[4,13],[5,13],[6,13],[17,12],[18,12],[19,12],[17,11][18,11]}

#### 8. Active Defense from turn 5

- (a) build wall and delete them:(turn 5 - 20)(left)  
{[0,13],[1,13]}.  
**if the Opponent's Mobile points** is greater than 15 and if  
{[1,14],[2,14]} or {[1,14],[1,15]} are empty or deleted.  
build wall and delete them:  
{[1,13]}.  
build wall upgraded and delete them:  
{[0,13]}.  
**if the Opponent's Mobile points** is greater than 25 and if  
{[1,14],[2,14]} or {[1,14],[1,15]} are empty or deleted.  
build wall and delete them:  
{[1,13]}.  
build wall upgraded and delete them:  
{[0,13]}  
build Turret and delete them:  
{[1,12]}.  
**if the Opponent's Mobile points** is greater than 35 and if  
{[1,14],[2,14]} or {[1,14],[1,15]} are empty or deleted.  
build wall and delete them:  
{[1,13]}.  
build wall upgraded and delete them:  
{[0,13]}  
build updated Turret and delete them:  
{[1,12]}.  
**if the Opponent's Mobile points** is greater than 45 and if  
{[1,14],[2,14]} or {[1,14],[1,15]} are empty or deleted.  
build wall and delete them:  
{[1,13]}.  
build wall upgraded and delete them:  
{[0,13]}  
build updated Turret and delete them:  
{[1,12],[2,12]}.

(b) build wall and delete them:(turn 5 - 20)(right)  
 $\{[26,13],[27,13]\}$ .  
**if the Opponent's Mobile points** is greater than 15 and if  
 $\{[26,14],[2,15]\}$  or  $\{[26,14],[25,15]\}$  are empty or deleted.  
 build wall and delete them:  
 $\{[26,13]\}$ .  
 build wall upgraded and delete them:  
 $\{[27,13]\}$ .  
**if the Opponent's Mobile points** is greater than 25 and if  
 $\{[26,14],[2,15]\}$  or  $\{[26,14],[25,15]\}$  are empty or deleted.  
 build wall and delete them:  
 $\{[26,13]\}$ .  
 build wall upgraded and delete them:  
 $\{[27,13]\}$ .  
 build Turret and delete them:  
 $\{[26,12]\}$ .  
**if the Opponent's Mobile points** is greater than 35 and if  
 $\{[26,14],[2,15]\}$  or  $\{[26,14],[25,15]\}$  are empty or deleted.  
 build wall and delete them:  
 $\{[26,13]\}$ .  
 build wall upgraded and delete them:  
 $\{[27,13]\}$ .  
 build Turret upgraded and delete them:  
 $\{[26,12]\}$ .  
**if the Opponent's Mobile points** is greater than 45 and if  
 $\{[26,14],[2,15]\}$  or  $\{[26,14],[25,15]\}$  are empty or deleted.  
 build wall and delete them:  
 $\{[26,13]\}$ .  
 build wall upgraded and delete them:  
 $\{[27,13]\}$ .  
 build Turret upgraded and delete them:  
 $\{[26,12],[27,12]\}$ .

## 9. Offense

- (a) define  $x$  = total number of upgraded Turret in  $\{[1,15],[2,15]\}$ ,  $y$  = total number of upgraded Turret in  $\{[1,14],[2,14],[3,14]\}$ ,  $z$  = total number of Turret(not upgraded) in  $\{[1,15],[2,15],[1,14],[2,14],[3,14]\}$ .

define  $\bar{x}$  = total number of upgraded Turret in  $\{[25,15],[26,15]\}$ ,  $y$  = total number of upgraded Turret in  $\{[24,14],[25,14],[26,14]\}$ ,  $z$  = total number of Turret(not upgraded) in  $\{[25,15],[26,15],[24,14],[25,14],[26,14]\}$ .

MP is my mobile points, SP is my structure points. Define  $O(x, y, z, \bar{x}, \bar{y}, \bar{c}, MP, SP, H) = (a, b, c, d, e, f, MP_l, SP_l)$ , where  $a$  is the first round scout needed,  $b$  is the second round scout needed,  $c$  is the support needed,  $d$  is the Demolisher needed,  $e$  is the Interceptor needed.  $f$  controls the position of scout.  $MP_l$  is the MP left after deploy offense or active defense.  $SP_l$  is the SP left after deploy offense or active defense.  $H$  is my health

- (b) If  $d \neq 0$  or  $e \neq 0$ , put Demolisher at  $[15,1]$  and Interceptor at  $[19,5]$ . If  $c \neq 0$ , put support in  $\{[13,3],[14,3],[15,4],[16,5],[17,6],[18,7],[14,4],[15,5],[16,6],[17,7]\}$  orderly.
- (c) If  $a \neq 0$  or  $b \neq 0$  and  $f = 1$ , put first scout at  $[11,2]$ , second scout at  $[10,3]$  and Stop right active defense for 1 turn, else continue right active defense. If  $a \neq 0$  or  $b \neq 0$  and  $f = 2$ , put first scout at  $[19,5]$ , second scout at  $[20,6]$  and Stop left active defense for 1 turn, else continue right active defense.