

Name Index

- Abelson, Philip, 13, 20, 219
 Ackerman, Jerome, 246, 294
 Agnew, Harold M., 391, 393
 Alldredge, Robert, 302
 Allen, James, 148
 Allison, Samuel K., 26, 54, 62, 121, 200, 237, 248, 263, 276, 310, 316, 330
 Alvarez, Luis W., 4, 5, 47, 48, 118, 151-4, 163, 171-3, 175, 246, 248, 269, 270, 275, 301-3, 305, 306, 308, 359, 362, 375, 391-3, 395, 405
 Anderson, David L., 311
 Anderson, Herbert L., 32, 337, 351, 358, 361, 363, 417
 Anderson, J. C., 367
 Argo, Harold, 204
 Argo, Mary, 204
 Arnold, H. H., 380
 Ashkin, Julius, 158
 Ashworth, Frederick L., 383, 386-8, 394, 395-7
 Auger, Pierre, 233
 Ayers, Allan, 254
- Bacher, Robert F., 7, 59, 405, 417
 Cornell, 47, 48, 51, 52
 Cowpuncher Committee, 316-8
 Gadget (G) Division, 245, 271, 275, 305, 306, 308, 309, 321
 G-Engineers, 330, 332, 333, 339, 367
 nuclear physics, 79, 178, 184-9, 191-7, 217
 plutonium shipment to Tinian, 397
 spontaneous fission, 229, 239, 240, 408 413
 uranium scheduling, 248, 263
 Water Boiler, 199, 218, 348
- Bachmann, Werner, 165
 Bacon, Roger, 164
 Bainbridge, Kenneth T., 125, 134, 139, 142, 174-6, 246, 248, 250, 304, 305, 310, 313, 316, 323, 353, 358, 360, 361, 363, 364, 367, 370, 371, 373
 Baker, Charles P., 47, 48, 52, 80, 186, 194, 199, 347
 Baker, Richard D., 212, 217, 252, 253, 264, 283, 329
 Balke, Claire, 284, 286
 Bardeen, John, 417
 Barnes, Philip, 396
 Barnes, Sidney, 317
 Barnett, Shirley, 100
 Barschall, Henry H., 193, 359
 Beahan, Kermit K., 396
 Beams, Jesse W., 19, 29
 Begg, Charles, 383
 Benedict, D. L., 50, 51, 186, 197
 Bennett, William C., 48, 49, 186
 Bernstein, Barton J., 389
 Bethe, Hans A., 4, 9, 68, 75, 76, 94, 204, 234, 417
 efficiency, 355, 408
 implosion, 132, 134, 151, 159-62, 168, 175, 269, 300, 308, 309, 312, 316-8, 326, 327
 nuclear physics, 178-83
 pre-Los Alamos work, 42, 44-7, 52, 54, 55
 T-Division, 77, 129, 247, 331, 343-5
 Bethe, Rose, 60, 61, 100
 Birch, A. Francis, 136, 249, 250, 254-62, 265, 266, 332, 384
 Bloch, Felix, 43, 48, 49, 134, 141
 Boggs, Elizabeth M., 168
 Bohr, Aage, 95, 317

Cambridge University Press

0521441323 - Critical Assembly: A Technical History of Los Alamos during the Oppenheimer Years, 1943-1945 - Lillian Hoddeson, Paul W. Henriksen, Roger A. Meade and Catherine Westfall

Index

[More information](#)

494

Name Index

- Bohr, Niels, 13, 14, 16, 21, 22, 95, 98,
99, 229, 248, 317, 389
- Boorse, Henry A., 29
- Bowles, Edward, 59, 378, 379
- Boyd, George, 26
- Bradbury, Norris E., 59, 168, 175,
245, 257, 273, 275, 294, 321, 322,
324, 325, 365, 367, 368, 384,
399-401
- Bradford, Rebecca, 292
- Bradner, Hugh, 87, 132, 134, 139,
141, 142
- Bragg, William L., 15
- Breit, Gregory, 19, 20, 27, 40, 41
- Bretscher, Egon, 13, 18, 20, 22, 98,
99, 203, 246, 345
- Brewer, Leo, 286
- Bridgman, Percy, 136, 159
- Briggs, Lyman J., 19, 20, 30, 43
- Brixner, Berlyn, 144, 145, 354, 381
- Brode, Robert, 260-2, 266, 384
- Bromley, LeRoy, 286
- Brown, H. S., 150, 152
- Brown, R., 324
- Buchanan, James, 324
- Burke, Joseph, 338
- Burton, Milton, 26
- Busbee, David, 167
- Bush, Howard C., 310
- Bush, Vannevar, 9, 12, 19, 21, 23-6,
28-31, 38, 41, 58, 84, 403
- Caleca, Vincent, 367
- Campbell, A. Wayne, 144
- Carlson, Roy W., 311, 367
- Case, Kenneth, 181
- Cefola, Michael, 35
- Chadwick, James, 13, 18, 22, 35, 36,
49, 50, 95, 98, 99, 159
- Chamberlain, Owen, 229, 231, 234,
235
- Cherwell, Lord (F. A. Lindemann),
168
- Chew, Geoffrey, 204
- Chipman, John, 286, 329
- Christy, Robert F., 5, 10, 43, 68, 77,
158, 161, 182, 200, 202, 203, 248,
270, 271, 293, 307-9, 311, 312,
317, 318, 326, 329, 413
- Churchill, Winston, 18, 168, 350, 364
- Clark, Jonas Gilman, 8, 137
- Clusius, Klaus, 16
- Cockcroft, John D., 18, 21
- Compton, Arthur Holly, 25-7, 30, 32,
34-6, 41, 42, 45, 47, 52, 54, 56,
80, 149, 150, 204, 207, 222, 224,
227, 229, 233, 237, 239-41, 389
- Compton, Karl T., 9, 25
- Conant, James B., 23-5, 29-31, 35-7,
55, 58-60, 92, 95, 98, 122, 135,
137, 209, 240-3, 275, 293, 311,
312
- Condon, Edward U., 68, 69, 92, 93
- Cook, Walter W., 108
- Cooper, Leon, 417
- Cornog, Robert, 82, 118
- Coryell, Charles, 26, 149, 150
- Crane, Horace, 260
- Creutz, Edward, 273
- Critchfield, Charles L., 82, 84, 85, 87,
111-4, 117, 118, 125, 126, 128,
132, 308, 317, 318, 331
- Cunningham, Burris B., 35, 214
- Curie, Irène, 13
- Cuykendall, Trevor, 141
- Daghlian, Harry, 341, 342, 367
- Davalos, Samuel P., 310
- Davisson, Richard, 98
- de Silva, Peer, 96, 310, 389, 390
- Dehart, Pappy, 396
- Dennes, William R., 106
- Dennison, D. M., 388
- Dickel, Gerhard, 16
- Dike, Sheldon, 378, 384
- Dirac, P. A. M., 53
- Diven, Benjamin, 106
- Doan, Richard, 26, 149, 150
- Dodson, Richard W., 125, 151-3,
198, 208, 309, 316, 318
- Doll, Edward, 384
- Dudley, John H., 58
- Duffield, Priscilla Greene, 62, 68
- Dunning, John R., 17, 21, 28, 37
- Dyson, Freeman, 417
- Eareckson, William O., 310
- Eastman, E. D., 286
- Ehrlich, R., 158
- Einstein, Albert, 19
- Elmore, William C., 156, 188, 416
- Ent, Uzal G., 310, 383
- Eyster, Eugene, 166, 299
- Fairbank, Henry A., 273
- Farrell, Thomas F., 364
- Farwell, George, 229, 231, 232, 234,
235, 238, 241, 243, 244
- Feather, Norman, 13, 18, 20, 22, 51
- Fermi, Enrico, 9, 10, 44, 57, 95, 122,
255, 256, 353, 371, 372, 389
- Chicago pile, 19, 20, 31-3, 37, 76
- critical assemblies, 199, 200, 337,
340, 348

