11 June 2020

A Prediction Model for the Cost per Flying Hour (CPFH)

Michail Bozoudis
Senior Cost Engineer
michail.bozoudis@ncia.nato.int

Cost per Flying Hour (CPFH)

Predict, Monitor and Control O&S costs

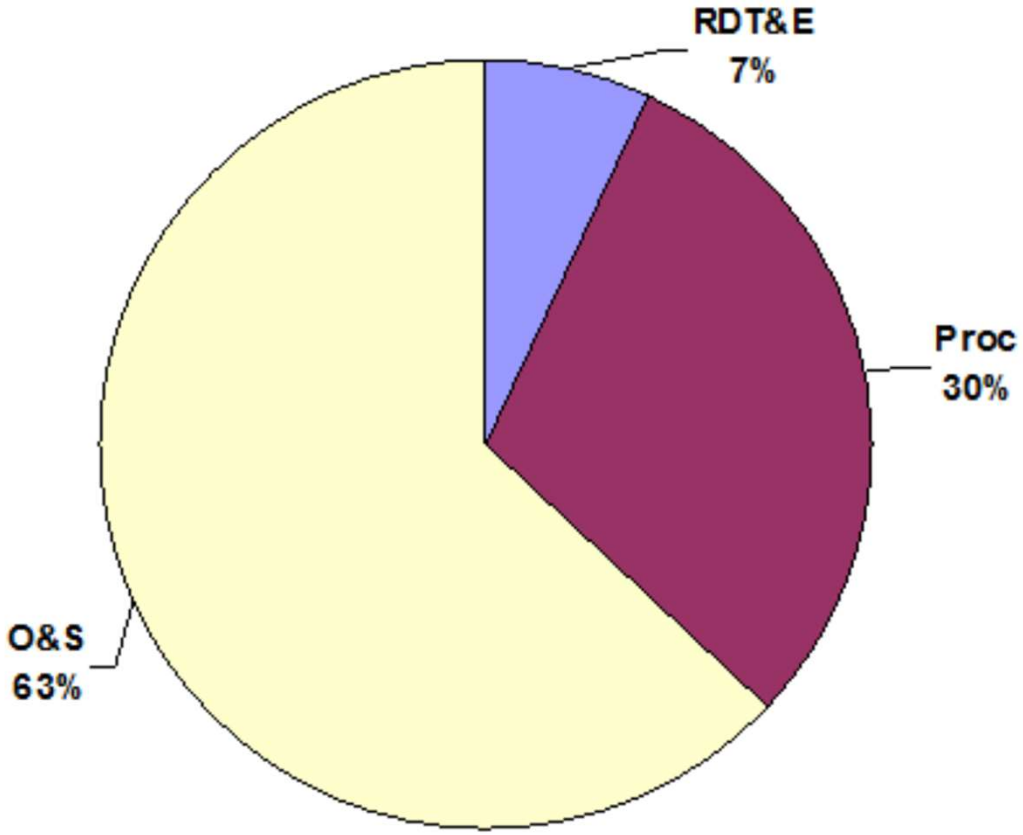
Mirage 2000-5

Expensive?

C-130H 'Hercules'

Cost-effective?

