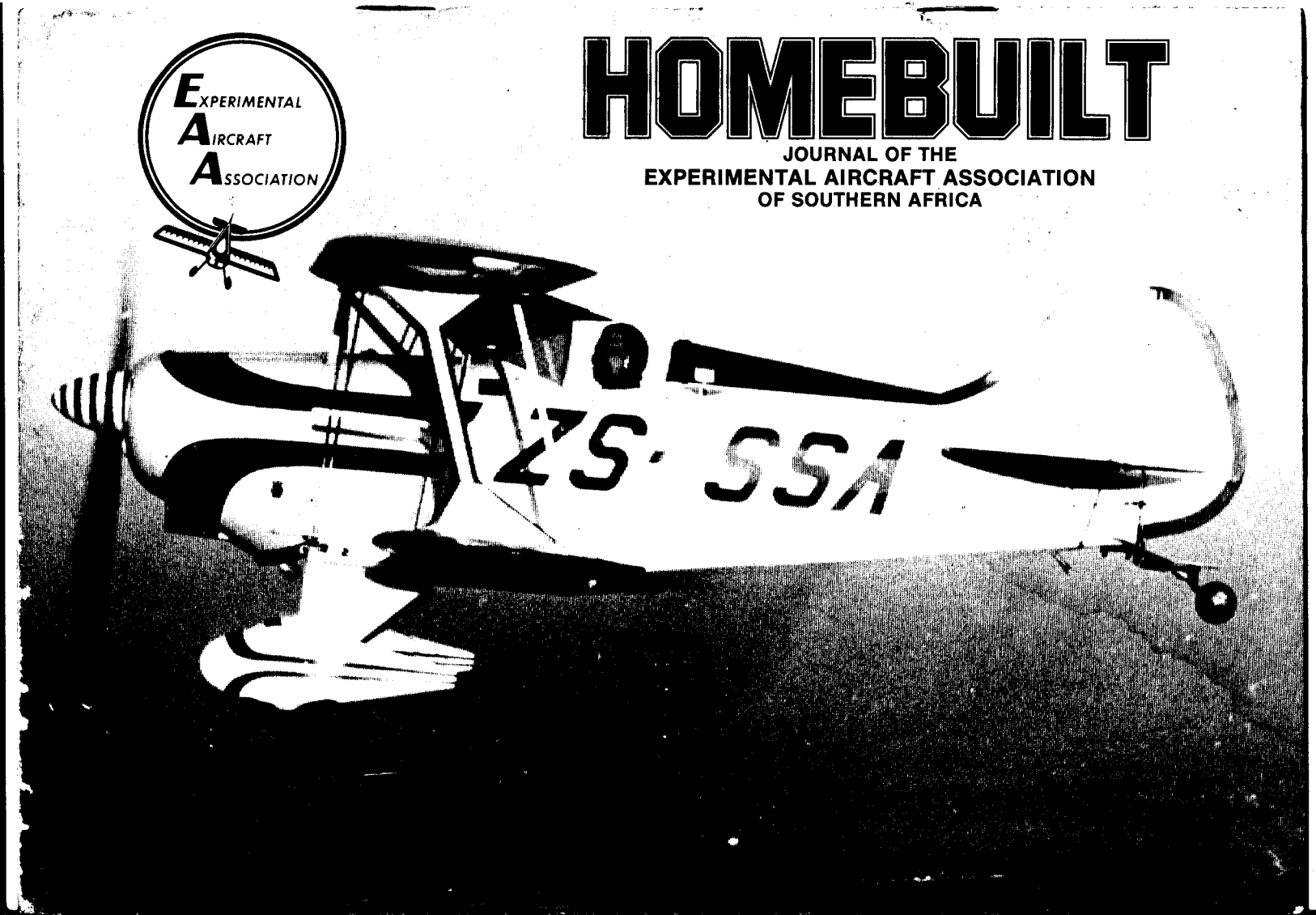
HOMEBUILT

JOURNAL OF THE
EXPERIMENTAL AIRCRAFT ASSOCIATION
OF SOUTHERN AFRICA



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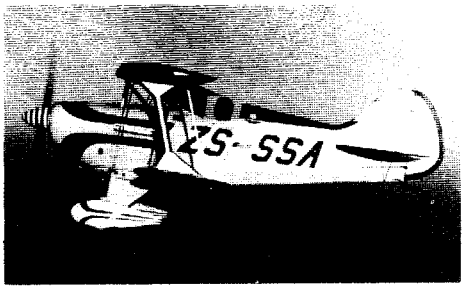
December 1977



ON THE COVER:
The Pitts Special flown to victory in the Intermediate and Standard Class by Brian Zeederberg in the South African National Championships.

