Intercept course plotting for enemy convoys at 7km

	-		Bearing											
		210°		240°	270°	300°	330°	O°	30°	60°	90°	120°	150°	180°
	н	1 210° 4. 5 210° 5. 5 210° 4. 1° 210° 5.	.5' .0' .5'	F 252° 2.6' H 266° 4.5' S 301° 7.5' F* 266° 4.5' H* 301° 7.5' S*	F* 319° 6.9'	H 1° 15.5'	F 351° 4.8' H 19° 34.9' S F* 19° 34.9' H* S*	F 12° 5.7' H 26° 53.0' S F* 26° 53.0' H* S*	н 30° 60.0' S	F 48° 5.7' H 34° 53.0' S F* 34° 53.0' H* S*	F 69° 4.8' H 41° 34.9' S F* 41° 34.9' H* S*	F 96° 3.9' H 59° 15.5' S F* 59° 15.5' H* S*	F 129° 3.1' H 101° 6.9' S F* 101° 6.9' H* S*	F 168° 2.6' H 154° 4.5' S 119° 7.5' F* 154° 4.5' H* 119° 7.5' S*
000	н	184° 4. 5 149° 7.	.5' .5'	F 240° 2.5' H 240° 4.0' S 240° 5.5' F* 240° 4.0' H* 240° 5.5' S* 240° 6.7'	F 282° 2.6' H 296° 4.5' S 331° 7.5' F* 296° 4.5' H* 331° 7.5' S*	н 349° 6.9' s	F 354° 3.9' H 31° 15.5' S F* 31° 15.5' H* S*	F 21° 4.8' H 49° 34.9' S F* 49° 34.9' H* S*	F 42° 5.7' H 56° 53.0' S F* 56° 53.0' H* S*	F 60° 6.0' H 60° 60.0' S F* 60° 60.0' H* S*	F 78° 5.7' H 64° 53.0' S F* 64° 53.0' H* S*	F 99° 4.8' H 71° 34.9' S F* 71° 34.9' H* S*	F 126° 3.9' H 89° 15.5' S F* 89° 15.5' H* S*	F 159° 3.1' H 131° 6.9' S F* 131° 6.9' H* S*
č	F S F H S	= 189° 3. H 161° 6. S =* 161° 6. H*	.9' .9'	F 228° 2.6' H 214° 4.5' S 179° 7.5' F* 214° 4.5' H* 179° 7.5' S*	F 270° 2.5' H 270° 4.0' S 270° 5.5' F* 270° 4.0' H* 270° 5.5' S* 270° 6.7'	F 312° 2.6' H 326° 4.5' S 1° 7.5' F* 326° 4.5' H* 1° 7.5' S*	F 351° 3.1' H 19° 6.9' S F* 19° 6.9' H* S*	F 24° 3.9' H 61° 15.5' S F* 61° 15.5' H* S*	F 51° 4.8' H 79° 34.9' S F* 79° 34.9' H* S*	F 72° 5.7' H 86° 53.0' S F* 86° 53.0' H* S*	F 90° 6.0' H 90° 60.0' S F* 90° 60.0' H* S*	F 108° 5.7' H 94° 53.0' S F* 94° 53.0' H* S*	F 129° 4.8' H 101° 34.9' S F* 101° 34.9' H* S*	F 156° 3.9' H 119° 15.5' S F* 119° 15.5' H* S*
Course Course 150 120	50 21 H S	= 186° 3. H 149° 15. G =* 149° 15. H* S*	.5'	F 219° 3.1' H 191° 6.9' S F* 191° 6.9' H* S*	F 258° 2.6' H 244° 4.5' S 209° 7.5' F* 244° 4.5' H* 209° 7.5' S*	F 300° 2.5' H 300° 4.0' S 300° 5.5' F* 300° 4.0' H* 300° 5.5' S* 300° 6.7'	F 342° 2.6' H 356° 4.5' S 31° 7.5' F* 356° 4.5' H* 31° 7.5' S*	F 21° 3.1' H 49° 6.9' S F* 49° 6.9' H* S*	н 91°15.5' S	F 81° 4.8' H 109° 34.9' S F* 109° 34.9' H* S*	F 102° 5.7' H 116° 53.0' S F* 116° 53.0' H* S*	F 120° 6.0' H 120° 60.0' S F* 120° 60.0' H* S*	F 138° 5.7' H 124° 53.0' S F* 124° 53.0' H* S*	F 159° 4.8' H 131° 34.9' S F* 131° 34.9' H* S*
	P H S H	= 189° 4. H 161° 34. S =* 161° 34. H*	.9'	F 216° 3.9' H 179° 15.5' S F* 179° 15.5' H* S*	F 249° 3.1' H 221° 6.9' S F* 221° 6.9' H* S*	F 288° 2.6' H 274° 4.5' S 239° 7.5' F* 274° 4.5' H* 239° 7.5' S*	F 330° 2.5' H 330° 4.0' S 330° 5.5' F* 330° 4.0' H* 330° 5.5' S* 330° 6.7'	F 12° 2.6' H 26° 4.5' S 61° 7.5' F* 26° 4.5' H* 61° 7.5' S*		F 84° 3.9' H 121° 15.5' S F* 121° 15.5' H* S*	S	F 132° 5.7' H 146° 53.0' S F* 146° 53.0' H* S*	F 150° 6.0' H 150° 60.0' S F* 150° 60.0' H* S*	F 168° 5.7' H 154° 53.0' S F* 154° 53.0' H* S*
		= 198° 5. H 184° 53. S =* 184° 53. H*	.0'	F 219° 4.8' H 191° 34.9' S F* 191° 34.9' H* S*	F 246° 3.9' H 209° 15.5' S F* 209° 15.5' H* S*	F 279° 3.1' H 251° 6.9' S F* 251° 6.9' H* S*	F 318° 2.6' H 304° 4.5' S 269° 7.5' F* 304° 4.5' H* 269° 7.5' S*	F 0° 2.5' H 0° 4.0' S 0° 5.5' F* 0° 4.0' H* 0° 5.5' S* 0° 6.7'	F 42° 2.6' H 56° 4.5' S 91° 7.5' F* 56° 4.5' H* 91° 7.5' S*	F 81° 3.1' H 109° 6.9' S F* 109° 6.9' H* S*	F 114° 3.9' H 151° 15.5' S F* 151° 15.5' H* S*	F 141° 4.8' H 169° 34.9' S F* 169° 34.9' H* S*	F 162° 5.7' H 176° 53.0' S F* 176° 53.0' H* S*	F 180° 6.0' H 180° 60.0' S F* 180° 60.0' H* S*
