

Go In and Sink

By Ian Shaw

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These are a simple set of naval rules to cover naval warfare from 1950 ish to 1996 ish. In this period warfare has become very complex, with massive use of very sophisticated electronics, and various other types of detector. They have seen guns virtually disappear, only to reappear, as a local defence weapon, and an appropriate response to the growth of missile boats, capable of sinking all but the very largest of warships. The inspiration comes from that game "Sea Strike", which I think is still available. I've dispensed with cards, but the tables given have exactly the same odds as the cards do in the original game. The rules concentrate on the abilities of ships to operate their weapons, rather than the number of weapons actually carried, and this is where the electronics comes in. There are no strict scales, and ships can be represented by cards, as in the original game. There are some additional weapons systems covered, mainly heavy guns and vertical take off aircraft. This allows the addition of battleships, and aircraft carriers.

In the version of "Sea Strike" that I have there is no mention of mines, and only Missile Boats have limited numbers of missiles. Given that it was produced in 1973, that's fair enough, particularly since there had been no real naval action since 1945, on which to base the rules. I will ignore mines for the moment, but we will come back to them. Ammunition restrictions will be included, to give you the players more problems, but then I'm nasty like that. I've also included a means of designing ships, so that you can make up your own vessels. Remember that a weapon symbol means that a ship can engage one target, and does not represent one mounting, with exceptions. You will find that Russian ships tend to be weaker than they look, on paper, because they lack the control abilities to that Western vessels normally have.

Ships are described using the USN classification system. I have modified this slightly, and also ignored the rather crazy situation that in the USN a frigate or DE, was the size of a small cruiser, whilst all other navies used the term to describe a much smaller vessel. For the purposes of these rules I have used the Standard Displacement, and the presence or lack of armour of a ship to define what classification it should be, as this seems to be a logical way to proceed. Even then it could cause problems, remember that "Ticonderogas" and "Spruances" use the same hull, but one is a cruiser, and the other a destroyer. The Russians aren't much better, they classify as cruisers vessels with displacements varying from 24,000 tonnes down to 4800 tonnes. To an extent therefore classification is something of a fudge. The base line classifications, and some examples are :

CV Aircraft carrier. Normally, only use CVL or Light Carriers, with helicopters, and one or two flights of Harrier type aircraft. A CVA or CVN could be used as a target for airstrikes and submarines, but their owners tend to be very nervous, and give them lots of protection. Vessels up to 24000 tonnes count as cruisers for damage purposes, and are CVL.

BB/BC Battleship or Battle Cruiser. As of now only the Russians have any, the Kirov Class. The Iowa's are up for disposal, and of course the RN disposed of theirs by 1962. Richelieu and Jean Bart only saw very limited service up to 1956.

CA/CG Cruiser, a vessel of 7000 to 20000 tonnes displacement. CG is missile armed, CA an obsolescent gun armed ship, including those which would have been called CL due to gun calibre.

DD Destroyer, vessel of 3000 to 7000 tonnes displacement. Functions are AA or ASW escort, older vessels may be surface attack types.

DE Frigate. Yes I know that the designation means Destroyer Escort. Vessel of 1200 to 3000 tonnes, otherwise as a destroyer.

PB Corvette, or Light Frigate, of over 400 tonnes displacement, may also include larger missile boats. These are PBF.

PCF Patrol Boat Fast. Light craft of less than 400 tonnes, capable of 35 or more knots, ie Missile or Torpedo boat.

PC Other small craft of less than 400 tonnes.

SS, SSN, SSG, SSGN. Submarines of various types, SS are none nuclear, SSN are Nuclear, if a G is included then they carry a missile.

Now there are merchant ships. These are as variable as warships, everything from a Mersey ferry, to a 1/2 Million tonne oil tanker. They are very resistant if large, but it does depend on the cargo that they carry. No doubt some people remember the news pictures of Kuwaiti tankers escorting their USN escorts in the 1980's, since the tankers could ignore the mines, whilst the much smaller warships could not.

Aircraft. There are three types of aircraft, Strike, Fighter, and Patrol. Some actual types are multi-purpose, and can act as both strike and fighter. Patrol aircraft are large ASW types such as Nimrod, Orion or Viking. What each type can do is covered later.

