35－45 CHARACTERISTICS OF THE FLYING METAL PLATE SYSTEM USING OVERDRIVEN DETONATION

衝撃・極限環境センター	教　授	伊東　繁
大学院自然科学研究科	前期課程	森本秀行
知能生産システム工学科	技　官	長野司郎
	研究生	大塚誠彦
旭化成株式会社		飛田栄治
		黒木賢二
産業技術総合研究所		劉　志躍

In this study, we took notice of O.D.D. phenomenon in explosive, that brings out higher detonation pressures than C-J pressure of each explosive. And we measured detonation velocity with optical fiber to confirm that O.D.D. phenomenon obtained in the experimental device of Fig.1, and observed underwater shock wave because the improvement of the work to the front of the explosive by O.D.D. phenomenon is not yet checked but it is checked that the detonation velocity becomes high by O.D.D. phenomenon.

From measurement of optical fiber, we confirmed that detonation velocity rises by O.D.D. phenomenon occurred in the experimental device.

In the inclination diagram of Fig.2 and velocity histories of underwater shock wave of Fig.3, we couldn't confirm significant difference in the case of O.D.D. phenomenon and usual explosion. Thus, the work to the front of the explosive doesn't rise by O.D.D. phenomenon.

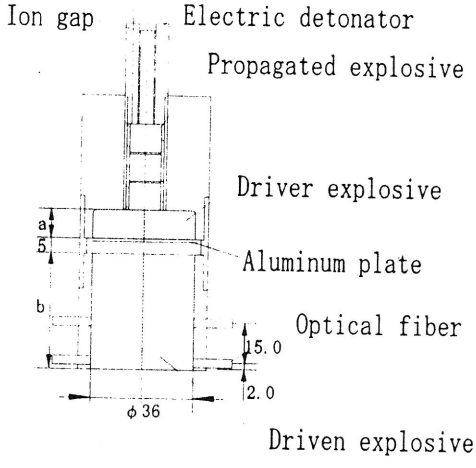

Figure 1. Experimental device

(Emerging Technologies for Fluids, Structures and Fluid-Structure Interaction 2002, ASME Pressure Vessel and Piping-Vol. 446-1, August4-8, 2002 Vancouver, British Columbia, Canada)

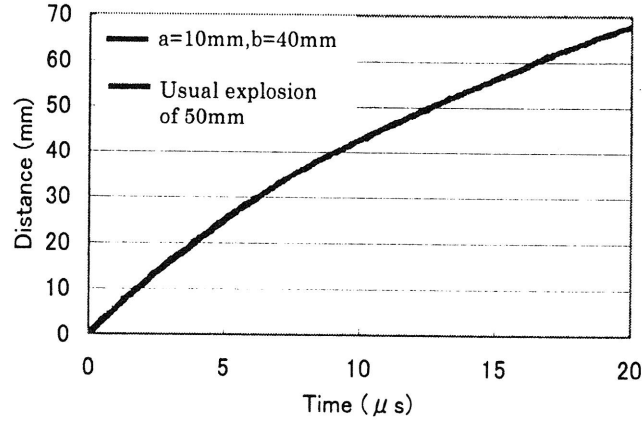

Figure 2. Inclination diagram of underwater shock wave in the case of total length of 20mm

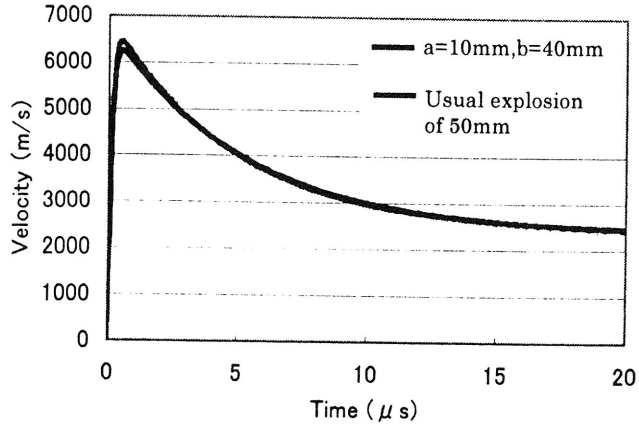

Figure 3. Velocity histories of underwater shock wave in the case of total length of 50mm