Cambridge University Press

0521441323 - Critical Assembly: A Technical History of Los Alamos during the Oppenheimer Years, 1943-1945 - Lillian Hoddeson, Paul W. Henriksen, Roger A. Meade and Catherine Westfall

Index

[More information](#)*Name Index*

495

- early fission research, 22, 25-7, 51, 54, 77, 78
 F-Division, 204, 245, 246
 initiator, 309, 317, 318
 measurement of ν for uranium, 182, 186, 191, 192, 195
 presentation to Navy, 13-5
 re-irradiation spontaneous fission experiment, 236, 237, 241-3
 Fermi, Laura, 398
 Feynman, Richard P., 4, 68, 84, 157-9, 160, 178, 179, 181, 183, 246, 255, 307, 331, 332, 345, 347, 355, 398, 408, 417
 Fine, Paul, 133
 Fisher, Leon, 321
 Fitch, Val, 98, 188
 Flanders, Donald, 100, 179, 246
 Flerov, G. N., 229
 Florin, Alan, 207
 Forman, Paul, 415
 Fowler, Joseph L., 155, 156, 273
 Fowler, William, 302
 Franck, James, 214, 216, 222, 389
 Frankel, Stanley, 43, 44, 50, 157, 160, 179-81, 246, 307, 331
 French, Anthony P., 98, 345
 Fried, Sherman, 223, 225
 Friedlander, Gerhardt, 151, 153, 199
 Frisch, Otto, 13, 14, 16-8, 21, 42, 53, 98, 99, 109, 156, 197, 335, 340, 346-8
 Froman, Darol K., 106, 156, 185, 188, 271, 272, 399
 Fuchs, Klaus, 53, 98, 279, 317, 331
 Fussell, Lewis, 301, 303, 304, 321, 323-5, 351, 353, 357, 384

 Galloway, George, 384, 386
 Gamow, George, 44
 Garner, Clifford S., 264, 281, 330
 Gibbs, Willard, 7
 Gilles, Paul, 286
 Glauber, Roy, 181
 Gold, Harry, 279
 Goldschmidt, B. L., 122, 123
 Grauman, R. L., 323
 Graves, Alvin C., 198, 341
 Green, Carlton, 115, 254
 Greenewalt, Crawford, 38
 Greenglass, David, 279
 Greisen, Kenneth, 142, 143, 277, 321, 323-5, 367
 Gross, Norman, 326
 Groves, Leslie R.
 delivery, 330, 378, 379, 387, 390, 393

 Director of Manhattan Project, 30, 31, 399-401, 404
 implosion, 55, 129, 131, 134, 135, 160, 209, 248, 276, 294,
 isotope separation, 218, 219, 263
 nuclear physics, 186, 191, 192, 312, 348, 412
 plutonium, 1-4, 36, 105, 207, 208, 239, 240
 organization of Los Alamos, 23, 40, 41, 56-60, 62, 65, 66, 68, 69, 91-8, 102, 183, 228, 250, 255-260, 290
 polonium, 120-2
 Trinity, 174, 310, 350, 353, 364, 365, 367, 375, 377
 Gunn, Ross, 19
 Gurinsky, David, 298

 Hahn, Otto, 13
 Hale, George Ellery, 8
 Hall, Theodore, 191, 198
 Hamilton, J. G., 120, 121
 Hammel, E. F., 329
 Hanson, Alfred, 50, 51, 186, 190, 197, 336, 337
 Harman, J. M., 92, 96
 Hawkins, David, 96, 136, 234
 Haworth, Leland, 64
 Hayworth, William N., 19
 Heisenberg, Werner, 17
 Helmholtz, Lindsay, 151, 153, 199, 201, 211
 Hempelmann, Louis, 104, 105, 107
 Henderson, Keith, 301
 Henderson, Robert, 298, 310, 321, 367
 Herb, Raymond G., 64
 Heydenburg, Norman P., 48, 50, 51
 Higinbotham, William A., 188, 189, 272, 333
 Hilberry, Norman, 31
 Hirschfelder, Joseph, 84-6, 112-6, 246, 254, 256, 257, 343, 344, 353
 Hoffman, Joseph, 280
 Holloway, Marshall G., 47, 48, 52, 199, 258, 330, 332, 333, 339, 340, 363, 367-9
 Holzman, Benjamin, 364
 Hopkins, Johns, 8
 Hopper, J. D., 298
 Hornig, Donald, 301, 302, 304, 305, 307, 321, 323, 324
 Hornig, Lilli, 99, 280
 Hubbard, Jack, 362-4, 371
 Hughes, A. L., 93, 103
 Hughes, James, 98, 347

Cambridge University Press

0521441323 - Critical Assembly: A Technical History of Los Alamos during the Oppenheimer Years, 1943-1945 - Lillian Hoddeson, Paul W. Henriksen, Roger A. Meade and Catherine Westfall

Index

[More information](#)

496

Name Index

- Ickes, Harold, 310
 Inglis, David, 180
- Jepson, Morris, 390
 Jercinovic, Leo, 367
 Jette, Eric R., 85, 252, 281, 285, 329, 330, 399
 Johns, Iral B., 282, 318
 Johnston, Lawrence, 171-3, 301-3, 391, 393
 Joliot, Frédéric, 13, 15, 78, 233, 234
 Jorgensen, Theodore, 360, 376
- Kauzmann, Walter, 146, 147, 166, 280
 Keith, Percival, 23, 28, 29, 37
 Keller, Joseph, 331
 Kennedy, Joseph W., 22, 27, 43, 76, 96, 125, 134, 152, 205-7, 209, 211, 215, 221-4, 226, 227, 229, 231, 237, 244, 254, 264, 290, 291, 317-9, 330, 410
 Kershner, R. B., 112
 Kerst, Donald W., 82, 136, 154, 155, 185, 199, 200, 274-6
 King, L. D. P., 47, 200, 201, 337
 Kirby, Richard H., 219
 Kirk, Paul, 35, 213-6
 Kirkpatrick, Elmer E., 387, 388
 Kistiakowsky, George B., 4, 7, 21, 25, 28, 41, 88, 130, 175, 176, 400, 413
 detonators, 170-3, 303, 304, 323
 explosives and lenses, 166-9, 289, 295, 297, 300, 320, 365
 explosions, 174, 367, 369, 370, 386
 implosion, 133, 136, 138-40, 143-6, 151, 156, 158, 273, 275, 312, 316, 332, 333
 Explosives (X) Division, 228, 245, 315
 Kolodney, Morris, 225, 226, 409
 Konopinski, Emil, 43, 45, 55, 68, 157, 158, 204
 Koontz, Philip, 191, 198
 Koski, Walter S., 138, 145, 168, 278-80, 309, 325
 Kowarski, Lew, 14, 15, 21
 Krige, John, 404
 Kruger, W. C., 62
- Langer, Beatrice, 99
 Langer, Lawrence, 119, 250, 260
 Langham, Wright, 105
 Larkin, Ralph, 257
 Latimer, Wendell, 120-2, 286
- Lauritsen, Charles C., 23, 291, 302, 312, 321, 323
 Lauritsen, Thomas, 302
 Lawrence, Ernest O., 1, 4, 8, 12, 13, 22, 23, 25-8, 30, 36, 37, 41, 42, 47, 56, 77, 95, 171, 218, 229, 241, 305, 389, 405, 406, 410, 415
 Leet, L. Don, 353
 Levy, Henry A., 149
 Lewis, Warren K., 36-8, 69, 91, 100, 102, 207
 Libby, Willard F., 229
 Linenberger, Gustave, 229, 231
 Linschitz, Henry, 139, 146, 147, 166, 168, 280, 295, 367
 Lipkin, David, 213, 226
 Littler, Derrick, 98
 Livingston, Stanley, 48
 Lockridge, R. W., 248, 305
 Lofgren, Edward, 306, 321-5, 367, 405
 Lofgren, Norman, 286
 Long, Earl A., 81, 100, 245
 Loomis, F. Wheeler, 58
 Lothian, Lord (Philip Kerr), 21
 Lum, James H., 254
- McCoy, Herbert, 26
 McDaniel, Boyce D., 52, 187-9, 194, 195, 333
 MacDougall, Duncan P., 166, 168, 170
 Machen, Arthur B., 367
 Mack, Julian, 68, 138, 153, 354, 372, 373, 381
 McKibben, Dorothy, 60, 100
 McKibben, Joseph L., 47, 76, 370
 McMillan, Edwin M., 20, 22, 88, 133, 219, 271-3, 405, 416
 gun program, 36, 112, 126, 128, 139, 238, 245, 248, 250, 255-7
 nuclear research before start of Los Alamos laboratory, 43, 54, 57
 setting up the laboratory, 59, 62, 64, 68, 82, 84, 87
 Magee, John, 115
 Magel, Ted, 223
 Malik, John, 393
 Manley, John H., 42, 43, 47, 50, 52, 54, 56-9, 62, 64, 68, 75, 76, 96, 184, 186, 192, 193, 197, 241, 242, 271, 336, 342, 359, 363, 399
 Mark, Carson, 98, 99
 Mark, Kathleen, 91
 Marley, William G., 98, 272, 280, 359
 Marshak, Robert M., 181, 182
 Marshak, Ruth, 100

