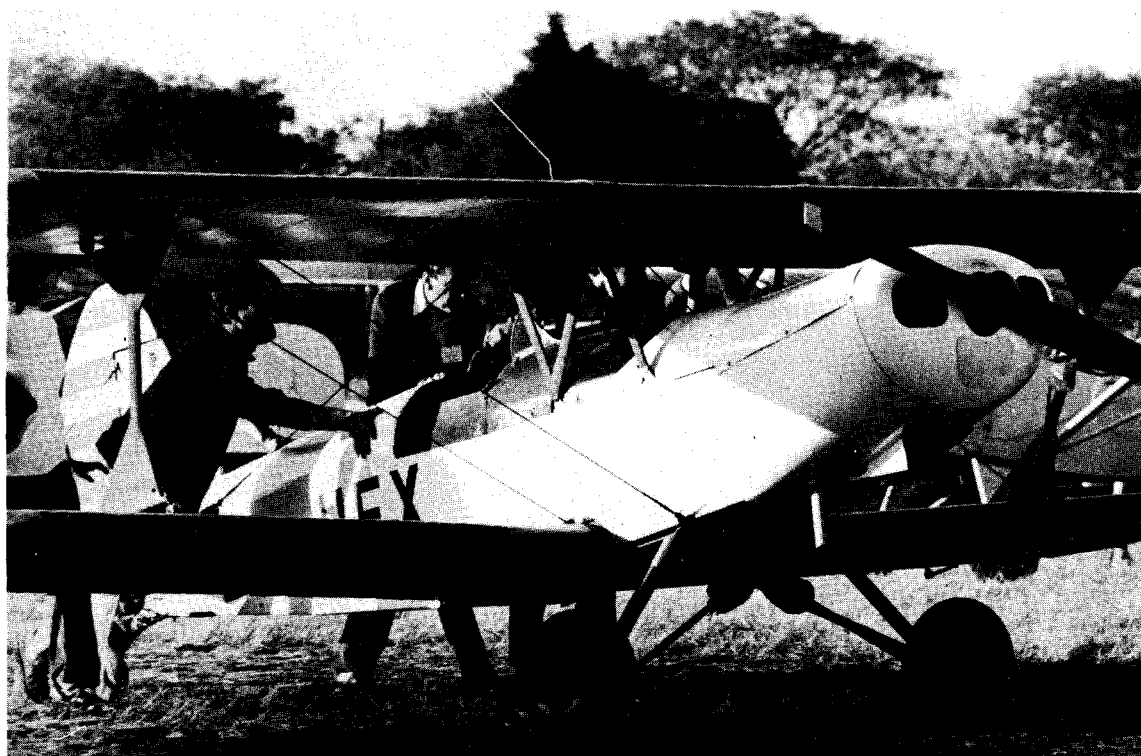


HOMEBUILT

JOURNAL OF THE EXPERIMENTAL AIRCRAFT ASSOCIATION OF SOUTHERN AFRICA



VOLUME I - NUMBER 1

SEPTEMBER 1972

ON THE COVER

Barrie Walker (on left) wheels out his impressive EAA Biplane in preparation for a demonstration flight at the 1972 Oribi Fly-In.

"Homebuilt" is the official publication of the Experimental Aircraft Association of Southern Africa. The views expressed are those of the contributors and not necessarily those of the Association.

Statement of Policy

The Experimental Aircraft Association of Southern Africa is a body representing individuals involved in the construction and operation of homebuilt aircraft and the restoration and operation of antique aircraft.

Subscriptions of R4,00 per year include affiliated membership of the Aero Club of South Africa and quarterly issues of "Homebuilt".

Editor: S. Crutchley
Photographic advisors: T. Wills
F. de Jongh

Correspondence

All correspondence to the Association should be addressed as follows:—

The Secretary, E.A.A. of S.A.,
21 Charles Boniface Rd,
Bisley,
PIETERMARITZBURG.
Natal.

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EDITORIAL

The sudden appearance of the "Experimental Aircraft Association of Southern Africa" is no doubt a surprise to many and an annoyance to some. As we all tend to be creatures of habit, and not taking kindly to change, it may well be asked "What the blazes are the committee up to now! Why couldn't they leave things as they were?"

