

\*20/7/87 "These clauses are purely illustrative. Different policy conditions may be agreed. The specimen clauses are available to any interested person upon request. In particular:  
 (a) in relation to any clause which excludes losses from the cover, insurers may agree a separate insurance policy covering such losses or may extend the clause to cover such events;  
 (b) in relation to clauses making cover of certain risks subject to specific conditions each insurer may alter the said conditions".

(FOR USE ONLY WITH THE NEW MARINE POLICY FORM)

## INSTITUTE TIME CLAUSES – HULLS PORT RISKS

This insurance is subject to English law and practice

<b>1</b>	<b>NAVIGATION</b>	1
	The Vessel has leave to proceed to and from any wet or dry docks harbours ways cradles and pontoons, within the limits specified in this insurance.	2 3
<b>2</b>	<b>TERMINATION</b>	4
	<b>This Clause 2 shall prevail notwithstanding any provision whether written typed or printed in this insurance inconsistent therewith.</b>	5 6
	Unless Underwriters agree to the contrary in writing, this insurance shall terminate automatically at the time of	7
	2.1 change of the Classification Society of the Vessel, or change, suspension, discontinuance, withdrawal or expiry of her Class therein. However where such change, suspension, discontinuance or withdrawal of her Class has resulted from loss or damage covered by Clause 4 of this insurance or which would be covered by an insurance of the Vessel subject to current Institute War and Strikes Clauses Hulls-Time such automatic termination shall not operate,	8 9 10 11 12
	2.2 any change, voluntary or otherwise, in the ownership or flag, transfer to new management, or charter on a bareboat basis, or requisition for title or use of the Vessel. However, in the event of requisition for title or use without the prior execution of a written agreement by the Assured, such automatic termination shall occur fifteen days after such requisition whether the Vessel is in port or at sea.	13 14 15 16
<b>3</b>	<b>ASSIGNMENT</b>	17
	No assignment of or interest in this insurance or in any moneys which may be or become payable thereunder is to be binding on or recognised by the Underwriters unless a dated notice of such assignment or interest signed by the Assured, and by the assignor in the case of subsequent assignment, is endorsed on the Policy and the Policy with such endorsement is produced before payment of any claim or return of premium thereunder.	18 19 20 21
<b>4</b>	<b>PERILS</b>	22
	4.1 This insurance covers loss of or damage to the subject-matter insured caused by	23
	4.1.1 perils of the seas rivers lakes or other navigable waters	24
	4.1.2 fire lightning explosion	25
	4.1.3 violent theft by persons from outside the Vessel	26
	4.1.4 jettison	27
	4.1.5 piracy	28
	4.1.6 breakdown of or accident to nuclear installations or reactors	29
	4.1.7 contact with aircraft or similar objects, or objects falling therefrom, land conveyance, dock or harbour equipment or installation.	30 31
	4.2 This insurance covers loss of or damage to the subject-matter insured caused by	32
	4.2.1 accidents in loading discharging or shifting cargo or fuel	33
	4.2.2 bursting of boilers breakage of shafts or any latent defect in the machinery or bull	34
	4.2.3 negligence of Master Officers Crew or Pilots	35
	4.2.4 negligence of repairers or charterers provided such repairers or charterers are not an Assured hereunder	36 37
	4.2.5 barratry of Master Officers or Crew,	38
	provided such loss or damage has not resulted from want of due diligence by the Assured, Owners or Managers.	39 40
	4.3 Master Officers Crew or Pilots not to be considered Owners within the meaning of this Clause 4 should they hold shares in the Vessel.	41 42
<b>5</b>	<b>EARTHQUAKE AND VOLCANIC ERUPTION EXCLUSION</b>	43
	In no case shall this insurance cover loss damage liability or expense caused by by earthquake or volcanic eruption. This exclusion applies to all claims including claims under Clauses 7, 9, 11 and 13.	44 45
<b>6</b>	<b>POLLUTION HAZARD</b>	46
	This insurance covers loss of or damage to the Vessel caused by any governmental authority acting under the powers vested in it to prevent or mitigate a pollution hazard, or threat thereof, resulting directly from damage to the Vessel for which the Underwriters are liable under this insurance, provided such act of governmental authority has not resulted from want of due diligence by the Assured, the Owners, or Managers of the Vessel or any of them to prevent or mitigate such hazard or threat. Master, Officers, Crew or Pilots not to be considered Owners within the meaning of this Clause 6 should they hold shares in the Vessel.	47 48 49 50 51 52
<b>7</b>	<b>COLLISION LIABILITY</b>	53
