

MASTERING ENGINE SHOP VISITS: YOUR GUIDE TO SEAMLESS PREPARATION & PROCESSING

by Joachim Kabamba
CEO & Founder Kabamba Aerospace GmbH

www.kabamba.aero

About Kabamba Aerospace:

- Founded in 2008
- Representation of Vector Aerospace from 2006 to 2018 with more than 500 engine maintenance events processed
- First Engine Maintenance Consulting in 2013
- “Commercial” Borescope Inspections since 2014
- Loyal customer base in Europe, Africa and Asia

What we do:

- Engine Maintenance Consulting on P&WC, GE CF34 & CFM56 engines
- Borescope Inspections on PT6A, PW100, PW150, CF34 & CFM56
EASA DE.145.0076
- Part Sales for PT6A, PW100
- PBTH Calculations with our own Software: AHEAD
- Expert Witness Statements

3 Phases for engine maintenance events:

BEFORE, DURING and AFTER

BEFORE:

Assemble the following engine data:

- Engine specs at manufacture
- Maintenance history, including technical documentation of past ME
- Current engine specs
- Flight profile
- Future use of aircraft/engine

BEFORE:

→ Workscope Definition:

- Reason for removal (e.g. timex, incident, findings during PPI etc...)
- Objective of maintenance event (e.g. return to service, min WS, OVH, etc.)
- Establish escalation workscope
- Time frame of maintenance event
- Consult with engine OEM (tech. rep.)

BEFORE:

→ Workscope Definition:

- Check regulatory requirements (EASA, FAA, other local CAA)
- Check for on-site / in-field workscopes
- Check for possible OEM or previous maintenance event warranty
- Check for insurance coverage (e.g. FOD repair)

ANY MAINTENANCE EVENT SHOULD HAVE A DEFINED WORKSCOPE !

BEFORE:

- Establish which MROs have capability and capacity for the workscope
- Rental engine requirement: availability, location of rental & specs
- Determine qualified MROs (capability, capacity, rental availability, location)
- Provide available information to qualified MROs:
 - Workscope, engine data, images, pilot-, incident- and BSI-reports
 - Holding back information may lead to significant cost increases during ME

BEFORE:

- Obtain commercial proposals from qualified MROs
- Analyze proposals by
 - Discount/mark-up structure offered
 - Detail on required parts replacement, exchanges and repairs
 - Fixed price items
 - Best case / worst case estimate for total charges
 - Possibility & charges for supplying parts
 - Turn-around-time offered
- Select MRO to be awarded the maintenance event

ANY MAINTENANCE EVENT SHOULD BE BASED ON A COMMERCIAL PROPOSAL, EVEN IF THERE IS ONLY ONE OPTION !

DURING:

- Follow-up on shop visit by requesting regular updates and “bad news”
- Establish if it's required to witness opening of crate (incident engine)
- Establish if a dirty strip inspection (disassembly) is required
- Review post-induction cost estimate
- Perform table inspection
- If possible / necessary (e.g. significant cost overruns), supply parts

DURING:

- Check for parts/component warranties
- Obtain time frame for completion of maintenance event
- Approve cost estimate
- Follow-up on completion
- If required (cash before shipment), make timely arrangements for payment

AFTER:

- If applicable, check test cell run performance
- Review certification
- Review technical documentation
- Review final invoice and compare to approved cost estimate
- Check for instructions regarding post ME install & power assurance run

Q & A

Thank You!