Well the reasons for the change are presented below, and we feel sure that after considering them, you will share the committee's earnest belief that the changes are to the benefit of the individual homebuilder and the homebuilding movement as a whole.

One of the striking features at the last fly-in was the continued growth of the homebuilding movement and this growth served to highlight the fact that at this stage the movement was not a united one.

Everyone is no doubt aware that the Aircraft Builders Association is a registered chapter of the Experimental Aircraft Association of America, and that the Edenvale E.A.A. is likewise registered as a chapter of the E.A.A. of America. This led to the state of affairs where many homebuilders in the Johannesburg area were faced with choosing between two groups. There was also much unnecessary duplication of work done and, on occasion, friction between the groups.

In considering the establishment of a single representative homebuilders movement the question of relationship with the E.A.A. of America became important. At present both homebuilding groups are registered as separate chapters which are essentially local groups whereas the proposed body would be a truly national body.

Looking abroad we see that Canada and Europe have formed their own national E.A.A. co-ordinating bodies which have strong links with the parent American body.

This then is the background for the committee meeting which took place at Oribi after the Aircraft Builders Association Annual General Meeting. The meeting was attended by the A.B.A. committee and the Chairman of the Edenvale E.A.A., Mr Mike Spence, who had come down from Johannesburg specially to discuss this issue.

The matter was discussed at great length and the benefits of a united movement were clearly apparent. It was also noted, in considering the organisation of other sporting bodies, how easily divisions can occur and the difficulties that usually result. By creating a truly national body we thus achieve a goal that

has been beyond the reach of many other sporting bodies.

It was decided, therefore, to form the E.A.A. of Southern Africa. The word "Southern" being incorporated in order to provide an organisational framework for the co-ordination of homebuilding activities in neighbouring countries with those in the Republic and thus avoid the need for any further changes in the future.

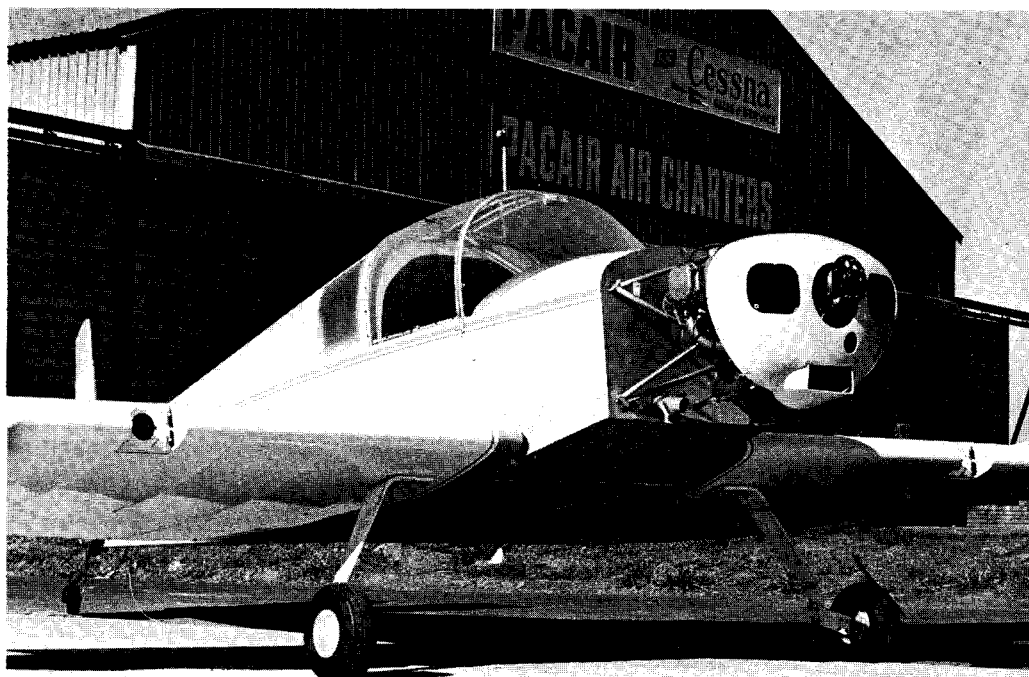
In essence the central committee of the E.A.A. of Southern Africa will be the committee that was elected at the Aircraft Builders Association A.G.M. and it will serve until the elections to be held at the 1973 annual fly-in.

