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**Bringing LLP "Back to Birth" Documentation to the
21st Century and Beyond**

July 15, 2019

presented by

International Aircraft Associates · 41 YEARS

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GE Aviation

- ➢ **Do more documents equal greater value?**
- ➢ **What is the cost burden of documentation overhead?**
- ➢ **What are the missing opportunities?**

This discussion will focus on commercial transactional documentation with the goal to present how to simplify BtB documentation while keeping the foundation of quality and safety in aircraft parts.

The workshop leaders will then take this information and develop industry guidance and action plan to effect beneficial change.

- Vision/Mission
- Pain Points / Better Plan Needed
- LLP Documentation Current State
- LLP Documentation Future State
- Next Steps

- Vision –
  - Consistent practical application of an industry standard for back to birth trace
- 2 areas of focus
  - Documentation required to demonstrate chronological usage of the part
  - Documentation required to show the chain of custody of a life limited part
- Mission –
  - Establish an industry standard specification that satisfies the intent of regulatory authorities and establishes the legitimacy and legacy of the part

Excessive overhead; the actual cost burden that involves hours of review, hours of searching for missing documents, printing of reams of paper, et al

Missed opportunities to save millions of dollars by not utilizing LLP's that currently are not approved or approval is delayed due to this "overkill" of documents

Why are we all insisting on going backwards in requiring "hard copy" and "ink stamps" and original "signatures"?

We need to consider the enormous use of "data" and real time streaming from aircraft, electronic record keeping and electronic signatures (and approved by the FAA)

 Discuss "Why"? "Where is this "overkill" being generated (operators, lessors, aftermarket?) and "**Why the distrust**". Note the federal penalties for fraudulent documents.

*Trust in the regulations and oversight is key, **trust** in the system is key, **trust** in operator record keeping is key*

- # Whatever the customer wants and can be obtained
  - Buyers determine what they want
  - No standard - we buy parts based on operator specific requirements
  - Categories have no basis (A,B,C,D,X) because there are no standards
  - If a specific document can't be obtained, then it may not be accepted by an operator, this leads to a "treasure hunt" approach
  - Economic consequences are enormous, not just for negotiating a lower price for the part, but in contracted services, number of FTE's

- # Industry standards don't exist
  - Ad-hoc opinion of needs for both commercial and technical trace

- ## What do regulators say is required
  - ### FAA (FAR Part 121.380)
    - The current status of life-limited parts of each airframe, engine, propeller, and appliance.
    - The current status of applicable airworthiness directives, including the date and methods of compliance, and, if the airworthiness directive involves recurring action, the time and date when the next action is required.
  - ### TCCA (571.09) Installation and Disposal of Life - Limited Parts
    life-limited parts and assemblies incorporating life-limited parts shall:

    (a) have a technical history that includes the total time in service of the life-limited part; and
    - (b) be installed in accordance with section 571.13 of this standard.

INTERPRETATION 1992-36

Interpretation 1992-36

FAD Digest of Interpretations:

FAR 91.417(a)(2)(ii); FAR 121.380(a)(2)(ii); FAR 135.439(a)(2)(ii)

An operator needs to maintain a record-keeping system that will substantiate the time that has accrued on a life-limited part; the operator must show with a sufficient degree of certainty that the time elapsed on a life-limited part is correct.

FAR 91.417(a)(2)(ii); FAR 121.380(a)(2)(ii); FAR 135.439(a)(2)(ii)

Although a complete audit trail tracing a life-limited part back to its origin is not needed for all life-limited parts, an audit trail is required where the operator's records are so incomplete that an accurate determination of the time elapsed on a life-limited part cannot be made.

FAR 91.417(a)(2)(ii); FAR 121.380(a)(2)(ii); FAR 135.439(a)(2)(ii)

The "current status" of a life-limited part is the total time on the life-limited part.

Source of Interpretation: Letter to Mr. Callahan from Kenneth P. Quinn, Chief Counsel, dated June 1, 1992.

Current State - "A" Level Trace

- Ferry Flights or test flights NIS. This document must list NIS requirements and the engine serial number(s), and must also include:
  - flight number with city pair(s)
  - flight times and cycles of the flight(s)
  - aircraft MSN
  - date(s) of flight(s)
- Ownership trace, which could be represented by a bill of sale (Commercial Trace). Chain of custody, i.e. lease documents, et al.
- Birth Certificate (i.e. MRP, EDS, VSL, IIL, RR Blue Book, Engine Logbook, manufacturer's history report, shipping memo (GE/CFM), EASA Form 1 or FAA 8130-3 Form).
- Operator's life limited part history (ON/OFF) summary depicting each movement (installations and removals), including but not limited to:
  - part description
  - part number
  - part serial number
  - part total time/cycles
  - engine serial number
  - engine model
  - engine total hours/cycles
  - installation/removal dates
  - operating thrust rate (if applicable)
  - In the event that any life limited part was transferred from one engine to another or one operator to another, the following must be available from each operator:
  - Operator / engine start / end of operation disk sheets
  - Operator NIS
  - Operator certification statement (Non PMA/THC, Non DER)
  - Operator engine thrust rating statement or LLP status listing the thrust rating the engine / LLP was operated at
  - Ownership commercial trace
- In the event that any life limited part is transferred from one operator to another as a spare or while installed on an engine, there shouldn't be a gap in the part total hours and cycles or on the traceability history.

- Note: It is imperative that the data listed above is signed and/or stamped by a certified air carrier, operator and/or airline representative.

- Data errors
  - Errors in prior reporting, primarily hours which are typically rounding and do not impact the life remaining on the part
- Bankruptcies, hostile lease returns
  - Leads to data creation, missing reports, records produced by CAMO's or other entities including Lessors
  - Engines shouldn't wind up in dumpsters because they don't have sufficient "commercial" trace and reporting
- Ferry Flights
  - Sometime they are recorded, sometimes not.
  - NIS documents may not be available

- An industry strategy is needed to set in place a safe, trusted method of determining life remaining on a part and chain of custody to ensure that
  - Chronological history (i.e. Hours and Cycles, Operators, NIS's) is identified and verified by a legitimized source
  - The part meets configuration, based on the applicable specification

  - All mandatory requirements are met (SB's, EA's)
  - All deviations to OEM instructions are approved by buyer
  - Documents are not falsified
  - It was not salvaged

- The economic impact of the current system is unsustainable.

- We also need to consider that the current and future state data reporting by the aircraft… and i.e. cycles can be adjusted using derate on a flight by flight basis

GE Aviation presentaiton

Educate the industry

- Present the current burden of overkill we are all placing on each other

- Perception of more documents equal greater value is false.

- Present the FAA regulations and guidance on record keeping.

    This is a trusted system established by the FAA, and only "if" in question is the need to truly document chronological Times and Cycles used

    Don't forget the FAA Interpretation 1992-36. It mentions that <u>BTB audit should be the exception not the norm</u>.

    The future will consist of zero documentation burden, simply logging into the database and entering data and/or capturing data to support life utilized.

    This will provide a **harmonized database**, consistent method of acceptance of BtB and consistent dependable values for the assets

Educate the industry

- Ask for participation by all invested parties;

    Operators, Lessors, MRO's, OEM's, Aftermarket

- Working group (IATA)

- Spread the word

- Present at conferences, write and publish articles, blogs, et al

Talk about a timeline to implement change…

It is time for change