

Nuclear Notebook

Nuclear weapons at sea, 1988

Weapons

	U.S.	Soviet	U.K.	France	China	TOTAL
Strategic missile warhead	5,472	3,378	64	256	39	9,200†
Nonstrategic warheads						
Cruise missiles	150	500*	0	0	0	650
Aircraft bombs	1,450	0	50	36	130	1,666
Antisubmarine weapons	1,760	1,400*	140	0	0	3,300
Antiair weapons	300	260	0	0	0	560
Naval artillery	0	100	0	0	0	100
Coastal missiles	0	100	0	0	0	100
Subtotal	3,660	2,360	190	36	130	6,400†
Total	9,132	5,738	254	292	169	15,600†

Nuclear reactors on naval vessels

Nuclear-powered ship types

	U.S.	Soviet	U.K.	France	China	TOTAL
Ballistic missile submarines	35	125	4	6	2	172
Cruise missile submarines	0	79	0	0	0	79
Attack submarines	95	146	15	3	3	262
Aircraft carriers	16	0	0	0	0	16
Cruisers	18	4	0	0	0	22
Other	1	8	0	0	0	9
Total	165	362	19	9	5	560

*Reflects improved estimates, not increases or reductions from last year.
 †Totals may not add up due to rounding.

The naval forces of the five nuclear powers possess about 15,600 nuclear weapons. About 59 percent of these are warheads on submarine-launched ballistic missiles; the rest are nonstrategic weapons. Together these represent about 27 percent of all nuclear weapons in the world.

Seventeen types of ballistic-missile submarines carry 14 types of ballistic missiles. The nonstrategic weapons include many types of sea-launched and air-launched cruise missiles, bombs, torpedoes, surface-to-air missiles, naval guns, and coastal missiles. About 3,000 aircraft and helicopters have naval nuclear missions, more than a third of these (particularly in Soviet Naval Aviation) are land based.

Of the 941 naval vessels capable of delivering nuclear weapons, nearly half are submarines—ballistic-missile, cruise-missile, or attack. Virtually all major Soviet surface warships and about 80 percent of U.S. major combatants (submarines and surface warships) can fire nuclear weapons. Some 32 percent of British, 12 percent of French, and 2 percent of Chinese major warships and submarines are nuclear capable.

Nuclear-capable ships and submarines

	U.S.	Soviet	U.K.	France	China	TOTAL
Submarines						
Ballistic missile	35	76	4	6	4	125
Cruise missile	0	60	0	0	0	60
Attack	61	202	0	0	0	263
Total submarines	96	338	4	6	4	448
Surface ships						
Aircraft carriers	19	6	3	2	0	30
Battleships	3	0	0	0	0	3
Cruisers	37	34	0	0	0	71
Destroyers	64	52	12	0	0	128
Frigates	65	119	12	0	0	196
Patrol combatants	0	65	0	0	0	65
Total surface ships	188	276	27	2	0	493
Total submarines and ships	284	614	31	8	4	941

About 560 nuclear power reactors are located at sea. The Soviet Union uses 362 reactors to run its fleet of nuclear-powered submarines, cruisers, and ice-breakers. Most Soviet submarines and all nuclear-powered cruisers and ice-breakers have two reactors each. All U.S. submarines have one reactor each while the cruisers have two. Four aircraft carriers have two each, and one carrier has eight reactors. The vessels of Britain, France, and China also operate on single reactors.

For comparison, about 412 commercial nuclear power reactors are now operating worldwide in 26 countries. The United States has 110, the Soviet Union 52, Britain 38, and France 50.

Tables adapted from Joshua Handler and William M. Arkin, *Nuclear Warships and Naval Nuclear Weapons: A Complete Inventory*, Neptune paper no. 2 (Washington, D.C.: Institute for Policy Studies, Greenpeace, 1988); *Nuclear Weapons Databook Vol. IV: Soviet Nuclear Forces* (forthcoming); *Nuclear Weapons Databook Vol. I: U.S. Forces and Capabilities* (forthcoming).