	7.1 The Underwriters agree to indemnify the Assured for any sum or sums paid by the Assured to any other person or persons by reason of the Assured becoming legally liable by way of damages for	54 55
	7.1.1 loss of or damage to any other vessel or property on any other vessel	56
	7.1.2 delay to or loss of use of any such other vessel or property thereon	57
	7.1.3 general average of, salvage of, or salvage under contract of, any such other vessel or property thereon,	58 59
	where such payment by the Assured is in consequence of the Vessel hereby insured coming into collision with any other vessel.	60 61

(Continued)

7.2	The indemnity provided by this Clause 7 shall be in addition to the indemnity provided by the other terms and conditions of this insurance and shall be subject to the following provisions:	62 63
7.2.1	Where the insured Vessel is in collision with another vessel and both vessels are to blame then, unless the liability of one or both vessels becomes limited by law, the indemnity under this Clause 7 shall be calculated on the principle of cross-liabilities as if the respective Owners had been compelled to pay to each other such proportion of each other's damages as may have been properly allowed in ascertaining the balance or sum payable by or to the Assured in consequence of the collision.	64 65 66 67 68
7.2.2	In no case shall the Underwriters' total liability under Clauses 7.1 and 7.2 exceed their proportionate part of the insured value of the Vessel hereby insured in respect of any one such collision.	69 70
7.3	The Underwriters will also pay the legal costs incurred by the Assured or which the Assured may be compelled to pay in contesting liability or taking proceedings to limit liability, with the prior written consent of the Underwriters.	71 72 73
<b>EXCLUSIONS</b>		74
7.4	Provided always that this Clause 7 shall in no case extend to any sum which the Assured shall pay for or in respect of	75 76
7.4.1	removal or disposal of obstructions, wrecks, cargoes or any other thing whatsoever	77
7.4.2	any real or personal property or thing whatsoever except other vessels or property on other vessels	78
7.4.3	the cargo or other property on, or the engagements of, the insured Vessel	79
7.4.4	loss of life, personal injury or illness	80
7.4.5	pollution or contamination of any real or personal property or thing whatsoever (except other vessels with which the insured Vessel is in collision or property on such other vessels).	81 82
<b>8</b>	<b>SISTERSHIP</b>	83
	Should the Vessel hereby insured come into collision with or receive salvage services from another vessel belonging wholly or in part to the same Owners or under the same management, the Assured shall have the same rights under this insurance as they would have were the other vessel entirely the property of Owners not interested in the Vessel hereby insured; but in such cases the liability for the collision or the amount payable for the services rendered shall be referred to a sole arbitrator to be agreed upon between the Underwriters and the Assured.	84 85 86 87 88
<b>9</b>	<b>PROTECTION AND INDEMNITY</b>	89
9.1	The Underwriters agree to indemnify the Assured for any sum or sums paid by the Assured to any other person or persons by reason of the Assured becoming legally liable, as owner of the Vessel, for any claim, demand, damages and/or expenses, where such liability is in consequence of any of the following matters or things and arises from an accident or occurrence during the period of this insurance:	90 91 92 93
9.1.1	loss of or damage to any fixed or movable object or property or other thing or interest whatsoever, other than the Vessel, arising from any cause whatsoever in so far as such loss or damage is not covered by Clause 7	94 95 96
9.1.2	any attempted or actual raising, removal or destruction of any fixed or movable object or property or other thing, including the wreck of the Vessel, or any neglect or failure to raise, remove, or destroy the same	97 98 99
9.1.3	liability assumed by the Assured under contracts of customary towage for the purpose of entering or leaving port or manoeuvring within the port during the ordinary course of trading	100 101
9.1.4	loss of life, personal injury, illness or payments made for life salvage	102
9.1.5	liability under Clause 1(a) of the current Lloyd's Standard Form of Salvage Agreement in respect of unsuccessful, partially successful, or uncompleted services if and to the extent that the salvor's expenses plus the increment exceed any amount otherwise recoverable under the Agreement.	103 104 105
9.2	The Underwriters agree to indemnify the Assured for any of the following arising from an accident or occurrence during the period of this insurance:	106 107
9.2.1	the additional cost of fuel, insurance, wages, stores, provisions and port charges reasonably incurred solely for the purpose of landing from the Vessel sick or injured persons or stowaways, refugees, or persons saved at sea	108 109 110
