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Total Remote Control of Soaking Pit Crane at No.3 Slabbing Mill of Chiba Works

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Synopsis :

An unmanned crane operating system has come to markedly improve the working environment of soaking pit cranes at slabbing mill. Controlled form the ground floor instead of form within the crane, the system makes utmost use of inductive radio and wireless ITV, solving the problems of crane operators with intense heat form beneath and strong vibration. The location of operation room, the proper position of ITV cameras, size and number of monitors, etc., to say nothing of the way of avoiding crane collision, were studied to minimize a sense of physical disorder caused by using monitored image instead of direct viewing from within the crane. Operating efficiency of the new system is almost as expected, though some minor camera troubles occurred during the test operation.

UDC 621.87-519:621.783.224.2
621.771.22:658.2

千葉第3分塊工場ソーキングピットクレーンの遠隔運転

Remote Control of Soaking Pit Cranes at No. 3 Slabbing Mill of Chiba Works

第3分塊工場は現在年産 300万 t（将来増産予

たは鋼塊を炉内に配列するときなど精密な操作が

18ホール（将来32ホールまで設置可能）

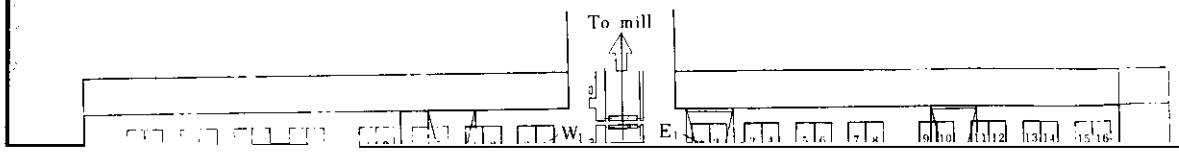
ットバギー1台，ソーキングピットクレーン2台（将来3台）と，それらの付帯設備である。**Table 1** に主要設備の仕様を示し，均熱ヤード全景を**Photo.1** に示す。

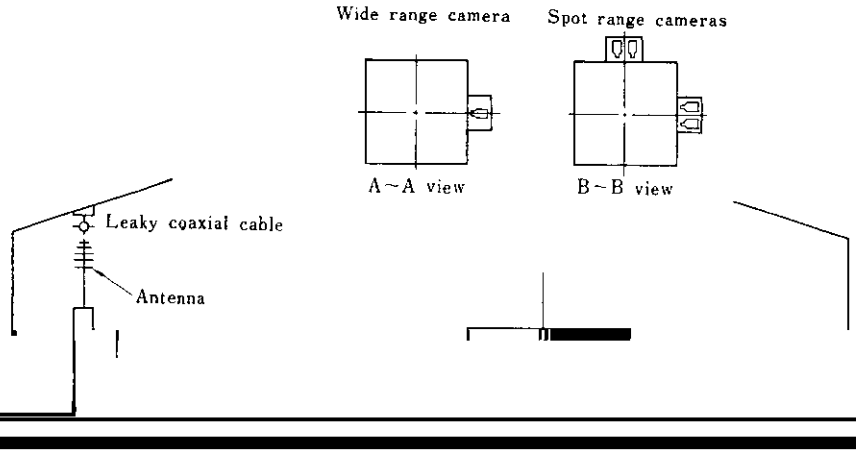
ソーキングピットクレーンは均熱炉への鋼塊の

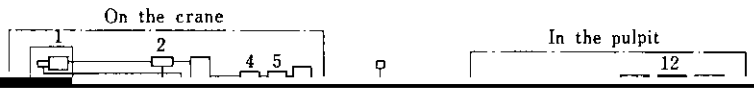
合はクレーンを直視して運転する。直視運転が可能な距離は運転室から60mまでで，これ以上遠く

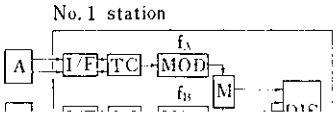
Table 1 Specifications of soaking equipment

Ingot	
Weight	4 ~ 25 t


To mill
W1
E1
1 2
3 4
5 6
7 8
9 10
11 12
13 14
15 16


Wide range camera
Spot range cameras
A~A view
B~B view
Leaky coaxial cable
Antenna


On the crane
1
2
4 5
In the pulpit
12


No. 1 station
A
I/F
TC
MOD
f_A
f_B
M

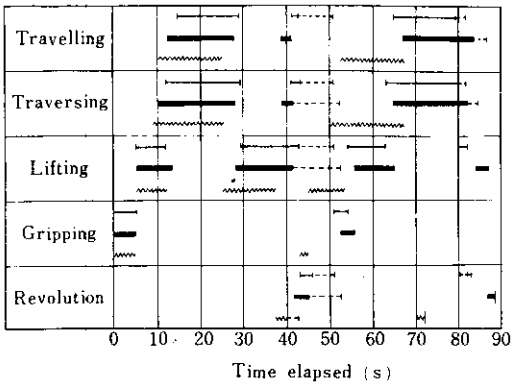
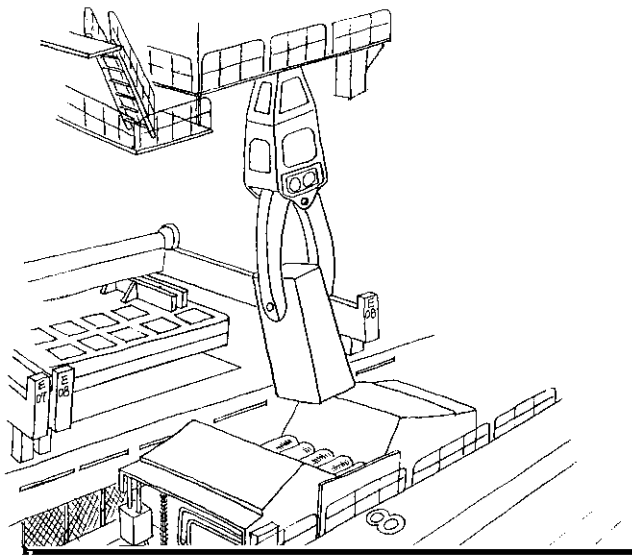


Photo. 4 Scenery of operation

Fig. 6 Comparison of charging cycle time of one ingot



千葉製鉄所第3分塊工場ソーキングピットクレーン