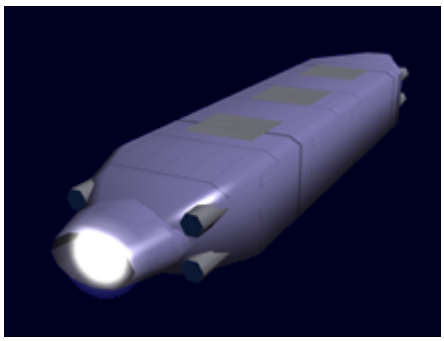
Mobile Operational Geological Surveyor

The second generation of the Mobile Operational Geological Surveyor (MOGS) was developed to replace the original surveyors for use with the Orbital Geological Survey Platform and became available in YE 31.



About the MOGS

This is the second generation MOGS for use with the OGSP. They were designed to improve the effectiveness of the surveyors.

History

The original MOGS served the OGSP well. However, the original model was more expensive to manufacture. The new version is less expensive, and barring mishap can be retrieved by the OGSP.

Appearance

The MOGS resembles a torpedo, but is smaller than any in use by the Star Army of Yamatai. The front of the MOGS is the boring assembly, and the rear of it contains the propulsion system.

Statistical Data

General

Class: Mobile Operational Geological Surveyors Nomenclature: Ke-O8-1a Type: Drone Designers: Ketsurui Fleet Yards, Ketsurui Zaibatsu Manufacturer: Ketsurui Fleet Yards

Dimensions

Length: 1.6 meters (5.25 feet) Width: .32 meters (1.05 feet) Height: .2 meters (.67 feet)

Speed (Sublight): 0.01c in a vacuum Speed (Atmospheric): Mach 1.8 at Earth sea level

Damage Capacity

See Damage Rating (Version 3) for an explanation of the damage system.

- Hull: 5 SP (Armor)

Components

Armored Constuction

The new MOGS are constructed with a Durandium Alloy frame, covered in a thin durandium hull. This provides the surveyor with a high structural strength that protects the unit while boring.

Ultrasonic/Sonic Driller

The MOGS uses a high powered KFY developed Ultrasonic/Sonic Driller to bore into the ground. This replaced the previous Zesuaium tipped drill in the original model. Ultrasonic and sonic vibrations are responsible for the drilling action which pulverizes any substance it encounters. The device can work even in the absence of atmosphere as the shock waves are transmitted directly into the substance to be tunneled into. There are four tubes that draw the pulverized matter from in front of the MOGS and push it behind it. The MOGS can also take samples of the matter and store it for later analysis. The borehole it creates is .45 meters (1.47 feet) in diameter.

The bore trajectory can be altered 15° pitch and yaw.

Bore rates	
Speed	**Substance**
10 Mpm [1)]	dirt
4 Mpm [2)]	soft rock, sandstone

Bore rates	
Speed	**Substance**
2 Mpm [3)]	dense rock, granite

OOC: NASA's JPL developed a version of this for use in obtaining samples from various planets or small bodies.

Computer & Avionics

Communications

Radio: Full spectrum, dual-modulation; range theoretically unlimited except by interference. Practical range is short, since the waves only travel at light-speed. Frequency-hop and multi-channel capable.

Computer core

The surveyor uses a quantum computer to control all aspects of the surveyor. It uses a series of programmed subroutines to execute commands sent to it. Instructions are sent to it from the Orbital Geological Survey Platform.

Avionics

For deployment the surveyor uses a Time-Modulated Ultra-Wide Band Radar and a Wide-Band Variable Optical Imaging Array.

Power supply

Ke-O8-G3100 Aetheric Generator and Capacitor System (A redesign of the Ke-M2-G2701) provides all the power requirements for surveyor. In the event of a failure of the Generator the surveyor will switch to the capacitor and reverse course through the bore hole.

Propulsion

The MOGS has three propulsion systems, each for a specific task.

Ke-O8-R3101 Inertialess Drive System

This is the primary propulsion systems for deploying the surveyor to the surface of the planetary body.

This is a redesign of the Ke-M2-R2901 drive system. The surveyor also uses this system to move to another location on the planetary body; or if the surveyor is boring perpendicular to the plane of gravity. The surveyor also uses this drive when maneuvering through water.

Ke-O8-P3102 Gravimetric Backup Engine and Thrusters

The surveyor uses this system for recovery, to maneuver the MOGS back to the OGSP. It is a redesign of the Ke-M2-P2902 system. This drive system can also be used to transport the MOGS to a moon of the planet that the surveyor is exploring.

Ke-O8-P3100

Once the MOGS starts boring it uses a pair of retractable treads to propel the surveyor through the bore hole. The treads emerge from the bottom of the surveyor. They can only be used if the borehole slope is less than 75°. If the bore goes more vertical the MOGS will switch to the Ke-O8-P3101.

Sensors

- Ground penetrating radar which can be used to image through rock, soil, ice, fresh water. It can detect objects, changes in material, and voids and cracks. Range is 1 kilometer.
- Seismometer to measure and record motions of the ground.
- Seismic reflection the surveyor has two seismic sources that generate controlled seismic energy. A series of receivers along its sides receive the reflected energy.
- Scalar ore scanner uses a scalar transducer to send a Scalar Field out in a 180° arc. The scanner then analyzes the phase shift of the reflected energy to identify ores. Range: 500 meters.

Storage and Maintenance Access

The MOGS has three panels on the top, the center one gives access to the ore sample storage containers. The other two panels give access to vital systems.

Note: All components in the drone are equipped with anti-tamper devices. Only Ketsurui Zaibatsu trained technicians may service them.

OOC Notes

Authored by Nashoba and approved by Exhack on Jun 17, 2009[4)]

[1)], [2)], [3)]
Meters per minute
[4)]
https://stararmy.com/roleplay-forum/index.php?threads/yamatai-mobile-operational-geological-surveyor.4181/