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Editorial & Advertising Address:
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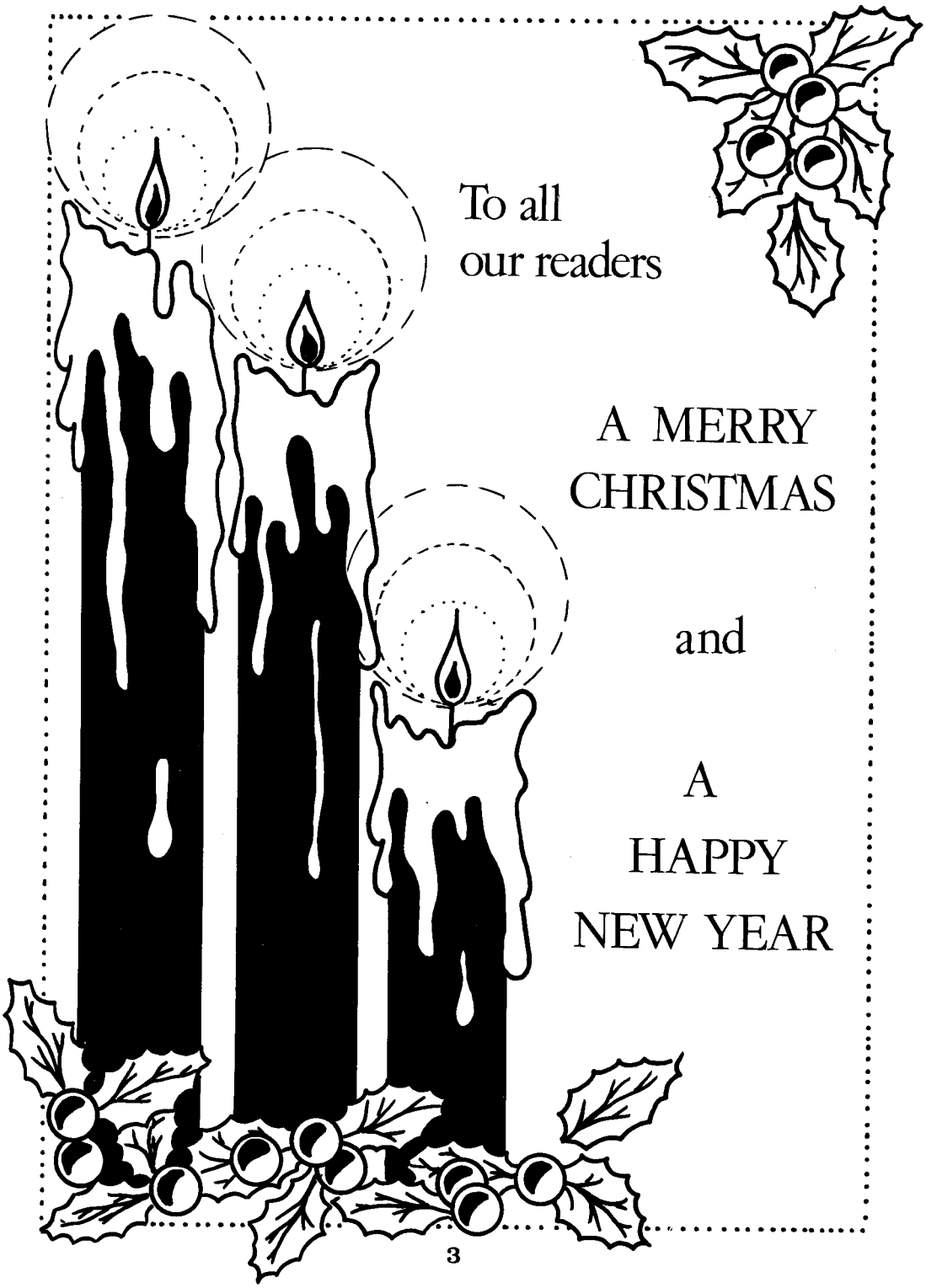
Your contributions for publication are invited.

HOMEBUILT — the official journal of the Experimental Aircraft Association of Southern Africa, is published for the benefit of its members. Membership rates are R6,00 per annum. Membership is open to anybody who is interested in aviation. Application for membership can be obtained by writing to the **E.A.A. of S.A., P.O. Box 247, Edenvale 1610, Republic of South Africa.**

The 1977 Aerobatic Nationals

Warren Percy IAC 4135
Brian Zeederberg IAC 4136

The face of aerobatics in South Africa has changed considerably in the past year.
The previous moving force — the "Sport Aerobatic Club" — was algamated with and absorbed into the "Baragwanath Aerobatic Club" and the latter, as the most active (? only), aerobatic club in the country, assumed responsibility for organising what is currently the only aerobatic competition in South Africa — the Nationals — on behalf of the Aero Club of South Africa
Many problems were tackled by B.A.C throughout the year with considerable success. The first recognized aerobatic box in the country, overhead the eastern side of Baragwanath Airfield was negotiated with the Department of Civil Aviation and the Johannesburg Light Plane Club — the airfield lease holders. The problems of fuel restrictions over weekends was relieved for aerobatic pilots in the form of a fuel permit for aerobatic training, very necessary for aircraft with multiple owners when flying from Baragwanath (elevation 5 780 ft) at density altitudes of over 9 000 feet.
The universal (?) problem of trained judges and assistants was combined with the introduction of many new pilots to Aresti and Aresti Aerobatics. As the championships have in sight, a series of five evening seminars and five related practical or demonstration days enabled a number of pilots to achieve various grades of flying patches (more of that later under separate headings) while many more achieved considerable skill and ability as judges and assistants. Although the turnout at these meetings was not always what one might have hoped for, it was most encouraging to find such consistency and uniformity of scores, within fairly close limits, at the debriefings. This increase in interested and skilled judges enabled us, for the first time, to have the load at the Nationals spread between two separate judging teams, one for Intermediate and Open, and one for Standard Class.
We were most fortunate this year te get James Black, an English team member, at the world championships, and an international judge, to come out to South Africa just before the S.A. Nationals to lecture and coach both judges and pilots. James' contribution as a judge for Open and Intermediate was particularly appreciated as it put both our judging and flying into context on the international scale, while his demonstration flying the day after the competition provided pointers for all.
The venue for the Championships was again Rustenburg. This friendly town north-west of Johannesburg was loudly reminded that it was "that time of year again" as various competitors started arriving during the preceeding practice week to use the aerobatic "box" and familiarise themselves with the local surroundings and land marks. Rustenburg at 3 550 feet, and density altitude of about 6 500 feet, is the lowest location for many miles. The airfield is well situated for all amenities, accommodation etc. and most importantly, boasts a very active flying club who have an excellent record of well run competitions.
Bob Hay, Warren Percy and I arrived on the


