

Notes from Hades

Last Memorial Day weekend, I had the good fortune to attend a beer festival in San Luis Obispo. For those of you who are unaware of California geography, San Luis Obispo is a small town on the coast about midway between Los Angeles and San Francisco. Anyway, at this festival were represented about 40 different microbreweries from California and elsewhere. It was situated right on the bay, and a couple of good blues bands performed. But, of course, the highlight of the whole thing was the beer. Now, I find the big, mass-produced American beers to be quite a bit like making love in a canoe -- they're fucking close to water. The beers at the festival, on the other hand, were not like that at all. The microbreweries tend to specialize in the more exotic beers. Ales, dark beers, porters, stouts, and the like, and they tend to devote a lot more time and effort to the production of their beers -- and it shows. I would highly recommend this event to anybody who is at all interested in fine beers. A thoroughly enjoyable event.

In other news, the Zine Register is out! That's right, the long awaited Zine Register #24 is now available. This fine publication is indispensable to anyone who wants to discover the true breadth and scope of this hobby. It is also the last issue to be produced under the auspices of Pete Gaughan; he is turning the reigns over to Micheal Lowrey. For copies of the current Zine Register, contact Pete at 1236 Detroit Ave. #7, Concord, CA 94520-3651. For inquiries about future Zine Registers, contact Michael Lowrey at 6503-D Fourwinds Drive, Charlotte, NC 28212.

I'd also like to extend my congratulations to Pete and Cathy Gaughan on the birth of their daughter Sally Anne Marie last Tuesday.

This issue's deadline will be on **Friday, August 4 at 5:00 pm Pacific Time.**

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Flier Games

"Proteus"	Midway Campaign	0900 Oct 25
"Canis Major"	Stellar Conquest	Turns 17, 18

Game Openings

None at this time.

Wish List

Time Agent is a game pitting six different races against each other with the object of becoming the dominant race in the galaxy. This is achieved through manipulating past events more to your liking and then when you have arranged things to suit you, preventing others from undoing your work by reversing time travel itself. It will be run by flier. Have Sean Cousins and Chris Hurley. Need 4 more.

Slapshot is a tongue-in-cheek card game about hockey. This will be run by Andy Lewis. Have Chris Hassler, need 7 more.

Machiavelli. With the completion of "Pack of Curs" I will open up another Machiavelli game. I am going to try the 9-player Genoan variant with plague, famine, and unlimited special military units, to the Advanced game victory conditions. Have Bob Robles, Dave Anderson, Ward Narhi, need 6 more.

Outpost. This game will start up as soon as the current one finishes. It will use the Expert Rules, which alter the sequence of play a bit. Anybody who signs up will be provided with the details of the differences. Need 10.

History of the World. This game will also start up when the current one finishes. Need 6.

Note that a subscription to S.O.B. is not required to play in a game run by flier, but that a game fee will be charged to non-subbers.

S.O.B. is a zine of unusual postal games, and anything else I feel like including. Your publisher is:

Chris Hassler a.k.a. Cerberus
631 Candia Circle
La Habra, CA 90631
Phone: (714) 773-0940
CompuServe: 70514,37
 Subscriptions cost \$1.00 per issue (\$1.50 overseas).

Howling at the Moon
The S.O.B. Letter Column

Bob Robles

How about that Measure R (is that the right one?)?!?! The voters in Orange County certainly do live too close to Disneyland. Let's see what happens when the default hits. What do you think?

[For those of you unaware of Orange County politics, Measure R was a ballot initiative that would have raised the sales tax in the county by half a percent in an effort to get the county out of its bankruptcy problems sooner. It was defeated by a 3 to 2 margin. Personally, I think it was rather short sighted and selfish of those who voted against the measure. I see two major consequences arising from the measure's failure. The first is that the

services offered by the county government are going to be slashed drastically, perhaps even more so than most people think. The second bit of fallout is of a more far reaching nature, however, and that is on the municipal bond market. In the past, municipal bonds were viewed as very safe investments, in part because it was thought that a government entity, as opposed to a corporation, could always raise more money if it had to by raising taxes. This has been proven not to be the case. As a result, the municipal bonds will no longer be looked upon as a "safe" investment, and as a result, investors will demand a higher return and governments will have to pay higher interest rates when they borrow money. Now, depending on

who you talk to, this may or may not be a good thing. The fact remains that in the future, it is likely that all government agencies will have a harder time

borrowing money, and as a result, they will either raise taxes, or cut services.]

