BONE GAMES®
Presents

LNL

Laplace, Newton & Lagrange

A game of ship to ship combat in outer space.

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Contents

1 x Counter Sheet
1 x Hex Map
Dice not included

I. Introduction

LNL is a ship to ship space combat game that takes place between Earth and Moon based forces in the near future. The combatants are two to eight vehicles fighting to gain control over the space around the moon. In LNL ships will have to contend with the effects of momentum and fuel consumption while maneuvering.

LNL introduces a unique movement system to track the effects of momentum, and a quick and simple system for combat resolution. Players take the roll of the Earth or Moon forces, and attempt to keep control of their own space.

II. EOR® (Even/Odd Randomizer)

LNL uses a unique system for randomization, called EOR. EOR uses the number of 'strikes' that result when 'dice' are thrown. Dice can be anything which can result in at least 2 mutually exclusive events – any die result can be said to either odd or even, a card from a shuffled deck is either red or black. A strike is one of the two results, agreed on by all players before play starts – an odd roll on a die, or a black card from a deck. By default, an odd result on a die is a strike. Because of this system any type of dice may used, even if they are of different types.

EOR events can be modified in two ways: +*Z*s or +*Z*d; where +*Z*s adds *Z* strikes automatically, and +*Z*d adds Z more dice.

III. Setting Up

Before LNL can be played some things need to be done. The counters need to be cut out after first being copied onto firm paper. The hex board that comes with LNL is too small for large encounters, so players are encouraged to make several copies of it and form a larger board (minimum recommended size is two hex pages by two hex pages, or get another larger hex board).

Each player needs to agree which scenario will be played. Once the players determine who plays what sides the various pieces should be distributed to the appropriate players. Each player should also have an abundance of dice of any variety.

Play begins by setting up according to the specific scenario being played.

IV. Ship Descriptions

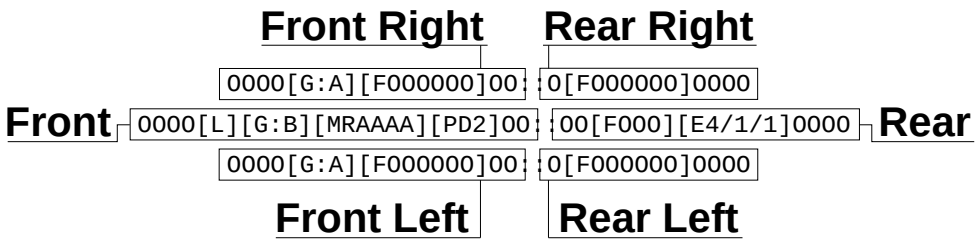
A. Ship Control Log

The vessels in LNL are represented by sets of alphanumeric characters, called a Ship Control Log. An example of a Ship Control Log is shown below:

```
1  Defiant  MxSpd: 5                HullInt: 8
2       OOOO[G:A][FOOOOOO]OO::O[FOOOOOO]OOOO
3  OOOO[L][G:B][MRAAAA][PD2]OO::OO[FOOO][E4/1/1]OOOO
4       OOOO[G:A][FOOOOOO]OO::O[FOOOOOO]OOOO

5     A1 (8) OOOO                    A3 (8) OOOO
6     A2 (8) OOOO                    A4 (8) OOOO

7     G:A  3 (6/10/12)               G:B  4 (6/10/12)
8     L    4 (5/10/20)
```

Line 1 gives the name of the ship, its maximum speed (MxSpd), and its hull integrity (HullInt).

Lines 2-4 describe the ship in terms of the hull strength and weapon systems. The first “O” represent hull spaces. The codes in brackets represent weapons and propulsion systems. The “O” following the F are the ship fuel points. Every hit inflicted on a ship destroys 1 hull point or system. The control log is divided up into 6 zones corresponding to the faces of a hex. The middle of the ship is designated by the double colons — “::”. See the following diagram for details:



Lines 5-6 are the control logs for the missiles on board the ship. These will be described in greater detail in a later section.

Line 7 describes the gun weapons mounted on the ship. This will be described in greater detail in a later section.

Line 8 describes the laser weapons mounted on the ship. This will be described in greater detail in a later section.

B. System Descriptions

There are only a few systems to keep track of in LNL and they are described in the following sections.

1. Hull Points

Hull points represent the structural strength and armor of a ship. They are represented as “O” on the ship control logs. It takes 1 hit to destroy 1 hull point.

2. Missile Racks

Missile racks store and launch a ship's missiles. They are designated by MR followed by a string of letters all of which is enclosed in brackets. Each letter represents a single missile on the rack and the type of missile. All missile control logs are shown below the ship itself. Once a missile is fired the owning player must mark off the missile from the rack. It takes only 1 hit to destroy a missile rack, and all of the missiles remaining in it.

