THE JAVELIN

OFFICIAL NEWSLETTER of THE JOWETT CLUB OF AUSTRALIA

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Published and Edited by J.D. Taylor, 1 Walker Rd., Mt. Waverley, Vic. 232-6331

ANNUAL GENERAL MEETING 1967

Twenty two people attended Christ Church Hall on the evening of 14th April for the General Meeting, and again elected Captain Pearson President. Maurice Dodd now fills the vice president's chair and I have taken over from Jim Mannix. John Taylor is now the editor and Bruce Kelsall fills the vacancy on the committee.

We had some new faces, and members we hope, who came along after seeing the advertisement in the 'Age' paper and also J. Somers from Adelaide and Mr and Mrs Langley from Ballarat. Over 900 miles return trip for the General Meeting would make Jack Somers perhaps our keenest member, followed closely by the Langleys. Although Ballarat is much closer they make the trip more frequently. Apologies were received from G. Gilmore and David Lupton of Albury. David also requested that any member passing through Albury look him up C/o Australian Broadcasting Commission.

President's Report

Captain Pearson paid a tribute to the quality of materials and the skill of the Jowett Engineers in view of the fact that now, fourteen years since the last Jowett was built, there are still some hundreds on the roads.

The fact that the J.C.A. has completed its tenth year of operation is due largely to the dedication of the committee and the support of members (who else? Ed). Since the first Annual General Meeting, twenty meetings have been held including six general meetings at which Club business has been discussed and much other interesting matter has been provided. The poor support by members is disappointing and it is questionable whether the expense and trouble incurred is warranted.

The death of Mr J.W. Dodd, our Vice President, meant the loss not only of a staunch supporter but also our Social Activities Organiser.

Captain Pearson commented on the growth of the N.S.W. Branch and the enthusiasm of its members. He stated that the main topic at committee meetings has been the spare parts problem, and that a current order to the value of about $800 is due from overseas.

A special tribute was paid to Mr Alec Gray, as Spare Parts Officer, about whom the Club pivots. A similar tribute to the Treasurer who so capably has looked after Club finances for the past six years. In regretfully advising the retirement of the Secretary, Captain Pearson expressed the hope that he would retain his association with the committee.

To all committee members Captain Pearson expressed his thanks and said that there are Jowett owners throughout Australia who have good reason to be thankful for their interest and co-operation. A special word of appreciation to 'committee wives' for making their homes available and for providing suppers throughout the year was expressed.

In closing, the President expressed the hope that members would continue their support and that as a result of this meeting club runs and other social activities would shortly be resumed.

Balance Sheet 1966-67

Receipts – $		**Payments – $**	
Carried forward	533·55	Expenses	257·37
Subscriptions	350·00	Purchase of Parts	1,133·99
Sale of parts	1,357·34	Bad Debts	6·67
Arrears	230·10	Debtors	279·62
Creditors	76·72	Cash on Hand	850·06
Total	$2,527·71	**Total**	$2,527·71

My wife and I have just returned from touring around Tasmania. Despite being told that "they broke the last one up years ago", and some anxious moments in the hold of the Princess of Tasmania with an 'I-can-drive—anything' type trying to move our Javelin backwards, we had a very pleasant trip. While waiting on the point at Devonport to return to the mainland, we met John Stafford of Hobart. John, a member of our club, was taking part in a veteran car rally and had noticed us drive past and stop down the road. He came down and made himself known, and all too soon he had to move on. It was a pity that we did not meet in Hobart, but next time we may.

- Peter Carboon.

(You didn't mention getting 39/MPG on the trip, Peter, and was John Stafford rallying in a Jav?!! Veteran?!!? Must try for a fuller account of this trip. Ed.)

EDITORIAL

Once upon a time not long ago there was a bloke like me who dutifully tootled along to an Annual General Meeting (that is, the tenth of the Jowett Club of Australia) because most of the committee nearly always go and sometimes it's quite a painless function anyway.

During the course of this meeting there was an election of committee members (as there always is at A,G.M.'s) and this B.L.M., who has been on the technical committee for some 8 years, is suddenly landed with the job of Editor.

