



contributed by Graeme Porter

First, build the aircraft. Then learn to fly.

Graeme Porter was in Whitianga recently and checked out progress on a new student build project.

AFTER many months of planning and ground work the Whitianga based Mercury Bay Area School Vans RV-12 project finally got underway on February 15. The kitset, an all metal two seater, is being assembled in a workshop adjacent to the airfield by a group of nine year 11-13 students. The project is being overseen by aircraft engineer Jim Evans and a group of adult mentors along with input from technology staff members from Mercury Bay Area School. Construction school is every Wednesday afternoon from 12 -5 pm. A recently completed RV-12 built by Alan Coubray resides on the airfield so final product incentive is easily kept in mind. The workshop has been set up with three workstations and a large shelving system to safely store the many parts needed for the aircraft. The basic and some specialised tools are neatly hung on the wall so they are easily accessible for the students.

First - Read the book

To introduce the students to aircraft metalwork techniques the earliest sessions were occupied with making some test pieces to gain experience in tool use. The next requirement was to read a scale plan and measure accurately on the materials provided, then follow a procedure accurately and decipher how that translates on to the sheet metal. The result, a handy wee toolbox to put odds and ends in. Fortunately the mentors involved with the project have spent many hours during their working life careers using the imperial measuring system - something quite foreign to today's students.

When it came to aircraft building proper, students were allocated into teams of three students each. Each team has one or two mentors assigned. The first group was assigned the Vertical Stabiliser, Group Two were given the Rudder to build and lastly Group Three had the task of assembling two parts for the Anti Servo Tab. All construction steps are as per the manual, followed to the letter and signed off by the student. Although the manual takes time to get used to, students are beginning to understand the procedural vocabulary for each process.

During the April school term break a smaller group of students couldn't stay away and steady progress was made in assembling tail cone bulkheads. The next stage was to offer up the outer tailcone skin covering. Students and mentors were motivated in completing this large section which signified a major step in the build process.



Students Casey Demler-Wakelin, Cody Bennett and Jake Vowles (obscured) at work.



Mentor Jim Evans working with student Hayley Betteridge.



Students Jake Vowles, Cody Bennett (in foreground). Mentors Tony Turner (obscured) and Brian Yelland.



Left to right Mentors: Charles Russell and Bob Walters (obscured). Students: Jacob Sanders and Shaun Hall.

The assigned team worked very well when two pop rivet guns were in operation and two students removing the clecos as they moved from the centre outwards.

Tail group construction

While one group worked on the tail cone, the other two groups were working on the Vertical Stabiliser (fin) and the Rudder. The skeleton of the stabilator took shape with the aft ribs getting secured by rivets. It didn't take long for the ribs to be put in place. Then the skin was placed over the framework using the clecos to line up the holes. This was the time for a trial fit of the stabilator to the tail cone and once happy with the alignment, this was placed back onto the bench so the skin could be riveted into place. Next was the match drilling and fitment of the stabilator hinge taking care to achieve careful alignment with the anti-servo tabs. This took some head scratching and deep and meaningful conversation with both students and mentors. As this issue prints the vertical stabiliser and rudder along with the stabilator have been fitted to the tailcone. There was a realisation that a milestone in the build has been reached and the next session saw some of the students commencing assembly of the wings. A group had already spent time prepping wing components by cleaning off preservative coating and deburring in preparation for priming. A two day field trip to Auckland at the end of May as guests of the Air New Zealand Engineering Training school along with other visits to Allied Metal Industries and Ardmore airfield to view various projects underway gave a broader understanding of career choices using the skills being acquired.

Overall the students are happy with their tasks and progress especially well when they see each completed component. They are also quite responsive to learning and following logical procedures based on the aircraft manual, along with many little tips of experience from the mentors. An incentive programme is in place (and working well) to reward exceptional attitude

with an experience flight by local Mercury Bay Aero Club members in their aircraft. From the students' point of view, all have expressed in various forms that this project offered experience at no cost and an opportunity to partake in something that is quite different for youth in Whitianga.

We look forward to seeing the completed aircraft in the not too distant future.