3. Guns/Lasers

These systems represent lasers or auto cannons. Auto cannons and lasers are represented in the same manner with a G for an auto cannon and a L for lasers followed by a letter that represents which of that weapon it is, if there are several of that type on the same ship. For example [G:A]. The weapon is further described below the ship control log as G:A 3 (6/10/12). The 3 is the base strength of the weapon. The three numbers in the braces are the short, medium, and long ranges of the weapon from left to right. It takes 1 hit to destroy either of these weapon systems.

Guns have normal firing arcs, lasers have tight firing arcs. For an illustration of firing arcs refer to Section XI.

4. Point Defense Systems

Point defense systems are short range last ditch weapons for use against missiles. They are listed on the control log as [PD2]. The number is the strength of the weapon — in this case 2. It takes 1 hit to destroy a point defense system.

Because point defense systems can only fire at missiles that enter the same hex the ship is in, they do not have a firing arc. A point defense system can fire on any missile or wave of missiles which enters the hex of the ship the point defense system is on.

5. Fuel Tanks

Fuel tanks represent the storage systems of the fuel used to propel the ships through space. They are represented by an F followed by a series of O's all enclosed in brackets. For example, [FOOOO] is a fuel tank with 4 fuel points. Every time a ship expends a fuel point the owning player scratches off one fuel point from a fuel tank of that player's choice. It takes 1 hit to destroy a fuel tank and all of the remaining fuel within.

6. Engines

Engines are used to propel the ships through space. They are represented on the ship control log by an E followed by four numbers enclosed by brackets. For example [E4/1/1]. The first number is the maximum amount the ship may thrust in a single turn. The second number is the number of hexsides the ship can rotate per turn. The last number is the number of fuel points the ship must spend to achieve a single point of thrust. The facing opposite the engine is located is the direction that ship will move when that engine thrusts. It takes 1 hit to destroy an entire engine.

V. Missile Descriptions

Every missile loaded aboard a ship has a log. An example of a missile log is shown below.

```
(1)(2) (3)
A1  8  0000
```

Section 1 describes the type and ID number of the missile. If there were two different types of missiles on board a ship then they would be listed “A” and “B” and so on.

Section 2 describes the warhead size. The number indicates the amount of damage the missile can possibly inflict.

Section 3 indicates the missile’s fuel. This fuel can be used to both change the velocity of the missile and its facing.

VI. Game Sequence

LNL is played in turns which are further divided into phases. A complete turn is described below.

1. Initiative Determination Phase
2. Missile Movement Phase
3. Ship Maneuver Phase
    a. Rotate
    b. Apply New Thrust
    c. Move
4. Combat Phase
5. End Phase

A. Initiative Determination Phase

At the beginning of each turn each player rolls 5d. The player rolling the highest number of strikes has initiative for that turn. This roll can be modified by which player had initiative the previous turn, and scenario special rules. The player without the initiative the previous turn gets a modifier of +1s for each turn they are out of initiative, until they get the initiative.

Example: Jessica won the initiative the first turn. John gets a modifier of +1s for his initiative roll on the second turn. If John would lose initiative again, he would get a +2s modifier for turn three. If he then were to win the initiative his next initiative would be unmodified, but Jessica’s roll would now be modified +1s.

During a turn, the side with initiative performs phase 2, the Missile Movement Phase, before the other player; then performs all of phase 3, the Ship Maneuver Phase, after the other player.

B. Missile Movement Phase

Missiles move differently in LNL then ships do. For a complete description of missile movement see Section VII.B.

C. Ship Maneuver Phase

All ships have the option to change their facing and/or apply new thrust. All ships that have thrust counters must then move.

1. Rotate

A ship can rotate the number of hex sides per turn in either direction no greater then the highest rotation value of a working engine. The rotation does not move the ship into another hex, it merely changes the facing of the ship. A correct ship facing results in the front of the ship facing a hex side, not a hex spine.

2. Apply Thrust

Any, all, or none of the engines on a ship may thrust. To apply thrust the player must first spend the needed amount of fuel to accomplish the thrust, mark the fuel as spent off the control log, then lay the appropriate thrust counters around the ship.

The method of displaying thrust and direction of thrust is discussed in Section VII.A.

3. Move

All ships with thrust counters must move. A ship moves in the direction of its thrust counters for as many hexes as the value of the thrust counters. See Section VII.A, for a description of ship movement in LNL

D. Combat Phase

The player with initiative gets the first opportunity to engage in combat. The initiative player chooses one of their ships and fires its weapons, followed by the other player. Then the initiative player chooses another ship to fire with, continuing the cycle until neither player can nor wants to fire. At this point play enter the End Phase.

