

Aerobat

**The Official Magazine
of the
Hibiscus Coast Radio Fliers Club**



February / March 2021

Issue Number 5 - Volume 20

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CoverPhoto

James Copley
being presented with
his well deserved
BP wings badge
by club president
Pete Denison

Photo Henny Remkes

H.C.R.F. Calendar 2020/21

Our fixed flying times are every
Wednesday, Saturday and Sunday morning

Please note these events may change due to COVID 19.

Date	Day	Event	Where/When
3 Feb	Wed	Twilight 3 Rain Date	Wainui 5Pm till dark
6 Feb	Sat	Winch Gliding	Wainui 8.30 am – noon
6 Feb	Sat	Club Meeting	Club meeting 10 am – 11 am
3 Mar	Wed	Twilight 4	Wainui 5Pm till dark
6 Mar	Sat	Winch Gliding	Wainui 8.30 am – noon
6 Mar	Sat	Club Meeting	Club meeting 10 am – 11 am
10 Mar	Wed	Twilight 4 Rain Date	Wainui 5Pm till dark
3 Apl	Sat	Winch Gliding	Wainui 8.30 am – noon
3 Apl	Sat	Club Meeting	Club meeting 10 am – 11 am

From the Editor's Desk



Well I guess it's time for me to put pen to paper and write my blurb.

This time's newsletter went together quite quickly. This was due to input by Henny Remkes and Peter Denison who always find the time to put in the effort with photos and articles. Thank you guys, this helps make a great magazine. Thanks also go to Jim who checked every mag and picked up mistakes

I would also like to thank all the

other hardworking model magazine editors around New Zealand who enable me to plagiarise things from their mags.

Now for the easy bit. I will no longer be standing for re-election for Editor next year. It has got to the stage where I no longer have anything more to say.

Great flying
Ross McDonnell
Editor

I really don't mind getting older, but my body is taking it badly.

From the President's Desk

Happy 2021 to you all.

Well it sure seems a long time since we had our Christmas BBQ Twilight, but thinking back I reckon it was one of the best I have ever been to!!! Big thank you for organising it to Carmel and Henny Ramkes plus master chef Nigel Grace with young Jim Hall helping it was a lovely evening.

So far so good as far as our Covid situation is concerned "fingers crossed", and for the Club. At the time of writing we have a Twilight on the 27 January plus another one in March - so lots to look forward to.

Looking forward to seeing you down at our field over the summer.

Happy Landings
Pete Denison



Peter Denison's Swordfish

Getting near to completion.



Photo Peter Denison

I fell off a 30ft ladder yesterday. Luckily it was only off the second step.

Snaps from the Christmas Party



I never run with scissors. Actually those last two words were unnecessary.

This is one of Bryan Leeves's legacies.

The building was finished by Dayle Montgomery.

It sat in our clubhouse for quite a while until James Copley decided to purchase it via a donation to the club.

He put in his own receiver and bound it to his Orange transmitter.

It was maiden on the weekend in VERY windy conditions and it flew beautifully thanks to James's skilled handling ☺

Brian's plane leaving James's hand

Another of Brian's plane. Misspelled though, (mabe not Ed)



Photos Henny Remkes

I never run with scissors. Actually those last two words were unnecessary.

A Bee Or Not To Bee

By Henny Remkes

My Bee didn't respond to my transmitter and this is what happened!

After many days gluing, fitting and painting, AND changing the orange receiver to a Spektrum one it flies beautifully again.

Cheers, Henny



A dentist and a manicurist married. They fought tooth and nail.

A BIT ABOUT COX ENGINES

COX ENGINES #3

The TEE DEE Range

1961 - 1996

By 1961 the Cox Babe Bee had been selling well for four years, but a higher powered engine of the same capacity was needed for competition use. The TD.049 was the answer, and has become the most lauded Cox engine, sitting in the middle of a range of engines of similar appearance that stretches from a miniscule .010 through .020 .049 .051 .09 to .15 cubic inch.

The TD.049 fulfilled its design brief, was dominant in competition for many years, and is still a potent performer in 1/2A free flight models. It was the creation of Bill Atwood, hired by Cox specifically to produce this line of competition engines.



TD.049 (Cat #170)

While the TD range was designed to be produced on the well established and efficient Cox production line, the .049 was not merely a souped-up Babe Bee but a totally new design. Several elements contribute to the greater power of the TD range.

A tapered piston runs in a tapered cylinder to give tighter piston fit at TDC yet less friction throughout most of the piston travel, and a lightened piston gave less reciprocating mass. The reed-valve induction of the Babe Bee had limitations at high revs so the TD was fitted with a true carburettor using peripheral fuel inlet ports in

the venturi for more efficient fuel induction. TD cylinders had two deep transfer ports and two booster grooves (sometimes referred to as "side flutes") on either side of the transfer ports. Compared with the one or two ports on the Babe Bee, the TD could breathe much more efficiently. The crankshaft was precision balanced for less vibration.

The TD.049 was tested by Aeromodeller Magazine in 1962 with output power recorded as .105 bhp (78 watts) @ 22,000 rpm with a maximum torque of 5.5 oz.in. at 18,000 rpm on 25% Nitromethane. For comparison, a modern Norvel AME .049 engine outputs .14 bhp (100 watts) @ 20,000 rpm. So the 60 year old Cox design is capable of producing 75% of the power output of a truly modern engine design - no bad at all, Mr Atwood!

In 1973 the .049's bypass porting, crankshaft timing and venturi were modified slightly and a mesh screen was added to the venturi to keep out dirt. This resulted in a minor performance improvement over the earlier versions.

