

A method and system for identifying a train number and model, and a train safety check method and system. The method for identifying a train number comprises: employing a line scan camera having a relative motion with respect to a train under test to take consecutive pictures of the train under test, thus obtaining multiple separate train image (S202); stitching the multiple separate train images to obtain a stitched image (S204); performing distortion correction on the stitched image to obtain a corrected image (S206); and identifying a train number from the corrected image (S208). The distortion correction on the stitched image comprises: extracting a wheel contour from the stitched image, acquiring a ratio of a horizontal diameter to a vertical diameter of the wheel from the wheel contour; if the ratio is greater than a first predetermined threshold, then performing horizontal compression on the stitched image according to the ratio; and if the ratio is smaller than a predetermined second threshold, then performing horizontal stretching on the stitched image. The method and system can enable automatic identification of a train model and a safety check of a train, thus providing high efficiency and usability.