

Progress report on Douglas Mk V

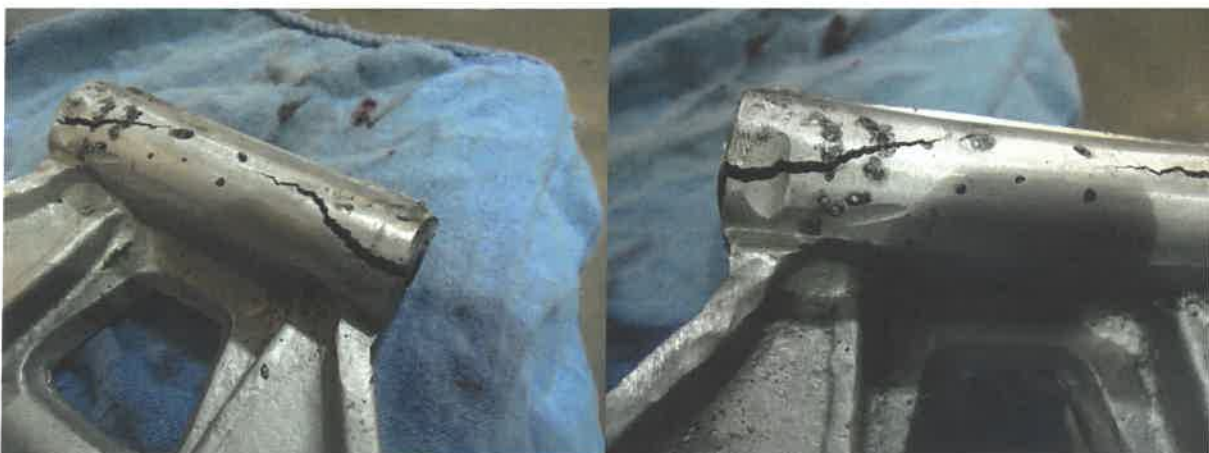
Your Douglas motorcycle came in to us on 20th November 2017 for a full service, with particular reference to the carburation.

When we first received the machine, we carried out a cursory examination of it to determine what needed to be done to it. The first problem that we noted was that the centre stand was not lifting the rear wheel from the ground. We discussed this with you, and it was agreed that we should sort out this problem at the same time as we were giving the machine a service.

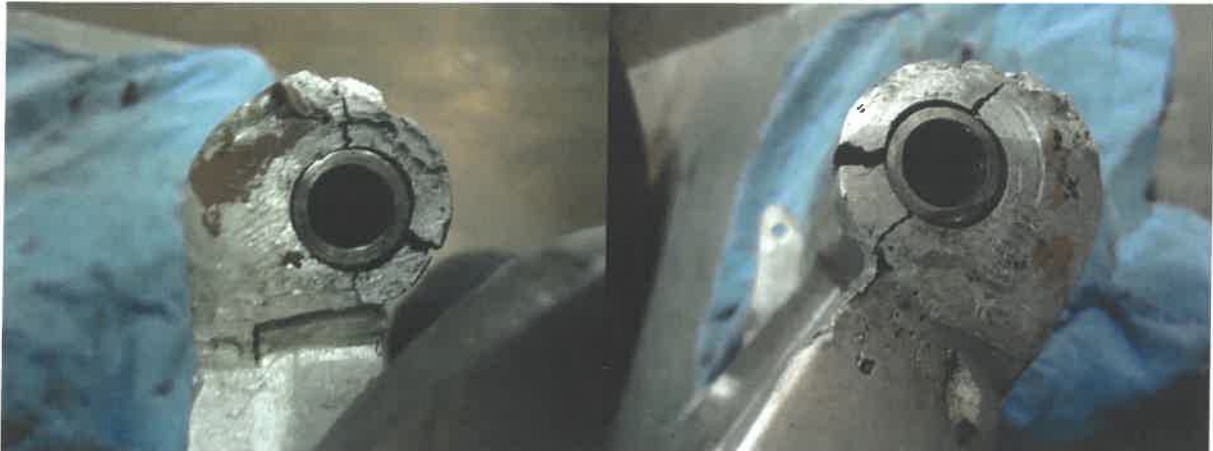
We started working on the machine by starting the engine to check how it ran, then stripping the carburettors and inspecting them. On examination we found that there was a considerable amount of wear on the throttle slides, so we ordered replacements.

