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***Indices of the  
Proceedings for the  
Thirteen International  
Symposia on Detonation  
1951-2006***

**Blaine W Asay  
James E. Kennedy  
John B. Ramsay  
F. Joseph Schelling  
Bruce E. Takala**

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*Los Alamos National Laboratory*

***INDICES OF  
THE PROCEEDINGS  
FOR THIRTEEN INTERNATIONAL  
SYMPOSIA ON DETONATION  
1951-2006***

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# The Detonation Symposia

| <b>Number</b> | <b>Date</b>                 | <b>Location</b>                            |
|---------------|-----------------------------|--------------------------------------------|
| 1             | 11-12 January, 1951         | Washington, District of Columbia           |
| 2             | 9-11 February, 1955         | Washington, District of Columbia           |
| 3             | 26-28 September, 1960       | Princeton, New Jersey                      |
| 4             | 12-15 October, 1965         | Silver Spring, Maryland, 1st International |
| 5             | 18-21 August, 1970          | Pasadena, California                       |
| 6             | 24-27 August, 1976          | Coronado, California                       |
| 7             | 16-19 June, 1981            | Annapolis, Maryland                        |
| 8             | 15-19 July, 1985            | Albuquerque, New Mexico                    |
| 9             | 27 August-1 September, 1989 | Portland, Oregon                           |
| 10            | 12-16 July, 1993            | Boston, Massachusetts                      |
| 11            | 30 August-4 September, 1998 | Snowmass, Colorado                         |
| 12            | 11-16 August, 2002          | San Diego, California                      |
| 13            | 23-28 July, 2006            | Norfolk, Virginia                          |

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# INDICES OF THE PROCEEDINGS FOR THE THIRTEEN INTERNATIONAL SYMPOSIA ON DETONATION, 1951–2006

Blaine W Asay, James E. Kennedy, John B. Ramsay, and F. Joseph Schelling  
and Bruce E. Takala

## ABSTRACT

The *Proceedings* of the thirteen Detonation Symposia have become the major archival source of information of international research in explosive phenomenology, theory, experimental techniques, numerical modeling, and high-rate reaction chemistry. In many cases, they contain the original reference or the only reference to major progress in the field. For some papers, the information is more complete than the complementary article appearing in a formal journal; yet for others, authors elected to publish only an abstract in the *Proceedings*. For the large majority of papers, the Symposia *Proceedings* provide the only published reference to a body of work. This report indexes the thirteen existing *Proceedings* of the Detonation Symposia by paper titles, topic phrases, authors, and first appearance of acronyms and code names.

## INTRODUCTION

The indices comprise four parts: (A) a listing of the paper titles and authors in order of appearance in each Symposium *Proceedings*, (B) an alphabetical listing of topic phrases, (C) an index of all authors, and (D) an index to first appearance of acronyms and code names of compositions and components that are defined.

Each index also lists the Symposium number and page number of the reference. These are the actual page numbers of the original *Proceedings* of the Fourth through the Thirteenth Symposia. The page numbers shown for the First and Second Symposia are for the single combined volume reprinted by the Detonation Symposium Committee in 1987 (NSWC MP 87-194), and not the original page numbers. Some confusion also

exists for references from the Third Symposium in that it was initially published as three paperback volumes. These were combined into a single hardbound volume, identified by the publisher, The Office of Naval Research, U.S. Navy, as ACR-52. The page numbers used in these Indices for the Third Symposium are those from this latter publication. If readers find errors in any of the sections, please contact one of the authors.

The indices are available on a CD containing a PDF version of the complete text suitable for text string searches.

## A. TITLES INDEX

In this first index, the chronological order of the papers is preserved, beginning with the First

Symposium and the first paper presented. We list the Symposium number, page number, paper title, co-authors, and nation of the first author.

## B. TOPIC PHRASE INDEX

Here we list topic phrases alphabetically with reference to the Symposium number and page number. We considered using key words, which are cryptic and more mnemonic, rather than the longer and more descriptive topic phrases, but we decided on the latter because they provide more information for selecting the correct reference. The compilers have used their own judgment in selecting and defining the topic phrases and hope that the phrases are self-explanatory. At the present time, a significant cross-referencing capability is lacking within the index, and users are cautioned to check several different possible topics when searching.

## C. AUTHOR INDEX

This index is a simple listing of all authors, giving the Symposium number and page number references. All except family names were contracted to initials. We have attempted to combine different presentations of an author's name (e.g., J. Ramsay and J.B. Ramsay) into a uniform entry.

## D. ACRONYM AND CODE NAME INDEX

This index is an attempt to cite the *first use* of an acronym or code name for neat explosives, ingredients, and formulations, for which a definition of the term is also provided. The names of some explosive compositions that were "known to everyone" in 1950 are no longer in

common usage, particularly within the international community. For example, the names MEDINA and DINA were used in at least one instance with no recognized chemical name or formula given. Rather interestingly, no definition of RDX was located within the *Proceedings* until the Fifth Symposium.

Many explosive compounds and compositions are named as a contraction of the chemical name (e.g., TNT); for others, the history of the name is lost in research laboratories (e.g. HMX<sup>\*\*</sup>); and others have no relationship to the composition (e.g., X-0290).

A large number of papers within the Symposia *Proceedings* refer to compositions only by acronym or code name, with no formal definition of composition. Composition B (Comp B) is cited in many papers, yet at least 10 citations for Composition B provide similar, but different, compositions. Also, in some instances, the same explosive compound was defined by three or more different acronyms.

We intended that each citation be the earliest reference within the thirteen *Proceedings* to the use of the acronym coupled with a meaningful chemical definition. Errors in finding and entering the citations may have occurred.

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<sup>\*\*</sup> Ray Walker has told JBR that HMX most probably stands for High Melting eXplosive, but Walker has also heard a reasonable statement that the initials may have been derived from Holston Military eXplosive. It does not stand for His Majesty's eXplosive.

# A. Titles Index

## By Symposium and Page

**Sy. Pg Title, Authors, Country**

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| 1.0003 | Recent Studies in BURORD, S. Brunauer, USA                                                                                         |
| 1.0009 | Recent Work on Detonation at Aberdeen, J.M. Dewey, USA                                                                             |
| 1.0012 | Studies on Detonation Phenomena, F.C. Gibson and C.M. Mason, USA                                                                   |
| 1.0022 | Recent Work at NOL, D. Price, USA                                                                                                  |
| 1.0031 | Recent Studies at the Naval Ordnance Test Station, J.S. Rinehart, USA                                                              |
| 1.0039 | Some Recent Studies in Canada, G.R. Walker, Canada                                                                                 |
| 1.0043 | Chemical Aspects of Detonation, B. Lewis, USA                                                                                      |
| 1.0045 | Nonstationary Detonation Waves in Gases, G.B. Kistiakowsky, USA                                                                    |
| 1.0052 | Duration of the Reaction in a Detonating Explosive, S.J. Jacobs, USA                                                               |
| 1.0057 | Experiments on the Transition from Deflagration to Detonation, J. Roth, USA                                                        |
| 1.0071 | Physical Aspects of Detonation, J.G. Kirkwood, USA                                                                                 |
| 1.0072 | The Equation of State for Detonation Gases, S.R. Brinkley, USA                                                                     |
| 1.0079 | Convergent Shock Waves, A. Kantrowitz, USA                                                                                         |
| 1.0088 | Shock Waves in Solids, J.E. Ablard, USA                                                                                            |
| 1.0093 | Interactions of Detonation Waves with Material Boundaries, R.B. Parlin and H. Eyring, USA                                          |
| 1.0105 | Problems and Future Developments, G.B. Kistiakowsky, USA                                                                           |
| 1.0107 | Theoretical Developments in Detonation, J.G. Kirkwood, USA                                                                         |
| 2.0119 | Charge Preparation for Precise Detonation Velocity Studies, E. James, USA                                                          |
| 2.0136 | Technique for the Measurement of Detonation Velocity, A.W. Campbell, M.E. Malin, T.J. Boyd and J.A. Hull, USA                      |
| 2.0151 | A Microwave Technique for Measuring Detonation Velocities, T.J. Boyd, P. Fagan, USA                                                |
| 2.0157 | Measurement of Detonation Temperatures, F.C. Gibson, M. Bowser, C.R. Summers, F.H. Scott, J.C. Cooper and C.M. Mason, USA          |
| 2.0168 | A New Cine Microscope and its Application to Detonation Phenomena, J.S. Courtney-Pratt, UK                                         |
| 2.0187 | The Measurement of Density Changes in Gaseous Detonations, G.B. Kistiakowsky and P.H. Kydd, USA                                    |
| 2.0198 | The Attainment of Thermodynamic Equilibrium in Detonation Waves, G.B. Kistiakowsky and W.G. Zinman, USA                            |
| 2.0216 | On the Structure of a Detonation Wave, W.R. Gilkerson and N. Davidson, USA                                                         |
| 2.0231 | High Temperature Thermodynamic and Gaseous Detonations in Mixtures of Cyanogen, Oxygen and Nitrogen, H.M. Peek and R.G. Thrap, USA |
| 2.0251 | Detonation in Gases at Low Pressure, A.L. Bennet and H.W. Wedaa, USA                                                               |
| 2.0266 | Measurements on Gaseous Detonation Waves, J.A. Nicholls, R.B. Morrison and R.E. Cullen, USA                                        |
| 2.0281 | Studies on Gaseous Detonation, B. Greifer, F.C. Gibson and C.M. Mason, USA                                                         |
| 2.0295 | Condensation Shocks and Weak Detonations, S.G. Reed and W.H. Heybey, USA                                                           |

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| 2.0327     |           | The Measurement of Chapman-Jouguet Pressure for Explosives, W.E. Deal, USA                                                                              |
| 2.0343     |           | Measurement of the Chapman-Jouguet Pressure and Reaction Zone Length in a Detonating High Explosive, R.E. Duff and E. Houston, USA                      |
| 2.0358     |           | The Detonation Zone in Condensed Explosives, H.D. Mallory and S.J. Jacobs, USA                                                                          |
| 2.0383     |           | Calculation of the Detonation Properties of Solid Explosives with the Kistiakowsky-Wilson Equation of State, W. Fickett and R.D. Cowan, USA             |
| 2.0404     |           | A Solid-State Model for Detonations, R.B. Parlin and J.C. Giddings, USA                                                                                 |
| 2.0424     |           | Diameter Effect in Condensed Explosives. The Relation Between Velocity and Radius of Curvature of the Detonation Wave, W.W. Wood and J.G. Kirkwood, USA |
| 2.0439     |           | The Detonation Behavior of Liquid TNT, E.A. Igel and L.B. Seely, USA                                                                                    |
| 2.0454     |           | Detonation in Homogeneous Explosives, A.W. Campbell, M.E. Malin and T.E. Holland, USA                                                                   |
| 2.0478     |           | Particle Size Effects in One- and Two-Component Explosives, M.E. Malin, A.W. Campbell and C.W. Mautz, USA                                               |
| 2.0500     |           | Detonation Wave Fronts in Ideal and Non-Ideal Detonation, M.A. Cook, USA                                                                                |
| 2.0519     |           | Determination of Reaction Rate of Sodium Nitrate and the Equation of State of 50/50 TNT-NaNO <sub>3</sub> , M.A. Cook and W.O. Ursenbach, USA           |
| 2.0529     |           | The Decomposition of Alpha-Lead Azide, J.M. Grocock, UK                                                                                                 |
| 2.0547     |           | The Detonation of Azides by Light, J.S. Courtney-Pratt and G.T. Rogers, UK                                                                              |
| 2.0561     |           | Detonation in Azides when the Dimensions Are Comparable with the Length of the Reaction Zone, F.P. Bowden and A.C. McLaren, UK                          |
| 2.0571     |           | Origin of Luminosity in Detonation Waves, E. Jones, UK                                                                                                  |
| 2.0582     |           | The Role of Gas Pockets in the Propagation of Low Velocity Detonation, O.A.J. Gurton, UK                                                                |
| 2.0601     |           | Sensitiveness to Detonation, E. Jones and I.G. Cumming, UK                                                                                              |
| 2.0612     |           | Initiation of Military Explosives by Projectile Impact, J.M. Dewey, USA                                                                                 |
| 2.0620     |           | Factors Affecting the Transmission of Detonation Between Small Explosive Charges, I.D. Hampton, J. Savitt, L.E. Starr and R.H.F. Stresau, USA           |
| 2.0643     |           | The Correlation of the Sensitiveness of Explosives with Combustion Data, E.G. Whitbread and L.A. Wiseman, UK                                            |
| 2.0695     |           | Problems of Initiation in Tests of Sensitiveness, E.G. Whitbread, UK                                                                                    |
| 2.0711     |           | Lead Azide Precipitated with Polyvinyl Alcohol, T.G. Blake, D.E. Seegar and R.H.F. Stresau, USA                                                         |
| 2.0733     |           | Thermo-Hydrodynamics and the Reaction Kinetics in Some Metalized Explosives, M.A. Cook, A.S. Filler, R.T. Keyes, W.S. Partridge and W.O. Ursenbach, USA |
| 2.0749     |           | Conditions Behind the Reaction Zone of Confined Columns of Explosive--Notions Derived from Plate Dent Experiments, W.M. Slie and R.H.F. Stresau, USA    |