	F H S F H S	= 210° 6. H 210° 60. S =* 210° 60. H*	.0'	F 228° 5.7' H 214° 53.0' S F* 214° 53.0' H* S*	F 249° 4.8' H 221° 34.9' S F* 221° 34.9' H* S*	F 276° 3.9' H 239° 15.5' S F* 239° 15.5' H* S*	F 309° 3.1' H 281° 6.9' S F* 281° 6.9' H* S*	F 348° 2.6' H 334° 4.5' S 299° 7.5' F* 334° 4.5' H* 299° 7.5' S*	S 30° 5.5' F* 30° 4.0'	F 72° 2.6' H 86° 4.5' S 121° 7.5' F* 86° 4.5' H* 121° 7.5' S*	н 139° 6.9' s	F 144° 3.9' H 181° 15.5' S F* 181° 15.5' H* S*	F 171° 4.8' H 199° 34.9' S F* 199° 34.9' H* S*	F 192° 5.7' H 206° 53.0' S F* 206° 53.0' H* S*
	5#2 F H S H S	= 222° 5. H 236° 53. S =* 236° 53. H* S*	.0'	F 240° 6.0' H 240° 60.0' S F* 240° 60.0' H* S*	F 258° 5.7' H 244° 53.0' S F* 244° 53.0' H* S*	F 279° 4.8' H 251° 34.9' S F* 251° 34.9' H* S*	F 306° 3.9' H 269° 15.5' S F* 269° 15.5' H* S*	F 339° 3.1' H 311° 6.9' S F* 311° 6.9' H* S*	F* 4° 4.5'	F 60° 2.5' H 60° 4.0' S 60° 5.5' F* 60° 4.0' H* 60° 5.5' S* 60° 6.7'	H 116° 4.5' S 151° 7.5'	F 141° 3.1' H 169° 6.9' S F* 169° 6.9' H* S*	F 174° 3.9' H 211° 15.5' S F* 211° 15.5' H* S*	F 201° 4.8' H 229° 34.9' S F* 229° 34.9' H* S*
	0 F S F H S	= 231° 4. H 259° 34. S =* 259° 34. H* S*	.9'	F 252° 5.7' H 266° 53.0' S F* 266° 53.0' H* S*	F 270° 6.0' H 270° 60.0' S F* 270° 60.0' H* S*	F 288° 5.7' H 274° 53.0' S F* 274° 53.0' H* S*	F 309° 4.8' H 281° 34.9' S F* 281° 34.9' H* S*	F 336° 3.9' H 299° 15.5' S F* 299° 15.5' H* S*	F 9° 3.1' H 341° 6.9' S F* 341° 6.9' H* S*	F 48° 2.6' H 34° 4.5' S 359° 7.5' F* 34° 4.5' H* 359° 7.5' S*	F* 90° 4.0'	F 132° 2.6' H 146° 4.5' S 181° 7.5' F* 146° 4.5' H* 181° 7.5' S*	F 171° 3.1' H 199° 6.9' S F* 199° 6.9' H* S*	F 204° 3.9' H 241° 15.5' S F* 241° 15.5' H* S*
	50C F H S H S	= 234° 3. H 271° 15. S =* 271° 15. H*	.5'	F 261° 4.8' H 289° 34.9' S F* 289° 34.9' H* S*	F 282° 5.7' H 296° 53.0' S F* 296° 53.0' H* S*	F 300° 6.0' H 300° 60.0' S F* 300° 60.0' H* S*	F 318° 5.7' H 304° 53.0' S F* 304° 53.0' H* S*	F 339° 4.8' H 311° 34.9' S F* 311° 34.9' H* S*	S	F 39° 3.1' H 11° 6.9' S F* 11° 6.9' H* S*	F 78° 2.6' H 64° 4.5' S 29° 7.5' F* 64° 4.5' H* 29° 7.5' S*		F 162° 2.6' H 176° 4.5' S 211° 7.5' F* 176° 4.5' H* 211° 7.5' S*	F 201° 3.1' H 229° 6.9' S F* 229° 6.9' H* S*
90	F H S F H S	= 231° 3. H 259° 6. S = 259° 6. H*	.9'	F 264° 3.9' H 301° 15.5' S F* 301° 15.5' H* S*	F 291° 4.8' H 319° 34.9' S F* 319° 34.9' H* S*	F 312° 5.7' H 326° 53.0' S F* 326° 53.0' H* S*	F 330° 6.0' H 330° 60.0' S F* 330° 60.0' H* S*	F 348° 5.7' H 334° 53.0' S F* 334° 53.0' H* S*	S	F 36° 3.9' H 359° 15.5' S F* 359° 15.5' H* S*	F 69° 3.1' H 41° 6.9' S F* 41° 6.9' H* S*	F 108° 2.6' H 94° 4.5' S 59° 7.5' F* 94° 4.5' H* 59° 7.5' S*	F 150° 2.5' H 150° 4.0' S 150° 5.5' F* 150° 4.0' H* 150° 5.5' S* 150° 6.7'	F 192° 2.6' H 206° 4.5' S 241° 7.5' F* 206° 4.5' H* 241° 7.5' S*
ð		1 236° 4. 3 271° 7.	.5' .5' .5'	F 261° 3.1' H 289° 6.9' S F* 289° 6.9' H* S*	F 294° 3.9' H 331° 15.5' S F* 331° 15.5' H* S*	F 321° 4.8' H 349° 34.9' S F* 349° 34.9' H* S*	F 342° 5.7' H 356° 53.0' S F* 356° 53.0' H* S*	F 0° 6.0' H 0° 60.0' S F* 0° 60.0' H* S*	F 18° 5.7' H 4° 53.0' S F* 4° 53.0' H* S*	F 39° 4.8' H 11° 34.9' S F* 11° 34.9' H* S*	F 66° 3.9' H 29° 15.5' S F* 29° 15.5' H* S*		F 138° 2.6' H 124° 4.5' S 89° 7.5' F* 124° 4.5' H* 89° 7.5' S*	F 180° 2.5' H 180° 4.0' S 180° 5.5' F* 180° 4.0' H* 180° 5.5' S* 180° 6.7'

