

A GPS data-logger for path recording in pigeons and other birds

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In July 1999, we presented a lightweight GPS data-logger (35 g including battery and casing) for path recording of pigeons. A detailed description of this logger and analysis software is available elsewhere (Steiner et al., A GPS logger and software for analysis of homing in pigeons and small mammals, *Physiol. Behav.* 71:589-596, 2000). A further development of the GPS logger more suitable to be used for homing pigeons and medium-size birds is now available, dimensions are 30 x 30 x 6 mm, a full-operating data logger (including an 11 g battery) being of about 20 g. Owing to its small size the module can be positioned in different ways, jointly or separated from the battery (one typical attachment is shown on the right), depending on morphology and aerodynamic requirements of the bird species under study. Logging can be continuous (1 fix per second) or with intervals to up to 9 seconds, with an accuracy <10 m over distances of up to hundreds km. For short-distance releases, the data-logger can be fitted additionally with a radio-transmitter permitting localization of lost birds up to 2 km. Similarly to the previous version, the improved logger provides data that can be analyzed with Wintrack, a public domain software for numerical and graphical analysis of paths available at www.dpwolfer.ch/wintrack. Data can be also transformed in vectorial formats suitable for geographic analysis. The figure on the left shows the track (about 80 km) of one male homing pigeon released singly 37 km from the home loft.

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