The duties of the committee are solely to co-ordinate activities for the benefit of the homebuilder and in the coming year this will consist of compiling regular news magazines, compiling a register of homebuilders and organising the 1973 Oribi Fly-In.

Organisation at chapter level, except in the Johannesburg area, remains unchanged and the naming of chapters will continue to be at the discretion of the chapters themselves.

It is realised that a major organisational change like this is sure to cause heated comment and letters from members will be published in future news magazines.

Dr. John Buchan's almost completed Jodel should take to the air at Oribi within the next few months.



THE 1972 ANNUAL FLY-IN AT ORIBI

The response to the 1972 fly-in was most encouraging. Fifty-six members and their families were accommodated in local hotels and in addition a large number stayed with friends and relatives. Including members of the local chapter there were almost one hundred people in attendance.

More encouraging still was the significant increase in the number of homebuilts present. This demonstration of progress was perhaps the most gratifying part of the whole fly-in.

At the 1970 fly-in there was but one home-built present — Toy van Rensburg's outstanding Mini Ace.

At the 1971 fly-in there were several more, but the future of the homebuilding movement still looked rather doubtful.

This year there were no fewer than ten homebuilts at the fly-in — a truly impressive turnout which should serve to reassure us all of the potential of the movement.

The individual aircraft and builders cannot be mentioned in great detail. Suffice it to say that Toy van Rensburg was there with his bright yellow Mini Ace, now with more than six hundred hours of flying behind it. Barrie Walker was there with his E.A.A. Biplane, and

there were no fewer than three Jodel D112 tourers down from Sabie in the Eastern Transvaal.

Oliver Morton earned everyone's admiration by flying his Topsy Nipper all the way from Somerset West. This feat took three days of determined flying but Oliver left home in good time and was first to arrive at the fly-in.

Also from a long way off were Dr. von Moltke of Kuruman in his modified Fly-Baby and Hoekie Baldwin of Port Elizabeth in his superb Smith Termite.

Ton Maneschyn flew down from Kempton Park in his recently completed Evans Volksplane and showed everyone what can be accomplished on a shoe-string budget and in only about six months of spare time work.

Finally there was Carel van der Merwe's exquisite Luton Beta which after careful deliberation by the judges was awarded the Ian Lewis Trophy for the best homebuilt completed during the year.

In addition to the homebuilts there were numerous classic aircraft on display. These included two Ercoupes, three Vagabonds, an Auster, a Piper Family Cruiser, A Super Cub, and an Aeronca Champ.

Toy van Rensburg's Mini-Ace at the 1972 Oribi Fly-In.



The activities during the weekend were, briefly, as follows:—

SATURDAY:

Excitement ran high during the morning as homebuilts began to arrive from all parts of the country.

The afternoon featured inspection of the aircraft and flight demonstrations. Highlight of the demonstrations was a breathtaking display of aerobatics by Pikkie Rautenbach in the Luton Beta.

A well attended film show and social were held in the evening and special thanks are due to Mr Woody Woods for his colour slides and commentary on the Oshkosh fly-in.

SUNDAY:

The Annual General Meeting took place during the early part of the morning. The new office bearers are listed further on in this issue. Technical symposia were held after the A.G.M. and some interesting observations were made on the flight testing of homebuilts and on the conversion of the VW engine for use as an aircraft power plant.

The afternoon was kept free for trips to the coast.

Sunday evening featured a very enjoyable braai and prize giving.

MONDAY:

The morning dawned rather dubiously from a Met. point of view and by midday all the homebuilts and classics had left for home.

In retrospect it must be admitted that there were several weaknesses in the organisation of the fly-in. There was virtually no crowd control in the display area and it was only due to luck that no damage was sustained by any of the aircraft. Furthermore, the A.G.M. and technical symposia were held during perfect flying weather thus confining pilots indoors when they would have liked to be flying.

The organisers are sure to learn by their mistakes, however, and it may be assumed that the 1973 Oribi Fly-In will not see these errors repeated. Judging by the letters of appreciation received by the organisers the fly-in was, nonetheless, considered a great success.

The Volksplane
built by Ton
Maneschyn.



