AUSTRIA SHOWCASE

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THEME

COST EFFICIENT TRACK MAINTENANCE STRATEGIES, TECHNOLOGIES AND MACHINES
CONTENTS

✓ MAINTENANCE COSTS
✓ BALLAST CLEANING
✓ TAMPING
✓ DYNAMIC TRACK STABILIZATION
✓ MACHINE AVAILABILITY
MAINTENANCE COSTS

Permanent way strategies aim to extend service-life of track
Reducing maintenance and accepting a reduction of service is highly uneconomic
Operational costs caused by maintenance work (or not done maintenance) are decisive
BALLAST CLEANING

Ballast fouling
BALLAST CLEANING

Neglected Ballast cleaning causes:

• higher costs of routine maintenance
• temporary speed restriction
• reduced service life of the permanent way material

COST REDUCTION BY BALLAST CLEANING
BALLAST CLEANING

DEVELOPMENT OF FINES
BALLAST CLEANING

BALLAST CLEANING – SCREENING QUALITY

- Total waste (not cleanable)
- Fouled ballast
- Cleaned ballast

Mesh size [mm]

Percentage passing [%]

20 30 40 50 60 70 80

0 20 40 60 80 100 120
BALLAST CLEANING

DEGRADATION OF GEOMETRY AND BALLAST
BALLAST CLEANING

BEFORE BALLAST CLEANING

AFTER BALLAST CLEANING
BALLAST CLEANING

IMPORTANT

- BY CONSTRUCTION OF A CATCHWATER DRAIN THE DRAINAGE OF THE TRACK IS WARRANTED

- MOREOVER CLEARING BETWEEN BALLAST AND CATCHWATER DRAIN SECURES THE VENTILATION OF THE BALLAST BED
TAMPING

MAXIMIZATION OF TAMPING PERFORMANCE IN SCHEDULED POSSESSIONS BY ASSURING THE QUALITY
TAMPING

POSITIVE EFFECT OF MULT-SLEEPER TAMPING
DYNAMIC TRACK STABILIZATION

Vertically applied forces (vertical load) induce horizontal vibrations. The dynamic track stabilization system utilizes flywheel gears and guiding rollers to counteract these vibrations, ensuring stability and smooth operation.
DYNAMIC TRACK STABILIZATION

STABILIZATION OF NEWLY BALLASTED TRACKS

NOT IDEAL

- Only top layer stabilised
- Loose = not stabilised
- Lower layer inhomogeneous
- Irregular large settlements

CORRECT - IDEAL

- Stabilised in layers
- Ideally homogeneous
- Compacted & stabilised
- Minimum settlements
- Durable track geometry
DYNAMIC TRACK STABILIZATION

IMPROVEMENT OF TRACK QUALITY BETWEEN REGENSBURG AND MUNICH
DYNAMIC TRACK STABILIZATION

- Extensive economies by avoiding speed restrictions within the first 48 (72) hours after tamping as a result of controlled stabilization.

- Sustained improvement of track bed by construction in layers. Consequential enlargement of tamping cycles and economies of maintenance costs.
MACHINE AVAILABILITY

MAXIMIZATION
OF
MACHINE AVAILABILITY
MACHINE AVAILABILITY

MACHINE AVAILABILITY BY

- TRAINED AND CERTIFICATED MECHANICAL AND ELECTRICAL SPECIALISTS

- LARGE DEPOT OF SPARE PARTS DIRECTLY ON THE MACHINES

- MACHINE MAINTENANCE ACCORDING TO THE MANUFACTURER’S SPECIFICATIONS AND ADDITIONAL PREVENTIVE MAINTENANCE BASED ON LONGTIME EXPERIENCE OF OURSELVES
MACHINE AVAILABILITY

- ANNUAL SAFETY CHECK ACCORDING TO THE MANUFACTURER’S SPECIFICATIONS AND THE REGULATIONS OF THE NATIONAL AND INTERNATIONAL PUBLIC AUTHORITIES

- PERIODICAL OVERHAUL IN ACCORDANCE WITH THE REGULATIONS OF THE NATIONAL RAILWAY AUTHORITY

ALL THE ISSUES DESCRIBED ABOVE CAN ONLY BE EXECUTED BY CERTIFICATED MAINTENANCE WORKS
MACHINE AVAILABILITY

CERTIFICATED MAINTENANCE WORKS WELS
CONCLUSIONS

COST EFFICIENCY MEANS

✓ HIGH INITIAL QUALITY BY CONSTRUCTION IN LAYERS
✓ INCREASING OF LIFE CYCLE BY BALLAST CLEANING
✓ OPTIMIZATION OF TAMPING OUTPUT IN SCHEDULED POSSESSIONS BY USING HIGH PERFORMANCE TAMPING MACHINES
✓ RAISE OF TRACK AVAILABILITY BY IMPLEMENTATION OF DYNAMIC TRACK STABILIZERS
✓ SUSTAINED IMPROVEMENT OF QUALITY BY USING HIGH PERFORMANCE TAMPING MACHINES AND DYNAMIC TRACK STABILIZERS
✓ QUALITY- AND EFFICIENCY-ORIENTED WORK BY CERTIFICATED SPECIALISTS
✓ MAXIMIZATION OF MACHINE AVAILABILITY BY PREVENTIVE MAINTENANCE AND OVERHAULS IN CERTIFICATED WORKS
DANKE.
THANK YOU.
TEŞEKKÜR EDERİZ.