

Index

- Accidental war, 382
Adenauer, Konrad, 31
Administrative Council, proposed by USSR, 330
Administrator (Control of Organization), 302; manner of appointment, 322, 326; privileges and immunities of, 313-14; replacement by "troika," 272-73, 276; two to five deputy administrators, 324-27
Afghanistan, 419
African states, 22, 268, 284, 419
Afro-Asian Solidarity Conference, 34
Agreement for Cooperation, US-UK, 1958, amended in 1959, 37
Ahmed, M. Samir, 359n
Air Force Technical Applications Center, 178
Akalovsky, Alexander, 452n
Alamogordo, New Mexico, 3
Albania, 419, 465
Algeria, French underground nuclear explosion in, 384
Allen, George V., 86
Alpert, J. L., 186n
American Embassy in Moscow, 98
American Friends Service Committee, 25
American Unitarian Association, 25
Anderson, Clinton P., 35, 243-45, 251
Antarctica Treaty, 211
Antimissile weapons, 146, 360
ANZUS, 103
Apt, Clark C., 334n
Argentina, 418
Argus experiments, 192
Arms control, link to world order, 7-9, 493
Arms Control and Disarmament Agency, 388, 445, 476
Arms limitation, in agreed area of Europe, 167
Arms race, 340-41
Artificial earth and solar satellites, 190-92
Artsimovitch, L. A., 425n
Asian states, 268, 419
Atmospheric tests, opposition to resumption of, 381-82; plans for announced by Kennedy (Nov. 2, 1961), 344; Soviet plans for new series, 370
Atomic Energy Act of 1954, amended (July 2, 1958), 36, 175; amendment considered, 30-31, 265, 271
Atomic Energy Commission, US (AEC), 29, 35, 43-45, 70, 88n, 91-92, 172, 178-79, 377-78, 381; approval of atmospheric tests with limitations, 345-48; Chairman of, 85-86; limitation on test ban recommended, 157-58; position on proposed treaty and Control Organization, 327; scientific panel, 45

- Australia, 22, 418, 421
 Austria, 105, 206-7, 268, 419
- Bacher, Robert F., vii, 33n, 54-55, 114
 Background radiation, 191
 Backscatter radar, 192, 194, 271
 Baker, Vincent, 114n
 Baker, William O., 33n, 277n
 Ball, George, 453
 Baraz, Robert G., 114n
 Barrington, James, 360, 371, 375, 413
 Bartlett, Len., 448n
 Bechhoefer, Bernhard G., viii, 6n, 15n, 17n, 24, 111n, 289n, 357n
 Belgium, 421
 Belgrade meeting, nonaligned states, 278, 283
 Benedict, Stephen, 114n
 Benioff, Hugo, 151n
 Bennett, Wallace F., 463n
 Berkner, Lloyd V., 33n, 151
 Berkner Panel (on Seismic Improvement), 151, 154, 159-62, 164, 168, 178, 184, 317-18; members, 151n; summary of conclusions, 173
 Berlin, 277, 280, 340
 Bermuda meetings (Kennedy-Macmillan), 344-45
 Bethe, Hans A., vii, 33n, 45, 47-49, 54, 55n, 56, 63, 73, 114n, 151n, 153, 156, 161, 164, 212n, 217, 219, 242-43, 245, 250-53, 269n, 277n, 460, 483; calculations, 153; lecture at Ithaca, 342
 Bethe Panel, 46-49, 58-59, 61-62, 93; majority view, 47; members of, 47; presentation of conclusions to NSC, 63; questions to study, 47
 Bethe-Teller, debate, 251-52
 Betts, Austin W., 269n
 Bikini Atoll, 19, 343
 Bipolarity, decline of, 500
 "Black boxes," 424, 437, 441;
 Soviet and U.S. position on, 428-29, 434; *see also* Seismic recording stations
- Blackett, P. M. S., 499, 500n
 Blanca shot, 148-49, 155, 220, 227
 Boyer, Carlton M., 254n
 Bradbury, Norris E., 277n, 343n, 460
 Bravo shot, 342; US largest, 348
 Brazil, 380, 418, 421, 427; delegate to ENDC, 394-95; ENDC, 357-58
 Brekhovski, L., 163-65
 Brennan, Donald G., 33n
 Brent, Darcey, 114n
 Brewster, Daniel B., 448n
 Bronk, Detlev W., 33n
 Brown, Allen, 346n
 Brown, Harold, 47n, 55n, 73-74, 76, 114n, 212n, 270n, 460
 Brown, Harrison, 44, 62
 Budgetary matters, veto on annual budget accepted by West, 328
 Bulganin, Nikolai A., 25, 39, 40-42
 Bulgaria, 419; Ten-Nation D.C. (ENDC), 357
 Bundy, McGeorge, 86, 345
 Burdick, Quentin N. 448n
 Burke, Arleigh Albert, 461
 Burma, 419, 421, 427; ENDC, 357-58
 Byerly, Perry, 55n
 Byrd, H.F., 463n
 Byrd, R.C., 463n, 464
- Camp David talks, 169, 171, 204-5, 246
 Canada, 52, 359n, 418, 420-21, 427; opposition to nuclear tests, 366; Ten-Nation Disarmament Commission, 357
 Carey, James B., 158
 Case, Clifford P., 245, 448n
 Cash, Frank E., 452n
 Central Committee (USSR), 31
 Central Europe, plan for disengagement in, 176; ground forces, 341
 Central Intelligence Agency, 172, 381; director of, 85-86; move for more openness into Soviet society, 88

- Ceylon, 419
 Chemical explosions, 247, 264
 China, 51, 65, 125, 418, 421
 China, Nationalist, 95, 458
 Chinese Communists, 95, 274, 328-29, 406, 433, 465; *see also* Communist China; People's Republic of China
 Chinese-Indian border fighting, 424
 Chou En-lai, 251
 Church, Frank, 158, 448
 Christmas Island, 344-45
 Citizens Committee for a Nuclear Test Ban, 463
 Civilian control of policy in U.S., 11
 Clandestine testing, 61, 64, 66, 73, 120n, 152, 172, 189, 192, 226-27, 234, 277, 333-34, 388, 440; in outer space, 194; *see also* Decoupling
 Clark, Joseph S., 448
 "Clean" nuclear weapons, 27, 30, 35, 38-39
 Cleveland, Harlan, 285
 Cockroft, Sir John, 54
 Coiner, Richard, 47n
 Cold War, 112, 265
 Cole, Sterling, 26
 Colgate, Sterling, 186n
 College Station, Fairbanks, Alaska, 59
 Collett, Charles E., 114n
 Colombia, 418
 Columbia University's Institute of War and Peace Studies, 44
 Committee of Deputies; *see* Committee of Principals
 Committee of Principals, 85-87, 115-16, 169, 180, 182, 203, 213, 389; Chairman of Joint Chiefs of Staff as member, 451; committee of deputies consider draft treaties (1962), 389; membership changes, 327
 Communication, network, 70; scientists with Dulles, 63
 Communist China, accession to Treaty, 328-29; acquisition of nuclear capability, 200; agreement with USSR on new technology (1957), 95-96; USSR discontinues nuclear assistance, 200; *see also* China; Chinese Communists; People's Republic of China
 Comprehensive Nuclear Test Ban Treaty, 127, 171, 231, 237, 415, 444, 448, 451, 466; agreed draft articles, 130-32, 134-35, 212, 301-3, 310-17; Preamble, 308-9; USSR draft (Oct. 31, 1958), 122-24, 454; USSR draft (Nov. 28, 1961), 286, 454-55; Western draft (April 18, 1961), 286, 326-29, 386; Western draft (Aug. 27, 1962), 389, 397-409, 455; *see also* Control Organization
 Conference of Experts to Study Methods of Detecting Violations of a Possible Agreement on the Suspension of Nuclear Tests, Geneva, July 1-Aug. 21, 1958, 14, 34-81, 93, 109-10, 124-26, 136, 162-63, 182-91, 198, 212, 252-53, 260-61, 352, 354-55, 364; agenda, 68; composition of, 52; concern at being outside the UN, 52; considered as fixed document by Soviet scientists, 188; controversy on collection of radioactive debris and overflights, 70-73; detection of high altitude explosions, 73; disagreement on recording seismic signals, 72-73; Eastern panel members, 56-58; elaboration of control system, 74-78; instructions to U.S. delegation, 64-66; preparation for, 54-67; public communique, 79-80; public opinion regarding, 65; report, 79; technical preparations of U.S. delegation, 58-61; technological assumptions invalid, 149-50, 152, 154; UK component, 56, 66-67; USSR does not accept report, 286; Western panel, 54-66
 Conference of Experts to Study