E. End Phase

If either player has met their victory conditions then they are declared the winner during the End Phase, and the game is over.

When the End Phase is completed, and neither player has won, players move to the next turn. Play proceeds this way until one player wins, or players agree to a call a draw.

VII. Movement System

Ships and missiles have different systems for tracking movement. Ships will be discussed first, then missiles. Any number of ships and missiles can be in the same hex at the same time.

A. Ship Movement

Ships move by using engines to accelerate the ship in the opposite direction the engine thrusts. Because of Newton’s Laws, the momentum that a ship builds when it thrusts stays with it until some force counters it. LNL represents this by using thrust counters which surround each ship.

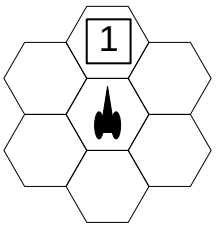


Figure 1

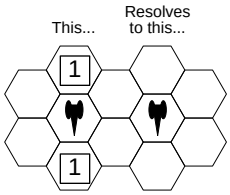


Figure 2

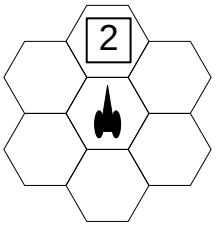


Figure 3

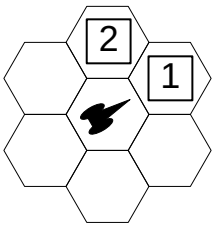


Figure 4

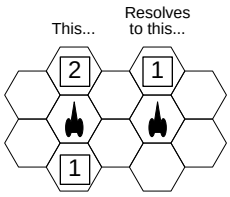


Figure 5

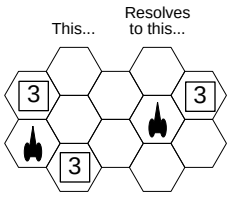


Figure 6

1. Use of Thrust Counters

The following describes how thrust counters are used in LNL.

If a ship with one engine facing the rear is at rest, it would have no thrust counters. If it were to fire the rear engine for 1 point of thrust, the ship would now get a single thrust counter (showing the numeral 1 for how strong the thrust is) in the hex in front of the ship. See Figure 1.

If the ship applied no new thrust the next turn, the ships momentum would carry the ship one hex forward. If the ship wanted to stop it would first have to turn to face the opposite direction, then fire the engines for 1 point of thrust. This would result in a 1 thrust counter being behind the ship (it was in the front, but the ship turned around), and 1 thrust counter being in front of the ship. Because each of these thrust counters is equal they cancel each other out - and the ship doesn't move at all. See Figure 2.

If that ship, while moving forward with a thrust of 1 in front, applied another single point of thrust while facing forward then the thrust counter in front of the ship would need to be replaced with a 2 force thrust counter. See Figure 3.

If that ship then turned one hex side to the right, then applied 1 more thrust out of the one engine, the ship would take on a new thrust counter, in front of the ship. This would leave the ship with two thrust counters; a 1 point thrust counter in front of the ship and a 2 point thrust counter one hex side to the left of the front of the ship. See Figure 4.

Note that when a ship rotates the thrust counters do not rotate with it. A ship's facing is important because it determines which direction the engines fire in, thus applying thrust to the opposite side of the engine.

Some ships have more then 1 engine, each maybe facing a different direction. A ship like this can choose to fire any, all, or none of the engines. If more than one of the engines are fired then thrust would be affected in several different directions.

Thrust counters should be resolved to the simplest representation of those thrusts. Example: if a ship has a 1 point thrust counter behind it, and a 2 point thrust counter at its front, those thrusts could be resolved by only putting a 1 thrust point counter in front. See example Figure 5. Example: a 3 point thrust counter at its front and a 3 point thrust counter two hex sides to the right, those thrust could be resolved by only putting a 3 point thrust counter one hex side to the right of the front (this is only because the thrust counters were equal). See Figure 6.

2. Maximum Ship Speeds

Each ship has a MxSpd value, which is that ship's maximum speed in any single direction. A ship may reach its maximum speed in more then one direction. Because a set of thrusts can be resolved in several ways, the maximum speed is checked on the simplest representation of those thrusts.

3. Over-Thrusting

A ship may wish to thrust greater then its maximum speed, but doing so can result in severe damage to the ship. Thrusting over the ship's maximum speed is called over-thrusting. An engine may over-thrust up to the full amount of that engine's maximum thrust value.

