

LEARN TO

# WHEELIE!



by Jack B. Watson

*A step by step guide that can make  
YOU a WHEELIE Whiz!*

**LEARN TO WHEELIE**

**By Jack B. Watson**

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**— WARNING —**

All forms of motorcycle riding involves a certain risk of accident. Competition or stunt riding can greatly increase that risk. The author and publisher assume no liability for injuries which may be received while learning to Wheelie.

## CHAPTER 1

### INTRODUCTION

What is a wheelie? A wheelie is the gul darndist thing you ever layed eyes on. There he goes, down the block on a motorcycle with the front wheel high in the air riding the thing like a unicycle! And he keeps on going and going as far as he wants. Now that's a wheelie! There are a few imitation wheelies, that I want to brush aside before going any further. Any rider can fly at a rock or small dirt mound and as the front wheel hits he can momentarily lift the wheel off the ground. After a short distance the wheel comes back down and the show is over. When I say wheelie I mean the front wheel goes up and stays up! When you are ready to bring it down the wheelie is over, but not before.

A second type of half-way wheelie is the type where the rider scoots back to the very rear of the seat and with both legs flung out like canoe outriggers, he juices the throttle and pops up the front wheel. Some riders have perfected this approach so they can hold the front wheel up a good distance, but the effect is lost with their legs dragging behind waiting for the fall. Feet belong on the pegs and when learned properly, it feels just as safe and secure as dangling them in the wind.

Can anybody learn to wheelie? No; sorry to pass on the bad word, but a few of you are saddled with the wrong bike or live in the wrong place and this book won't help. On the other hand I would guess that 95% of you readers will qualify and nothing but your own determination, or lack of it, can stop you. What kind of bikes won't qualify? and what's wrong with where I live? Chapter 3 will cover the bikes in detail but as an indication, if you own a Harley 74, you are finished before you start.

As far as where you live goes; if you live in the flat lands of Kansas, you've got a tough road ahead. The secret of this book is learning to do wheelies while riding up a hill. The book will stress that this is the only way to learn. After sufficient practice, you will learn to wheelie on level ground but most of the learning will take place on hills.

The average rider can learn to wheelie in four or five weeks or less with 25 or 30 minutes of practice a day. If you thought there was a quick and easy gimmick that would allow you to become a wheelie whiz on a few weekends of practice, you're sadly mistaken. Learning to wheelie is difficult, I would even say very difficult. However, there is really only one price to pay for success. It's not natural skill or balance, not past experience, not nerve or courage. It is just plain ordinary effort and one hell of a lot of it! With this, you just can't lose. Without it, you have little or no chance of success. Well, I will say it again. Thirty minutes of practice a day, day after day for four or five weeks and you will be a wheelie whiz. When it is over, the thrill and exhilaration are beyond description and it will be worth the effort ten times over.

## CHAPTER 2

### THE AUTHOR'S STORY

Before I attempt to tell you the easy way to learn wheelies you might be interested in the hard way. I know it is the hard way because I plowed that road myself. Without help or advice, you will follow dead ends, waste energy and effort, and have nothing to show for it.

It all started a few years ago when I first became interested in motorcycles on the dirt. After years of street riding I accidentally became introduced to dirt riding and like many others, I was suddenly hooked. It was during this awakening that I found myself at a motorcycle shop "feeling the material" on a brand X dirt bike. Brand X was, and still is, an off-beat make of questionable attributes and the salesman was having a tough time convincing me this was the bike of the future. In the process I casually asked about the machine's low end torque and that was the cue he'd been waiting for. "Outside", he ordered and he led the way to his own personal brand X parked at the curb. I thought he was going to offer a test ride but instead he mounted the machine himself and roared away half out of sight down the block. He turned and started back and you can guess what came next. Up went the front wheel and away he went! The engine throbbed as he passed the front of the shop and disappeared down the block in a full wheelie. I almost sprained my arm reaching for my wallet. I will bet that salesman sold more brand X bikes with that display than any sales pitch ever put forward. Much to my dismay, brand X didn't come with a built-in wheelie and after a few short tries, I dismissed wheelies as an impossible circus stunt requiring years to perfect.

It was several years later before I saw that stunt repeated. A young kid on a brand Y trail bike caused me to spill my tongue one afternoon while I was out cow trailing. I saw him rear back and pull the front wheel high in the air. He moved forward with a familiar throbbing sound and held the wheelie for 50 yards or more. That did it. "If that kid can do it so can I."

The months that followed are almost too painful to recall. As a first go at it, I

selected an assortment of medium sized rocks, dirt ledges, curbs or whatever and charged each, one at a time. When the front wheel struck, I reared back and yanked on the handle bars. The wheelie that followed was short lived at best and spills and falls were too numerous to recall. Taking stock of the situation I realized that this approach lacked class and besides it hurt too much, and too often. What was needed was a controlled practice area with a series of smooth bumps or ledges in some sort of line so that I could begin at one end and proceed down the line making a wheelie attempt at each spot. This, I reasoned, would greatly increase the amount of practice I could squeeze into a short period. I found the practice area several blocks away where a new housing tract was under construction. The street was very slightly sloped and each lot was about six inches or so below its neighbor. The lots had been graded and the results were a series of small ledges at the edge of each lot. By starting at the bottom and riding uphill I would strike the ledges one at a time. As each ledge was attacked, the front wheel was violently thrown skyward. As the rear tire passed the ledge the entire bike jumped upward. If all went well, and it usually didn't, the bike came back down still in the wheelie position and for a brief instant I pictured myself on the way. This nightmare continued for several weeks, the scene was well punctuated with spills, back flips, and damage. Progress? None that I could see.

I was all set to cash in my chips when one weekend, by a stroke of luck, a passing motorcyclist stopped to gaze at my torture routine. After watching several passes up the row of lots, he proceeded to demonstrate several not-too-bad wheelies in the middle of the street. Each of his wheelies lasted 10 or 15 feet. Studying him more closely I recognized the throbbing sound I had heard before. He appeared to be rapidly pulsing the throttle on and off. It was many weeks later before I came to realize what that was all about. Anyway, after watching his show for a few minutes I flagged him down. I confessed my predicament and asked for the secret of his success. He volunteered a tip that was worth a gold mine. "Practice on hills", he said. After you get the hang of it on hills you can do it anywhere. Besides this nugget of knowledge, he volunteered to show me the perfect hill where he had mastered the skill. A half mile away he pointed to a well worn fire break heading up a long hill. At first glance I wasn't sure I could make the hill at all, much less practice wheelies on it. The view was deceptive and I found I could handle the

hill without a flying start. My benefactor demonstrated a few passes up the hill. Every 15 or 20 feet he lifted the front wheel six inches or so and held it off for 10 or 15 feet. I followed suit and much to my amazement, I too could wheelie. Only a few inches off the ground and for only five or six feet, but nevertheless this was a start. From here on out everything began to fall in place. I spent a total of two weeks on my new found hill. I practiced a little each day and I even imitated the throbbing or pulsing sound with my engine. Before long I began to appreciate the added control this technique offered.