- Conference of Experts (*continued*)
 Helpful Measures for Preventing Surprise Attack, Geneva, Nov. 10-Dec. 18, 1958; *see* Surprise attack, Conference
- Conference of Heads of State and Government of Nonaligned Countries, recommendation for representation in disarmament talks, 357
- Conference on the Discontinuance of Nuclear Weapon Tests, *see* Geneva Conference on the Discontinuance of Nuclear Weapon Tests, Comprehensive Nuclear Test Ban Treaty; Moscow Treaty
- Congo crisis, 268
- Congress, U.S., role in consensus-building, 475-77; to circumvent consent of, by word "agree-ment," 125; hearings, 475-76; *see also* Joint Committee on Atomic Energy, Senate, Committee on Armed Services, Senate, Committee on Foreign Relations
- Consensus-building, 10
- Continued testing (1962), 422-23 (US and USSR)
- Control Commission, 183, 193, 280; composition of, 319-20, 327-28, 331; privileges and immunities of representatives, 313; right to dismiss Administrator, 331; to conduct research, 235; voting procedures (veto), 317, 320-23; voting procedures not determined, 135; *see also* Control Organization
- Control of the press in Communist countries, 118
- Control Organization, 121, 142-44, 248; Annex I (Detection and Identification System) 165, 329; Annex II, adopted, 310-17 (*see also* Privileges and Immunities); Annex III, adopted, 212, 303-10 (*see also* Preparatory Commission); Administrative Council instead of Administrator, 330; administrative staff, 141; administrator, 309, 313-18; agreements on duration of treaty, withdrawal rights, periodic review of control system, 301; budgetary matters, 328; chief executive officer, 133-34; Commission, 133-35 (*see also* Control Commission); compromises and controversies 1959-60, 304-26; conference of parties, 133-34, 305-6; controversies concerning, 288-335; Detection and Identification System, 133-34; differences between concepts, 298-301; disagreements on staffing of control posts, 317-19; on composition of Control Commission, 302, 317, 319-20, on voting in Control Commission, 317, 320-23, and on role and structure of executive authority, 317, 323-26; East-West compromises, 301-3; financial arrangements (like those of UN), 312; "foreign controllers," international staff, 141; formulation by Ormsby-Gore, 134; headquarters, 309; influence of basic assumptions about societies affected, 289; influence of experience in UN, 289; legal capacity of, 307; legal personality and capacity of, 313; need for clarification of, 181-83; not part of UN, 307; officers and functions, 309; opposing concepts of, 292-303; Preparatory Commission, Annex III, 212, 309-10; privileges and immunities, Annex II, 310-16; privileges and immunities of personnel, 307 (*see also* Privileges and Immunities); provision for settlement of disputes absent, 313; right to exchange currency, 312; Soviet concept of manning control posts, veto, headquarters, violation, 133, 295-301; Soviet proposals on unresolved issues, 212; Soviet

- Control Organization (*continued*)
 view, 242-43; U.K., greater sense of independence on matters of, 290; value of negotiations on, 332-35; Western concept of, 133-35, 292-95; *see also* Administrative Council, Administrator, Control Commission
- Control posts, 72, 149, 236, 280, 302; staffing, controversy over "third-third," 319, 327; detection of high altitude nuclear explosions, 190; international staff, Western concept, 141; land-based, on ships, 77-78; national, internationally coordinated and standardized for comprehensive ban, 388; number in USSR, US, and UK, 252, 426; required, estimate of Brown and Latter, 76; required in USSR, 62; Soviet agreement to some foreign controllers, 318; Soviet position on staffing of, 317-19; Soviet suggestion for location of, 239; timetable for establishment of, 329; US confusion over necessity of in USSR, 389-90; Western position on staffing of, 317-19
- Control system, 125, 157, 242; capability of, in US-UK draft comprehensive test ban treaty, 408-9; cost of, 191; detection and identification, 249, 369; East-West agreement on aspects of, 434; elaborated by Conference of Experts, 74-78; identification of violation, 193-94; improvement of, 225; information on missile launchings, 193-94; obligation of the parties, 306-7; treaty articles adopted, 306-7; *See also* Control Organization, Control posts
- Conventional forces, 38, 110; Soviet superiority in, 16
- Coolidge, Charles A., 202
- Coolidge Committee, 232
- Council of the Federation of American Scientists, 25, 34
- Cousins, Norman, 158, 426, 433n, 449
- Couve de Murville, Maurice, 89
- Cowboy series, 242
- Cuba, 206, 419-21, 462, 465; crisis, 423-24; 446; vote in UN, 284
- Curtis, Carl T., 463n, 464
- Cutler, Robert, 86
- Cut-off on nuclear weapons production, 41, 91-92; policy of USSR, 43
- Czechoslovakia, 40, 52, 57, 419; Ten-Nation Disarmament Commission, ENDC, 357
- Dallin, Alexander, 300n, 335n, 496n
- Dantas, F. C. de San Thiago, 365-66
- Davey Crocket, 147
- Davis, Saville R., 33n
- Dean, Arthur H., vii, 270-72, 275, 277, 279-80, 327, 330, 362, 369-70, 376, 386, 389-91, 393-94, 397, 403-4, 411-12, 426, 432, 438-39, 460, 474
- Dean, conversations with Kuznetsov, 426, 431-32, 438-39
- Decoupling, 151-54, 161, 179, 252-53, 333, 445; theory of, 216, 218-19, 223-24, 242, 256, 352; *see also* Clandestine testing
- Defense Research Organization in Stockholm, 360
- Denmark, 418, 421
- Denuclearization of Germany, 112
- Department of Defense (US), 45, 71, 92, 172, 178-79, 377-78, 381; favoring resumption of testing in atmosphere, 345
- Department of State (US), 45, 50, 92-93, 172, 381, 476
- Department of State, Office of the Special Assistant for Disarmament and Atomic Energy Affairs, 93
- Department of State, opposition

- Department of State (*continued*)
to resumption of testing in atmosphere, 345
- Deputy Administrator; *see* Administrator
- Detection and Identification System, 188, 190, 192; veto on, 193; Western draft, 329; *see also* Comprehensive Nuclear Test Ban Treaty, US-UK draft, of 1962; Control Organization
- Detection of explosions at high altitude, 138; underground, 138
- Detection of nuclear explosions, four methods examined by Conference of Experts, 68-73
- Détente, 232, 234, 424, 433
- Deterrence, doctrine of, 234
- Detonations for peaceful purposes, 91; *see also* Project Plowshare
- Diefenbaker government, 359n
- Dirksen, Everett M., 462
- Disarmament, general and complete; *See* General and Complete Disarmament
- Disarmament Commission (UN), 202; controversy over composition of, 23-24; Soviet refusal to participate in, 34
- Dodd, Thomas J., 158, 444-45, 447, 450, 477
- Dominick, Peter H., 448n
- Donovan, Allen F., 186n
- Doolittle, James H., 33n
- Douglas, James H., 246
- Douglas, Paul H., 448n
- Dribble experimental program
planning for tamped and decoupled shots, 355
- Dulles, Allan W., 86, 246, 473
- Dulles, John Foster, 23, 27n, 31, 45-46, 49, 62-66, 86-89, 94, 138, 141, 159, 169, 473, 482
- Dupré, J. Stefan, 33n
- Duration of treaty on ban on nuclear testing, 129, 142-43
- Dyson, Freeman J., 244
- number per year, 79, 136; table of, 160; unidentified, 253; in USSR, 384-85; *see also* Entries under Seismic
- East Germany, 40, 329, 458, 462
- Eastland, James O., 463n
- Edberg, R., 372n
- Eight-Nation Memorandum, 370-78, 386, 419, 427; interpretation of, 376
- Eight nations, reaction to Western draft treaties of August 1962, 414-16; suggestions of, 394-97
- Eighteen-Nation Disarmament Committee (ENDC), 287, 349, 381, 388, 498; creation of, 356; deadlock in, 363-65; debate in full Committee 365-68; draft treaty on general and complete Disarmament (USSR), April 15, 1962, 360; eight states added to Ten-Nation Disarmament Committee, 357-58; first meetings (March 1962), 360; link with UN, 356; reconvened in Geneva, July 1962, 389; reconvened, November 26, 1962, 426-28; reconvened, February 12, 1963, 438-42; report to, from Subcommittee, 365; resumed, March 28, 1962, 368-70; Subcommittee on a Treaty for the Discontinuance of Nuclear Weapon Tests, deadlock in, 363-65; US resumption of atmospheric tests supported in, 377
- Eisenhower, Dwight D., vii, 26, 28, 31-32, 39-41, 45-46, 48-51, 55, 67, 85, 87, 91-92, 94, 104, 108, 114, 120, 124, 126, 127n, 128, 137, 143, 155, 158, 168-74, 176, 178, 181-82, 184, 201, 203, 211-12, 232-35, 246-47, 257, 262-63, 269, 482, 491; collapse of Summit Meeting, May 1960, 257-58; conference of experts suggested, 49-51; discussion of moratorium, 232; dismissed So-
- Earthquakes, 75, 199; Distinguishing from explosions, 136;