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- 3.0001 A Colliding Ball High Explosive Impact Sensitivity Testing Machine, C.M. Bean, G.P. Cachia and J. Kirkham, UK
- 3.0010 A Photographic Study of Explosions Initiated by Impact, J. Wenograd, USA
- 3.0024 Pure Environmental Shock Testing of Condensed Phases, T.A. Erikson, USA
- 3.0042 On the Memory Effect in the Thermal Initiation of Explosives, W.R. Hess and R.C. Ling, USA
- 3.0050 The Thermal Decomposition of  $[\text{Co}(\text{NH}_3)_6](\text{N}_3)_3$ , T.B. Joyner and F.H. Verhoek, USA
- 3.0060 The Behavior of Explosives at Very High Temperatures, J. Wenograd, USA
- 3.0077 The Rapid Burning of Secondary Explosives by a Convective Mechanism, J.W. Taylor, UK
- 3.0088 Electrical Initiation of RDX, G.M. Muller, D.B. Moore and D. Bernstein, USA
- 3.0112 Detonation Studies in Electric and Magnetic Fields, F.E. Allison, USA
- 3.0120 Electrical Measurements in Detonating Pentolite and Composition B, R.L. Jameson, USA
- 3.0139 On the Electrical Conductivity of Detonating High Explosives, B. Hayes, USA
- 3.0150 Ionization in the Shock Initiation of Detonation, R.B. Clay, M.A. Cook, R.T. Keyes, O.K. Shupe and L.L. Udy, USA
- 3.0184 Chemical Factors in External Detonation-Generated Plasmas, M.A. Cook and A.G. Funk, USA
- 3.0202 Detonation Plasma, R.T. Keyes, E.L. Kendrew and E.G. Whitbread, UK
- 3.0205 Energy Transfer to a Rigid Piston under Detonation Loading, A.K. Aziz, H. Hurwitz and H.M. Sternberg, USA
- 3.0226 A Computer Program for the Analysis of Transient Axially Symmetric Explosion and Shock Dynamics Problems, T. Orlow, D. Piacesi and H.M. Sternberg, USA
- 3.0241 Pressure Profiles in Detonating Solid Explosive, G.E. Hauver, USA
- 3.0253 Decay of Explosively-Induced Shock Waves in Solids and Spallings of Aluminum, J.O. Erkman, USA
- 3.0267 Effects of Boundary Rarefactions on Impulse Delivered by Explosive Charge, B.C. Taylor, USA
- 3.0285 Experimental Determination of Stresses Generated by an Electric Detonator, J.S. Rinehart, USA
- 3.0304 Comments on Hypervelocity Wave Phenomena in Condensed Explosives, R.F. Chaiken, USA
- 3.0309 Nonideal Detonation of Ammonium Nitrate-Fuel Mixtures, L.D. Sadwin, R.H.F. Stresau and J. Savitt, USA
- 3.0327 The Detonation Velocity of Pressed TNT, M.J. Urizar, E. James and L.C. Smith, USA
- 3.0357 Measurement of Detonation, Shock, and Impact Pressures, R.T. Keyes and W.O. Ursenbach, USA
- 3.0386 Low Pressure Points on the Isentropes of Several High Explosives, W.E. Deal, USA
- 3.0396 Strong Shocks in Porous Media, J.L. Austing, H.S. Napadensky, R.H.F. Stresau and J. Savitt, USA
- 3.0420 The Behavior of Explosives at Impulsively Induced High Rates of Strain, H.S. Napadensky, R.H.F. Stresau and J. Savitt, USA
- 3.0436 Initiation and Growth of Detonation in Liquid Explosives, F.C. Gibson, C.R. Summers, C.M. Mason and R.W. Van Dolah, USA
- 3.0455 Initiation Characteristics of Mildly Confined, Bubble-Free Nitroglycerine, C.H. Winning, USA
- 3.0469 Shock Initiation of Detonation in Liquid Explosives, A.W. Campbell, W.C. Davis and J.R. Travis, USA
- 3.0499 Shock Initiation of Solid Explosives, A.W. Campbell, W.C. Davis, J.B. Ramsay and J.R. Travis, USA

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| 3.0562     |           | Initiation of a Low-Density PETN Pressing by a Plane Shock Wave, G.E. Seay and L.B. Seely, USA                                                                 |
| 3.0574     |           | The Transition from Shock Wave to Detonation in 60/40 RDX/TNT, E.L. Kendrew and E.G. Whitbread, USA                                                            |
| 3.0584     |           | Determination of the Shock Pressure Required to Initiate Detonation of an Acceptor in the Shock Sensitivity Test, I. Jaffe, R. Beauregard and A.B. Amster, USA |
| 3.0606     |           | A Computational Treatment of the Transition from Deflagration to Detonation in Solids, C.T. Zovko and A. Macek, USA                                            |
| 3.0635     |           | A Method of Determination of Detonability of Propellants and Explosives, S. Wachtell and C.E. McKnight, USA                                                    |
| 3.0659     |           | Sensitiveness Testing and its Relation to the Properties of Explosives, E.G. Whitbread, UK                                                                     |
| 3.0671     |           | Sensitivity Relationships, M.J. Kamlet, USA                                                                                                                    |
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| 3.0706     |           | The Electric-Spark Initiation of Mixtures of High Explosives and Powdered Electrical Conductors, T.P. Liddiard and B.E. Drimmer, USA                           |
| 3.0721     |           | Detonation and Shock Review, M.L. Wilkins, USA                                                                                                                 |
| 3.0725     |           | Detonation Performance Calculations Using the Kistiakowsky-Wilson Equation of State, C.L. Mader, USA                                                           |
| 3.0738     |           | Energy Release from Chemical Systems, J.W. Kury, G.D. Dorough and R.E. Sharples, USA                                                                           |
| 3.0761     |           | The Detonation Properties of (1,3-Diamino, 2,4,6-Trinitrobenzene), N.L. Coleburn, B.E. Drimmer and T.P. Liddiard, USA                                          |
| 3.0784     |           | Non-Steady Detonation-A Review of Past Work, S.J. Jacobs, USA                                                                                                  |
| 3.0813     |           | The Shock Initiation of Detonation in Liquid Explosives, W.A. Gey and K. Kinaga, USA                                                                           |
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| 3.0833     |           | Some Studies on the Shock Initiation of Explosives, E.N. Clark and F.R. Schwartz, USA                                                                          |
| 3.0842     |           | The Influence of Energy on the Decomposition of the Transition from Initiation to Detonation, Z.V. Harvalik, USA                                               |
| 4.0003     |           | Metal Acceleration by Chemical Explosive, J.W. Kury, H.C. Hornig, E.L. Lee, J.L. McDonnel, D.L. Ornellas, M. Finger, F.M. Strange and M.L. Wilkins, USA        |
| 4.0014     |           | The Motion of Plates and Cylinders Driven by Detonation Waves at Tangential Angles, N.E. Hoskin, J.W.S. Allan, W.A. Bailey, J.W. Lethaby and I.C. Skidmore, UK |
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| 4.0039     |           | Detonation of a Cylindrical Charge-Study of the Flow of Burned Gases, C. Fauquignon, M. Prouteau and G. Verdes, France                                         |

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- 4.0052 An Equation of State of Detonation Products at Pressure below 30 Kilobars, J.W.S. Allan and B.D. Lambourn, UK
- 4.0067 Structure, Chemistry, and Instability of Detonation in Gases, G.L. Schott, USA
- 4.0078 Theoretical Considerations on the Propagation of Shock and Detonation Waves, R. Cheret, France
- 4.0084 Failure of the Chapman-Jouguet Theory for Liquid and Solid Explosives (Abstract Only), W.C. Davis, B.G. Craig and J.B. Ramsay, USA
- 4.0086 Radius of Curvature Effect on Detonation Velocity, L.G. Green and E. James, USA
- 4.0092 Lateral Shock Pressure Measurements at an Explosive Column, L.D. Sadwin and N.M. Junk, USA
- 4.0096 Studies on the Diameter-Dependence of Detonation Velocity in Solid Composite Propellants: I. Attempts to Calculate Reaction-Zone Thickness, M.L. Pandow, K.F. Ockert and H.M. Shuey, USA
- 4.0102 Studies of the Diameter-Dependence of Detonation Velocity in Solid Composite Propellants: II. Prediction of Failure Diameter, M.L. Pandow, K.F. Ockert and T.H. Pratt, USA
- 4.0107 Non-Ideal Detonation with Constant Lateral Expansion, F. Wecken, France
- 4.0117 Detonations in Liquid Explosives-The Low Velocity Regime, R.W. Watson, C.R. Summers, F.C. Gibson, R.W. Van Dolah, USA
- 4.0126 Detonation of Nitromethane-Tetranitromethane Mixtures: Low and High Velocity Waves, A.B. Amster, D.M. McEachern and Z. Pressman, USA
- 4.0135 Observation and Study of the Conditions for the Formation of Mach Detonation Waves, J.P. Argous, C. Peyre and J. Thouvenin, France
- 4.0142 Mach Interaction of Two Plane Detonation Waves, B.D. Lambourn and P.W. Wright, UK
- 4.0153 Interaction of Oblique Detonation Waves with Iron (Abstract Only), H.M. Sternberg and D. Piacesi, USA
- 4.0154 Interactions of Detonation Waves in Condensed Explosives (Abstract Only), S.D. Gardner and J. Wackerle, USA
- 4.0156 Axial Initiation of Multi-Component Explosives Charges, L. Deffet and C. Fosse, Belgium
- 4.0167 A Detonation Calorimeter and the Heat of Products of Detonation of Pentaerythritol Tetranitrate (PETN) (Abstract Only), D.L. Ornellas, J.H. Carpenter and S.R. Gunn, USA
- 4.0168 Anomalous Isentrope Results Obtained with the RUBY Computer Program, J. Hershkowitz, USA
- 4.0176 Front and Mass Velocity at Detonation in Evacuated Chambers, M. Lundborg, Sweden
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- 4.0205 Evaluation of the Grüneisen Parameter for Compressed Substances: I. Metals, W.H. Andersen, USA
- 4.0213 The Equation of State of 1060 Aluminum from Shock Wave Measurements (Abstract Only), G.D. Anderson, A.L. Fahrenbruch and G.R. Fowles, USA
- 4.0214 The Compression of Polymethyl Methacrylate by Low Amplitude Shock Waves, T.P. Liddiard, USA
- 4.0222 Shock Wave Compression of Plexiglas from 3 to 20 Kilobars, W.J. Halpin and R.A. Graham, USA

