

# Acceleration measurements on tile-press bearings

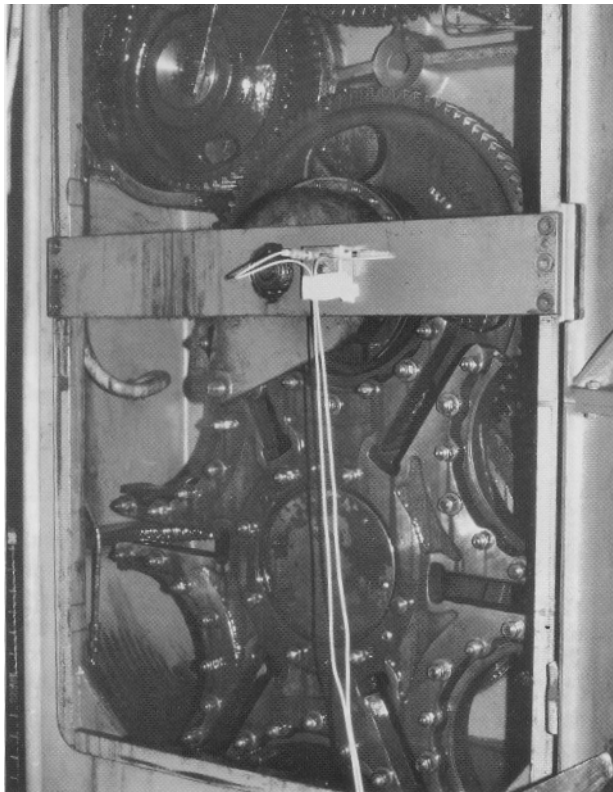
by Heinz Joas

Premature wear on plain bearings in a recently installed mechanically driven lifting press led to operational problems in the production of roof tiles. This resulted in a high scrap rate.

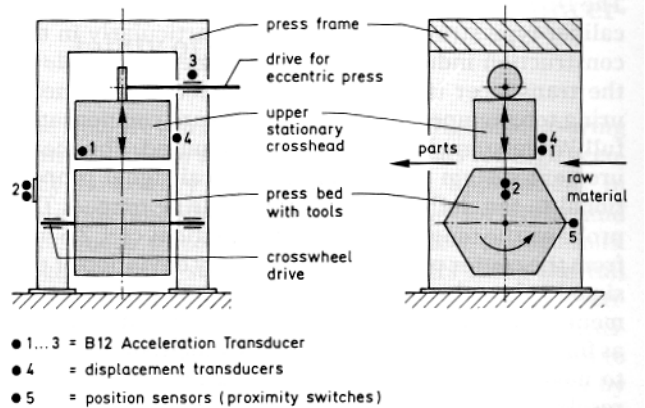
The cause of the problem was traced by using inductive acceleration and displacement transducers which were fitted both to a perfectly operating press and to the new press at identical measuring points, but in particular near to force transfer points such as bearings. **Figure 1** illustrates the pairs of B 12 Acceleration Transducers that were mounted on the bearing of the crosswheel drive. **Figure 2** shows the positions of the measuring points on the press.

Since the old and new machines were operated in parallel, the results could be compared immediately. **Figure 3** shows the amplitude occurring during an operating cycle and **Fig. 4** a frequency analysis of two signals recorded at comparative points in operation. The greater amplitude of acceleration occurring at higher frequencies can be seen on the faulty machine.

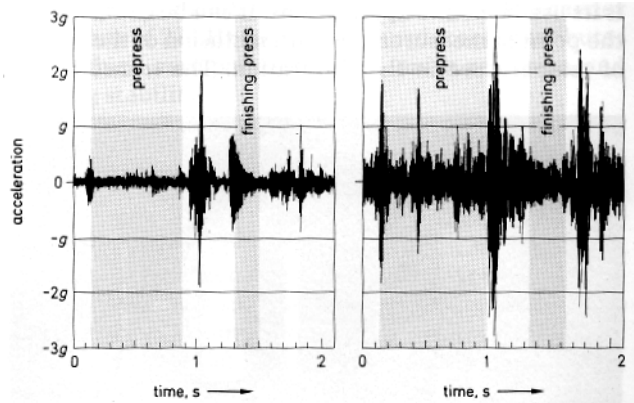
Recurring vibration measurements including analysis are to be used in the future to provide information on bearing damage.



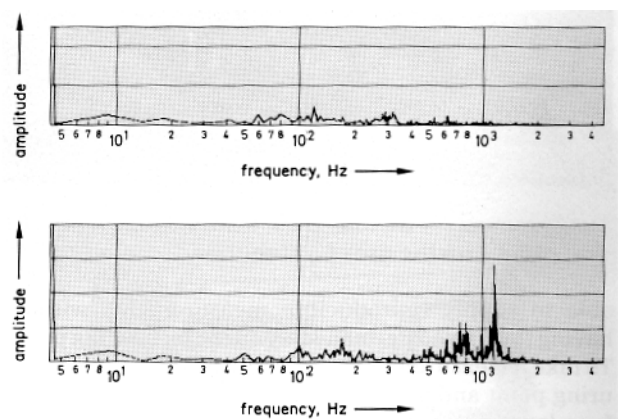
**Fig. 1: A pair of B 12 Acceleration Transducers**



**Fig. 2: Measuring points on the press**



**Fig. 3: Acceleration amplitude on the non-faulty bearing (left) and the bearing showing signs of wear (right)**



**Fig. 4: Frequency analysis on the non-faulty bearing (top) and on the worn bearing (bottom)**

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