To all
our readers
A MERRY
CHRISTMAS
and
A
HAPPY
NEW YEAR

Wednesday before the championships to find a Tiger Moth and a Pitts Special already in residence, nestling in the back of a vacant hangar.
Judging from the condition of the underside of the Tiger Moth, it was readily evident that their oil streaks were not only from a ferry flight, but also from some serious aerobatic routines that had been performed during the preceding few days.

Weather was perfect during practice week and the majority of the early arrivals installed themselves in the Tambootie Inn. Nick Turvey flew in from Johannesburg for a daily "blast" in the "box" during the early part of the week and then settled down for an unbroken last three days of earnest practice. During the practice days there was much designing, re-designing and more re-designing of sequences as the big day drew closer. Hilton Wolff was constantly to be found deeply involved in pep talks on the finer points of various manoeuvres, with any aero pilot that he could lay his hands on — it was a real case of "lend me your ears". It is most encouraging to see someone with so much enthusiasm and so willing and keen to learn and improve the hard way — keep it up Hilton!
ZS-UUU, the Stampe bi-plane, was also making full use of the aerobatic box, with three pilots competing in the same aircraft. The three pilots also turned out to be three mechanics who were constantly to be seen under the cowls of the Stampe making minor adjustments and tightening things up for the competition. An inverted plumbing system would be a great asset on the Stampe and I believe this is in the pipeline. This system would cut out those long periods of silence between manoeuvres which are also so familiar with other Gypsey engined aircraft.
Late on the Friday afternoon we saw the arrival of Noel Otten in his Pitts Special. Noel has recently been in Australia for over a month, and got married, so he has had a pretty full plate recently and could not get a lot of time off work for practicing.
Peter Golden was another late arrival in his immaculately prepared Fournier. I think the Fournier was probably airborne out of Baragwanath on the Saturday morning long before any of the resident competitors at Rustenburg had even rubbed the sleep from their eyes. The Fournier does very graceful aerobatics and is a pleasure to watch with those long thin wings glistening against the sun.
The compeition day dawned cloudless and very hot! (31 C). As the number of competitors to fly in the three classes: Standard, Intermediate and Open numbered only 15 (few of whom represented people entering more than one class) the early crackle of activity soon tended towards a more leisurely pace. This meant Bob Plane's last flight of the day was only just accommodated in the gathering dusk.
Standard class saw a variety of aircraft and a number of first time entrants. Hilton Wolff in his Chipmunk and John Heath and Bob Plane in their Stampe, while Bunty Borchards Tiger Moth and Brian Zeederberg's Pitts Special, had both been placed previously in the Standard class.
The strong cross wind of the previous two days disappeared which made staying in the "box" much easier. First away was Bunty Borchards in the Tiger Moth, who tended to suffer height problems all day, both with slow climb on the way up and rapid descent during his sequences. The size and grace of the Tiger contrasted with noise and roar of the almost invisable blue and white Pitts of Brian Zeederberg, the next competitor. After Brian's first sequence, it was apparent that he would be difficult to beat. As he entered the box for his free sequence, so did Bob Plane in the Stampe. Bob who had been climbing for some time must have suffered a bout of "don't speka da langvitch" as control claim he was given both ground and radio signals to remain clear of the box. Bob of course had his own opinion on the matter which he expressed "voluably" upon landing! Brian Zeederberg then continued to take first place by what appeared to be a clear margin from Bunty Borchard's Tiger, John Heath's Stampe and Hilton Wolff, who suffered some navigational problems in his second sequence. However, when at the very end of the day Bob Plane reflew, he contained his frustrations which had been mounting all day, gained some performance benefit from the falling temperatures, and flew very well to take second place, only 38 points behind Brian Zeederberg.

Intermediate class with six competitors was this year the "least small" class. Bunty Borchards in the Tiger really suffered height problems with his rather downhill sequence and despite reclimbs, was penalised for being low. Luchio Vashelenko, in the Stampe, was an early favourite for whom the previous months of practice was obviously paying off in really accurate lines and angles and the ease with which he remained slap in the centre of the box. Luchio's long face and violent gesticulations on landing indicated two blown manoeuvres! The same fate befell both Peter Goldin, in the Fournier RF 4, who's

second sequence went to pieces at the end and Warren Percy, who used Brian Zeederbergs sequence card in the Pitts and read and flew a cuban eight backwards. This left the other two partners in the blue and white Pitts: Bob Hay, who was still a little hung over from the flu, and Brian Zeederberg to fill second and first spots respectively.