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| 4.0239     |           | Low-Pressure Hugoniot of Solid Explosives (Abstract Only), R.J. Wasley and J.F. O'Brien, USA                                                    |
| 4.0240     |           | The Unreacted Hugoniot Equations of State of Several Explosives (Abstract Only), N.L. Coleburn and T.P. Liddiard, USA                           |
| 4.0241     |           | Determination of Shock Hugoniot for Several Condensed Phase Explosives, V. Boyle, R.L. Jameson and M. Sultanoff, USA                            |
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| 4.0266     |           | Shock Behavior of Some Non-Reacting Porous Solids, J.R. Rempel and D.N. Schmidt, USA                                                            |
| 4.0277     |           | Elastoplastic Effects in the Attenuation of Shock Waves, J.O. Erkman, USA                                                                       |
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| 4.0290     |           | The Elasto-Plastic Release Behavior of Magnesium at 80 kb, P.J.A. Fuller and J.H. Price, UK                                                     |
| 4.0295     |           | The Influence of Mechanical Properties on Wave Propagation in Elastic-Plastic Materials, B.M. Butcher and D.E. Munson, USA                      |
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| Wardell, J.F.    | 12.0384 | Wenograd, J.     | 3.0010  | Wiley, T.       | 13.0388 |
| Wardell, J.F.    | 12.0846 | Wenograd, J.     | 3.0060  | Williams, A.R.  | 13.0980 |
| Wardell, J.F.    | 13.0536 | Wescott, B.L.    | 13.0744 | Williams, A.E.  | 10.0963 |
| Wardell, J.F.    | 13.0573 | West, C.E.       | 5.0533  | Williams, P.E.  | 11.0475 |
| Wardlaw, A.      | 12.0661 | West, G.T.       | 7.0865  | Williams, R.F.  | 5.0427  |
| Warnes, R.       | 9.1131  | Westmoreland, C. | 7.0256  | Williams, T.O.  | 13.0274 |
| Warren, T.W.     | 9.0822  | Westmoreland, C. | 7.0517  | Wilmot, G.B.    | 9.0626  |
| Wartenberg, Ch.  | 10.0885 | Weston, A.M.     | 7.0256  | Wilmot, G.B.    | 10.0619 |
| Wasley, R.J.     | 4.0239  | Weston, A.M.     | 7.0887  | Wilson, A.D.    | 13.0591 |
| Wasserman, H.J.  | 8.0839  | Weston, A.M.     | 8.0914  | Wilson, L.L.    | 11.0286 |
| Watson, J.L.     | 7.1048  | Weston, A.M.     | 9.0280  | Wilson, L.T.    | 11.1049 |
| Watson, R.W.     | 4.0117  | Weston, A.M.     | 10.0963 | Wilson, W.      | 13.0233 |
| Watson, R.W.     | 5.0081  | Weterings, F.P.  | 12.0121 | Wilson, W.H.    | 10.0063 |
| Watson, R.W.     | 5.0169  | Whatmore, C.E.   | 7.0017  | Wilson, W.H.    | 10.0731 |
| Watson, R.W.     | 5.0559  | Whatmore, C.E.   | 8.1035  | Wilson, W.H.    | 11.0565 |
| Watson, R.W.     | 6.0115  | Whitbread, E.G.  | 2.0643  | Winey, J.M.     | 11.0521 |
| Watt, J.W.       | 10.0347 | Whitbread, E.G.  | 2.0695  | Wingborg, N.    | 11.0807 |
| Weaver, R.       | 12.0055 | Whitbread, E.G.  | 3.0202  | Winning, C.H.   | 3.0455  |
| Webber, P.E.     | 8.0294  | Whitbread, E.G.  | 3.0574  | Winslow, O.G.   | 6.0664  |
| Wecken, F.       | 4.0107  | Whitbread, E.G.  | 3.0659  | Winter, N.W.    | 11.0480 |
| Wedaa, H.W.      | 2.0251  | White, C.T.      | 13.1191 | Winter, R.E.    | 11.0649 |
| Weeks, B.L.      | 12.0066 | White, R.W.P.    | 12.0044 | Winter, R.E.    | 12.0271 |
| Weese, R.        | 12.0846 | White, S.J.      | 11.0012 | Winter, R.E.    | 12.0967 |
| Weese, R.K.      | 13.0573 | White, S.J.      | 12.0632 | Winter, R.E.    | 13.0052 |
| Wei, D.          | 12.0724 | White, S.J.      | 12.0917 | Wiseman, L.A.   | 2.0643  |
| Weingart, R.C.   | 6.0653  | Whitehead, M.C.  | 12.0159 | Witkowski, W.   | 9.0766  |
| Weingart, R.C.   | 6.0755  | Whitehorn, L.J.  | 13.0980 | Wittig, C.      | 9.1084  |
| Weingart, R.C.   | 7.0325  | Whitworth, M.B.  | 10.0525 | Wlodarczyk, E.  | 9.0766  |
| Weingart, R.C.   | 7.0425  | Whitworth, N.J.  | 13.0110 | Wolfe, A.       | 9.0918  |
| Weingart, R.C.   | 7.1062  | Whitworth, N.J.  | 13.0871 | Wolfe, A.       | 10.0190 |
| Weingart, R.C.   | 8.0003  | Whitworth, T.L.  | 13.0536 | Wollenweber, U. | 8.1131  |
| Weingart, R.C.   | 8.1045  | Wiedermann, A.H. | 6.0336  | Wong, C.P.      | 12.0617 |
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| Weirick, L.J.    | 9.1060  | Wiegand, D.A.    | 12.0557 | Woo, T.         | 13.1263 |
| Welle, E.J.      | 13.0342 | Wiknich, J.      | 10.0320 | Wood, A.        | 11.0897 |
| Welle, E.J.      | 13.1059 | Wilke, M.D.      | 11.0054 | Wood, A.        | 12.0705 |
| Wellman, G.W.    | 11.0127 | Wilkes, J.S.     | 7.0075  | Wood, A.        | 13.0857 |
| Wellmar, U.      | 11.0807 | Wilkins, M.L.    | 3.0721  | Wood, A.D.      | 12.0881 |
| Wemhoff, A.P.    | 13.0573 | Wilkins, M.L.    | 4.0003  | Wood, A.D.      | 13.0110 |

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| Wood, W.W.     | 2.0424  | Yoshida, M.     | 9.0621  | Zhang, L.           | 13.0848 |
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| Wu, C.J.       | 11.0490 | Zerilli, F.J.   | 10.0449 | Zoludeva, T.A.      | 9.0724  |
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| Xu Laibin      | 8.1011  | Zerilli, F.J.   | 12.0617 | Zovko, C.T.         | 3.0606  |
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| Yakushev, V.V. | 6.0143  | Zerkle, D.K.    | 13.0771 | Zumbro, J.D.        | 12.0055 |
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| Yao, J.        | 12.0140 | Zhang, F.       | 12.0693 | Zwisler, W.H.       | 6.0162  |
| Yao, J.        | 12.0901 | Zhang, F.       | 12.0724 | Zybin, S.V.         | 13.0496 |
| Yates, G.J.    | 11.0054 | Zhang, F.       | 12.0781 | Zybin, S.V.         | 13.0786 |
| Ye, H.         | 10.0608 | Zhang, F.       | 12.0993 | Zybin, S.V.         | 13.0848 |
| Yoh, J.J.      | 13.0672 | Zhang, F.       | 13.0097 | Zybin, S.V.         | 13.1191 |
| Yoneda, K.     | 8.0168  | Zhang, F.       | 13.0214 |                     |         |
| Yoo, C.-S.     | 11.0951 | Zhang, F.       | 13.0233 |                     |         |

## D. Acronym and Code Name Index

### Alphabetic, First Reference

| Name      | Sy.Pg   | Makeup                                                                          |
|-----------|---------|---------------------------------------------------------------------------------|
| 1,1-DP    | 5.0090  | 1,1-bis(difluoroamino)propane                                                   |
| 1,2-DB    | 5.0237  | 1,2-bis(difluoramino)butane                                                     |
| 1,2-DP    | 5.0237  | 1,2-bis(difluoramino)propane                                                    |
| 1,3-DP    | 5.0090  | 1,3-bis(difluoramino)propane                                                    |
| 1,4 BGDN  | 11.0086 | 1,4 Buthylene Glycoldinitrate                                                   |
| 1-MNT     | 6.0232  | 1-methyl-5-nitrotetrazole                                                       |
| 2,2-DB    | 5.0237  | 2,2-bis(difluoramino)butane                                                     |
| 2,2-DP    | 5.0237  | 2,2-bis(difluoramino)propane                                                    |
| 2,3 BGDN  | 11.0086 | 2,3 Buthylene Glycoldinitrate                                                   |
| 2-MNT     | 6.0232  | 2-methyl-5-nitrotetrazole                                                       |
| 2-NE      | 7.0762  | 2-nitroethanol                                                                  |
| 2-NP      | 13.0990 | 2-nitropropane                                                                  |
| A-3       | 9.0106  | 91 RDX/9 wax                                                                    |
| A-5       | 7.0551  | 97 RDX/3 wax                                                                    |
| A-589     | 5.0139  | 86 HMX/14 PB                                                                    |
| A-590     | 5.0139  | 80.3 HMX/5.9 AP/13.8 PB                                                         |
| A-591     | 5.0139  | 69 HMX/17 AP/14 PB                                                              |
| A-592     | 5.0139  | 57 HMX/29 AP/14 PB                                                              |
| AAB 3189  | 7.0892  | 9.2 RDX/60.8 AP/15 Al/15 binder                                                 |
| AAB 3225  | 7.0892  | 7.1 RDX/62.9 AP/15 Al/15 binder                                                 |
| AAB 3267  | 7.0892  | 5 RDX/65 AP/15 Al/15 binder                                                     |
| ABH       | 8.0528  | C <sub>24</sub> H <sub>6</sub> N <sub>14</sub> O <sub>24</sub>                  |
| ADDF      | 6.0467  | 1,4,4,10,10,13-hexafluoro-1,1,7,7,13,13-hexanitro-3,5,9,11- tetraoxotridecane   |
| ADN       | 11.0214 | ammonium dinitramide                                                            |
| ADNBF     | 9.0566  | 7 amino-4,6 dinitrobenzofuroxan                                                 |
| ADNT      | 7.0801  | ammonium salt of 3,5-dinitro-1,2,4-triazole                                     |
| AF 902    | 9.0487  | 95 NQ/5 Viton A                                                                 |
| AFM       | 11.0443 | Atomic force microscope                                                         |
| AFX-108 E | 9.1236  | 82 RDX/18 O                                                                     |
| AFX1100   | 9.1284  | 66 TNT/16 OD2 wax/18 Al                                                         |
| AFX-521   | 8.1106  | 95 PYX/5 Kel-F 800                                                              |
| AHM       | 12.0141 | Asphaltic hot melt                                                              |
| ALE3D     | 12.0095 | Coupled thermal-hydro-chemical code                                             |
| Aln       | 13.1228 | nanoaluminum                                                                    |
| Amatex 20 | 6.0647  | 20 RDX/40 TNT/40 AN                                                             |
| Amatol    | 5.0501  | 20-60% AN/80-40% TNT                                                            |
| AMMO      | 9.0232  | azidomethyl methyloxethane                                                      |
| AMS       | 11.0249 | 40 AN/15 sodium nitrate/10 carbamide/25 water/10 Al/polyacrilamide/0.4 additive |
| AN        | 6.0439  | ammonium nitrate                                                                |
| AN        | 11.0086 | Allynitrate                                                                     |
| ANFO      | 3.0186  | 94.6 AN/5.4 fuel oil                                                            |
| ANFOAL-10 | 6.0546  | 87.4 AN/2.6 fuel oil/10 aluminum                                                |
| ANT       | 10.0886 | 3-amino-5-nitro-1,2,4 triazole                                                  |
| AP        | 5.0139  | ammonium perchlorate                                                            |
| ATEC      | 9.0539  | acetyl triethyl citrate                                                         |

