

EXTENDED TECHNICAL INSPECTION OF THE INCLINED ARM OF THE M5A COAL REMOVER

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ABSTRACT: From the point of view of safety in operation, the technical condition of the metal construction is decisive, therefore, the main objective remains its evaluation, but for the evaluation of rehabilitation costs and to provide the beneficiary with all the data necessary to decide on the appropriateness of maintaining of the machine, the expertise will also include the presentation of the technical condition of the resistance construction (metal construction) and of the mechanisms related to the machine.

Keywords: arm, car, coal

1. INTRODUCTION. TILTED ARM OF THE M5A COAL REMOVER

The technical expertise was performed based on the technical documentation sheets symbol T2052-78 / d-00 and the assembly and commissioning documentation related to the coal extractor from storage with bucket wheel with a capacity of 1200 tons / hour and the length of the wheel arm 20c cup holder (elinda). The specialized technical inspection aims to determine the possibilities of exploitation in continuation of the

machine in complete safety conditions, beyond the normal operating time. From the point of view of safety in operation, the technical condition of the metal construction is decisive, therefore the main objective remains its evaluation, but for assessment of rehabilitation costs and to provide the beneficiary with all necessary data for to decide the opportunity to keep the machine in operation, the expertise will also include the presentation the technical condition of the resistance construction (metal construction) and the related mechanisms machine.

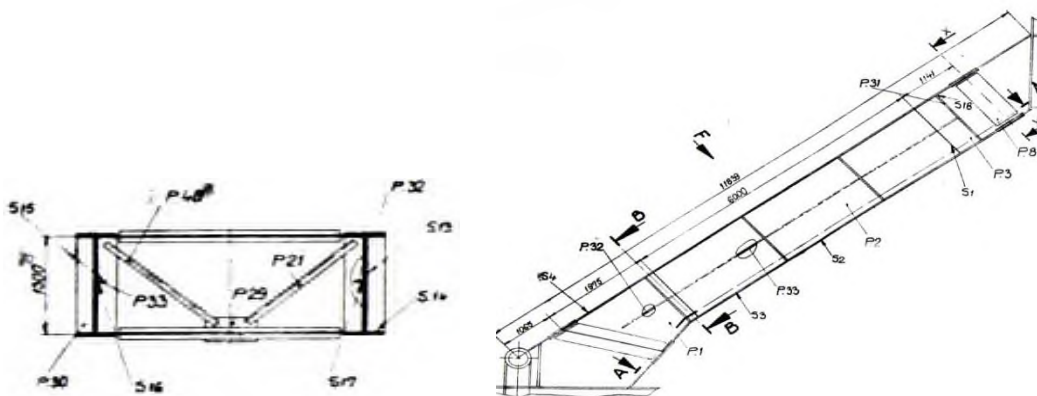


Fig.1 Inclined arm (Balancing arm)

The technical expertise follows the methodology used by KRUPP experts FÖRDERTECHNIK GmbH Germany to the expertise of quarry equipment namely The directives "Bergverordnung des Landesoberbergamtes" of the Land of Nordrhein – Westfalen for lignite mines (BVR Br.) dated 20.02.1970, variant from 20.11.1981, for conducting annual investigations of large equipment in surface quarries and landfills solid fuel.

2. DESCRIPTION OF NON-CONFORMITIES AND REHABILITATION PROPOSALS

Unpermitted flows on the metal construction in the area of the rotation actuation mechanism, fig.2.



Fig.2

Pos.11, 14, 15, 18, 21, 22 from section. A-A debit. Careful! - must be urgently reassembled according to the

documentation. Imminent danger of major construction damage.



Fig.3



Fig.4



Fig.5



Fig.6

The transverse upper bracing between pos.24 left-right cut and reassembled improperly, fig.7. Attention - urgently

needs to be reassembled according to the documentation. Imminent danger of major technical accident.



Fig. 7

The bracing pos .17 and the transverse room pos.13 shown in fig.8 and fig.9 are

deformed. They will be replaced during the repair with the discharge of efforts.

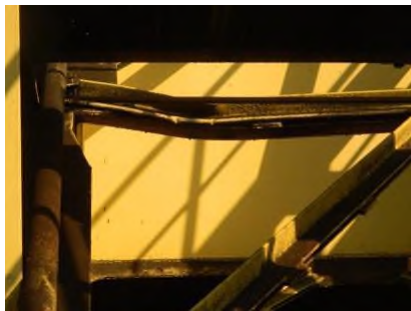


Fig.8

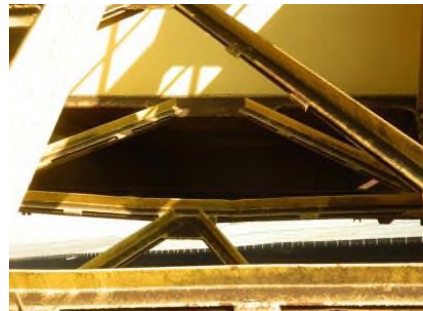


Fig.9

Joining details between the support of the lifting mechanism and the inclined arm, in 2003 the beginning of the degradation reached now in an accentuated state when

it is necessary to replace the eclipses with the restoration of the area. They will be replaced during the repair with the discharge of efforts.

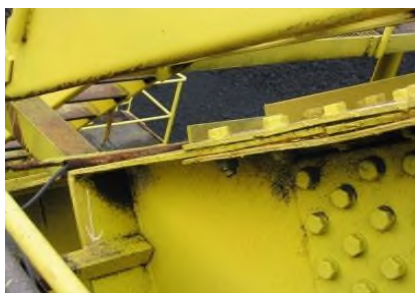


Fig.10

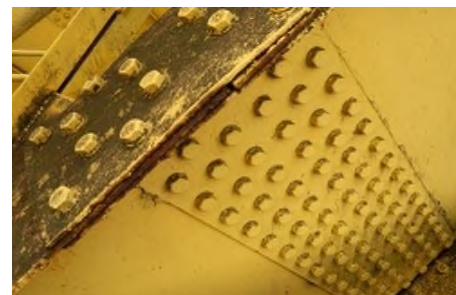


Fig.11

The control of the screws by the vibration method indicated that there are defects and the eclipses on the upper soles and the screws will be replaced urgently.

The deformations reach 8-11 mm by removing the sole in the median areas, fig.12-15.

They will be replaced during the repair with the discharge of efforts.

Unloading requires support on the scaffolding under the beams of the ballast box and lifting on presses 150-175 mm.



Fig.12



Fig.13



Fig.14

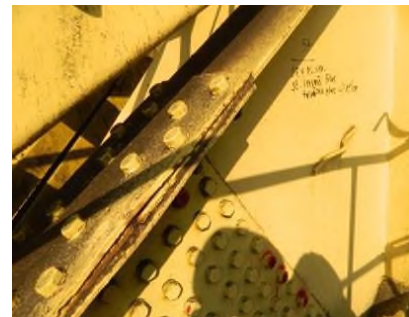


Fig.15

4. CONCLUSIONS:

-The degradation curve indicates in the future the acceleration of deformations and cracks, if it is not intervened as soon as possible.

- It is necessary to remedy the works executed without technical discernment.

- The deformed beams will be replaced during the repair with the unloading of efforts, otherwise serious cracks will occur.

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