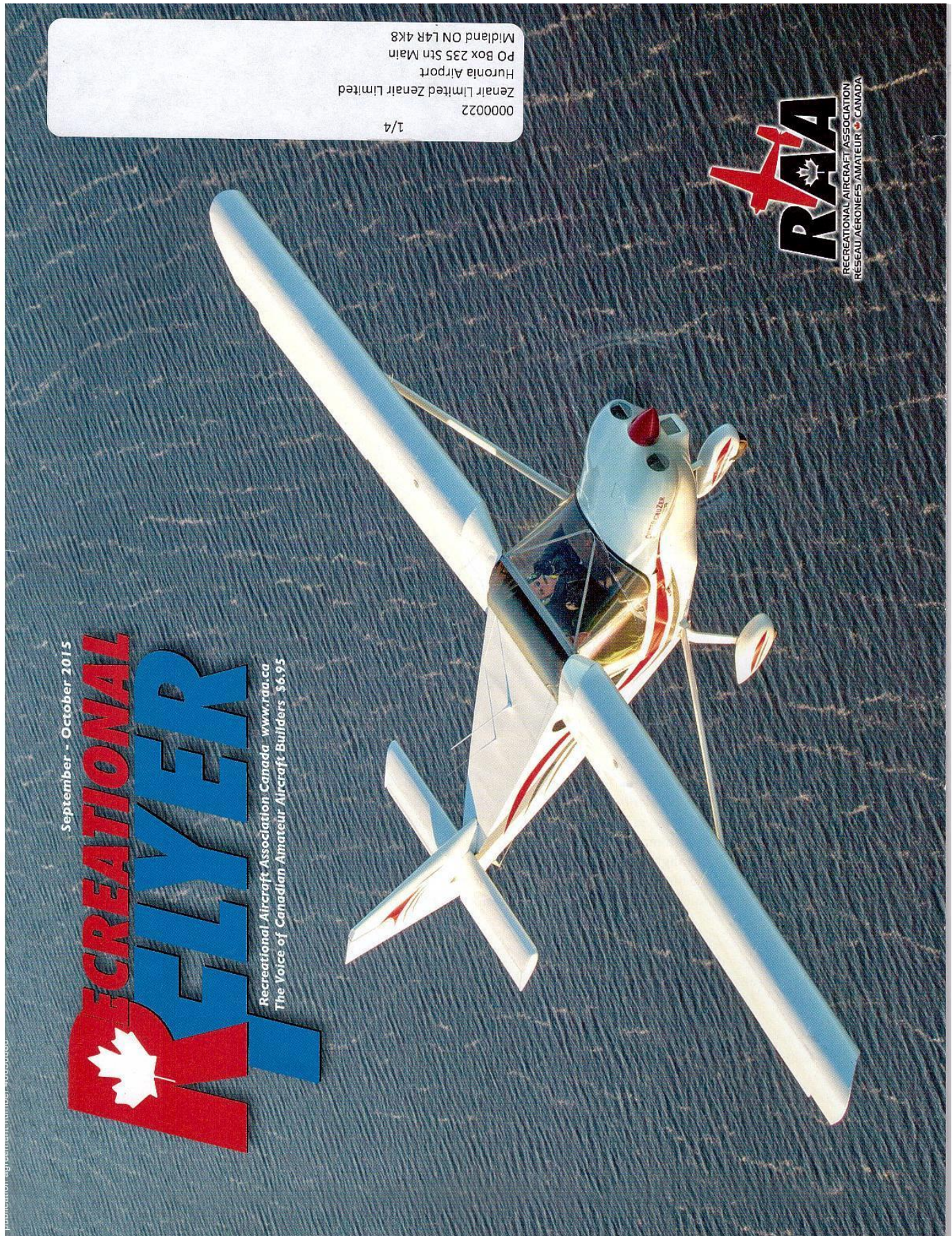


The mission of the RAA is to promote recreational aviation and amateur-building of light aircraft for personal enjoyment and educational purposes. This article was printed in the RAA's bi-monthly magazine: the Recreational Flyer, in 2015.





# *A New Club*

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# 6 Airplane

## *Chapter 85 Starts Construction of their Zenith 750 Cruiser / by Peter Whittaker*

AT THE BEGINNING OF 2015, RAAC Vancouver Chapter 85 based at Delta Heritage Airpark made the decision to begin a homebuilt project. This came about because the chapter airplane, a Druine Turbi, had been damaged in a landing accident and the remains had been sold in 2013 to an RAAC member in Brandon, Manitoba. With funds in the bank account it was decided at the January 2015 meeting to use the money to build a new chapter aircraft, the intent being that it would be for the use of chapter members and follow the model used with the Turbi.

