

a lighter bike is a better bike, every time. In many—
all—cases, the aftermarket pipe will give you more
ance, too. This is something you must check out
by mail are convenient, but it's better to have a look
want—on someone else's bike. That way, if it has a
y kink in it, or if its design turns it into a passenger
can see the problem without having to own it.

es are heavy because they're designed to last.
metal, large mufflers with complex internal flow
need for compliance with noise standards make
With an aftermarket pipe, you will have to consid-
nifices. Being made in thinner metal, it may very
ooner, especially if you are an all-weather rider.
thing in stainless-steel if that's a concern. Lacking
al tubes and baffles, your aftermarket muffler canis-
be louder than stock—maybe too loud for even
More reasons to inspect before you buy.

two-stroke racebikes began to sport black carbon-
ministers, and the high-temperature resin that makes
now at work making super-light four-stroke muffler
trendy black textile look. I know they now make car-
shelf paper, but when will it come out in spray cans?

be Size

comes in, the tide goes out. Years ago, there was a
ge header pipes on Triumph twins. Bigger was nasti-
Then it went back the other way. Little teeny tubes
icated, just like the ones on Triumph 500 road rac-
always there, tempting us to worship false gods—
ther than the dyno, the time-slip, or the lap-time.

tion is still there; some pipes have bigger header
ave smaller. Why? The answer is that header-tube
to exhaust valve-open area—valve circumference
es max lift, times the number of exhaust valves per
t engines have moderate lift because they are sup-
t least as long as the payments. Therefore they have
tubes. In modified engines with more exhaust-valve
e pipes can be considered.

of thumb is that header-pipe inside area should be
haust-valve open area.

pens if you put on the big tubes and don't have ex-
atch? It's just like oversized carbs—slowing down the
s to hurt bottom-end performance, and may not help
ther. Exhaust gas must accelerate to high velocity to
e exhaust valve and get through the port throat. If the
e is too big, the gas then has to slow down again.

e is too small for the valve area, the pipe will be the
o high a pipe velocity creates friction loss. Too low
es it too easy for pipe waves to reverse flow when it
pen.

nder who wants a different look but doesn't care to
all those bolts and nuts, there is the slip-on, a re-
muffler that takes the place of the stock part. There is
t saving and there may be a drop in back-pressure,
m line is, I fear, no pain, no gain. But, again, if you
g out with modifying, it's an easy place to start, with
sequences.

Is Permanent Beauty Possible?

Several outfits offer to coat your pipes with corrosion-delay-
ing materials said to be better than paint. But as my metallurgist
friend likes to say, "Metals can hardly wait to get back to their
natural state," which means they oxidize—rust—and return to
mineral form. Try coatings, maybe you'll like them.

Plating is another question. Some people like chromed pipes
and will endure happily the inevitable bluing and other problems.
They don't mind even when they hear that chrome can cause the
dreaded hydrogen embrittlement—rigid-mounted pipes will crack
if they possibly can. It's all a question of how much bother you are
willing to endure to have the appearance you want. Paint burns
off, rubs off, and weathers off. Plating peels, chips, and discolors.
Coatings are a pay-as-you-go question.

The fact is, streetbikes look only as good as their owners take
the time to make them look. Racebikes look good because they
are frequently maintained and always indoors in comfortable
shops or transporters, perhaps paid for by deep-pockets sponsors
to whom appearance is important. For myself, I find beauty in a
strong dyno print-out. I appreciate the look of a bike that is actu-
ally ridden, with the natural grind marks on the ends of the pegs,
and even on the handlebar ends or fork top nuts. I happily leave
the paint and plate to others.

Heat Wrap

Particularly in NASCAR-oriented magazines you will find ads
for heat-wrap—insulating tape that you wrap around your pipes to
insulate them. Some people find the appearance of wrapped pipes
irresistibly high-tech. But the major reason NASCAR racers use this
stuff is to prevent exhaust heat from overheating nearby compo-
nents in the engine bay. When you ride in rain, this stuff absorbs
and holds water next to your pipes, helping them to rust.
Meanwhile, the NASCAR race cars are safe and dry in their 45-foot
transport trailers. Draw your own conclusions.

Other Materials

For many years, aftermarket pipes have been made of good old
rusto-steel, but lately, pipe builders have also offered corrosion-resis-
tant pipes in stainless steel or titanium. Naturally, the price is higher.
The stainless pipe saves you from having to decide about corrosion-
resistant coatings or plating, and the appearance is good.

Titanium is very expensive and beautiful, but exotic. And light;
some of these systems weigh as little as 7 pounds, complete. Titanium
is coming, if for no other reason than that the Russians have so much
of it—they actually made sub hulls out of the stuff—and need the
cash. Don't heat-wrap a titanium pipe. If it gets too hot inside that
blanket, the metal oxidizes into a flaky yellow dust and falls apart.

Installation

It would be nice to have a set of metric combination wrenches—
box and open-end—and even some sockets for tackling this
job. Often, getting at the attachment of the pipes to the cylinder
head requires removing the radiator or hinging it forward. Each
header pipe is held in place against its exhaust port by a collar, in
turn held in place on a pair of studs, by nuts. The muffler itself is
supported on brackets, and detaches from the pipe system by
means of a large clamp.

Find all the fasteners, then remove the muffler first. Then,
unfastening the headers from the cylinder head, the rest of the