A ship's HullInt value represents how strong and well built the hull of the ship is, the lower the number the better. Every time a ship over-thrusts, and for every turn a ship is over-thrusting, the player must roll the number of die equal to the HullInt value of that ship. For every strike rolled the ship takes a point of damage, originating from the outside edge of the facing opposite the engine attempting the over-thrust (if the engine trying to over-thrust is in the rear, then any damage from the over-thrust is dealt with as if it were incoming fire from the front hex side.) See Section VIII.C, for how to deal with damage.

An over-thrust attempt is successful unless the damage caused by the over-thrust destroys the ship. A ship that is over-thrusting will continue to over-thrust until it can reduce its speed below the ship's MxSpd value. Each turn a ship is over-thrusting its HullInt is increased by 1.

B. Missile Movement

Missiles in LNL are large guided projectiles with powerful engines that allow them to rapidly change their momentum. This changes how missile movement is tracked, when compared with ships.

A missile may rotate, apply thrust, and move all in any order during the Missile Movement phase; but may only rotate or apply thrust once during its movement. See Missile Combat, Section VIII.B, for a description of launching missiles.

Missiles rotate by expending 1 point of fuel. A missile may only rotate 1 hex side per turn. The fuel expended to rotate the missile does not change its velocity, merely its hex facing. When a missile rotates the thrust counter rotates with it, unlike ships.

Missiles may accelerate after they are launched if there is fuel available to do so. Each point of fuel spent adds another point of thrust to the front of the missile. A missile's acceleration is limited by how much fuel is left on board the missile and by a maximum speed of 10. A missile may not over-thrust, so may not exceed the maximum speed of 10 in any way.

A missile continues moving until it enters a hex with another ship counter, or leaves the board.

If the missile, during its movement, enters the hex of another ship (any other ship or ships) then the missile explodes and the following takes place:

The defender (or anyone with a ship in the hex the missile is exploding in), if they have a point defense system which can fire on the incoming missile, has a chance to try to destroy some of the incoming missiles. The defender gets to fire its point defense system at each wave of incoming missiles. A wave of missiles is defined as a group of missiles all in the same hex, in the same direction, with the same thrust counters, that will enter the hex of the defending ship together. For each strike the defender rolls an incoming missile is destroyed before it has a chance to explode. All eligible

point defense systems get to fire before the attacker rolls to see how much damage the missiles inflict.

The attacker then rolls as many die as given by the strength of the remaining missiles. The number of strikes rolled is the amount of damage done to the defender's ship. See Taking Damage below for how damage is inflicted upon the defender's ship.

Note about missile counters: the missiles on the ship's log are numbered, but the missile counters are lettered. Because missiles are most often fire in waves a single missile counter can represent several missiles. When a missile (or missiles) is launched the player should note off to the missile's side which letter missile counter the missile wave is represented by.

VIII. Combat System

Combat in LNL takes two forms; direct fire combat and missile combat.

A. Direct Fire Combat

Direct fire combat consists of firing lasers and guns. The following general procedure is used to resolve direct fire combat. The number of dice the attacker gets to roll is determined by the power of the weapon at the given range. All direct fire weapons fire at full power at their medium range, at half power at long range (rounding down), and at double power at short range.

The defender does not get to roll any dice during direct fire combat.

The attacker rolls their dice. The number of strikes rolled is the amount of damage done to the defender's ship. See below for a description of how damage is taken.

B. Missile Combat

There are two parts to Missile combat; launching of missiles and exploding of missiles. Missiles are launched during the Combat Phase, but explode during the Missile Movement Phase (if they enter another ship's hex.)

What happens when a missile enters another ship's hex is described in Missile Movement.

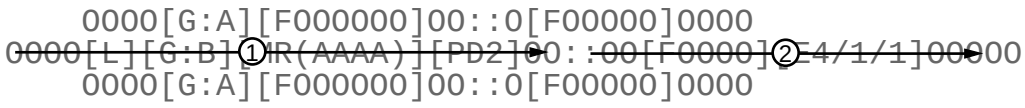
When a missile is launched it is placed in the hex of the launching ship, facing in any direction. A player may spend any, all, or none of the missile's on board fuel to give it additional initial thrust. If the direction the missile is fired in is along a direction corresponding to a thrust counter of the launching ship then the missile is launched with that thrust added to its launch thrust.