## D. Acronym and Code Name Index (Continued)

| Name              | Sy.Pg   | Makeup                                                                |
|-------------------|---------|-----------------------------------------------------------------------|
| ATX-27R           | 10.0891 | 33 EDD/33 AN/1.4 urea/3.1 oil/1.7 emulsifier/27 RDX/0.4 casting agent |
| B 2141            | 7.0409  | 88 RDX/12 HTPB                                                        |
| B 2142            | 7.0409  | 77 PETN/23 PU                                                         |
| B 2161            | 8.0437  | 40 HMX/30 AP/20 Al/10 polyurethane binder                             |
| B 2169            | 8.0437  | 83 PETN/17 polyurethane                                               |
| B 2174            | 8.0437  | 47 HMX/30 AP/11 lead nitrate/12 polyurethane                          |
| B 2190            | 8.0437  | 30 PETN/70 HTPB                                                       |
| B 2191            | 8.0437  | 37 HMX/40 AP/11 lead nitrate/12 polyurethane                          |
| B 2192            | 8.0437  | 27 HMX/50 AP/11 lead nitrate/12 polyurethane                          |
| B 2203            | 10.0115 | RDX/inert binder                                                      |
| B 2208            | 10.0899 | 82 HMX/polyurethane binder                                            |
| B 2209            | 10.0899 | 81.5 HMX/silicon(sic) binder                                          |
| B 2210            | 10.0899 | 72 HMX/florinated binder                                              |
| B 2214            | 9.1008  | 12 HMX/72 NTO/16 inert binder                                         |
| B 2214            | 10.0115 | HMX/NTO/inert binder                                                  |
| B 2220            | 10.0115 | RDX/inert binder                                                      |
| B 2241            | 10.0899 | 82.8 HMX/HTPB                                                         |
| B 3003            | 8.0437  | 80 HMX/20 NC-NGI                                                      |
| B 3100            | 10.0646 | 42 HMX/9 AP/19 Al/30 binder                                           |
| B 3103            | 10.0646 | 51 HMX/19 Al/30 binder                                                |
| B 3108            | 10.0115 | HMX/Al/energetic binder                                               |
| B2211D            | 11.0385 | 20 RDX/43 AP/2 Al/12 HTPB                                             |
| B2214B            | 11.0385 | 12 HMX/72 NTO/16 HTPB                                                 |
| B2248A            | 11.0385 | 42 HMX/46 NTO/12 HTPB                                                 |
| B3110A            | 11.0385 | 29 HMX/30 NTO/25 NC-NG binder                                         |
| Baratol           | 3.0563  | 76 barium nitrate/24 TNT                                              |
| Baratol           | 4.0361  | 70 barium nitrate/30 TNT                                              |
| Baratol           | 6.0629  | 72 barium nitrate/28 TNT                                              |
| Baratol 76        | 6.0647  | 76 barium nitrate/24 TNT                                              |
| Baratol UK        | 9.0793  | 70 TNT/30 BaNO <sub>3</sub>                                           |
| BDNPA             | 9.1018  | bis (2,2-dinitropropyl)-acetal                                        |
| BDNPA-F           | 9.1236  | eutectic                                                              |
| BDNPF             | 9.1018  | bis (2,2-dinitropropyl)-formal                                        |
| BET               | 12.0087 | Brunauer Emmett Teller theory                                         |
| BFADNEN           | 13.0154 | bis(2-difluoramine-2,2-dinitroethyl)nitramine                         |
| BH-1              | 8.0083  | plastic-bonded RDX                                                    |
| blasting gelatin  | 3.0045  | 91 NG/8 NC/1 chalk                                                    |
| BO-1              | 8.0093  | plastic-bonded HMX, similar to PBX 9404                               |
| Boracitol         | 10.0418 | 40 TNT/60 boric acid                                                  |
| Bridgwater Type A | 10.0089 | 59.5 RDX/39.5 TNT/1.0 Beeswax                                         |
| BTF               | 6.0712  | benzotrifuroxane                                                      |
| BTFMA             | 6.0467  | 1-fluoro-1,1-dinitro-4,4-bis(trifluoromethyl)-3,5-dioxohexane         |
| BTNEN             | 3.0070  | bis-(2,2,2-trinitroethyl)nitramine                                    |
| BTX               | 6.0460  | 5,7-dinitro-1-picrylbenzotriazole                                     |
| BTZ               | 8.1019  | bitetrazole                                                           |
| BWX               | 2.0661  | beeswax                                                               |
| BX1               | 8.1106  | 60 TATB/35 (95 RDX/5 HMX)/5 Kel-F                                     |
| BX2               | 8.1106  | 60 TATB/35 (95 RDX/5 HMX)/5 PTFE                                      |
| BX3               | 8.1106  | 60 TATB/35 (90 RDX/10 HMX)/5 Kel-F                                    |

## D. Acronym and Code Name Index (Continued)

| Name            | Sy.Pg   | Makeup                                                            |
|-----------------|---------|-------------------------------------------------------------------|
| BX4             | 8.1106  | 60 TATB/35 (90 RDX/10 HMX)/5 PTFE                                 |
| C-4             | 4.0097  | 91 RDX/9 wax                                                      |
| CAB             | 9.0539  | cellulose acetate butyrate                                        |
| CACTP           | 6.0455  | catena- $\mu$ -cyanotetraammine cobalt(III) perchlorate           |
| CDB             | 10.0095 | 42 nitrocellulose/46 nitroglycerin (cast double base)             |
| CDPI            | 13.0233 | critical diameter for particle ignition                           |
| Cedosol 10      | 9.1082  | B <sub>10</sub> H <sub>12</sub> (CsNO <sub>3</sub> ) <sub>2</sub> |
| CEF             | 4.0005  | tris $\beta$ -chloroethylphosphate                                |
| CFD             | 12.0183 | Computational Fluid Dynamics                                      |
| CH6             | 9.0100  | 97.5 RDX/0.5 polyisobutylene/0.5 calcium stearate/0.5 graphite    |
| CL              | 12.0311 | compact tension specimen                                          |
| CL-20           | 13.0342 | hexanitroisowurtzitane                                            |
| CMBD            | 9.0007  | NC/NG/HMX/Al/AP                                                   |
| CN              | 13.0204 | calcium nitrate                                                   |
| Comp A          | 3.0687  | 91 RDX/9 wax                                                      |
| Comp A          | 6.0647  | 92 RDX/8 wax                                                      |
| Comp A 3        | 9.1463  | 91 RDX/9 polyethylene                                             |
| Comp A 5        | 7.0551  | 97 RDX/3 wax                                                      |
| Comp A 5        | 7.0928  | 98 RDX/2 stearic acid                                             |
| Comp A 5        | 8.0265  | 98.5 RDX/1.5 stearic acid                                         |
| Comp B          | 2.0479  | 60 RDX/40 TNT, wax and other additives (1 to 1.5%)                |
| Comp B          | 4.0048  | 60 RDX/40 TNT                                                     |
| Comp B          | 6.0493  | 60 RDX/40 TNT/1 wax                                               |
| Comp B          | 6.0629  | 59.5 RDX/39.5 TNT/1 beeswax                                       |
| Comp B          | 6.0647  | 63 RDX/36 TNT/1 wax                                               |
| Comp B          | 7.0353  | 45 RDX/55 TNT/1 wax                                               |
| Comp B (ISL)    | 7.0317  | 65 RDX/35 TNT                                                     |
| Comp B, Grade A | 4.0005  | 64 RDX/36 TNT                                                     |
| Comp B, Grade A | 5.0198  | 59.5 RDX/39.5 TNT/1.0 wax                                         |
| Comp B-3        | 4.0361  | 64 RDX/36 TNT                                                     |
| Comp B-3        | 5.0004  | 60 $\pm$ 1.5 RDX/40 $\pm$ 1.5 TNT                                 |
| Comp B-3        | 9.1236  | 60 RDX/40 TNT                                                     |
| Comp B-3 (ISL)  | 7.0317  | 60 RDX/40 TNT                                                     |
| Comp B3 (waxed) | 5.0280  | 60 RDX/40 TNT/1 wax                                               |
| Comp B4         | 7.0900  | 60 RDX/40 TNT, no wax                                             |
| CP              | 6.0455  | 1-(5-cyanotetrazolato)pentaammine cobalt(III) perchlorate         |
| CPeX            | 11.0193 | divergnet flow code (see 8th symposium) p176                      |
| CPEX            | 12.0325 | Commercial Performance of Explosives reaction model               |
| CPX 200         | 11.0273 | 60 RDX/20 Al/10 binder/ 10 K10 liquid                             |
| CRZ             | 13.0319 | chemical reaction zone                                            |
| CTX-1           | 8.0265  | 15 RDX/40 AP/23 Al/22 TNT + additives                             |
| CV              | 13.0700 | cyclic voltammetry                                                |
| CW3             | 9.1323  | analog of 60 RDX/40 TNT                                           |
| CX              | 13.0245 | cast-cured explosive                                              |
| CX-84           | 8.0366  | 84 RDX/9.7 R45-HT/5.6 DOA/0.7 TDI                                 |
| CX-84A          | 9.1482  | 84 RDX/16 HTPB                                                    |
| CX-85           | 10.0307 | 84.25 HMX/15/75 HTPB                                              |
| Cyclonite       | 3.0437  | RDX                                                               |
| Cyclotol        | 3.0502  | 65 RDX/35 TNT                                                     |



## D. Acronym and Code Name Index (Continued)

| Name            | Sy.Pg   | Makeup                                                                                                     |
|-----------------|---------|------------------------------------------------------------------------------------------------------------|
| Cyclotol        | 5.0065  | 72 RDX/25 TNT                                                                                              |
| Cyclotol 25/75  | 9.1236  | 25 RDX/75 TNT                                                                                              |
| Cyclotol 60/40  | 9.1236  | 60 RDX/40 TNT                                                                                              |
| Cyclotol 77/23  | 6.0647  | 77 RDX/23 TNT                                                                                              |
| D-2             | 9.1236  | 84 D2 wax/14 NC/2 lecithin                                                                                 |
| DAC             | 13.0097 | diamond anvil cell                                                                                         |
| DANTNP          | 10.0885 | 5-nitro-4,6 bis((5nitro,1H-1,2,4 triazole-3yl) amino pyrimidine                                            |
| DAT             | 10.0588 | 3,6-diaminotetrazine                                                                                       |
| DATB            | 3.0761  | 1,3-diamino-2,4,6-trinitrobenzene                                                                          |
| DBA             | 3.0379  | Dense Blasting Agent, slurries of TNT or Composition B                                                     |
| DDI             | 10.0095 | Dimeryl diisocyanate                                                                                       |
| DDNP            | 3.0012  | diazodinitrophenol                                                                                         |
| Debrix 18AS     | 8.0265  | 95.5 RDX/2.5 wax/2 additives                                                                               |
| Debrix-2        | 8.1106  | 95 RDX/5 wax                                                                                               |
| DECS            | 13.0145 | differential equation for curved shock                                                                     |
| DEGDN           | 7.0762  | diethylene glycol dinitrate                                                                                |
| DETA            | 10.0105 | diethylenetriamine                                                                                         |
| DFB             | 6.0467  | 2,2-difluoro-2-nitroethyl-5,5-difluoro-2-(3',3'-difluoro-3'-nitro-1-oxopropyl)-5,5-dinitro-3-oxopentanoate |
| DFE             | 6.0467  | bis(2-fluoro-2,2-dinitroethyl)difluoroformal                                                               |
| DFNT            | 6.0467  | 2,2-difluoro-2-nitroethyl-trifluoromethane-sulfonate                                                       |
| DFT             | 13.1007 | density functional theory                                                                                  |
| DGDN            | 11.0086 | Diethylene glycoldinitrate                                                                                 |
| DHE             | 8.0365  | 2-hydroxymethyl dimethylhydantoin                                                                          |
| DICC            | 12.0044 | Digital Image Cross-Correlation                                                                            |
| dichloro TEDNCP | 10.0157 | derivative of cyclotriphosphazene                                                                          |
| difluoro TEDNCP | 10.0157 | derivative of cyclotriphosphazene                                                                          |
| DINA            | 3.0066  | di-β-nitroxyethyl nitramine                                                                                |
| DINGU           | 7.0540  | dinitroglycoluril                                                                                          |
| DIPM            | 10.0414 | C <sub>12</sub> H <sub>6</sub> N <sub>8</sub> O <sub>12</sub>                                              |
| DiTeU           | 4.0435  | dinitroethyl-uric ( <i>sic</i> )                                                                           |
| Dithekite       | 3.0186  | a mixture of 82.8% nitric acid, nitrobenzene, and water                                                    |
| Dithekite 13    | 3.0493  | 63 nitric acid/24 nitrobenzene/13 water                                                                    |
| Dithekite 13/20 | 2.0648  | dithekite with 13/20 wt% water                                                                             |
| DNBF            | 9.0566  | 4,6-dinitrobenzofuroxan                                                                                    |
| DNCH            | 11.0086 | Dinitrochlorohydrine                                                                                       |
| DNNC            | 9.0232  | 1,3,5,5-tetranitro-hexahydropyrimidine                                                                     |
| DNP             | 7.0374  | dinitrophenol                                                                                              |
| DNPA            | 4.0005  | 2,2-dinitropropylacrylate                                                                                  |
| DNPF            | 3.0685  | bis-dinitropropyl fumarate                                                                                 |
| DNPP            | 6.0467  | 2,2-dinitropropyl perchlorate                                                                              |
| DNPTB           | 3.0070  | 2,2-dinitropropyl 4,4,4-trinitrobutyrate                                                                   |
| DNT             | 7.0374  | dinitrotoluene                                                                                             |
| DNT             | 7.0802  | 3,5-dinitro-1,2,4-triazole                                                                                 |
| DOA             | 8.0363  | dioctyl adipate                                                                                            |
| DOP             | 4.0005  | dioctylphthalate                                                                                           |
| DREV-Explosive  | 8.0363  | 84 RDX/16 polybutadiene                                                                                    |
| DSC             | 13.0131 | Differential scanning calorimeter                                                                          |
| DSR             | 12.0049 | Digital Speckle Radiography                                                                                |