Cambridge University Press

0521441323 - Critical Assembly: A Technical History of Los Alamos during the Oppenheimer Years, 1943-1945 - Lillian Hoddeson, Paul W. Henriksen, Roger A. Meade and Catherine Westfall

Index

[More information](#)*Name Index*

497

- Marshall, Donald G., 98, 128
 Marshall, George C., 30
 Marshall, James C., 30, 65
 Martin, Gordon, 359
 Martinez, Maria, 110
 Mastick, Donald, 68
 Maurer, W., 235
 Maxwell, Emmanuel, 417
 Meitner, Lise, 13, 14
 Messerly, George, 166
 Metropolis, Nicholas, 60, 61, 157–61, 204, 416
 Michelson, Albert, 7
 Millikan, Robert, 8, 9
 Mitchell, Dana, 48, 64, 66, 68, 93, 245
 Moon, Philip B., 18, 98, 156, 311, 351, 352, 356–8
 Moore, Thomas V., 26
 Moreland, Edward, 275
 Morgan, Elmo, 62
 Morrison, Philip, 332, 333, 340, 363, 368, 395
 Mueller, Donald, 139, 141, 276
 Murphree, Eger V., 26, 28, 30

 Nachtrieb, Mary, 99
 Neddermeyer, Seth H., 7, 55, 67, 69, 82, 86–90, 129–35, 137, 141, 143–6, 151, 155, 157, 172, 175, 245, 274–6, 411–3
 Nelson, Donald, 65
 Nelson, Eldred, 43, 44, 50, 157, 160, 179–81, 246, 307
 Nichols, Kenneth D., 30, 33, 218, 241, 263
 Nicodemus, David, 151
 Nier, Alfred O., 17
 Nimitz, Chester, 387
 Nobel, Alfred, 164, 169
 Noddack, Ida, 13
 Nolan, James, 107
 Norton, F. H., 286
 Novick, Aaron, 417

 Ogle, William, 276
 Oliphant, Mark L., 16, 18, 98
 Olmstead, Thomas, 117
 Olum, Paul, 158
 Oppenheimer, Frank, 325
 Oppenheimer, J. Robert
 delivery, 389, 397
 gun program, 81–4, 112, 117–22, 125, 249, 254–7, 259, 261–3
 implosion, 67, 87, 88, 129–37, 149–51, 155, 157, 159, 160, 162, 175, 270, 271, 275, 276, 291, 294, 300, 302, 305, 307–9, 312, 316–8, 323–5, 330, 412
 laboratory director 1, 3, 6, 56, 245–7, 398, 399, 401, 408
 Los Alamos life, 100, 103–5
 nuclear physics, 77, 78, 80, 185, 186, 191, 192, 195, 200, 346, 348
 plutonium and uranium, 207, 214, 216, 218, 221, 226, 227, 252, 338
 research before start of Los Alamos, 8, 25–8, 35, 45–62, 64, 65
 setting up laboratory, 40, 57–62, 65, 66, 68, 69, 75, 76, 91–8, 204
 spontaneous fission, 228, 231, 233–4, 237, 240–4, 407
 Trinity, 174, 310, 350, 351, 360, 364, 365, 367, 371, 375, 377, 414

 Palmer, T. O., 98
 Paneth, F., 122, 123
 Panofsky, Wolfgang, 405
 Parratt, Lyman, 141, 149–51, 154, 155, 275, 277, 278
 Parsons, William S., 87, 102, 131, 246–8
 bombings, 310, 359, 379, 380, 382–8, 390–3
 gun program, 84, 111–4, 117, 119, 125–8, 256, 257, 260, 266
 implosion, 88, 132–4, 137, 139, 141, 145, 146, 167, 169, 171, 173–6, 245, 275, 280, 300, 316, 323
 Patapoff, Morris, 139, 144, 145, 280
 Patterson, Robert P., 31
 Patton, Robert, 35
 Pegram, George B., 19, 20, 25
 Peierls, Rudolf E., 4, 17, 18, 22, 42, 52, 53, 98, 99, 156, 159–62, 168, 179, 246, 278, 295, 300, 307, 325, 331
 Penney, William J., 98, 344, 353
 Perlman, Morris, 35, 211
 Perrin, Francis, 17
 Pestre, Dominique, 404
 Peterson, 291
 Petrzhak, K. A., 229
 Placzek, George, 15, 17, 98, 99, 246, 399
 Plato, 172
 Poole, Michael J., 98, 168, 345
 Pose, H., 235
 Pregel, Boris, 120, 121, 122

Cambridge University Press

0521441323 - Critical Assembly: A Technical History of Los Alamos during the Oppenheimer Years, 1943-1945 - Lillian Hoddeson, Paul W. Henriksen, Roger A. Meade and Catherine Westfall

Index

[More information](#)

498

Name Index

- Prestwood, Rene, 61, 120, 123
 Pryce, Maurice, 53
 Purnell, William R., 31, 131

 Rabi, Isadore I., 27, 59, 133, 317, 378
 Ramsey, Norman F., 59, 95, 174, 248, 378, 380-4, 387, 388, 393
 Reddemann, H., 15
 Reines, Frederick, 359, 360, 393
 Reynolds, George T., 311, 344
 Richards, Hugh T., 49, 76, 186, 345
 Richman, Chaim, 158, 181
 Roberg, Jane, 157, 204
 Roberts, A. E., 331
 Rockefeller, John D., Sr., 8
 Roosevelt, Franklin D., 9, 12, 19, 23, 24, 29, 37, 38, 41, 389, 403
 Rose, Edwin L., 82, 83, 112, 113
 Rosenberg, Lyle, 62
 Rossi, Bruno B., 52, 148, 149, 151, 153, 155, 185, 190, 191, 198, 268-71, 275, 326, 343, 356, 376
 Rotblat, Joseph, 98, 347
 Rowland, Henry A., 7
 Roy, Max F., 170, 399
 Russell, John H., 165, 320

