

(line balancing)

TPM /

(1)

工程 正味

(pitch diagram) , (cycle time) , 工程

1

(Eb)

$$E_b = \frac{\sum t_i}{m \cdot t_{\max}} \times 100$$

, $\sum t_i$:

t_{\max} :

m :

E_b :

75%

80%

[1]

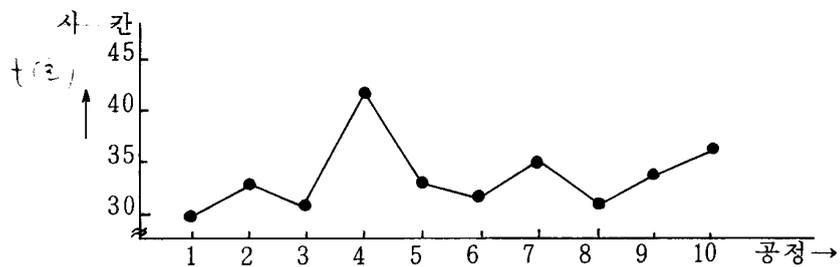
480

1

1

	1	2	3	4	5	6	7	8	9	10
(t)	30	33	31	42	33	32	35	31	34	36
	1	1	1	1	1	1	1	1	1	1

[1]



[1]

4 (42) 1

(Eb)

a)1 $= \frac{480 \times 60}{42} = 686 ()$

$$b) E_b = \frac{\sum t_i}{mt_{\max}} \times 100 = \frac{30+33+\dots+36}{10 \times 42} \times 100 = 80\%$$

1 : 4 2 21 가 ,
10 (36) . 1 Eb

$$a) 1 = \frac{480 \times 60}{36} = 800 ()$$

$$b) E_b = \frac{\sum t_i}{mt_{\max}} \times 100 = \frac{30+33+31+(21 \times 2)+33+32+35+31+34+36}{36 \times 11} \times 100 = 85.1\%$$

. 2 , 3 , ... 가

(2)

(pitch time)

, 1

(P)

$$P = \frac{T}{N}$$

, T : l

N : l ()

(a)

$$P = t_1 = t_2 = \dots = t_n$$

$$P = \sum t/n$$

, t : (t_i :)

n : 工程數

(b) (가 ,)

$$P = \frac{T}{N'} = \frac{T(1-a)}{N} , \quad N' = \frac{N}{(1-a)}$$

, a :

N' : N

(c) (y₁)

$$P = \frac{T'}{N} = \frac{T(1-y_1)}{N} , \quad T' = T(1-y_1)$$

, y₁ : (, 가)

T' : 正味

(d) (a) (y1)

$$P = \frac{T'}{N'} = \frac{T(1-y_1)}{N/(1-a)} = \frac{T(1-y_1)(1-a)}{N}, \quad T' = T(1-y_1)$$

(v) (S:)

$$V = \frac{l'}{P}$$

$$S = \frac{L}{l'} - n, \quad L = n \cdot l$$

, r : 物品 (pitch mark)

l : 1工程 (m)

L : (m)

n :

【 1】

50 , 15 , 1,000 9
pitch mark

가 100 5 3%

16 , 1 0.5m

1) (pitch time) 가?

2) 가?

3) 가?

{ } 460 , y1 = 5% , a = 3%

$$= 9 \times 60 - (50 + 15 \times 2) = 460 ()$$

()

$$P = \frac{T'}{N'} = \frac{T(1-y_1)}{N/(1-a)} = \frac{T(1-y_1)(1-a)}{N} = \frac{460(1-0.05)(1-0.03)}{1,000} = 0.4238 ()$$

stock S ()

$$S = \frac{L}{l'} - n = \frac{n \cdot l}{l'} - n = \frac{16 \times 1}{0.5} - 16 = 16 ()$$

V

$$V = \frac{l'}{P} = \frac{0.5}{0.4238} = 1.1798 (m / min)$$

(c)

, 行列 ,

(simulation)