Doghouse / MGN# O/B/8/ABC/3

Fall 1457

Deadline/Winter-Spring 1458 8/4 Friday

The Venetian steamroller picks up speed, this time with French help as they combine in an attack on the erstwhile Venetian ally Milan. The Pope offers money to the citizens of Venice, but finds them too loyal to sway. Florence continues his period of mourning, and is taken advantage of by the Pope. The Turks let Naples out of the box, but leaves him with but a single city. Financial crises loom for France and Naples.

Summer 1457 Retreats

Milan A3 retreats to Montferrat

Expenditures

France gives 3 ducats to Venice.

The Papacy spends 20 ducats to buy Venetian Citizens Militia A6 (36 required).

Orders

FLORENCE: A2 PISA holds

(York)

FRANCE: A1 TURIN to Pavia

(Wilke) A2 Genoa supports A3 (DISLODGED, retreat Fornova, Pontremoli, Modena, OTB)

A3 (EM) Provence to SAVOY

A4 (EM) SWISS to Turin

MILAN: A1 PIACENZA to Pavia

(Scharf) A2 Savoy to Turin (DISLODGED, retreat Saluzzo, Montferrat, OTB)

A3 (EP) Montferrat to GENOA

A4 (CM) Milan to COMO

NAPLES: F2 PALERMO to WESTERN MEDITERRANEAN

(Koehler) G1 (EM) PALERMO converts to F1

PAPACY: A1 Romagna to FLORENCE

(Hurley) A2 Perugia to URBINO

TURKS: F1 Gulf of Naples to NAPLES

(Lewis) F2 Eastern Tyrrhenian Sea to MESSINA

F3 Ionian Sea to DURAZZO

F4 Ancona to AQUILA

F5 Bay of Tunis to IONIAN SEA

VENICE: A1 (EM) Tyrolea to MILAN

(Anderson) A2 Verona to MANTUA

A3 CARINTHIA supports A1

A4 Mantua to CREMONA

A5 Herzegovina to ALBANIA

A6 (CM) Bologna to PISTOIA

F1 UPPER ADRIATIC supports F2

F2 LOWER ADRIATIC supports F1

Press

France - Milan: If your gripe was with the old France, why are you still bugging me?

France - Venice: Done.

France - Turks: Thank you for keeping your distance. I hope we shall have years of non-aggression.

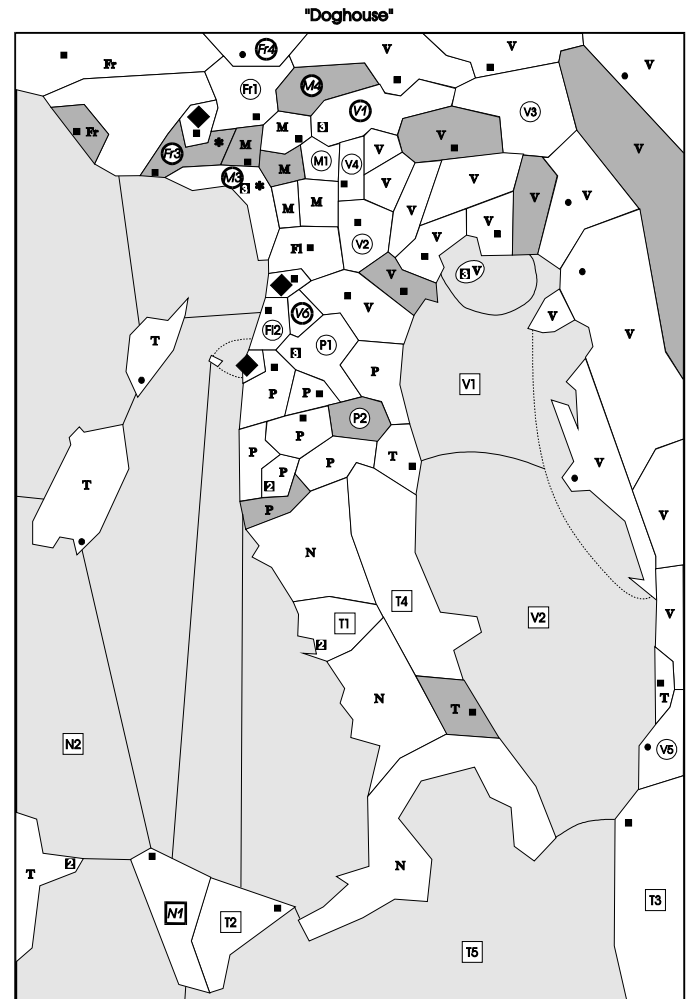
Milan - France: Thanks for Genoa, you're a pal for setting me up to take it.

Milan - France: Sheesh, see if I wave an olive branch in your face again.

Next time, I'll use a club.

Milan - World: We've got to stop Venice, we've got to stop him, we've all got to hit Venice. (But I've got to hit France first.)

