

MARCH 1972 60 CENTS

# Popular Science

THE *What's New* MAGAZINE

PS Tests Five New  
CAMPING TRAILERS  
DESIGNED FOR  
YOUR SMALL CAR

**OUR SECRET RESEARCH  
ON LASER WEAPONS**

—What Can Be Told

**MAN-POWERED  
PLANES GET  
A NEW LIFT**

**4-WHEEL-DRIVE  
PASSENGER CARS**  
Are They on the Way?

**PARKING-LOT  
SAILCAR YOU  
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**APOLLO 16**  
Why We're Going Back  
By WERNHER von BRAUN

**SPECIAL 12-PAGE  
CAMPING SECTION**  
New Trends in Tent  
Campers...Motor Homes  
...Travel Trailers...  
Truck Campers...Vans  
that Double as Wagons  
...and More

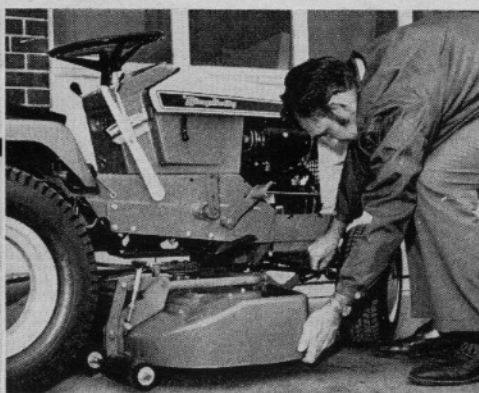
**NEW TV  
ANTENNAS**  
How to  
Choose One

...plus 13 other exciting  
articles, What's New Digest,  
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**Penncraft mowers** from J. C. Penny feature large, easy-to-reach controls and a safety interlock that prevents in-gear starting.



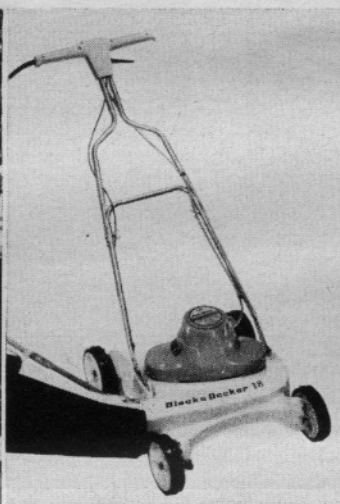
**Simplicity cable lift** suspends deck at balance point so you can float the mounting holes into alignment without tugging.



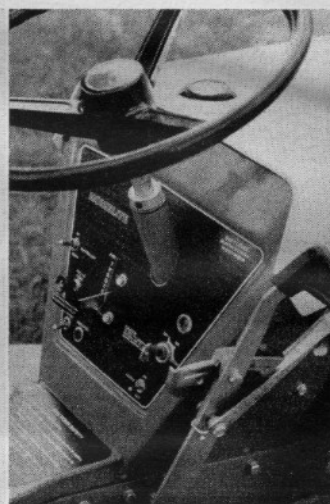
**Snapper Comet** has excellent deck mount, positive controls, and solid construction details including a tubular-type frame.



**Toro's top-of-the-line** walk-behind has a new, safer bagging system featuring a rear-opening bag. Model above, a 19-incher, is the Guardian.



**Black & Decker electric** mower is double-insulated to eliminate shock hazard. Other safety plusses: instant stop, and no restarting problems.



**Homelite's new tractors** have a control panel designed for easy visibility and use. Famous for its chain saws, Homelite is new in mower field.



**Sears rear-engine rider** is an all-new model with seven hp, 26-inch cut, safety discharge chute, single-pedal foot control of both clutch and brake.

dangerous. Rear-stand riders that tip up are great. Hahn Eclipse features this capability and claims the vertical posture is suitable even for extended storage.

For big tractors, where deck removal is the rule, Simplicity shows some well-thought-out deck-mount engineering. One flip of a tension release frees you from the usual wrestling match with the drive belt; even better, the cable-type lift is attached at the deck center of gravity. To insert the pins is easy; you just dangle, or float, the deck on the lift while you align the holes.

The safer decks can be accurately and easily adjusted for cutting height on the go. Try before you buy hydraulic-type lifts. Most are "either/or" and lack precise intermediate adjustments between full up and full down. To adjust their cutting positions, you must stop and re-rig gauge wheels, stops, or rollers. A really practical deck lift lets you select instantly the height you want from a series of clearly marked positive positions. Many manual, and some electric, lifts

do this, and do it while on the go, too.

**Safety through electricity.** Electrical power take-off clutches, used by Jacobson and others, are quick operating and less troublesome than belt tighteners. Unfortunately, few makers see the logic in fitting them with massive handles since a simple toggle switch—just like the one for the headlights—is all that's needed electrically. I've made a fast flick at a PTO switch many times, usually in an emergency, only to find that I've turned the headlights on or off and the PTO has, by now, chewed up what I didn't want chewed up.