The decision to build an aircraft then initiated a number of questions and debates that took place over a 7 month period until a final decision was reached to purchase a Zenith 750 Cruiser kit project from Zenair Ltd in Midland, Ontario. One of the first tasks was to determine who the core builders would be and establish a builders group out of the overall chapter membership. The builders group started with 12 people and has grown to include 16 people at the time of writing.

Meetings took place starting in January to deal with questions that were oriented to finding an aircraft project that would be suitable for

chapter use by a range of members with different levels of flying experience and at the same time have a reasonable aircraft for cross country flights, which in the lower mainland of BC, would inevitably involve mountain flying. A few meetings were required to determine if the chapter wanted to consider buying a used certified aircraft such as a Cessna 150 or 152, refurbishing a non-flying certified aircraft as a restoration project or building a kit aircraft. The overriding consideration was that members were not interested in a multi-year long drawn out project. This led to the realization that a project would have to develop relatively quickly in order to foster and maintain enthusiasm in the project. The key attributes that were finally decided upon included:

- All metal construction for durability and corrosion resistance

*Matt Heintz goes over construction details with chapter participants the Saturday of the workshop. The Cruiser was chosen since it met the chapter's mission parameters - high wing, all metal, tricycle gears and side by side seating.*

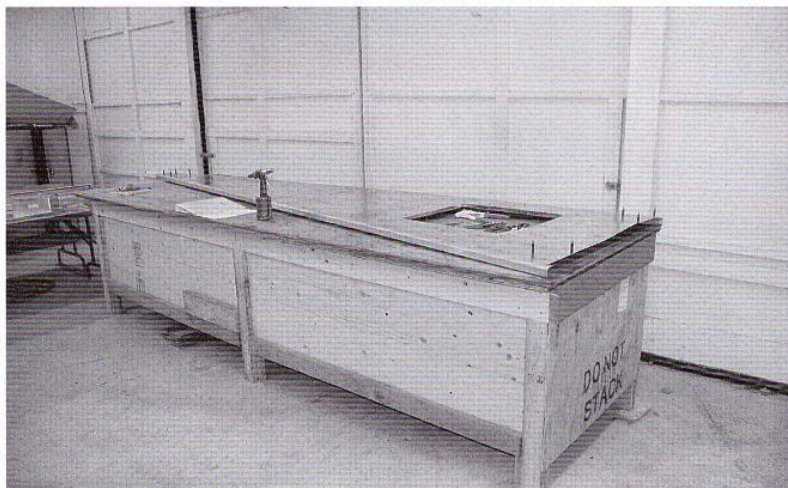




- Proven construction methods since most members have not built an airplane
- Tricycle gear (not everyone has taildragger experience)
- Readily available and serviceable engine (Continental or Lycoming; no auto conversions)
- High wing
- Robust and short field capable
- 2 seater acceptable since most previous Turbi flights were single or with 1 passenger
- Good leg room and head clearance, side by side seating (not the case in the Turbi)

Members wanted to gain hands on building experience so a "quick-build" kit was ruled out.

The aircraft attributes decided upon by the building group were presented to the general membership for discussion and further input at several of the monthly meetings. At this point, the building group met to develop a list of potential kit projects. At several stages during the search process, tempting "good deals" for



One of the build tables the chapter built for the project. Here, the aft fuselage bottom lies clecoed together prior to drilling full size holes, deburring and final assembly.

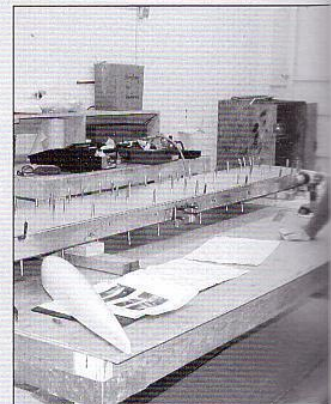
partially completed kit projects were brought up. The underlying concern in all of these was the state of workmanship, the completeness of the remaining parts inventory and how much re-work would have to be done. It was finally decided that the most expedient approach was to buy a new kit so that the chapter had full

control over the building process and support from the manufacturer.

After going through an evaluation of kit aircraft that met the criteria, it came down to the Zenith 750 Cruzer and one other high wing all metal kit. The Zenith 750 Cruzer was selected for the long running and consistent history of kit development

## Team Leaders

Workers are divided into 4 teams. From left to right: Cyril Henderson (forward fuselage and firewall) discusses the construction of the cabin; past president John Macready with the empennage, Chapter president Peter Whittaker describes the construction of the aft fuselage and Perry Delano explains wing construction to chapter members. By breaking up the workload and assigning teams to specific components, a more efficient utilization of manpower is achieved with less chance of duplication or mistakes. That said, it's still a learning experience. That's what RAA is all about. Exciting times!







