

<p>Practice Title</p>	<p>Badische Stahlwerke GmbH, Kehl / Germany: BSW Wagon Tippler</p>
<p>Date that the practice was last reviewed</p>	<p>04.05.2011</p>
<p>Brief overview of the practice Please give a brief description of the practice, how it is applied, and who uses it</p>	<p>At BSW appr. 30% of annual scrap delivery (around 2.4 Mio. Tons) is delivered by railway wagons. After unloading the wagons BSW has to clean them before sending back on railway track.</p> <p>The cleaning is a manual process by which two persons open the side doors of the wagon, take a ladder to climb in and sweep with a broom all dirt through the open doors on the infrastructure of the scrapyard (picture 1 and 2).</p> <p>The new wagon tippler is installed outside the scrapyard and tilts the wagons automatically 150° degree (picture 3) so that the dirt falls off in a bunker (picture 4). The wagon tippler is operated by one person who drives the train and pushes with the locomotive the wagon one by one on the tippler (picture 5).</p> <p>The new installation removes the risk of people being hurt in scrapyard by cleaning wagons because the cleaning is taking place appr. 500 meters away full automatically (picture 6).</p>
<p>On a width of 30 meters the scrapyard includes (picture 7):</p> <ul style="list-style-type: none"> • 3 tracks for automatic scrap ferries (basket diameter 6,30m) • 2 railway tracks • Crane rail with 4 scrap cranes <p>Within this environment it was common practice to let two people take a ladder and a broom to clean the railway wagons, even at night (picture 8) and bad visibility (fog, caused often in spring and autumn by the river Rhine), 24 hours, 7 days a week. The dirt was thrown on the tracks and every Thursday (downday) a wheel loader with a rotating broom cleaned the area.</p> <p>The first step to mitigate the risk of being run over by crane or scrap ferry was to install</p> <ul style="list-style-type: none"> • Camera surveillance for the scrap ferries, controlled by central area manager • Anti-collision system for the cranes, detecting pieces (even human beings) on the crane rail <p>But the risk for the wagon cleaners to be overrun by a vehicle / crane was still existing, the handling of scrap over their heads with cranes was very likely and the additional risk of slip / trip / fall on the uneven surface and by climbing the wagons was still present.</p> <p>By using the new wagon tippler this risk was removed and work-related illnesses and injuries by cleaning the wagons manually has been prevented. The working environment at the new wagon tippler is much safer without any hazards caused by uncontrolled movements or uneven surface.</p>	

Supporting **photographs** – optionally include some photographs that support the practice



Picture 1: Opening the doors of scrap wagon, walk through dirt from wagon cleaning on the ground



Picture 2: Wiping out the dirt with a broom



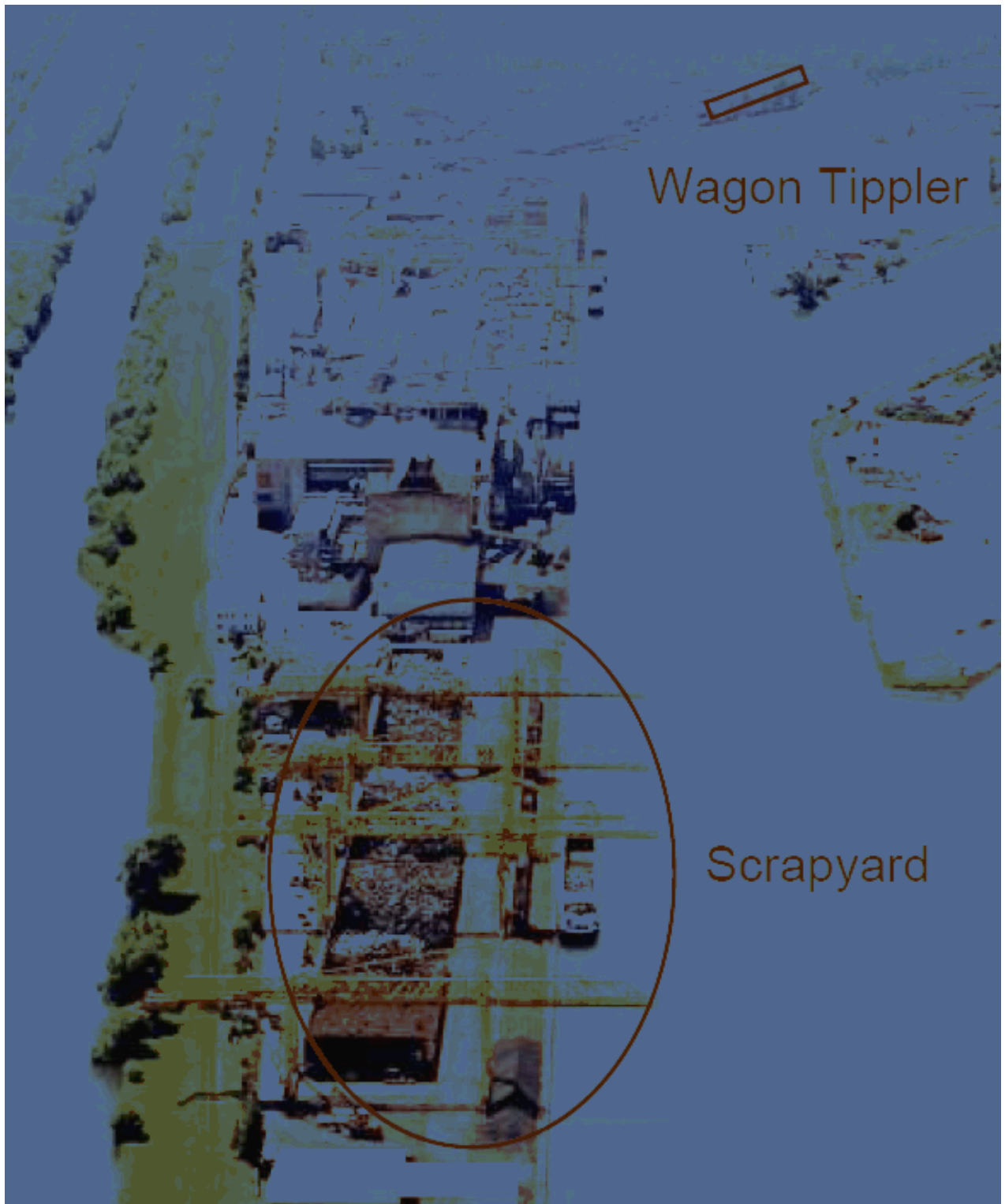
Picture 3: Wagon tippler, wagon started tilting



Picture 4: Wagon fully tilted, vibrator active, dirt falling in bunker



Picture 5: Wagon positioned in tipler, disconnected from locomotive and following wagon



Picture 6: Location of scrapyard where the wagon were unloaded manually and place of new wagon tippler



Picture 7: Scrapyard with 3 tracks for scrap ferry, 2 railway tracks and 1 crane rail.
Railway wagons ready for unloading



Picture 8: Wagon cleaning at night with passing crane