- Eisenhower (*continued*)
 viet appeal, April 1958, 46; exchange of letters with Bulganin (1957-58), 39-42; impressed by reports of scientists, June 1957, 28; informed of new seismic data, 155; joint declaration with Macmillan, 246-47; letter to Nehru, December 15, 1957, 40-41; meetings with Khrushchev, 204-5; plans for trip to USSR, 232; presidential campaign (1956), 24-26; qualified endorsement of treaty, 460; reply to Bulganin, January 12, 1958, 41; reply to Khrushchev, April 8, 1958, response to Stevenson's proposal, 25; restated U.S. position, 48; statement of August 22, 1958, 89-90; statement of December 29, 1959, on moratorium, 233; suggested technical talks to Khrushchev, April 28, 49-53
- Eisenhower Administration, 233, 342; consensus building in 471-73; divisions of opinion, 472
- Eisenhower-Macmillan, correspondence, letter to Mr. Khrushchev, 171, 174; new Western position, 173; statement, 248
- Elections, in US, 291; in UK, 291
- Engle, Clair, 448n
- English, Spofford G., 43-44
- Eniwetok, 343
- Epicenter of seismic events, difficulty of locating, 352
- Espionage, 198, 334, 364, 370
- Ethiopia, 419, 421, 427; ENDC, 357-58; Foreign Minister of, Ato Kelema Yifru, 367
- Euratom, 307
- European Common Market, 307
- Evans, R. M., 254n
- Ewing, W. Maurice, 151n
- Executive Office of the President (US), 381
- Extraterritoriality, right of, 310
- Fallout, 36, 58, 110, 127, 346-47, 382, 387, 414, 502; scientific analysis of effect, 346
- Farley, Philip J., viii, 156-57, 213
- Federal Republic of Germany, 21, 40, 51, 112, 125, 175, 280, 436, 443; denuclearization of, 112
- Federov, Yevgeni K., 56-57, 68-71, 73, 75-76, 78, 115, 167, 186, 188, 191n, 192, 216-19, 225, 227, 426, 431, 439
- Finkelstein, Lawrence S., 295n, 299n
- "Finite deterrent" concept, 383
- Finland, 352
- Fisher, Adrian S., vii, 381, 445, 452n
- Fisk, James B., vii, 33n, 54, 56, 68, 77, 80-81, 85, 154, 212, 215-17, 219, 224, 227-29, 269, 277n
- Fissionable materials; transfer from weapons stockpiles, 92
- Foose, Richard, 212n
- Foreign Affairs*, 31
- Foreign military bases, 42, 106-7
- Foreign Ministers, meetings in Geneva (July 13, 1959), 202; representing governments at ENDC meetings, 350
- Fortune*, 184
- Foster, John S., 277n, 278, 343n, 460
- Foster, William C., 347, 385, 386n, 387, 432, 437, 439-41, 446, 453
- Fox, Alfonzo P., 114n
- France, 52, 95, 104-5, 125, 406, 421-22, 465; abstained from voting UN General Assembly (1959), 207; development of nuclear capacity and weapons, 16, 250-51, 351; explosions caused by simple devices, 274; independent weapons development program, 30, 250-51; nuclear testing, 205-6, 208, 238, 251, 275, 280, 284, 384, 443; opposition to test ban, 89, 132; position on MLF, 436; Soviet

- France (*continued*)
 view on French testing, 273;
 Ten-nation disarmament conference, 357; *see also* de Gaulle, Charles
- Frye, William R., 63n
- Fukien Province, 95
- Fukurya Maru*, 20
- Fulbright, J.W., 158
- Gaitskell, Hugh, 348
- Gardner, Richard N., 7n
- Garwin, Richard L., 212n
- Gates, Thomas S., Jr., 86, 246
- de Gaulle, Charles, 37, 67, 250, 351, 465; address before Joint Session of Congress, 251; correspondence with Khrushchev, 351
- Gehron, William J., 304n
- General Assembly, UN, 21-23, 42, 52, 202, 289-90, 422, 498; resolution on studying feasibility of using existing facilities for monitoring nuclear tests, 395-96; Twelfth Session, First Committee, 208; Resolution 1148 (XII), 22n; Thirteenth Session (1958), 42, 100; Fourteenth Session (1959), 202-9; Fifteenth Session (1960), debate on cessation of tests, 267-68; Sixteenth Session (1961), 278, 283-85; resolution requesting USSR to abstain from atmospheric tests, 284; Resolution 1722 (XVI), 356; Resolution 1629 (XVI), 367, 372; Resolution 1648 (XVI), requesting states to refrain from testing, 358, 366; Seventeenth Session (1962), 416-22; Resolution 1762A (XVII), 427, 432, 438; Resolution 1762B (XVII), 421n; Eighteenth Session (1963), 465-66
- General and Complete Disarmament: 110, 276; UN Resolution on, 422; general disarmament proposal (Khrushchev), 204-5, 276; USSR draft treaty on, 360
- Geneva Conference on the Discontinuance of Nuclear Weapon Tests, 113, 288, 331; opening date, Oct. 31, 1958, 14, 116-17; adoption of Annex II on Privileges and Immunities (Oct. 14, 1960), 258; agenda, controversy over, 121-22; delegates: US, 113-14, UK, 114-15, USSR, 115; opening controversies, 116-19; position paper, US, 115-16, 147, 149, 163; talks resumed Jan. 5, 1959; introduction of new data (US), 136-39; Conference recessed May 12, 1960, 248; Conference, end of, without agreement, 286-87, 363; final session Nov. 28, 1961-Jan 29, 1962 (adjourned); Western insistence on consideration of new data, 195; *see also* Technical talks
- Geneva Conference, Eighteen-Nation Disarmament Committee; *see* Eighteen-Nation Disarmament Committee
- Geneva Conference, Ten-Nation Disarmament Committee; *see* Ten-Nation Disarmament Committee
- George, Theodore A., 445n
- German Federal Republic; *see* Federal Republic of Germany.
- Gerrard, John, 151n
- Ghana, 358, 419; subamendment, 420
- Gilpin, Robert, 9n, 25n, 48n, 88n, 89n, 91n, 246n, 479n, 487
- Glasstone, Samuel, 27n
- Gnome experiments, 369-70, 385-86
- Godber, J., 369, 402-3
- Goldwater, Barry, 463 and n
- Gore, Albert, 114, 126-30, 131n, 157, 159, 172, 282, 386, 472, 476-77; private memorandum to Eisenhower, 126-27
- Graves, Allen, 186n, 187

- Gray, Gordon, 86
 Greece, 175, 418, 421
 Griggs, David T., 151n, 154
 Grinevsky, O.A., 186n, 254n
 Gromyko, Andrei A., 23n, 28, 100, 156, 184, 205, 276, 361, 365, 378n. 447, 456-57
 Gruening, Ernest, 158, 448n
 Gubkin, K. Y., 57, 214n
- Hahn, Otto, 21
 Hailsham (Lord), 452, 456
 Hamilton, Jack H., 151n
 Hammarskjöld, 268, 331; activities in Congo, 331; attack on (by Khrushchev), 268
 Hardtack II, 147-51, 214, 218-25, 228
 Harriman, W. Averell, 452, 456
 Harris, George, 344n
 Hart, Phillip, 448n
 Hartke, Vance, 448n
 Haskel, Norman, 55n
 Haskins, Caryl P., 33n
 Headquarters Agreement, 311n
 Henkin, Louis, 63n
 Herter, Christian, 86-87, 159, 188, 205, 212-14, 216, 243, 246
 Herz, John H., 4n
 Hickenlooper, Bourke B., 114, 476
 High altitude nuclear explosions, danger of false alarms in detection of, 191; detection and identification, 61, 73, 171, 196
 Hill, M., 254n
 Hilsman, Roger, 10n
 Hiroshima, 3, 19
 Holborn, Hajo, 4n
 Holifield, Chet, 26, 28, 94, 251; recommendation on halting tests of high-yield weapons, 26
 Home (Lord), 456
 Horelick, Arnold L., 424n
 Hosmer, Craig, 436-37, 445
 "Hot line," 446-47
 Hsieh, Alice Langley, 95n, 96n, 274n, 329n
 Hulme, H.R., 186n, 218n, 254
 Humphrey, Hubert H., 26, 35, 44, 114, 131n, 156, 168-70, 209, 240, 245, 440, 445, 448, 477; letter to Eisenhower, 26
- Iceland, 419, 421
 Iklé, Fred Charles, viii, 299n, 333n, 406n
 India, 104, 206, 268, 283, 371-72, 379, 419, 421; appeal not to test, 377; border dispute with China, 424; ENDC, 357-58; proposal in UN General Assembly (XII), 22
 Indonesia, 358, 419
 Inglis, D. R., 425n
 Inouye, Daniel K., 448n
 Inspection; *see* Control Organization, Control posts, On-site inspections
 Intercontinental ballistic missiles; *see* Missiles
 Interdepartmental Working Group, 86
 Intermediate Range Ballistic Missile, received by Turkey, 176
 International Atomic Energy Agency (IAEA), 289, 367, 395; *see also* Privileges and Immunities
 International center for seismology, proposed, 372
 International conferences on the peaceful uses of nuclear energy, (1955, 1958) 53
 International control, 69; *see also* Control Organization
 International Control Commission, 425; *see also* Control Commission
 International control mechanism, Western insistence on, 364
 International control organization, 334-35; *see also* Control Organization
 International control system, 127, 368, 387; unnecessary according to Soviets, 237
 International detection system, 68
 International Geophysical Year, 32, 57, 255, 396