 Sachs, Alexander, 19
 Sachs, Robert, 360
 Sagane, Ryokichi, 394
 Sampson, Milo, 317
 Sands, Matthew, 188, 416
 Sayre, C. F., 276
 Schafer, William, 106
 Schaffer, W. F., 367
 Schiff, Leonard, 125, 266
 Schnettler, Frank, 285
 Schonfeld, Fred W., 285
 Schoonover, I. C., 264
 Schreiber, Raemer E., 47, 199-200, 333, 389, 390
 Schultz, Gus, 100
 Schweber, Sylvan, 404, 415
 Schwinger, Julian, 180
 Scrieffler, J. Robert, 417
 Seaborg, Glenn T., 22, 23, 27, 34, 35, 83, 95, 206, 207, 213-6, 221, 223, 224, 226-8, 230, 406
 Seely, Leslie, 137
 Segrè, Emilio, 1-3, 22, 23, 43, 48-51, 76, 95, 122, 151, 162, 185, 190-2, 195, 206, 228, 229, 231-5, 237-41, 244, 357, 375
 Seidel, Robert, 415
 Semple, David, 382
 Sengier, Edgar, 33
 Serber, Charlotte, 99
 Serber, Robert, 42-5, 54-6, 67-76, 82, 86, 87, 113, 119, 126, 128, 136, 148, 149, 158, 179, 182, 183, 246, 255, 336, 344, 345, 376, 395, 397
 Serduke, James, 113, 114
 Serin, Bernard, 417
 Seybolt, Alan U., 220, 224, 253, 264, 287
 Shane, D. A., 245
 Shapiro, Maurice M., 371, 384
 Sheard, Herold, 98
 Sherr, Rubby, 309, 317, 376
 Sherwin, Martin J., 389
 Skyrme, Tony H. R., 98
 Slater, John Clark, 25
 Slotin, Louis, 333, 341, 342, 367
 Smith, Alice Kimball, 100
 Smith, Cyril, 126, 127, 205-7, 209-13, 215, 217, 222, 223, 225, 263, 264, 281, 316, 318, 329, 330, 410
 Smith, Jack, 273
 Smith, Ralph Carlisle, 240, 244, 399
 Smyth, Henry, 222
 Snell, Arthur H., 48, 76
 Snyder, Thoma M., 197, 337
 Sommerfeld, Arnold, 162
 Sommervell, Brehon B., 30
 Spaatz, Carl, 393
 Spedding, Frank, 26, 31-3, 210-3
 Spence, Rod W., 150, 154, 326
 Sproul, Robert, 66
 Stalin, Joseph, 350, 364
 Staub, Hans, 148, 151, 153, 185, 269
 Stearns, Joyce, 215
 Stein, Paul, 317
 Stevens, W. A., 152, 176, 275, 310
 Stimson, Henry L., 30, 31, 378, 389
 Stokes, Helen, 106
 Strassmann, Fritz, 13
 Streib, John, 82, 87, 132, 134, 139, 141, 144, 145, 276
 Styer, Wilhelm, 30, 31
 Sutton, Roger, 375
 Sweeney, Charles, 394, 396
 Szilard, Leo, 14, 15, 19, 20, 26, 31, 49, 95, 389

 Tamarely, Melvin, 276
 Taschek, Richard, 189
 Taylor, Geoffrey I., 22, 53, 98, 142, 153, 161, 162, 307, 359
 Taylor, Hugh S., 28
 Teller, Edward, 4, 9, 19, 42-7, 54, 68, 76, 94, 95, 129-33, 151, 157-60.

Cambridge University Press

0521441323 - Critical Assembly: A Technical History of Los Alamos during the Oppenheimer Years, 1943-1945 - Lillian Hoddeson, Paul W. Henriksen, Roger A. Meade and Catherine Westfall

Index

[More information](#)*Name Index*

499

- 162, 174, 178–81, 203, 204, 246,
307, 346, 412
Teller, Paul, 180
Tenney, Gerold, 142, 299
Thomas, Charles A., 121–4, 133, 134,
159, 209, 215, 216, 220, 224, 241,
243, 254, 290, 309, 316
Thompson, L. T. E., 87, 112, 134
Thomson, George P., 15, 16, 18
Tibbets, Paul, 383, 388, 390–3
Titterton, Ernest W., 98, 99, 156,
277, 370
Tizard, Henry, 18, 21
Tolman, Richard R., 55, 56, 68, 75,
81–3, 85–7, 94, 95, 112, 131, 133,
233, 234, 276, 291, 312, 364
Truman, Harry S., 350, 364, 389, 393
Tuck, James L., 98, 137, 142, 155,
163, 166, 168, 278
Turner, Louis A., 20, 22
Tuve, Merve A., 19, 21
Tyler, Gerold, 107
- Ulam, Stanislaw, 204
Underhill, Robert M., 66
Urey, Harold, 19, 25, 26, 30
- van Halban, Hans, 14, 15, 21
Van Vesse, Alvin D., 365, 367
Van Vleck, John, 25, 42, 54
von Droste, Gottfried, 15
von Neumann, John, 4, 9, 129–34,
157, 159, 161, 163, 168, 174, 183,
184, 295, 371, 380, 412
- Wahl, Arthur C., 22, 27, 68, 79, 205,
206, 213, 221, 223, 224, 226, 229,
231, 244, 281, 287, 290–2, 328
Waldman, Bernard, 136, 351, 357,
359, 362, 375, 378, 391, 393, 397
Walker, Robert, 197
Warner, Edith, 330
Warner, Roger S., 367, 384, 386, 399
Watkins, P. H., 153
Watts, Richard J., 106
Weisskopf, Victor F., 142, 151, 158,
179, 246, 275, 332, 351, 353, 357,
371
Weissman, Samuel, 211, 213, 287
Werner, Louis, 35
Wheeler, John A., 16, 21, 22, 95, 229
Whitaker, Martin D., 121
White, Roger, 155
Wichers, Edward, 338
Wiegand, Clyde, 190, 229, 231, 234,
235, 238
Wieneke, J. R., 273
- Wigner, Eugene, 9, 19, 26, 54, 95
Williams, John H., 48, 59, 68, 76, 79,
134, 142, 184, 186, 189, 196, 198,
310, 336, 342
Williams, Robert W., 197, 367
Wilson, E. Bright, 134
Wilson, H. A., 48
Wilson, Robert R., 11, 59, 63, 68, 78,
84, 106
 early fission experiments, 80, 184,
 186, 189, 191, 194, 196, 197
 gun and implosion, 117, 147, 214,
 248, 257, 318
 R-Division, 79, 246, 336, 342, 343
 Trinity, 355, 356, 376
Wilson, Volney, 32
Wood, David S., 118
Woodward, William, 337
Workman, E. J., 66
- Zachariasen, William H., 215, 216,
221, 222, 224
Zinn, Walter, 32, 49, 291

Cambridge University Press

0521441323 - Critical Assembly: A Technical History of Los Alamos during the Oppenheimer Years, 1943-1945 - Lillian Hoddeson, Paul W. Henriksen, Roger A. Meade and Catherine Westfall

Index

[More information](#)