As usual, with aircraft competitions, the standard and intermediate classes are flown off first and the open class left for the afternoon, leaving the open class competitors plenty of time to work themselves up into a tight bundle of nerves!

The open class competitors comprised of Bob Hay, Nick Turvey, Noel Otten and Warren Percy all flying Pitts Specials.

It was discovered by James Black, our visiting international judge, on Saturday morning, that both Warren and Bob had "gremlins" in their free sequences, and these had to be hastily eradicated and new sequence sheets drawn up. This caused two slightly concerned faces as both Warren and Bob realised that they were going to be flying sequences in competition, that they had not practiced before.

The open class flying went well with the pilots having elected to fly both the compulsory and the free sequences straight after each other and then come back to the unknown programme.

Nick Turvey had a slight problem when his engine lost power after digesting part of the aircleaner elements. The aircleaner was replaced and he went on to win the open class in fine style.

Warren Percy finished up a close second with Noel Otten not far behind in third place.

Bob Hay unfortunately turned 180° in the wrong direction after his third manoeuvre in the compulsory programme, and thereafter "blew" the rest of the sequence by flying everythin'in the wrong direction — better luck next year Bob!

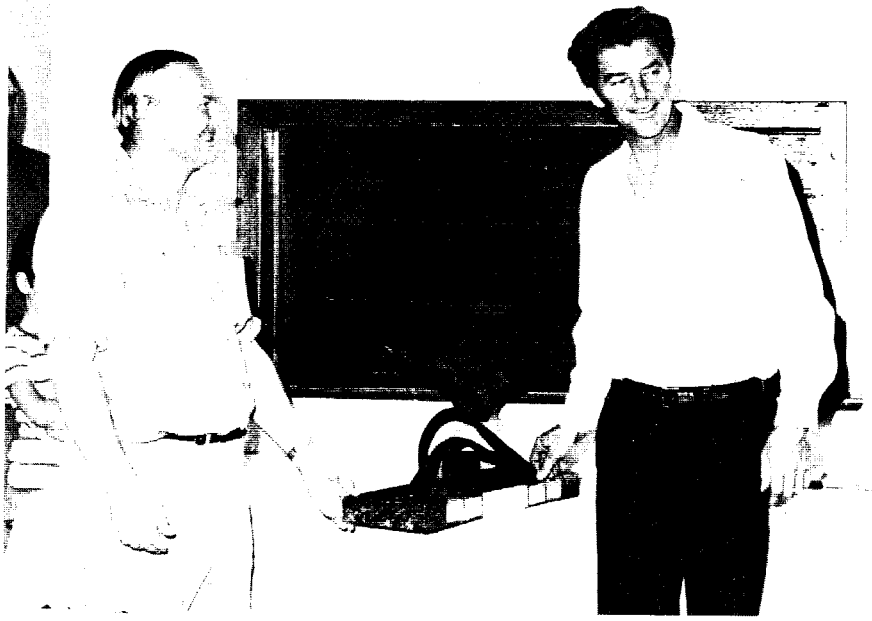
The open unknown sequence was set by James Black and contained a lot more manoeuvres on the "Y-axis" than the locals were used to. This provided good experience for both pilots and judges, although the three turn rolling circle on the "Y-axis" gave everyone problems.

Brian Zeederberg, Standard Class and Intermediate Class winner – Well Done Brian!

The results and prize giving got under way soon after the final "night" sequence much to the relief of the heat-crazed judges, starters, directors, scorers et al.

Ah! At last a cold beer (several?). The evening's braaivleis (bar-b-q) and dancing in the flying club accompanied the usual reflies at the bar until the early hours of Sunday morning.

The not so early hours of Sunday morning saw a good turn out of sore heads to watch James Black's demonstration in Nick Turvey's Pitts and the slow gathering of wits for the flight home.



Nick Turvey, winner of the Open Class, being presented with his trophy.

Award of the Paul Tissandier Diploma of the Federation Aeronautique Internationale

EVELYN CECIL WOODS learned to fly in Natal in 1937. During the war he rose to the rank of major and flight commander in No. 24 Squadron of the South African Air Force.

He was awarded the Distinguished Flying Cross. Subsequently Mr. Woods has become increasingly interested in Sport Avaiation and his active enthusiasm and support have been directly responsible for the significant growth of the Experimental Aircraft Association in South Africa. His own participation in actually building sport aircraft and his generous assistance and encouragement to others in this activity, have been instrumental in realising the new high standard of aerobatics which is now apparent in South Africa, and the increasing interest in amateur-built aircraft.

American Pen Pal

Mr. President of:
Aircraft Builder Asociation
Aero Club of South Africa
P.O. Box 2512
Johanesburg,
SOUTH AFRICA

Dear Sir:

First of all, I'm very sorry for not use your name on this letter but it was im ossible for me to remember it, and I could'nt get it from no where, but the needing of your cooperation push me to do it like this.

I'm building one airplain four places, down wings, tricicles, gear all metal constracction with 125 power engine, wich will be ready at the end of January.

Now, what I need from you is that I'm interested in having correspondence with your Aero Club's members , becouse I want to know wath are they building, maybe we can exchage some new ideas. As soonest as I get the airplain's manuals I promess to send you some for your people.

Hopping that this very simple letter, get some eco in your people, I give you my best regards to you and all your members.