Up to this time all my practice had been after normal working hours and before dark. It was now late November and daylight was running out. With stout heart and weak mind I switched to early morning practice. I set my alarm for 5:30 a.m. By 6:15 I was suited out and primed with hot coffee. I started the bike in the garage with the door shut, so as to muffle the noise from my neighbors. With the engine at a fast idle I opened the door, while still sitting on the bike, and kicked it into gear. I crept down the block at this crawling speed and several blocks away left the road onto a trail. A half mile or so later I arrived at a newly found practice area. The new area consisted of a flat dirt road with no houses for at least two blocks in any direction. Now that I had learned all there was to know about hills, it was time to graduate to flat land. What better time than now while also introducing the new early morning practice session.

Looking back now I realized I was too impatient and once again I had detoured from the easiest path. The early hour practice was a good idea but I was not at all ready for the flat lands. After three or four days of practice I began to realize the problem. Learning to wheelie involved learning two basic skills. First is how to lift-off or how to get the whole thing started. The second is how to keep going once you get started. The skills are quite separate and mixing the problems more than doubles the learning time. I now realize that the steep hill had let me practice balance, that is how to stay up once you get up. On the flat land the lift-off was so violent and difficult that during these early stages of practice I almost never did it right. Since I never got started, I never had a chance to keep going.

Back to the hills. But this time I sought out a shallow hill. This shallow hill gave

me a chance to work up to the lift-off problem. The hill was steep enough that it took only a small yank to bring the front wheel up to the right place. As I progressed I went after shallower and shallower hills until finally I was ready for the flat country.

In total time I spent almost ten weeks before I declared myself victorious. More than half this effort was misdirected or downright wasted. The realization of all this waste prompted me to write this book.



## CHAPTER 3

### ON THE TECHNICAL SIDE

For those who are chewing at the bit and anxious to learn to wheelie, I suggest you skip this chapter. This chapter covers the technical side of how it works, not how to do it. It is complicated and to be honest it won't help you learn to wheelie, at all. It is interesting though and if you have the time and inclination, dig through it and it will give you some understanding of the strange feelings that lay ahead.

There are three major forces which act on rider and bike. First, there is the weight of rider and bike combined. This force is centered forward of the rear wheel and thus tends to pull the front wheel toward the ground. It is a misconception to think that during a wheelie the front wheel is raised up until the weight is directly over the rear wheel. However, it is true that as the front wheel is raised higher off the ground, the weight force is shifted rearward toward the rear tire and the tendency of the weight force to restore the front wheel to the ground becomes less.

A second force which acts on the rider and bike is the ground force, which is made up of friction and ground reaction to weight. Consider what happens when riding along at a steady speed, you suddenly shut off the throttle. The ground slows the bike and this tends to lurch the rider forward. In the case of a wheelie, the effect is the same. If a rider is doing a wheelie and suddenly shuts off the throttle, the ground force on the rear tire slows the bike and the inertia of the rider and bike forces the front wheel down.

The third major force acting on rider and bike is the engine power applied through the rear tire to the ground. The rear tire, in effect, tries to move forward and overturn the bike. This third force, the engine power, is the only one of the three major forces which tries to lift the front wheel. During a wheelie, this single force is balanced against the others and the rider and bike proceed forward in complete balance. Whoopie! !

Do all the three forces; weight, ground, and engine power, have to balance each

other? Yes they do; but as we shall see there is more than one way to slice this pie. Figure 1 illustrates two conditions which commonly exist. The curved arrows above the sketch indicate which forces try to lower the front wheel and which forces try to raise the front wheel. As can be seen in both sketches, the ground force and the weight force try to lower the front wheel. In the left-hand sketch, the bike is doing a wheelie with the front wheel higher than shown on the right-hand sketch. With the higher front wheel, the weight is shifted aft closer to the rear tire and is less helpful in forcing the front wheel back down. The right sketch illustrates a wheelie with a much lower front wheel. The weight of rider and bike is more forward and a very strong front wheel-down effect is suggested by the arrows above. In either case the rider has dialed on the engine, as necessary, to hold the front wheel up. On the left side sketch, it takes only a little power to overcome the small friction and weight effects. On the right side sketch, it takes quite a bit more engine to resist that large weight effect. In both cases, all the forces (in terms of front-wheel-up or -down) have been balanced.

There is one very important difference between the two wheelies shown in Figure 1. Below each sketch, the forces which act horizontal only have been separated and represented by arrows. Note that these forces have nothing to do with front-wheel-up or -down. These forces are the overall push or pull which will determine if the bike slows down, speeds up, or stays the same. The left sketch of Figure 1 indicates that the two opposing forces are about equal and thus the bike and rider continue forward at a steady constant speed. On the right side the large amount of engine power, needed to hold the front wheel in the air, also overpowers the small ground friction and there is a strong net force forward. As such, the bike will increase speed, and increase speed, and increase speed, and then something has to give. In most cases the bike runs out of engine power first. After all, you're in first or second gear and before long the engine has revved to its peak and there is no more to give. At this point the wheelie balance must end and down comes the front wheel. The actual force balance picture is more complex than shown. Actually the engine is accelerating the bike and it is this acceleration force which eventually comes to an end as the engine revs out and can no longer accelerate. In any case the reader can picture what happens. We conclude that the left side of Figure 1 is the only true balance condition in which the rider can wheelie forever.