- International Labor Organization, 21
- International organization, new meaning of, 4
- International political system, changes in, 4
- International scientific commission, proposed in Eight-Nation Memorandum, 371-72, 374, 427
- International system, open and closed society impact on negotiations, 495-97
- International system and control of modern technology, 501
- International Union of Geodesy and Geophysics, 372
- Iodine, 131, 382
- Iran, 418
- Iraq, 419
- Ireland, 105; resolution in UN General Assembly, 268, 284
- Italy, 208, 377-78, 418, 421; Ten-Nation Committee (ENDC) 357; US agreement with (1959), 175
- Izvestia*, 418
- Jackson, Henry M., 27, 444, 464
- Jacobson, Harold Karan, 19n
- Japan, 105, 206-7, 418; proposal in UN General Assembly XII, 22
- Japan, seismic station in, recording Gnome shot, 352
- Javits, Jacob K., 448n
- Jenks, C. Wilfred, 315n
- Johnson, Gerald W., 148n, 254n
- Johnson, Lyndon B., 281
- Johnson Island (1958, Argus shots), 182
- Johnson Island (test site), 145-46
- Johnston Islands, 344
- Joint Chiefs of Staff (US), 381; Chairman added to Committee of Principals, 451; favoring resumption of testing in atmosphere, 345; on ratification of Moscow Treaty, 459
- Joint Committee on Atomic Energy, US Congress, 35, 89, 156, 189, 194, 221, 227, 249, 251, 265, 389, 475; Military Application Subcommittee, 27; several members favoring resumption of atmospheric testing, 345; Special Subcommittee on Radiation, 26
- Jordan, B., 463n
- Jupiter rockets, 175
- Kaganovich, dropped from power in 1957, 31
- Kastenmeier, Robert W., 342n
- Kavanaugh, George M., 114n
- Kaysen, Carl, 452n
- Keating, Kenneth B., 448n
- Keeny, Spurgeon M. Jr., 55n, 114n, 186, 212n, 254n, 270n
- Kefauver, Estes, 448n
- Keilis-Borok, V.I., 214n, 254n, 418n
- Kennedy, John F., 263, 269-71, 276-79, 281-83, 285, 291, 327, 330, 344-50, 362, 366, 369, 371, 377-78, 382, 389-90, 411-12, 415, 423, 425, 430-32, 435-39, 446-50, 452-53, 456, 458, 462-66, 474-75, 499; address at The American University, 449, 453; authorized resumption of testing, April 26, 1962, 377; correspondence with Khrushchev, Dec. 1962-Jan. 1963, 430-32; correspondence on Cuban crisis, 425; criticism of Eisenhower Administration, 269; decision not to resume testing, 278-79; meeting with Khrushchev, Vienna, June 1961, 276, 330; order to cut back nuclear warheads, 382; resumption of tests ordered by September 5, 1961, 343-48; visit with Macmillan, June 1963, 452
- Kennedy Administration, 275, 383, 473-75; agreement within (on US position on test ban), 270-72; efforts to achieve a test ban, 275-80; extension of testing program (1962), 423;

- Kennedy Administration (*cont.*)
 institutional changes and new drive, effect on test ban, 473-75; less sanguine on limited nuclear war, 382; personnel changes, 270; reappraisal of American position (early 1961), 269-72; rebuttal of domestic criticisms, 444-46; reconsideration of Western position, Jan. 1961, 326-27
- Kennedy and Macmillan, letter to Khrushchev, February 7, 1962, 349; letter to Khrushchev, April 24, 1963, 447
- Khrushchev, Nikita S., 31, 39, 45, 48-50, 67, 96-99, 158, 167, 171, 173, 176-78, 180-82, 184, 202-4, 209, 211, 233-34, 254, 257, 262, 265, 268, 272-73, 276, 279, 281, 330, 340, 347, 349-51, 357-58, 360-61, 371, 411, 414, 423, 425-26, 430-33, 438, 447, 449-50, 453-54, 458; agreement to TWGI, 184; appeal to Eisenhower, April 4, 1958, 46; article in *Foreign Affairs*, 202-3, factual errors in letter from, 431; in letter to Eisenhower, May 9, 1958, agreed to technical talks, 50; letter to Eisenhower, April 22, 1958, 49; meeting in Vienna, June 1961, 276; meetings in Vienna, June 1961, 330; opposition to his policies within Soviet elite, 265; pledge on moratorium reiterated, 233-34; replies to Kennedy and Macmillan, 350-51; response to Eisenhower, 97-99; speech at ENDC meeting, 360-61
- Killian, James R., Jr., 32-33, 47, 86, 151, 154, 178, 187
- Kissinger, Henry A., 109-11
- Kistiakowsky, George B., 33n, 86, 246, 277n, 461
- Kondorskaya, N., 418n
- Koslov, Frol R., 199
- Kramish, Arnold, 35n
- Kuznetsov, V. V., 23n, 426, 431-32, 438-40
- Lakoff, Sanford A., *Science and the Nation*, 33n
- Lall, Arthur S., 359n, 360, 371, 373-75, 377, 393n, 420, 424, 428, 442n
- Land, Edwin H., 33n
- Lapp, Ralph E., 158, 284n
- Larson, Thomas B., 55
- Latin American states, 418-19
- Latter, Albert L., 36, 151-54, 161, 179, 212n, 219, 223-25, 242, 255, 351n, 483; decoupling theory, 491
- Latter, Richard, 73-74, 76, 114n, 186, 252-53, 254n, 267, 270n, 351n, 355n
- Lausche, Frank J., 448n, 463n, 464
- Lawrence, Ernest O., 28, 54-56, 151
- Lay, Dent L., 186n
- Legacy of Hiroshima*, 346
- Leghorn, R. S., 425n
- LeMay, Curtis, 342, 459
- Leonard, Byron P., 195
- Leypunsky, O. I., 57, 186
- Libby, Willard F., 44, 461
- Lie, Trygve, 325
- Limited test ban; *see* Partial Nuclear Test Ban Treaty
- "Link" between test ban and other arms control measures, 41-45, 94, 102; debate February-March 1958, 42-45, 157; dropping of "link," 140-43; with weapons production cut-off, 41
- Lloyd, Selwyn, 17-18, 168, 205
- Lodge, John Cabot, 206, 208
- Logan shot, 148-49, 155, 220, 227, 351-52
- Long, Franklin A., 381, 412, 446, 452n
- Long, Russell B., 462, 463n
- Loper, Herbert B., 47n, 270n
- Lovett, Robert, 389
- Lunik I, January 2, 1957, 146
- Luxembourg, 421

- Macmillan, Prime Minister, 31, 85, 158, 167-69, 173, 176-77, 181-82, 184, 244, 246-47, 282-83, 291, 344-45, 347-51, 364, 371, 411, 435, 447, 449-50, 452, 454, 456, 465; visit to USSR, February 21-March 3, 1959, 167
- Macmillan and Kennedy, correspondence with Khrushchev, 349, 371, 447
- Maddock, I., 186n, 218n
- Malaya, 419
- Malenkov, G. M., 31
- Mali, 419, 421; vote in UN, 284
- Malinovsky, R. Y., 96
- Mansfield, Mike, 25, 462
- Mao, Tse-tung, 96
- Margolis, Emanuel, 20
- Mark, J. Carson, 47n, 55n, 212n, 270n
- Marshall Islands, 19
- Matador rockets, 176
- Matsu, bombardment of, 94-97
- Matsushita, Masateshi, 21
- McCarthy, Eugene, 448n
- McClellan, John L., 463n
- McCloy, John J., 269, 279, 281, 389, 460, 474
- McCone, John A., 86, 88n, 157-58, 173, 178, 180-81, 200-1, 244-45, 249, 327, 453, 473
- McDougal, Myers S., 20n
- McElroy, Neil H., 861
- McGee, Gale W., 448n
- McGovern, George, 448n
- McMillan, W., 351n
- McNamara, Robert S., 86, 270, 340n, 345, 382-83, 440, 453, 461; address at University of Michigan, 382
- McNaughton, John T., vii, 349, 386, 452n
- Mechem, Edwin L., 463n
- Melman, Seymour, 44n, 59n, 61n, 92n, 299n
- Menon, V. K. Krishna, 360, 367, 373, 424
- Metcalf, Lee, 448n
- Mexico, 379, 421, 427; ENDC, 357-58
- Middle East, crisis in, 67, 87
- Military forces, reduction of in Europe, 112
- Mills, Mark M., 28
- Missile controls, 92
- Missiles, anti-intercontinental ballistic, 342; ballistic, 38; ballistic Soviet superiority, 341; controls of, linked to delivery vehicles, 92; other measures of arms control, 112; for selected NATO countries, 36; intercontinental ballistic, 42, 281; launching of, 92; long-range (USSR), 341; nuclear warheads for in Europe, 40; operational long-range, 340; operational (USSR), 340; Redstone, to be stationed in West Germany, 38; Skybolt Polaris, 435; US offer to Britain to replace Skybolt with Polaris, 435, in France, 436; Soviet advances, 51; Thor, for United Kingdom, 38; to NATO countries, 174-76; USSR lead in ballistic, 32
- Moch, Jules, 208
- Molnar, Julius P., 151n
- Molotov, V. M., 31
- Moore, Virgil L., 114n
- Moratorium on nuclear testing, 45, 89, 90, 108, 110, 120, 135, 143, 147, 174, 247, 267, 290, 495; broken by USSR, Sept. 1, 1961, 280-81, 341, 356; debate on, in US, decision on resumption of atmospheric testing announced March 2, 1962, 345; Eisenhower declaration on voluntary, Dec. 1959, Khrushchev repeats pledge, Jan. 1960, 233; Eisenhower decision to continue, UK decision to continue, Soviet statement on, Aug. 1959, 201-3; Kennedy order for test resumption in laboratory and underground, 283; opposition by AEC, 91; opposition by Department of