C. Taking Damage

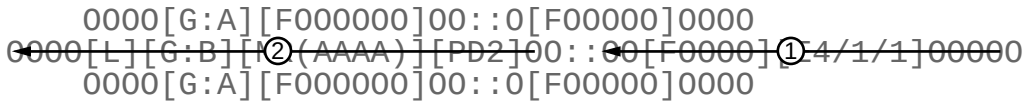
If there were any hits as the result of either kind of combat then the defender strikes off a system for each hit from the appropriate line of the ship control log. The proper line is the line, and portion of the line, that represents the hex side of the defending ship that faces the attacking ship.

To determine where the damage done to a ship is applied see the following illustrations and instructions:

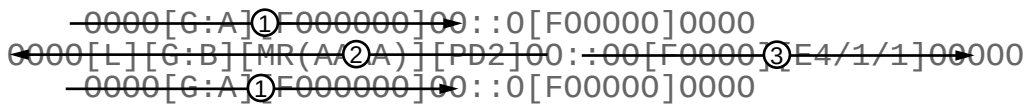
Damage from the Front



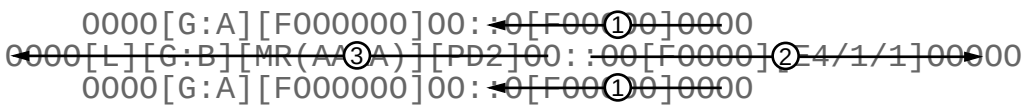
Damage from the Rear



Damage from a Front Side



Damage from a Rear Side



Determine which direction the damage is coming from; front, rear, front side, or rear side. Apply damage in the direction of the first arrow, following to the second and third arrow when all of the systems on a given section are destroyed.

Any results of the damage done to the defending ship take effect immediately. A ship is destroyed when all of the systems on the center line have been destroyed, whether or not any systems still exist on either of the sides. Remove a ship from play as soon as it is destroyed.

IX. Combat Example

In the Combat Illustration below E1 and E2 are each a Venus, and M1 is an Austin. MA is a missile wave of 2 missiles. The ship control logs are as follows:

```
E1 Venus MxSpd: 4 HullInt: 8
     0000[L][F000]::[F000]000
0000[L]::[E3/1/1]000
     0000[L][F000]::[F000]000

   L   3 (5/10/20)

M1 Austin MxSpd: 4 HullInt: 10
     0000[F000]::[MRAAA]000
0000[G][F0000]::[E3/1/1][F00]000
     0000[F000]::[MRAAA]000

   A1 5 0000 (E A)
   A2 5 0000 (E A)
   A3 5 0000

   G   2 (6/10/12)
```

```
E2 Venus MxSpd: 4 HullInt: 8
     0000[F000]::[F000]000
0000[L]::[E3/1/1]000
     0000[F000]::[F000]000

  L   3 (5/10/20)

   A4 5 0000
   A5 5 0000
   A6 5 0000
```

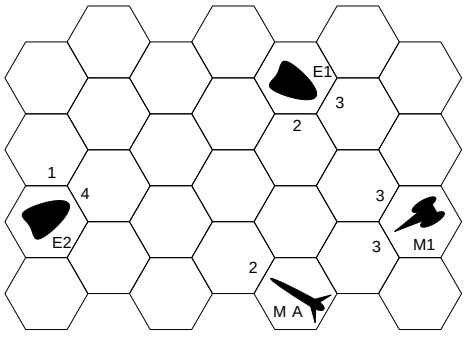
The Ship Maneuver Phase has just ended, and the Combat Phase is just starting.

The Moon player, having the initiative, gets to fire all eligible weapons from the Moon ship first. All of the missile racks have been destroyed, so the Austin may no launch more missiles. The Austin may fire the gun, but only at E2, as E1 is out of the gun's firing arc. The range is 6, allowing the gun to fire at its close range strength of 4. The Moon player rolls 4 dice, and gets 1 strike. Because the damage came from the front, damage is done to the final hull point on the front facing of E2.

The Earth player now fires the front laser from E1 to M1 (M1 is not in any of the other lasers firing arcs). The range from E1 to M1 is 3, allowing a laser to fire at its close range of 6. The Earth player rolls 6 dice, and gets 4 strikes. Because damage came in from the front right side, the damage first destroys the remaining hull and fuel tank on the front facing, then the fuel tank and gun on the front facing.

The Earth player would like to fire the lasers on E2, but cannot, because M1 is not in its firing arc.

There are no ships left to fire, so play continues to the End Phase. Neither player has meet their victory conditions so play proceeds to the next turn's Initiative Determination Phase. Because the Moon player had the initiative last turn, the Earth player gets a +1s modifier to their role, and is able to win the initiative this turn. Play now proceeds to the Missile Movement Phase.



