Iron Sportster problems

Be sure to check for these problems if you don't want to have to push your bike home.

There are several maintenance and design problems that could blow up the engine or break things or even kill you.

Check tire pressures, don't run them bald.

Don't over-tighten the fork stem, it will make the bike unstable.

Don't work on the front and rear brakes at the same time.

Check for intake air leaks.

If you have a cone motor, check the flyweights.

Check for frayed wires.

Buy batteries often.

Understand both engine and tranny oil.

Not too tight.

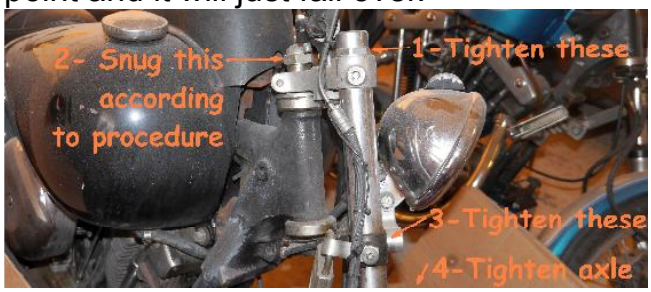
Motorcycles are dangerous. That gives them dignity. It also means that you have to be careful with maintenance. Old Iron Sportsters may have things worn out, or more likely, you will screw something up when you work on it. I have found it takes three tries. Once with wrong parts and wrong procedures. Then I get the parts right but install them wrong, and finally, I manage to get the right parts installed with the right procedures.

Maintenance issues can kill you. Under-inflated tires can dump you off the bike and will damage the tires with heat. Have a favorite gas station or better yet, buy a compressor and have a decent gauge. I put 36 pounds in, whatever the tire sidewall has as maximum. It makes the ride harder. The hardtail chopper guys used to put 20 pounds in the rear. Up to you, but be sure to keep the front tire topped off to whatever value makes you feel safe. I once dumped the bike pulling into my driveway. It was so surreal, the bike just fell over. I checked the tires and they had 20 pounds in them.

Having a compressor in the garage makes keeping tire pressure more convenient. Similarly, don't run the tires until the red cord shows through. I have been poor and pushed things that far when my Sportster was my only transportation. My buddy saw the cord and took up a collection for a $120 Metzler. And it is even stupider to run a front tire that ragged.

Check and make sure your saddle bags do not rub on the tire stem in any situation and no matter what you have in the bags. I took some heavy stuff once in toss-over-the-fenders bags. The bag sagged down and hit the valve stem. It broke the valve stem at 70mph on 101 in San Jose. A flat rear is no fun and a sudden flat is even worse. I didn't drop the bike, but it got my heart going. Be sure that the tire valves are protected. Its also smart to lace the wheels so the valve is on the chain side, where the chain-guard will protect the valve

There are many areas of a Sportster where the order of assembly is important. The front fork is a perfect example. There are ball or roller bearings in your fork neck. Too loose makes the steering feel way sloppy, but the real danger is too tight. A motorcycle is a complicated exercise in conditional stability. If you over-tighten the fork stem the bike can't find its stability point and it will just fall over.



Read the service manual carefully, and buy the factory manual for your bike. In general, you tighten the fork tubes to the top triple clamp but leave the lower clamp loose. Then tighten the fork stem. You have to have the bike up in the air. The axle should be loose too. I tighten the stem until the fork still flops to the side under its own weight when it is half-way turned. It has to be this loose or you might dump. Once you get this, tighten the triple tree and the axle.

Vance Breese told me he makes the **rear** fork really tight to make the rear end stiff. This will Brinell (dent) the races. I do it snug, not wanting to do the 6-pound-drag factory procedure.

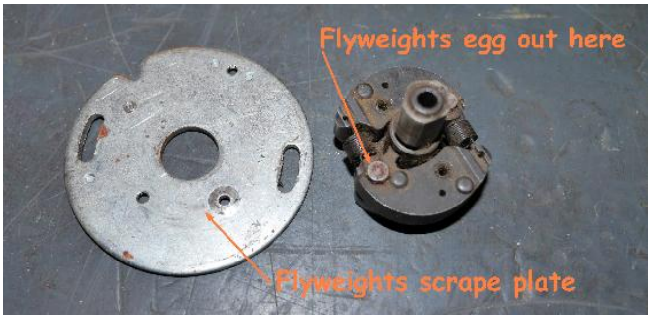
Your brakes are critical. I once had both brakes fail. It was that crappy rear cable used on 1974 to 1978 bikes, and a bad gasket on the front master cylinder. It feels really weird riding a bike with no brakes. You can coast down with the clutch pulled and scrape your feet to stop. I suspect killing the engine and letting compression slow you down works well too.