Trully Yours

JORGE ALBERTO BONIFACIO
Juncal 1760 Lanus Este
Codigo Postal 1824
Buenos Aires
ARGENTINA

Procedures and Requirements

In order to avoid disappointment and to clarify methods, procedures and standard requirements before a member becomes an approved person, we are publishing the *Manual of Procedure* as approved by the Commissioner of Civil Aviation.
It has become necessary to do this as comments from exam participants and chapter chairmen have made it clear that the situation is not fully understood and this has caused unnecessary resentment and confusion in certain quarters. The *Manual of Procedure* sets out clearly the requirements and qualifications necessary to become an approved person.
Whilst Aero Club will sponsor approved persons (see Section 7) the Department of Civil Aviation reserve the right, in spite of recommendation from E.A.A. through Aero Club, to have the final veto. The passing of the exam does not automatically qualify the individual to become an inspector.
The standard required to become an approved person has been deliberately set at a level where only the more competant and →

experienced builders are likely to qualify. The examination is based on CAM 18 and it is apparent that a number of the people who might have been expected to pass the exam failed, at the last two sittings, not because of their lack of experience, but because they have not fully revised CAM 18. Obviously we cannot name names, but two or three recent applicants would certainly have become approved persons had they done their "homework". It must also be said that the chapter chairman must ensure that members who wish to enter the examination have the qualifications as per the *Manual of Precedure* before recommending them to sit the exam. So those of you who meet the experience qualifications, but have slipped up on the tests, take heart, and have another go. After all anything that is really worth while is never easy.

Aero Club of South Africa

Amateur Built Aircraft Section

Inspection of Amateur Built Aircraft by Approved Persons

Manual of Procedure

1. **Organisation Particulars**
   (a) *Head Office:*
   Aero Club of South Africa,
   Amateur Built Aircraft Section,
   P.O. Box 2312,
   Johannesburg 2000
   Telephone 834-8026

   (b) The Aero Club of South Africa is registered under Section 21 of the Companies Act as a non profit organisation.

   (c) Amateur Built Aircraft Section,
   Inspection Division,
   P.O. Box 39779,
   Bramley 2018
   Telephone 40-2282

   (d) Person in direct control:
   John Murray Cohoe.

2. This *Manual of Procedure* contains inspection procedures which will be strictly observed by all Approved Persons operating under the authority granted by the Commissioner of Civil Aviation (CCA) to the Aero Club of South Africa.

3. All Approved Persons have copies of this *Manual of Procedure* and are familiar with its contents and will adhere to its provisions.

4. All revisions and/or amendments to this manual will be submitted to the CCA for approval before thay are introduced.

5. Approval is required for the Amateur Built Aircraft Section of the Aero Club of South Africa to appoint Approved Persons, who may carry out inspections on amateur built aircraft during their construction, as well as annual inspections and maintenance inspections (where applicable).

6. Approved Persons will be granted authority to carry out inspections within the following ratings:
   Wood, Fabric and Welded Structures
   Sheet Metal Aircraft
   Composite Aircraft (of Foam, Fibreglass, Resin or similar construction)
   Piston Engines
   Rotorcraft
   within the requirements of the "General Provisions . . ."

7. The Approved Persons will be suitable qualified to carry out these inspections, and they will only be appointed after having successfully passed an examination set by the Aero Club of South Africa for the particular rating. In addition, the Approved Person must have completed the construction of and obtained authority to fly for his own aircraft, or obtained aircraft maintenance experience for at least 12 months, compatible with the particular rating.

The Approved Person will be sponsored by Aero Club.

8. The Aero Club will advise the CCA of the names, ratings and inspection stamp numbers of Approved Persons as and when they are accepted as Approved Persons.

9. The principal duties of the Aero Club in the administration of this scheme is as follows:

   (a) To supervise all operations being conducted under this approval.

   (b) To ensure that all necessary means are available for the efficient inspection of amateur built aircraft.

   (c) To ensure that the inspections being

done under this approval are performed in accordance with this *Manual of Procedure.*

(d) To request a suitably rated Approved Person to carry out the inspection called for by the constructor of the amateur built aircraft at a time and place mutually acceptable, and to maintain current files of all such inspections.

(e) To ensure that all documentation properly completed is available for submission to CCA when the application is being made by the constructor for Proving Flight Authorization on Form TV/128, or for Authority to Fly on Form TV2/130.

(f) The control of the Inspection Division shall be exercised from the premises detailed in paragraph 1(c), where records of all inspections carried out by the Approved Persons will be kept.

(g) To prepare an Engineering Change Note (ECN) when necessary, or to advise other constructors of improved methods or techniques.

110. The duties of the Approved Person is as follows:

(a) To carry out such inspections as may be called for from time to time by the constructor in accordance with the requirements of the "General Provisions . . ." and as arranged with the constructor or through the Administration Office.

(b) To complete records in triplicate of all such inspections carried out. The original record is to be passed to the constructor and becomes his *Log Book Entry.*

The second copy of the record is to be forwarded immediately to the address in Section 1(c), to enable comprehensive records of all amateur built aircraft to be maintained.

The third copy of the record is to be retained by the Approved Person for his reference.

11. All persons authorized to carry out inspections on amateur built aircraft will be issued with an Inspection Stamp. This stamp should be used to certify the various entries, as well as to mark components approved of when applicable.

Inspection Stamps will be as shown will contain an identification number.