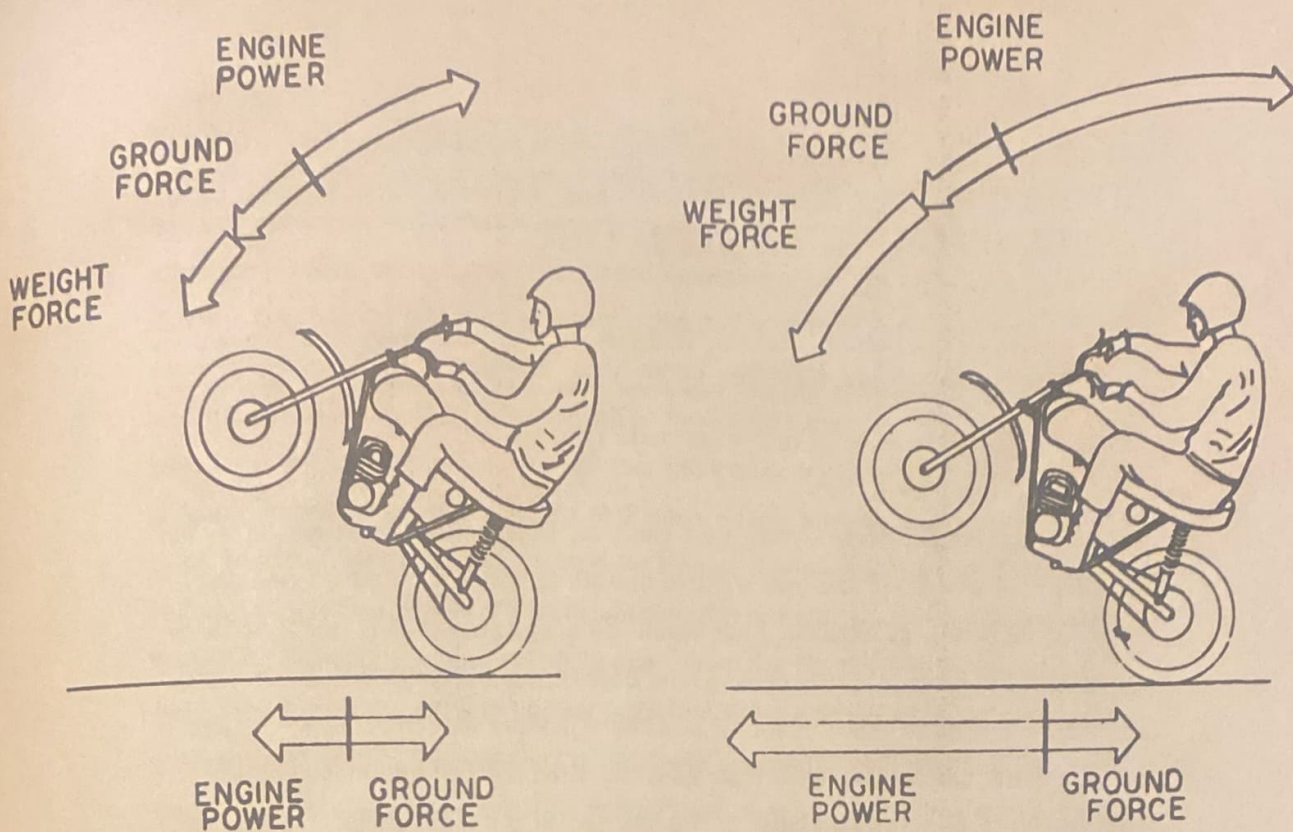


FIGURE 1 On the right this cautious rider wheelies with the front wheel too low and the only way he can hold it up is to dial on full engine power. Soon this excess power will make the bike gain unwanted speed. On the left side this rider wheelies correctly with the front wheel high using balance and only a little engine power.

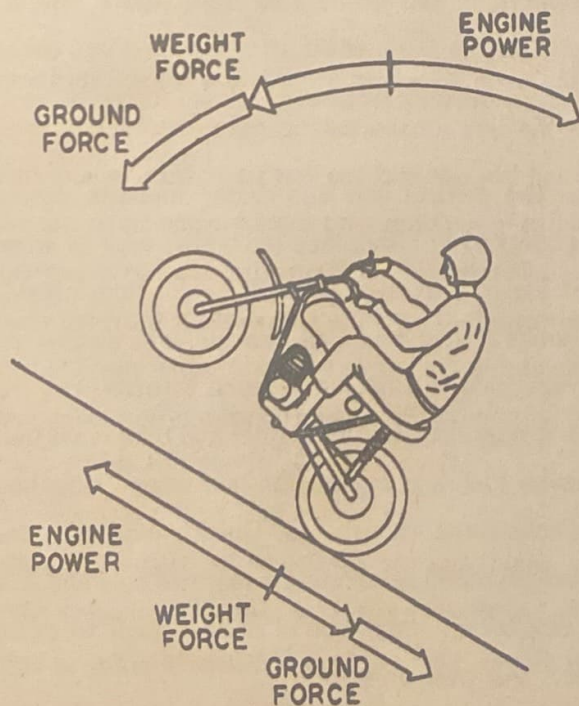


FIGURE 2 When you wheelie up-hill, you have an ideal situation. The engine is pulling strong yet you don't gain speed. If you make a small mistake you can get back down fast by shutting down the hard pulling engine.

At this point you might ask, why not do it right, as is illustrated on the left side of Figure 1? To answer this we had better stop and discuss what the rider can or cannot do about any or all of these various forces.

First consider the ground friction. Without delving into basic laws of friction, take my word for it that for any one given rider and bike you are stuck with one set ground force and hell or high water won't change it.

How about weight force? Well, you can't do much about your weight in the middle of a wheelie unless you want to imitate the hot air balloonist who cast off bags of sand to gain altitude. That would be a sight to behold, racing down the road in a full wheelie madly casting sand bags to the left and right! We should not pass over weight so quickly; for in fact there is a lot we can do about it. Back in Figure 1 the left side shows a rider who has lifted the front end high enough that the weight force acts down close to the rear tire. If the front wheel is raised higher the weight force can be made to act directly over the rear tire and at this point the weight force has no effect on front-wheel-up or -down. Taken even further, here it comes, the weight force passes over and behind the rear tire and over backwards we go. From this you see that even though you can't do much about the total weight of the bike and rider, you can do a lot about how it effects the wheelie. By controlling the height of the front wheel off the ground you control a very strong force; and in fact, this is the only front-wheel-down force you can control.

Engine power you can control and this simply involves more or less throttle. With these various controls in mind, let's see which type of wheelie you want to do, the left side of Figure 1 or the right side. Look at the left side case first. At a glance everything looks fine, but like all humans, let's assume you make a small mistake. Suppose you give it a little too much throttle. The front wheel lifts a little higher and as it does, the weight of rider and bike move back more over the rear wheel and maybe even a little past the rear wheel. Now here it comes. The weight effect suddenly turns against you. Quickly you shut down the throttle, but too late. The weight effect is behind the rear tire now and it tends to raise the front wheel. All too often this effect is large enough to overpower the small ground force effect, and over you go!

Now take another look at the right side of Figure 1. This rider, with the slightly lower front wheel, has a rather large front-wheel-down weight effect. If he makes the same mistake and overdoes the throttle momentarily, he is a lot less likely to get that large weight effect down to zero. To put it another way, he has to make a much bigger mistake before the front wheel will raise up and pass the critical point where the weight of bike and rider lie directly over the rear tire. The rider who skipped this chapter can feel all this and you don't have to draw him a force diagram. The rider on the left side of Figure 1 feels himself high in the air. The front wheel is light as a feather and he knows damn good and well that he is walking a thin line between a great wheelie and a nasty back flip. On the other hand the rider on the right side of Figure 1 feels the front wheel heavy and he keeps pouring on the coals to keep it in the air. What a shame you can't have your cake and eat it too. The one condition feels so secure, yet inevitably the game must end as the engine revs out. It is this type of wheelie all of us start with. As you progress and become more proficient, you will slowly ride with the front wheel higher and higher until you finally arrive at the correct balance condition. Now you can wheelie forever. Not just 50 feet or 100 feet but just as long and as far as it suits you.