Subject Index

- Aberdeen Proving Ground, 131
 absorption cross section, 342
 accelerators, 64
 Cockcroft–Walton, 63, 64, 75, 184, 193, 336
 cyclotron, 48, 64, 65, 74, 78, 184, 187, 336
 Van de Graaff, 48, 47, 63, 64, 75, 186, 193, 336
 accidents, 340
 active material, *see* uranium, plutonium
 Administrative Board, 247
 Advisory Committee on Uranium, 19, 25
 became S-1 Section of OSRD, 25
 African Metal Corporation, 33
 Allis Chalmers Company, 275
 α particles
 (α, n) reaction with light element impurities, 74, 35, 74, 316
 capture-to-fission ratio, 192, 336
 measurements of, 192, 195
 pileups, 237
 American Brass Company, 209
 American physics community, 7–9
 American Smelting and Refining Company, 121, 122
 Anchor Ranch, 116, 166, 167, 277
 April conferences, 75–81
 arc neutron source, 47
 Archie device, 261
 Argonne Laboratory, 32, 415
 Army Corps of Engineers, 29, 30, 311
 Army–Navy E Award, 401
 assembly techniques, 74
 Atomic Energy Commission, 414, 415
 autocatalytic assembly, 55
 B-29, 379, 380, 384
 bomb bay, 139
 B. F. Goodrich Company, 115
 Bachmann process for RDX, 165
 Baker’s method (neutron delay), 80
 Ballistics Research Laboratory, 113
 Bandler National Monument, 109
 Bathub Row, 102
 Bell Telephone Laboratories, 37
 Berkeley cyclotrons
 60-inch cyclotron, 22, 34, 213, 230, 234
 184-inch cyclotron, 28
 Berkeley laboratory
 discovered neptunium and plutonium, 20, 22
 polonium separation, 120
 spontaneous fission, 229, 230
 Berkeley meeting 1942, on fast-neutron fission, 42–4
 Big House, 62, 103
 Birmingham, 17
 bismuth irradiation, 120, 122
 bismuth “Super Scrub” process, 124
 blast efficiency measurements, 358–61
 blast wave, *see* shock wave
 Bock’s Car, 395
 British-American cooperation, 29, 42, 53
 calculational methods, 52, 53
 information exchange, 21–3, 42, 52, 53
 British Mission, 98, 99
 British program, 16, 18, 21
 Brode’s philosophy of fuzing, 260
 Brookhaven National Laboratory, 415
 Brown University, 33
 Bruceton, *see* Explosives Research Laboratory
 Brush Beryllium Company, 33

Cambridge University Press

0521441323 - Critical Assembly: A Technical History of Los Alamos during the Oppenheimer Years, 1943-1945 - Lillian Hoddeson, Paul W. Henriksen, Roger A. Meade and Catherine Westfall

Index

[More information](#)

502

Subject Index

- Bureau of Mines, 115
- C Shop fire, 290
- California Institute of Technology, 118, 302, 306, 322
- California, University of, contract, 65, 66, 68
- Calutrons, 28, 38
- Canadian Radium and Uranium Corporation, 121
- Carnegie Institution, 19, 21, 41, 48, 50
- Carnegie Van de Graaff, 48, 50
- casting
 - explosives, 298
 - lenses, 320
 - uranium, 253, 264
- chain reaction, 14, 21
 - divergent, 21, 31
 - first, 31-3
 - lattice, 31, 32
 - prompt neutron, 347
 - role of Wigner in, 26
- Chicago
 - Bacher report of spontaneous fission, 239
 - Instrument Group, 105
 - meeting, September 1942, 54
 - Metallurgical Laboratory, 2, 31, 239
 - Pile No. 1, *see* CP-1
- Christy gadget, 270-1, 293, 307
- cloud chamber, *see* detectors
- Cockcroft-Walton, *see* accelerators
- code names, 95
 - 23, *see* uranium
 - 25, *see* uranium
 - 28, *see* uranium
 - 49, *see* plutonium
- coincidence method, 194
- collaboration between scientists and military, 59, 60
- colloquium, 94
- Columbia University, 14, 19, 24, 26, 37, 218
- computer, 416
- construction of buildings, 62-4, 100-4
- containment vessel, *see* Jumbo
- contaminated waste, 104
- contractors
 - M. M. Sundt, 62, 100, 103, 102
 - McKee, 102-4
 - Stone & Webster, 62
- Coordinating Council, 92, 247, 313, 347
- cosmic-ray induced fission in uranium, 235
- Cowpuncher Committee, 248, 313, 316, 330, 332
- CP-1 (Chicago Pile No. 1), 26
 - construction, 32, 33
 - control rods, 32
 - criticality as predicted, 33
- crash sets, 301
- crisis in August 1944, 206
- critical assemblies, 335-41
 - hydride assembly, 338
 - pseudo-spheres, 339, 340
 - sphere experiments, 337
 - subcritical metal assembly, 336
- critical mass, 21, 41, 71, 72, 77, 199, 340
 - calculation of by Frisch and Peierls, 17, 18
 - diffusion theory, 71, 77
 - finite tamped cylinders, 181
 - gun assembly, 180
 - many-velocity method, 181, 182
 - ²³⁹Pu solution, 340
 - tamped metal core, 182
 - ²³⁵U, 235, 17, 27
- crucibles, 207, 212, 282, 284, 286
 - cerium monosulfide, CeS, 287, 329
 - magnesium oxide, MgO, 252, 253, 287
- cyclotron, *see* accelerators
- Dahlgren Naval Proving Ground, 379, 380
- damage, 44, 72, 183, 343
 - effect of shock waves, 183
- deadline, *see* Los Alamos, completion date
- delayed neutrons, 47, 51, 78, 186
- delivery
 - bomb assembly kit, 387
 - bombing procedures, 388
 - Dahlgren Naval Proving Ground, 379, 380
 - decision to drop bomb, 389
 - drop tests, 255, 381, 384
 - Fat Man, 4, 332, 380, 381, 389, 390
 - Fat Man tail design, 382
 - 509th Army Air Forces group, 262, 265, 383, 387, 388, 394
 - fuzing, 259, 260, 384
 - Little Boy, 2, 261, 262, 266, 385, 392
 - Muroc Army Air Base, 380-2
 - Project A (Alberta), 313, 387
 - pumpkin missions, 388, 389
 - shipping to Tinian, 258, 386, 388

Cambridge University Press

0521441323 - Critical Assembly: A Technical History of Los Alamos during the Oppenheimer Years, 1943-1945 - Lillian Hoddeson, Paul W. Henriksen, Roger A. Meade and Catherine Westfall

Index

[More information](#)

