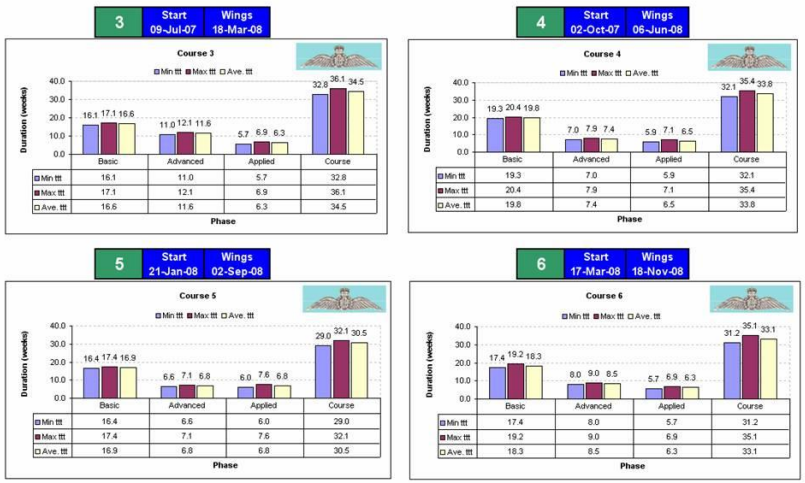
Moderate complexity, 8 weeks work (first project)

RAAF Advanced Flying Training

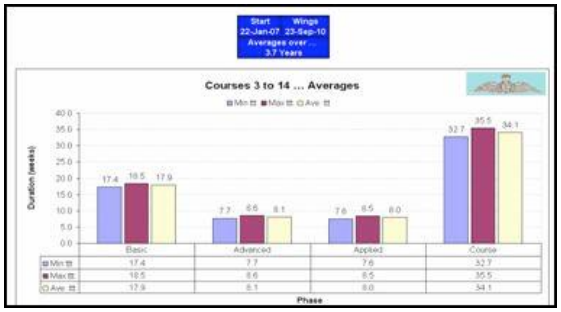
RAAF Advanced Flying Training

- For AIR5428 interests within Boeing Defence Australia, Rob built a model of the Advanced Flying Training System at No 2 Flying Training School (2FTS) using ExtendSim, a COTS software modelling & simulation tool
- Purpose – understand the impact of changes to resource numbers on throughput and time to train.
- System was modelled in significant detail, simulating individual students moving in courses through the curriculum over a number of years.
- Results validated against historical system performance data from 2FTS & produced time to train metrics within **2.5%** of the actual system.

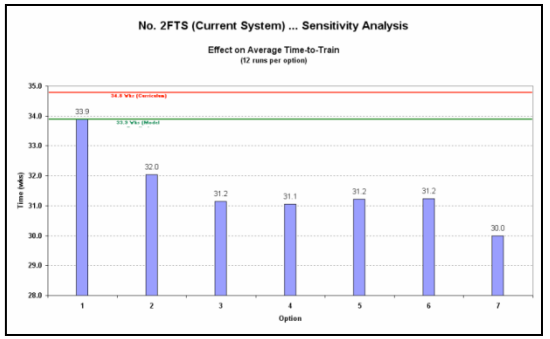


RAAF Advanced Flying Training

- Single course time to train (ttt)
  - curriculum = 27.2 weeks
    model = 28.7 weeks (10 runs)
- Steady state ttt (4 years)
  - curriculum = 34.8 weeks
    model = 33.9 weeks (12 runs)
- Sensitivity analysis for key metric (ttt)
  - Add 1 x TO (FIHT* & Wings)
    model = 32.0 weeks (12 runs)
  - Add another
    model = 31.2 wks (12 runs)



Option	QFI	Aircraft	CTO	TO	PTT	CPT	Ave.ttt	33.9 wks
1	24	24	5	2	2	3	33.9 wks	100.0%
2	24	24	5	3	2	3	32.0 wks	94.5%
3	24	24	5	4	2	3	31.2 wks	91.9%
4	24	24	5	5	2	3	31.1 wks	91.6%
5	24	24	5	4	3	3	31.2 wks	92.1%
6	24	24	5	4	2	4	31.2 wks	92.2%
7	24	28	5	4	2	3	30.0 wks	88.5%



*FIHT = Final Instrument Handling Test

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4	24	24	5	5	2	3	31.1 wks	91.6%
5	24	24	5	4	3	3	31.2 wks	92.1%
6	24	24	5	4	2	4	31.2 wks	92.2%
7	24	28	5	4	2	3	30.0 wks	88.5%

- Resources
  - QFI = Qualified Flying Instructor
  - CTO = Certified Testing Officer (eg Flight Commander, XO)
  - TO = “special” Testing Officer, ie Chief Flying Instructor and CO
  - PTT = Part Task Trainer
  - CPT = Cockpit Procedural Trainer
- Sensitivity / what-if analysis
  - Baseline figure = 33.9 weeks (Option 1). Added a 3rd TO and improved 1.9 weeks (Option 2). Added 4th TO and improved further 0.8 weeks (Option 3). Added 5th TO and no improvement (Option 4). Option 5 had 4 x TO with extra PTT. No improvement. Added extra CPT in Option 6 and no improvement. Added 4 x aircraft for Option 7 and improved by 1.2 weeks.

