

My Thoughts on Tug Options for DDSC

I have spent a bit of time on planes in recent weeks and been able to turn my mind to the tug debate. I must say we must all give our enormous thanks to Keith for doing such comprehensive amount of work, so we now know the advantages and pitfalls of an autotug project.

It has occurred to me this week that it is not an autotug viability debate but a club viability debate, and (if we are to remain a two-tug operation) we are committed to two engine refits in the next year or so – this changes some of the analysis.

Bob Llewellyn rang me this week with the information that Dave Sharples is undertaking an engine mount design for a V8 Chev. We would be foolish to do this when someone is already doing it. Bob's advice is to hold off while someone else is doing the work and wearing some costs. In addition, there is now some lack of clarity on the STC cost, the use of experimental rules in prototypes, etc. Bob's information is that the STC costs are around \$100,000. He said that there is a 100% quality control approach required to validate the type certificate, and reverse engineering will cost a lot more money in the long run.

Talking to Neil Dunn, their autotug is less than satisfactory and has only done 500 hrs. They are waiting for Lake Keepit to do their Chev8 engine and will replace their 6 with an 8 if it proves satisfactory. Their advice is that the autotug would take at least 9 months to get everything right. If we take on the autotug project with one of the airframes, and the other engine fails/needs reconditioning, we are stuck from both a logistics and financial position.

The club is not in a financial position to expend significant sums on tugs in the next two years. This has a huge bearing on what options we take. We could not commit the club to a loan for an experimental/R&D project.

I have looked at five options for tug operations for the next 6 years as follows:

One tug operation

- Pawnee 235

Two tug operation:

- Two Pawnee 235s
- One Pawnee 235, One Autotug
- One Pawnee, One lightweight tug (eg Cub)
- One Autotug, One lightweight tug (eg Cub)

The least cost operation of course is a single tug operation.

The most reliable operation is a two tug operation with either two Pawnees or a Pawnee and a lightweight tug, because the autotug has project risks. The cost difference between the least cost (two-tug) option and the most cost (two-tug) option is a cost of between \$2 and \$3 per launch.

If we commit to a two-tug operation, we are committed to two tug engines in the next 12-18 months. We cannot commit to an autotug before a Lycoming as we need to guarantee a serviceable tug to members.

Despite all the analysis the risks for an autotug are:

- The project fails altogether
- The project is delayed
- The tug cannot be used for some reason
- The costs exceed the estimate
- The engine doesn't perform as desired
- Regulatory issues intervene
- Other tug or engine developments leave us with a lemon
- The personnel involved drop out for any reason.

My personal views are that we should not be involved in developing aircraft – that is up to others. Our members want and deserve low risk options.

We still have some concerns on the current tugs. It may be possible that all of MLR engine hours were not recorded and its engine life is closer to its end than we first reckoned. Fabric on both airframes needs work. SWR is nearing the 2000 hrs, indicating at least that we are approaching the end of its engine life (but do not know when).

My preferred way forward is:

2005:

1. Continue as a two-tug operation.
2. Top overhaul MLR @\$8000 before the State comps
3. Continue to upgrade MLR (Cowl flap, new radio, purchase vario, evaluate for refabrication) – up to \$10000 expenditure.
4. Carefully manage finances and “segregate” tug engine overhaul and fabric costs.
5. Evaluate progress on autotugs by others.
6. Hope both engines see 2005 out.

2006:

7. Re-engine SWR when advised by LAME.
8. Evaluate for refabrication.
9. Carefully manage finances and “segregate” tug engine overhaul and fabric costs.
10. Evaluate progress on autotugs by others.
11. Evaluate other tug options along the way such as Tecnam, Jabiru, Diesels, etc.
12. Evaluate whether we continue to be a two-tug operation.

I would see that the Autotug is still a possibility in the future, but we cannot do this now. The principles are:

- DDSC finances are not flush with excess and we need to carefully manage things for a while.
- the club must not be exposed to R&D risk
- We cannot put the club in financial risk by taking on anything that has a significant risk component.
- We must guarantee members reliable tug operations even if marginally more expensive in the short term.
- We should evaluate what others are doing in tug development, and use whatever information is available and free.

In addition, my personal view is winching is not a direction the club should take. Our niche is a large cross country club that provides top-end opportunities. If people want cheap launching they can go to other clubs. Trends in society are that there are less people who want to do things like sitting in a winch all day.

I have attached a rough spreadsheet of the various tug options. As with Keith's analysis you can play around with numbers at will and there are lots of assumptions made. However, what it says to me is that we cannot take the autotug path first ahead of a straight Lycoming re-engine first, but can re-consider the autotug after that. It also says that we don't have a genuine two-tug operation – rather a 1.2 tug operation at the capital cost of 2. If we are really interested in saving tug costs, we would only have one.

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