9.2.2	additional expenses brought about by the outbreak of infectious disease on board the Vessel or ashore	111 112
9.2.3	finer imposed on the Vessel, on the Assured, or on any Master Officer crew member or agent of the Vessel who is reimbursed by the Assured, for any act or neglect or breach of any statute or regulation relating to the operation of the Vessel, provided that the Underwriters shall not be liable to indemnify the Assured for any fines which result from any act neglect failure or default of the Assured their agents or servants other than Master Officer or crew member	113 114 115 116 117
9.2.4	the expenses of the removal of the wreck of the Vessel from any place owned, leased or occupied by the Assured	118 119
9.2.5	legal costs incurred by the Assured, or which the Assured may be compelled to pay, in avoiding, minimising or contesting liability with the prior written consent of the Underwriters.	120 121
<b>EXCLUSIONS</b>		122
9.3	Notwithstanding the provisions of Clauses 9.1 and 9.2 this Clause 9 does not cover any liability cost or expense arising in respect of:	123 124
9.3.1	any direct or indirect payment by the Assured under workmen's compensation or employers' liability acts and any other statutory or common law, general maritime law or other liability whatsoever in respect of accidents to or illness of workmen or any other persons employed in any capacity whatsoever by the Assured or others in on or about or in connection with the Vessel or her cargo, materials or repairs	125 126 127 128
9.3.2	liability assumed by the Assured under agreement expressed or implied in respect of death or illness of or injury to any person employed under a contract of service or apprenticeship by the other party to such agreement	129 130 131
9.3.3	punitive or exemplary damages, however described	132
9.3.4	cargo or other property carried, to be carried or which has been carried on board the Vessel but this Clause 9.3.4 shall not exclude any claim in respect of the extra cost of removing cargo from the wreck of the Vessel	133 134 135
9.3.5	property, owned by builders or repairers or for which they are responsible, which is on board the Vessel	136 137
9.3.6	liability arising under a contract or indemnity in respect of containers, equipment, fuel or other property on board the Vessel and which is owned or leased by the Assured	138 139
9.3.7	cash, negotiable instruments, precious metals or stones, valuables or objects of a rare or precious nature, belonging to persons on board the Vessel, or non-essential personal effects of any Master, Officer or crew member	140 141 142
9.3.8	fuel, insurance, wages, stores, provisions and port charges arising from delay to the Vessel while awaiting a substitute for any Master, Officer or crew member	143 144

9.3.9	finer or penalties arising from overloading or illegal fishing	145
9.3.10	pollution or contamination of any real or personal property or thing whatsoever (This Clause 9.3.10 shall not exclude any amount recoverable under Clause 9.1.5)	146 147
9.3.11	general average, sue and labour and salvage charges, salvage, and/or collision liability to any extent that they are not recoverable under Clauses 7, 11 and 13 by reason of the agreed value and/or the amount insured in respect of the Vessel being inadequate.	148 149 150
9.4	The indemnity provided by this Clause 9 shall be in addition to the indemnity provided by the other terms and conditions of this insurance.	151 152
9.5	Where the Assured or the Underwriters may or could have limited their liability the indemnity under this Clause 9 in respect of such liability shall not exceed Underwriters' proportionate part of the amount of such limitation.	153 154 155
9.6	In no case shall the Underwriters' liability under this Clause 9 in respect of each separate accident or occurrence or series of accidents arising out of the same events, exceed their proportionate part of the insured value of the Vessel.	156 157 158
9.7	PROVIDED ALWAYS THAT	159
9.7.1	prompt notice must be given to the Underwriters of every casualty or claim upon the Assured which may give rise to a claim under this Clause 9 and of every event or matter which may cause the Assured to incur liability costs or expense for which he may be insured under this Clause 9.	160 161 162
9.7.2	the Assured shall not admit liability for or settle any claim for which he may be insured under this Clause 9 without the prior written consent of the Underwriters.	163 164
<b>10</b>	<b>NOTICE OF CLAIM AND TENDERS</b>	165
10.1	In the event of accident whereby loss or damage may result in a claim under this insurance, notice shall be given to the Underwriters prior to survey and also, if the Vessel is abroad, to the nearest Lloyd's Agent so that a surveyor may be appointed to represent the Underwriters should they so desire.	166 167 168