Believe me, when something fails, it is just as likely that you worked on it as opposed to it wearing out. That is why you never work on the front and rear brakes unless you are building a bike from scratch. The front cable is pretty good, but the drum brakes are weak and they do fade. The front master cylinder is a pain, I swap in the newer ones with the "Magic Eye" lid.

The best brakes I have every felt are GMA brakes on my XR-1000. The worst brakes I have had is with the Arlen Ness chopper master cylinder. It's reservoir is too small and DOT-3 makes the piston swell and seize up.

I blew up my 1977 because it had an intake air leak. The leak made the front cylinder run lean, and that burns a hole in the piston. To check this, spray carb or brake cleaner or pretty much anything where the intake O-rings are. It the engine speeds up or slows down that indicates a leak. Be careful to not let overspray into the air filter or you will get a false reading.

1979 and later Ironheads use a rubber tube instead of an O-ring. Here it is critical to make sure the carb has some support other than the clamps. You might get away with using S&S clamps on an O-ring bike, but not on a bike with the rubber tube. I got a good deal on my 1979 since the rubber tube had broken and shrunk so there was a 1/4-inch gap. It burned the front piston. So intake leaks cost me once and saved me money once. Check the intake flanges on the manifold and heads to make sure the O-ring is supported right. Always install the manifold without the carb, so you can feel inside and make sure the O-rings are not pinched. On new builds leave the cylinders and heads a bit loose, tighten the intake, then tighten the cylinders and heads.



The 1970 and later cone motor has the ignition flyweights on their side. They beat themselves loose at the pivot. Then the weights clank against the underside of the breaker plate until the 1/4-28 bolt shears off, flush with the camshaft. Even the 1979 electronic ignition uses the weights, it was only the module electronic ignition that did away with them. Some bikes are worse than others for how quickly the weights get egged out. This is something you have to check often.

This is a well-known problem. Rivera sells an ignition flyweight set with stainless parts. Other companies make a flyweight set that uses needle bearings. You can also install aftermarket electronic ignition. Be careful, I burned a piston with a Dyna ignition because there is not enough advance on a module meant for a big bike. I have a Crane HI-4 on my 1977 and it has a VOES wire you can short to give more total advance like an old Sportster needs. I run it uncovered to keep it cool.

That chuckling you hear in the distance are the guys with magneto bikes that don't have a cone ignition. The old "upright" breaker seems to last as well.

For 5 years I kept replacing generators and voltage regulators on my 1977. The real problem is the previous owner (PO) had put on a 16-inch rear tire. He didn't lace it quite right either. So the side of the rear tire was rubbing against the tail lamp wire, shorting out the generator and battery every time the rear suspension went into jounce. With a bump or a gal on the back, or both in combination, the shorts would eat generators and regulators.

So realize that wires are a simple, stupid, but critical part of the bike. Check back there under the rear fender, and look around the fork neck as well, where wires get bent in day-to-day use. Wires can fray inside the headlamp bucket and I had a 60W halogen bulb melt the connector. Anytime you change things from dead stock, you risk these kinds of problems.

I have tried to route tail lamp wires in the strut, or a little tube welded to the lamp.

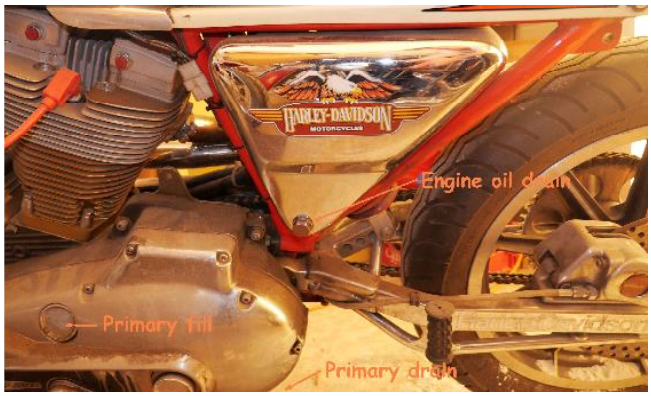
I wonder when people say they have batteries that last 7 years. I once had a battery become useless after one ride from Eureka to Sunnyvale. I used to insist on Yuasa batteries. When they became obviously cheapened, I now just go to the auto parts store or Amazon.