Combat Illustration

If the Earth player had any missiles, they would get to move first. Because the Earth player has no missiles, the Moon player moves their missiles. The missile wave of MA can hit E1 by turning one hex side to the right, moving its 2 hexes, then adding 1 more point of thrust. The MA missile wave cannot hit E2, as it is out of range. If E1 had any point defense systems they could fire now, but not having any means both missiles have a chance to damage the ship. The strength of each missile is 5, and as there are 2 missiles, the Moon player gets to role 10 dice. The Moon player roles 10 dice, and gets 4 strikes. Because the missiles struck from the front right side, damage is done to the fuel tank on the front right (destroying any remaining fuel), then the laser and remaining hull point on the front, then the engine on the rear. Because the center line is totally destroyed, the ship is destroyed, and removed from play!

Play proceeds on from here...

X. Ship Lists

The following are the ship lists for the Moon and Earth forces. The ship lists are divided into the Early Ships, the Standard Ships, the Advanced Prototypes, and the Heavy Ships.

A. Moon Ships

1. Early Moon Ships

```
London  MxSpd: 4  HullInt: 10
     OOOO[FOOO]::F[OOO]OOO
OOO[G][MRAAAAAA]::[E3/1/1]OOO
     OOOO[FOOO]::F[OOO]OOO

   A1 5 OOOO                        A4 5 OOOO
   A2 5 OOOO                        A5 5 OOOO
   A3 5 OOOO                        A6 5 OOOO

   G   2 (6/10/12)

Austin  MxSpd: 4  HullInt: 10
     OOOO[FOOO]::[MRAAA]OOO
OOOO[G][FOOOO]::[E3/1/1][FOO]OOO
     OOOO[FOOO]::[MRAAA]OOO

   A1 5 OOOO                        A4 5 OOOO
   A2 5 OOOO                        A5 5 OOOO
   A3 5 OOOO                        A6 5 OOOO

   G   2 (6/10/12)
```

2. Standard Moon Ships

```
Denver  MxSpd: 5  HullInt: 8
     OOO[MRAAAA]O::[FOOOOO]OOO
OOOO[L][PD2]::[E4/1/1][FOOOO][G]OOO
     OOO[MRAAAA]O::[FOOOOO]OOO

   A1 8 OOOOO                        A5 8 OOOOO
   A2 8 OOOOO                        A6 8 OOOOO
   A3 8 OOOOO                        A7 8 OOOOO
   A4 8 OOOOO                        A8 8 OOOOO

   L   3 (5/10/20)                   G   3 (6/10/12)

Singapore  MxSpd: 5  HullInt: 8
     OOO[MRAA][MRAA]::[FOOOOO]OOO
OOOO[G][PD2]::[E4/1/1][FOOOO][L]OOO
     OOO[MRAA][MRAA]::[FOOOOO]OOO

   A1 8 OOOOO                        A5 8 OOOOO
   A2 8 OOOOO                        A6 8 OOOOO
   A3 8 OOOOO                        A7 8 OOOOO
   A4 8 OOOOO                        A8 8 OOOOO

   L   3 (5/10/20)                   G   3 (6/10/12)

Chicago  MxSpd: 6  HullInt: 9
     OO[MRAA]O::[FOOO]OO
OOO[L][PD2][FOOOO]::[E5/1/1][FOOOO][G]OO
     OO[MRAA]O::[FOOO]OO

   A1 8 OOOOO                        A3 8 OOOOO
   A2 8 OOOOO                        A4 8 OOOOO

   L   3 (5/10/20)                   G   3 (6/10/12)
```

3. Heavy Moon Ship

```
Cairo  MxSpd: 4  HullInt: 10
 OOOOOOO[L][MRAAA][FOOOOO][PD3][FOOOOO][MRAAA]OOOO::[FOOO]OOO[G:A]OOOOOOO
OOOOOOOOO[G:B][L]OOO::[FOO]OOOO[E3/1/1][E3/1/1][MRAAAA]OOOOOOO
 OOOOOOO[L][MRAAA][FOOOOO][PD3][FOOOOO][MRAAA]OOOO::[FOOO}OOO[G:A]OOOOOOO

   A1 8 OOOOO                        A5 8 OOOOO
   A2 8 OOOOO                        A6 8 OOOOO
   A3 8 OOOOO                        A7 8 OOOOO
   A4 8 OOOOO                        A8 8 OOOOO

   G:A  2 (6/10/12)                  G:B  3 (6/10/12)
   L   3 (5/10/20)
```