Now that I've defined what ships are which I'll move onto the playing rules.

Rules

Before starting a game both players or teams must decide on the scenario, and forces available to them. There are some suggested games later on. Add any Islands, or coasts needed and then deploy ships, and any shore installations in play. Players deploy each vessel or installation in turn. **Roll a D20**, the side scoring higher deploys first, and will have initiative on the first move. Once both sides have deployed team commanders issue orders to their subordinates.

Where there are teams, the senior player controls a nominated flagship, normally the largest vessel in a force, and any aircraft allocated to the force. If there are submarines and surface ships in the same group they should be commanded by different people.

When all orders are written the game starts. The player or side with initiative moves one of his ships. The other side then moves one of theirs. Calling an airstrike, or moving a patrol aircraft counts as moving a ship. The distances which can be moved are :

Move Distances.

For merchants, PC's, and Diesel Submarines 10 cm

For warships, and Nuclear Submarines 15 cm

For PCF, PBF 20 cm

Patrol aircraft may move from 20 cm to off table. They may only be over the table for 5 moves.

Ships and submarines may turn 45 degrees in one move. PC's may turn up to 90 degrees in one move. There are no restrictions on Patrol aircraft.

Other types of aircraft appear over the table only when they are being used, and do not move. Helicopters don't move as such, but are used as extensions of a ship's weapons.

Firing.

Once all ships have moved the player with initiative may fire with the weapons on one of his ships, or carry out an airstrike if he has any, or intercept an airstrike, if he has any fighters. With one exception, weapons may only fire once in any move, although some weapons may be reserved for later, if they can be used defensively. This applies to AA and AAM systems, which may be held back until the vessel is attacked with missiles, or by helicopters or aircraft. However they may still only be used against one such attack.

The firing player first checks to see what targets are in range, and nominates those that he is firing at. Targets may not be nominated if they are not in range. Beware that Area SAM's and VLR ASW have a minimum range, and may not shoot at targets inside that range. However SAM's can fire at any point from the entry point to the current position of the flight, so long as they can draw a line of sight and are in range. See below for more information.

For each nominated target, and weapon system firing at it roll a D20. This must be done individually, weapon by weapon. A score of 11 or higher is needed to hit. The roll is modified as follows depending on the number of fire control hits. Optionally when an obsolete ship is firing at a modern one, subtract 4 from the die roll.

For each fire control hit taken subtract 3 from the die roll.

Aircraft subtract 5 from the die roll, always. This reflects the well documented ability of pilots to never arrive in the right place at the right time.

Helicopters roll twice, once to take off, and once to acquire their target. For the first roll add 5 to the die

The roll must be carried out weapon by weapon, because any roll of one stops both that weapon and others of the same type firing in this move. Helicopters scoring a 1 on the first roll have crashed, and should be removed.

Ranges for weapons are :

Helicopters, LR Area SAM's 10 cm Min*
Radar Horizon 35 cm
Heavy Guns, SSM, Medium Guns 30 cm
Area SAM's, Lt SSM Very Long Range ASW 5 cm Min*
Modern Guns 20 cm
Torpedoes, Long Range ASW, Point Defence Missile 10 cm
Short Range ASW, Point Defence Guns 5 cm

* Only applies to SAM's and VLR ASW

Note that there are restrictions on what can be fired at what. Optionally some of these can be ignored, or modified. I'll detail that later.

Essentially the restrictions are :

SSM, Heavy and Medium Guns may only fire at surface targets, ships or land installations. Heavy and medium guns must fire all mounts at the same target. Note that realistically most SSM have a very limited ability to attack land targets, this rule is a straight carryover from the original rules, and realistically should not be allowed.

Area and PD AA may only fire at Airborne targets, aircraft, helicopters or SSM's.
VLR, LR and Short Ranged ASW may only fire at Submarines.
Torpedoes on Surface ships may only fire at Ships.
Modern Guns may fire at surface and Airborne targets, except SSM.
Submarine Torpedoes may fire at Submarines and Ships.