What happens on a hill? Figure 2 illustrates a wheelie while riding uphill. Looks difficult? Not so; as you will soon see, or find out for yourself if you skipped this chapter. After a minute of study you will see that the hill has given the rider all the advantages of a low front wheel without the problem of gaining speed. The hill has forced the rider to use more engine power to drive the bike up the hill. To offset this engine power the front wheel is carried lower to the ground. In other words you can ride with the front wheel low as shown on the right side of Figure 1 except that the extra engine power does not make you accelerate.

There are two other important advantages of the wheelie on a hill. In Figure 2 you can see that the front wheel is only a foot or two off the ground. This means that the initial yank or lift-off, which is needed to get started, will be less violent and you are a lot less likely to do it wrong. I cannot overemphasize how impor-



During the early stages of practice, concentrate on steep hills where the front wheel rides close to the ground. Note the slight left turn on the front wheel as the rider juggles to maintain balance.



This long hill makes an ideal practice area. Only a small pull is needed to lift the front wheel on a hill.

tant this is. One of the most difficult things to learn about a wheelie is how to get started. You usually begin with a combined yank on the bars, rearward shift of body weight, and sudden burst of engine power. This combination is violent and sudden and it takes a lot of practice to tailor this combination to the correct amount. Not too much, or over you go. Not too little or back down you come. Now you can see why the hill helps so much. You are almost up there when you start.

A second advantage to doing a wheelie on a hill is that you have less distance to drop the front wheel if you decide things aren't going well. What this really means is that you can afford to hold off a little longer before giving up. If the front wheel is high in the air, as will be the case on level ground, you must allow extra time to get back down. On the hill you need less time because the front wheel is closer to the ground. Therefore, there is more time to try to recover your balance.

Before leaving the theory we should consider one last condition. Suppose, while in the middle of a wheelie, you suddenly stab at the foot brake. Well, I am sure you can imagine. The front wheel starts back down in a hurry. Many riders have learned to use this condition to bail them out of a jam. If you make the big mistake, and the back flip is in process, you have two choices. One, you can bail off the back and if you are lucky you will land on your feet running forward, grab the handle bars and chase the front wheel back down. Secondly, you can stab the rear brake hard and the sudden braking will lurch the front wheel back down. In spite of the obvious advantage of the second choice, many riders never master this technique and the author, somewhat regretfully, admits he belongs to this group.

## CHAPTER 4

### THE MOTORCYCLE

Now sure as I say you can't learn to wheelie on a full dressed hog, someone will make a liar out of me. I can say this; some bikes are easy to learn on, some are okay but not the best, some are going to add to the difficulty and on some you might as well forget the whole idea.

From the wheelie standpoint, the most important aspects are bike weight, wheelbase and engine power. Taken one at a time, weight is the major consideration in determining the amount of control a rider can exert by small shifts in his body position. If the bike is approximately the same weight or only slightly heavier than the rider, then any small shift in rider position has a large effect on the combined rider and bike. On the other hand, a 150 pound rider on a 350 pound motorcycle has little influence on the two together. As will be seen later, the rider will depend on shifts in body position to prevent falling sideways during a wheelie and lightweight motorcycles will have a definite advantage.

Wheelbase, which is the distance between the front wheel and the back wheel, is very important. Consider as one example, a long wheelbased motorcycle where the rider sits near the center, halfway between the two wheels. As the front wheel moves high in the air the center of the bike must move upward also. If, for example, the front wheel is lifted two feet off the ground, a rider who is sitting in the middle of the bike will be lifted about half this amount or about one foot upward. This lifting of the rider feels much higher than it really is and gives the rider a very uneasy feeling. Now consider the opposite case; the very short motorcycle. The bike is still designed for the average rider; therefore it was necessary to place the seat further back to provide for some arm room. In the extreme case, the seat is almost directly over the rear tire. Picture a motorcycle of this size with its front wheel up two feet or so. The rider sitting directly over or almost over the rear tire has not been lifted any appreciable height at all. This leaves the rider feeling more secure; that is, during the initial learning stage. In terms of wheelbase, the best choice of a bike will be one of the small trail bikes or small street bikes. Two popular examples are the Yamaha 80 and the Honda S90. You will also note that



both bikes are very lightweight. Another example is the little Harley Davidson Rapido, sometimes referred to as the "wheelie bike." This doubtlessly arises from the number of riders who learned to wheelie on this short wheelbase, lightweight motorcycle.

The final consideration is engine power. Perhaps surprisingly to some readers, I would place engine power as less important than weight or wheelbase. If a bike is light enough and short enough, you can jerk the front wheel up with a shift in body weight and little engine power is required. Once the bike is balanced in the air, only a little engine power is required to maintain the balance position. Speaking from the other viewpoint, engine power can't hurt and in fact, extra power will make learning easier. If a twist of the throttle can lift the front wheel then it won't take much extra help from you. You will also see later that an extra portion of engine power can cover up for some rider mistakes. Above-average power can thus be classified as very desirable but not absolutely necessary.

From the standpoint of all three; that is, weight, wheelbase, and engine power, most bikes are a compromise. As an example, consider the 250 cc Bultaco Pursang. This is a relatively lightweight bike somewhere in the low 200 pound class. There is certainly gobs of engine power and a sudden twist of the throttle will send the front wheel on its way up in a hurry. Wheelbase is the only drawback. That is one long motorcycle compared to the average street bike of the same weight. Of course, Bultaco designed this bike for high speed dirt riding and the long wheelbase contributes to its superb handling characteristics. In terms of a wheelie bike, this Bultaco is not a bad choice. It will be more difficult to learn on compared to the little Harley Davidson "wheelie bike" but this drawback will disappear quickly as the rider becomes adjusted to the higher rider position during a wheelie. As a matter of fact the best wheelie man I have ever seen learned on one of these bikes. I have seen him lift the front wheel, while in first gear, and disappear out of sight in fourth gear doing 50 mph and that front wheel never once came down.

What kind of bike should you choose? Most of us don't have a choice. You've got a bike and like it or not you're pretty much stuck with it. If it is one of our cousins from England, such as a fire breathing TR Velocetted Rocket 850, you're in

trouble. On the other hand, if it is a new Komokazi 90, you're in clover. My advice is, forget about the over-300-pound group. If your bike is in this class give a thought to buying a used lightweight trail bike and reselling it in five or six weeks after the technique has been mastered. At this time you can move up to your current bike with a few extra weeks of practice.