On the right:

Top: Owen Pilcher's V.W. installation

Bottom: The carburettor arrangement

REVIEW OF TECHNICAL SYMPOSIA HELD AT THE FLY-IN

The symposia were directed by the Chairman and took the form of short discussion sessions by members with experience in the fields concerned.

Flight testing of Homebuilt Aircraft

by Barrie Walker, Toy van Rensburg and Dr. von Moltke.

Points made were as follows:—

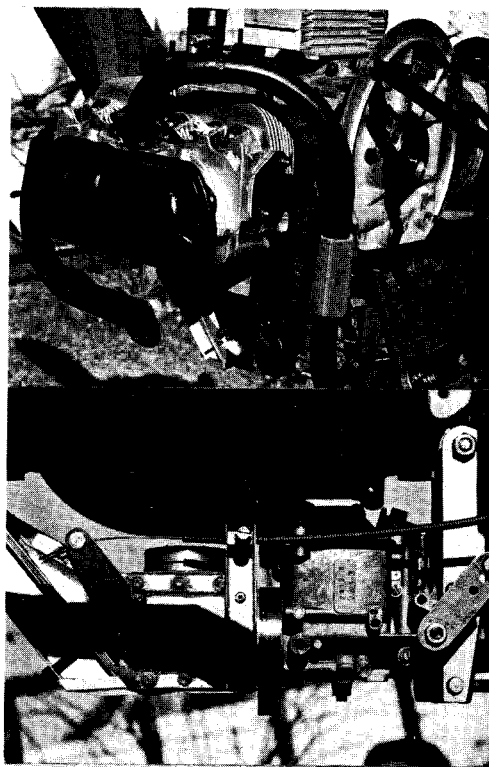
- (a) If the builder is not fully qualified to undertake the initial test flight he should under no circumstances attempt to do so.
- (b) To really "loosen-up" before the test flight some right hand seat experience should be gained in as wide a variety of aircraft as possible.
- (c) Prior to the first flight the aircraft should be taxied at flying speed past an observer who should note the elevator position with respect to the tailplane. Any misalignment should be eliminated by adjusting the tailplane incidence.
- (d) Little importance should be attached to the airspeed indicator reading during the initial take-off and climb. Instead, particular attention should be given to the oil temperature.
- (e) Once a safe height has been reached gentle power-on and power-off stalls should be conducted. A landing approach speed of power-off stalling speed plus fifty per cent should be used.
- (f) The first approach should be made under power as the sink rate of homebuilts during the glide is normally rather high.
- (g) A small amount of toe-out will benefit directional stability of tailwheel aircraft.

Converting the VW engine

by Owen Pilcher, Oliver Morton and Ron Sillis.

Points mentioned were as follows:—

- (a) It is of the utmost importance for the propellor hub to be precisely lapped on to the crankshaft taper as the length of contact is no more than 20 m.m.
- (b) To reduce the stress intensification effects of the keyway all corners should be rounded. A further improvement would be the replacement of the Woodruff key by a round taperpin.
- (c) Certain well-proven conversions use a shrunk on hub in lieu of taper. This



could have several important advantages but must be strictly controlled to prevent excessive residual stresses.

- (d) It takes a 12 kilogram bar of round steel to manufacture a propellor hub weighing just over one kilogram when finished. This indicates the volume of material to be removed.

General note

The technical symposia were well received and it is to be hoped that they will become a regular feature of the annual fly-ins.

On the right:
Mr Tony Wills,
Chairman of the
E.A.A. of S.A.

COMMITTEE OF THE E.A.A. OF SOUTHERN AFRICA

Chairman	Mr. A. Wills
Vice Chairman	Mr. E.C. Woods
Secretary/Treasurer	Mr. S. Crutchley
Aero Club of S.A.	
Representative	Mr. M. Cohoe
Cape Representative	Mrs. R. Hobbs
Transvaal Representative	Mr. B. Walker
O.F.S. Representative	Mr. H. van Rensburg
Natal Representative	Mr. O. Pilcher

E.A.A. PERSONALITIES

Mr. Tony Wills (Chairman).

The Association is indeed fortunate in having a man of Tony's enthusiasm and integrity at the helm. Of equal value to the Association is his friendly manner towards everyone.

As a great friend of the late Ian Lewis, founder of the Aircraft Builders Association, he has a very personal interest in the welfare of the homebuilding movement and we may rest assured that he will give the Association his wholehearted support through whatever lies ahead.