Note that the effects and ranges are heavily simplified, those who know more can differentiate more if they wish. (I have received the following suggestions : Differentiate between SS-N-12, and MM38 Exocet, also 5"/54, Russian tw130mm [Medium Gun ?] and British 4.5" Mk 6)

Optionally players can also use some weapons against other targets. Remember that these are optional, and do add a little complication.

Medium Guns may fire at aircraft. *(Strictly this should only apply to British and American 6" guns post war, plus the British twin 8")*
Area SAM may fire at surface targets, using gun factors.
Long range ASW may fire at ships, counting as torpedoes [Strictly only Russian weapons]
Point Defence may fire at ships up to destroyer size, counting as guns, .

No fire may be aimed over land, except at land installations, or over ships, specifically the point used for measuring ranges.

The weapon classes represent the following types of weapon , with some examples of real ones :

Heavy Guns : Weapons of 11" or over. Only 12" on Alaska Class, 14" on the KGV's, 15" on Vanguard and the French battleships, and 16" on the US battleships survived on active ships after 1950.

Medium guns. These are 6" to 8" guns on gun armed cruisers, numerous classes of which survived until the early 1980's. A few still remain. Rate of fire tends to make up for the lower shell weight in the smaller weapons.

Surface to Surface missiles are

Long range : Harpoon, Exocet, and all Russian SSM's

Short Range : Penguin, or early Gabriel, most specialist air launched weapons such as Sea Eagle. Missiles on helicopters.

Modern Guns are weapons like the British 4.5" Mk 6 or Mk 8, current US 5", 76mm Compacts, Russian 130mm, 100mm, and 76.2mm. Again I have assumed that rate of fire will compensate for weight of shell.

LR SAM's are weapons like Talos, or Standard-LR(SM2 ER), note that they can only fire at long range against high altitude targets.

Area SAMs are weapons like Sea Slug, Sea Dart, SA-N-1, 2, 3, 4, 6 and 7, Terrier, Standard MR, and Masurca. Most of these have some ability to fire at ships.

Point Defence (Missile). These are systems like Sea Wolf, Crotale, Aspide, Sea Sparrow, Phalanx, Goal Keeper, modern Bofors, etc.

Point Defence. Older light missiles, and guns, including improvised weapons added for barrage fire. The point defence systems are further categorised as R (for missiles) and G for Guns.

VLR ASW launchers are ASROC, Ilkara, Mafalon, SS-N-14, 15 and 16. I have assumed only torpedo armed versions are used.

LR ASW are homing torpedoes, fixed or trainable tubes carried on almost all surface warships. Also torpedoes fired from submarines at submarines.

ASW. Mortars like Limbo, Bofors. Also Russian RBU launchers.

Helicopters are obvious. So are Strike aircraft and Interceptors.

Ok we have now decided how to hit a target, and what we are hitting it with. It's time to look at the effects. This involves two tables, and rolling a D20. The initial die roll is really to see if the weapon being fired has acquired its target. Roll on the Effects Table to see what, if any, effect the hit has had. There are four types of hit :

Catastrophic : Sinks vessels up to Destroyer size. Shoots down aircraft, helicopters and missiles. Acts as an Engine hit on ships up to Cruiser size. It is cumulative on larger ships. A second hit of this type sinks Cruiser sized vessels, and is an engine hit on larger vessels, preventing carriers launching aircraft. A third hit of this type sinks large vessels.

Major : Sinks PB, and PC, shoots down helicopters and missiles. Aborts strike and patrol aircraft, acts as an engine hit on Sub's, DE and DD sized vessels. It is cumulative on larger vessels. Two hits sink or shoot down all the above, and cause an engine hit on Cruiser sized vessels. They are cumulative on larger vessels. Three cause an engine hit on large ships, and sink cruisers. A fourth hit sinks large ships.

Fire Control. This has already been detailed, it makes it progressively more difficult to lock on to targets. It counts as a major hit on merchant ships.

System. Roll on the System hit table, if the system shown is not carried then the hit is not effective, it removed the anchor or flag (jack) staff. It counts as a cumulative hit on a merchant ship

Merchant ships count as 1/4 net tonnage for displacement when assessing damage.

An engine hit reduces a ship's speed by 50%. Normally a second such hit sinks the ship, players could have it stopped, and unable to fire. They could then attempt to tow it out.

Aborted aircraft do not attack, but may be used again later in the game.

Hit Effect Table

Die				Weapon	Firing			
Roll	Heavy Gun	Med Gun	SSM	Mod Gun	Torpedo	ASW	AA Fire	Airstrike
20	Catastrophic	Major	Catastrophic	Major	Catastrophic	Catastrophic	Catastrophic	Major

19	Catastrophic	Major	Catastrophic	Fire Control	Catastrophic	Catastrophic	Catastrophic	Major
18	Catastrophic	Fire Control	Catastrophic	System	Catastrophic	Fire Control	Catastrophic	Fire Control
17	Catastrophic	Fire Control	Catastrophic	System	Major	Fire Control	Major	Fire Control
16	Major	System	Catastrophic	System	Major	Torpedo	Major	System
15	Major	System	Catastrophic	System	Major	Torpedo	Miss	System
14	Major	System	Major	System	Major	Missile	Miss	System
13	Major	System	Fire Control	System	Major	Missile	Miss	System
12	Fire Control	System	System	System	Miss	Miss	Miss	System
11	Fire Control	System	System	System	Miss	Miss	Miss	System
10	Miss	Miss	System	Miss	Miss	Miss	Miss	Miss
09	Miss	Miss	Miss	Miss	Miss	Miss	Miss	Miss
08	Miss	Miss	Miss	Miss	Miss	Miss	Miss	Miss
07	Miss	Miss	Miss	Miss	Miss	Miss	Miss	Miss
06	Miss	Miss	Miss	Miss	Miss	Miss	Miss	Miss
05	Miss	Miss	Miss	Miss	Miss	Miss	Miss	Miss
04	Miss	Miss	Miss	Miss	Miss	Miss	Miss	Miss
03	Miss	Miss	Miss	Miss	Miss	Miss	Miss	Miss
02	Miss	Miss	Miss	Miss	Miss	Miss	Miss	Miss
01	Miss	Miss	Miss	Miss	Miss	Miss	Miss	Miss

Systems Hit Table

Die Roll	System Hit
20	Heavy gun or Medium Gun or SSM Launcher
19	Heavy gun or Medium Gun or SSM Launcher
18	Modern Gun
17	Modern Gun
16	Area AA
15	Area AA
14	PD AA (Missile)
13	PD AA (Missile)
12	PD AA (Basic)
11	PD AA (Basic)
10	Very Long Range ASW

09	Very Long Range ASW
08	Long Range ASW
07	Long Range ASW
06	Short Range ASW
05	Short Range ASW
04	Helicopter
03	Helicopter
02	No Effect
01	No Effect

Air and Helicopter attacks.

These follow the basic rules. Check for availability as normal, subtracting 5 from the die roll for strike, patrol and fighter aircraft, as is mentioned above. On an unmodified roll of 1 the aircraft is unserviceable, and removed from play.

Once the strike or patrol aircraft are on table they may be intercepted, if fighters are available. The attacking side may allocate fighters as escorts. These cancel out the defending fighters, at the rate of 1 for each interceptor. For each strike or patrol flight intercepted roll on the AA column of the hit effect table. Optionally the intercepted strike aircraft may fire back after the interceptors have fired. **Note** : Helicopters may not be intercepted.

What happens next depends on the attacking player. There are three types of attack, Stand Off, using missiles or smart bombs, Direct, using iron bombs, rockets and cannon, and Anti-Submarine, which is restricted to patrol aircraft and helicopters only.

Aircraft using stand off attacks must make a fire control roll as normal, to get the weapons to lock on to the nominated target. They may however attack from either high level at up to 45 cm, or low level at 25 cm. Aircraft at high level are not covered by any terrain, but those at low level may only be shot at under the normal restrictions.

Helicopters may use this option only at low level.

The attack is resolved using the SSM column of the Hit Effect table.

Aircraft making a direct attack must be at low level

The strike aircraft is placed alongside its target, and a roll made on the airstrike column of the Hit Effect Table. This may not be used by patrol aircraft. Before 1980 ? patrol aircraft may use torpedo attacks, at low level only.

Anti-submarine attacks are restricted to Helicopters and Patrol Aircraft. The attack is carried out at 5cm, and a fire control roll must be made. If successful roll on the Anti-Submarine Table.

AA fire is carried out before attacks, and may be fired by any weapon in range, but only once in a move. I have already noted the restrictions. Also point defence may only fire at low level aircraft.

AA fire at stand off attacks may also be used to shoot down the missile. This is restricted to Area SAM's, Modern Guns, and Point Defence (Missile). These may also shoot at surface launched missiles attacking the ship.

Remember that a weapon may only fire once in a move.

One additional mission for patrol aircraft and helicopters is over the horizon targeting. This is used to allow the full range of missiles. It is covered later.

Mine Warfare.

Mines are something most Admirals hope will go away, but they won't. There are two types of mine, Dumb, or the old style floating type, with horns, and smart, which sit on the bottom. The second type are influence mines. Mines can only be used in fairly shallow water, unless they are ASW mines, such as Captor. Mines have to lock onto their targets as do all other weapons. Smart mines require an 11 on a D20, and dumb ones require a 16. Once a target has been locked onto test on the Torpedo Column on the Hit Effect Table, for surface vessels, and on the ASW column on the Hit effects table for submarines.

If you allow mines, the player laying the mine fields must draw the on a map, his opponent will be informed when he moves into the mine field, testing for the first ship to enter.

Mines do not attack aircraft.

HIDDEN MOVEMENT.

In the original game only submarines used any form of hidden movement. You can leave it at this if you wish, but some hidden movement would be justified for surface ships, to reflect their heavy electronic warfare abilities. It is represented by using blanks to represent ships. If this is being done the number of blanks should be varied to reflect the amount of electronic equipment carried. With submarines the number of blanks used should be varied depending on their speed. Remember that a fast moving submarine is much easier to find than a slow one.

So use the following, optionally for surface ships, and always for submarines.

Ships with lots of ECM, 3 counters, one of which is the real ship.

Ships with some ECM, 2 counters.

Ships with no ECM 1 counter.

Stationary Diesel Submarines 5 Counters.

Stationary Western Nuclear submarines, and all Diesel submarines moving at up to 1/2 Speed, 3 counters.

Nuclear Submarines moving at up to 1/2 Speed, and Diesel Submarines moving at full speed, 2 Counters.

Nuclear submarines moving at full speed 1 counter.

When firing at a target, indicate which counter you want to lock onto, if successful, and it is a blank, remove it. The shot is wasted, and was deflected by counter measures. For surface ships remove blanks for any in sight at 20 cm or less, as the targets are in sight.

The number of submarine blanks should be varied with its speed. The system is designed to reflect the sheer frustration of hunting submarines, which requires much patience.

The level of electronics carried is up to players. It can depend on the age, and owner of the ship in question.

Over the Horizon Targets.

Many missiles, and heavy guns, can fire over the radar horizon. However it does require external targeting, and is less accurate. To allow this the following must be done.

- i) The firing unit (it may be a ship, submarine or aircraft), must lock on asnormal. In some cases they may not even be on table.
- ii) The targeting unit, which can also be any type, must also lock on to the target, before any attack is resolved. This applies

to aircraft, and is a change to normal rules.
iii) Then carry out an attack as normal.

Note that Heavy guns may only fire to 45 cm, but missile attacks are possible from off table.

Optionally, such attacks may be made blind. In this case, nominate a target. It needs 20 to lock on to that target, but test all ships on table if this fails, working towards from the nominated vessel.

This does not apply to land targets, which are fixed, and may be attacked from over the horizon as normal, so long as the attack is being carried out by a specialised land attack missile, or heavy guns. This does make land installations more vulnerable.

Weather

All naval warfare is very heavily affected by the weather, which reduces the performance of both sensors and weapons. There are two basic conditions, poor visibility, and heavy seas, which are frequently combined. To reflect this more Fire control rolls should be made in bad weather. First check to see if there is bad weather.

Roll a D20, if the score is 5 or less then the weather is bad enough to affect combat.

Roll a second die :

On a score of 1 to 5 there are heavy seas and poor visibility. Three fire control rolls are needed to lock on. PC's Helicopters, and aircraft other than patrol aircraft may not operate. The horizon is limited to 20 cm.

