

Naval Forces - Minefield Operations

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Mine Production:

Type	SP	/month	Usage
3	0	30	Air drop (annoy opponent)
4	211	45	Coastal Minelayer (local defense)
88	201	35	Sub mines
93	483	110	Minelayers (defense and traps)

This is from the Japanese players perspective:

- Things to keep in mind about mines:
 - Mines are a finite resource in WitP:AE. Consider that you may end up producing more A6M2's in some months than you will Type 93 mines (which are your most plentiful type). Put another way - when deployed as 150 mines per base, Japan can deploy 7 minefields on day 1 (using mines on ships at start), another 4-5 minefields from stockpiles, and 1 additional minefield per month as the game progresses. Do not waste them.
 - Multiple small minefields can be more effective than one large minefield in a given hex
 - Multiple minefields can exist in a hex, and each minefield gets a chance to damage the ships in a TF that enters the minefield's hex. The probability increases with number of mines, BUT
 - Once a minefield gets detected, the chance of subsequent ships hitting that minefield declines. Each ship to hit a mine increases the minefield's DL by 1 and as soon as the DL = 1, every other mine in the minefield becomes less effective.
 - A minelaying task force lays a single minefield in the destination hex comprised of the number and type of mines the task force carries
 - Minefields decay without a minefield tender (ACM class ship)
 - Deepwater ocean hex minefields decay at 33% per day
 - Shallow water decays at 5%
 - Friendly bases with size 1 ports decay at 1%
 - Letting minefields decay is a huge waste. Airdropped and submarine deployed mines are the only mines that should be deployed without a tender.
 - Each ACM maintains 150 mines worth of minefields if it has sufficient fuel and is located in a friendly size 1+ port.
 - Five Minefields with 30 mines each will generally be more effective than one minefield with 150 mines.
 - The ideal minelayer divides 150 mines into evenly sized minefields e.g. 15 x 10, 5 x 30, 3 x 50, 2 x 75, etc. or
 - The individual minefields add up to 150
 - You do not need many minelayers:
 - A single Toshima class Coastal minelayer, on a single Coastal minelaying mission, can consume most of an entire month's production of Type 4 mines
 - Two to 4 submarines can lay a month's production of Type 88 (sub laid) mines.
 - An Okinoshima class Cruiser Minelayer can lay more than a month's production of Type 93 mines in a day.
 - Most minelayers come with a load of mines
 - Many minelayers convert to escorts
 - Inland ports like Hankow and Canton are difficult to reach to begin with and putting ACM's to keep mines from decaying in those bases is a waste.
- All of the above important facts suggest the following usage of minelayers:
 - You should plan the size of your defensive minefields in increments of 150 and you should deploy them to dot bases at a minimum.
 - Minelaying task forces should consist of single ships with small mine capacities.
 - For type 93 mines - the 3 Hatsutaka class CM (30 mines) are nice. 5 trips to lay mines and one ship can lay a 5 x 30 minefield for one ACM.
 - For Type 4 mines, the Toshima class coastal minelayers (35 each) combined with the Hirashima class cruiser minelayers can lay 150 mines. 35 + 35 + 20 + 20 + 20 + 20 = 150
 - For Type 88 mines, subs will be used to lay this type of mine and they are carried in torpedo tubes. (2 per torpedo tube). Most IJN subs can carry 8, 12, or 16 mines in 4/6/8 tubes. I prefer to use these offensively.
 - For Type 3 mines, these can only be used starting in January 1943 and are air dropped from

- bombers using City Attack/air dropped mines.
- All other ships should have their mines laid and then the ships should be transferred to other operations. Most IJN minelayer cruiser classes convert to escorts and get depth charges. Most also get AA or DP guns with sufficient range to provide for fleet air defense. This can make them useful as escorts for some task forces. Four of them have good speed (20/15) and good cargo/troop capacity and can be used as you would APD's.
 - CM Itsukushima Babeldaob
 - CM Okinoshima Jaluit
 - CM Tokiwa Jaluit
 - CM Tsugaru Chichi-jima

Starting minefields:

Here's the fun part. A selection of your larger ports come pre-equipped with minefields. In general, the size of the minefield is 50 x port size. However, most of those ports have no ACM in them, so they start decaying immediately. Tokyo has 500 mines on 12/7, but on 12/8 there are 5 mines floating around the hex undetected? Anyway, here are your starting minefields with a total of 9200 mines:

Area	Base	Port S	Mines	ACM	ACM Req'd	Need
Thailand	Bangkok	4	200	0	1	1
Indochina	Cam Ranh Bay	5	250	0	2	2
Southern China	Canton	5	250	0	2	0* let decay
Kyushu	Fukuoka	10	500	0	3	3
Korea	Fusan	4	200	2	1	-1
Hokkaido	Hakodate	6	300	0	2	2
Central China	Hankow	4	200	0	1	0* let decay
Honshu	Hiroshima/Kure	9	450	5	3	-2
Kyushu	Kagoshima	4	200	0	1	1
Korea	Keijo	4	200	0	1	1
Honshu	Kobe	10	500	0	3	3
Honshu	Maizuru	5	250	1	2	1
Kyushu	Nagasaki/Sasebo	7	350	2	2	0
Honshu	Nagoya	9	450	0	3	3
Central China	Nanking	4	200	0	1	0* let decay
Honshu	Ominato	5	250	2	2	0
Honshu	Osaka/Kyoto	10	500	2	3	1
Formosa	Pescadores	5	250	2	2	0
Manchukuo	Port Arthur	9	450	0	3	3
Indochina	Saigon	5	250	2	2	0
Central China	Shanghai	7	350	4	3	-1
Honshu	Shimonoseki	9	450	0	3	3
Formosa	Taihoku	4	200	0	1	1
Formosa	Takao	4	200	0	1	1
Northern China	Tientsin	5	250	0	2	2
Honshu	Tokuyama	4	200	0	1	1
Honshu	Tokyo	10	500	0	3	3
Caroline Islands	Truk	6	300	3	2	-1
Northern China	Tsingtao	4	200	0	1	1
Honshu	Yokohama/Yokosuka	7	350	0	2	2
			9200	25	59	34

