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EXPLOSIVE GAS TEST OF A
MK 12 VEHICLE (CRD)

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CENTRAL TECH FILE

Organization 7300 Environmental Test Report

R. I. Butler - 7342

Approved by R D Bauder for
D. W. Bauder - 7342

Approved by James E. Bean
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EXPLOSIVE GAS TEST OF A
MK 12 VEHICLE (CRD)

TEST SUMMARY

A series of explosive gas tests have been performed to develop an explosive gas technique for simulating blast environments on a MK 12 test vehicle. The tests, all with hydrogen-oxygen mixture may be grouped into two general categories:

1. Those tests in which the hydrogen-oxygen mixture was detonated at the end of the shock tube opposite the location of the test vehicle.

2. Those tests in which the detonation of the hydrogen-oxygen mixture was propagated through the mixture with strands of solid HE.

Details and results of individual tests are included in the following Division 7325 and Division 7342 quarterly progress reports:

RS 7325/385	1/28/65
RS 7325/388	4/20/65
RS 7325/391	7/15/65
RS 7325/406	10/15/65
RS 7342/1	1/17/66
RS 7342/15	4/20/66

In general, these tests indicated that sweep velocities of about 10,000 fps are obtainable with Method 1, and velocities up to 30,000 fps are feasible with Method 2. Pulse durations of about 1 ms per 10-feet of pipe length are produced by both methods. The pulse amplitudes and shapes are predictable and repeatable, especially with Method 1. Considerable noise is superimposed on the pulse in Method 2.

The most serious drawback to the test method is the low flow mach number (about 1.5) which results in high overpressures. It is possible that the base of the vehicle could be protected from the overpressure, in which case this method would be attractive for the zero angle of attack condition.

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