- Moratorium (*continued*)
 Defense, 91; pledges to honor by Presidential candidates, 247; position of three powers at expiration of Spring 1960, 249; Soviet decision to discontinue tests, March 31, 1958, 45; Soviet ends, 119; Soviet proposal for (with partial treaty), March 19, 1960, 240; temporary, urged by USSR, 28; US, continued in summer of 1961, 279; US, resumes atmospheric testing, April 26, 1962, 377; unpoliced, 387; USSR for first time drops as condition to partial test ban
- Morgan, H. T., 254n
- Morocco, 208
- Morris, Donald, 55
- Morse, John H., Jr., viii, 54
- Morse, Wayne, 448n
- Morton, Louis, 5n
- Moscow Treaty; *see* Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space, and Under Water
- Moss, Frank E., 448n
- Multilateral Nuclear Force (MLF), 435-36, 443, 461; *see also* North Atlantic Treaty Organization
- Munk, Walter H., 151n
- Murphy, Charles J. V., 28n, 46n, 48n, 63n, 155n, 160n
- Murray, Thomas E., 25n, 29, 91n, 167n, 173, 269
- Murrow, Edward R., 86, 281
- Muske, Edmund S., 448n
- Myrdal, Alva, viii, 395-96, 442n
- Nagasaki, 19
- Nathan, Robert R., 158
- National detection systems, 69, 127, 172, 361, 363-68; for monitoring nuclear testing, 291
- National stations, international supervision of, 434
- Nehru, Jawaharlal, 20-21, 40-41
- Nepal, 419
- Netherlands, 421
- Neuberger, Richard L., 448n
- Neutral states, 125
- Neutron bomb, 28, 30, 35, 39, 62, 147, 244, 347, 382
- Nevins, Allan, 269
- New seismic data; *see* Seismic data; Technology
- New Zealand, 418, 421
- Niger, 419
- Nigeria, 421; ENDC, 357-58
- Nitze, Paul H., 408-9, 412, 459
- Nixon, Richard, 263
- Nogee, Joseph L., 6n, 15n
- Nonaggression pact between NATO and Warsaw Pact countries, proposed, 443
- Nonaligned states, 413
- Nongovernmental organizations, hearings granted to, 117
- Non-nuclear powers, influence of, 12; transfer of nuclear weapons to, 16; *see also* Nth country problem
- Nordness, Nedville E., 352n
- North Atlantic Treaty Organization (NATO), 103, 110, 133, 273-74, 357, 383, 421; Agreement for Cooperation, US-UK, 37; Council meeting, 40, 175; crisis of strategic doctrine, 38; forces, strength of, 341; intelligence agents, 453; missiles for NATO countries, 174-76; Multilateral Nuclear Force (MLF), 443, 461; Multilateral Nuclear Force (MLF), plans for, 435-36; nuclear striking force, 110-11; pressure against test ban, 38; programs, 267; selected countries of, to receive missiles, 36; strategy of, in 1957, 29-31, 36-40; strategy, pressure for "clean" bomb and dispersal of nuclear weapons, 30-31; *see also* Privileges and Immunities
- North Atlantic Treaty Organization and Warsaw Pact governments, discussion of nonaggression pact between, 455

- Northrup, Doyle L., 47n, 55n, 73-74, 114n, 270n
- Norway, 22, 418, 421
- Nth country problem, 7, 16, 30-31, 51, 88, 103, 111, 125, 174, 200, 208-9, 237-38, 267-68, 273-75, 284, 371, 387, 411, 414, 436, 443, 446, 455, 457, 500; Communist China, 251; France, 38; France and Communist China, 455
- Nuclear detonations for peaceful purposes, 156-58, 405; *see also* Project Plowshare
- Nuclear explosions, at high altitudes, in outer space, 146, 189, 333, 344, 348
- Nuclear test ban, linked to other measures of arms control and disarmament; *see* "Link"
- Nuclear test ban negotiations, as case study, 11-13
- Nuclear warheads, US, 340
- Nuclear weapons, "clean"; cut-off on production, 17; development of, versus control, 5-7; existing stockpiles, no control possible of, 43-44; high yield, 342; largest tested (USSR), 342; new tasks for, 26-29; prohibition of, resolution in 16th UN General Assembly, 285; *see also* "Clean" nuclear weapons
- Nuclear weapons control, interaction with Soviet behavior, 8-9; link to world order, 7-9
- Nuclear weapons tests, as political issue, 1959 Presidential campaign, 209; at high altitudes, 63; comprehensive agreement for suspension of, 171; deep underground, 58; extremely high altitudes, 58; first underground detonation by USSR, 353; 1958 US series, Hardtack I (Teak, Orange, Argus); Hardtack II (Tamalpais, Logan, Blanca), 145-47; improved detection of, 368; in atmosphere, resumed by US, April 26, 1962, 377; more extensive in 1962 than in any other year, 378; opposition to resumption of, in US, 345-49; President's assurances on Moscow Treaty, 462; resumption by USSR, August 5, 1962, 393; resumption of, in laboratory and underground, ordered by Kennedy, September 5, 1961, 343; underground, 63; under water, in the atmosphere, in the biosphere, detection and identification of, 366-67; USSR resumed, September 1, 1961, 280, 332; USSR test of "superpowerful" bomb, 284; *see also* Moratorium on nuclear testing
- Oliver, Jack E., 151n, 212n
- Olmstead, George B., 55n
- On-site inspections, 61, 72, 74, 134-35, 149, 171, 253, 280, 303, 322, 369, 376; annual quota of, 177, 226; continued deadlock over quota, 433, 438-39; criteria for, 181, 185, 226-28; criteria in US-UK draft comprehensive test ban treaty (Aug. 1962), 402-5; difficulty of, 253; discussion in the Conference of Experts Report, 78; in mainland China, 166; new approach suggested by US, 275; number of, 241; number of, as political issue in Technical Working Group II, 221; quota of, 249; quota of three not acceptable to US Senate, 449; reduction in number of, 363; Soviet proposal for temporary criteria for initiation of, 238; Soviet proposal of three per year, 199; Soviet proposal on annual quota, 199, 235; Soviet reaction to Western draft of Aug. 1962, 414; still required in 1962 for comprehensive ban, 388; two schemes proposed by US, 236-37; of unidentified events, 352; US insistence on,

- On-site inspections (*continued*)
 432; US offer to reduce number of, 393; US position on quotas, 272; USSR quota acceptable to US, 426; veto on, 177; Western modification of process suggested, 441; Western proposal on composition of inspection teams, 331-32; *see also* Technical Working Group II
- "Operation Deadline," 99
- Opponents of test ban, 124, 137, 139-40, 157
- Orear, Jay, 44, 59n, 61n
- Organization of American States (OAS), 103
- Original Parties, 305, 310, 458; unanimity among, 203, 302-3
- Ormsby-Gore, David, 114, 129, 132, 134, 140, 150, 162, 167, 330
- "Other States," 305; adherence of, 328-29; role in negotiations appraised, 498
- Our Nuclear Future*, 219
- Outer space, 92; peaceful use of, 106-7; reconnaissance of, 334
- Overflight for radioactive debris, dispute over, 70-73
- Padilla Nervo, Luis, 360, 379-80, 416
- Pakistan, 22, 104
- Palais des Nations, 363
- Panofsky, Wolfgang K. H., vii, viii, 146, 186-90, 191n, 192n, 193-94, 212n, 214n, 215n, 218n, 219, 221, 222n, 227, 228n, 229n, 270n, 277, 480
- Panofsky Panel, 178, 182, 187; report, 278
- Panton F., 218n, 254n
- Partial Nuclear Test Ban Treaty, 115, 127, 171-77, 286, 415, 454; Soviet proposal (Mar. 19, 1960), 240-41; US suggestion for, 171; US verbal proposal for (Feb. 11, 1960), 234-38, and Soviet response, 238-40; USSR draft (July 15, 1963), 454-55; Western draft (Aug. 27, 1962), 389, 397, 409-13, 455; Western proposal (Sept. 3, 1961), 282-83
- Parties to treaty, 130-32
- Pasechnik, I. P., 254n
- Pashchnik, D. R., 57, 214n
- Pastore, John O., 446
- Pauling, Linus C., 25, 34, 56, 460, 464, 479-80
- Peaceful uses of nuclear explosions, 463; *see also* Project Plowshare
- Pell, Claiborne, 448n
- Peng, Tehhuai, 96
- Penney, Sir William, 54, 76-77, 85, 218, 452n
- People's Republic of China, 66, 95, 96, 371; Condition for participating in disarmament conference, 25; explosions by USSR on its territory, 131; not bound by treaty, 251; *see also* Communist China.
- Peru, 207, 418
- Petersen, Allen M., 186n
- Phased treaty; *see* Partial test ban treaty
- Philippines, 419, 421
- Piore, Emanuel R., 33n
- Poland, 40, 52, 57, 419; resolution in U.N General Assembly, 267; Ten-Nation Disarmament Committee, ENDC, 357
- Policy-makers, in open and closed societies, 496; understanding of detection problems, 62-64
- Political compromise, search for, 231-61
- Political instructions, for Soviet delegate to TWG II, 216; for US delegates to TWG II, 216-17
- Popper, David H., 114, 241n
- Portugal, 421
- Power, Thomas S., 459
- Pravda*, 94, 99, 163
- Preparatory Commission, 212, 242, 309-10; Annex III adopted,