Stamps must be returned immediately to the Inspection Division in the event that the Approved Person can no longer act as an inspector for any reason whatsoever.

12. To cover the costs of the administration of this operation, the Approved Person will collect a fee from the constructor for each inspection he performs. This fee will be determined by the Amateur Built Section Inspection Committee, as may be necessary from time to time.

In addition, the Approved Person who is carrying out the inspection voluntarily and in his own time, may ask the constructor to cover any "out of pocket expenses" such as travelling or accommodation costs which may be incurred by the Approved Person in carrying out the inspection.

13. The object of the Aero Club is to assist the constructor to complete a fully airworthy aircraft with the minimum of problems, accordingly,

(a) All enquiries received by the DCA, in respect of Amateur Built Aircraft will be referred to the Aero Club.

(b) Aero Club, through the Approved Persons, will offer every possible assistance to the constructor. This includes advice, as well as the inspection of his aircraft, and checking the documentation prior to it being submitted to DCA by the constructor.

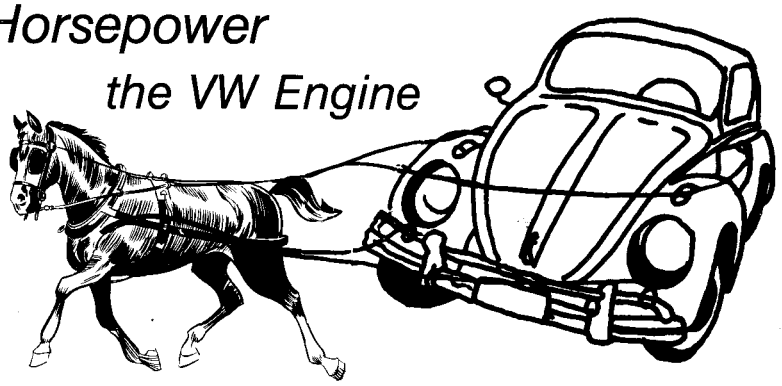
14. It is specifically noted that:

(a) The Approved Person is *not* authorised to grant permission to the constructor to fly his aircraft under any circumstances.

(b) Permission to fly may be granted only by the CCA on receipt of all the necessary documentation. Such application should be made by the constructor to the CCA on the appropriate forms.

The constructor is not authorised to fly his aircraft until he is in possession of the valid authority issued by the CCA.

More Horsepower From the VW Engine



By Bill Kiel

A variety of ways exist to increase the output of power from the VW engine for aircraft.

1. Increase the cubic inch displacement.
2. Increase the engine r.p.m.
3. By using gearing.
4. By supercharging.

It has been said that there is no substitute for cubic inches, if you want more horsepower. After years of standardising, Volkswagen apparently entered the horsepower race and has been steadily adding cubic inches.

Cu. In. Disp.	H.P./r.p.m.	Bore x Stroke	Comp. Ratio
72,74	36 at 3700	3,03" x 2,52"	6,6:1
72,74	40 at 3900	3,03" x 2,52"	7,1:1
78,42	50 at 4600	3,03" x 2,72"	7,3:1
91,10	53 at 4000	3,26" x 2,71"	7,8:1
96,66	65 at 4600	3,37" x 2,71"	7,7:1

The horsepower that an engine can develop is a function of speed. However, when using a VW engine in an aircraft, the rate of rotation is limited by the propeller efficiency.

If the engine is slowed enough to attain the desired propeller efficiency, the power that the engine will develop at the lower speed (say 3200 r.p.m.) can be calculated by the following formula:

$$BHP = BHPr \times \frac{RPM}{RPMr} \div \frac{dP}{dN} \quad \ldots\ldots\ldots\ldots\ldots\ldots (1)$$

Where the subcrip "r" represents advertised or rated engine condition, dP/dN is determined in part by many engine design factors and will probably not exceed 9,0.

Hence the horsepower of a direct drive VW 1600 engine at 3200 r.p.m. equals:

$$BHP = 65r \times \frac{3200}{4600r} \div 0{,}9 = 50{,}2 \text{ h.p.}$$

For aircraft use, at sea level.

The inherent tendency of propeller efficiency to drop at high speeds can be offset by suitable reduction in gearing. The gearing does not increase the horsepower of the engine, it merely lets one get the horsepower out of the engine for which it was designed.

Gear reductions have been used on large aircraft engines for many years, whereas small and medium powered engines are usually direct drive. However, E.A.A. members are continually clamouring for more and more horsepower, and this has created a desire to gear the VW engine.

Here are some problems one encounters when designing a gear reduction for the VW aircraft engine.

The VW crankshaft is a short and sturdy design but no matter how rigid it may seem, it has a certain amount of elastisticity which allows it to deflect when subjected to the power stroke of the piston. Restoring forces are set up in the crankshaft when it is deflected so that as soon as the power stroke is spent, the crankshaft will spring back towards it's neutral position but the inertia of movement carries it beyond the neutral position and then opposing restoring forces start it back towards neutral. After the crankshaft commences this torsional vibration and it is no longer disturbed, it will continue to vibrate and the amplitude will continually decrease until it has completely damped itself out due to internal friction.

However, if the deflecting force is applied repeatedly the crankshaft will continue to vibrate, the magnitude of this vibration will vary depending upon the frequency of the power strokes and on the natural vibrating frequency of the crankshaft.