The tappets were reset and the right hand crash bar was relieved to give clearance to the rocker cover.

The suspension and headstock were greased and we then turned our attention to the stand. With the machine on the bench it was easier to see the nature of the problem, which was caused by wear in the aluminium casting of the stand and also the stand brackets on the frame. To give us access to the stand and the frame brackets, the petrol tank, seat, engine and gearbox were removed. When we came to examine the stand we found that it was cracked, almost to the point of failing altogether, across the pivot section, please see photographs attached. The strength of the stand had been compromised by the addition of a $\frac{5}{8}$ " outside diameter tube in an attempt to take up the wear in the pivot. This had left insufficient aluminium in the pivot area, leading to the cracking. This could not be repaired by simply welding it back together again, a new pivot section would have to be made and welded to the stand. The stud through the centre of the tube had also been increased in size to $\frac{1}{2}$ " from $\frac{3}{8}$ ". A new $\frac{1}{2}$ " diameter pivot tube was made along with a new $\frac{3}{8}$ " clamping stud. The stand pivot lugs on the frame were built up with M.I.G. weld and shaped in situ to suit the stand stops. Two new top-hat bushes were made for the frame lugs to restore the $\frac{3}{8}$ " diameter for the stud. Having made the new stand pivot boss, we fitted the stand in the mill and milled off the old boss. The stand was then milled to the same profile as the new pivot boss, which we tacked into place to enable us to check that it was in the correct place relative to the feet. On finding that it was, we welded the pivot boss into place and dressed the joint. The stand was then refitted.



The damaged stand. ↑



The damaged stand. ↑

We made new engine spacers and fitted the engine and gearbox. The wheel alignment was checked, and corrected. When we came to refit the battery holder, we found that one of the mountings had a stripped thread, so this was repaired with a helicoil insert. With that done, we refitted the voltage regulator, with new brackets, petrol tank and seat, with a new pivot bolt. The exhaust system was refitted and fresh oil was put into the engine and gearbox.

It was noted that there was excessive side play in the front wheel. On investigation, it was found that the cause of this was that the right hand distance piece had been fitted the wrong way round. As a result, the hollow spindle was loose. We rectified the fault by turning the distance piece round and tightening the hollow spindle correctly.

When we came to check the electrical system, we found that the ammeter was not connected to the correct polarity, so this was altered.

We fitted the new throttle slides that we had ordered for the carburetter and the engine was started. With the engine running, we noted that there was slight seepage around the cylinder head joint on both cylinders and that, when the throttle is opened wider, there is gas visibly escaping. On removing the left hand cylinder head, we found that the cylinder head gaskets were made out of very light gauge solid copper, whereas they should be made from Klingerite, or similar material. We ordered an engine gasket set and will be fitting the new cylinder head gaskets when we next work on the machine.

In the next period of working on the machine we will be fitting the new cylinder head gaskets and giving it a brief road test to ensure that all is well with it before it is returned to you, unfortunately, due to the amount of salt on the roads, we have not been able to do this yet.

Progress report on Douglas Mk V

In our last report we detailed how we had carried out an examination of the machine, we had started the engine and checked over the carburettors, fitting new throttle slides. The tappets had been reset and the right hand crash bar relieved to clean the engine. On checking the centre stand we found that it was cracked, almost to the point of failure, and had made a new pivot boss and welded it in place to repair it. We had made, and fitted, new engine spacers and corrected the wheel alignment. The polarity of the ammeter was incorrect, so we had corrected it. On checking the front wheel, we found that the right hand distance piece was fitted the wrong way round, so this was corrected. We had started the engine again to find that the cylinder heads were leaking badly so we had ordered a new gasket set to enable us to cure the problem.