- Preparatory Commission (*cont.*)
309-10; composition of, 309-10;
functions of, 309-10; *see also*
Control Organization
- President (US), presidential cam-
paign and test ban, 24-25, 263
- President's Science Advisory Com-
mittee (PSAC), 46-49, 63, 88,
93, 149-51, 153, 156, 160; *ad*
hoc panel appointed by Ken-
nedy, 277; appointment of
Panofsky Panel, 146, 153; mem-
bers, 277n
- Press, disclosure to, 118
- Press, Frank, 62, 151n, 212n, 219,
254-55, 259, 277n, 352n, 455
- Press, R., 186n
- Pressure; by public opinion, 80,
91, 180; on public officials, by
insistent press corps, 390-91;
to resume testing, 275, 279;
against test ban, from NATO,
38, 275; for test ban, 19-21,
25-26; for test ban negotiations,
277; against testing, 371; *see*
also Public opinion
- Privileges and Immunities, abuse
of, 316; Agreement on the Priv-
ileges and Immunities of the
International Atomic Energy
Agency, 311; Agreement on the
Status of the North Atlantic
Treaty Organization, National
Representatives and Interna-
tional Staff, 311; Annex II, 258,
310-17; access of personnel to
party's territory, 316; of Con-
trol Organization, 313-14; repre-
sentatives on Control Commis-
sion, 313; of staff and experts,
313-14; waiver of immunities,
313; Specialized Agencies, 1947
Convention on, 311; to be
granted by parties to own na-
tionals, 314-16; of the UN,
1946 Convention on, 311
- Production of nuclear weapons,
cut-off, 41, 91-92
- Project Cowboy, 223, 351
- Project Gnome, 351-52
- Project Plowshare, 35, 351, 456
- Projects Vela and Cowboy, 177-
80; *see also* Vela Program
- Proliferation; *see* Nth country
problem
- Proof testing of existing weapons,
378
- Propaganda (by USSR), 113;
benefits for USSR, 180, on pre-
ventive war, 422; victory for
USSR, admitted by Dulles, 46
- Prouty, Winston, 448n
- Proxmire, William, 448
- Public opinion, 95, 162; British,
169; concern of, since 1954,
15; domestic, in Western and
uncommitted states, 334; Soviet
control over, 99; Soviet effort to
influence Western and uncom-
mitted countries, 118; in US,
39, 169, 470; Western sensitiv-
ity to, 350; *see also* Pressure
- Pugwash Conference (Tenth), on
Science and World affairs, 425
- Purcell, Edward M., 33n, 461
- Quarles, Donald A., 48, 146, 178
- Quemoy, bombardment of, 94-97
- Rabi, Isador I., 33n, 460
- Radford, Arthur W., 461
- Radioactive fallout; *see* Fallout
- Rainier, data, 148-49; shot, mag-
nitude incorrectly estimated,
218; underground nuclear ex-
plosion in Nevada, Sept. 1957,
58-61, 72, 148, 155, 163
- RAND Corporation, 36, 179, 252
- Randolph, Jennings, 448n
- Reciprocal control system, 502
- Reciprocal inspection, 446
- Reid, Luther, 114n
- Report of the Conference of Ex-
perts; *see* Conference of Ex-
perts
- Republican Conference on Nu-
clear Testing (early 1963), 437-
38
- Republican opposition to test ban
negotiations, Jan. 1963, 436-38

- Research program, East-West, coordinated, 237-41, 247-49; East-West, agreed by USSR, 249; joint program, USSR insistence on, 249; joint Soviet-Western, of criteria for initiating on-site inspection, 239; Seismic Research Program Advisory Group (SRPAG), 248; in US, reported at SRPAG meetings, 254-55
- Ribicoff, Abraham A., 448n
- Rich, A., 425n
- Riznichenko, Y. V., 163-65, 214n, 254n, 255-56, 425n
- Roberts, Chalmers M., 245n
- Robertson, A. W., 463n
- Robertson, H. P., 33n
- Roberston, Walter S., 66
- Rocard, Yves, 54
- Rockefeller, Nelson A., 209
- Roddis, Louis H., 277n
- Rome treaties, 307
- Romney, Carl F., 55n, 150, 151n, 160, 164-66, 212n, 218, 220n, 222n, 254, 354n, 444
- Roosevelt, Franklin Delano, Mrs., 158
- Rumania, 52, 57, 419; Ten-Nation Disarmament Committee, ENDC, 357
- Rusk, Dean, 80, 270, 276, 281, 345, 362, 365, 390, 446, 453, 456, 461
- Russell, Richard B., 444, 463n
- Sadovsky, Mikhail A., 56-57, 186, 214n, 254-56, 258-60, 418n
- Sahlou, P., 375-76
- Saltonstall, Leverett, 462
- Saturday Evening Post*, 346
- Saudi Arabia, 419
- Scheid, Robert C., 254n
- Schelling, Thomas C., 9n
- Schilling, Warner R., 6n
- Schlei, Norbert A., 20n
- Schlesinger, Arthur M., Jr., 276n, 277n, 278n, 279n, 281n, 282n, 285n, 346n, 348 and n, 431n, 440n, 447n, 448n, 453n, 465n
- Schnierman, G. L., 254n
- Schweitzer, Albert, 21
- Science, "betrayal by," 154-57
- Science Adviser; *see* Special Assistant for Science and Technology
- Science Advisory Committee of the Office of Defense Mobilization (ODM), 32-33, 49; *see also* President's Science Advisory Committee
- Science policy, relation to security policy (US), 477-78
- Scientific Committee on Effects of Atomic Radiation, 20
- Scientific literacy, importance for politicians and diplomats, 481-83
- Scientists, 185; as advisors and negotiators in international conferences, 53, 486-90; conflicting advice by, 365, 483; East-West area of agreement, 225, 239; East-West disagreement on need for international control, 69; efforts to use for achieving agreement, 378; employed in executive agencies, 485; interpretation of Hardtack II, 221; need for advice from mixture of scientific disciplines, 484; outside government, 485; panel of, proposed, 280; personal relationships of, 489; problems of communication with nonscientists, 10, 481-82; proposal for national scientific institute, 486; role in TWG I and II, 188-95, 218, 223-25, 489; in Seismic Research Program Advisory Group, 254-57, 490; statement on 1962 comprehensive draft treaty, 445; suggested use of "black boxes," 425; Sweden, 369; use in informal sessions, 490
- Scientists, US, ability to detect underground shots, 386; access to highest policy-makers, 33; ability to function apolitically doubted, 392; advice at highest

- Scientists, US (*continued*)
 level of government, 483-84;
 advice within bureaucracy, 484-86; arrangements for participation in policy process, 32-33; clarifying US position to ENDC, Subcommittee 1, 368-70; contradictory replies to questionnaires on test ban control, 60-61; divided over resumption of atmospheric tests, 346; engaged in political negotiations, 191; in Geneva to explain technical situation in light of Vela Program data, 392; impact of Eight-Nations delegates, 394; interpretation of seismic data, 149; lacking political guidance, 192-93, 195; as new actors in policy process, 9-11; opposition to acceptance of Soviet proposals, 437-38; petition for test ban by, 25; as policy advisers, 479-81; political issue in TWG II, 221; role in Conference of Experts, criticism of, 487; role in consensus-building, 470-72; selected for Conference of Experts to balance differing views, 55-56; Western panel at Conference of Experts, 54-56; willing to generalize on basis of single Rainier experiment, 60
- Scott, Hugh, 448n
- Scoville, Herbert, Jr., 47n, 55n
- Seaborg, Glenn T., 86, 270, 327, 461
- Secretary of Defense, 85-86
- Secretary of State, 85-86; *see also* Dulles, John Foster; Rusk, Dean
- Security Policy (US), ambiguous and vacillating, 490-91; relation to science policy, 477-78
- Seismic data (new), 216, 303;
 USSR agrees to examine, 210;
 USSR reaction to, 162-66; US insistence on consideration of, 210; *see also* Technology
- Seismic method of detection, 75-77
- Seismic research in USSR, 161-62
- Seismic recording stations, 75, 148, 352, 502; automatic, 428, 432, 434
- Seismic Research Program Advisory Group (SRPAG), 248, 254-61, 392; delegations from UK, US, USSR, 254; disagreements, 259-61
- Seismic signals, 75, 160, 199, 369; disagreement on recording method, 72-73; decoupling or muffling, 153; effects of various media on transmission of, 352, 369-70, 385-86; shots tamped in salt and in tuff, 351; "Second Zone," 354; "Third Zone," 354, 384
- Seismographs, improved effectiveness of, 385
- Seismological stations, 59, 502; detection of French underground shot in Algeria, 384; existing facilities, 395-96; instrumentation offered by US Coast and Geodetic Survey, 353; preliminary lists of, exchanged by US and USSR, 434; prototype, established at Fort Sill, Oklahoma, 354
- Seismologists, Soviet, unavailable in Moscow, 455
- Semenov, N. N., 56-57
- Senate, Committee on Armed Services, Preparedness Investigating Subcommittee, 412, 450-51, 459, 462
- Senate, Committee on Foreign Relations, 26, 445-46, 459, 461-62; Subcommittee on Disarmament, 26, 35, 43, 45, 60-63, 150, 156, 213-14, 245, 475-76
- Senate, consent to Moscow Treaty, 463; debate on Moscow Treaty, 462; resolution on partial test ban, 448
- Shepilov, Dimitri T., 31
- Shulman, Marshall D., viii, 424n
- Shustov, V., 214n
- Siberia, on-site inspections in, 363; central, 353