10.2	The Underwriters shall be entitled to decide the port to which the Vessel shall proceed for docking or repair (the actual additional expense of the voyage arising from compliance with the Underwriters' requirements being refunded to the Assured) and shall have a right of veto concerning a place of repair or a repairing firm.	169 170 171 172
10.3	The Underwriters may also take tenders or may require further tenders to be taken for the repair of the Vessel. Where such a tender has been taken and a tender is accepted with the approval of the Underwriters, an allowance shall be made at the rate of 30% per annum on the insured value for time lost between the despatch of the invitations to tender required by Underwriters and the acceptance of a tender to the extent that such time is lost solely as the result of tenders having been taken and provided that the tender is accepted without delay after receipt of the Underwriters' approval.	173 174 175 176 177 178
	Due credit shall be given against the allowance as above for any amounts recovered in respect of fuel and stores and wages and maintenance of the Master Officers and Crew or any member thereof, including amounts allowed in general average, and for any amounts recovered from third parties in respect of damages for detention and/or loss of profit and/or running expenses, for the period covered by the tender allowance or any part thereof.	179 180 181 182 183
	Where a part of the cost of the repair of damage other than a fixed deductible is not recoverable from the Underwriters the allowance shall be reduced by a similar proportion.	184 185
10.4	In the event of failure to comply with the conditions of this Clause 10, a deduction of 15% shall be made from the amount of the ascertained claim.	186 187
<b>11</b>	<b>GENERAL AVERAGE AND SALVAGE</b>	188
11.1	This insurance covers the Vessel's proportion of salvage, salvage charges and/or general average, reduced in respect of any under-insurance, but in case of general average sacrifice of the Vessel the Assured may recover in respect of the whole loss without first enforcing their right of contribution from other parties.	189 190 191
11.2	Adjustment to be according to the law and practice obtaining at the place where the adventure ends, as if the contract of affreightment contained no special terms upon the subject; but where the contract of affreightment so provides the adjustment shall be according to the York-Antwerp Rules.	192 193 194
11.3	No claim under this Clause 11 shall in any case be allowed where the loss was not incurred to avoid or in connection with the avoidance of a peril insured against.	195 196
<b>12</b>	<b>DEDUCTIBLE</b>	197
12.1	No claim arising from a peril insured against shall be payable under this insurance unless the aggregate of all such claims arising out of each separate accident or occurrence (including claims under Clauses 7, 9, 11 and 13) exceeds . . . . . in which case this sum shall be deducted. Nevertheless the expense of sighting the bottom after stranding, if reasonably incurred specially for that purpose, shall be paid even if no damage be found. This Clause 12.1 shall not apply to a claim for total or constructive total loss of the Vessel or, in the event of such a claim, to any associated claim under Clause 13 arising from the same accident or occurrence.	198 199 200 201 202 203 204
12.2	Excluding any interest comprised therein, recoveries against any claim which is subject to the above deductible shall be credited to the Underwriters in full to the extent of the sum by which the aggregate of the claim unreduced by any recoveries exceeds the above deductible.	205 206 207
12.3	Interest comprised in recoveries shall be apportioned between the Assured and the Underwriters, taking into account the sums paid by the Underwriters and the dates when such payments were made, notwithstanding that by the addition of interest the Underwriters may receive a larger sum than they have paid.	208 209 210 211

<b>13 DUTY OF ASSURED (SUE AND LABOUR)</b>	212
13.1 In case of any loss or misfortune it is the duty of the Assured and their servants and agents to take such measures as may be reasonable for the purpose of averting or minimising a loss which would be recoverable under this insurance.	213 214 215
13.2 Subject to the provisions below and to Clause 12 the Underwriters will contribute to charges properly and reasonably incurred by the Assured their servants or agents for such measures. General average, salvage charges (except as provided for in Clause 13.5) collision defence or attack costs and costs incurred by the Assured in avoiding, minimising or contesting liability covered by Clause 9 are not recoverable under this Clause 13.	216 217 218 219 220