## D. Acronym and Code Name Index (Continued)

| Name     | Sy.Pg   | Makeup                                                                                        |
|----------|---------|-----------------------------------------------------------------------------------------------|
| DXD-01   | 9.0475  | 84% RDX/16% binder                                                                            |
| E1       | 12.0297 | AN/ 0.08 AI                                                                                   |
| E2       | 12.0297 | AN/0.08 AI                                                                                    |
| E3       | 12.0297 | AN/0.12 AI                                                                                    |
| E4       | 12.0297 | AN/0.02 AI                                                                                    |
| E5       | 12.0297 | AN                                                                                            |
| E6       | 12.0297 | AN                                                                                            |
| EA       | 7.0548  | 50 EDD(ethylenediamine dinitrate)/50 AN                                                       |
| EAK      | 8.1002  | 46 ethylenediamine dinitrate/46 ammonium nitrate/8 potassium nitrate                          |
| EAR      | 7.0551  | 42.5 EDD/42.5 AN/15 RDX                                                                       |
| EARK     | 7.0551  | 42.5 EDD/36.1 AN/15 RDX/6.4 potassium nitrate                                                 |
| EARL-1   | 7.0551  | 40.3 EDD/40.3 AN/14.2 RDX/5.2 AI                                                              |
| EARL-2   | 7.0551  | 36.2 EDD/36.2 AN/12.8 RDX/14.8 AI                                                             |
| EDC1     | 11.0273 | 70 HMX/4 RDX/25 TNT/1 Wax                                                                     |
| EDC-29   | 9.0793  | 95 HMX/5 polyurethane                                                                         |
| EDC-32   | 9.0793  | 85 HMX/15 Viton                                                                               |
| EDC-35   | 9.0123  | 95 TATB/5 Kel-F 800                                                                           |
| EDC-37   | 11.0067 | 91 HMX(bi-modal)/1 NC/8 K10                                                                   |
| EDD      | 6.0439  | ethylenediamine dinitrate                                                                     |
| EDNA     | 6.0314  | ethylenedinitramine                                                                           |
| EDNP     | 5.0139  | ethyl-4,4-dinitropentanoate w/1% Cab-O-Sil gelling agent                                      |
| EE       | 9.0585  | emulsion explosive                                                                            |
| EFI      | 12.0330 | Exploding Foil Initiator                                                                      |
| EGD      | 3.0456  | ethylene glycol dinitrate                                                                     |
| EGDN     | 3.0438  | ethylene glycol dinitrate                                                                     |
| EGN      | 2.0659  | ethylene glycol dinitrate                                                                     |
| EIE      | 4.0159  | exchanged-ion explosive (10 NG/90 stoichiometric ammonium chloride-potassium nitrate mixture) |
| EJC-90   | 9.1236  | 26 HMX/14 NC/32 NG/5 AP/18 AI/5 O                                                             |
| Emulite  | 8.1071  | AN/FO/water with gas-filled microspheres                                                      |
| EN       | 3.0813  | ethyl nitrate                                                                                 |
| Estane   | 4.0005  | trademark for polyester-urethane of adipic acid 1,4-butanediol, diphenylmethane diisocyanate  |
| ET       | 3.0744  | homogeneous mixture of ethyldecaborane in tetranitromethane                                   |
| EtDP     | 4.0005  | ethyl 4,4-dinitropentanoate                                                                   |
| eutectic | 9.1015  | 50 BDNPA/50 BDNPF                                                                             |
| EXP-D    | 10.0414 | C <sub>6</sub> H <sub>6</sub> N <sub>8</sub> O <sub>12</sub> (ammonium picrate)               |
| FDA      | 6.0467  | bis(2-fluoro-2,2-dinitroethyl) acetal                                                         |
| FDE      | 6.0467  | 1,1,4-trifluoro-1,4,4-trinitro-3-oxobutane                                                    |
| FDEE     | 6.0467  | 1,5,-difluoro-1,1,5,5-tetranitro-3-oxopentane                                                 |
| FDEK     | 7.0804  | 2.55 AN/0.3 ADNT/1 EDD/0.36 potassium nitrate, the numbers are vol%                           |
| FDNE-A   | 6.0467  | 1,9-difluoro-1,1,5,5,9,9-hexanitro-3,7-dioxononane                                            |
| FDNE-N   | 6.0467  | 2-fluoro-2,2,-dinitroethyl nitrate                                                            |
| FDNEP    | 6.0467  | 2-fluoro-2,2-dinitroethyl perchlorate                                                         |
| FDNE-S   | 6.0467  | bis(2-fluoro-2,2-dinitroethyl)sulfate                                                         |
| FEFO     | 6.0467  | bis(2-fluoro-2,2-dinitroethyl)formal                                                          |
| FNR      | 4.0005  | tetrafluoroethylene-trifluoro-nitroso methane copolymer                                       |
| FO       | 6.0546  | fuel oil #1                                                                                   |
| FOX-7    | 12.0617 | 1,1-diamino-2,2-dinitroethylene, DADNE                                                        |

## D. Acronym and Code Name Index (Continued)

| Name          | Sy.Pg   | Makeup                                                        |
|---------------|---------|---------------------------------------------------------------|
| FOX-7         | 12.0286 | 1,1-diamino-2,2-dinitroethylene                               |
| FOX-12        | 13.0121 | N-guanylurea-dinitramide                                      |
| FT-1          | 9.0879  | 21 thiokol/8 Al/65AP                                          |
| FT-2          | 9.0879  | 11 HTPB/18 Al/68 AP                                           |
| FTE           | 6.0467  | 1,1,1,4-tetrafluoro-4,4-dinitro-3-oxobutane                   |
| G111L         | 12.0023 | 20 RDX/43 AP/25 LiF (5 $\mu$ m)/12 wax                        |
| G111M         | 12.0023 | 20 RDX/43 AP/25 Al (5 $\mu$ m)/12 wax                         |
| G111N         | 12.0023 | 20 RDX/43 AP/25 Al (100 nm)/12 wax                            |
| G258L         | 12.0023 | 50 RDX/24 AP/12 LiF (5 $\mu$ m)/14 wax                        |
| G258M         | 12.0023 | 50 RDX/24 AP/12 Al (5 $\mu$ m)/14 wax                         |
| G258N         | 12.0023 | 50 RDX/24 AP/12 Al (100nm)/14 wax                             |
| GAP           | 10.0603 | glycidyl azide polymer binder                                 |
| GBFO          | 6.0467  | 1,12-difluoro-1,1,12,12-tetranitro- 3,5,8,10-tetraoxododecane |
| GD            | 11.0086 | Glycerin dinitrate                                            |
| GGO           | 11.0037 | generalized geometrical optics                                |
| GMB           | 8.0993  | glass microballoons                                           |
| GN            | 11.0086 | Glycidol nitrate                                              |
| GuDN          | 13.0121 | N-guanylurea-dinitramide                                      |
| Gurit         | 8.1071  | NG/EGDN/SiO <sub>2</sub>                                      |
| H/HN          | 9.0487  | 21 hydrazine/79 hydrazine nitrate                             |
| H19           | 9.1061  | 32 Al/5 AP/51 KCl/9 HTPB/2 DOA                                |
| H-6           | 5.0255  | 45 RDX/30 TNT/20 Al/5 wax                                     |
| HAV-10        | 5.0139  | 74.7 HMX/10.6 Al/14.7 Viton                                   |
| HAV-20        | 5.0139  | 65.7 HMX/18.9 Al/15.4 Viton                                   |
| HBX           | 2.0737  | 45 RDX/30 TNT/25 Al                                           |
| HBX           | 5.0073  | 75 Composition B/25 Al                                        |
| HBX-1         | 5.0524  | 40 RDX/38.1 TNT/17.1 Al/4.8 Wax                               |
| HBX-1         | 9.1236  | 40 RDX/36 TNT/19 Al/5 D-2                                     |
| HBX-3         | 9.1236  | 30 RDX/26 TNT/38 Al/6 D-2                                     |
| HCX           | 8.1011  | heterogeneous composite explosive                             |
| HDBA          | 8.0365  | 4-hydroxy-N-N-dimethylbutyramide                              |
| heat powder   | 9.1082  | 88 Fe/12 KP                                                   |
| HEDM          | 13.0263 | high-energy-density material                                  |
| HEP           | 8.0883  | high-energy propellant                                        |
| HEP-1         | 10.0956 | 60 wt% solids propellant (RDX/AP) 0.8 wt% PbCO <sub>3</sub>   |
| HEP-2         | 10.0956 | 60 wt% solids propellant (HMX/AN)                             |
| HEP-3         | 10.0956 | 60wt% solid propellant (RDX/AN)                               |
| Hexatol 60/40 | 6.0546  | 59 RDX/40 TNT/1 wax                                           |
| Hexatonal 15  | 6.0546  | 42.1 RDX/42.1 TNT/0.8 wax/15 Al                               |
| Hexogen       | 4.0159  | RDX                                                           |
| Hexol         | 10.0115 | 60 RDX/40 TNT                                                 |
| Hexotol 60/40 | 6.0511  | 60 RDX/40 TNT                                                 |
| Hexotolif 15  | 6.0511  | 42.5 RDX/42.5 TNT/15 LiF                                      |
| Hexotonal 15  | 6.0511  | 42.5 RDX/42.5 TNT/15 Al                                       |
| HH            | 9.0940  | hydrazine hydrate                                             |
| HMA           | 12.0292 | Heavy metal azide                                             |
| HMTA          | 4.0184  | hexamethylenetetramine                                        |
| HMX           | 6.0712  | cyclotetramethylene tetranitramine                            |
| HN            | 1.0027  | hydrazine mononitrate                                         |