Tony's interest in aviation goes back as far as he can remember and even after all these years he is not happier than when surrounded by aeroplanes and flying enthusiasts.

His actual introduction to piloting was rather unique — he was inadvertently launched in a primary glider when due to a misunderstanding it was thought that he had already received the necessary training. The flight and landing were successfully handled, however, and he went on later to qualify on Tiger Moths, Harvards and eventually front line aircraft such as Hurricanes, Spitfires, Mustangs and his favourite, the Kittyhawk.

Tony did his operational training in North Africa followed by combat duty as a S.A.A.F. officer seconded to No. 250 Squadron of the R.A.F. in the Italian campaign.

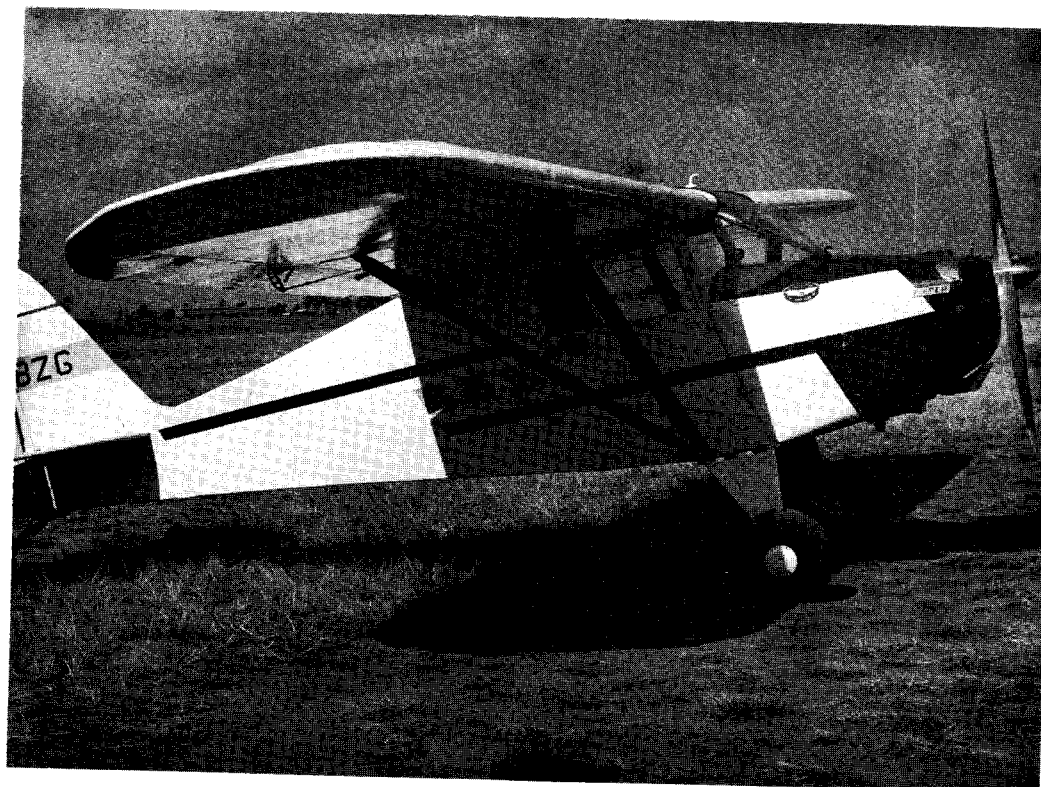
A high school science and geography teacher by profession he returned to civilian life and retired from active flying for a number of years. However, in due course he found himself back in the cockpit with his licence renewed and all his old enthusiasm returned.



In recognition of his tremendous work on behalf of the Pietermaritzburg Aero Club he was recently awarded Honorary Life Membership.

Tony's special interest lies in grass roots aviation and it was largely this which prompted him to take up saw and glue-pot and begin construction of his ideal aeroplane — a Bowers Fly-Baby.

We wish him many happy hours of flying in his homebuilt, now almost completed, and everyone who has seen it will appreciate the painstaking work that has gone into producing such a well constructed and strikingly attractive aircraft.



A CLASSIC AIRCRAFT

The Piper Vagabond — by Clive Dennison.

