

## THE INFLUENCE OF USAGE FACTORS AND MAINTENANCESYSTEM ON AIRCRAFT ENGINE PERFORMANCE

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*In this paper the author focuses his research to examining aircraft engine performance losses in civil aviation from the broadest perspective. An engine, in service, is exposed to the influence of various usage factors and operator's maintenance program and practice in the maintenance process. By fundamental design, the investigation utilized differences in experience between operators to identify potential cause and effect relationships.*

*Special consideration dedicated to the definition of performance sensitivity factors, or influence coefficient, to better understand the performance cause and effect which has major performance impact, and thus, is of prime interest in analysis of engine performance loss. JT8D (Pratt & Whitney) engine performance losses was presented as an example of the investigation results.*

*Finally, due to a limited scope of the paper the author was obliged to give only the abridged (condensed) presentation of indisputable influence of maintenance program and practice applied to overall engine condition in service. Therefore, the big variance between airline experience in engine reliability, performance and maintenance cost appears will be primarily related to individualized concepts.*

**Key words:** Engine, Usage factor, Maintenance system, Deterioration, Engine performance.

## UTICAJ EKSPLOATACIONIH FAKTORA I SISTEMA ODRŽAVANJA NA PERFORMANSE VAZDUHOPLOVNIH MOTORA

*U ovom radu su data istraživanja usmerena na gubitak radnih sposobnosti aviona u civilnoj avijaciji. Motor je u eksploataciji izložen uticajima različitih faktora, pa je potrebno napraviti program njegovog održavanja u kome bi bili definisani procesi održavanja. Otkrivene razlike u teorijskim postavkama i iskustvu bi doprinele da se formira relacija između ovih veličina.*

*Neki specijalni pristupi su urađeni u cilju definisanja faktora osetljivosti performansi motora. Time bi se dobili uticajni koeficijenti kojima bi se razjasnili uzročnici glavnih gubitaka performansi. Kao rezultat istraživanja dat je primer gubitka performansi motora JT8D.*

*Na kraju, uzimajući u obzir ograničen prostor u časopisu, autor je dao sažete rezultate istraživanja koji se odnose na uticaj samog programa održavanja i njegovu praktičnu primenu na motore u eksploataciji. Razlike koje postoje između iskustvenih podataka u pouzdanosti motora, performansi i cene održavanja su rezultat individualnih sprovođenja koncepta.*

**Ključne reči:** motor, eksploatacioni faktor, sistem održavanja, performanse motora.