- Signature, ratification, entry into force of treaty, article on, adopted, 305
- Simpson, Milward L., 463n
- Sino-Soviet alliance, 66; border fighting, 371; disarmament differences, 251; dispute, 424; ideological differences conference, 450; tensions, 265
- Smith, Margaret Chase, 463n, 464
- Solandt, Ormond, 54
- Somalia, 419
- Sorenson, Theodore C., 276n, 277n, 283n, 344n, 345n, 346n, 347n, 348n, 449n, 450n, 452 and n, 456n, 463 and n
- South Africa, 421
- Southeast Asia, 339; guerilla action, 382; SEATO, 103
- Sovereignty, cooperation among sovereign states, 132
- Soviet bloc, 207, 421; vote in UN, 284-85
- Soviet press, 281
- Soviet Union; *see* Union of Soviet Socialist Republics
- Spain, 419, 421
- Sparkman, John J., 448n
- Special Assistant for Science and Technology, 32, 86, 88, 93
- Special Assistant to the President for Disarmament, 43
- Special Assistant to the President for National Security Affairs, 86
- Speier, Hans, 30n
- Spence, Roderick, 47n
- Spiers, Ronald I., 47, 55
- Sputnik I and Sputnik II, 32
- Starbird, Alfred D., 44, 47n, 201, 270n, 344
- Stassen, Harold, 16-17, 43-44, 58, 91, 93, 460
- Stebbins, Richard P., 31n, 96n, 119n, 258n
- Stelle, Charles C., 114n
- Stennis, John, 463n
- Stevenson, Adlai E., 24-25, 345, 456
- Stockholm, Defense Research Organization, 360
- Strategic doctrine, US, 382; alert forces, 340; *see also* North Atlantic Treaty Organization
- Strategy (US), "massive retaliation" abandoned, 26
- Strauss, Lewis L., 25n, 29, 44, 48, 55, 59n, 86, 88n, 461
- Street, Kenneth Jr., 151n
- Stromberg, Roland N., 7n
- Subcommittee (tripartite) of ENDC, 416, 429, 442
- Summit meeting (Eisenhower and Soviet leaders), 41; collapse of, 257-58
- Summit meeting, Western, May 1959, 168-69
- Supreme Soviet, Gromyko's speech before, 156
- Surprise attack, 92; agreement on meeting to consider, 67; Conference, 104, 111-12; safeguards against, 16-17
- Sweden, 105, 206-7, 268, 372, 379, 421, 427; delegation to ENDC, 357-60, 395; Gnome shot recording, 352
- Symington, Stuart, 35, 444, 462
- Syria, 419
- Tactical nuclear weapons, 30, 62, 126, 128, 147, 252; demanded by Germany, 31
- Talmadge, Herman E., 463n
- Tamm, I. Ye., 56-57, 425n
- Tass, 94
- Taubenfeld, Howard J., 211n
- Technical agreement, search for, 174-230
- Technical experts, 49; *see also* Scientists; Technology; Technical talks
- Technical preparation for negotiations appraised, 491-92
- Technical talks, 472; agreed to by Khrushchev, 50; conference on surprise attack, 104, 107, 111-112; first suggested by UK, 17; group of experts suggested in UN resolution, 22, by Eisen-

- Technical talks (*continued*)
 hower, 41, 49-53; as a neutral device, 392; possible USSR opposition to group, 392; proposal on "black boxes," 429; proposed working group, 139; *see also* Technical Working Group I (TWG.I); Technical Working Group II (TWG.II); Conference of Experts; Seismic Research Program Advisory Group (SRPAG)
- Technical Working Group I, 183-209, 472; agenda argument, 188; bulk of data from West, 189; delegates, 186-87; high altitude testing, and banning of, 182; little political guidance, 187; recommendations on basis for control system, proposed by US, 271; report to diplomatic Geneva Conference, 190-91, 195; terms of reference, 185-85
- Technical Working Group II, 210-29; agenda for, 214-15; agreed report on improvement of techniques and instrumentation, 226; delegations: Soviet, 214, UK, 218, US 212; deadlock, 229; failure of, impact on moratorium, 232; lack of preparation, US delegation, 214; report, with four Annexes, 229; talks end without agreement, 229-30; terms of reference, 210-11
- Technological lead, impact of, on negotiations, 498
- Technology, changes in, impact on test ban negotiations, 497, 501; controlling modern, 501; military, impact on vulnerability of US, 5; military, revolution in, 42; new date, 145; Soviet reaction to new data, 162-68
- Teller, Edward, vii, 28, 36, 48, 55-56, 151-53, 219, 223, 251-52, 346, 437, 459, 479-80
- Ten-Nation Disarmament Committee, 202, 205, 207, 232; composition of, 357; Soviet suggestion of adding five nonaligned nations, 357; USSR walks out, 263
- Testing of nuclear weapons; *see* Moratorium on nuclear testing
- Test sites, funds for, 201; US offer to allow Soviets to inspect, 279
- Thailand, 421
- Thomas, Norman, 25, 158
- Thompson, Llewelyn E., 272, 282, 386, 453
- Thor intermediate range rockets, 175
- Threshold, 74-77, 138, 181, 191, 199-200, 236-37, 241, 290; failure by Administration to find acceptable, 62; acceptable risk disagreement, US, 196-97; seismic magnitude (4.75); elimination of, 271, 280, 362; of detectability, 250, 446
- Thurmond, Strom, 463n
- TNT explosions, data from, 73
- Toon, Malcolm, 714n
- Toussaint, Paul, 114n
- Tower, John G., 463n
- Treaties; *see* Comprehensive Nuclear Test Ban Treaty, drafts and agreed draft articles; Partial Nuclear Test Ban Treaty, drafts; Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space, and Under Water (Moscow Treaty)
- Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space, and Under Water (Moscow Treaty), 3-13, 444-66; assurances on, by Kennedy, 462; comparison with 1962 draft, 456-58; consent by US Senate, 463; drafts, 389, 397, 409-13, 454-55; effect of Cuban crisis on signing, 424; effective date, 464; lack of control machinery, 288; negotiations opened, 454; negotiations in retrospect, 469-503; Original Parties as depository governments, 458; preliminaries to negotiations, 444-54; ratifica-

- Treaty Banning (*continued*)
 tion, 458-64; refusal to sign by Communist China, Albania, Cuba, France, 465; signed by more than 100 other states, 464; text of, 504-6; *see also* Partial Nuclear Test Ban Treaty
- "Troika" concept, 357-58
- Truman, Harry S., 32, 48
- Tsarapkin, Semen K., 57, 75, 115, 118, 120, 122, 127-28, 132n, 135-37, 139, 162-63, 177, 182-85, 196, 198-99, 210, 216n, 230, 235, 237-43, 249, 256, 258, 264-65, 267, 272-73, 275, 286, 296, 299, 303, 312, 318, 321n, 325-26, 328, 330-31, 335, 362-64, 368, 376n, 446
- Tukey, John, 151n, 212n, 277n
- Tunisia, 22
- Turkevich, Anthony L., 55n, 212n
- Turkey, 175, 421
- Twining, Nathan F. (General), 461
- Tyler, William R., 452n
- Unilateral intelligence systems, 193
- Union of Soviet Socialist Republics (USSR), Academy of Sciences, 163; accepted inspection in aseismic areas, January 7, 1963, 433; armed forces, reduction suspended, 340; as nuclear power, 6; bombers, long-range, 341; Central Committee of the Communist Party of the Soviet Union, 450; closed society, impact on negotiations, 496; concern at China's nuclear capability, 200; delegates to Geneva Conference, 115; delegates to Seismic Research Program Advisory Group, 254; derision of Vela Program results, 393; discontinuance of nuclear assistance to Communist China, 200; discussions with Communist China, agreement on new technology, October 15, 1957, 95-96; drafts of comprehensive test ban treaty tabled: October 31, 1958, 122-24, 454, November 18, 1961, 286, 454-55; "global" intercontinental missile, 360; high-yield weapons (1962), 423; insistence on "joint" research program, 249; lead in areas of nuclear weapons development, 343; lead in ballistic missiles, 32; missiles, long-range, 341; motivation in agreeing to Conference of Experts, 51; 1961 nuclear weapons tests, 341-43; objections to meeting of technical experts, 378-79; objections to NATO nuclear plans, 174-76; position in 15th General Assembly, 268; position on "black boxes," 428; preliminary moves at Moscow treaty negotiations, 453-54; proposal for control system by, at Conference of Experts, 75; proposal for nonaggression pact, etc. in ENDC, March 1963, 443; reaction to "new data," 162-68; reaction to Western draft treaties of August 1962, 413-14; readiness for partial test ban without unpoliced moratorium, July, 1963, 453; refusal to assist Communist China, 274; reinstatement of offer of 3 on-site inspections (1962), 426; rejection of offer to reduce number of on-site inspections and control stations, 394; response to US suggestion for phased treaty, Feb. 1960, 238; resumption of atmospheric testing, Dec. 13, 1962, 429; resumption of testing, Sept. 1, 1961, 280-81; sharp change in conduct in negotiations, 275; Soviet members, Conference of Experts, 56-58; Soviet sites for "black boxes," Dec. 10, 1962, 429; superiority in conventional forces, 16; superiority over US in intermediate and long-range ballistic missiles, 341; test series completed in March 1958,

Soviet Union (*continued*)

45; troop strength reduced, 234; underground nuclear explosion, first (Feb. 1962), 353; unwillingness to accept inspection, 245; willingness to establish control system (June 1958), 15; viewed as expansionist by US, 6; willingness to consider direct line of communication with US, 446; *see also* Khrushchev, Nikita S.