Having had very little experience at this sort of thing I checked around and found that a real editor wears a tennis eye shade, has three telephones and a waste paper basket of considerable capacity. People send him Valuable Documents etc. to incorporate in their 'News-Thing' and the editor goes red in the face and roars and throws the above Document in the W.P.B. and the people out the door.

I would like to state here and now that one can't edit the 'Jowett News' like that.

Reason is that I have only one phone and none of the other requisite, and almost nobody offers anything anyway, let alone printable stuff. Of course this was in the past and I expect everybody will come to my aid with Documents to be published, even if only to see their own writing in print. It's one way of getting your own back. The trouble with clubs of this sort is that everybody thinks that it's the other fellow's job to do it, whatever it may be. I know I do.

When it comes to writing, most people have a mental block about actually putting it on paper. When I first started to write technical articles I used to spend hours writing and rewriting them, but it became easier with practice till I could write one in maybe two hours. It's just like talking really, but ten times slower.

To get back to the point, if we had one, when this started, if anybody has done anything to or been anywhere in a Javelin or Jupiter that is of interest to Club members, I'll be glad to have a readable and printable copy from you. You write we'll print it.

Included in this 'News' is an article by Eddy Wolf of Sydney, which goes into this compression business at some length and has obviously taken some considerable time to collate. We must apologise to Eddy for having it 'on file' for so long, but we finally got round to printing it, and valuable knowledge it is to be sure.

In The Bits And Pieces Department:

Eddy wolf has sold his 1926 Jowett to Roger Bund of Melbourne. I would like to see this weapon. Roger, if you could contact me sometime.

Mr. G. Newlands of Newlands Auto Service Centre (108-112 Power Street, Hawthorn, phone 81 6938) has the following for sale: 1 complete engine, 1 crank shaft, gear box parts, and body parts. The model or type is not stated. Don't ring me – ring Mr. Newlands.

Mr. Langley of Ballarat uncovered two Javelins at Stawell which are at present unused and, I understand, are available for a giveaway price. Condition and model undisclosed or unidentifiable, I forget which. Interested parties contact me on this and I'll try to find the bit of paper it was written on.

Mr Lucas Klein of 'the Manse', Laurel Street, Whittlesea (phone Melbourne 716 2094) rang me to say he had a Javelin to dispose of. Engine has this on it: E1PC17167 and V59255IP. The car has a late type grille, and a great heap of odd spares (heads, c/cases etc.) goes with it. Bargain at $10 less discount (to be negiated on site). Brakes do not function due to brake hoses hanging down like grape vines, so it must be trailered or towed with a solid bar. Engine, runs but needs a 'tune-up'. Ring me if you see it or take it so we can keep track.

A note here to Mr. W. Laurence of Boulder, W.A. Sorry if I haven't answered your last letter, Bill, but I haven't written 'answered' on it, so I don't really know for sure. If you have got the impression we are a dying race let me reassure you. There are some cranks here who believe a Jav. can go forever both physically and economically, and there are plenty of good Javs. about here to prove it. Certainly a lot bite the dust due to neglect, but this is because the wrong type of people own them. The following is an opinion of mine and not particularly to you, Bill. There are plenty of expendable cars made now for this type of person, so perhaps they will keep clear of cars that count, not only Javelins. Most car owners (not motorests or drivers, there is a distinction here!) will tell you that a car is for going from point A to point B with a degree of reliability. It has a wheel at each corner and 'seats' for six people, one of whom influences its direction and speed somewhat. It is made mostly of metal and consumes gas (petrol), H.P. payments, pedestrians and other cars in part or wholly, and quite often its own occupants. Ideally, its engine has six cylinders all standing up and it gasps and reverberates and breathes noxious fumes from its crankcase ground-wards (because it hasn't got a breather valve). If this sort of thing pleases you, you are easily pleased or don't know any better. Also, you won't be reading this, as this is basically a letter to enthusiasts (cranks?).

Sorry about this drift from the point (what point?) but Jav. critisism annoys me, coming from a complacent sod who owns a corroding hack (not you, Bill). For further reading see Ralph Nader's book 'Unsafe At Any Speed' or the finding of the U.S. Congress on car safety.