4. Moon Advanced Prototype

```
Rio  MxSpd: 5  HullInt: 5
     OOO[G][MRAAA]::[FOOO][E3/1/1]OO
OOO[L][PD3][FOOOO]::[FOOOO][G]OOO
     OOO[G][MRAAA]::[FOOO][E3/1/1]OO

   A1 9 OOOOO                        A4 9 OOOOO
   A2 9 OOOOO                        A5 9 OOOOO
   A3 9 OOOOO                        A6 9 OOOOO

   L   3 (5/10/20)                   G   3 (6/10/12)
```

5. Moon Transport

```
Venice  MxSpd: 4  HullInt: 12
     OOOOOO[FOOOOO]::[FOOOOO]OOOOO
OOOOOOOO[FOOOOO]::[FOOOOO][E2/1/1]OOOOOOO
     OOOOOO[FOOOOO]::[FOOOOO]OOOOO
```

B. Earth Ships

1. Early Earth Ships

```
Venus  MxSpd: 4  HullInt: 8
     OOOO[L][FOOO]::[FOOO]OOO
OOOO[L]::[E3/1/1]OOO
     OOOO[L][FOOO]::[FOOO]OOO

   L   3 (5/10/20)

Mercury  MxSpd: 4  HullInt: 8
     OOOOO::F[OOOO][L]OOO
OOOO[L][FOO]::[E3/1/1][FOO]OOO
     OOOOO::F[OOOO][L]OOO

   L   3 (5/10/20)
```

2. Standard Earth Ships

```
Pluto  MxSpd: 5  HullInt: 7
     OOO[L][MRAAA]O[FOOO]::[FOOO]OOO
OOOO[L][PD2]::[E4/1/1][FOOO][G]OOO
     OOO[L][MRAAA][FOOO]O::[FOOO]OOO

   A1 8 OOOO                         A4 8 OOOO
   A2 8 OOOO                         A5 8 OOOO
   A3 8 OOOO                         A6 8 OOOO

   L   4 (5/10/20)                   G   2 (6/10/12)
```

```
Saturn  MxSpd: 5  HullInt: 7
     OOO[MRAA]::[FOOO][L]OOO
OOOO[G][L][MRAA][PD2][FOOO]::[E4/1/1][FOOO]OOO
     OOO[MRAA]::[FOOO][L]OOO

   A1 8 OOOO                        A4 8 OOOO
   A2 8 OOOO                        A5 8 OOOO
   A3 8 OOOO                        A6 8 OOOO

   L   4 (5/10/20)                  G   2 (6/10/12)

Uranus  MxSpd: 6  HullInt: 8
     OOO[L]OO::[FOOOOO][G:A]OO
OOO[G:B]OO::[E5/1/1][FOOOO]OOO
     OOO[L]OO::[FOOOOO][G:A]OO

   G:A  2 (6/10/12)                 G:B  3 (6/10/12)
   L   4 (5/10/20)
```

3. Heavy Earth Ship

```
Jupiter  MxSpd: 4  HullInt: 9
  OOOOOOO[L][PD2][MRAAA]OOOO::[FOOOOO]OOO[MRAAA][FOOOOOO]OOOOOOO
OOOOOOOOO[PD2][L][FOOOOOO]OOO::OOO[E3/1/1][E3/1/1][L][G]OOOOOO
  OOOOOOO[L][PD2][MRAAA]OOOO::[FOOOOO]OOO[MRAAA][FOOOOOO]OOOOOOO

   A1 8 OOOO                        A7  8 OOOO
   A2 8 OOOO                        A8  8 OOOO
   A3 8 OOOO                        A9  8 OOOO
   A4 8 OOOO                        A10 8 OOOO
   A5 8 OOOO                        A11 8 OOOO
   A6 8 OOOO                        A12 8 OOOO

   G   3 (6/10/12)                  L   4 (5/10/20)
```

4. Earth Advanced Prototype

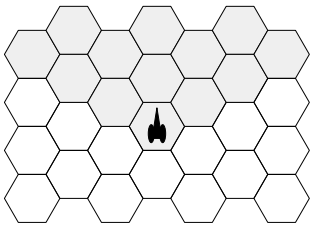
```
Mars  MxSpd: 5  HullInt: 4
     OOOO[G][FOO]::[G][FOOO]OOO
OOO[L][PD2][E3/1/2][FOOO]::[E4/2/1][FOOO][L]OOO
     OOOO[G][FOO]::[G][FOOO]OOO

   G   2 (6/10/12)                  L   3 (5/10/20)
```

5. Earth Transport

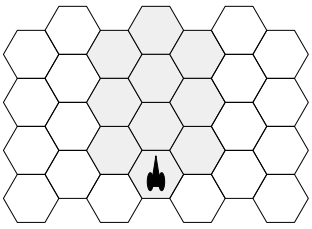
```
Neptune  MxSpd: 4  HullInt: 10
     OOOOOO[FOOOOO]::[FOOOOO]OOOOO
OOOOOOOO[FOOOOO]::[FOOOOO][E2/1/1]OOOOOOO
     OOOOOO[FOOOOO]::[FOOOOO]OOOOO
```

XI. Firing Arc Diagram

The following diagram illustrates the normal and tight firing arcs. For the purposes of this diagram assume the given weapon is on the front facing of the ship. (This would be the front of the second line of a ship control log.) The firing arcs extend as far forward as the maximum range of the specific weapon.