Against that, you have a total of 33 ACM capable of servicing $33 \times 150 = 4,950$ mines. That amounts to a shortfall in mine tending capacity of 4250 mines or 50 ACM to fully maintain our EXISTING minefields. Never mind the minefields we will want to lay. You can convert Kiso-E and To'su class xAKL's to ACM's. However, in the 15 days it takes to do that, plus the time it takes for those ships to relocate, many of your starting minefields will decay significantly. Toyko, Kobe, and Fukuoka which each have 500 mines will lose roughly 60-75 mines before you could convert a single new ACM. Given the production rates in game, the number of ACM's, and the decay rates, one wonders how 500 mines ever got in one of those ports. Anyway, you need to resign yourself to seeing significant portions of those minefields go bye bye. You also need to think before you begin about how you want to utilize your minefields and ACM's.

Oh yeah another puzzling aspect of mine fields for the JFB to ponder:

You get 33 ACM at the start of the game - and despite the massive shortfall in minefield maintenance capacity in heavily trafficked ports, 8 of your 33 starting ACM's are IN PORTS WITH NO MINEFIELD OR REPRESENT MINETENDING OVERCAPACITY (more ACM in one place than needed). Your starting ACM:

Ship	Location	Ship	Location	Ship	Location
ACM Kaiyo Maru #3	Fusan	ACM Kongosan Maru	Osaka/Kyoto	ACM Unkai Maru #1	Shanghai
ACM Tasei Maru	Fusan	ACM Eguchi Maru	Osaka/Kyoto	ACM Okuyo Maru	Amami Oshima
ACM Hong Kong Maru	Hiroshima/Kure	ACM Chiyo Maru	Pescadores	ACM Seisho Maru	Amoy
ACM Asahi Maru #2	Hiroshima/Kure	ACM Banshu Maru #52	Pescadores	ACM Shofuku Maru #2	Chichi-jima
ACM Bisan Maru	Hiroshima/Kure	ACM Muro Maru	Saigon	ACM Mejima Maru	Hiroshima/Kure
ACM Hanata Maru #6	Maizuru	ACM Ranzan Maru	Saigon	ACM Oi Maru	Hiroshima/Kure
ACM Himejima Maru	Nagasaki/Sasebo	ACM Hayakafuku Maru	Shanghai	ACM Seiko Maru	Kanko
ACM Shawa Maru #10	Nagasaki/Sasebo	ACM Shinko Maru #1	Shanghai	ACM Daido Maru	Kwajalein Island
ACM Zuiko Maru	Ominato	ACM Toshio Maru	Shanghai	ACM Tamozono Maru #2	Ominato
ACM Misago Maru #11	Ominato	ACM Choan Maru #2	Truk	ACM Toshi Maru #5	Ominato
		ACM Heijo Maru	Truk	ACM Yoshino Maru	Ominato
				ACM Tama Maru	Truk
Tending minefield				Available for reassign	

In other words, not only do you not have enough ACM's, some of those ACM are in places where they do not tend any mines. Your first order of business with minefields will be to determine where to put them. Assume you can have 33 groups of 150 mines in defensive minefields around the map. Where do you want them?

Ports that will see large amounts of traffic and be susceptible to submarine infiltration or transits.

- o Repair yards
- o Major resource shipping ports
- o Invasion beaches
- o Port Airfields likely subject to heavy bombardment or sub activity
- o At start ACM requirements for ports with starting minefields:
 - Size 4, 5, and 6 ports with minefields "need" 2 ACM to fully support the minefields they have at start.
 - Size 7, 8, and 9 ports with minefields "need" 3 ACM to fully support the minefields they have at start.
 - Size 10 ports need with minefields "need" 3 ACM to fully support the minefields they have at start.
- o We already know that many of these minefields will degrade before we can get them ACM's anyway, so we really want to consider how to apportion ACM's. One first step is to put port Size / 3 (ignore fractions) ACMs in each port. If we try to fully support each minefield, that means we need 75 ACM. If we take the port size divided by 3 and ignore fractions, we drop our requirements to 51. Keep in mind - we only have 33 and we still have not laid a single minefield outside those at start.

New Minefields

As previously mentioned, many small minefields in a hex are superior to 1 big one. So my organization of my minelayers is organized around that concept. My minelayers will operate in single ship task forces for the most part, but in small swarms of them. Mines should be deployed in a ratio of approximately 40 Type 4 and 110 Type 93 mines per 150.

Airdrop minefields

Nuisance mining using G3M3 Nell's massive range.