If the drive gear is connected directly to the crankshaft it transmits the crankchain vibration through all the propeller drive components. When the flywheel effect of the propeller is moved from the crankshaft to the

gear-driven propeller shaft it aggravates this torsional vibrating condition set up between the propeller and the engine. For smooth operation it is necessary that there should be no reversal of pressure on the gears.

To overcome this torsional vibrating condition in geared aircraft engines they are equipped with either a quill shaft or spring coupling between the crankshaft and the drive gear, and/or the crankshaft is equipped with oscillating counter weights, which damp out crankshaft torsion at the gear end. Since the VW crankshaft is not equipped with pendulum counter weight it is necessary to provide some form of spring coupling between the crankshaft and the drive gear to damp out the torsional vibration.

Because the power impulse occurs only twice in each revolution of the VW crankshaft this reversal in pressure on the gears is more pronounced than it would be in a multi-cylinder engine where the power impulse is more continuous and is greater at some speeds than at others.

To keep the bulk and weight of the engine as low as possible it is essential that the reduction gear be compact and of material that will withstand extreme high stresses. This calls for a high grade material, careful design and precision workmanship. It just might be that some of the davantages of a gear drive could be offset by greater costs and complexity.

There are a number of possible arrangements of reduction gearing, but the ones considered here are:

(a) Spur gear,
(b) Planetary gear,
(c) V,belt drive.

A. Spur Gear

This is probably the most efficient kind of transfer drive you can use. It is also the noisiest type of gear. The basic principle of the spur gear is almost too simple to study, if it were not for the tortional vibration problem.

B. Planetary Gear

In the planetary train you have a set of several gears to get your speed reduction. There is an outer ring gear with teeth cut on the inside of the ring. Then there is a sun gear with the ring gear on the same axes, between these two gears, in mesh with both, are six small planet pinions that are carried on a spider or planet carrier. One of these three elements, the sun, ring or spider has to be locked stationery to get a speed change on this type of gear-set. In our case we lock the sun gear stationery and drive the ring gear, and we get a ratio of 1,621 on the speed of the spider or propeller shaft.

The automotive planetary gear system that can be used on VW engines is all helical gears. This type of gear has it's teeth slanted on the wheel, in a general spiral pattern. This idea is to let the meshing points (in and out) of the individual teeth overlap so that the gear is quieter. With a straight spur gear there is a distinct "clank" when sets of teeth strike each other. With helical gears one set of teeth goes into mesh before the last set goes out of mesh. Also the tooth doesn't go into mesh all at once, but the mesh points move across the tooth as the gear turns. In other words, the meshing process is essentially continuous, which makes the gear much quieter.

The major advantages of the planetary gear train are compact design, more efficient gearing, and were it not necessary that some form of spring coupling be installed between the crankshaft and the drive gear, it would be more suitable for adaptation to the VW crankcase.

C. V-belt Drive

It is the simplest and quietest and probably the least expensive kind of drive. It also absorbs any torsional vibration created by the engine-propeller combination. With the V-belt drive the propeller axis can be placed above the crankshaft axis, thus the visibility forward in a single engine tractor-type plane is greatly improved. With a 1,621 ratio the engine can rev. up to deliver it's full power and the propeller remains in it's efficient speed range.

For the VW multi-V-belt drive we would suggest four V-belts, because of their dimensional stability. They are matched and stay matched throughout their service life. The endless load carrying cords are laid in a single plane for flexibility and long life. Notches for increasing flexibility and heat dissipation provide excellent performance on small sheaves, short centres and high speed.

Supercharging

Generally speaking, a supercharger such as is used on aircraft engines is a mechanical device for supplying the engine with a greater weight of charge than would be incurred normally by the pressure of the atmosphere. Supercharging is employed not only to maintain sea level power at higher altitudes, but to increase the power of an engine at sea level. All we need to do to boost the horsepower of the VW aircraft engine is use a simple little centrifugal blower to overcome the negative pressure or vacuum existing in the intake manifold. As yet we have not found a ready made blower of the correct size for the VW engine, and the ones that we have looked at were disproportionately expensive.

LITTLE WORLD OF BIG FLYING !

The Story of Rand

Narrator: Stan Jane

The recent issues of *Wings* has told part of the story, *Rand – Little world of big flying* and of Baragwanath.

To some of us oldies the tear-ducts were surely brought into action as the excitement, joy and sadness of those early days came flooding back.

When landing at an airport we are so inclined to accept that it is there, never bothering to question why or who was involved in it's planning, yet somebody must have spent many hours of work to give us this facility. We are so inclined to take things for granted, I have with no small amount of pleasure taken on the unravelling of events leading up to the birth of 'Rand'.

The incredible history of the beginning of Rand has never really been told and now there are only two people left who can relate the inside truth of this event. So much of the scheming and planning took place in our home. Brother and I took great pleasure in eavesdropping on the meetings during which my father organised to ensure that Germiston and not Johannesburg would have the Customs Airport for South Africa.

So much of our history disappears because simple stories are not recorded, why not let our own newsletter record this story for posterity. As Alice said: "the best place to start a story is at the beginning".

1917, Major Miller lands his Harry Tate (RE 8) on Germiston Golf Course during a recruiting drive for the RFC. This spot would be roughly where Van Dusens are today.