We started working on the machine in this period by removing the cylinder heads and fitting the new cylinder head gaskets. When refitting the cylinder heads and resetting the tappets we found that they were now too short and that it was not possible to adjust them correctly. We attempted to source the correct Douglas parts, but were unable to secure any. On investigation, however, we found that Triumph tappets are a match for what we were looking for, so we secured a set of them, fitted and adjusted them, and fitted the rocker covers and exhausts.

We started the engine and gave the machine a short road test during which major handling problems showed themselves. We discussed these problems with you, and, on your instructions, stripped the forks, front wheel and suspension. We measured the wear in the fork bushes and made, and fitted replacements. Finally, on the forks, we took measurements, designed and made new fork pivot caps to replace those which had been missing. We made inner seal thrust washers, fitted seals and assembled the bottom of the fork before fitting the front mudguard and wheel.

With that done, we carried out a further road test, during which it was noted that the action of the front fork was now good. The rear brake was notably poor, so, on return to our works we fitted a new inner cable and made, and fitted, an adjuster.

You telephoned us to arrange collection of the machine and, before we passed it over to you, we started the engine and gave it a brief road test. During this road test, we had a problem with the clutch release thrust bearing, which was making a severe whining noise. We tried greasing the bearing, but this made no difference to the noise so we telephoned you and informed you of the situation.

In our next period of working on the machine we will, as discussed with you, be removing the engine and gearbox to gain access to the thrust bearing and will be investigating the cause of the problem and how we can rectify it.

Progress report on Douglas Mk V

In our last report we detailed the work that we had done on your Douglas engine, fitting new head gaskets and tappets. We had then given the machine a road test during which we had found serious handling problems due to wear in the front fork bushes. The forks had been stripped and reconditioned. On a final road test we found a major problem with the clutch release thrust bearing and discovered that we would have to strip the whole machine down to rectify this.

In this period of working on the machine, we started by removing the tank, seat, battery, exhaust, carburettors, etc and removing the engine and gearbox as a unit. Once they had been removed from the machine, the engine and gearbox were split and the engine was stripped down to allow us to access, and remove, the clutch. Once the clutch was removed we were able to assess the exact causes of the problem and the parts that were needed to correct it.

We telephoned you and explained the problem to you, and you subsequently visited our works to view the parts that needed replacing. As you are a member of the London Douglas Owners Club you were able to source the parts that we needed through their spares scheme.

When we received the parts, we checked them over and noted that the clutch lifting cam had only one location / adjustment hole, instead of the three that were present on the original one. Hoping that this hole was in the correct place, we fitted the crank to the engine, reassembled the clutch and fitted it to the engine and rejoined the gearbox and engine. When we came to test the action of the clutch we found that the clutch lifting cam was not suitable and that we would have to have one with three location / adjustment holes. We spoke to you again and you attempted to source a replacement, or an exchange, through the club's spares scheme. As they were not able to help further we put the job aside to await any further developments.

With no news of a compatible part being found, and with the winter rapidly coming to an end, we re-evaluated the clutch and decided that it might be possible to remove all of the parts from the old one to isolate the plate with three locating / adjusting holes and to swap it over for that with one hole in the parts that had been sourced from the owners club.

Once again the engine and gearbox were split, the engine, stripped and the clutch was removed. We stripped the clutch and rebuilt it with the original lifting cam plate before reassembling the engine and clutch, rejoining them with the gearbox and testing the clutch operation. The clutch now worked as it should, so we continued and fitted the engine and gearbox as a unit into the frame and refitted the carburettors, exhausts, battery, tank, seat, etc. We then checked that the electrical circuitry was working as it should.

The machine was given a thorough nut-and-bolt tightness check and the engine was started. With the engine running well, we gave the machine a trouble-free road test of some ten miles, and it was "signed off" ready for return to you.