Normal Firing Arc



Tight Firing Arc

XII. Scenarios

The following scenarios provide a variety of situations. Scenarios A through D have the following setup: each side sets up at opposite sides of the board, within 3 hexes of the edge. Each ship may have any facing; and 1 thrust counter in any direction, of between 2-4 thrust points. The winner is the last player to have an operational and maneuver capable ship on the board.

Scenarios E and F have the following setup: each player sets up at opposite sides of the board, within 3 hexes of the edge. Each ship may have any facing; and 1 thrust counter in any direction, of between 2-4 thrust points. The player with the transports must try to move them off the opposite end of the board; all 5 for a total victory, 4 for a victory, and 3 for a marginal victory. The player attacking the transports must destroy the transports before they exit the board; all 5 for total victory, 4 for a victory, and 3 for a marginal victory.

A. Early Battles

Moon: any combination of early ships, totalling 3
Earth: any combination of early ships, totalling 3

B. Later Battles

Moon: any combination of 2 Denver or Singapore, 2 Chicago
Earth: any combination of 2 Pluto or Saturn, 2 Uranus

C. Most Recent Battles

Moon: 1 Cairo, 3 Chicago
Earth: 1 Jupiter, 3 Uranus

D. Prototype Battles

Moon: 1 Cairo, 3 Rio
Earth: 1 Jupiter, 3 Mars

E. Moon Transport Interdiction

Moon: 5 Venice, any combination of 2 Denver or Singapore, 1 Chicago
Earth: 3 Pluto or Saturn, 1 Uranus

F. Earth Transport Interdiction

Moon: 3 Denver or Singapore, 1 Chicago
Earth: 5 Neptune, any combination of 2 Pluto or Saturn, 1 Uranus

XIII. About BoneGames

BoneGames is dedicated to designing and producing top quality games. Our goal is to put the fun and simplicity back into games of all types. By offering our games in the manner we do, we allow everyone the opportunity to enjoy what we ourselves have been enjoying for some time.

Please feel free to distribute LNL. Be on the watch for other games by BoneGames. Please let us know what you think of our games, and of our unique distribution system.

Visit the Bonegames website at:

http://www.bonegames.com

Your comments are welcome at the following email address:

bonegames@bonegames.com

XIV. Legal Notice

By playing or distributing LNL you are agreeing to the following:

Contact BoneGames for licensing or reprint information. Email all inquires to the email address above.

Turn Sequence

1. Initiative Determination Phase
2. Missile Movement Phase
3. Ship Maneuver Phase
   a. Rotate
   b. Apply New Thrust
   c. Move
4. Combat Phase
5. End Phase

M1	M2	M3	M4	M A	M B	M C	M D	M E	M F	M G	M H
M5	M6	M7	M8	M I	M J	M K	M L	M M	M N	M O	M P
E1	E2	E3	E4	E A	E B	E C	E D	E E	E F	E G	E H
E5	E6	E7	E8	E I	E J	E K	E L	E M	E N	E O	E P

1	1	2	2	3	3	4	4	5	5	6	7	8	9	10
1	1	2	2	3	3	4	4	5	5	6	7	8	9	10
1	1	2	2	3	3	4	4	5	5	6	7	8	9	10
1	1	2	2	3	3	4	4	5	5	6	7	8	9	10
1	1	2	2	3	3	4	4	5	5	6	7	8	9	10
1	1	2	2	3	3	4	4	5	5	6	7	8	9	10
1	1	2	2	3	3	4	4	5	5	6	7	8	9	10
1	1	2	2	3	3	4	4	5	5	6	7	8	9	10
1	1	2	2	3	3	4	4	5	5	6	7	8	9	10
1	1	2	2	3	3	4	4	5	5	6	7	8	9	10
1	1	2	2	3	3	4	4	5	5	6	7	8	9	10
1	1	2	2	3	3	4	4	5	5	6	7	8	9	10
1	1	2	2	3	3	4	4	5	5	6	7	8	9	10
1	1	2	2	3	3	4	4	5	5	6	7	8	9	10

Counter Sheet