

Engine OEM Panel

PW – GTF Engines

- 16% efficiency with reference to which engine, what is preventative measure on reducing spool up time - Currently approx. it is required for 8- 12 mins dry motoring during per engine start.
- Even assuming the start time issue is resolved by P&W, is the gear box going to manifest more issues during its operation?
- Fan drive system gear – additional maintenance cost, what are repair procedure and cost for repair, How we have controlled wear and tear / reliability issues caused by this additional mechanism. As this system is just behind fan how strong it is protected from FOD, how we have controlled scrap rate possibilities
- Pressure ratio – due to fewer stages –Always compressor blades took more load, which consequently lead to high scarpage rate – what is cost of blades with reference to stages. What is preventive action to reduce scarp rate, and any new repair procedure introduced on blades and vanes?
- Combustor Talon X – Although it is (Technology for Advanced Low NOx) – What is scrap rate in this combustor so far absorbed in different P & W engines, what is minor & major repair available and its cost.
- In there any issue on turbine blades revealed during its short period of operation?
- What is expected engine time on wing, first engine removal reason for shop & shop visit work scope and approx. shop visit cost with tentative TAT in shop for repair?
- What is additional technologies going to be introduce in Irkut MC-21 aircraft engine which is under development or did P&W going to follow same technology like this engine?

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CFM – Leap 1A

- What is **actual** fuel efficiency obtained so far with reference to -5B engines?
- Any operational delay due to leap 1A engine? Any fault message during engine operation what is it.
- Focus on Continuous improvement – More than 40 years of two strong aerospace leaders – is always keeping operator big burden on parts reliability (Main is CFM engines HPTB performance & Keep on releasing new P/N no fixed solution) Have we escaped this HPTB issues in Leap engines by introducing two stage HPTB ?
- What is expected life of leap engine HPTB and its overhaul cost. What is max temperature HPTB – Stg 1 withstand in Leap engine?
- What is 85% asset value engine - expected time on wing in harsh environment , first engine removal reason (hope not because of HPTB in leap engines) & shop visit work scope and approx. shop visit cost with tentative TAT in shop for repair
- Is the maintenance cost (shop visit) and TOW comparable for 1A and 1B?
- What is maintenance cost guarantees CFM going to provide to operator.