How to read this chart:

First translate the enemy's bearing into a direction relative to north (white disk).

Find the cell that matches the translated bearing (column) and course (row) of your target.

The first three lines show the intercept courses for full (F), half (H) and slow (S) speed while on the surface. The last three lines show the intercept courses while submerged (*).

Each intercept course has two parts: the actual course and the time.

To intercept a target, plot the given course at your chosen speed. Multiply the given time (in minutes) by the distance the enemy is currently away from you (in nm).

To calculate the time until you enter torpedo range, double the minutes and subtract them from the total time until interception. For the time until you are too close to fire, divide the given time by 6 instead.

The mid tone diagonally aligned boxes show direct frontal approaches or direct chases.

Example

Your course is 70° and you spotted an enemy 5 nm away at a bearing of 170°. The enemy's course is 210°. You plan to intercept the vessel at half speed on the surface.

First, look at the direction on the white disk for the enemy's bearing. In this case that is 240° .

Find the box at the column for 240° and row for 210° and look at the line for half speed on the surface:

H 214° 53.0'

Plot the intercept course at 214° and you will reach the enemy in 4:25h (53 minutes for each of the 5 nm distance).

You will enter torpedo range 1:46h before that (53 minuted times 2) and will be too close to fire around 9 minutes before interception (53 minutes divided by 6)