Turning the front wheel left or right causes a minor shift in body weight which is essential to maintaining balance and preventing falling over sideways.



As practice enters the advanced phases, the hills need not be as steep but a smooth surface becomes more important.

## CHAPTER 5

### MODIFYING THE BIKE

For the most part very little modification will be required. One area where it may be desirable is the bike gearing. Many bikes are geared too high for ideal wheelie practice. To determine if the bike is geared properly, ride forward at a fast walking pace and suddenly open the throttle. If the bike is geared correctly, the front wheel should lift several inches off the ground. In any case, good "jump" is more important than high speed. Almost all street bikes and many dirt bikes will be better off if geared down. As a general guideline I would suggest 20% lower gearing for all street bikes and 10% for stock trail or dirt bikes. To accomplish this, count the number of teeth on the rear sprocket and replace the sprocket with one with 10% or 20% more teeth. As an alternate, replace the engine counter sprocket with one having 10% or 20% less teeth. This second suggestion is cheaper by far if the desired sprocket can be found. Sprockets with less than 12 teeth are not recommended so that if your stock bike has a 12 tooth counter sprocket, you have no choice but to change the rear sprocket.

Another modification which should be given careful consideration is the removal of all protruding hardware attached to the rear fender, such as license or stop lights. Removing these will, of course, render the bike illegal for street use and therefore somewhat limit your ability to travel to and from the desired practice area. The advantage of removing these obstructions is that they may inflict some bodily harm as you slide off the rear of the seat, and to be perfectly honest, you are going to slide off the rear of the seat before this is over. If removing these obstructions is undesirable, the addition of a buddy seat to the back of the main seat will sometimes shadow the offending object. To carry the above suggestion even further, you should give some consideration to removing the entire rear fender temporarily. This is not a safety consideration, but will spare you some cash outlay if you flip the bike over. More on the damage aspects in the next chapter.

Another possibility for modification is the type of tires. In general, any type of tire will be adequate for practice on paved surfaces. A full knobby is probably the last choice on pavement, but it will suffice. If all the available practice areas

are on the dirt, then a knobby would be desirable. In the extreme case of loose dirt plus street tires, some change may be necessary. Perhaps the ideal combination dirt and pavement tire is the Trails Universal. In general I would suggest you make a go of it with the tires you have and change only if circumstances demand.

## CHAPTER 6

### DAMAGE AND INJURIES

You might as well face it now, before this is over there will be some damage to the bike and there may be some injuries to the rider. Hopefully, very little of each. Let's look at damage first. The most likely candidate for damage is the rear fender, if you have one. Sooner or later you will give it a little too much throttle and the front will come up and over the top. To save yourself, you bail off the back and the bike continues up and over. Any fender that was there will be wrapped up and perhaps over the seat. If your exhaust pipe or expansion chamber stinger extends aft of the rear tire, it will receive a similar treatment. My first damage was the rear fender and my second broke the exhaust mounting bracket. The fender set me back \$17.00 and the bracket I fixed myself.

My third damage was the seat cover. One of several repeat performances of the stunt described above tore a few patches in the leatherette seat cover. I immediately purchased a new seat cover for \$10.00 but wisely put it aside for a month.

My next damage was a set of rear wheel bearings. They set me back a modest \$3.00. It surprises me that rear wheel bearings don't drop like flies under the punishment they receive in learning wheelies. I must admit, after this first set I had no problems.

My last damage was two clutch bolts that sheared in half. The cost was a modest fifty cents but it required several hours of time to install them.

What kind of damage might you expect? Let's put it this way; you are going to fall down. Some will fall more than others but all will fall. When a bike falls, it's a toss-up as to whether there will be damage or not. If you are handy around the garage the cost to repair this type of damage will be small. If you send out all your work it can get pretty steep. As I mentioned earlier, the most common type of damage results from overturning the bike during a wheelie. If you master the technique of stabbing the foot brake, many of these falls can be avoided. As an alternate you can learn to slide off the rear of the seat and land on the ground running alongside the bike. Keep running and reach for the handle bars, and if you

are lucky you can grab them and guide the bike back down in a straight line. A word of caution here: Running down a bike which is about to backflip will tend to reduce damage but can increase your chances of injury. It is not uncommon to bump a shin on a foot peg while chasing the bike down.

How about injuries? This is another tough prediction. I can say what happened to me, and you can take it from there. My first battle scar came on the first day of practice - - - what a coincidence. Everything was going just great and then I started practice. With teeth gritted, eyes slimmed, and fingers in a death grip, I charged a six inch hill of dirt. As the front wheel hit, I reared back, yanked for all I was worth, and up, up and away we went. The wheelie didn't hurt at all but the landing was a lot worse. When it was over I was lighter by the weight of several square inches of skin on the right knee. I am happy to say that that was my worst injury to date. There have been other falls, but none that broke the skin. As for you, it will depend on your luck and skill. After all, you can break your neck everytime you set foot on one of those two wheel contraptions. I would offer the opinion that learning to do wheelies is no more difficult than learning to ride reasonably fast on the dirt. Some will press forward steadily but cautiously and will see little or no injuries. Others will ride slightly beyond their capability and fall often. I will try to guide you through the process with the least number of falls, but in the end only you can say what will happen.

It is possible to minimize injuries by wearing protective equipment. The most important item is the crash helmet. I will confess that I am one of those riders who hates to wear a helmet unless it is clearly going to be a rough day. Learning to do wheelies I classify as a rough day and I suggest you do the same.

A second area worth protecting is your knees. I found the standard basketball players knee pads worked perfectly. These are the pads held over the knees by elastic webbing around the back of the leg. With a little effort most pant legs can be forced down over the outside so that you don't have to look as ridiculous as you feel.

Next to knees, elbows take the most beatings. I know of no commercially available elbow pads, but if you can find such a thing, buy them. As second best, try

having small pads sewn to the inside of a jacket around the elbow area. It would be more comfortable if the pads were sewn to the outside, but here again you may not want to arouse the ridicule of friends and neighbors. As a last resort, the elbows will receive some protection from a double layer of clothing. A shirt and a jacket for example.

In addition to the above armor you might consider hip pads as worn by baseball players for sliding protection. These pads are worn under your trousers and are hardly detectable.

Another area worthy of protection is the hands. As most of you probably know, when you hit the ground your hands are usually trying to stop the sliding or skidding. Without gloves your palms will take a lot of punishment.

Last but certainly not least is protection for your feet and ankles. A sturdy high top boot will do the job.

If I were asked to rate these items in the order of their importance, I would say: the helmet, the gloves, the boots, the knee pads, the elbow pads and then the sliding pads. Good luck, Sir Lancelot.



