Weekly Report

This report is updating the progress of the S-90 Off-Road Vehicle from 1/20/09 to 1/29/09. Figure 1 shows a 3D CAD representation of what our finished project should look like. The CAD design represents about 90 percent of the total project since it is missing the engine, gearbox, seat(s), brake calipers, and foot rest.

(Figure 1)

Figure 2 shows a picture of the current project. There have been some slight modifications to the original CAD design, including the way the steering wheel mount is raised and lowered. The new design uses a turnbuckle to raise and lower as opposed to using two knobs to lock the height at certain positions. One reason for the change is that
the new method is faster to use. Another reason is that it was easier to fabricate and required fewer parts.

(Figure 2)

Figure 2 also shows the side panels and the other parts that were missing from the CAD image. Also seen are the wires for the various control systems. All of the transducers have been mounted and all of the actuation motors have been mounted. The engine starter has been wired as well as the 7amp alternator. The schematics for the seat actuation switch have been drawn up as well as the schematics for the gear box shifter limit switches and simple control logic using a DPDT 12v 10amp relay.
The goal for the following weeks is to have the steering wheel and pedals limit stops mounted as well as the steering wheel and pedals spring returns mounted. Also, the final wiring of the vehicle needs to be checked, wrapped and fastened to the frame. There also needs to be a panel that has various indicator lights on it.

After these few tasks get finished we will begin to do live testing of the vehicle. We will of course begin with the vehicle propped up so that it cannot actually drive, then once all the systems are verified, we will do a driverless test run and finally multiple tests with drivers. We have already begun to test the strength of the brakes, and are currently working on increasing the braking power by about 3 times. We will do this by shortening the lever arm that is coming off of the gear motor. This gray piece of aluminum that we will be re-working can be seen in figure 3.

(Figure 3)