Intercept course plotting for enemy merchants at 7.6km

		Bearing				,	******			
	210°	240°	270°	300°	330°	O°	30°	60° 90°	120°	150° 180°
'n	F 210° 2.4' H 210° 3.8' S 210° 5.2' F* 210° 3.8' H* 210° 5.2' S* 210° 6.2'	F 253° 2.6' H 268° 4.4' S 312° 7.7' F* 268° 4.4' H* 312° 7.7' S*	F 293° 3.1' H 325° 7.2' H S F* 325° 7.2' H S S*	S	F 353° 5.1' H 25° 80.3' S F* 25° 80.3' H* S*	F 13° 6.0' H 28° 31.0' S F* 28° 31.0' H* S*	F 30° 6.4' F H 30° 50.0' F S F* 30° 50.0' F H* S*	F 47° 6.0' F 67° 5.1' F 83° 31.0' H 35° 80.3' H 5 5 5 5 80.3' H 5 5 5 6 5 80.3' H 5 5 6 5 80.3' H 5 5 6 5 8 6 5 8 6 5 8 6 5 8 6 5 8 6 5 8 6 6 8 6 8	S	F 127° 3.1' F 167° 2.6' H 95° 7.2' H 152° 4.4' S 108° 7.7' F 152° 4.4' H 108° 7.7' F 152° 4.4' H 108° 7.7' S*
ູບ	F 197° 2.6' H 182° 4.4' S 138° 7.7' F* 182° 4.4' H* 138° 7.7' S*		H 298° 4.4' S 342° 7.7'	н 355° 7.2' s	F 357° 3.9' H 42° 24.0' S F* 42° 24.0' H* S*	F 23° 5.1' H 55° 80.3' S F* 55° 80.3' H* S*	F 43° 6.0' H 58° 31.0' H 58° 31.0' H 58° 58° 31.0' H 58° 58° 58° 58° 58° 58° 58° 58° 58° 58°	F 60° 6.4' F 77° 6.0' F 60° 50.0' H 62° 31.0' H 55 62° 31.0' H 62° 51.0' F 62°	97° 5.1' F 65° 80.3' H 8 65° 80.3' F H H 8 S	F 123° 3.9' F 157° 3.1' H 78° 24.0' H 125° 7.2' S ** 78° 24.0' F* 125° 7.2' H* S **
°C	F 187° 3.1' H 155° 7.2' S F* 155° 7.2' H* S*	F 227° 2.6' H 212° 4.4' S 168° 7.7' F* 212° 4.4' H* 168° 7.7' S*	S 270° 5.2' S F* 270° 3.8' I	H 328° 4.4' S 12° 7.7'	F 353° 3.1' H 25° 7.2' S F* 25° 7.2' H* S*	F 27° 3.9' H 72° 24.0' S F* 72° 24.0' H* S*	F 53° 5.1' F 85° 80.3' F 5 85° 80.3' F 5 85° 80.3' F 6 85° 80.3' F 7 85° 80.3' F 7 85° 80.3' F 85° 80° 80° 80° 80° 80° 80° 80° 80° 80° 80	H 88° 31.0' H 90° 50.0' H S S	92° 31.0' H S	F 127° 5.1' F 153° 3.9' H 108° 24.0' S F* 108° 24.0' H* S*
Course Course 150° 120°	F 183° 3.9' H 138° 24.0' S F* 138° 24.0' H* S*	F 217° 3.1' H 185° 7.2' S F* 185° 7.2' H* S*	S 198° 7.7' S F* 242° 4.4' I H* 198° 7.7' I		F 343° 2.6' H 358° 4.4' S 42° 7.7' F* 358° 4.4' H* 42° 7.7' S*	F 23° 3.1' H 55° 7.2' S F* 55° 7.2' H* S*	S S	s s	S	F 137° 6.0' F 157° 5.1' H 125° 80.3' S F 122° 31.0' F 125° 80.3' H 125
	F 187° 5.1' H 155° 80.3' S F* 155° 80.3' H* S*	F 213° 3.9' H 168° 24.0' S F* 168° 24.0' H* S*	H 215° 7.2' I S F* 215° 7.2' I		F* 330° 3.8'	F 13° 2.6' H 28° 4.4' S 72° 7.7' F* 28° 4.4' H* 72° 7.7' S*	H 85° 7.2' H	H 132° 24.0' H 145° 80.3' H S S	148° 31.0' H S	F 150° 6.4' F 167° 6.0' H 150° 50.0' H 152° 31.0' H 152°
	F 197° 6.0' H 182° 31.0' S F* 182° 31.0' H* S*	F 217° 5.1' H 185° 80.3' S F* 185° 80.3' H* S*	S	S F* 245° 7.2'	S 258° 7.7' F* 302° 4.4'	F 0° 2.4' H 0° 3.8' S 0° 5.2' F* 0° 3.8' H* 0° 5.2' S* 0° 6.2'	S 102° 7.7' S	H 115° 7.2' H 162° 24.0' H S S	143° 5.1' F 175° 80.3' H S * 175° 80.3' F H * S	F 163° 6.0' F 180° 6.4' H 178° 31.0' H 180° 50.0' S 18 178° 31.0' F 180° 50.0' H 18
