

Wing Aviation Pty Ltd Briefing – BMAC Field - 7 March 2019

Introduction

Mr Phil Swinsburg , Head of Global Flight Operations for Wing Pty Ltd assisted by the Canberra based Operations Manager of Wing addressed approximately 35 BMAC members at the clubhouse on Thursday 7 March 2019.

Phil explained to the BMAC members present the primary aim of his visit was to provide club members with a brief introduction the Wing company, the type aircraft the company would be operating, the type and scope of operations that would be operated from their Vickers Street (Mitchell) facility and finally to gain an insight into the operations of the BMAC.

Phil spoke to the assembly for an hour and answered in detail all operational and technical questions put by BMAC members.

The following are salient points from Phil's presentation:

- Wing Pty Ltd grew from a company named **X**, a diverse group of inventors and entrepreneurs who build and launch technologies aimed to improve the lives of millions (<https://x.company/>). To read more about **Wing** go to <https://www.wing.com/> or <https://x.company/projects/wing/>
- The aircraft used by Wing are purpose designed and built semi-autonomous drones controlled by Wing's **Unmanned Aerial System Traffic Management (UTM)** system enabling a high volume of drones to share the skies and fly safely over people, around terrain and buildings, and near airports. The UTM has been developed consultation with NASA, the US Federal Aviation Administration (FAA) and the Australian Civil Aviation Safety Authority (CASA) to provide an industry-led solution to safely integrate and manage drone operations in low-altitude airspace. To read more about the Wing **UTM** go to <https://www.wing.com/utm-platform/>
- Wing's UTM system currently restricts drone operations entering the designated boundaries of the BMAC Crace grassland field and environs.
- The current Wing's aircraft is a hybrid fixed wing aircraft that takes off vertically and transitions to forward horizontal flight capable of 125 KPH in cruise mode to reach a merchant and customers quickly. The company aims to deliver an order within ten minutes of placing that order provided the customer was within a range of 10 km of the Vickers Street operations base.
- To achieve the required flight profiles aircraft has 12 hover motors arranged within 4 zones and two cruise motors. Safety systems include by dual redundant batteries, flight control computer, independent mission control computer, GPS navigation system, mobile phone (LTE) communications system and camera based **Odometry** to estimate change in aircraft position over time, particularly during pickup and delivery hover phase. See Figure 1.

- In relation to previous aircraft noise issues, Wing has redesigned the hover propellers in order to reduce the audio pitch and produce less noise. The redesigned asymmetric propellers are to be fitted to production aircraft. Wing's tests have measured noise levels of 55Db at 20 metres, typical noise sources somewhere between normal suburban activity and busy office activities, restaurant noise and loud conversations.
- Wing aircraft operations conform to standard CASA UAV operational requirements, specifically less than 400 feet AGL. The current CASA approved operating area for Wings aircraft are those northern suburbs within 5 to 6 km of Mitchell, (Palmerston and Crace initially and then Franklin, Harrison, Gungahlin,). Future operations may include all of Belconnen. Wing anticipate they will operate 20 to 25 aircraft initially and more if demand increases.

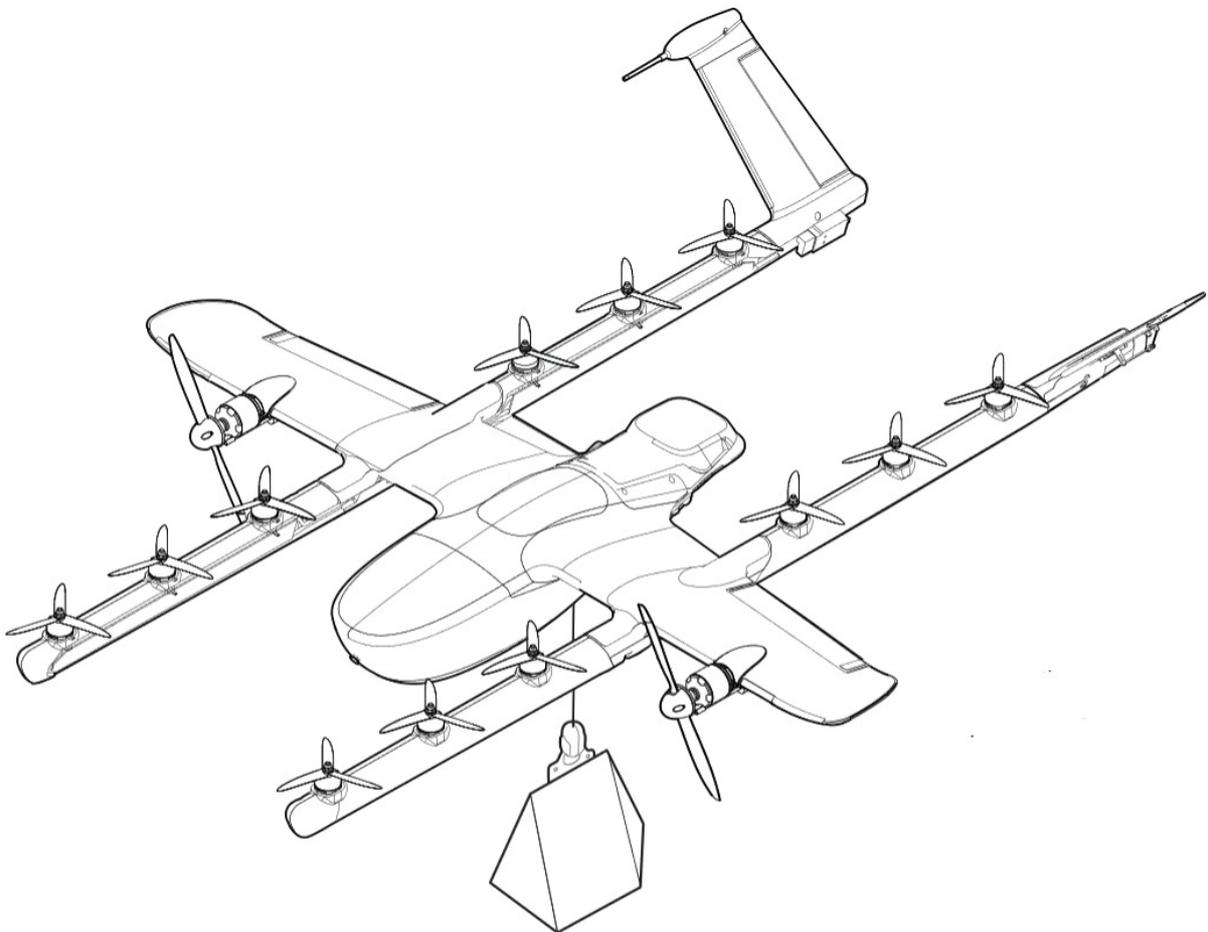


Figure 1: Current Wing Hybrid Aircraft ¹

¹ Image © X Company – The Moonshot Factory

Summary

Overall the Wings briefing by Mr Phil Swinsburg was erudite, detailed and professional. Phil spoke at length about the aircraft and the type of operations likely to be conducted from their Mitchell facility. In the opinion of the author, Phil's presentation managed to allay any concerns I may have had about the impact Wing's aerial delivery operations may have had on normal BMAC club activities.

I look forward to the day I can order and have delivered within 10 minutes my long black and egg and bacon roll from King Arthur's Feast or Gommy's Café in Mitchell.

Images taken on the day



Figure 2: Mr Phil Swinsburg, Head of Wing Flight Operations - Figure 3: Demonstration of the hover delivery system

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