

Colin Hough

Joined: 10 Sep 2004

Posts: 35

Location: Amersham, Bucks

Posted: Fri Nov 05, 2004 4:57 pm Post subject: Advice please - gearbox or engine problem???

GENERAL BACKGROUND

After 4 years off the road (2 1/2 at the London Motor Cycle Museum and 18 months for an engine and gearbox service by Tim Sharp), I have finally got my Brum Scott all back together and she fired on the first kick and ran perfectly on the second (after I got the HT leads the right way round that is). I was therefore very very pleased.

Being concerned about lubrication, I had filled the engine wells (and ensured the big end would splash through them), loosened the oil feed line at the Pilgrim pump to ensure the supply line was flowing and full, I filled the wells in the Pilgrim so she would immediately suck oil and opened up the pump adjusters wide so there would be a very good flow. I also use a 50:1 in the tank to lubricate the top end.

I ran the bike on tick-over for about 5 minutes (she died a few times, but started first kick each time and was very easy to kick over). By this time there was a huge amount of smoke coming out so I turned down the Pilgrim to about 12 drops per minute and got the smoke down to a "reasonable" level.

I then decided to try a gentle run of about 4 miles and all was fine, though the gearbox was not particularly smooth. On my return, I confirmed that she still had a blue haze coming out.

THE PROBLEM

Next day I booked her in for an MOT and wheeled her out. I tried kicking her over and the kick start hardly moved - I initially thought it was in gear (but could not have been as it wheeled OK). On pulling in the clutch it was totally free, but the engine did not turn i.e. not in gear.

Having confirmed it was out of gear, I tried kicking again - the kick start moved continuously, but was very very stiff (in retrospect I probably should not have done this). I tried without plugs - no change.

My first reaction was that it was a gearbox problem. I had fitted the drive chain cover to the gearbox that morning just for the MOT so I loosened off all the nuts on the left hand side, removed the cover and tried kicking to see if I had got the alignment wrong. No difference. I then tightened up the nuts and tried to think - engine seizure???

In disgust, I decided to wheel it back into the garage, but, for some unknown reason, I put it in gear, gave it a slight push and let the clutch out to see what happened - it appeared to turnover before running out of momentum. I then knocked it out of gear and gave the kick start a prod - she turned over well as if there was no problem. I switched on the ignition, kicked and she fired up first kick and settled down to a tickover immediately. There was a very slight haze of blue smoke that gradually increased. I also confirmed that the oil flow setting was about 12 drops per minute and stopped her. Having taken the day off work to get the MOT, I decided to give it a go and she fired up fine and ran well over to the test centre - about 6 miles. 45 minutes (and a pass) later, she kicked over easily, fired on the fourth attempt and ran the 6 miles home OK. My wife, who had followed me in the car, said that she was smoking all the way.

I tried kicking again the next day and all appears fine, but I am reluctant to start her up and ride until a reason for the tightening up is known (I know,

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this should have been the reaction immediately, but frustration tends to confuse - while trying to get it freed I was even working out the wording of a for sale advert in Yowl and awearing that I would give up old bikes for ever).

My thoughts are that it was a gearbox problem as it freed after effectively 'rocking' in gear.

COMMENTS

Note: when I bought the bike from a dealer I thought the gearbox was sloppy and asked for it to be serviced before delivery. However, the bike tightened up on the second ride so I got a professional to sort it out and fit a reduction gear thinking it was a partial engine seizure - he said the gearbox had seized as it had no oil in it (!), but there was no damage. He freed it, filled it with greese (to ensure it did not leak) and the bike ran fine after that. Following Tim's strip down (he said ti looked fine), the gearbox is now filled with single grade SAE 40 engine oil (as per the Book of the Scott) up to the level of the plug at the centre line of the gearbox - I assume this is the correct level.

Should I just try riding it and see? Should I be thinking of a strip down?? How easy is a gearbox rebuild if riding does do it in??? Are there any tricks to lining up the gearbox????

Any advice, comments, suggestions etc????