13.3 Measures taken by the Assured or the Underwriters with the object of saving, protecting or recovering the subject-matter insured shall not be considered as a waiver or acceptance of abandonment or otherwise prejudice the rights of either party.	221 222 223
13.4 When expenses are incurred pursuant to this Clause 13 the liability under this insurance shall not exceed the proportion of such expenses that the amount insured hereunder bears to the value of the Vessel as stated herein, or to the sound value of the Vessel at the time of the occurrence giving rise to the expenditure if the sound value exceeds that value. Where the Underwriters have admitted a claim for total loss and property insured by this insurance is saved, the foregoing provisions shall not apply unless the expenses of suing and labouring exceed the value of such property saved and then shall apply only to the amount of the expenses which is in excess of such value.	224 225 226 227 228 229 230
13.5 When a claim for total loss of the Vessel is admitted under this insurance and expenses have been reasonably incurred in saying or attempting to save the Vessel and other property and there are no proceeds, or the expenses exceed the proceeds, then this insurance shall bear its pro rata share of such proportion of the expenses, or of the expenses in excess of the proceeds, as the case may be, as may reasonably be regarded as having been incurred in respect of the Vessel; but if the Vessel be insured for less than its sound value at the time of the occurrence giving rise to the expenditure, the amount recoverable under this clause shall be reduced in proportion to the under-insurance.	231 232 233 234 235 236 237
13.6 The sum recoverable under this Clause 13 shall be in addition to the loss otherwise recoverable under this insurance but shall in no circumstances exceed the amount insured under this insurance in respect of the Vessel.	238 239 240
<b>14 NEW FOR OLD</b>	241
Claims payable without deduction new for old.	242
<b>15 BOTTOM TREATMENT</b>	243
In no case shall a claim be allowed in respect of scraping gritblasting and/or other surface preparation or painting of the Vessel's bottom except that	244 245
15.1 gritblasting and/or other surface preparation of new bottom plates ashore and supplying and applying any "shop" primer thereto,	246 247
15.2 gritblasting and/or other surface preparation of: the butts or area of plating immediately adjacent to any renewed plating damaged during the course of welding and/or repairs, areas of plating damaged during the course of fairing, either in place or ashore,	248 249 250 251
15.3 supplying and applying the first coat of primer/anti-corrosive to those particular areas mentioned in 15.1 and 15.2 above, shall be allowed as part of the reasonable cost of repairs in respect of bottom plating damaged by an insured peril.	252 253 254
<b>16 WAGES AND MAINTENANCE</b>	255
No claim shall be allowed, other than in general average, for wages and maintenance of the Master, Officers and Crew, or any member thereof, except when incurred solely for the necessary removal of the Vessel, with the agreement of the Underwriters, from one port to another for the repair of damage covered by the Underwriters, or for trial trips for such repairs, and then only for such wages and maintenance as are incurred whilst the Vessel is under way.	256 257 258 259 260
<b>17 AGENCY COMMISSION</b>	261
In no case shall any sum be allowed under this insurance either by way of remuneration of the Assured for time and trouble taken to obtain and supply information or documents or in respect of the commission or charges of any manager, agent, managing or agency company or the like, appointed by or on behalf of the Assured to perform such services.	262 263 264 265
<b>18 UNREPAIRED DAMAGE</b>	266
18.1 The measure of indemnity in respect of claims for unrepaired damage shall be the reasonable depreciation in the market value of the Vessel at the time this insurance terminates arising from such unrepaired damage, but not exceeding the reasonable cost of repairs.	267 268 269
18.2 In no case shall the Underwriters be liable for unrepaired damage in the event of a subsequent total loss (whether or not covered under this insurance) sustained during the period covered by this insurance or any extension thereof.	270 271 272
18.3 The Underwriters shall not be liable in respect of unrepaired damage for more than the insured value at the time this insurance terminates.	273 274
<b>19 CONSTRUCTIVE TOTAL LOSS</b>	275
19.1 In ascertaining whether the Vessel is a constructive total loss, the insured value shall be taken as the repaired value and nothing in respect of the damaged or break-up value of the Vessel or wreck shall be taken into account.	276 277 278