## D. Acronym and Code Name Index (Continued)

| Name     | Sy.Pg   | Makeup                                                                                                        |
|----------|---------|---------------------------------------------------------------------------------------------------------------|
| HNAB     | 7.0416  | hexanitroazobenzene                                                                                           |
| HNB      | 7.0647  | hexanitrobenzene                                                                                              |
| HNDZ     | 9.0232  | 1,3,3,5,7,7-hexanitrodiazacyclooctane                                                                         |
| HNS      | 5.0222  | hexanitrostilbene                                                                                             |
| HRDX     | 12.0079 | Regular RDX                                                                                                   |
| HTPB     | 8.1036  | hydroxyl-terminated polybutadiene                                                                             |
| HU-28    | 12.0122 | 85 HMX                                                                                                        |
| HV4      | 5.0280  | 85 HMX/15 Viton                                                                                               |
| HW4      | 5.0280  | 95 HMX/5 wax                                                                                                  |
| HX72     | 9.0963  | 80 RDX/20 PB                                                                                                  |
| HX78     | 9.0963  | 55 NQ/30 RDX/15 PB                                                                                            |
| HXA123   | 9.0963  | 70 RDX/15 PB/15 AI                                                                                            |
| IBA      | 5.0237  | 1,2-bis(difluoramino)-2-methylpropane (isobutylene adduct)                                                    |
| ICCP     | 6.0455  | isothiocyanatopentaammine cobalt(III) perchlorate                                                             |
| ILDm     | 12.0183 | Intrinsic Low Dimensional Manifold                                                                            |
| IPDI     | 8.1036  | isophorone diisocyanate                                                                                       |
| IPFT     | 12.0141 | Intense Pressure Friction Test                                                                                |
| IPN      | 12.0781 | Isopropyl nitrate                                                                                             |
| IRDX     | 12.0079 | Insensitive RDX                                                                                               |
| IRX-1    | 10.0732 | Coarse HMX/HTPB                                                                                               |
| IRX-3    | 10.0732 | Coarse HMX/HTPB/AI                                                                                            |
| ISLS     | 11.0491 | Impulsive Stimulated Light Scattering                                                                         |
| IZO-PN   | 11.0086 | Iso-propylnitrate                                                                                             |
| JA2      | 9.0539  | 59 NC/15 NG/25 DEGDN                                                                                          |
| JAGUAR   | 12.0195 | Thermodynamic equation of state                                                                               |
| K10      | 11.0067 | 2,4-dinitroethylebenzene, 2,6-dinitroethlybenzene, 2,4,6-trinitroethlybenzene                                 |
| K-6      | 10.0862 | 1,3,5-trinitro-2-oxo-1,3,5-triazacyclo-hexane                                                                 |
| keto-RDX | 10.0862 | 1,3,5-trinitro-2-oxo-1,3,5-triazacyclo-hexane                                                                 |
| KHNO     | 9.1082  | potassium salt of hexanitro diphenylamine                                                                     |
| KP       | 5.0139  | potassium perchlorate                                                                                         |
| LAC      | 9.0975  | $\beta$ -lactose                                                                                              |
| LG/UW-4  | 10.0732 | AP/AI/TMETN/Other                                                                                             |
| LIS-2    | 12.0289 | 50 FOX-7(250-355 $\mu$ m)/FOX-7(<70 $\mu$ m)/21 PolyGlyN/5 Bu-NENA/4<br>H <sub>12</sub> MDI(Desmodur-W)/DBTDL |
| LLM-105  | 12.0440 | 2,6-diamino-3,5-dintropyrazine-1-oxide                                                                        |
| LP       | 5.0139  | lithium perchlorate                                                                                           |
| LPEOS    | 12.0140 | Low Pressure Equation of State                                                                                |
| LS       | 8.0711  | lead styphnate, Pb(C <sub>6</sub> O <sub>9</sub> N <sub>3</sub> H <sub>3</sub> )                              |
| LX-01    | 10.0414 | C <sub>1.52</sub> H <sub>3.73</sub> N <sub>1.69</sub> O <sub>3.39</sub>                                       |
| LX-03-0  | 9.1236  | 70 HMX/20 DATB/10 Viton A                                                                                     |
| LX-04-1  | 4.0489  | 85 HMX/15 Viton, "1" denotes fine-particle-sized HMX                                                          |
| LX-07    | 5.0065  | 90 HMX/10 Viton                                                                                               |
| LX-07-0  | 4.0005  | 90 HMX/10 Viton                                                                                               |
| LX-09    | 5.0065  | 93.3 HMX/4.2 DNPA/2.5 FEFO                                                                                    |
| LX-10    | 5.0065  | 95 HMX/5 Viton                                                                                                |
| LX-10-1  | 10.0786 | 94.5 HMX/5.5 Viton, "1" denotes fine-particle-sized HMX                                                       |
| LX-11    | 5.0139  | 80 HMX/20 Viton                                                                                               |
| LX-13    | 8.1091  | 80 PETN/20 Sylgard (see XTX-8003)                                                                             |
| LX-14    | 8.0614  | 95.5 HMX/4.5 Estane 5702-F1                                                                                   |

## D. Acronym and Code Name Index (Continued)

| Name         | Sy.Pg   | Makeup                                                                  |
|--------------|---------|-------------------------------------------------------------------------|
| LX-15        | 8.1106  | 95 HNS/5 Kel-F 800                                                      |
| LX-16        | 11.0423 | 96% PETN                                                                |
| LX-17        | 7.0488  | 92.5 TATB/7.5 Kel-F (formerly RX-03-BB)                                 |
| M2           | 9.0539  | 75 NC                                                                   |
| M5           | 9.0539  | 82 NC/20 NG                                                             |
| MA           | 6.0467  | 1,1,7-trifluoro-4-methyl-1,7,7-trinitro-3,5-dioxoheptane                |
| MAEC         | 13.0137 | mechanically activated energetic composite                              |
| MAN          | 6.0439  | methylammonium nitrate                                                  |
| MDF          | 9.1510  | mild detonating fuse or fuze                                            |
| MEDINA       | 3.0674  | CH <sub>4</sub> N <sub>4</sub> O <sub>4</sub> , methylene dinitramine   |
| MEN-II       | 10.0414 | C <sub>2.06</sub> H <sub>7.06</sub> N <sub>1.33</sub> O <sub>3.10</sub> |
| MF           | 6.0467  | 1,1,7-trifluoro-1,7,7-trinitro-3,5-dioxoheptane                         |
| MF           | 8.0711  | mercury fulminate, Hg(ONC) <sub>2</sub>                                 |
| MFDNB        | 6.0467  | methyl-4-fluoro-4,4-dinitrobutyrate                                     |
| M-FEFO       | 6.0467  | 1,7-difluoro-4-(1-oxomethyl)-1,1,7,7-tetranitro- 3,5-dioxoheptane       |
| MFF          | 6.0467  | 1,4,4,7,7-pentafluoro-1,1,7-trinitro-3,5-dioxoheptane                   |
| Minol 2      | 4.0463  | aluminized ammonium nitrate/TNT                                         |
| MMAN         | 7.0374  | monomethylamine nitrate                                                 |
| MN           | 5.0267  | methylnitrate                                                           |
| MNCH         | 11.0086 | Mononitro-Chlorohydrine                                                 |
| N-100        | 12.0012 | Demodur N-100                                                           |
| NB-40        | 6.0771  | 60 pyroxyline/40 nitroglycerine                                         |
| NC           | 4.0005  | nitrocellulose                                                          |
| NCSH         | 12.0079 | noncatastrophic self-heating                                            |
| NDAG         | 10.0588 | Diaminoguanidinium nitrate                                              |
| NDNAZ        | 11.0239 | 1-nitroso-3,3-dinitroazetidine                                          |
| NEPE         | 13.0948 | nitrate ester plasticized polyether propellant                          |
| NF           | 9.0995  | nitroform                                                               |
| NG           | 3.0066  | nitroglycerin                                                           |
| NGI          | 7.0043  | nitroglycol                                                             |
| Nigu         | 8.0577  | nitroguanidine                                                          |
| Nitromixture | 2.0648  | 83% nitromethane/17 2-nitropropane                                      |
| NLTE         | 13.1151 | Non-local thermodynamic equilibrium                                     |
| NM           | 4.0126  | nitromethane                                                            |
| NME          | 9.1019  | nitromethane                                                            |
| NOBEL        | 12.0058 | Eulerian reactive hydrodynamic code                                     |
| NONA         | 5.0222  | nonanitroterphenyl                                                      |
| NQ           | 7.0566  | nitroguanidine                                                          |
| NTO          | 9.1001  | 3-nitro-1,2,4 triazole-5-one                                            |
| NTODAG       | 10.0588 | NTO-diaminoguanidinium                                                  |
| O            | 9.1236  | other material                                                          |
| Octogen      | 9.1236  | HMX                                                                     |
| Octol        | 4.0005  | 78 HMX/22 TNT                                                           |
| Octol        | 6.0647  | 77 HMX/23 TNT                                                           |
| Octol        | 9.0069  | 64 RDX/36 TNT                                                           |
| OCTOL        | 12.0303 | 70 HMX/30 TNT                                                           |
| Octol 75/25  | 10.0307 | 75 HMX/25 TNT                                                           |
| Octol-A      | 5.0280  | 80 HMX/20 TNT/1 Wax                                                     |
| Octol-B      | 5.0280  | 70 HMX/30 TNT/1 Wax                                                     |

## D. Acronym and Code Name Index (Continued)

| Name         | Sy.Pg   | Makeup                                                                         |
|--------------|---------|--------------------------------------------------------------------------------|
| Octorane 86A | 9.1047  | 84 HMX/16 PU                                                                   |
| ORA 86       | 9.1008  | 86 HMX/14 inert binder                                                         |
| ORA86B       | 11.0385 | 86 HMX/14 PU                                                                   |
| ORVIS        | 13.0128 | Optically recorded velocity interferometer system                              |
| OTTO         | 6.0467  | 1,1,1,7,7,13,13,13-octafluoro-4,4,10,10-tetranitro-2,6,8,12- tetraoxotridecane |
| P1           | 12.0235 | modified double-base propellant                                                |
| P2100 B      | 8.0626  | 88 HMX/12 HTPB                                                                 |
| PA           | 3.0700  | picric acid                                                                    |
| PAX-3        | 12.0200 | 66 HMX/15.9 plasticizer/ 18.1 Al                                               |
| PB           | 5.0139  | hydroxyterminated polybutadiene                                                |
| PB           | 8 1132  | polybutadiene                                                                  |
| PBH-9D       | 9.0144  | HMX, plastic bonded                                                            |
| PBX-0280     | 9.1463  | 95 RDX/5 Estane                                                                |
| PBX-0280/PE  | 9.1463  | 95 RDX/5 polyethylene                                                          |
| PBX-1        | 10.0956 | RDX/single cast-cured non-energetic binder                                     |
| PBX-2        | 10.0956 | TATB/HMX/HTPB binder                                                           |
| PBX-9007     | 10.0415 | $C_{1.97}H_{3.22}N_{2.43}O_{2.44}$                                             |
| PBX-9010     | 4.0005  | 90 RDX/10 Kel-F                                                                |
| PBX-9010     | 9.1082  | 90 HMX/10 Kel-F 800                                                            |
| PBX-9011     | 4.0005  | 90 HMX/10 Estane                                                               |
| PBX-9205     | 5.0599  | 92 RDX/6 polystyrene/2 dioctyl phthalate                                       |
| PBX-9404     | 5.0060  | 94 HMX/3 nitrocellulose/3 tris-β-chloroethyl phosphate                         |
| PBX-9404-03  | 4.0005  | 94 HMX/3 NC/3 CEF                                                              |
| PBX-9407     | 7.0928  | 94 RDX/6 EXON 461                                                              |
| PBX-9501     | 6.0647  | 95 HMX/2.5 Estane/1.25 BDNPA/1.25 BDNPF                                        |
| PBX-9502     | 7.0052  | 95 TATB/5 Kel-F 800 (formerly X-0290)                                          |
| PBX-9503     | 8.1106  | 80 TATB/15 HMX/5 Kel-F 800                                                     |
| PBXC-117     | 9.1236  | 71 RDX/17 Al/12 other                                                          |
| PBXC-121     | 9.1236  | 82 HMX/18 other                                                                |
| PBXE-1       | 12.0012 | 11 GAP/11 TEGDN/TMETN/1.7 IDPI/N-100/66 HMX/10 Al H-15                         |
| PBXE-2       | 12.0012 | 11 GAP/11 TEGDN/TMETN/1.7 IDPI/N-100/66 HMX/10 Al ALEX                         |
| PBXI-1       | 12.0012 | 9.6 HTPB/5.6 DOA/0.8 TDI/74 HMX/10 Al H-15                                     |
| PBXI-2       | 12.0012 | 9.6 HTPB/5.6 DOA/0.8 TDI/74 HMX/10 Al Alex                                     |
| PBXI-3       | 12.0012 | 9.6 HTPB/5.6 DOA/0.8 TDI/64 HMX/20 Al H-15                                     |
| PBXI-4       | 12.0012 | 9.6 HTPB/5.6 DOA/0.8 TDI/64 HMX/20 Al Alex                                     |
| PBXN-103     | 9.1236  | 23 TT/40 AP/27 Al/10 other                                                     |
| PBXN-110     | 10.0732 | formerly PBXW-113 II                                                           |
| PBXN-111     | 10.0732 | formerly PBXW-115                                                              |
| PBXN-5       | 7.0928  | 95 HMX/5 Viton A                                                               |
| PBXN-9       | 11.0077 | 92 HMX(1.2:1 Class 1:5)/6 dioctyl adipate                                      |
| PBXS 9501    | 12.0049 | 95 sugar/ 2.5 Estane/2.5 BDNPA-F by weight                                     |
| PBXW         | 8.0883  | RDX/inert binder                                                               |
| PBXW-106 E   | 9.1236  | 75 RDX/18 BDNPA-F/7 other                                                      |
| PBXW-108 I   | 9.1236  | 85 RDX/15 other                                                                |
| PBXW-109 E   | 9.1236  | 64 RDX/20 Al/16 other                                                          |
| PBXW-109 I   | 9.1236  | 65 RDX/20 Al/15 other                                                          |
| PBXW-113 II  | 9.1236  | 68 HMX/12 other                                                                |
| PBXW-114 II  | 9.1236  | 78 HMX/10 Al/12 other                                                          |
| PBXW-115     | 9.0806  | 20 RDX/43 AP/25 Al/12 HTPB                                                     |