*The Cruiser goes together quickly. The kit chosen was not a quick build since part of the rationale was to maximize participants learning opportunity. The aft fuselage is shown here: a way to go, but it's starting to look like an airplane.*

from Zenair Ltd, competitive pricing and ongoing support and interest in the chapter 85 project. Chapter 85 had also built a Zenith CH 600 with Chris Heintz during Expo 86 in Vancouver, several members had experience building Zenith aircraft (701, 601 HDS) and this provided a level of base knowledge for moving

ahead with a Zenith project. Part of the commitment from Zenith Aircraft was to conduct a kick-off building workshop designed to get the project started. A possible follow-up weekend workshop later in the building process is also planned. All of these factors helped to make the decision to build a Zenith 750 Cruiser. During

the summer of 2015, John Macready, past-president, was in Ontario and was able to visit Zenith aircraft and have a flight in the 750 Cruiser. That flight clinched the choice!

The decision was finalized at the July chapter meeting to purchase the Zenith 750 Cruiser kit plus the firewall forward and finishing kits. This would leave engine and instruments which would become separate projects for future scrounging and hunting for deals. The order was placed in early July and the kit was delivered in September. Preparation work began with discussions and advice from Zenith on setting up the chapter workshop. Chapter 85 has a permanent aircraft maintenance workshop for members to use for repairs and annual inspections. The building project would take over the workshop for the duration of the build and the entire kit would be located in the workshop. Four worktables would be needed, three 4' X 12' tables were built, one from plywood from the kit shipping crate and a fourth table was donated which







was 4' X 8'. Tools were acquired from members and a few were purchased along with zinc chromate primer plus reducer.

In early October, Matt Heintz from Zenair in Midland, Ontario came out to Vancouver / Delta to conduct the kick-off building workshop. This began on a Saturday morning with a presentation and review of aircraft building standards and basic building techniques. The building seminar then moved into the workshop where everyone had a chance to build a practice piece which involved reading a small design plan, arranging L angle stiffeners onto a square piece of sheet aluminum, drilling and clecoeing 2 sizes of rivet holes, drilling for an AN3 bolt and then riveting and installing the bolt.

*Top: chapter members work on practice pieces at the October kick-off. Left, top, Shawn Connolly, Perry Delano, Cyril Henderson and Gerard van Dijk work on the horizontal stabilizer. Left, fuselage team Eric Klassen, Peter Whittaker and Evie Chan stand in front of their handiwork.*




*The chapter building project has had a noticeable effect on increasing the enthusiasm and interest level amongst current and former members of Chapter 85*

This generated a hive of activity and regardless of the plan, a number of different ways to complete the practice piece were conjured up! This turned out to be an excellent exercise for getting people on the same page in terms of reading a plan, using a drill and drill bits (and no, the masonry bit that was tried never did work) and realizing what was meant by the tolerances called for in the Zenair construction techniques document.

The organization of the building process benefited greatly from the experience and advice given by Matt Heintz (it became readily apparent he has done this many times before). The key points involved keeping the project centred in one place in order to keep track of parts, establish component building teams and keep the team members focussed on their chosen component. This allows builders to study the photo manuals and drawings and get to know their component. Building teams were established for the empennage,

wings, main / rear fuselage, forward fuselage and firewall plus another sub-group was formed to begin a search for a suitable used engine. Other members are on the lookout for avionics.

The building workshop carried on into a full day of activity on the Sunday and this saw parts of the empennage, one wing, forward fuselage and the rear fuselage bottom skin dry fitted, de-burred and ready for primer and clecoes (Figures 4 & 5). One month later (early November) work had progressed to having some of the components partly riveted and in a suitable state for eventual pre-cover inspection. The chapter building project has had a noticeable effect on increasing the enthusiasm and interest level amongst current and former members of Chapter 85. Several previous members have decided to re-join and a few new members have joined as a result of interest in aircraft building and hearing about the project via the grapevine. One of our new members

is a grade 10 student, she is very diligent at reading plans and has a good eye for detail. Former members have appeared out of the wood work to offer and donate tools. Apart from eventually having a chapter aircraft for members to use once again, this project is off to a good start in terms of increasing interest, attracting former members and most importantly, raising interest and awareness in private aviation in some new and younger members. 

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**Peter Whittaker** is the president of RAA Chapter 85 (Vancouver). He is the owner of a Zenith 601 HDS which he built from plans over a 14 year period, and which has recently completed its 25 hour fly-off.



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