United Arab Republic, 357, 420-21, 427

United Kingdom (UK), Agreement for Cooperation with US (1958), 37; agreement with US on Thor rockets (1958), 175; Atomic Energy Authority, 56; Bomber Command, 436; decision to continue moratorium, 203; delegates to Geneva Conference, 114-15; delegates to Seismic Research Program Advisory Group, 254; delegation to TWG I, 186; draft treaty (with US, April 18, 1961), 363-64; Labor Members of Parliament, 20; members of Conference of Experts, 56; position in 15th General Assembly, 268; primary objective to perpetuate negotiations, 291; proposed technical talks on "black boxes," 429; suggestion for meeting of technical experts, 378-79; technical talks: first suggestion, 17, favored again, 392; willingness to accept partial test ban (July 1963), 454; *see also* Macmillan, Prime Minister

United Nations (UN), agreements authorized between Control Organization and UN, 143; Charter, 305; Committee on the Peaceful Uses of Outer Space, 211; Convention on Privileges and Immunities, 1946, ratified by USSR and UK, 307; Convention on Privileges and Immuni-

ties of the Specialized Agencies, 1947, 311; Economic and Social Council, 21, 373; expanded membership, implications, 53; impact on US position, 108; role of, in international political system, 12; Scientific Committee on the Effects of Atomic Radiation, 395; Secretariat, 371; Secretary General, 117, 290 (*see also* Hammarskjöld); Security Council, 289, 303; Subcommittee of the Disarmament Commission, 14-24, 91; *see also* Disarmament Commission; General Assembly

United States, Arms Control and Disarmament Agency (ACDA), 381, 474; Army, 340; Coast and Geodetic Survey, seismological network, 353; Disarmament Administration, 269; Information Agency (USIA), Director of, 86; National Security Council (NSC), 46-47, 63; Office of Defense Mobilization (ODM), Director of, 33; President's Science Advisory Committee (*See* President's Science Advisory Committee), Seismological stations equipped by, 384; absence of contingency planning, 39; Administration's defense of draft comprehensive treaty, 445-46, Agreements of Cooperation with UK and others, 1958, 37; assurance against misuse of on-site inspections, December 20, 1962, 431; assurances by President to Congress on Moscow Treaty, 462; atmospheric testing resumed, April 26, 1962, 377-78; bilateral agreements with Greece, Federal Republic of Germany, Netherlands, Turkey, Canada (May 1959), 175; Cold War attitudes reexamined, July 1963, 449; reflecting forces in nuclear test ban policy formulation, 18-33; confusion over

- U.S. Arms Control (*continued*)
 necessity of control posts in USSR, 389-90; decision not to resume testing (1961), 278; decision to continue priority for comprehensive test ban (June 1963), 452; defense appropriations, 27, 339; defense strategy, 339-40; delegates to Geneva Conference, 113-14; delegates to Seismic Research Program Advisory Group, 254; delegates to TWG I and II, 186-87, 212; delegation to Geneva political negotiations, 113; development of policy leading to the Conference of Experts, 39-53; domestic opposition to 1962 comprehensive draft treaty, 444; evolution of policy on nuclear weapons test ban, 40-41; formulation of security policy, 470-90; impact of changes in international system upon, 4; impact of "new data" on US position, 145-62; instructions to scientists, Conference of Experts, 64-66; integration of scientist into policy process in, 9; interagency *ad hoc* committee (April-July 1962), 381, 386-89; lead in nuclear weapons (1961), 278; memorandum on draft treaty changes (April 1, 1963), 441; military power, 339-41, 439-41; need to explain policy changes (1962) to different audiences, 39; new concessions offered by Dean (Aug. 28, 1961), 280; new negotiating position tabled (Feb. 11, 1960), 235; new policy approved by Kennedy, 271; number of on-site inspection control stations in USSR acceptable to (October 1962), 426; offer to allow Soviet experts to examine US testing sites, 279; opposition to resumption of testing in atmosphere, 354; partial treaty suggested by (April 13, 1959), 171; policy in transition, April 1958, 50; position in 15th General Assembly, 268; power increasing, 339-41; processes of decision-making, 233-34; proposal (verbal) for partial test ban, Feb. 11, 1960, 234-38; readiness in 1962 to accept internationally supervised, nationally manned control stations, 390; security policy of, 11-13; strategic doctrine, 382; strategic forces, 436; strategy and nuclear weapons under Kennedy, 499; (with UK) tabling of draft partial test ban treaty (Aug. 27, 1962), 455; tactical air squadrons, 340; technical memoranda for General Assembly (1962), 418; technical preparation of delegation to Conference of Experts, 58; technical preparation for negotiations inadequate, 491-93; test ban policies appraised, 494-95; underground tests postponed (Jan. 26, 1963), 432; underground tests (Sept. 13, 1963), 463; underground tests series began (Feb. 8, 1963), 438; weapons progress if tests resumed, 278; willingness to accept a partial test ban, July 1963, 454; *see also* Atomic Energy Commission; Committee of Principals; Comprehensive Nuclear Test Ban Treaty, Western drafts; Congress (*also* Joint Committee on Atomic Energy; Senate, Committee on Armed Services; Senate, Committee on Foreign Relations); Department of Defense; Department of State; Eisenhower, Dwight D.; Eisenhower Administration; Kennedy, John F.; Kennedy Administration; Senate
 University of California Radiation Laboratory, 179

- Ustyumenko, A. I., 186n, 214n, 254n
 U-2 incident, 71
- Van Allen radiation belts, 191
- Vela Program, 178, 182, 197, 214, 254, 263-65, 279, 353-56, 384, 390-91, 412, 445
- Venezuela, 268
- Verification; *see* Control Organization; On-site inspection
- Vernov, S. N., 186n
- Veto; *see* Control Commission; Control Organization
- Vienna meeting, 276
- Villard, Henry S., 114n
- Violation of agreement, 110, 124-25, 333-34, 367
- Violations, alleged by US, of General Assembly Resolution 1762A (XVII), 438
- Voss, Earl H., 19n, 25n, 49n, 55n, 69n, 108n, 120n, 136n, 168n, 170n, 172n, 180, 224n, 251n, 271, 275n, 279n, 352n, 362n, 378n
- Wadsworth, James J., 113-14, 136-40, 142, 143n, 150, 168-74, 196, 210, 235-43, 248, 258n, 312, 318, 329, 494n
- Walske, M. Carl, 254n
- Warsaw Pact, 274, 357, 443; forces, strength of, 341
- Watson, Kenneth M., 186n
- Weapons development, 462; state of, impact on negotiations, 498
- Wennerström, Stig, 360
- Western alliance, 421
- Western press, conflicting views of scientists reported in, 365
- Wiesner, conversations with Fedorov, 426
- Weisner, Jerome B., viii, 33n, 86, 270 and n., 341, 345, 362, 368-69, 393, 426, 431, 439-40, 475
- Williams, G. Mennen, 199
- Wilson, Charles E., 29
- Wilson, Duncan, 352n
- Wilson, Harold, 449, 453
- Withdrawal from treaty, 142, 406-8; *see also* Duration of treaty on ban on nuclear testing; Control Organization
- Wohlstetter, Albert, 479
- Wolfe, Thomas W., 266n
- Women's Strike for Peace, 471
- Woodward, Lester, 47n
- World Council of Churches, 21
- World Meteorological Organization, 367, 395
- World order, arms control, 493; link to control of nuclear weapons, 7-9; *see also* International system and control of modern technology
- Wright, Christopher, viii, 9n, 479n
- Wright, J. W., 218n, 254
- Wright, Sir Michael, 159n, 167n, 169n, 196, 230-33, 241, 248n, 270, 326, 359n, 471n, 473n, 494n, 498n
- Yarborough, Ralph W., 448n
- Yifru, Ato Ketema, 367
- York, Herbert F., 33n, 47, 270n, 460
- Yugoslavia, 206, 419
- Zacharias, Jerrold R., 33n
- Zagoria, Donald S., 251n, 265n
- Zhukov (Marshall), 31
- Zinn, Walter H., 277n
- Zones of inspection, 112
- Zoppo, Ciro E., viii, 69n, 329n
- Zorin, Ambassador, 17n, 18n, 376, 393, 428
- Zuckerman, Sully, 352n