Subject Index

503

- Tinian, 126, 258, 265, 386, 388–90
 Wendover Army Air Base, 323, 379, 383–6
- destination, *see* delivery, Tinian
- destructive power, 18, 27
- detectors
- boron trifluoride counter, 33
 - cloud chambers, 48, 274–6, 327
 - counterionization chambers, 47
 - fast-sweep oscilloscopes, 274
 - Geiger counters, 141
 - indium foils, 32
 - ionization chamber, 49, 51, 190, 234
 - long counter, 190, 198, 337
 - photographic plates, 49
 - Pluto counters, 106
- detonation wave, *see* shock wave
- detonator, 73, 169–73, 301–7
- Alvarez concept, 172
 - bridgewire, 169, 301, 302
 - committee, 305
 - development, 321–5
 - handlebar, 321–3
 - lead azide, 170, 303
 - manufacture, 302
 - number of detonation points, 147
 - reliability, ruggedness and safety, 301, 323
 - simultaneity, 171, 355
 - spark-gap, 170, 301, 303, 304, 323
 - spark-gap switch, 306
 - timing, 306
 - for Trinity, 324
 - X units, 173, 301, 390
- deuterium, 45
- deuteron reactions, 48, 229
- diaphragm box gauges, 360
- Division 8 of OSRD, 133
- dormitories, 103
- Dragon (drop) experiment, 346
- drop tests, *see* delivery
- Du Pont Corporation, 34, 38
- E-Division (Ordnance and Engineering), 246
- effective detonation velocity, 295
- efficiency, 27, 54, 73, 183, 345
- Bethe-Feynman method, 183
 - effect of tamper, 73
- Einstein letter, 19
- Eldorado Gold Mines, 33
- electric method, *see* implosion
- diagnostics, pin method
- Electro Metallurgical Company, 33, 37
- electron collection, 190
- electronics equipment, 188, 260, 416
- element 93, *see* neptunium
- element 94, *see* plutonium
- energy
- in blast wave, 358
 - release (yield), 54, 70, 75, 351, 356
- energy spectrum, 76, 196
- Enola Gay*, 390–2, 396
- ERL, *see* Explosives Research Laboratory
- excess velocity method, 359
- Expert Tool and Die Company, Detroit, Michigan, 257
- explosive lenses, 168, 280, 299, 300, 320
- experimental study of, 168, 277, 280, 295, 296
 - fast component, 299
 - making, 100, 294–306
 - slow component, 168, 298, 299
 - theory, 295
- explosives, 164–9
- Baratol, 293, 299, 320
 - Baronal, 299
 - Comp B, 293, 298, 299
 - Pentolite, 166, 299
 - PETN (pentaerythritol tetranitrate), 164
 - Primacord, 145, 170
 - PTX-2, 299
 - Research Department Explosive, RDX, 164, 165
 - Torpex, 279, 299
- Explosives Research Laboratory (ERL), Bruceton, Pennsylvania, 88, 115, 130–3, 165
- Project Q, 166
- Explosives (X) Division, 245
- extrapolated end-point method, 179
- F-Division, 204, 246
- Faculty Club at Columbia University, 44
- fast implosion, *see* implosion, fast (von Neumann)
- Fastax cameras, 354
- fast-neutron fission, 26, 27, 40–3, 47–52, 189; *also see* fission
- integral experiments, 76
 - 1942 meeting, Berkeley, 42–4
 - 1942 meeting, Chicago, 54
- Fat Man, 4, 332, 380, 381, 389
- assembly, 385
 - program on Tinian, 390
 - tail, 382
 - trap-door, 333
- Federation of Atomic Scientists, 417

Cambridge University Press

0521441323 - Critical Assembly: A Technical History of Los Alamos during the Oppenheimer Years, 1943-1945 - Lillian Hoddeson, Paul W. Henriksen, Roger A. Meade and Catherine Westfall

Index

[More information](#)

504

Subject Index

- Fermi (F) Division, 204, 246
 Fire Department, 107
 Firestone Tire and Rubber Company, 124
 fission
 cross section of natural uranium, 21
 cross section of ^{235}U , 197, 198
 cross sections, 31, 48, 50, 51, 70, 76, 342
 cross sections for ^{239}Pu , 51
 differential, 76
 discovery, 13, 14
 experiments, 48, 76–81
 fragments in soil, 358
 integral, 76, 187
 product chemistry, 26
 reaction speed, (α), 351, 355, 356
 reactors, graphite for, 34
 spectrum, 51, 345
 studies in Berkeley by Segrè team, 229
 theory, 16, 22
 threshold of uranium-238, 50
 fission weapon
 critical mass calculations, 17, 18, 200
 efficiency calculations, 131, 183, 358–61
 yield, 54, 70, 75, 266, 351, 356, 393
 fizzle, *see* predetonation
 Frijoles Canyon, 109
 Frijoles Lodge, 103
 Fuller Lodge, 62
 funding for research and development, 414
 fusion bomb, *see* Super
 fuze for detonating bomb, 259, 384

 G-Engineers, 332, 333
 Gadget (G) Division, 245
 γ -ray detection, 357
 γ -ray source, 148
 General Electric Company, 33, 253
 geophone, 353
 George Washington University, 14
 German bomb project, fears of, 222
 Governing Board, 103, 247
Great Artiste, 393
 Ground Zero, 361
 gun program, 115, 128, 250
 3-inch gun, 117
 20-mm gun, 118, 254
 20-mm laboratory, 118, 119
 augmented gun, 115, 258
 ballistic shape, 259
 breach plug, 262
 closed bomb, 115
 combat unit size, 126
 deadline (1 July 1945), 255
 dimensions, 380
 double gun, 113
 emplacement, 116
 external ballistics, 83
 firing circuits, 301–3
 firing range, 116
 fuzing system, 260
 gadget, 2, 81–6, 111–27
 ignition system tests, 115
 interior ballistics, 83, 85, 111–6
 loading charts, 115
 model experiment, 343
 muzzle velocity, 115
 ordnance problems, 82–6
 powder, 113, 114
 pressure, 112, 115, 359
 program termination, 243, 250
 projectile assembly, 126
 propellant testing, 115
 recruiting, 84
 shooting, 74
 steering committee, 117
 targets, 17, 118, 126
 tellurium process, 124
 terminal ballistics, 83
 Thin Man, 2, 114, 380, 381
 yaw card, 116

 health and safety, 104–6, 340
 heap-of-disks experiment, 278
 heavy water, 20, 25
 height of explosion, 183, 184, 344, 374
 Herb's high-voltage laboratory, 64
 Hercules Powder Company, 130, 171, 173, 304
 Hiroshima mission, 258, 390–4
 Hispano bores, 113
 Holston Ordnance Works of Tennessee Eastman, 165, 299
 hospital, 107
 hydride, uranium
 critical assemblies, 203, 338
 gun, 181
 integral experiments, 217
 hydrogen bomb, *see* Super

 IBM, *see* International Business Machines
 ignition of nitrogen in the atmosphere, 45, 346
 ignition temperature of deuterium–tritium mixtures, 204

Cambridge University Press

0521441323 - Critical Assembly: A Technical History of Los Alamos during the Oppenheimer Years, 1943-1945 - Lillian Hoddeson, Paul W. Henriksen, Roger A. Meade and Catherine Westfall

