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### TRENDS AND DEVELOPMENTS

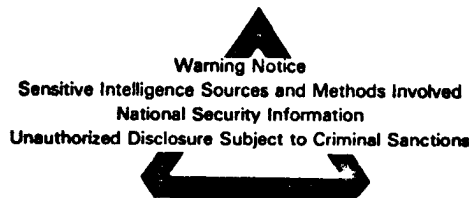
## FOREIGN TECHNOLOGY WEAPONS AND SYSTEMS

10 APRIL 1978

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TALENT-KEYHOLE-COMINT  
CONTROL SYSTEMS JOINTLY

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GROUND SYSTEMS

Soviet Heavy Caliber MRL, M-1977 (C)

(S) [redacted] of the Soviets' new MRL and its resupply vehicle at the Letzlinger Heide training area, reveals several additional technical and operational features not evidenced [redacted]. The number of launch tubes, previously assessed to be either 12 or 14, has now been confirmed to be 16. The caliber, yet to be accurately determined, is still assessed to be about 240 mm. Figure 1 shows a battery of six launchers drawn up along the firing line, three are in launch position with launch tubes elevated and three have just pulled into the line.

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(S) Preliminary analysis and mensuration of the launch tube cluster discloses that when traveling, the tube cluster is positioned with its breech end slightly elevated and resting on the vehicle engine compartment and the muzzle end depressed and facing to the rear of the vehicle. Analysis further reveals that when compared with its travel position, the tube cluster in the firing position is slewed 180 degrees and moved somewhat to the rear with the breech end overhanging the end of the vehicle in order to achieve the quadrant elevation required to fire to maximum range. In traveling with the tube cluster in the reverse position, the overall vehicle length is reduced and its maneuverability improved by shifting the launcher's weight forward and improving the center of gravity of the 8-wheel chassis.

(S) The MRLs photographed lining up in battery firing position, appear able to negotiate very tight turns in very muddy terrain, indicating that the vehicle carriers probably are identical to the ZIL-135 models used with the FROG-7 systems. The ZIL-135 has a 1-2-1 axle arrangement with both front and rear wheels having steerable axles, torsion bar suspension and a remotely controlled eight tire inflating system. The center tandem wheels are fixed rigidly to the vehicle frame and have no suspension system. Under adverse conditions involving deep mud or snow, takeup drums fitted to the hubs of the front wheels can be used to extricate bogged down vehicles. As with the FROG-7 launcher, the rigid frame of the ZIL-135, when fitted with similar stabilizing jacks, provides a very stable firing platform for the new MRL.

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(U) During certain training, boresighting/sighting, and prefire exercises, the Soviets have seen fit to provide individual concrete hard stands for their vehicles. (Figure 2) The hard stands not only facilitate these types of crew training but make it convenient to perform them under inclement weather conditions. The crew size assessment for the new MRL remains at four members.

(S) [Redacted]

analysis indicates that the rockets are carried in two stacks with a handling/loading device mounted between them. Each stack appears to contain two rows of three rockets each for a total of 12 rockets per resupply vehicle. (Figure 3) The rockets are probably fitted with HE (controlled fragmentation) or chemical warheads, armed with either proximity or mechanical time fuzing systems. Two resupply vehicles are associated with each MRL. Analysis of the new MRL, its resupply vehicle and the ancillary equipment and support vehicles is continuing and significant developments will be reported in future issue of Trends and Developments. (SECRET/RELEASABLE TO UK and CANADA)

SOURCE: [Redacted]

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