A new and promising electrically operated clutch/brake on some Montgomery Ward mowers pulls the whirling blades to a halt in three seconds or less. The device is reportedly "fail safe" even if battery power fails. This could set a trend, in light of proposed federal safety regulations.

The appeal of electric operation is not limited to controls. John Deere's Electric 90 battery-powered rider has proven both successful and popular. Now, to supplement their larger Elec-

trak tractor, GE is introducing an eight- and a 10-hp. series. Blessed with the typical high torque of electrics, these are capable of snow and ground-engaging work as well as mowing. The word is that the price is "right," about \$700.

Electrics, rider or walk-behind, have safety features hard to duplicate with engine power. Black & Decker points out that users are mentally conditioned to turning off electrical gadgets to adjust them. Free of fret about restarting, one just flips the switch.

Controls are just as vital on walk-behinds as riders, maybe more so, because the user tends to be less protected and more intimately involved. Bending to grope for a clutch on a self-propelled diverts your eyes from the mower path. Attending to engine or mower-mounted throttle and clutch controls invites the intrusion of toes under the mower deck. For an excellent example of control placement, look at the upper panel on the Bolens 22-inch self-propelled. There's a full display of clutch and throttle.



Massey-Ferguson six-horse rider has neat controls, fiberglass upper deck. Side car holds five bushels of grass or leaves.



Lawn Boy 26-inch compact is a nimble and sturdy rider for small lawns. It has five-horse engine, two speeds forward, reverse.



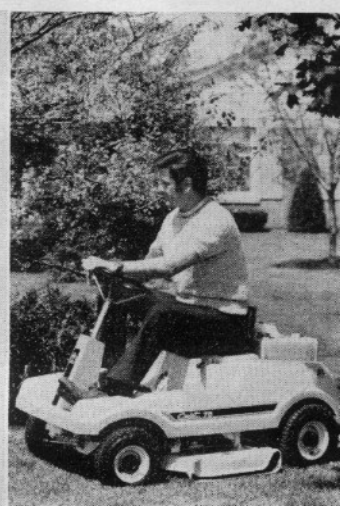
GE has a new, lower-priced addition to its line of electric tractors. The E8M is around \$700, 36-inch mower not included.



Allis-Chalmers Scamper gives great visibility in tight spots, maneuvers nicely. Despite small size, it has eight-hp engine for big jobs.



Sleekly styled Ariens encloses all mechanisms for looks and safety. Eight horses driving through six forward speeds cuts large lawns down to size. Controls, including separate clutch and brake, are easy to see and use. The Emperor II shown here has a built-in rear stand for easier servicing.



International Cadet 75 has side or rear discharge, two blades in floating deck that adjust on the go. Body is lightweight, rustproof fiberglass.

**Safety in the bag.** Some users couldn't care less about bagging cuttings; and some mowers, such as Bolen's Orbit-Air, intentionally operate as mulchers without discharge chutes. But if collecting grass or leaves is your bag, look for bagging arrangements that:

- Remove and attach without tricky hardware, rubber bands, or strings. If you have to stoop, squat, or get near the chute, look farther.

- Do not make the mower tipsy when full of heavy cuttings.

- Hold enough grass.

- Convert from bag to nonbag mode with full safety-chute deflection in both, and without having to change chute or outlet parts.

The latest mowers have swing-up chute deflectors that pop back into fully safe position automatically when you remove the bag. As for capacity, Snapper offers a whopping six-bushel rear catcher for their rider; and Massey-Ferguson's side cars hold five bushels. Jacobsen's rig on walk-behinds swings up for clearance in tight spots, or, again, Snapper has a be-

tween-the-handle mount for the bag.

Regardless of whether you're shopping for a walker, rider, or tractor mower, look for the new safety features in four broad areas:

- Deck and cutter sturdy for projectile containment, and shielded against dangerous throw-outs.

- Starting, stopping, clutch, lift, brake standardized and labeled.

- Protection against moving or hot parts.

- Service safety for easy, safe deck

John Deere Electric 90 cuts 1½ acres on a battery charge. Author found it very safe and easy to drive, even on hillsides.



and blade access or removal without pinched fingers, lifting, or precarious positioning.

If the mower you're looking at doesn't show positive evidence of attention to these areas, it is not worth buying. Above all, try before you buy. No mower is perfect for every kind of lawn, but some are better than others. Take the time to find the one that's best for you and your lawn. You'll find it if you shop carefully. P 5

AMF's 21-inch walk-behind has two-speed front drive, rear toe guard, integral cast deck and drive housing, safe Flexor blade.