Index

[More information](#)*Subject Index*

505

- Illinois, University of, 42, 64, 75, 199, 274, 275
- Imperial Chemical Industries, 33, 304
- implosion, 3, 55, 56, 75, 88, 382
- asymmetries, 147, 169, 293
 - back-burner effort, 129
 - bomb dimensions, 380
 - collapse velocity, 140
 - design freeze, 28 Feb. 1945, 311
 - efficiency, 131
 - equation of state for uranium and plutonium, 159
 - fast (von Neumann), 158
 - as first priority, 242
 - freezing design, 311
 - jets, 140, 141, 145, 278, 279, 317
 - Metropolis and Feynman calculations, 160
 - nonlens gadget, 300
 - numerical integration of hydrodynamics of implosion, 159-61
 - organization, 132-6, 138, 175
 - in Serber lectures, 86
 - spallation, 140, 278
 - suggestion by Neddermeyer, 87-90, 133
 - suggestion by Tolman and Serber, 55
 - Teller group, 157
 - tuballoy compression, 326-7
- implosion diagnostics
- betatron method, 136, 154, 155, 274-7, 327
 - counter X-ray method, 141, 277
 - explosive flash method, 143-5
 - flash photography, 138, 143, 279, 280, 325
 - flash X-ray method, 140-2, 277
 - magnetic method, 155, 156, 272-4, 277, 327
 - magnetic pin-loop method, 274
 - pin method, 156, 271, 272, 326
 - RaLa method, 136, 148-54, 268-71, 326
 - rotating drum camera, 143-5, 280
 - rotating mirror camera, 280, 306
 - rotating prism camera, 138
 - terminal observations, 130, 146-8, 280, 281, 325
 - X-ray study, 138, 139, 277-9, 299
- Indianapolis*, 265, 389
- initiator, 308-11, 316-9
- advisory committee on implosion initiators, 309
 - for Christy gadget, 293, 308
 - design, 125, 126
 - fabrication, 318
 - Fermi's mistrust of, 317
 - for gun, 119-26, 254, 264
 - radium-beryllium initiators, 119
 - theory, 331
 - Urchin, 317, 318
- Initiator Advisory Board, 313, 318
- Initiator Committee, 125, 247
- interaction between theory and experiment, 408
- interlaboratory meeting, 215
- Intermediate Scheduling Conference, 247, 313
- International Business Machines (IBM), 159-61, 307, 331, 416
- IBM machines versus calculating women, 160
- "Introvert", 86
- Iowa State University, 26, 31
- isotope separation, uranium, 16, 21, 24, 25, 28, 37
- electromagnetic method, 28, 37, 38, 218, 251, 263, 306
 - gaseous diffusion, 21, 24, 28, 37, 218, 251, 263
 - German program, 16
 - thermal diffusion, 16, 18, 38, 218, 251, 263
- Jemez Mountains, 109
- jets, *see* implosion
- jolt and jumble tests, 323
- Jornada del Muerto, 163, 310, 350
- Jumbo, 174, 310, 365-7
- Kellex, 37, 218
- Kellogg Company, 24, 28
- Kingman, 304, 383
- Kokura, 395
- Lancaster, 379
- lanthanum, *see* RaLa method
- lenses, *see* explosive lenses
- Lewis Committee, first (Nov.-Dec. 1942), 36-8, 91, 102
- Lewis Committee, second (April-May 1943), 69, 207
- Linde Air Product Company, 37
- Little Boy, 2, 392
- assembly, 385
 - readying for combat, 262
 - reliability, 261
 - yield, Shiff calculation, 266
- long counter, 190, 198, 337
- long tank, 78, 186
- Los Alamos, 412, 415
- access to laboratory, 96

Cambridge University Press

0521441323 - Critical Assembly: A Technical History of Los Alamos during the Oppenheimer Years, 1943-1945 - Lillian Hoddeson, Paul W. Henriksen, Roger A. Meade and Catherine Westfall

Index

[More information](#)

506

Subject Index

- arrival, Santa Fe office, 60–2
- authorization of bomb program, 12, 23
- completion date, 5, 255
- contract with University of California, 65–8
- expansion of laboratory, 93
- experimental program, 75
- formal beginning of Project Y, 41, 66
- housing shortage, 92, 103
- impact on science, 416
- objective of project, 69
- organization, 56–66, 91–3
- Primer, *see* Los Alamos, Serber indoctrination course
- procurement, 65, 68
- Ranch School, 1, 62, 101, 102
- recruiting, 58–60, 92, 93
- reorganization of laboratory, summer 1944, 245
- Serber indoctrination course, 67, 69–75
- shop facilities, 100
- town, 101
- McDonald Ranch House, 311
- Mallinckrodt Chemical, 31, 33, 104
- Manhattan Engineer District (MED), *see* Manhattan Project
- Manhattan Project, 1, 30, 406, 415
- Marchant calculating machines, 160
- Mare Island Navy Yard, 386
- Marianas, 386
- MAUD Committee, 18–22, 27
- Metal Hydrides, 31, 33
- Metallurgical Laboratory (Met Lab), 26
- Metallurgical Laboratory pile, 192
- Military Policy Committee, 31, 38
- MIT Radiation Laboratory, 415
- Mitsubishi Steel and Arms Works, 396
- modulated neutron source, 47
- Monsanto Chemical Company, 121–5, 209, 309, 316, 338
- movie cameras, 354
- multigroup method, 179
- Murphree's Planning Board, 28, 30
- Nagasaki mission, 394–7
- National Academy of Sciences (NAS), 131, 133
- National Bureau of Standards, 82
- National Carbon Company, 34, 37
- National Defense Research Committee, 25
- National Research Council, 8
- National Science Foundation, 414
- Naval Gun Factory, Washington, D.C., 257
- Naval Ordnance Factory, 127, 256
- Naval Ordnance Plant, Centerline, Michigan, 257
- Naval Ordnance Test Station at Inyokern, 384
- Navy Bureau of Ordnance, 131
- neptunium, 20
- neutron(s)
 - from α collisions with impurities, 44
 - background, 74
 - capture cross section, 16, 192, 195
 - D–D, 50
 - delayed emission, 76, 78, 80
 - diffusion, 53, 179, 183, 344
 - emitted per fission, ν , 14, 77–80, 186, 235
 - expansion of distribution in spherical harmonics (Marshak), 181, 182
 - from lithium bombardment, 50
 - lost through uranium surface, 70
 - measurement, 357
 - multiplication, 339–45
 - multiplication in uranium and plutonium assemblies, 336
 - neutrons per fission for Pu vs U, 78
 - number, (ν), 15, 49, 192, 195, 197, 342
 - population growth rate. *see* α particles
 - scattering experiments, 192
 - slow neutron fission spectrum, 51
- Norden Laboratories, 260
- nose counts, *see* health and safety
- O-Division, 246
- Oak Ridge, 2, 415; *also see* piles, Clinton
- Office of Emergency Management, 24
- Office of Naval Research, 414
- Office of Scientific Research and Development (OSRD), 24
- Omega Site, 201, 330
- Ordnance and Engineering (E) Division, 111
- Otsego Lake, 45
- P-Division, 246
- Pajarito Canyon, 234, 238, 273, 327
- partnership between scientists and military, 59, 60, 91, 92
- photodisintegration, 48