	F 210° 6.4' H 210° 50.0' S F* 210° 50.0' H* S*	F 227° 6.0' H 212° 31.0' S F* 212° 31.0' H* S*	H 215° 80.3' I	F 273° 3.9' H 228° 24.0' S F* 228° 24.0' H* S*	F 307° 3.1' H 275° 7.2' S F* 275° 7.2' H* S*	F 347° 2.6' H 332° 4.4' S 288° 7.7' F* 332° 4.4' H* 288° 7.7' S*	H 30° 3.8' F S 30° 5.2' S F* 30° 3.8' F	H 88° 4.4' H 145° 7.2' H S 132° 7.7' S	192° 24.0' н S	F 173° 5.1' F 193° 6.0' A 205° 80.3' H 208° 31.0' B 5 208° 80.3' F 208° 31.0' B 5
	F 223° 6.0' H 238° 31.0' S F* 238° 31.0' H* S*	F 240° 6.4' H 240° 50.0' S F* 240° 50.0' H* S*	S	S	F 303° 3.9' H 258° 24.0' S F* 258° 24.0' H* S*	F 337° 3.1' H 305° 7.2' S F* 305° 7.2' H* S*	F* 2° 4.4' F	H 60° 3.8' H 118° 4.4' H S 60° 5.2' S 162° 7.7' S	143° 3.1' F H S S T S T S T S T S T S T S T S T S T	F 177° 3.9' F 203° 5.1' H 222° 24.0' H 235° 80.3' S 5 222° 24.0' F* 235° 80.3' H* S*
°070°	F 233° 5.1' H 265° 80.3' S F* 265° 80.3' H* S*	F 253° 6.0' H 268° 31.0' S F* 268° 31.0' H* S*	S	F 287° 6.0' H 272° 31.0' S F* 272° 31.0' H*	F 307° 5.1' H 275° 80.3' S F* 275° 80.3' H* S*	F 333° 3.9' H 288° 24.0' S F* 288° 24.0' H* S*		H 32° 4.4' H 90° 3.8' H S 348° 7.7' S 90° 5.2' S F* 32° 4.4' F* 90° 3.8' F	148° 4.4' H 192° 7.7' S	F 173° 3.1' F 207° 3.9' H 252° 24.0' S F* 205° 7.2' F* 252° 24.0' H* S*
300°	F 237° 3.9' H 282° 24.0' S F* 282° 24.0' H* S*	F 263° 5.1' H 295° 80.3' S F* 295° 80.3' H* S*	H 298° 31.0' I	н 300° 50.0' s	н 302° 31.0' S	S	F 3° 3.9' H 318° 24.0' H S S F* 318° 24.0' H S S S	S	120° 5.2' S * 120° 3.8' F	F 163° 2.6' F 203° 3.1' H 235° 7.2' S 178 4.4' H 235° 7.2' S 178 4.4' F* 235° 7.2' H* 222° 7.7' H* S*
ንዱ የ	F 233° 3.1' H 265° 7.2' S F* 265° 7.2' H*	F 267° 3.9' H 312° 24.0' S F* 312° 24.0' H* S*	S F* 325° 80.3' I H*	н 328° 31.0' S	н 330° 50.0' S	F 347° 6.0' H 332° 31.0' S F* 332° 31.0' H* S*	S S	F 33° 3.9' F 67° 3.1' F 4348° 24.0' H 35° 7.2' H 5 5 S S F* 348° 24.0' F* 35° 7.2' F H* S*	48° 7.7' S * 92° 4.4' F * 48° 7.7' H	F 150° 2.4' F 193° 2.6' H 150° 3.8' H 208° 4.4' S 150° 5.2' S 252° 7.7' ** 150° 3.8' F* 208° 4.4' H* 150° 5.2' H* 252° 7.7' ** 150° 6.2' S*
ç	F 223° 2.6' H 238° 4.4' S 282° 7.7' F* 238° 4.4' H* 282° 7.7' S*	F 263° 3.1' H 295° 7.2' S F* 295° 7.2' H* S*	H 342° 24.0' I	S	S	F 0° 6.4' H 0° 50.0' S F* 0° 50.0' H* S*	H* F	F 37° 5.1' F 63° 3.9' F 18° 24.0' H 5° 80.3' F 18° 24.0' H 18° 24.0' H 18° 24.0' F 18° 5° 80.3' F F 18° 5° 80.	* 65° 7.2' F *	F 137° 2.6' F 180° 2.4' H 122° 4.4' H 180° 3.8' S 78° 7.7' S 180° 5.2' F 122° 4.4' F 180° 3.8' H* 78° 7.7' H* 180° 5.2' S* 180° 6.2'