## D. Acronym and Code Name Index (Continued)

| Name           | Sy.Pg   | Makeup                                                      |
|----------------|---------|-------------------------------------------------------------|
| PBXW-115(AUST) | 12.0323 | 43 AP/25 Al/20 RDX/12 HTPB (Australian version of PBXN-111) |
| PBXW-121       | 10.0732 | NTO/Al/HTPB/RDX                                             |
| PBXW-122       | 10.0732 | NTO/AP/Al/HTPB/RDX                                          |
| PBXW-123       | 10.0063 | aluminum/AP/TMETN (ratios not specified)                    |
| PBXW-7         | 9.0106  | 36 RDX/60 TATB/5 Viton A                                    |
| Pc             | 3.0323  | Primacord                                                   |
| PCP            | 10.0095 | polycaprolactone                                            |
| PE             | 6.0543  | 86 PETN/14 wax                                              |
| PE 4           | 8.0265  | 88 RDX/12 plasticizer                                       |
| PE 6           | 5.0139  | 6-polyethylene                                              |
| PE4            | 10.0089 | 88 RDX/12 grease                                            |
| PEG            | 10.0095 | polyethylene glycol                                         |
| Pentanex       | 6.0546  | 45 PETN/37 AN/2 glycol/15.5 water/0.5 guar                  |
| Pentolite      | 1.0014  | 50 PETN/50 TNT                                              |
| PETN           | 3.0012  | pentaerythritol tetranitrate                                |
| PGDN           | 11.0086 | 1,2 Propylene glycodinitrate                                |
| PGN            | 13.0408 | Poly glycidyl nitrate                                       |
| PHX31          | 9.0963  | 85 RDX/15 Cariflex 1107                                     |
| Picratol       | 10.0415 | 52 EXP-D/48 TNT                                             |
| PLM            | 12.0087 | polarized light microscopy                                  |
| PN             | 11.0086 | PropylNitrate                                               |
| PolyNIMMO, PN  | 13.0302 | Poly 3-nitratomethyl-3-methyloxetane                        |
| Polystyr       | 4.0005  | polystyrene                                                 |
| PS-1           | 12.0114 | 70 AP/20 Al/10 HTPB                                         |
| PSC            | 11.0013 | propagation of surfaces under curvature                     |
| PSF            | 9.0822  | polysulfone                                                 |
| PTFE           | 6.0626  | polytetrafluoroethylene                                     |
| PU             | 11.0385 | polyurethane binder                                         |
| PVA            | 2.0712  | polyvinyl alcohol                                           |
| PYX            | 8.1106  | 2,6-bis(picrylamino)-3,5-dinitropyridine                    |
| QMAN           | 6.0439  | tetramethylammonium nitrate                                 |
| RB-100 - 90    | 10.0803 | aluminum/AP/HMX/PEG/microballoons                           |
| RDX            | 5.0222  | cyclotrimethylenetrinitramine                               |
| RDX            | 7.0928  | 1,3,5-trinitro 1,3,5-tetrazacyclohexane                     |
| REAXFF         | 13.0786 | Reactive force field molecular dynamics model               |
| RECONEX        | 13.0857 | Response of CONfined Explosives model                       |
| Reolit         | 4.0435  | slurry with 62.6% nitrate/25% TNT/12% water/0.4% guar       |
| REX-20         | 6.0467  | 2,2,2-trifluoroethyl-4-fluoro-4,4-dinitrobutyrate           |
| RGPA           | 8.0265  | 70 RDX/19 plasticizer/5.5 polyurethane/5.5 ?                |
| Rowanex 1001   | 11.0273 | 88 HMX/12 HTPB                                              |
| Rowanex 1301   | 11.0273 | 20 RDX/44.5 AP/25 Al/10.5 HTPB                              |
| Rowanex 1400   | 11.0273 | 66 RDX/22 AL/12 HTPB                                        |
| Rowanex 2000   | 11.0273 | 92 HMX/8 HTPB                                               |
| RT 60/40Type A | 11.0273 | 60 RDX/40 TNT + 1wax                                        |
| RU -119        | 12.0122 | 80 RDX/ binder & chain extender                             |
| RU -120        | 12.0122 | 81 RDX/ binder & chain extender                             |
| RU-81          | 12.0122 | 85/ RDX/ no chain extender                                  |
| RX-03-BB       | 7.0488  | 92.5 TATB/7.5 Kel-F (new name is LX-17)                     |
| RX-04-AT       | 4.0005  | 88 HMX/12 carborane-fluorocarbon copolymer                  |

## D. Acronym and Code Name Index (Continued)

| Name     | Sy.Pg   | Makeup                                        |
|----------|---------|-----------------------------------------------|
| RX-04-AU | 5.0139  | 92 HMX/8 Viton                                |
| RX-04-AV | 4.0005  | 92 HMX/8 PE                                   |
| RX-04-BM | 5.0139  | 81.6 HMX/4 Al/14.4 Viton                      |
| RX-04-BN | 5.0139  | 79 HMX/6.6 Al/14.3 Viton                      |
| RX-04-BO | 5.0139  | 72.7 HMX/13.3 Al/14.0 Viton                   |
| RX-04-BT | 5.0139  | 76 HMX/10 LiF/14 Viton                        |
| RX-04-BY | 4.0005  | 86 HMX/14 FNR                                 |
| RX-04-DS | 5.0139  | 81 HMX/9.9 Al/9.1 Viton                       |
| RX-04-P1 | 4.0005  | 80 HMX/20 Viton                               |
| RX-05-AA | 4.0005  | 80 RDX/8 polystyrene/2 DOP                    |
| RX-08-EL | 9.1312  | 73 HMX/25 FEFO/1 PCL 240/other                |
| RX-08-FL | 9.0007  | 75.9 HMX/22.2 FEFO/1.9 polyvinyl binder       |
| RX-08-GB | 9.0026  | 61 HMX/36 FEFO/3.1 urethane                   |
| RX-08-GG | 9.0026  | 61 HMX/36 FEFO/3.1 urethane                   |
| RX-08-HD | 11.0423 | 73.6% HMX/19.9 % TMETN                        |
| RX-09-AA | 4.0005  | 93.7 HMX/5.7 DNPA/0.6 EtDP                    |
| RX-11-AF | 5.0139  | 52 HMX/43 KP/5 PE                             |
| RX-11-AI | 5.0139  | 52 HMX/43 KP/5 PE                             |
| RX-11-AJ | 5.0139  | 52 HMX/43 KP/5 PE                             |
| RX-11-AW | 5.0139  | 51 HMX/35 KP/14 PB                            |
| RX-11-AX | 5.0139  | 51 HMX/35 KP/14 PB                            |
| RX-11-AY | 5.0139  | 33.4 HMX/53.4 KP/13.2 PB                      |
| RX-11-AZ | 5.0139  | 33.4 HMX/53.4 KP/13.2 PB                      |
| RX-11-BA | 5.0139  | 51 HMX/39 AP/10 Viton                         |
| RX-18-AB | 5.0139  | 51 HMX/20 AP/29 EDNP                          |
| RX-18-AE | 5.0139  | 51 HMX/20 AP/29 EDNP                          |
| RX-18-AG | 5.0139  | 51 HMX/20 AP/29 EDNP                          |
| RX-18-AH | 5.0139  | 71 HMX/29 EDNP                                |
| RX-18-AJ | 5.0139  | 52.6 HMX/34.7 KP/12.7 PB                      |
| RX-18-BA | 5.0139  | 31 HMX/45 KP/24 EDNP                          |
| RX-22-AG | 5.0139  | 73.6 HMX/26.4 LP                              |
| RX-23-AA | 6.0712  | 79 hydrazine nitrate/21 hydrazine             |
| RX-23-AB | 6.0712  | 70 hydrazine nitrate/5.9 hydrazine/24.1 water |
| RX-23-AC | 6.0712  | 30 hydrazine nitrate/70 hydrazine             |
| RX-25-AA | 5.0139  | 22 HMX/58 AP/10 Al/10 Viton                   |
| RX-25-BF | 9.0526  | 38 HMX/36 AP/22 ZrH <sub>2</sub> /4 Estane    |
| RX-25-BH | 9.0526  | 19 HMX/47 AP/30 ZrH <sub>2</sub> /4 Estane    |
| RX-25-BP | 9.0526  | 38 HMX/36 AP/22 ZrH <sub>2</sub> /4 Estane    |
| RX-25-BQ | 9.0526  | 38 HMX/36 AP/22 ZrH <sub>2</sub> /4 Estane    |
| RX-26-AF | 7.0059  | 49.3 HMX/46.6 TATB/4.1 Estane                 |
| RX-30-AA | 6.0731  | 60.8 AP/38 NM/1.2 guar                        |
| RX-30-AB | 6.0731  | 61.1 AP/37.9 NM/1 guar                        |
| RX-30-AC | 6.0731  | 47.6 KP/50.8 NM/1.6 guar                      |
| RX-30-AD | 6.0731  | 47.1 KP/51.3 NM/guar 1.6                      |
| RX-30-AE | 6.0731  | 57.9 AN/40.8 NM/1.3 guar                      |
| RX-30-AF | 6.0731  | 57.9 AN/40.8 NM/1.3 guar                      |
| RX-31-AA | 6.0731  | 28.8 AN/47 NM/22.8 Al/1.4 guar                |
| RX-31-AB | 6.0731  | 43.2 AN/47 NM/8.3 Al/1.5 guar                 |
| RX-35-AP | 9.1313  | 60 HMX/40 NG, TA, PEG binder                  |