The Vagabond was first offered for sale in 1948 and the production run ceased two years later. This short period of manufacture was due more to the rush in the 1950's to produce a four-seater than to any short-coming in the design of this fine two-seater aircraft.

The PA-15, as it was known officially, used Piper Cub wings with three feet removed from the root of each panel, giving a span of 29 feet. The tail group was regular Cub structure. The fuselage was completely different due to the side by side seating arrangement used.

The emphasis of the design was on economy of manufacture. There was a door on one side only, no floor mat, no cabin heater, no primer, no mixture control, no dual control and no shock absorbers. Most of these items were available, however, as optional extras. The toe brakes which replaced the Cub's awkward heel brakes were a great improvement.

The early Vagabonds were equipped with the 65 horse power Lycoming motor of 145 cubic inch displacement. This was later replaced by the 65 horse power Continental motor of 175 cubic inch displacement. This

model was known as the PA-17, and most Vagabonds have since been fitted with the Continental motor due to the improved performance realised.

As two-seater aircraft go the Vagabond is very light, weighing only 646lb. empty and 1 100lb. at gross. This probably contributes significantly to the spritely performance, especially when propelled by 65 Continental-type horses.

The PA-15 shown above was purchased for R1 300 and has flown two hundred hours during the past year at an average fuel consumption of only 2.9 gallons per hour. The oil consumption is negligible. As can be expected the performance is not of the Saturn V variety. Nevertheless, it breaks ground in two hundred yards during take-off and cruises at 80 m.p.h. at 2 300 r.p.m. The stall is gentle and occurs at 45 to 50 m.p.h. depending on power-setting and load aboard.

The combination of tailwheel configuration and control stick instead of wheel make the Vagabond a pleasure to fly, and, coupled with its economy of operation, a most suitable aircraft for private ownership.

"HOMEBUILT" – SOME NOTES OF GENERAL INTEREST

It is strongly felt by the Committee that members have not been receiving their money's worth in the past. Apart from affiliated membership of the Aero Club of South Africa and the annual fly-in there has been no tangible advantage in being a member of the Association.

A proper newsletter is something that can and should be offered to the membership. It is quite a gamble as, with the present membership, there is not enough money coming into the Association to carry on indefinitely. Publishing costs money.

However, printing 400 copies of "Homebuilt" is only slightly more expensive than printing 200 copies. The revenue from 400 members is of course double that from 200 members. A solution to the problem lies, therefore, in recruiting additional members.

If each existing member can introduce just one new member the strength of the Association will be doubled. There must be many prospective members throughout the country who would join our Association if they only knew that it existed.

Advertising offers another source of revenue and this is being offered at R30 per quarter page for four issues. It is necessary to work in a unit of four issues as the advertisements are to appear on the insides of the cover and the back of the cover and these will be printed in a batch sufficient for one years issues of the magazine. It would greatly benefit the Association if each member would approach a couple of prospective advertisers with this proposal. The circulation at this embryo stage is approximately two hundred.

The name "Homebuilt" has been chosen as an interim one and suggestions regarding the permanent name are invited. It should be borne in mind that the title should be short and should, if possible, explain to a casual reader the purpose of the Association. Perhaps "Homebuilt" will meet with general approval and can be retained.

The future success of this magazine rests with each and every member and contributions in the way of suitable articles, photographs and news items are earnestly sought. It is the intention at this stage to make a regular feature of "E.A.A. Personalities", and "A Classic Aircraft". The ball has been set rolling in this issue.

Provincial Representatives are requested to send in news of activities in their area to appear in "Provincial News" which will become a regular feature from the next issue onwards.

Providing the necessary response is received the news magazine will be published quarterly, and, if the necessary new members are received and advertisers found, the number of pages can perhaps be increased.

Swap/Sale

One pair of 6.00 x 6 aircraft wheels complete with tubes and tyres to swap for pair of 5.00 x 5.

Also, as new VSI to swap for sensitive altimeter.

Contact: *F. de Jongh,
20 Perth St.,
Pietermaritzburg.*

Ron says: "The runway behind you is as useless as the height above you, mate!"

MOST IMPORTANT NOTE

This issue of "Homebuilt" is being sent to everyone on the Association's list of members and interested persons. However, owing to the costs involved, future issues can only be sent to paid up members and to advertisers.