Safe Use Of All-Terrain Vehicles

All-terrain vehicles (ATV's) were initially developed in Japan, for farm-to-town transportation in isolated and mountainous areas. ATV's began finding their way into agriculture in the 1980's. Typical uses are to access remote areas, to inspect crops or livestock, tend to irrigation and/or fence lines, or transport items between locations.

In most recent times, ATV's have been modified further to take on more active "workhorse" roles. Some examples of modifications include carrying racks, trailer hitches, and the mount of implements (augers, tanks and sprayers) to the machines.

Few of these modifications are performed by the manufacturer, but rather after-market, by local fabrication shops or by the user. Modifications that change the vehicles' intended center of gravity create additional stability problems.

SAFETY

The ATV has not enjoyed a good safety record. Estimates provided by the Consumer Products Safety Commission report up to 90,000 ATV related injuries per year, and up to 120 deaths. Nearly 50% of the injuries and fatalities are children less than 16 years of age.

A number of factors are believed responsible for the high number of injuries related to these vehicles.

These factors include:

- **Stability:** Inherent instability of three-wheel ATV's has led to many side overturns. Four wheel ATV's are much more stable and better suited for farm work.
- **Power and speed:** ATV's come with engines ranging in size from less than 100cc's to more than 500 cc's. Many have gear ratios which permit speeds in excess of 50 miles per hour! This increased speed, combined with instability characteristics, can cause disaster. Work applications should not require an ATV to have speed potential above 25 miles per hour.
- **Suspension:** In some cases, the only suspension provided is the low pressure (2 psi to 6 psi) balloon tires. Excessive speeds, combined with rough terrain, can create enough pitch and bounce to cause the operator to lose control of the vehicle.
- **Drive lines:** Many ATV's have solid axles or locked differentials. This causes the rear drive wheels to rotate at the same speed. The operator must consciously shift body weight, so the inside drive wheel can slip during a turn. This move by the operator causes the machine to be less stable and increases the risk of side overturn. This potential is greatly reduced if the unit is equipped with a differential.
- **"Popping the clutch"** is also a common cause of rear overturn. A unit equipped with an automatic clutch reduces the potential for this type of accident.

ATV's FOR WORK

ATV's selected for work should have a number of safety features:

- Stable and heavier four-wheel design, which will reduce the potential for side overturn.
- Power and gearing conducive to the work use intended. Agricultural ATV's should not have to attain speeds higher than 25 miles per hour.
- Models with factory-built suspension systems are more stable and controllable over rough terrain.
- Serious consideration should be given when modifying any ATV. For safety's sake, the manufacturer's representative should be consulted, and their recommendations heeded.
- Towing of excessive weight, mounting of tall or heavy implements, or other performance alterations can lead to serious accidents.
- Adequate guarding is necessary over exhaust, hot engine components, and drive shafts, chains or sprockets. A spark arrestor is also necessary.

OPERATOR SAFETY

- Children under the age of 12 should not be allowed to operate or ride on ATV's. Any potential rider should receive adequate training before being allowed to operate an ATV.
- Most ATV's are designed for seating the operator only. In fact, the unique handling characteristics of the ATV require that the operator utilize body weight to aid in control of the machine. An additional rider disturbs this process and can lead to loss of control.
- Since ATV's are relatively small and low to the ground, they are difficult to see. Lights, reflectors and flags should be used to improve visibility.
- ATV's are built for off-road use and should not be operated on public roadways. Drugs and alcohol can impair the operator's ability to control these vehicles and should be avoided.
- As with all work, certain clothing and footwear are appropriate when operating these vehicles. Over-the-ankle work boots are recommended. Clothing should be close-fitting to avoid entanglement. Approved helmets and eye protection are highly recommended.

OPERATOR TRAINING

Given the past safety record of these vehicles, having new operators attend an approved training session is highly recommended. For information concerning training in your area, contact your local ATV dealer or the ATV Safety Institute at (800) 447-4700.

ATV's are becoming prevalent in agriculture, business, industry and government. Beyond their recreational value, they have proven useful in the workday world. They can be used safely and effectively, if their application is correct, their limitations are known and adhered to, and if they are operated by trained and conscientious workers.