



UNDERGROUND MINING TELE REMOTE CONTROL OPERATIONS

Operation A

Line-of-sight remote control with machine cameras



Equipment overview

- Machine equipped with line-of-sight equipment plus one or two cameras.
- The remote control operator has a small monitor attached to the transmitter, or mounted onto a stand

Possible usage

- Ideal for temporary operations to remove remaining ore from the stope, especially large stope.
- Machine recovery
- Machine able to be driven out of sight from the remote operator

Operation B

Tele remote control from simple tele station



Equipment overview

- Machine mounted tele remote equipment with up to three cameras: more can be added.
- The remote control operator uses one monitor, and controls the camera selection
- Machine containment by laser barrier
- Machine control by line-of-sight transmitter

Possible usage

- Ideal for temporary operations
- Can be used for long term tele remote mining

Operation C

Tele remote control from underground tele station



Equipment overview

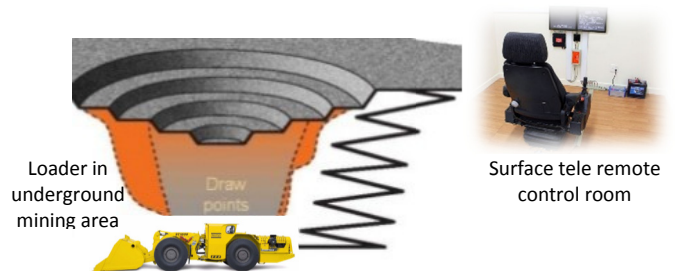
- Machine mounted tele remote equipment with up to six cameras
- Operator station can be placed into a light vehicle, a moveable cabin, or an underground control room
- Machine containment by laser barrier
- Machine control by tele-chair

Usage and benefits

- Long term tele remote mining with option of automation
- Operator is placed in a comfortable station further away from the mining operation

Operation D

Tele remote control from the surface



Equipment overview

- Operator station placed on the surface and connected by fibre optic cable to the mining operation
- Same machine equipment as **OPERATION C**

Benefits

- Long term tele remote mining with option of automation
- Greater machine utilization: machine can be used through shift change and firing times
- Greater efficiency through automation, less machine damage, and reduced operator fatigue



SEPIA SOLUTIONS
BOTSWANA

Email nautilus@mineserv.co.uk • Visit www.mineserv.co.uk

Mine Technology Services Ltd, 26 York Street,
London W1U 6PZ, United Kingdom

Tel: +44 203 282 7891 Fax: +44 203 282 7892

Offices in Botswana

MTS