## CHAPTER 7

### BEFORE WE START

Before going into the step by step process, you should prepare yourself for what is ahead. If you follow instructions and practice 25 to 30 minutes a day for five weeks, you will become a wheelie whiz. The five week mark is for average people. Experienced dirt riders, who can already do a little wheelie, will complete in less time. However, if you aren't willing to put in the time and work at it day after day after day, then don't even start. You can practice a lifetime of Saturdays and never learn to wheelie. But just 25 to 30 minutes a day for five weeks, and you can't lose. Many will ask, "Why are there so few who can wheelie if it only takes five weeks of practice?" There are two major reasons. First, without help and guidance you may well spend the whole five weeks doing the wrong kind of practice. The second, and by far the biggest, reason is that most people give up after one or two weeks. They have made little, if any, progress and figure that at the rate they are going it will take five years. This second factor; that is, giving up, will also cause the downfall of many readers of this book. I can't over-stress the importance of not giving up. It will be difficult to resist, particularly with so little progress at first. Look at it this way. It is like a see-saw with a heavy weight on one end and an empty bucket on the other. You are trying to tip the bucket-end down and every day you practice is like throwing pebbles in the bucket. As you steadily practice, the bucket steadily fills and even though you can't see the daily progress, it is there. Everyone who ever tipped this see-saw had to go through the same process. Those with determination keep going and as sure as the sun will rise again, they succeed. Each time you lift the front wheel, tell yourself "There goes another pebble." After five weeks that bucket will be so overflowing nothing can stop the see-saw from tipping.

The practice schedule as mentioned before is 25 to 30 minutes a day. From the first day to the last you must maintain this average. For each day you miss, a make-up session should be added as soon as possible. If you want to compress the five weeks, it is possible to practice up to one hour a day, providing the two 30 minute lessons are separated by several hours of rest. There is a reason for this separation; and for this same reason you can't practice 3-½ hours on Saturday and

call that seven days of practice. The wheelie technique must be developed as a sense, or a feeling, and cannot be reduced to memorizing a series of motions. This sense or feeling is best learned by monotonous repetition; the same thing over and over again until you can do it without any conscious thought or effort. Follow the instructions, don't give up, and it will be easy.

## CHAPTER 8

### STEP BY STEP

The step by step instructions have been divided into five phases. Each phase lasts from five to ten days and each day requires 25 to 30 minutes of practice. The 30 minutes does not include travel to and from the practice area. If a practice session is missed, force yourself to make it up as soon as possible. Weekends provide an ideal opportunity to make up these missed sessions.

#### Phase 1 (5 days)

The purpose of Phase 1 is to introduce the rider to the feel or sensation of riding briefly with the front wheel off the ground. The first step is to locate the practice area. You are looking for a hill. The hill should be as long as possible, certainly not less than thirty feet and preferably closer to fifty feet or more. The hill should have a good long section of constant slope. The surface need not be completely smooth, but large rocks or pot holes should be avoided. How steep a hill? This is the most important point. The hill steepness should be such that you can just barely ride up the hill in first gear, moving forward at a walking pace. If the hill were any steeper, you could only handle it with a run. It may take some time to locate this hill, but it is worth the trouble. You may find more than one hill. One may be almost right but have some small drawbacks. Another hill may take care of that problem but have some other aspect you don't like. This is fine, you will welcome the break in monotony by switching back and forth.

Alright, you have found your hill or hills. Let's get started. With the bike in first gear, feet firmly planted on the pegs, start up the hill using a steady 50% throttle. Some adjustments will have to be made for the steepness of the hill. When you are well along and up the slope, pour on the throttle and let the front wheel dance lightly off the ground. Keep moving steadily up the hill adding power as necessary. Give a light medium tug on the bars if necessary to lift the front wheel. Carefully now, I'm talking about six inches or so. You may notice that bumps or small rocks help lift the front wheel. Look ahead and take advantage of these aids. How long should you keep this front wheel up? As long as you can. This will usually be part

of a second or perhaps one or two seconds. But don't expect much. You are up the hill, now what? Do it again, and again and again. This will continue for the next five days, so get in the swing of it and keep trying. Subconsciously you are learning to balance, but don't expect the progress to be noticeable.

What do you do about falling over sideways while the front wheel is off the ground? Turn the front wheel, that's what. It may not do much for you but that's all you've got to work with. Turning the front wheel from side to side actually shifts the body and bike weight a small amount, and this alone must keep you upright.

A word of caution here; don't take your feet off the pegs. If you do, you may never find the courage to put them back.

At this point you may find that your hill is not really what you wanted, so look around. Try as many as you can. After three or four days of practice, and assuming you selected a good practice hill, you will be able to hold the front wheel up for brief spurts of three to six feet of travel. If the hill is near perfect, you may on occasion get a really long dash of ten to fifteen feet. Continue practice. Keep doing it over and over again. Each time the front wheel leaves the ground, you are learning something.

### Phase 2 (5 days)

Phase 2 stays on the same practice hill, but two new techniques are introduced. First is throttle control by pulsing. Throttle pulsing consists of rapidly twisting the throttle partially open and closed. The purpose is to increase the sensitivity of your control. The throttle on a motorcycle is too coarse to provide the fine degree of control necessary to hold the front wheel precisely where you want it. By rapidly pulsing the throttle on and off, your control is improved. If you need more power you pulse faster, if you need less power you pulse slower. When you slow down what you really do is make the "off" pulse longer.

Continue to practice on the hill, but introduce the pulsing throttle wherever

possible. As this throttle technique is perfected you will feel more at home forcing the front wheel higher in the air.

The second new technique to be practiced is braking. As I mentioned earlier, I have never mastered this myself, but many others have and I recommend that you try. Deliberately jerk the front wheel too high and then stab the foot brake to recover. One problem which makes practice difficult is that once you stab the brake on a hill, it will be hard to get started again. If this "recovery" technique can be learned you will save yourself a lot of grief later.

By this time you may be sick of looking at the same old hill. Try creating your own distractions. As an example you might practice your downhill braking. Your hill may not be much of a downhill challenge, but try making faster and faster downhill runs with heavy braking at the bottom. One problem you will find is that your right hand and forearm are going to tire very quickly as a result of throttle pulsing and you may want to rest them during the downhill returns, as opposed to tiring them further with partial front wheel braking.

As another distraction I tried turning around at the bottom of the hill as though it were a tight hairpin turn. Give it a lot of throttle and try to perfect a controlled "brodie" or "donut". Try creating designs in the dirt with your tire tracks. Before you finish with this hill you will have worn a complete new trail and your tire tracks will be everywhere.

