

BRAKE HEALTH INDICATOR SYSTEMS USING INPUT AND OUTPUT ENERGY

ABSTRACT

5 Systems and methods for indicating the health of brakes on an aircraft or
a ground vehicle. One method for monitoring brake health calculates the ratio of input
energy to output energy during braking. The input energy is a function of commanded
brake force and speed. The output energy may be measured by measuring the
increase in temperature or the actual brake force over time during brake application.
When using brake temperatures, the temperatures in a pair of brakes may optionally be
10 compared. If the respective measured temperatures of the two brakes differ by an
amount that exceeds a specified threshold, the system produces an indication that one
brake may require repair or replacement. Variability due to operational and
environmental factors that affect measured temperature can be reduced by comparing
the measured brake temperatures for one brake with selected brake temperature data
15 collected from the same brake during other landings under similar conditions.

Fig. 2