If your battery dies you can sometimes save it by putting it on a trickle charge for a long time. Keep checking to see it is not getting too warm or boiling out.

When the water gets low, never add acid. Add water, preferably distilled water. I also add a little pigtail to let me charge the battery in my XR-1000 where I can't get to the positive terminal. Be advised that if this wire touches chassis, you might explode the battery before the wire melts, That is why I use a small-gauge wire.

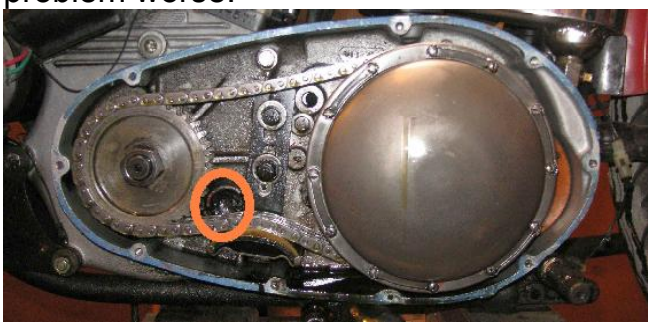
Pro tip. When you charge, it makes explosive hydrogen gas. Never pull off the cables before unplugging the charger. That way you don't get a spark at the terminal where there could be hydrogen. Wear safety glasses. Always.

Understand the oil in your Sportster. I had a buddy who just bought a 1979 Sportster after he checker out my 1977. He is a smart guy, and works on printing presses for a living. He drained the tranny oil with the plug on the bottom of the primary cover. Then he looked into the tank, which happened to be almost empty, so he added his oil there.



There are two separate oil systems in an Iron Sportster or K-model. The engine oil is in the tank. There is a drain on the tank bottom. Then there is separate oil in the primary and transmission. You drain this with the plug on the bottom of the primary cover (left side). There may be a plug in the bottom of the crankcase but that should stay put, it does not drain anything unless the motor is sumped.

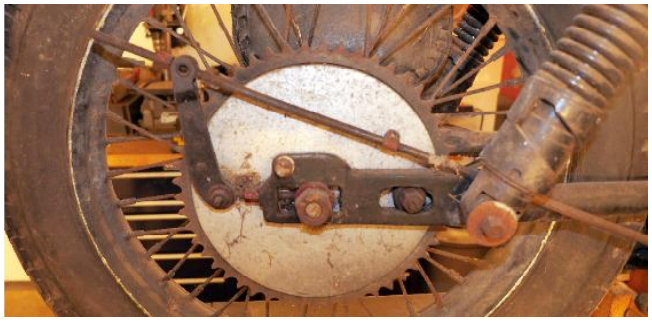
Ahhh sumping. When the bike sits for a long period, and you start it, oil blows out the breather tube. 1976 and earlier bikes will often have oil leak past the oil pump so all the oil in the tank ends up in the bottom of the engine. There is a spring-loaded steel ball that is supposed to stop this. There are also seals on the shaft and I suspect worn gears can make the problem worse.



There is also a transfer valve in the primary (1, 2, 3, 4). If the bike is sumping and this valve is bad, then the excess oil overfills the primary and transmission.

That picture reminds me-- don't put silicone sealer anywhere near your primary. The blithering idiot (me) that slathered blue silicone all over the primary surface did not realize that silicone can skate roller bearings, causing them to melt.

As to oil, I use 20W-50 synthetic in both engine and tranny. And any oil is better than none, I have used gas station 30 weight to get home once.