Naples - Venice: Please win this game quick.



Spring 1458 Famine

Bad Year. Bari, Slavonia, Montferrat, Urbino, Fornova, Como, Trent, Tivoli, Friuli, Marseilles, Ferrara, Savoy

Spring 1458 Income

Provinces and cities that are underlined do no produce income while those that are in italics could change hands depending on retreats.

Provinces

FLO:	<i>Modena</i> , Pisa	(2)
FRA:	Avignon, Swiss, Provence, <u>Marseilles</u> , Turin, <u>Savoy</u>	(4)
MIL:	<u>Como</u> , Pavia, <i>Fornova</i> , Piacenza, Genoa, Parma, <u>Montferrat</u> , <u>Pontremoli</u>	(5)
NAP:	Capua, Salerno, Otranto, Palermo	(4)
PAP:	Sienna, Arezzo, Patrimony, Spoleto, Rome, <u>Tivoli</u> , <u>Urbino</u> , Florence, Perugia	(7)
TUR:	Ragusa, Corsica, Sardinia, Tunis, <u>Bari</u> , Ancona, Aquila, Durazzo, Naples, Messina	(9)
VEN:	Bergamo, Brescia, Verona, Padua, Vicenza, Treviso, <u>Friuli</u> , Venice, Istria, Carniola, Croatia, <u>Slavonia</u> , Hungary, Austria, <u>Ferrara</u> , Bologna, Milan, Cremona, Mantua, Tyrolea, Carinthia, Croatia, Dalmatia, <u>Trent</u>	(20)

Seas

NAP:	Western Mediterranean	(1)
TUR:	Ionian Sea	(1)
VEN:	Upper Adriatic, Lower Adriatic	(2)

Cities

FLO:	Pisa, <i>Modena</i>	(2)
FRA:	<u>Marseilles</u> , Avignon, Swiss, Turin, <u>Savoy</u>	(3)
MIL:	Pavia, Genoa(3), <u>Montferrat</u>	(4)
NAP:	Palermo	(1)
PAP:	Sienna, Arezzo, Rome(2), Florence(3), Perugia	(8)
TUR:	Ragusa, Corsica, Sardinia, Tunis(2), <u>Bari</u> , Ancona, Durazzo, Naples(2), Messina	(10)
VEN:	Padua, Treviso, Venice(3), Carniola, Croatia, Hungary, Austria, <u>Ferrara</u> , Bologna, Milan(3), Cremona, Mantua, Tyrolea, Croatia, Dalmatia, <u>Trent</u>	(18)

Totals

Coun	Rolls	Var	Prv	Seas	City	Gross	Treas	Tot
FLO	3, 5	7	2	0	2	11	0	11
FRA	1	1	4	0	3	8	0	8
MIL	4, 4 ^G	7	5	0	4	16	6	22
NAP	1	1	4	1	1	7	1	8
PAP	5	5	7	0	8	20	0	20
TUR	6	6	9	1	10	26	4	30
VEN	1, 1, 2 ^A	6	20	2	18	46	7	53

^AThis is the roll gained by conquering Austria.

^GThis is the roll gained by holding Genoa.

Game Summary

Coun	1454			1455			1456		
	Spr	Sum	Fal	Spr	Sum	Fal	Spr	Sum	Fal
Aus:	3	4	3	3	2	2	3	0	0
Flo:	3	3	2	2	2	2	2	3	3
Fra:	4	5	5	5	4	6	6	5	5
Mil:	3	3	3	4	4	4	3	3	3
Nap:	4	4	4	4	4	2	1	3	4
Pap:	4	5	6	5	5	6	4	4	4
Tur:	3	3	5	5	6	8	10	8	7
Ven:	4	4	5	7	8	8	9	11	12

Coun	1457		
	Spr	Sum	Fal
Aus:	0	0	0
Flo:	3	3	2
Fra:	4	5	5
Mil:	5	5	3
Nap:	4	4	1
Pap:	4	4	5
Tur:	7	7	9
Ven:	13	13	16

Rude Dog / MGN# O/B/8/CH/1 - Gunboat

Fall 1455

Deadline/Winter-Spring 1456 8/4 Friday

Milan engages in a bit of "Do as I say, not as I do" as he urges an attack on the Pope, while attacking the only player who is so engaged. France, the object of the attack, is blithely engaged in patrolling his borders and is totally surprised by the attack, and his expeditionary force to Pisa is repulsed. Venice forges a ring of steel around Austria, incidentally eliminating an Austrian army along the way. The Turks gain a reprieve as displeasure with the King of Naples' domestic policies results in widespread civil unrest. