Industry Trends
Maintenance Cost
About Maintenance Cost Task Force (MCTF)

- MCTF is one of the oldest work groups of IATA. Over 50 airlines.
- Started in 1959 as PPM (Production Performance Measurement).
- The only annually updated worldwide database on maintenance cost.

Mission:
- Be the focal point on commercial airline maintenance costs for the purpose of cost management & benchmarking.

Objectives:
- Define and standardize reporting
- Identify trends and cost drivers
- Develop strategies to manage costs
- Share knowledge, experience, best practices

www.iata.org/mctf
MCTF Main Activities

- Annual data collection, analysis and benchmarking for 50+ airlines:
  - ~20% MRO expense
  - Confidentiality; De-identification
  - Industry standard cost reporting tool
  - Trend industry analysis
  - Maintenance cost per aircraft type

- Steering Committee Meetings

- Annual Maintenance Cost Conference (MCC)
  - Sept 23-24, 2015 in Miami, FL

- Benchmark Reports, publications and industry survey

- Subgroup: Aircraft Leasing Advisory Group
  - [www.iata.org/alag](http://www.iata.org/alag)
MCTF Data Collection & Analysis (1/2)

- Historically, a collaboration between airlines, MCTF & selected OEMs (Airbus for input tool, Boeing for output tool)

- Now, IATA has ownership of input/output tools & processes.

- Customized reports are available upon airline request.

- Toolset is ready to collect data by tail number & ATA chapter.

- Other sources and issues: DOT F41, OEMs, Consultants
MCTF Data Collection & Analysis (2/2)

- Data is collected from a managerial accounting point of view.
- Forex is provided by each airline.
- Data is de-identified and airline names are coded.
- Data is validated with airlines, not normalized for reports.
- Data is not distributed to non MCTF participants.
- ASM/ASK are required.
Industry Trends: Maintenance Costs
FY2014
World Fleet = 24,597 Aircraft (FY2014)

- By Aircraft Type
  - NB: 56%
  - WB: 20%
  - RJ: 16%
  - TP: 8%

- By Region
  - Americas: 38%
  - Europe: 25%
  - Asia: 15%
  - MENA: 7%
  - N. Asia: 12%
  - Africa: 3%

Source: ACAS 3.0 – April 2015
World Fleet = 24,597 Aircraft (FY2014)

‣ By Manufacturer

‣ Most Popular Aircraft Families

Source: ACAS 3.0 – April 2015
World MRO Market: $62.1 Bill. (FY2014)

By Segment
- Engines: 40%
- Line: 17%
- Base: 21%
- Comp: 22%

By Region
- MENA: 7%
- Africa: 4%
- Americas: 35%
- Europe: 27%
- Asia: 27%

10-year Forecast
- 2014: $62.1B
- 2024: $90.0B
  - Engines: 17%
  - Comp: 21%
  - Base: 22%
  - Line: 40%

Source: ICF International – Jan 2015
MCTF Fleet (FY2014)

- 47 airlines
  - 12 airlines operate both pax and freighter aircraft
  - 1 airline operate freighters only

- MCTF: 3,575 aircraft
  ⇒ ~15% of world fleet

- MCTF airlines by Region
  - By number of fleet size

REGIONS AS DEFINED BY IATA:
Africa: Sub-Saharan Africa
AS PAC: Asia Pacific
MENA: Middle East & North Africa
Americas: North & South America
Europe: includes CIS
N. Asia: China, Hong Kong, Macao, Taiwan, Mongolia
MCTF Fleet (FY2014)

(assertion) By A/C Category

(assertion) By Manufacturer

- WB: 34%
- NB: 52%
- TP: 5%
- RJ: 9%

- Boeing: 55%
- Airbus: 30%
- Embraer: 9%
- ATR: 3%
- Bombardier: 2%
- BAe: 1%
- Fokker: 0.1%
MCTF A/C Families (FY2014)
Direct Maintenance Costs (FY2014)

- Direct Maintenance Costs* (Line/Base/Component/Engine)
  - 47 airlines ⇒ $10.62Bill. (17% of World MRO Spend)
- By Segment
- By Element

* Direct cost only, excluding Overhead
Direct Maintenance Costs (FY2014)

- **Operational Data:**
  - 3,185 FH/AC
  - 1,351 FC/AC
  - Avg Age: 9.8yrs
  - Avg Utilization: 8.7hrs/day
  - FH/FC: 2.4hrs

- **Average Unit Costs (DMC):**
  - Average Cost per Flight Hour*: $1,082/FH
  - Average Cost per Departure*: $3,518/FC
  - Average Cost per Aircraft*: $3.06M/AC

* Direct cost only, excluding Overhead
Direct Unit Cost by A/C Family

21 A/C Families with 5+ A/C and 3+ airlines
DMC are only the tip of the iceberg

DMC: $10.62 Bill.

Spares & Inventory: $7.80 Bill.

OH: $1.76 Bill.

MR: $454 Mill.

FY2014 – 47 airlines
Total Spares & Inventory

On average, for every $ spent on maintenance, airlines hold ~$1 of spares & inventory.

- Engines: 43%
- Rotables: 40%
- Others: 17%

34 MCTF airlines
Aircraft Leasing & Maintenance Reserves

- 41% of total MCTF fleet is under operating lease
  - World average is 39%

- 72% of MCTF airlines pay MRs
  - Total MRs: $454 Mill.

- Engine maintenance (incl. LLPs) = 76% of MRs
Total Technical Division Cost

- Technical Division Cost = DMC + Overhead
- Average OH: 19% of Technical Division cost

36 MCTF airlines
What’s Next in Maintenance?
What’s Next in Maintenance?

- Aircraft health monitoring systems
- Wearables and mobile tech devices
- Predictive maintenance
- Composite repair capabilities
- Additive manufacturing

Source: Oliver Wyman – MRO Survey 2015
What’s Next in Maintenance?

- Estimated to decrease MRO spending by 15 to 20%

- But first, the market need to innovate:
  - With a clear vision and strategy
  - Identify opportunities and isolate the most promising
  - Innovation process to transform opportunities into pilot projects and market roll-outs
Summary

- Maintenance costs:
  - Engine maintenance: 40% of DMC (76% of Maintenance Reserves)
  - Airlines subcontract 65% of their maintenance activities
  - Overhead: 19% of total Technical Division costs
  - For $1 spent for maintenance, airlines hold $1 of inventory

- Real-time aircraft health monitoring and big data are the next big thing.

- Want to know more?
  - Join MCTF!
Any questions?

Chris MARKOU
Head, Operational Cost Management
MarkouC@iata.org

Geraldine CROS
Manager, Operational Cost Management
CrosG@iata.org
More Information on MCTF?

- Visit www.iata.org/mctf
- Contact mctf@iata.org

- Maintenance Cost Conference MCC 2015
  - Sept 23-24, 2015 in MIA