TD.051 (Cat #200) The 051 is simply a Class A version of the .049 engine, of similar external appearance except for its red carb body. The bore is slightly larger and the piston has a small groove in its skirt that visually differentiates the .051 from the .049. The groove is useful for competition scrutineering and it has been suggested that the groove bled off just enough power so an .051 would exactly equal an .049 in power, obviating trim changes in free flight models. The ability of the groove to consistently perform such a task seems unlikely to this writer in light of the differences in power created by manufacturing and assembly variations.

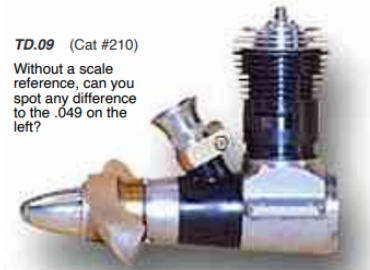
One of the engines Cox required of Atwood was an .010. Cox had already tried to halve the size of the Pee Wee .020 but couldn't get it to run. The problem was with the tiny reed valve. Atwood found that the front rotary valve of the TD.049 worked well in the .010 size so the .010 was born along with a x2 version, the TD .020



TD.15 (Cat #180) The original Tee Dee 15 quickly became the engine to use in FAI FF. It had much higher performance than Cox's Olympic .15, an earlier engine that had supplanted the European diesels in use at the time.

TD.09 (Cat #210)

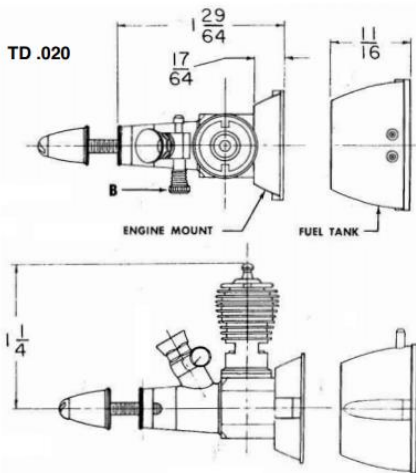
Without a scale reference, can you spot any difference to the .049 on the left?



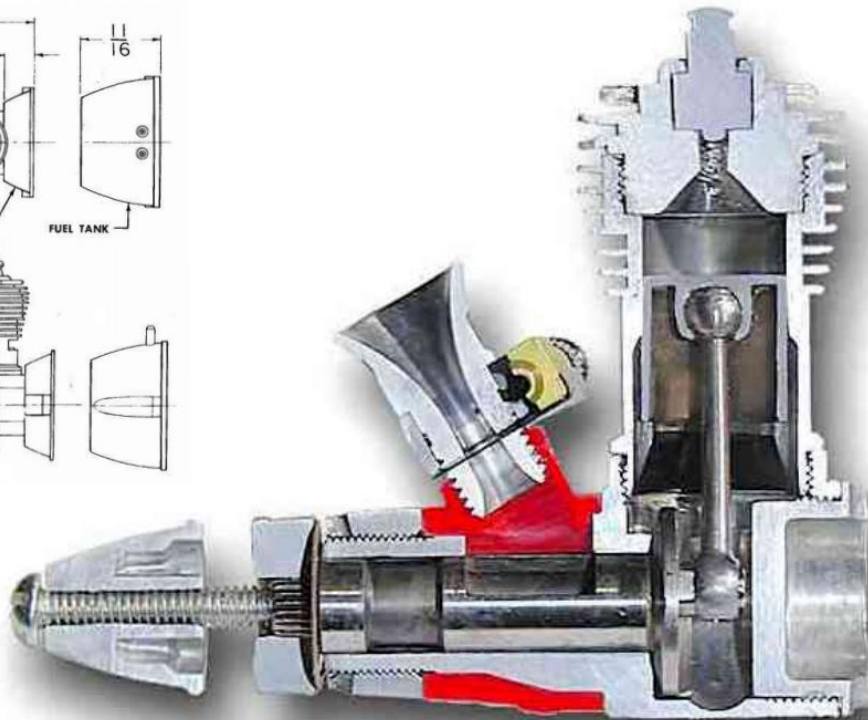
With the advent of more powerful (if heavier in weight and price) engines of similar capacity, the Cox TDs are no longer Kings of Power, yet the TD series remains a useful, lightweight and reliable engine for small power. And why TD? Earlier Cox products had been sold under the name *Thimble Drome* which was abbreviated to *TeeDee* and then *TD* for this engine series.

COX ENGINES

Sectioned TEE DEE .051 Engine



Above: The .020 and the .010 came with a backplate for use with a separate tank, plus a combined tank and mount. The combined unit was handy, but prone to leaks.




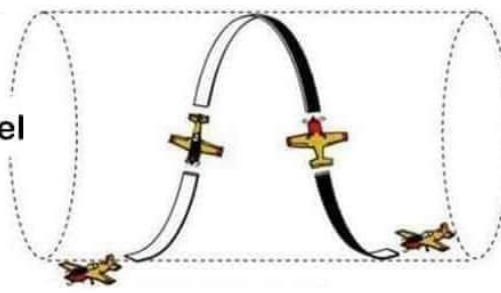

Unashamedly plagiarised from AVANZ News Jan 2021

No matter how much you push the envelope, it'll still be stationary.

Other Things



KNOW YOUR ROLLS

1. Aileron Roll A diagram showing a small airplane performing an aileron roll, with a dashed line indicating the path of the aircraft as it rolls around its longitudinal axis.
2. Barrel Roll A diagram showing a small airplane performing a barrel roll, with a dashed line indicating the path of the aircraft as it rolls around its longitudinal axis, forming a barrel shape.
3. Cinnamon Roll An illustration of a cinnamon roll on a blue plate.



The only knowledge that can hurt you is the knowledge you don't have.