ABSTRACT

Airplanes stand as one of the safest and most efficient modes of transportation globally. However, even these engineering marvels are subject to the rigorous demands of maintenance and spare parts management. This research delves into enhancing the spare part inventory control system designed explicitly for unscheduled maintenance work within the aviation industry. The primary objective of this study is to comprehensively examine and analyze the existing spare part inventory control system, aiming to identify areas for improvement. The research also proposes a refined spare part inventory control system model. To achieve these goals, the study employs two critical methodologies: economic order quantity (EOQ) for determining optimal stock levels and the Reliability-centered Spare (RCS) method for assessing the fatigue levels of these critical spare parts. The findings of this research demonstrate a significant advancement in the management of spare parts inventory that were previously unavailable. Through the meticulous application of EOQ and RCS, the study has facilitated the establishment of an efficient inventory control system. This system ensures the availability of spare parts and strategically manages stock levels, optimizing the balance between cost-effectiveness and reliability. Ultimately, this research contributes to the ongoing efforts to enhance the safety and efficiency of aircraft operations by improving spare part inventory control systems for unscheduled maintenance.

Keywords : Maintenance, Unschedule, EOQ and RCS

ABSTRAK

Pesawat terbang merupakan salah satu moda transportasi yang paling aman dan efisien di dunia. Dalam hal ini pesawat terbang tidak terhindar dari proses maintenance dan inventory spare part. Penelitian ini akan menjelaskan terkait perbaikan sistem pengendalian persediaan spare part untuk pekerjaan unschedule maintenance. Tujuan dari penelitian ini adalah untuk mengetahui dan menganalisis sistem pengendalian persediaan spare part saat ini dan menentukan model sistem pengendalian persediaan spare part. Metode yang digunakan dalam penelitian ini adalah EOQ (Economic Order Quantity) untuk penetuan stock part dan metode RCS (Reliability Centered Spare) untuk penentuan tingkat kekeritisan pada spare part tersebut. Hasil penelitian tersebut dapat diketahui bahwa sistem pengendalian persediaan spare part yang sebelumnya belum tersedia , telah tersedia dengan penentuan EOQ dan RCS.

Kata Kunci : Perawatan, Unschedule, EOQ dan RCS