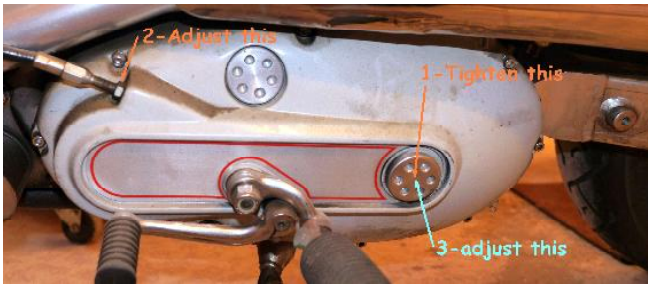
My common failing on old Sportsters has been to over-tighten adjustments. I would tighten the brake rod adjustment so the pedal would move only an inch or two. But the shoes dragged and the backing plate was so hot after a ride it would boil water.

I would keep the rear chain so tight it would wear out sprockets. It can blow your tranny bearings too. Get three of the fattest pals you have. Have one sit and two lean on the rear of the bike. When the suspension bottoms out, **now** feel how tight your chain is. Same with the primary chain. So loose it almost clanks against the cover. Crank the bike and try it at different points, the clutch and sprocket are not round. Same for the rear chain.

The rear brake has an adjustment for the pivot too. In theory the clevis where the rod attaches is supposed to be centered with the swing arm pivot. I will let you argue as to where that is with the brake engaged or not. One way reduces wear, the other means the pedal does not pump with the rear suspension jounce.

I have shimmed cams so tight the bike went a block before it died. I had my tools, and opened the gear case under a theater awning at 2:00AM. At least I had good light.

I would shim the mainshaft and countershaft so tight that when I buttoned up the tranny, it would bind. Now I don't even bother with feeler gauges, I use plain old feel. If it doesn't "tink" it's to tight. If it goes "thunk" it's too loose.



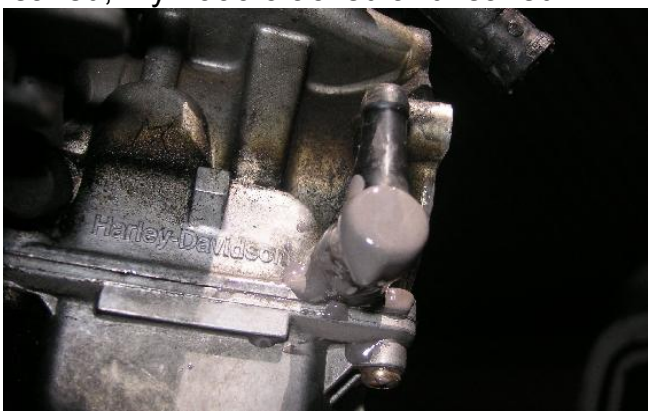
The clutch is another thing that likes it a bit loose. The dry clutch has to be set up loose or you will wear out the rods in the mainshaft. The procedure makes sense about the 40th time you do it, see the manual. You need to adjust for the length of the cable first, then you adjust the clutch itself.

The dry clutches adjust the cable up at the bars. I use Barnett steel levers since they have a tiny bit more travel. They also just bend when you drop the bike, as opposed to breaking off.

A buddy had his clutch drag on his 1974. A mechanical had just put in a new spring. This was a single "heavy duty" spring. You need the two factory springs to keep the clutch plate level as it gets pushed in from the center. You rotate those two springs until they apply an even force. This two-spring setup is a mistake compared to the 6 separate springs of the dry clutch. We are Devo. D E V O

I used to hold in the clutch at lights. I figured it saves the gear dogs getting clanked. Well, on dry clutch bikes it wears out the thrust bearing in the clutch basket. See the big thread on the XLForum.

All Keihin carburetors crack and leak at the inlet elbow. My 1977 cracked and leaked, my 1996 cracked and leaked.



Lets hope that stubborn Japanese bastard that thinks plastic is for fuel fitting retires soon. We should throw a party. Henry Ford said "Plastic is for combs and toothbrushes."

The 40mm Mikuni flat-slide carburetor sticks. Maybe not much, but it will stick open off-idle. You might think that would not bother you but you would have PTSD for weeks after. I refuse to use any Mikuni product because of this. The only thing more dangerous is the Arlen Ness master cylinder.

Last tips- blow of the lifters before adjusting valves to keep dirt from wearing out the lifters. Don't run drag pipes. you can't tune the bike.