

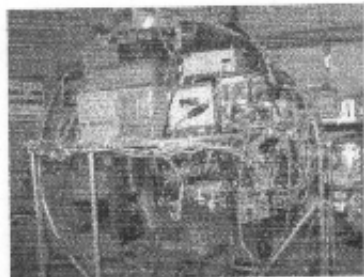
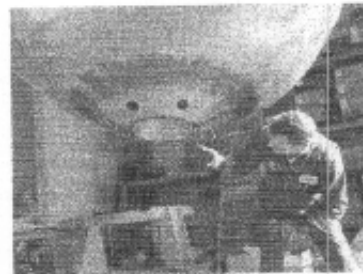
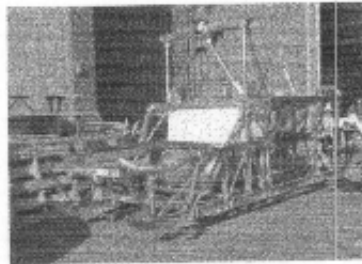
APPENDIX XII

ALVIN Overhaul and Upgrades

ALVIN Overhaul

Status

- Some personnel on ROV ops
- Frame repaired..100%
- Variable ballast rebuilt..70%
- Manipulators rebuilt..90%
- Electronic Equip maint..75%
- Personnel/VB/HP spheres insp..100%
- Pressure test implodables..50%
- Hydraulic system rebuild..80%
- Electrical J-boxes rebuild..75%
- Explosive bolts..20%
- Battery Boxes..10%
- Foam repairs..50%
- Blow/vent system.. 100%
- Internal panels/wiring.. 75%
- Skin repairs/painting..5%
- Component re-installations started..5%





ALVIN Upgrades

- Wiring for 3rd battery
- Pan/Tilt installation
- New single chip video camera
- New motor controllers
- Pelagic pump motors
- New in-hull Nikon cameras