Regards,

Colin Hough
1959 Brum
SOC Membership No. 473

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BRIAN MARSHALL

Joined: 31 May 2004
Posts: 50
Location: East Midlands, U.K.
Posted: Fri Nov 05, 2004 8:45 pm Post subject: Advice please

Hi Colin, First things first..... Your gearbox cannot have seized up without some damage having ocured. The next thing is to disconnect the primary chain and then operate the kickstart lever. The box should turn over perfectly freely if generally O.K. but you have almost certainly got some damage to either the layshaft bush positioned behind the kickstart or to the High gear bush on the end of the mainshaft behind the clutch. If the damage is serious you will probably have an oil leak from either of these two points. The main risk is if one of the bushes has seized onto its shaft and is now turning in its housing and wrecking the gearbox shell or end cover. If it was mine I would have the end cover off the box to investigate. This can be done with the box in-situ.
Regards. Brian.

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Regards. Brian.

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neil levings

Joined: 01 Jun 2004

Posts: 20

Location: Stratford upon Avon

Posted: Fri Nov 05, 2004 10:24 pm Post subject:

MMmmm

There are two issues here- firstly u have way too much oil going thru yr dripper - 6 drips /min is ample - hence the smoke!!

The gearbx is definately the problem -and I suspect that a tooth or two has been damaged or broken off - hence the intermittent turnover problem .

In any event taking yr box out is easy - even I can now do this!!!!!!

U can then examine the gears and the bearings.

Incidentally I would think that 40 is too light a gear oil - try 140.

Cheers

Neil

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BRIAN MARSHALL

Joined: 31 May 2004

Posts: 50

Location: East Midlands, U.K.

Posted: Sat Nov 06, 2004 8:51 pm Post subject: Advice please

Further to my previous reply and the subsequent response from Neil Levings, I do not think that broken gear teeth would give anything like the symptoms described. It would be virtually unrideable with such damage and it would not be intermittent. Also do not confuse engine oil viscosities with gear oil viscosities. They are on totally different SAE scales. I use 140 grade GEAR oil in Scott gearboxes. I feel 90% sure that the problem is a seizure of either the layshaft bush or the high gear bush. Regards, Brian.

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Douglas Kephart

Joined: 06 Jun 2004

Posts: 11

Location: Pennsylvania, USA

Posted: Sun Nov 07, 2004 4:25 am Post subject:

Brian,

Not necessarily unrideable if only one gear tooth were missing. When I acquired my Brum and gave it a test ride, all appeared normal in the gearbox department. It shifted and ran in all three-gears without any indication of trouble or noise. Yet on disassembly it was missing a tooth. Can not remember which position it was in after all these years, but just dug out the broken gear from the box of left over bits and note it is (or was) 22t and no dogs, so one of the lay shaft gears I presume. The missing tooth was not in the gear case on disassembly!

Also know of friend who ran a Model A Ford 3-speed clash box some distance without a tooth or two (though larger diameter gears.) He also drove from Long Island, NY to Philadelphia without the bottom in a trans either, just a rectangular gallon tin oil can cut to serve as an impromptu sump and wire up in place! The same fellow, as well as my father, broke teeth off of the ring gear pinion on the rear axles of their Models As (cheap transport in the fifties.) That WAS definitely noticeable, but by careful modulation of the throttle they were able to nurse the cars home from work so they could be repaired. Father's had two teeth missing by the time he got home! Amazing what you can get away with.

But I digress. The missing tooth did not cause the kick start to jam in my particular case the two dozen times I had occasion to use it before ripping it assunder for restoration. Though perhaps the very next kick it would have.

-Doug

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Colin Hough

Joined: 10 Sep 2004

Posts: 35

Location: Amersham, Bucks

Posted: Sun Nov 07, 2004 9:05 pm Post subject:

Guys,

Thanks for the comments - my reaction is that Brian is probably right in that it was a tight gearbox shaft bearing. It also appears not to be the engine.

As it turned over OK after freeing up, I have tried kicking it occasionally over the last couple of days and each time it has turned over easily - I therefore expect that it was a bearing freeing (rather than being a broken tooth which would give a problem when it next lined up).

Concerning oil for the gearbox I used SAE 40 engine oil as the Book of the Scott

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says "Lubrication of the Three-speed Gear Box. This is designed for lubrication with the same oil as used in the engine, and thicker oil is not advised". I therefore assumed that SAE 40 was the closest to engine oil of the 1950's.

Regards,

Colin Hough
1959 Brum
SOC Membership No. 473

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Martin Chlebek

Joined: 04 Jun 2004
Posts: 4

Posted: Mon Nov 08, 2004 11:23 am Post subject:

I had a very similar problem, which was easily traced to a cracked kickstart ratchet. The problem occurred when I forgot to retard the ignition, and it backfired.