Life Cycle Cost of aircraft



$$O\&S\ Cost = CPFH\ * FH$$

$$LogCPFH = -a + b * LogEMPTY + c * LogSFC$$

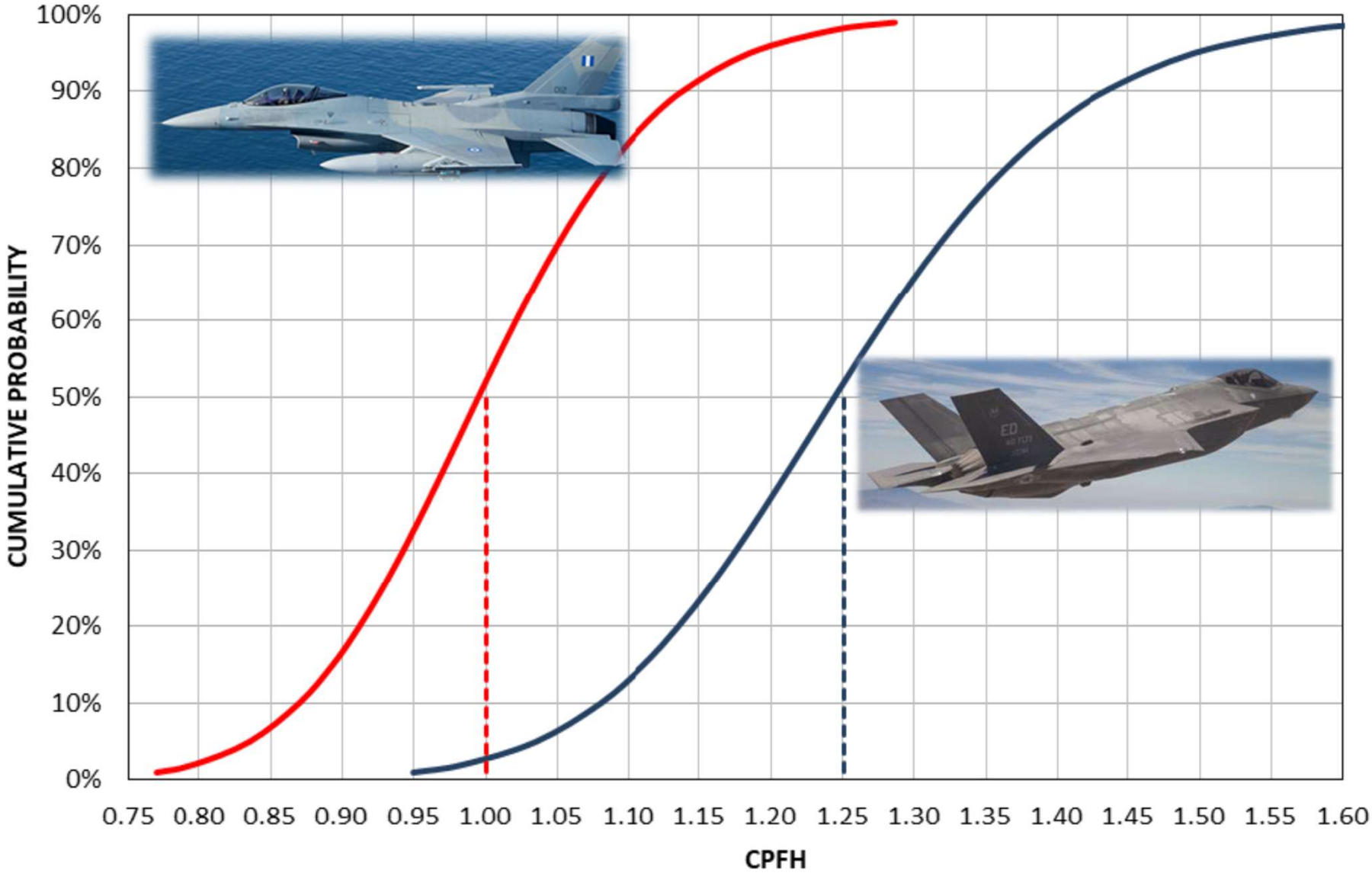
- Length (longitudinal axis)
- Empty Weight
- Maximum Take-Off Weight (MTOW)
- Maximum Specific Fuel Consumption (SFC)
- Maximum speed
- Ceiling

