



# Materials Handling

## Case Study

### Hydraulic Charger system improves crushing efficiency for Aluminum Ore plant

#### Background

Software engineering services company, ASE has successfully applied its software design skills to Compagnies des Bauxites de Guinee (CBG) aluminium ore crushing site in West Africa, resulting in significant efficiency improvements at the plant

#### Challenge

Bauxite arrives at the CBG crushing plant in rail wagons and is emptied into a crusher using a Strachan and Henshaw elevating dumper wagon and marshalling system, before the wagons are returned along a second rail track. A Hydraulic charger, a machine that runs on its own track, adjacent to the rail track, is used to move rail wagons onto and off the wagon dumper.

#### Solution

ASE's contract involved the commissioning of a new Telemecanique Programmable Logic Controller (PLC) system built into the panels of the hydraulic charger. As the South line charger at the plant had previously been changed to hydraulic operation the programme was modified for the North line; the main changes required being due to differences in the operation of the hydraulics on the new charger.

The contract was completed during a 10 day shutdown period and finished ahead of schedule. The project has resulted in significant efficiency improvements, with a reduction in the wagon cycle time and an increase in wagon throughput; achieved through an increase in the number of wagons shunted through at one time.

Tony Bowen of Automation Software Engineering (ASE), delighted with the success of the contract, commented: "The CBG Guinea contract demonstrates the company's versatility and technical expertise in applying software engineering skills to diverse industrial settings such as the CBG application."

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#### Benefits

- Crushing efficiency improved
- No delays in plant shut down
- Quick wagon cycle times
- Improved throughput
- Huge cost savings

#### Project Statistics

- Based in West Africa
- Need to be completed during scheduled 10 Day plant shut down

#### Systems Expertise

- Planning
- Testing and execution of procedures
- Project specification
- Control panel design and