On a roll of 6 to 12 there are heavy seas. Subtract 2 from the roll for helicopters to take off, and PCF's or PBF's are limited to the same speed as other ships. 2 Fire control rolls are needed to lock on. (Optionally DD and larger can ignore this.)

On a roll of 13 to 20 there is limited visibility. The horizon is 20 cm, any firing over 20 cm requires two fire control rolls.

Ammunition.

To keep this simple it only applies to missiles, which even on the largest ships are only carried in limited numbers. There are two options here. Ships can fire one missile per box carried, or they can fire twice per box carried. In the first case each box represents one missile, and in the second it represents two. The second option limits the Russian somewhat, so you could mix.

Ship Design.

Designing ships is difficult. It always appears that you can do better than the real thing. There are lots of constraints due to the sea. I have limited the amount of equipment which you can fit, simply because it limits you to real ships. Costs are purely notional, and increase all the time. I've presented the information in tables, as this make it easier to read. I've also not distinguished between old and new "Modern" guns, since much of the improvement is due to fire control and ammunition improvements. If you are using real prototypes, these weapons may not fire at missiles if the ship was built prior to 1960. This is fairly arbitrary, but should make life a bit easier. As an aside, the Israelis in 1973 were able to shoot down "Styx" missiles with 0.5" HMG's, manually aimed and fired, so be careful limiting weapons.

If a ship is overloaded, as most Russian ones are, or an obsolete hull, add 5 to the effect roll if a hit of some sort is rolled i.e. if miss shows make no adjustment, but if a system or major hit is caused add 5 to the roll. This is to cover the explosions which occur on ships with too many weapons in close proximity. Optionally you could do the same on old hulls.

Shore Installations

Shore installations may be airfields, AA sites, gun batteries, and SSM batteries.
Airfields have 30 spaces, and may operate any fixed wing aircraft or helicopters.

AA sites are Area or Long Range SAM, and may have up to 10 spaces.

Gun batteries count as medium calibre guns, and represent army batteries deployed on the coast. They may have 8 spaces.

SSM batteries may be either Long range or short range SSM's. They represent trailer mounted SSMs, deployed on the coast to fire at ships coming in to bombard shore installations. They have 6 spaces.

Any shore installation may add upto 2 Point Defence units of either type.

Firing at shore installations is the same as firing at ships, they count as PB sized targets for damage.

Hull Sizes and Cost

Hull	Cost	Cost	Spaces	Spaces	Comments
Type	New Hull	Old Hull	In Hull	Overload	
CVA/CVN	£200m	£150m	280	300	Post war carriers, spaces allow for the largest.
CVL	£150m	£100m	60	90	Invincible, Keiv, Hermes or similar ships.
BB	-	£200m	44	-	Iowas. In WWII configuration have 100 spaces
BC	£ 200m	£ 100m	40	60	Kirov, old hull is Goben (Yavuz Sultan Selim)
CA/CG	£ 150m	£ 75m	30	40	Many types. Sizes are for the largest.
DD	£ 75 m	£ 50 m	20	30	Older Lt. Cruisers count as destroyers.
DE	£ 50 m	£ 25 m	15	20	WW II destroyers fit into this category.
Submarine	£ 100 m	£ 75 m	10	12	
Nuc Sub	£ 200 m	-	12	14	
PB	£ 30 m	£ 15 m	10	15	This would also include most WW II escorts
PBF	£ 20 m	-	10	-	Use for Ashviles, Taruntals and similar
PC	£ 1 m	-	4	5	Many types of small vessel
PCF	£ 2 m	£ 1 m	4	5	FPB, MTB etc.

Weapon System Costs.

Weapon Types	Cost Per System	Spaces need	May be on
Heavy Guns	£ 10 m	3	Old BB or BC
Medium Guns	£ 7 m	3	Old CA
Modern Guns	£ 6 m	2	Old CVA, CVL,BB, BC, CA,DD,DE,PC,PCF
Long Range SSM	£ 8 m	2	CVL,BB, BC, CA,DD,DE,PC,PCF, PB, PBF, Submarines
Short Range SSM	£ 6 m	1	Any.
Long Range AAM	£ 15 m	4	CG, DD.

