

## **Tractor body types, Unit Body, Bathtub, Rail frame, Tube body.**

*This is an interesting but messy topic.*

*Body type in farm tractors is important because form and function are closely tied as in most things.*

*In order to make tractors agile, smaller, more powerful, and economical, several specific body types emerged in the 1920s.*



*Over time these types evolved and frequently merged to produced tractors that were optimized for their intended use.*

*Every tractor company, based their tractor designs on these body types.*

### **LEFT: The Tube Body.**

*The Tube Body is a variation of the Unit Body. The tubular frame segment was used to house the clutch and main drive shaft. This segment bolted between the engine and the transmission. The tube was used to reduce weight on tractors. In practice that meant row crop and garden tractors of under 25 horsepower.*

*Tube body tractors often had threaded holes in unit segments to facilitate implement mounting. The A family and the Cub family of Farmalls have tube unit bodies.*

### **RIGHT: The Unit Frame.**

*Most modern tractors have some form of the unit frame. Unit frame means that functional segments of the tractor are bolted together. There is no separate frame. The units when bolted together have enough strength to support the tractor wheels.*

*The engine is bolted to the clutch housing, the clutch housing is bolted to the transmission unit, the transmission is bolted to the differential-final drive unit. The unit frame concept reduced tractor cost by enabling assembly line production. It also made service, repairs and replacement much easier. A unit frame is also referred to as a unit body.*



### **LEFT: The Rail Frame.**

*Row crop tractors typically used a rail frame or a partial rail frame. A rail frame allowed the design of tractors that were light and agile. On a full rail frame tractor, the two rails extended from the front wheel assembly to the final drive. All the units of the tractor were bolted to the rails.*

*Additionally, the rails had holes in patterns that facilitated the mounting of implements, particularly cultivators.*

*The F Series Farmalls have rail frames.*





**ABOVE: The Bathtub Body**

*The first McCormick Deering tractors were built on a “Bathtub” version of the unit body. The bathtub is a large cast member that may accept the engine for mounting or may house the base of the engine. The bathtub element was quite popular and used by many tractor manufacturers until the 1950s. It was used on standard tractors where it provided weight and rigidity. The first McCormick Deering series of tractors used a bathtub frame.*

**RIGHT:** *This W-6 has an abbreviated bathtub frame. An abbreviated bathtub is bolted to the clutch or transmission unit rather than the final drive.*



**LEFT: Abbreviated rail frame**

*Row crop tractors often used an abbreviated rail frame where the frame extended from the front axle mounting to the clutch housing or transmission housing. The Letter Series Farmalls are of this type.*