As I said earlier (two hours ago) it's quite easy to write bits for News Letters once you get started.

I have an extensive letter here from Bruce Polain (Sydney), quite a lot of which will need some thought, so I'll keep this for the next News Letter, when I may not be feeling so verbose myself. Seems like a very active tribe you have there, Bruce, judging from your comments. How about a combined rally-thing sometime at a suitable half-way point. Maybe Seymour or thereabouts?

Having calmed down a bit after my outburst on 'volume sellers' I shall go to bed before it gets light. Sorry if you don't like all the above but you're stuck with it for a year or so.

- John Taylor, Editor.

MELBOURNE

NEXT GENERAL MEETING AT CHRIST CHURCH HALL, WOOD STREET, HAWTHORN WILL BE HELD ON FRIDAY 9TH JUNE AT 8 PM. MEMBERS AND FRIENDS WELCOME.

ANNUAL SUBSCRIPTIONS ARE <u>NOW</u> <u>DUE</u>.

STOP PRESS!

Jim Mannix, our last honorary secretary, would like somebody to buy his P.D. Jav. It is registered till February 1968 and is in 'fair condition all round', as he puts it himself. The price: cost of the registration and tyres, which means you get the car for nothing. It is available unregistered if this is desirable to interested parties. Jim lives at 21 Surrey Street, East Bentleigh, Phone 97 5091.

Don't ring me, ring Jim.

-J.T.

WHAT COMPRESSION RATIO IS YOUR JAVELIN?

by Eddy Wolf

The compression ratio of an engine is the mathematical figure arrived at by considering the capacity of a motor with the piston at top dead centre (TDC) and bottom dead centre (BDC). The difference in these two volumes is known as the SWEPT volume or the capacity of the engine whilst the excess of BDC capacity over TDC capacity is known as the UNSWEPT volume. The ratio of BDC capacity over BDC capacity minus TDC capacity is known as the COMPRESSION RATIO. More Simply:

Compression Ratio =

$$\frac{\text{Unswept + Swept Volume}}{\text{Unswept Volume}}$$

In the Javelin engine, the capacity or swept volume is 1,486 ccs and the unswept volume is 60 ccs in a standard engine being made up of three parts. These three parts are:

a) Depression in the crown of the piston. (11 ccs)

b) Space in compressed head gasket. (7½ ccs)

c) Volume of the cylinder head. (41 ccs)

Thus the unswept volume per cylinder is 60 ccs and the total unswept volume of the engine is 60 x 4 = 240 ccs. Using the formula we get:

Compression Ratio =

$$\frac{240 + 1486}{240}$$

$$= 7{\cdot}2 : 1$$

By using a light oil or kerosene and a burette or similar measuring device, the compression ratio of your Javelin is easily worked out using the accompany chart. A reasonable approximation of the compression ratio can be obtained by measuring the volume of one cylinder by rotating the engine to TDC and removing the spark plug. The oil can then be poured into the sparkplug hole until it comes flush with the aperture but is not coming up the threads. By gently rocking the crankshaft all air can be ejected without opening the valves and the volume read off when multiplied by four will give you the total unswept volume. Now by using the chart or the formula, you can determine exactly what your compression ratio is. Remember however that unless the carbon is first removed from the pistons, head and valves, an inaccurate result will be obtained.

At this stage we may look at the compression ratio formula again to determine how to increase the compression ratio from the point of theory. To increase the C.R. we can take three paths:

a) Increase the capacity (swept volume) only,

b) Decrease the unswept volume, or

c) Fit higher compression pistons (which in effect decrease your unswept volume).

To increase the capacity an increase in bore size is required because the stroke is unalterable (unless you want to go to a huge expense). This rules out method a), Both method b) and c) are possible but b) is the cheapest so we shall spend some time on it.

In the January-March 1965 edition of 'The Javelin' Mr. J.D. Taylor made a very interesting comment on the difference in performance of Javelin engines, his final statement being: '. . that a power difference between one engine and another will mostly be found in the 'breathing' department'. I would now like to take the liberty of quoting some facts and figures on this remark.

Over the past year, I have checked about twelve cylinder heads to determine their combustion chamber capacities. In almost every case where the valve seats had been recut (resulting in them sitting lower in the head) the volume had increased by a significant amount producing a larger unswept volume and hence a lower compression ratio than standard.