- piezoelectric gauges, 362
- piles
- Chicago Pile No. 1, 26, 32, 33
 - Clinton, 34, 36, 38, 148, 216, 220
 - Columbia, 14, 19, 24, 26, 37, 218
 - experimental, 38
 - exponential, 31
 - graphite, 31, 32, 34
 - graphite-moderated, 16, 19, 48
 - Hanford, 2, 34, 38, 290, 291, 312, 327, 330, 415
 - Metallurgical Laboratory, 192
 - Water Boiler, 76, 182, 199–203, 336
- Planning Board, 68, 69, 92
- plutonium
- α phase, 284, 285
 - β phase, 285
 - γ phase, 285
 - δ phase, 285, 329, 340
 - 160-g run, 290
 - A process (purification), 226, 281, 228
 - allotropic forms, 224, 225
 - B process (plutonium purification), 328
 - centrifuge method, 29, 282
 - chemistry, 213
 - Chicago metal measurements, 207
 - contamination, 105
 - critical mass, 339
 - cyclotron-made plutonium, 2, 3
 - density yield of bomb, 215, 221, 393
 - discovery, 20–2
 - dry chemistry, 281
 - electrolytic method, 282
 - ether extraction process, 252
 - fabrication, 282, 284, 327
 - fission cross-section measurements, 196
 - fluorides, 222
 - hydrofluorination, 328
 - light-element impurities, 36, 226
 - melting point, 127, 225
 - metal reduction, 282, 283
 - metallurgy, 207, 209, 213, 218, 281–92
 - ^{239}Pu – fissionable plutonium, 2, 22
 - ^{240}Pu , 231, 240–4; also *see* spontaneous fission
 - production, 2, 33–5, 71, 213
 - production, investment in, 3
 - purification, 2, 34, 37, 207, 218, 223, 226, 243, 281, 292, 327
 - radiation, 105
 - reactor, 2, 33
 - recovery, 287, 288
 - remelting, 329
 - separation, 26, 35
 - wet chemistry, 223, 281
 - wet plutonium purification, 327
 - polonium, 119–25, 253, 309, 316
 - polonium–beryllium initiators, 119
 - polonium–beryllium sources, 120, 121
 - Post Recreation Committee, 109
 - postwar reorganization, 399, 400
 - Potsdam, 350, 364
 - predetonation, 2, 44, 54, 55, 65, 73, 83, 116, 231
 - Princeton University, 37
 - priority ratings, 65
 - problem solving approaches
 - committees, 7
 - Edison approach, 9, 88, 405, 410, 411
 - extrapolation, 408
 - interaction between theory and experiment, 308, 408
 - iteration, 10, 215, 403, 410, 413
 - Lawrence research approach, 1, 4, 405, 415
 - Los Alamos approach, 4, 5, 405
 - multidisciplinary research, 151, 407
 - multiple lines of inquiry (overlapping approaches), 10, 137, 267, 403
 - numerical analysis, 10, 408, 410
 - overkill, redundancy, risk avoidance, 5, 403, 413
 - perturbation theory, 180
 - pragmatic approach, 19, 404, 405
 - shotgun approach, 9, 405, 410, 413
 - small-scale model study, 10, 137, 403–5, 410, 411, 413
 - trial and error, 267, 294, 303, 320, 403 - Project A, *see* delivery
 - Project Q, *see* Explosives Research Laboratory (ERL)
 - Project Y, *see* Los Alamos
 - Purdue University, 41, 47, 52, 59
 - PX, 109
- R-Division, 246, 313
- racetrack, *see* isotope separation, gaseous diffusion
- radiation, 26, 104
- radioactive contamination, 150
- radioactivity, artificial, 13
- RaLa method, 136, 148–54, 268–71, 326
- mobile tank laboratory, 269

Cambridge University Press

0521441323 - Critical Assembly: A Technical History of Los Alamos during the Oppenheimer Years, 1943-1945 - Lillian Hoddeson, Paul W. Henriksen, Roger A. Meade and Catherine Westfall
Index[More information](#)

508

Subject Index

- lanthanum separation, 152, 153, 326
 radiation levels, 150
 radiolanthanum, 148–50, 268
 shots with electric detonators and solid core, 271
 Ranch School, *see* Los Alamos
 Raytheon Company, 304, 390
 mechanical switch, 306
 Model II units, 305, 323, 324
 reactivity (or reproduction factor) k , 31
 refractories, *see* crucibles
 Rock Island Arsenal, 275
 Rocket devices, 114
 rotating drum spectrograph, 355
- S-1 Executive Committee, 30, 35, 38
 S-1 Section of OSRD, 25
 S-Site, *see* Sawmill Site
 sabots, 84
 safety
 gates, 304
 of ordinary uranium, 71
 precautions, 288, 348
 tests for shipping active material, 258
- Salton Sea, 384
 San Ildefonso, 110
 sand butt, 116
 Sandia Canyon firing site for initiator, 309
 Sawmill (or S-) Site, 100, 167
 school, 108
 Science Advisory Board, 9
 security, 93–6
 ban on publishing, 20
 censorship, 96
 information exchange restriction, 29
- SED, Special Engineer Detachment, 97, 98
 shaped charges, 131
 shock wave, 53, 72, 131, 279, 295
 short tank, 186
 Silverplate, 387
 South Mesa, 305, 322
 Special Engineer Detachment, *see* SED
 spontaneous fission, 1–4, 74, 196, 226, 228–43
 Joliot effect, 233, 234
 rate of ^{240}Pu , 244
 Sprague Company, 306
 Stagg Field, 32
 strike plane, 263
- Super, 44–7, 76, 81, 203, 204, 345, 346
 switches
 barometric, 260
 clock, 260
 electronic spark gap, 302
 explosive, 301, 304
 inertial impact, 262
 informer, 261, 352
 mechanical, 301
 multiple, 304
 spark-gap, 306
- T-Division, 77, 179, 246
 tail fin folding, 381
 tamper, 45, 47, 72, 76, 336
 tamper scattering experiments, 194
 target-projectile-initiator development, 111
 Taylor instability, 161
 Technical and Administrative Board, 313
 Technical Board, 247
 Technical and Scheduling Conference, 248, 255, 338
 thermonuclear weapon, *see* Super
 Thin Man, 2, 114, 380, 381
 Thomas–Fermi approximation, 159
 time-of-flight method, 48, 187, 194
 Tinian, *see* delivery
 Tizard Mission, 21
 Town Council, 106, 107
 Trinitite, 374
 Trinity, 311, 312, 324, 330, 350–77
 100-ton test, 360–2
 Alamogordo, 310
 ball of fire, 354
 blast, estimates of power, 358–61, 371
 decision to test implosion bomb, 174
 earth motion, 353
 essential, desirable, and unnecessary experiments, 351
 Esterline–Angus chart recorder, 239
 fallout, 373
 neutron population growth rate, 326, 351, 355, 356, 376
 neutrons released, 357
 photography, 354, 372
 pit team, 333
 radiation, 373
 weather, 362–5
 tritium, 45, 204, 416
 Two-Mile Mesa, 305

Cambridge University Press

0521441323 - Critical Assembly: A Technical History of Los Alamos during the Oppenheimer Years, 1943-1945 - Lillian Hoddeson, Paul W. Henriksen, Roger A. Meade and Catherine Westfall

Index

[More information](#)*Subject Index*

509

- Union Carbide Corporation, 33
- uranium
- barrier (for gaseous diffusion), 24, 28, 218
 - Belgian uranium, 33
 - bomb reduction, 251, 33
 - cross-section measurements, 186, 187
 - fabrication of metal, 264
 - feed, 263
 - gun, 4, 115
 - hydride, 181, 206, 210, 219
 - hydride cubes, 217, 338
 - hydride production, large-scale, 217
 - separation, *see* isotope separation
 - metal production, 219
 - metallurgy, 209–13
 - procurement, 31, 211, 212
 - production schedule, 263
 - recovery, 220, 217, 252
 - Spedding's uranium plant, 33
 - stationary bomb efforts, 212, 217, 219, 282
 - tuballoy, 229
 - ^{235}U cross-section measurements, 149, 194, 198
 - ^{235}U fabrication, 253, 265, 266
 - ^{235}U fission spectrum, 49
 - ^{235}U -fissionable uranium, 2
 - ^{235}U metal reduction, 252
 - ^{235}U production plants, 26
 - ^{235}U separation plants, 39
 - weapon, feasibility, 22
- Urchin, *see* initiator
- velocity aberrations, 280
- velocity separator, 81
- Vemork hydroelectric station, 20
- W-47, *see* Wendover Army Air Base
- Wabash Ordnance Plant, 165
- Washington University cyclotron in St. Louis, 34
- Christy calculation of critical mass, 200
 - critical mass of uranium sulfate solution, 202
 - high-power (Hypo), 203, 348
 - low-power, 199
- Weapons Committee, 247, 313
- Wendover Army Air Base, 323, 379, 383–6
- Westinghouse Lamp Works, 31, 33
- Westinghouse X-ray apparatus, 142
- Woolwich process for RDX, 165
- women's contribution, 99, 100
- X units, *see* detonator
- xenon poisoning, 291
- X-ray powder crystallography, 215, 216