

KAWASAKI STEEL TECHNICAL REPORT

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"Developed Machinery Maintenance Technology
in Steelmaking Plant"

Maintenance Revolution Mechanical Maintenance Technologies Developed to Support the Steel Industry of the 21st Century

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Synopsis :

In iron and steel industry, which is composed of equipment in large scale, equipment maintenance technology is a significant fundamental technology of exerting an influence upon the operation efficiency of the equipment. This report firstly summarizes the trend of the equipment maintenance technology developed by Kawasaki Steel. And herein subsequently described is "maintenance revolution" of aiming at significant developments in maintenance technology for mechanical equipment, which has been initiated for the purpose of constructing a basis for securing unshakable high profits for the iron and steel industry under the recent business management environment. The "maintenance revolution" is an activity with the intention of establishing a new equipment maintenance technology, which is more efficient than the conventional ones, by developing and organizing in-company individual technologies comprising arts in search for appropriate machine elements, machine materials and equipment diagnosis applicable to respective equipment condition in use in the iron and steel industry. In this paper, developments and the perspective of equipment maintenance technology in the future are also discussed by citing examples.

Maintenance Revolution

Mechanical Maintenance Technologies Developed

CONTENTS

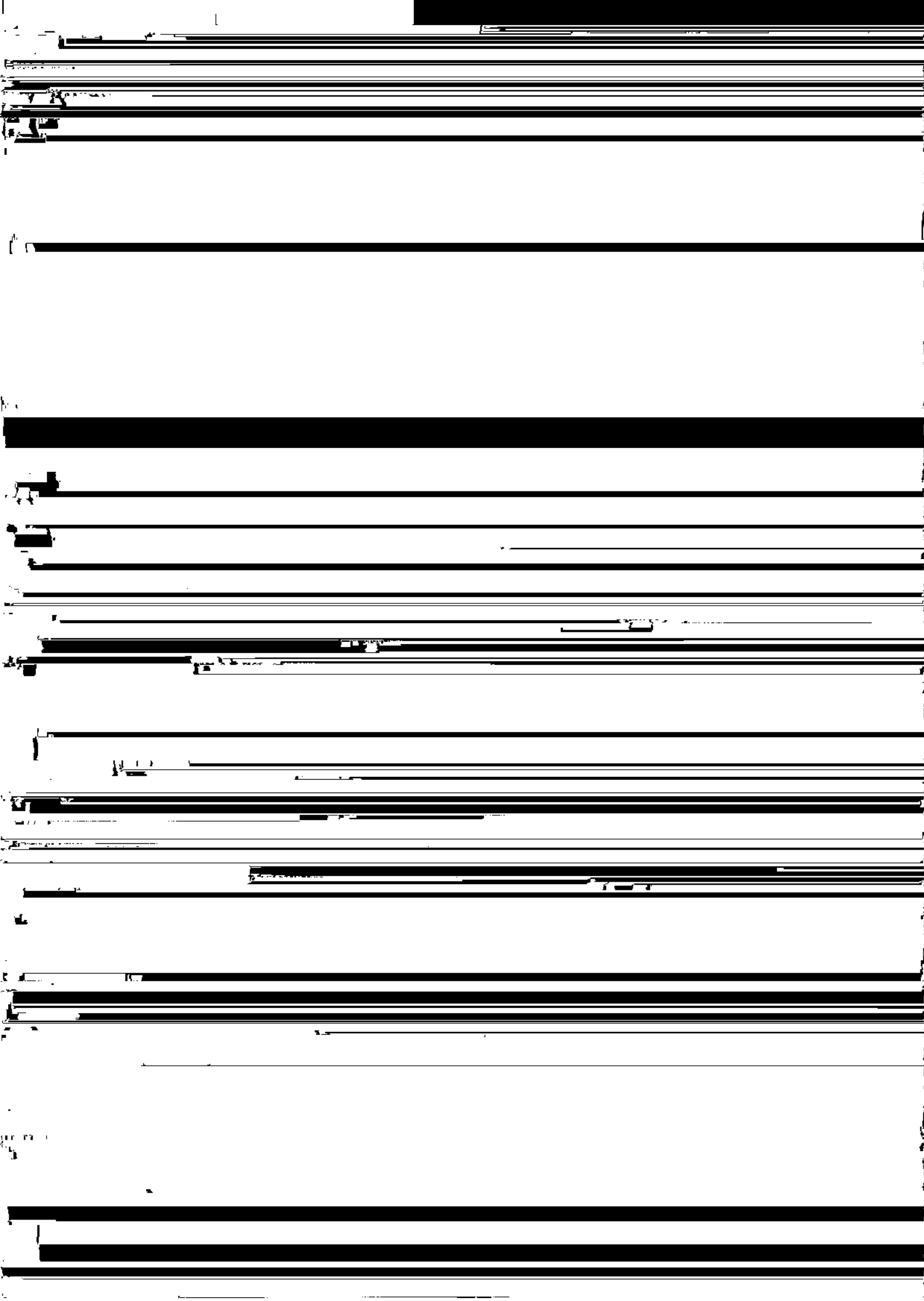
- Saturated demand in steel product
- Moving up of NIES
- Appreciation of yen
- Japan's economic "Bubble"
- Classification by customers



- (1) Quantitative monitoring on machine conditions
(Vibration, temperature, torque, etc.)
- (2) Severe control of machine accuracy
- (3) High reliability
 Mechanical parts
- (4) High maintainability

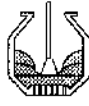


Expansion of established technology

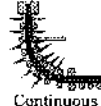




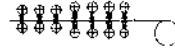
Blast furnace



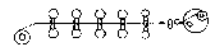
Converter



Continuous



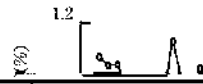
Hot strip mill



Cold strip mill

	Ironmaking	Converter	Continuous caster	Hot strip mill	Cold strip mill
Temperature (°C)	1500	1500	1200	1000	200

Table 5 Technology aiming at shortening maintenance time



Results of 12 main facilities in Mizushima Works