### Phase 3 (8 days)

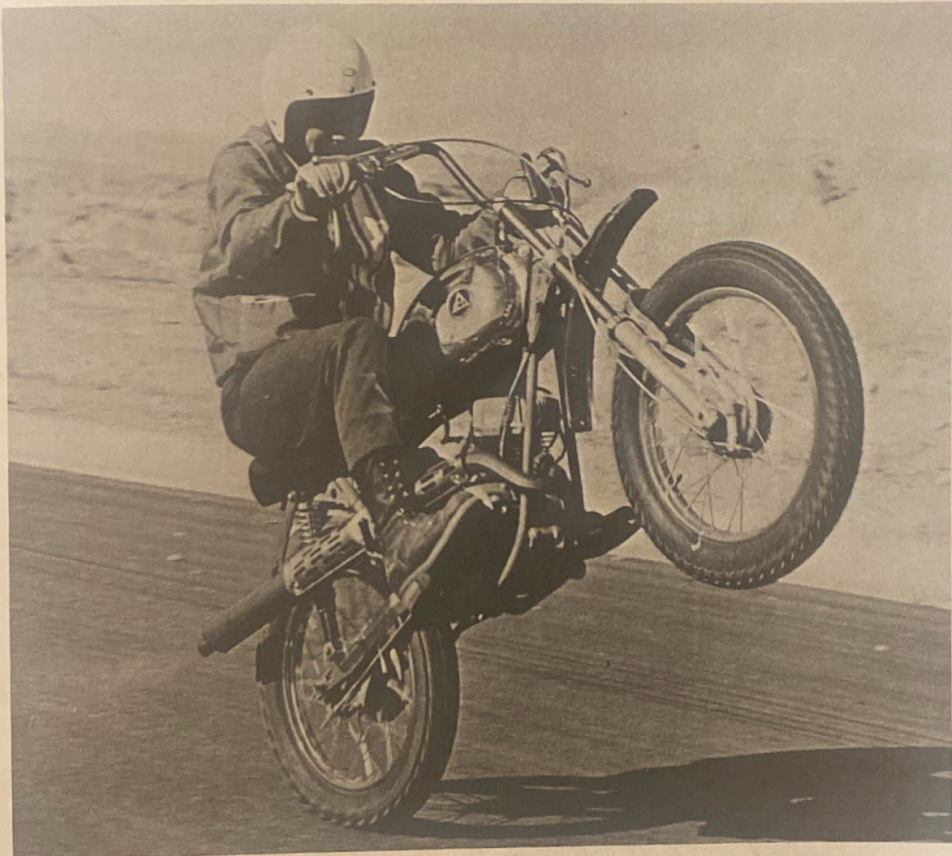
Phase 3 requires a new practice area. You still need a hill, but not as steep as before. The trail must be wide and smooth, at least ten feet wide and hopefully wider. The best choice will be a road going up a hill. The surface may be dirt or hard surfaced. The dirt road will be much easier to find. After all, you can't practice directly in front of someone's house or in the middle of a heavily traveled road. Hard surfaced roads, with a hill, located away from housing, and with little or no car traffic are difficult to find. There is a definite advantage to the hard surfaced road. Traction between tires and the road will be much greater and to be

perfectly honest, it will be noticeably easier to learn on the hard surface than to learn on the dirt. After the wheelie has been learned you will have no difficulty with either type of surface. It may be that you can practice on both types of hill. You will probably be able to locate a dirt road closer to your home and this can become your primary practice area. On weekends you will have the time to transport your bike a greater distance and you can practice on a hard surfaced hill. To help you locate a hard surfaced road with a hill, try looking for new housing developments where the streets have been put in first and housing is under construction. In some cases builders put in roads for long range growth building and housing will be built only on a portion of the land, leaving the remaining streets abandoned. These are ideal practice areas and are worth searching out.

With a new practice area located, it is time to get down to practice. Begin at the bottom of the hill, bike in first gear. Start up the hill at a walking pace with the clutch fully engaged. Lean forward slightly and in a single motion, turn on the throttle and abruptly shift the trunk of your body rear-ward. As your arms become straight, the front wheel will be jerked into the air. As soon as the front wheel is in the air, begin pulsing the throttle. Faster if the wheel starts back down, slowly if you feel momentarily unbalanced. At first there will be an almost instant tendency to fall over to the side, either left or right. This is caused by not being perfectly balanced before you attempt the lift-off. Even the very smallest error in misalignment, prior to front wheel lift-off, will cause the rider to veer left or right. You will quickly find that maintaining a straight-up position without falling left or right is more difficult than controlling the front wheel height. At first it will take almost a dozen tries for each time the front wheel lifts off straight. When this does happen you will move forward with surprising success. Don't expect too much since you still have a lot to learn about how high the front wheel should be carried. Initially you will tend to carry the front wheel too low and in spite of the occasional straight-ahead lift-off, you will be forced back down by lack of sufficient engine power. It can be very frustrating during this phase. You know that with a little practice you could hold the wheel up for a short, but very definite, wheelie. Unfortunately you keep falling left or right, and you can't concentrate on the front wheel. Again this left or right veer is caused totally by not being properly balanced and stable when you lift-off. Concentrate on a steady straight course just prior to lift-off. It isn't easy to hold a straight course riding up a hill



During the final stages of learning, the rider progresses to shallower and shallower hills. Note that as the hills become shallower the front wheel must be carried higher.



This shot taken an instant after lift-off, shows the rider crouched and tense as the balance position is sought. Once balanced, the rider tends to relax and sit more erect.

slow as a walking pace. Try a slightly slower or faster pace prior to lift-off. A slower pace will be hard to steady just prior to lift-off, but will reserve more engine power for the actual wheelie. If the pace is too fast you may lack engine power to lift the front wheel or keep it up after the initial lift-off.

As you continue to practice there will occur, on rare occasions, a brief but almost perfect wheelie of some distance such as 25 or perhaps 50 feet. When this perfect combination of events occurs, you will feel a tremendous exhilaration. Keep this in mind and remember that if you can do it once, you can learn to do it every-time. It was this one thought that kept me going. Some days I did just one single short wheelie that indicated a little progress. I kept saying over and over to myself, "I did it once, therefore with enough practice I will be able to do it all the time."

By this time you will have realized that 30 minutes is a long time. Depending upon how long your hill is, you may be able to make one complete pass up the hill in a half minute or so. On each pass you may get in three or four wheelie attempts. At that pace you will complete between 180 and 240 wheelie attempts in a single lesson. That is a lot of trying.

As with Phases 1 and 2, you may want to mix up the practice areas. At this point you will still find that the steeper the hill the easier the wheelie. Don't let this bother you. Once the wheelie is learned on a hill it will only take a week or so to transfer to level ground.