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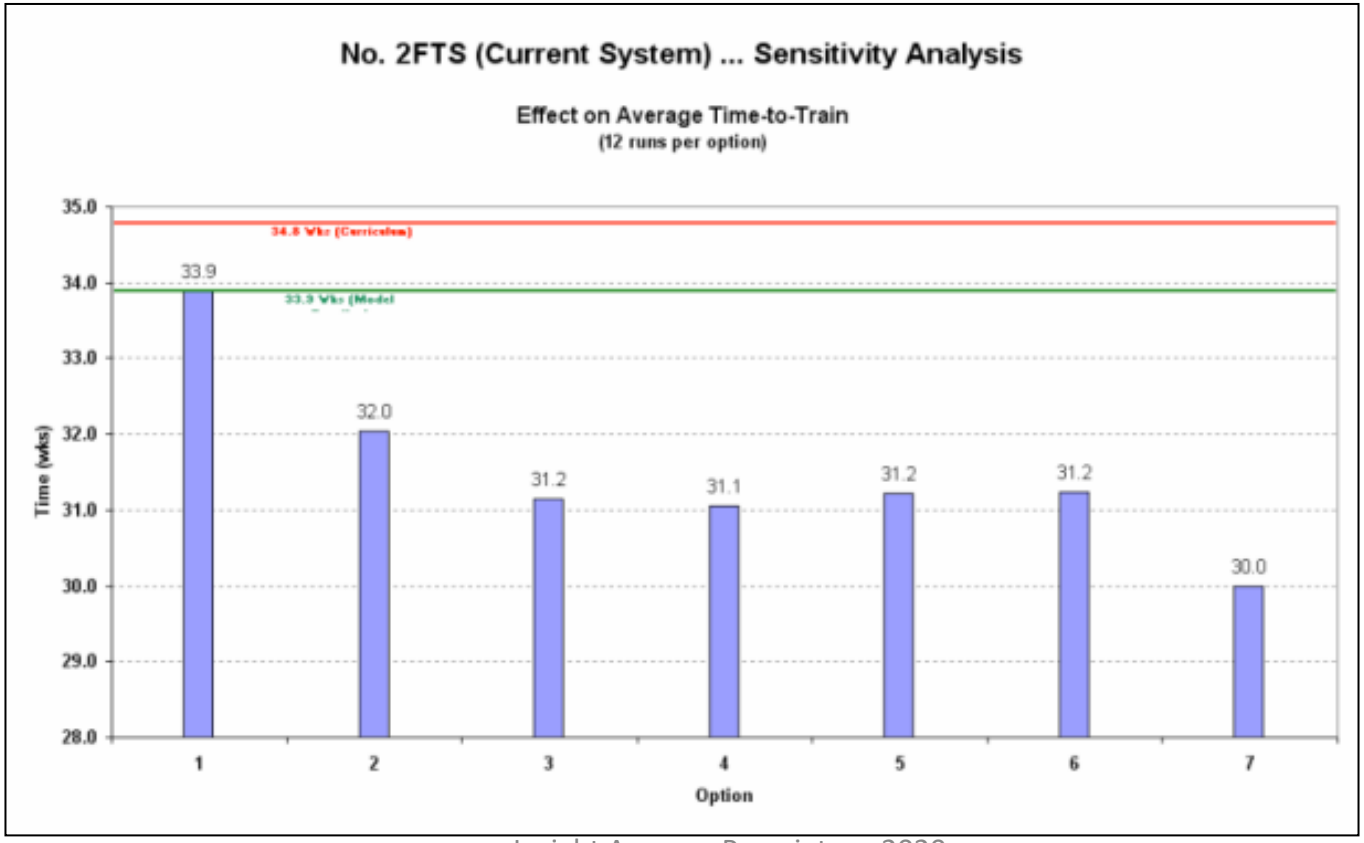

So what?

- TO were a significant bottleneck to trainee throughput.
- The 2 x TO (CFI & CO) were the only instructors permitted to assess trainees for the final two test events at the unit (historical “gatekeepers”).
- With 5 other FLTCDRs and/or senior instructors (CTO) at the unit, the number of TO could have been increased by anointing CTO to undertake both CTO & TO duties.
- The training unit could provide approximately 10% faster throughput by anointing 2 existing CTO, thereby increasing TO resource pool from 2 to 4.

extendsim authorized consultant

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