$$LogCPFH = -a + b * LogEMPTY + c * LogSFC$$

- ‘Hangar Queens’ → Cannibalization

$$LogCPFH = -a + b * LogEMPTY + c * LogSFC$$

- No contractual framework for Follow-on Support
- Expensive spare parts

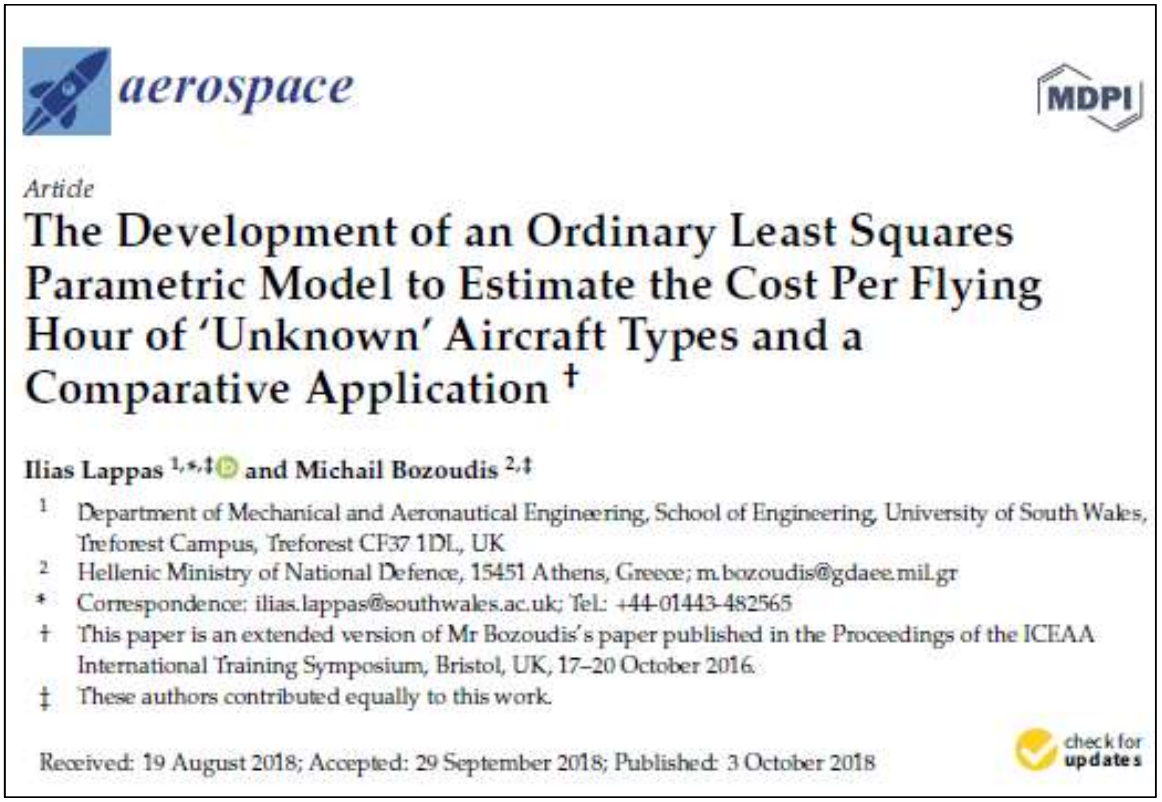

100%
90%
80%
70%
60%
50%
40%
30%
20%
10%
0%
CUMULATIVE PROBABILITY
0.75 0.80 0.85 0.90 0.95 1.00 1.05 1.10 1.15 1.20 1.25 1.30 1.35 1.40 1.45 1.50 1.55 1.60
CPFH

Take-Aways

- High discrepancies identified. What's next?
- Be prepared for opposition
- Affordability Assessment

Aerospace 2018, 5, 104; doi:10.3390/aerospace5040104

www.mdpi.com/journal/aerospace



aerospace

MDPI

Article

The Development of an Ordinary Least Squares Parametric Model to Estimate the Cost Per Flying Hour of 'Unknown' Aircraft Types and a Comparative Application †

Ilias Lappas [1,*,‡] and **Michail Bozoudis** [2,‡]

1 Department of Mechanical and Aeronautical Engineering, School of Engineering, University of South Wales, Treforest Campus, Treforest CF37 1DL, UK

2 Hellenic Ministry of National Defence, 15451 Athens, Greece; m.bozoudis@gdaee.mil.gr

* Correspondence: ilias.lappas@southwales.ac.uk; Tel.: +44-01443-482565

† This paper is an extended version of Mr Bozoudis's paper published in the Proceedings of the ICEAA International Training Symposium, Bristol, UK, 17–20 October 2016.

‡ These authors contributed equally to this work.

Received: 19 August 2018; Accepted: 29 September 2018; Published: 3 October 2018

check for updates

DANK U WEL !