Earlier I mentioned that the wheelie would be easier on a hard surfaced road. The reason is that your tire will have better sideways traction on the hard surface. On hard surfaces the rider can allow the bike to begin to fall sideways, left or right, and occasionally be able to regain control by applying full turn on the handle bars into the direction of the fall. When practicing on the dirt, it is usually too late when you notice that the bike is beginning to fall. the rear tire tends to



slip just a tiny bit sideways as the bike begins to tip and recovery is much more difficult.

#### Phase 4 (7 days)

This is the next to the last phase. It is a period of transition to progressively shallower hills and also an introduction to level ground practice. Once again you begin by searching out new practice areas. You are looking for more hills. Roads are almost the only choice now. If you have not located a hard surfaced practice area before, it is worth trying again. This time you are less particular and can settle for a much smaller hill. A long steady rise may suffice.

The practice routine is the same. The only new item I would suggest is to begin to keep track of how far you can wheelie. I suggest you mark the lift-off spot with a small rock in the middle of the road. Try lifting off at or before this rock everytime. Place a second rock or mark at the spot you come down. This second mark is your best record and each time you set a new distance record the rock is moved forward. One thing you may notice at this stage is backward progress. One day you set a new distance record and for the next two or three days you can't get near the same distance. Don't be discouraged, it happens to everybody.

The first indication of real progress will not be setting a new distance record, but will be the consistency by which you go any distance at all. At first, your success is hit or miss. Most attempts end before they start. The lift-off is crooked and back down you come with almost no travel at all. Mixed between these majority failures will be the occasional success. As time progresses, the number of successes will increase even though each success may not be a very long wheelie. This is the beginning of real progress.

It is now time to mix up the practice areas. One day you may work out on one hill, the next day another. If the hills are not too far apart you may mix them up on a single day. As an introduction to level ground wheelies, back off from your practice hill so that your first wheelie is at the bottom and on almost level ground. This gives you one shot at a level ground wheelie for each pass up the hill. You will quickly find that the more level the ground the more difficult the wheelie.

As wheelie practice proceeds to shallower and shallower hills or even to level ground the balance situation becomes more acute. At this point, cross winds become a serious problem. Even a slight cross wind will be sufficient to disrupt your practice during this phase. I suggest you skip practice on windy days and make it up another day. The effect of the cross wind will surprise you at first. The bike tends to veer over sideways into the wind, not away from it. I suspect this is caused by your sudden overcompensation as the wind is initially felt. In any case, the effect is so distracting that meaningful practice is almost impossible. One interesting side note is that eventually these side winds will not bother you unless they are a heavy gust. As you become more proficient the side winds tend to steer you off a straight line course, but you can still remain upright.

#### Phase 5 (10 days)

It is now time to leave the hills and concentrate entirely on the level ground. The techniques are the same as before and I am sure your problems are the same as before. The lift-off is even more critical. It takes a bigger yank and even more power to lift the front wheel up to the new, even higher, front wheel position. Keep going. Keep using the same approach. Keep track of your distance record. Keep using all the distractions you can to break the monotony.

Somewhere in the last few days of Phase 5 it will be time to try second gear wheelies. You will be the best judge of when. At first, you will not be able to get the front wheel up where it belongs. This is because your bike has less abrupt power in second gear than in first and your initial lift off is about half jerk and half engine. The answer is to give it more jerk. It will take a little time to overcome this lift-off problem (a day at the most). Once you are up you have a surprise coming. It's easier! All of a sudden you are much steadier and there is almost no tendency to fall sideways. Everything is smoother and the front wheel bobs up and down much less. You might ask yourself, "why didn't I do this earlier?" The reason you didn't is that before this you fell off too much and at the new higher speeds you are moving at now you would have broken your neck! When you are up in second gear the real estate moves by in a big hurry. If you start over the back there is no way to bail off and run down the bike. No way! Once you have been up in second gear you are on your own. Let's face it, you are a wheelie whiz.



This is what it's all about. When done properly the wheelie can go on indefinitely.



A high speed shutter camera freezes the action as the author moves by at 50 miles per hour on a 400cc Husquarna.

It may surprise you to find that wheelies are still so difficult after all that practice. The day never seems to come when you find it easy. Each day you get better and better, but it still seems difficult. That feeling will be with you for some time to come. Even as you dazzle your friends with a block long wheelie, you will be telling yourself how difficult it really is.

### A Sequel

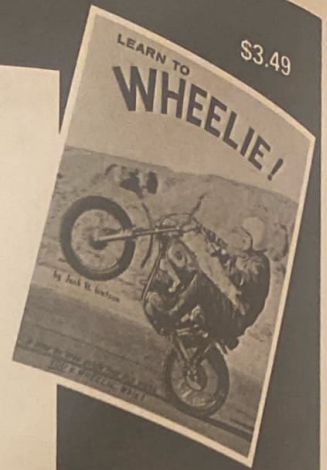
Following the sell out of the first edition of this book, two questions seemed to pop up frequently. First, has anybody really learned to wheelie from your book and second, can you wheelie the bigger bikes or just the little ones as pictured in this book? The first question answered itself one day when I crossed trails with three wheelie whizzes out in Honda Valley (70 miles north east of Los Angeles). All three bought the book at the same time, all three had never wheelied before, all three followed the instructions word for word and would you believe it, all three could wheelie 300 feet or more. Two of the three could wheelie downhill which is something I can't do today. That was proof enough for me.

To answer the second question, I have enclosed an additional photo of myself on a Husky 400. That is one tough bike to wheelie. It's like trying to fill a jigger with a fire hose. The power is so abrupt and harsh that it is tough to hold on the mark. Anyway, after a lot of practice I can wheelie the bike. The only drawback is that I do my best wheelies in second or third gear and on a Husky 400 that means 45 to 55 mph. Join me in a moment of silent prayer that you or I will never go over backwards at those speeds.

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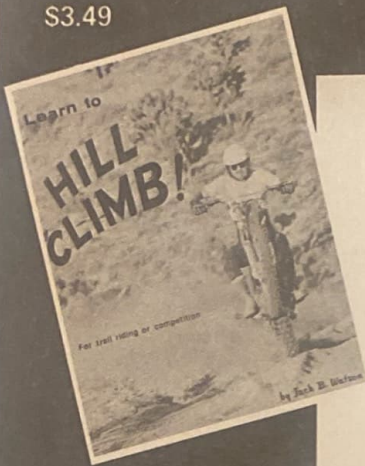
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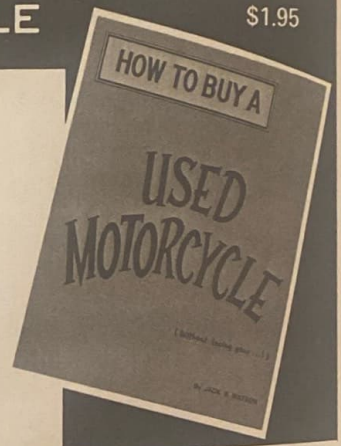
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