1927, Imperial Airways announce their intention of starting an airmail service down Africa to Cape Town. The *Star* newspaper of Johannesburg, with a view to creating a public interest in aviation buys a Cirrus Moth and employs Lt. Bentley of the SAAF to fly it from England to South Africa. Lt. Bentley marries and he and his bride fly back up Africa to England on honeymoon in the Moth.

1928, Imperial Airways declare Baragwanath as being unsuitable as an aerodrome for air mail needs. The *Star* starts a competition 'Find Johannesburg an Airfield', the prize £100.0.0. In Germiston three town councillors get together to steal a march on Johannesburg, they were: Mr. W.H. Jane, a Manxman who left home at the age of 12 to earn his living, arrived on the Witwatersrand before the turn of the century at the age of 17 and became an official with the Goldfields of South Africa. Mr. N.J. Kock, a Germiston businessman, also Chairman of the Nationalist Party in the Transvaal and Lt. Col. Dukoff-Gordon, ex-Indian Army and then serving as Germiston's Town Clerk.

Mr. Jane cunningly invited Sir Pierre van Ryneveld and Captain Lindup of the Civil Air Board to a private lunch. After lunch they were taken to the golf course and asked their opinion of this area as an aerodrome. If Major Miller could land there, why not others? Both agreed that if the golf course was swung

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around to the lower ground in the west, then the field had great potential.
Having received this assurance, a visit to his friends at Goldfields brought a firm promise that Germiston may have the surface rights of 1 100 acres for an aerodrome. Now off to Cape Town where parliament was in session. The government was a pact between the Nationalist and Labour Parties. Mr. Kock's influence here was invaluable and Germiston was assured by Mr. Sampson, the Minister of Posts and Telegraphs that if it established an aerodrome, Germiston would be the premier airport for the Union.
This brief description may give the impression about all this was accomplished with the greatest of ease, this is far from the true facts, it involved many, many months of hard work, unpaid, and in many quarters not appreciated. Remember all this was done in cloak and dagger style and the Johannesburg Council was not aware of what was going on. Armed with all this ammunition, Mr. Jane proposed to Germiston Council that an aerodrome be established and after a heated debate the motion was carried. Four hundred acres were purshased from Elandsfontein Estates (Goldfields) at £20.0.0 an acre. Portion of the golf course that was necessary to move was redeveloped to the west, a small prefab hangar built and Germiston Aerodrome was in business.
Came the great day, Official Opening, Mr. George Brown MLA was invited to do the honours, however, in a letter he expressed his appreciation for the honour and said only one man was entitled to open the drome and that was Mayor Jane who had done so much to bring this to fruition.
One Saturday afternoon early in 1930 a great gathering saw Mayor Jane declare the aerodrome open. Mr. Wilfred Fernhead, Mayor of Johannesburg was invited to share the dias during the opening ceremony. The guest list looked like the 'whose-who' in South African aviation. On the field the South African Airforce put up a great show with their: DH9's, SE5A's, Avro 504's and even their latest, the Westland Wapiti. The civil verson were represented by Cirrus and Gypsey Moths and a sprinkling of Avro Aveans.
A Mr. Veasy was the first to set up an aviation business at this new field, followed by Major Millers' Union Airways and a Mr. Rodwell King who started a flying school and charter service and soon it was a hive of activity.
Germiston invited Johannesburg to take up a half share in the airport so that it could be developed to it's full 1 100 acres. Germiston felt it could not meet the enormous sum of £60,000.0.0 to do this and in any event not only Germiston but Johannesburg would also share in the benefits that air travel would bring.
Now came the crunch, Johannesburg was all bitter and twisted about the whole affair and it did not help matters when the press kept referring the to the 'City without an airport'. They declined to take up the offer, let those ... Germistonians stew in the goo of their own making.
A year was to pass during which much wrangling and approaches were made to get together to develop the site, but Johannesburg remained obstinate. It was only when the government intervened and stated that Germiston was the only site that would be accepted as a customs airport on the Reef and if the two councils did not come together immediately, a new airport would be sited in the Pretoria area.
This was the catalysis that was needed. The two councils shook hands and soon Germiston Aerodrome became Rand Airport, the first chairman of the combined committee was Mr. Fotheringham of Johannesburg. Not long afterwards the first Imperial Airway Liner was to land and start the weekly service down Africa.
It decided by the committee, that the airport should be properly opened and His Excellency the Governor General should do the job. However, the Earl of Athlone who was so well known for his courteous approach to all things, spoke to my father at the civic function prior to the opening and laughingly asked, "How does one open an airport, you ought to know because you have already done it". In his address among other points he congratulated Rand on it's new big hangar, expressed disappointment at the non-arrival of the Imperial Airway Liner but tactfully avoided using the words declaring the airport open.
As a reward for his efforts, Mr. Jane lost his seat on the Germiston Council for visiting such an expensive white elephant as Rand Airport on the ratepayers of Germiston. Succeeding Germiston Councils over the years attempted to farm their half share to Johannesburg. In 1948 Johannesburg became the sole owner of the airport. In recent years Germiston has appealed unsuccessfully to the Administrator to be allowed to buy their heritage back.
In closing the story, lets remember three men of vision, Messrs. Kock, Jane and Dukoff-Gordon and borrow from a memorial tablet in Kirstenbosch Gardens: "If you look for their epitaph — look at Rand — little world of big flying".

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Tony Wills in his "Fly Baby" ZS UFI from Pietermaritzburg.