How to read this chart:

First translate the enemy's bearing into a direction relative to north (white disk).

Find the cell that matches the translated bearing (column) and course (row) of your target.

The first three lines show the intercept courses for full (F), half (H) and slow (S) speed while on the surface. The last three lines show the intercept courses while submerged (*).

Each intercept course has two parts: the actual course and the time.

To intercept a target, plot the given course at your chosen speed. Multiply the given time (in minutes) by the distance the enemy is currently away from you (in nm).

To calculate the time until you enter torpedo range, double the minutes and subtract them from the total time until interception. For the time until you are too close to fire, divide the given time by 6 instead.

The mid tone diagonally aligned boxes show direct frontal approaches or direct chases.

Example

Your course is 70° and you spotted an enemy 7 nm away at a bearing of 230°. The enemy's course is 30°. You plan to intercept the vessel at full speed submerged.

First, look at the direction on the white disk for the enemy's bearing. In this case that is 300°.

Find the box at the column for 300° and row for 30° and look at the line for full speed submerged:

F* 12° 24.0'

Plot the intercept course at 12° and you will reach the enemy in 248h (24 minutes for each of the 7 nm distance).

You will enter torpedo range 48 minutes before that (24 minuted times 2) and will be too close to fire around 4 minutes before interception (24 minutes divided by 6)