Most heads showed a volume of 46 ccs although two were down to 48 ccs. Since the undercutting of valve seats is only done when strictly necessary the actual undercutting cannot be done away with. There are a few points that could well be considered here. When valve seats are recut the original angles of turbulence should be maintained. It is usual to reface the valves also when recutting the seats in order for them to be correctly mated. When the valves have been refaced make sure that the remaining portion of the valve is not thin at the edge otherwise pinging will occur after about 2,000 miles due to the exhaust valve heating up and becoming incandescent when a layer of carbon forms over the thin edge of the valve.

The best way out is to use new valves in recut seats for two reasons:

a) They are thicker and will not cause pinging, and

b) They are thicker and make up for the pocket produced by recutting the seat as will as decreasing the unswept volume.

On point b) a set of figures confirms the result. I tested a head for volume using recut seats and valves and obtained a reading of 48 ccs per cylinder. By using new exhaust valves, the volume became 46 ccs and using new inlet valves as well, the result would probably have been 44 ccs.

Now you may say that this is only a slight decrease in the unswept volume due to the new valves, but when multiplied by 4 it means a saving of 8 ccs for exhaust valve only and 16 ccs for both inlet and exhaust. To achieve the same decrease by grinding the head would have meant taking 44 thou of the head. No mean figure indeed! Furthermore, whereas with recut seats and valves, the compression ratio would have been 6·5:1, by using new valves this became 6·95:1. Thus the compression ratio was raised 0·4 merely by fitting new valves in a given head.

Should the valves have sunk to a lower level than 46 ccs, the head can be brought back to normal by reducing metal through shaving the head. As a guide to ???? ???????? or reducing the head volume, 11 thousandths of an inch taken off the head will decrease the volume of the head by 1 cc. So that if a head with old valves and recut seats is found to be 50 ccs, new valves will reduce this to 46 ccs. It will still require another 4·5 ccs to bring the head back to standard volume. Thus it becomes necessary to take 4·5 x 11 = 50 thou off the heads. As a guide, here, it may be well to note that I have seen heads with 100 thou taken off without any apparent ill effects.

From the chart it can be seen that a worn head with recut valves and seats and a head volume of 46 ccs would give a compression ratio of 6·75:1. Is it any wonder then that after going to the trouble of supposedly improving the breathing by getting the valves to seat properly, the car does not pull as well as what it used to?

The answer is simple. If recutting the seats becomes necessary, replace the valves by new ones and have the correct amount taken off the head. The engine will then return to its original healthy pull.

Good luck!

COMPRESSION RATIO CHART FOR THE STANDARD JAVELIN ENGINE

Standard Piston Specifications	
Bore	72 mm
Stroke	90 mm
Compression Height	39·5 mm
Capacity	1486 ccs
Compression Ratio	7·2:1
Unswept Volume Per Cylinder	
Head Capacity	41 ccs
Gasket Capacity	7·5 ccs
Depression in Piston	11 ccs
Total	60 ccs

Unswept Volume Per Cylinder	Unswept Volume Total	Head Volume	Compression Ratio :1
67·5 ccs	270 ccs	49·0 ccs	6·50 ccs
67·0	268	48·5	6·55
66·5	266	48·0	6·60
65·75	263	47·25	6·65
65·0	260	46·50	6·70
64·5	258	46·00	6·75
64·0	256	45·50	6·80
63·5	254	45·00	6·85
63·0	252	44·50	6·90
62·5	250	44·00	6·95
62·0	248	43·50	7·00
61·5	246	43·00	7·05
61·0	244	42·50	7·10
60·5	242	42·00	7·15
60·0	240	41·50	7·20
59·5	238	41·00	7·25
59·0	236	40·50	7·30
58·5	234	40·00	7·35
58·0	232	39·50	7·40
57·5	230	39·00	7·45
57·0	228	38·50	7·50
56·75	227	38·25	7·55
56·25	225	37·75	7·60

Restorer's Note: On Page 5 there is a section marked '??????????', the original was unreadable at this point. Some parts of the article had been hand written.