Area AAM	£ 10 m	3	CG, DD, DE
Point Defence (Missile)	£ 6 m	2	Any except Merchants
Point Defence	£ 1 m	1	Any
VLR ASW	£ 10 m	3	CG,CVL,DD,DE
LR ASW	£ 6 m	1	CVL,BB, BC, CA,DD,DE,PC,PCF, PB, PBF
SR ASW	£ 5 m	1	Any
Torpedoes	£ 5 m	2	Submarines, Old DE
Helicopters	£ 10 m	2	Any except PB, PBF
Fixed Wing Aircraft	£ 15 m	3	CV's only.

Some Examples.

This gives a small selection of real ships, from the major fleets, and hopefully the most common types. I have not costed them, or detailed the spaces occupied by the systems.

American

Iowa - 6 LR SSM (4 Tomahawk, 2 Harpoon), 3 Heavy Gun (3 x 3 16" Turrets), 6 Mod Gun (6 x 2 5"/34), 4 PDM[G] (Vulcan / Phalanx)

Virginia - CG 4 SSM (2 Tomahawk, 2 Harpoon), 2 LR Area AAM (Standard SM 2 LR), 1 VLR ASW (ASROC), 2 LR ASW (ASW TT), 2 Mod Gun (2 x 1 5"/54), 2 PDM[G] (Vulcan / Phalanx)

Ticonderoga - CG 2 LR SSM (Harpoon), 2 VLR ASW (ASROC), 2 LR ASW (ASW TT), 2 Mod Gun (5"/54), 2 PDM[G] (Vulcan Phalanx), 2 Helicopters

Spruance - DD 4 SSM (Tomahawk), 1 VLR ASW (ASROC), 2 LR ASW (ASW TT), 2 Mod Gun (5"/54), 1 PDM(R) (Sea Sparrow), 2 PDM[G] (Vulcan Phalanx), 1 PD[G] (12.7mm MG), 1 Helicopter (SH60B)

Charles F. Adams - DD 1 Area AAM (Standard or Terrier), 1 SSM (Harpoon), 1 VLR ASW (ASROC), 2 LR ASW (ASW TT), 2 Mod Gun (5"/54)

Forest Sherman - DD (ASW Conversions) 1 VLR ASW (ASROC), 2 LR ASW (ASW TT), 2 Mod Gun (5"/54)

Perry - DE 1 SSM (Harpoon), 1 Area AAM (Standard), 1 Mod Gun (76mm OTO Melera), 1 PDM[G] (Vulcan Phalanx), 2 Helicopters (SH60B)

British

Invincible - CVL 5+ Aircraft (Harrier), 9 Helicopter (Sea King), 1 Area AAM(Sea Dart), 2 or 3 PDM[G] (Vulcan Phalanx or Goal Keeper), 2 PD (Single 20mm)

Tiger - CA 1 Medium Gun (1 x 2 6"), 1 Mod Gun (1 x 2 3"), 2 PD[R] (Sea Cat), 4 Helicopter (Sea King)

County - DD 2 Mod Gun (2 x 2 4.5" Mk 6) or 2 SSM (Exocet), 1 Mod Gun (1 x 2 4.5" Mk 6), 1 Area AAM (Sea Slug), 2 PD[R] (Sea Cat), 2 PD[G] (2 x 1 20mm), 1 Helicopter (Wessex)

Sheffield - DD 1 Area AAM (Sea Dart), 1 LR ASW (ASW TT), 1 Mod Gun (1 x 1 4.5" Mk 8), 2 PD[G] (2 x 1 20mm or 30mm), 1 Helicopter(Lynx)

Broadsword - DD 2 SSM (Exocet), 2 LR ASW (ASW TT), 2 PDM[R] (Seawolf), 2 PD (40mm), 2 Helicopters(Lynx)

Cornwall - DD 2 SSM (Harpoon), 2 LR ASW (ASW TT), 1 Mod Gun (1 x 1 4.5" Mk 8), 2 PDM[R] (Sea Wolf), 2 PD (2 x 1 30mm), 1 PDM[G] (Goalkeeper) , 2 Helicopters (Lynx/EH101)

