

SINGLE-FLUID-FORWARD® Advanced Mobile Hydraulic System



USMC MPC Technical Demonstrator 22-1/2 ton equipped with *Single-Fluid-Forward*® undergoing testing at NATC. Exclusive Common-Hydraulic-System technology and integration engineering from ISLAND CITY, LLC.

One Fluid (engine oil), One Check Point, One Fill Point, One Minute PMCS, One Lube – All Climates

A generation forward technology to reduce POL inventory/logistics and enhance vehicle capability.

Revolutionary System for organizing, storing, heating, cooling, controlling and distributing hydraulic fluids and lubricants while protecting critical systems. Single-Fluid-Forward(SFF) minimizes POL logistics, reduces components, reduces cost, reduces weight and improves readiness. Fully compatible with MIL-L-2104 and MIL-L-46167 POL, mineral and synthetic motor oils.

Conventional tactical vehicles typically employ 3 to 4 different operating fluids. The Single-Fluid-Forward hydraulic system employs 1 fluid – engine oil. SFF can integrate all tactical vehicle fluid systems including: torque converter, transmission, primary steering, secondary steering, regulated hydraulic supply, auxiliary hydraulic supply, transmission retarder, and more. A crankcase top-off provision automatically maintains engine oil level without operator intervention.

A single reservoir equipped with unique *cascaded compartments* prioritize, distributes and provide a fluid reserve to “shared yet isolated” systems. With one fluid there is only one level to check - a simple visual PMCS instantly verifies all integrated systems- no dipsticks to pull, no plugs to remove.

SFF reduces system filters associated with conventional hydraulic systems. Multiple filters are replaced with integrated high-performance filtration providing all systems with *hydraulically clean* oil. Clean oil extends life, reduces maintenance, and improves readiness.

SFF MPC hydraulic system features a multiplexed main hydraulic pump system performing unique functions to maximize performance and minimize weight. A 300 hp hydraulic marine pump drive that also functions as a braking retarder to enhance the MPC transmission performance on downhill grades.

- continuous regulated oil supply (ie: cooling fan)
- auxiliary hydraulic supply (ie: marine drive, suspension, trim vane)
- high-power, constant-torque hydraulic retarder
- integral rapid warm-up engine and hydraulic system heater

When serviced with synthetic motor oils such as 0W40 the Single-Fluid-Forward system requires no inter-theatre or inter-seasonal oil change. True desert to arctic capability.

ISLAND CITY, LLC

1800 West Taylor Street, Merrill, Wisconsin USA 54452

TEL:715.536.8600, FAX:715.536.8660

EMAIL: islandcityeng@msn.com WEB: islandcity.us

ISLAND CITY Common-Hydraulic-System technology is protected under US PATENT 6,227,221, and 7,610,927 and foreign patents, other patents pending.

Single-Fluid-Forward is a registered trademark of ISLAND CITY

Single-Fluid-Forward® **Advanced Mobile Hydraulic System**

Single Operating Fluid

- Reduced Logistics
- Reduced Cost
- Simplified Service
- Fewer Components
- Reduced Weight

MPC TD Marine Drive

- Twin 150 hp
- Joy Stick Control
- Full Cap - Fwd/Rev
- Braking Retarder
- Enhanced Gradability

Single Fill Point

- Improved Cleanliness
- Extended Component Life
- Simple Maintenance
- Visual Fluid Level Check

Shared Reservoir Capacity

- Long Fluid Life
- Large Fluid Reserve
- Consistent Fluid Viscosity
- Less than 2% Aeration
- Reduced Weight
- Reduced Onboard Fluids
- Fewer Filters

MPC TD Steering System

- Front/Rear Supply
- Emergency Supply

Common Motor Oil

- Mineral Base MIL2104
- Synthetic Oil w/o Mods
- Reduced Cost

MPC Hydraulic Braking

- Braking Retarder
- Enhanced Gradability
- Transmission Assist

Shared Filtration

- Fewer Filters
- Hydraulic Quality Filtration
- Longer Oil Life
- Extended Component Life

Shared Cooling

- Rapid Warm-Up System
- Efficient Water Removal
- Extend Component Life

MPC Multiplex Main Pump

- Fan Drive
- Trim vanes
- Suspension
- Engine Oil Top-off
- Aux Hyd Supply

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