

coefficient of loss for machines: $\frac{\text{avr. no of machines in working line}}{\text{no of machines}} = \frac{W}{m}$

coefficient of loss for repair men: $\frac{\text{avr. no of repair men idle}}{\text{no of repair men}} = \frac{A}{m}$

$$p_B(t + \Delta t) = (1 - \beta \Delta t) p_B(t) + \alpha \Delta t p_A(t)$$

$$p_A'(t) = -\alpha p_A(t) + \beta p_B(t) = \beta - (\alpha + \beta) p_A(t)$$

(rate of production per machine) = (avr. operative utilization) $\frac{m}{n\lambda} \times -(\alpha + \beta) p_B(t)$

mittl. Utilization des Arbeiter = $\sum_{n=0}^m \frac{n p_n}{m} + \sum_{n=m+1}^{\infty} p_n$ $e^{-(\alpha+\beta)t}$ = capacity

Table: Cox-Smith $p \cdot 100 \beta$
 operative utilization Rate of prod. per operative $\frac{\text{rate of products per machine}}{\text{steady state}}$

Limiting value of large scale economies: $\frac{p_B(t)}{p_A(t)} = \frac{\alpha}{\beta}$

Result: $\frac{1}{1+\alpha}$ for $\frac{n\lambda}{m} < 1$
 $\frac{m}{n\lambda}$ for $\frac{n\lambda}{m} > 1$

Stationary distribution, independent of time: $p_A(t) = \frac{\beta}{\alpha + \beta}$
 $p_B(t) = \frac{\alpha}{\alpha + \beta}$



Intervals spent in A are random variable with λ^{-1} expected
 " in B " " " " β^{-1} in steady

Suppose $2N$ workers, N_A^{-1} in A, N_B^{-1} in B

Rate of production of each worker in A: $\frac{N_A^{-1}}{N_A^{-1} + N_B^{-1}} = \frac{\beta}{\alpha + \beta} = p_A$

(derived from the Burkhoff-Model)