Duke - DD 	2 SSM (Harpoon), 2 LR ASW (ASW TT), 1 Mod Gun (1 x 1 4.5" Mk 8), 1 PDM[R] (Seawolf), 1 PD[G] (1 x 30mm) 1 Helicopter (EH101)

Leander - DE (As Built) 1 Mod Gun (1 x 2 4.5" Mk 6), 1 PD[R] (Seacat), 1 PD[G] (1 x 2 20mm), 1 ASW (Limbo), 1 Helicopter (Wasp)

Amazon - DE 2 SSM (Exocet), 1 LR ASW (ASW TT), 1 Mod Gun (1 x 1 4.5" Mk 8), 1 PD[R] (Seacat), 1 PD[G] (1 x 2 20mm), 1 Helicopter (Lynx)

Russian

Kiev - CV 4 SSM (SS-N-12), 2 LR Area SAM (SA-N-3), 1 VLR ASW (SUW-N-1), 2 LR ASW (ASW TT), 2 ASW (RBU - 6000), 2 Mod Gun (2 x 2 76mm DP), 4 PDM [G](30mm Gatling), 2 PD[R] (SA-N-4), 14 Helicopters (Helix), 12 Aircraft

(Forger)

Kirov - BC 10 SSM (SS - N - 19) , 4 LR Area SAM (SA - N - 6), 1 VLR ASW (SS - N - 14), 2 LR ASW (ASW TT), 1 ASW (RBU - 6000), 2 Mod Gun (2 x 1 100 or 130mm), 8 PDM[G] (30mm Gatling), 3 Helicopters (Helix)

Kara - CG 4 VLR ASW (SS - N - 14), 2 Area AAM (SA - N - 3), 2 LR ASW (ASW TT), , 2 Mod Gun (2 x 1 76mm), 2 ASW (RBU - 6000), 2 PDM[G] (4 30mm Gatling), 2 PDM[R] (SA - N - 4), 2 ASW (RBU - 1000), 1 Helicopter (Hormone)

Slava - 4 SSM (SS - N - 12), 2 LR Area AAM (SA - N - 6), 2 LR ASW (ASW TT), 2 ASW (RBU - 6000), 1 Mod Gun (1 x 2 130mm), 3 PDM[G] (6 x 30mm Gatling), 4 PDM[R] (SA - N - 4)

Servdlov - CA 4 Med Gun (4 x 3 152mm), 6 Mod Gun (6 x 2 100mmDP), 4 PD (37mm AA)

Kanin - DD 1 Area AAM (SA - N - 1), 2 LR ASW (2 ASW TT), 3 ASW (RBU - 6000), 2 PD (2 x 4 57mm), 2 PD (4 x 2 30mm)

Kynda - DD 4 SSM (SS - N - 3), 1 Area AAM (SA - N - 1), 2 LR ASW (ASW TT), 2 ASW (RBU 6000), 2 Mod Gun (2 x 2 76mm DP)

Sovremeny - DD 2 SSM (SS - N - 22), 2 Area AAM (SA - N - 7), 2 LR ASW (ASW TT), 2 Mod Gun (2 x 2 130mm), 2 PDM[G] (4 30mm Gatling), 2 ASW (RBU - 1000)

Udaloy - DD 2 VLR ASW (SS - N - 14), 2 Area AAM (SA - N - 9), 2 LR ASW (ASW TT), 2 Mod Guns (2 x 1 100mm DP), 2 ASW (RBU 6000), 2 PDM[G] (4 30mm Gatling), 2 Helicopter (Helix)

Krupny - DD 1 SSM (2 x 1 SS - N - 1), 4 PD[G] (4 x 4 57mm), 2 ASW (2 x RBU - 250), 2 TT (21" - Anti-surface)

That should be enough to give you ideas for most of the rest. The details were extracted from Conways "*All the World's Fighting Ships 1947 to 1982*," and "*Combat Fleets 1988 to 1989*". Therefore if any data is out of date that is why. I've not done any small ships, they are much simpler. Trying to decide how to classify some weapons is difficult. In particular some of the AA missiles could be reclassified as Area rather than PD, or PDM rather than PD, in particular some of the later Russian missiles.

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