

1. turn 0

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

2. turn 1

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

3. turn 2

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

4. turn 3

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

5. turn 4

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

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)
 $f[4,11],[5,10],[6,9],[7,8],[8,7],[9,6],[10,5],[11,4],[12,3],[13,2],[14,2]g$,
 $f[15,3],[16,4],[17,5],[18,6],[19,7],[20,8]g$
- (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)
Turret upgraded $f[3,12],[24,12]g$
- (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)
Turret upgraded $f[20,9],[22,11]g$
- (d) build wall and delete them:(turn 5 - 20)
 $f[2,13],[3,13],[24,13],[25,13]g$, $f[4,12],[23,12]g$.
- (e) build wall and self-repair-4:(21-50)
 $f[2,13],[3,13],[24,13],[25,13]g$, $f[4,12],[23,12]g$.
- (f) build wall upgraded and self-repair-4:(51-100)
 $f[2,13],[3,13],[24,13],[25,13]g$, $f[4,12],[23,12]g$.
- (g) build and self-repair-5 if we have extra resources:(turn 5-100) the following is in order
wall $f[19,11],[20,11]g$
Turret [20,10]
Turret [19,10]
Turret upgrade [20,10]
Turret upgrade [19,10]
wall upgrade $f[19,11],[20,11]g$
Turret [22,12]

Turret update[22,12]
 Wall $f[4,13],[5,13],[6,13],[17,12],[18,12],[19,12],[17,11],[18,11]g$
 Wall upgrade $f[4,13],[5,13],[6,13],[17,12],[18,12],[19,12],[17,11],[18,11]g$

8. Active Defense from turn 5

(a) (left)

if the Opponent's Mobile points is like: $H_o < 15$ or **if** $f[1,14],[2,14]g$
 or $f[1,14],[1,15]g$ are not empty or deleted
 build wall and delete them:

$f[0,13],[1,13]g$.

if the Opponent's Mobile points is like:15

$H_o < 25$ and if $f[1,14],[2,14]g$ or $f[1,14],[1,15]g$ are empty or
 deleted.

build wall and delete them:

$f[1,13]g$.

build wall upgraded and delete them:

$f[0,13]g$.

if the Opponent's Mobile points is like:25 $H_o < 35$ and if
 $f[1,14],[2,14]g$ or $f[1,14],[1,15]g$ are empty or deleted.

build wall and delete them:

$f[1,13]g$.

build wall upgraded and delete them:

$f[0,13]g$

build Turret and delete them:

$f[1,12]g$.

if the Opponent's Mobile points is like: 35 $H_o < 45$ and if
 $f[1,14],[2,14]g$ or $f[1,14],[1,15]g$ are empty or deleted.

build wall and delete them:

$f[1,13]g$.

build wall upgraded and delete them:

$f[0,13]g$

build updated Turret and delete them:

$f[1,12]g$.

if the Opponent's Mobile points is like: 45 H_o and if
 $f[1,14],[2,14]g$ or $f[1,14],[1,15]g$ are empty or deleted.

build wall and delete them:

$f[1,13]g$.

build wall upgraded and delete them:

$f[0,13]g$

build updated Turret and delete them:

$f[1,12],[2,12]g$.

(b) (right)

if the Opponent's Mobile points is like: $H_o < 15$ or **if** $f[26,14],[2,15]g$
or $f[26,14],[25,15]g$ are not empty or deleted

build wall and delete them:(right)

$f[26,13],[27,13]g$.

if the Opponent's Mobile points is like: $15 \leq H_o < 25$ and if
 $f[26,14],[2,15]g$ or $f[26,14],[25,15]g$ are empty or deleted.

build wall and delete them:

$f[26,13]g$.

build wall upgraded and delete them:

$f[27,13]g$.

if the Opponent's Mobile points is like: $25 \leq H_o < 35$ and if
 $f[26,14],[2,15]g$ or $f[26,14],[25,15]g$ are empty or deleted.

build wall and delete them:

$f[26,13]g$.

build wall upgraded and delete them:

$f[27,13]g$.

build Turret and delete them:

$f[26,12]g$.

if the Opponent's Mobile points is like: $35 \leq H_o < 45$ and if
 $f[26,14],[2,15]g$ or $f[26,14],[25,15]g$ are empty or deleted.

build wall and delete them:

$f[26,13]g$.

build wall upgraded and delete them:

$f[27,13]g$.

build Turret upgraded and delete them:

$f[26,12]g$.

if the Opponent's Mobile points is like: $45 \leq H_o$ and if
 $f[26,14],[2,15]g$ or $f[26,14],[25,15]g$ are empty or deleted.

build wall and delete them:

$f[26,13]g$.

build wall upgraded and delete them:

$f[27,13]g$.

build Turret upgraded and delete them:
 $f[26,12],[27,12]g$.

9. Offense

- (a) define x = total number of upgraded Turret in $f[1,15],[2,15]g$, y = total number of upgraded Turret in $f[1,14],[2,14][3,14]g$, z = total number of Turret(not upgraded) in $f[1,15],[2,15],[1,14],[2,14][3,14]g$. w is the status of $[0,14]$. ($w=0$ represents empty grid, $w=1$ represents wall, $w = 2$ represents upgraded wall).

define \bar{x} = total number of upgraded Turret in $f[25,15],[26,15]g$, \bar{y} = total number of upgraded Turret in $f[24,14],[25,14],[26,14]g$, \bar{z} = total number of Turret(not upgraded) in $f[25,15],[26,15],[24,14],[25,14][26,14]g$. \bar{w} is the status of $[27,14]$. ($\bar{w}=0$ represents empty grid, $\bar{w}=1$ represents wall, $\bar{w} = 2$ represents upgraded wall).

MP is my mobile points, SP is my structure points. Define $O(x, y, z, \bar{x}, \bar{y}, \bar{z}, w, \bar{w}, MP, SP, H, R) = (a, b, c, d, e, f, MP_l, SP_l)$, 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. R is the number of turn.

- (b) If $d \notin 0$ or $e \notin 0$, put Demolisher at $[15,1]$ and Interceptor at $[19,5]$. If $c \notin 0$, put support in $f[13,3],[14,3],[15,4],[16,5],[17,6],[18,7],[14,4],[15,5],[16,6],[17,7]g$ orderly.
- (c) If $f = 0$, keep both left and right active defense. If $f = 1$, put a number of scouts at $[11,2]$ and b number of scouts at $[10,3]$ and Stop the right active defense(defined in 8(b)) for 1 turn, keep the left active defense. If $a \notin 0$ or $b \notin 0$ and $f = 2$, put a number of scouts at $[19,5]$ and b number of scouts at $[20,6]$ and Stop the left active defense(defined in 8(a)) for 1 turn, keep the right active defense.