19.2 No claim for constructive total loss based upon the cost of recovery and/or repair of the Vessel shall be recoverable hereunder unless such cost would exceed the insured value. In making this determination only the cost relating to a single accident or sequence of damages arising from the same accident shall be taken into account.	279 280 281 282

<b>20</b>	<b>DISBURSEMENTS WARRANTY</b>	283
20.1	Additional insurances as follows are permitted:	284
20.1.1	<i>Disbursements, Managers' Commissions, Profits or Excess or Increased Value of Hull and Machinery.</i> A sum not exceeding 25% of the value stated herein.	285 286
20.1.2	<i>Earnings or Anticipated Freight, insured for time.</i> A sum not exceeding 25% of the value as stated herein less any sum insured, however described, under 20.1.1.	287 288
20.1.3	<i>Freight or Hire, under contracts for voyage.</i> A sum not exceeding the gross freight or hire for the first passage and next succeeding cargo passage plus the charges of insurance. In the case of a voyage charter where payment is made on a time basis, the sum permitted for insurance shall be calculated on the estimated duration of the voyage, subject to the limitation of two cargo passages as laid down herein. Any sum insured under 20.1.2 to be taken into account and only the excess thereof may be insured.	289 290 291 292 293 294
20.1.4	<i>Time Charter Hire or Charter Hire for Series of Voyages.</i> A sum not exceeding 50% of the gross hire which is to be earned under the charter in a period not exceeding 18 months. Any sum insured under 20.1.2 to be taken into account and only the excess thereof may be insured An insurance under this Section may begin on the signing of the charter.	295 296 297 298
20.1.5	<i>Premiums.</i> A sum not exceeding the actual premiums of all interests insured for a period not exceeding 12 months (excluding premiums insured under the foregoing sections but including, if required, the premium or estimated calls on any Club or War etc. Risk insurance) reducing pro rata monthly.	299 300 301 302
20.1.6	<i>Returns of Premium.</i> A sum not exceeding the actual returns which are allowable under any insurance but which would not be recoverable thereunder in the event of a total loss of the Vessel whether by insured perils or otherwise.	303 304 305
20.1.7	<i>Insurance irrespective of amount against:</i> Any risks excluded by Clauses 5, 22, 23, 24 and 25.	306 307
20.2	Warranted that no insurance on any interests enumerated in the foregoing 20.1.1 to 20.1.6 in excess of the amounts permitted therein and no other insurance which includes total loss of the Vessel P.P.I., F.I.A., or subject to any other like term, is or shall be effected to operate during the currency of this insurance by or for account of the Assured, Owners, Managers or Mortgagees. Provided always that a breach of this warranty shall not afford the Underwriters any defence to a claim by a Mortgagee who has accepted this insurance without knowledge of such breach.	308 309 310 311 312 313
<b>21</b>	<b>RETURNS FOR CANCELLATION</b>	314
	To return pro rata monthly net for each uncommenced month if this insurance be cancelled either by agreement or by the operation of Clause 2 provided that a total loss of the Vessel, whether by insured perils or otherwise, has not occurred during the period of this insurance or any extension thereof.	315 316 317
	<b>The following clauses shall be paramount and shall override anything contained in this insurance inconsistent therewith.</b>	318 319
<b>22</b>	<b>WAR EXCLUSION</b>	320
	In no case shall this insurance cover loss damage liability or expense caused by	321
22.1	war civil war revolution rebellion insurrection, or civil strife arising therefrom, or any hostile act by or against a belligerent power	322 323
22.2	capture seizure arrest restraint or detention (barratry and piracy excepted), and the consequences thereof or any attempt thereat	324 325
22.3	derelict mines torpedoes bombs or other derelict weapons of war.	326
<b>23</b>	<b>STRIKES EXCLUSION</b>	327
	In no case shall this insurance cover loss damage liability or expense caused by	328
23.1	strikers, locked-out workmen, or persons taking part in labour disturbances, riots or civil commotions	329
23.2	any terrorist or any person acting from a political motive.	330
<b>24</b>	<b>MALICIOUS ACTS EXCLUSION</b>	331
	In no case shall this insurance cover loss damage liability or expense arising from	332
24.1	the detonation of an explosive	333
24.2	any weapon of war and caused by any person acting maliciously, or from a political motive.	334 335
<b>25</b>	<b>NUCLEAR EXCLUSION</b>	336
	In no case shall this insurance cover loss damage liability or expense arising from any weapon of war employing atomic or nuclear fission and/or fusion other like reaction or radioactive force or matter.	337 338