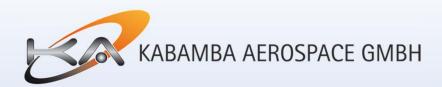


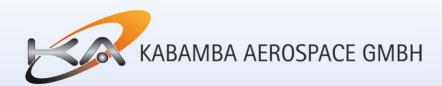
# MASTERING ENGINE SHOP VISITS: YOUR GUIDE TO SEAMLESS PREPARATION & PROCESSING

by Joachim Kabamba
CEO & Founder Kabamba Aerospace GmbH



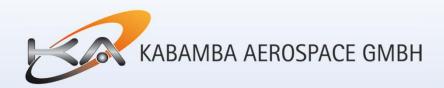
#### About Kabamba Aerospace:

- → 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



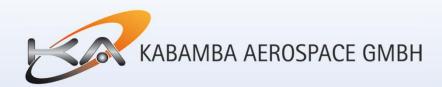
3 Phases for engine maintenance events:

BEFORE, DURING and AFTER

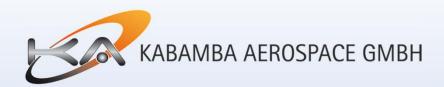
**BEFORE**:

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

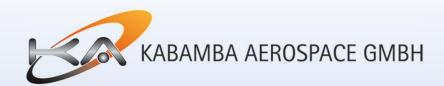


- → Workscope Definition:
  - Reason for removal (e.g. timex, incident, findings during PPI etc...)
  - Objective of maintenance event (e.g. return to service, min WS, OVH, etc.)
  - Establish escalation workscope
  - Time frame of maintenance event
  - Consult with engine OEM (tech. rep.)

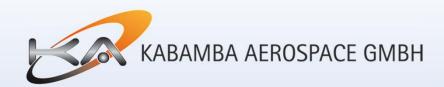


- → Workscope Definition:
  - Check regulatory requirements (EASA, FAA, other local CAA)
  - Check for on-site / in-field workscopes
  - Check for possible OEM or previous maintenance event warranty
  - Check for insurance coverage (e.g. FOD repair)

#### ANY MAINTENANCE EVENT SHOULD HAVE A DEFINED WORKSCOPE!



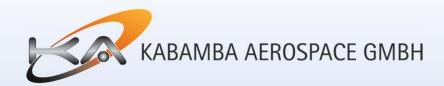
- > Establish which MROs have capability and capacity for the workscope
- > Rental engine requirement: availability, location of rental & specs
- → Determine qualified MROs (capability, capacity, rental availability, location)
- → Provide available information to qualified MROs:
  - Workscope, engine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



- → 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

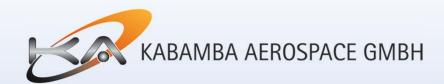
### ANY MAINTENANCE EVENT SHOULD BE BASED ON A COMMERCIAL PROPOSAL, EVEN IF THERE IS ONLY ONE OPTION!

Bern-Belp 15-SEP-2023



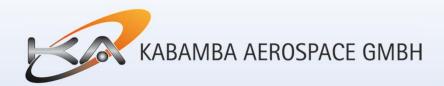
#### **DURING:**

- > 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!