## D. Acronym and Code Name Index (Continued)

| Name     | Sy.Pg   | Makeup                                                                    |
|----------|---------|---------------------------------------------------------------------------|
| RX-36-AA | 8.1020  | 1 HMX/1 TATB/1 BTF, note mole ratios                                      |
| RX-36-AB | 8.1020  | 1 TATB/1 BTF, note mole ratios                                            |
| RX-36-AC | 8.1020  | 4 HMX/1 TATB/1 BTF, note mole ratios                                      |
| RX-36-AD | 8.1020  | 1 HMX/3 TATB/1 BTF, note mole ratios                                      |
| RX-36-AE | 8.1020  | 1 HMX/1 BTF, note mole ratios                                             |
| RX-36-AF | 8.1020  | 1 HMX/1 TATB, note mole ratios                                            |
| RX-36-AG | 8.1020  | 1 HMX/1 TATB/3 BTF, note mole ratios                                      |
| RX-40-AA | 10.0629 | 95 PETN/5 Al(5 $\mu$ m)                                                   |
| RX-40-AB | 10.0629 | 90 PETN/10 Al(5 $\mu$ m)                                                  |
| RX-40-AC | 10.0629 | 80 PETN/20 Al(5 $\mu$ m)                                                  |
| RX-40-AF | 10.0629 | 95 PETN/5 Al(18 $\mu$ m)                                                  |
| RX-40-AG | 10.0629 | 90 PETN/10 Al(18 $\mu$ m)                                                 |
| RX-40-AH | 10.0629 | 80 PETN/20 Al(18 $\mu$ m)                                                 |
| RX-40-CA | 10.0629 | 95 TNT/5 Al(5 $\mu$ m)                                                    |
| RX-40-CB | 10.0629 | 90 TNT/10 Al(5 $\mu$ m)                                                   |
| RX-40-CF | 10.0629 | 95 TNT/5 Al(18 $\mu$ m)                                                   |
| RX-40-CG | 10.0629 | 90 TNT/10 Al(18 $\mu$ m)                                                  |
| RXAC     | 8.0802  | 70 hydrazine/30 hydrazine nitrate                                         |
| S-2      | 9.1236  | 63 RDX/22 TNT/15 Al                                                       |
| SANS     | 12.0087 | Small angle neutron scattering                                            |
| SAXS     | 12.0087 | Small angle x-ray scattering                                              |
| SCB      | 11.0136 | small scale cook-off bomb                                                 |
| SCE      | 13.0145 | shock-change equation                                                     |
| SHG      | 12.0103 | Second harmonic Generation                                                |
| SHPB     | 12.0235 | split-Hopkinson pressure bar                                              |
| SPIS-44  | 7.0620  | 20 HMX/49 AP/21 Al/10 binder                                              |
| SRI-1    | 6.0467  | 1,1,1-trifluoro-4,4,4-trinitro-2-oxobutane                                |
| SRI-2    | 6.0467  | 1,1,1,4-tetrafluoro-4,4-dinitro-2-oxobutane                               |
| SRI-3    | 6.0468  | 1,1,1-trifluoro-4,4-dinitro-2-oxopentane                                  |
| SRI-4    | 6.0468  | 1,1,1,7,7,7-hexafluoro-4,4-dinitro-2,6-dioxoheptane                       |
| SRI-5    | 6.0468  | 1-fluoro-1,1,3,3-tetranitro-5-oxohexane                                   |
| Startex  | 4.0435  | 60% DiTeU/20% nitrates, 17.5% water/2% hydrocarbons/0.5% guar             |
| s-TCB    | 7.0425  | symmetrical 1,3,5-trichlorobenzene (precursor to TATB)                    |
| STEX     | 12.0384 | Scaled Thermal Explosion Experiment                                       |
| SW-21    | 10.0732 | Fine HMX/Other                                                            |
| SX-2     | 6.0493  | RDX/filler, sheet explosive                                               |
| SYEP     | 6.0468  | 4,4-bis(difluoramino)-1,7-difluoro-1,1,7,7-tetranitro-3,5-dioxoheptane    |
| T        | 7.0697  | 95.5 TATB/4.5 Viton                                                       |
| T1       | 8.0151  | 95.5 TATB/?                                                               |
| T2       | 8.0151  | 97 TATB/?                                                                 |
| TA       | 2.0659  | triacetin                                                                 |
| TACOT    | 10.0416 | C <sub>12</sub> H <sub>4</sub> N <sub>8</sub> O <sub>8</sub>              |
| TATB     | 6.0659  | 1,3,5-triamino-2,4,6-trinitrobenzene                                      |
| TBP      | 9.1236  | tris- $\beta$ -chloroethyl phosphate                                      |
| TCE      | 7.0374  | trichloroethylene                                                         |
| TCTNB    | 7.0425  | 1,3,5-trichloro-2,4,6-trinitrobenzene (precursor for TATB)                |
| TDI      | 8.0363  | toluenediisocyanate                                                       |
| TDPF     | 6.0468  | 1,1,1,13,13,13-hexafluoro-4,4,10,10-tetranitro-2,6,8,12-tetraoxotridecane |
| TEDNCP   | 10.0157 | derivative of cyclotriphosphazene                                         |

## D. Acronym and Code Name Index (Continued)

| Name            | Sy.Pg   | Makeup                                                                          |
|-----------------|---------|---------------------------------------------------------------------------------|
| Tetryl          | 6.0427  | N-methyl-N-nitro-2,4,6-trinitroaniline                                          |
| TFA             | 6.0468  | 1,7, difluoro-1,1,7,7-tetranitro-4-trifluoromethyl- 3,5-dioxoheptane            |
| TFMA            | 6.0468  | 1-fluoro-1,1-dinitro-4-trifluoromethyl-3,5-dioxohexane                          |
| TFMDA           | 6.0468  | 1-fluoro-4-difluoronitromethyl-1, 1-dinitro-4-trifluoromethyl-3, 5-dioxoheptane |
| TFMFF           | 6.0468  | 1,1,1,4,4,7-hexafluoro-7,7-dinitro-3,5-dioxoheptane                             |
| TFNA            | 8.0802  | 1,1,1-trifluoro-3,5,5-trinitro-3-azahexane                                      |
| TGDN            | 11.0086 | Triethylene Glycoldinitrate                                                     |
| THA             | 12.0112 | Thermal Threat Assessment                                                       |
| TMETN           | 3.0813  | trimethylolethane trinitrate                                                    |
| TNA             | 8.0746  | trinitroaniline, picramide                                                      |
| TNAZ            | 11.0239 | 1,3,3-trinitroazetidine                                                         |
| TNB             | 3.0066  | 1,3,5 trinitrobenzene                                                           |
| TNB             | 11.0491 | 2,4,6 trinitrobenzene                                                           |
| TNETB           | 3.0070  | 2,2,2-trinitroethyl-4,4,4-trinitrobutyrate                                      |
| TNM             | 4.0126  | tetranitromethane                                                               |
| TNRL            | 12.0307 | lead trinitroresorcinate                                                        |
| TNT             | 3.0066  | 2,4,6-trinitrotoluene                                                           |
| TNTAB           | 8.0802  | 1,3,5-triazido-2,4,6-trinitrobenzene                                            |
| TO              | 9.1001  | 1,2,4-triazole-5-one                                                            |
| Torpex          | 4.0463  | aluminized RDX/TNT                                                              |
| Torpex 2B       | 8.0265  | 42 RDX/40 TNT/18 Al/5 desensitizer                                              |
| TPH12076        | 9.1061  | Al/AP/HTPB                                                                      |
| Tritonal        | 2.0735  | 80 TNT/20 Al                                                                    |
| Trotyl          | 9.1236  | TNT                                                                             |
| TS3659          | 9.0297  | 79.9 NC/21.6 NG                                                                 |
| TT              | 9.1236  | trimethylolethane trinitrate                                                    |
| TTF             | 6.0468  | 1,1,1-trifluoro-7,7,7-trinitro-3,5-dioxoheptane                                 |
| TZL-4           | 9.0232  | 1,5-dinitro-tetrazole                                                           |
| TZX             | 10.0588 | 3,6-diaminotetrazin-1,4-dioxide                                                 |
| UFD             | 9.0407  | ultrafine diamonds                                                              |
| UGS             | 9.1062  | 20 DBP/5 Al/65 Na <sub>2</sub> SO <sub>4</sub> /9 HDAP                          |
| UP              | 6.0450  | ureamonoperchlorate                                                             |
| UPS             | 6.0450  | 90 wt% aqueous solution of UP                                                   |
| VCCT            | 11.0428 | Variable confinement cook of test                                               |
| VID             | 11.0171 | Viscous Internal Damage model                                                   |
| Viton           | 5.0139  | vinylidene fluoride-hexafluoropropylene copolymer                               |
| WAK2            | 9.1062  | Al/HMX/AP                                                                       |
| WBL             | 11.0012 | Witham Bidzil Lamborn detonation model                                          |
| WC 140          | 9.0297  | 98 NC                                                                           |
| WC 231          | 8.0883  | 75 NC/25 NG "commercial reloading powder"                                       |
| WC 231          | 9.0297  | 74.8 NC/25.2 NG                                                                 |
| WG-2            | 6.0546  | MMAN-sensitized watergel explosive 7% Al                                        |
| WG-4            | 6.0546  | MMAN-sensitized watergel explosive 13% Al                                       |
| X-0204          | 4.0005  | 83 HMX/17 Teflon                                                                |
| X-0219          | 6.0647  | 90 TATB/10 Kel-F 800                                                            |
| X-0233          | 8.0979  | 85.48 tungsten/13.22 HMX/0.8 polystyrene/0.5 DOP                                |
| X-0242          | 9.1015  | 94 HMX/3 Estane/5 eutectic                                                      |
| X-0242-92-04-04 | 11.0077 | 92 HMX (3:1 Class 1:2)/4 Estane/4BDNPA-F                                        |
| X-0290          | 6.0637  | 95 TATB/5 Kel-F 800 (changed to PBX 9502)                                       |

## D. Acronym and Code Name Index (Continued)

| Name     | Sy.Pg   | Makeup                                      |
|----------|---------|---------------------------------------------|
| X-0319   | 7.0567  | 50 TATB/45 HMX/5 Kel-F 800                  |
| X-0320   | 7.0567  | 60 TATB/35 HMX/5 Kel-F 800                  |
| X-0321   | 7.0567  | 75 TATB/20 HMX/5 Kel-F 800                  |
| X-0341   | 7.0567  | 90.25 TATB/4.75 HMX/5 Kel-F 800             |
| X-0342   | 7.0567  | 85.5 TATB/9.5 HMX/5 Kel-F 800               |
| X-0343   | 7.0567  | 80.75 TATB/14.25 HMX/5 Kel-F 800            |
| X-0344   | 7.0567  | 71.25 TATB/23.75 HMX/5 Kel-F 800            |
| X-0407   | 8.0123  | 70 TATB/25 PETN/5 Kel-F                     |
| X-0420   | 9.0487  | 94 DINGU/5 Exon/1 titanate                  |
| X-0430   | 9.1015  | 88 HMX/6 Kraton/6 Tufflo oil                |
| X-0432   | 9.0487  | 57 DINGU/43 TNT                             |
| X-0444   | 9.1015  | 88 HMX/6 Estane/6 eutectic                  |
| X1       | 8.0151  | 96 HMX/?                                    |
| XLDB     | 10.0115 | HMX/AP/Al/energetic binder                  |
| XM39     | 9.0539  | 76 RDX/15 NG/12 CAB/8 ATEC                  |
| XRD      | 12.0070 | x-ray diffraction                           |
| XTX-8003 | 6.0647  | 80 PETN/20 silicone rubber                  |
| XTX-8004 | 10.0418 | 80 RDX/20 Sylgard 182                       |
| Z TACOT  | 8.0528  | $C_{12}H_4N_8O_8$                           |
| ZOX      | 9.0995  | zero-oxygen-balance explosive               |
| ZOX      | 9.0995  | 2,2,2-trinitro ethyl-N-nitroethylenediamine |
| ZPCP     | 9.1083  | azidopentamine cobalt (III) perchlorate     |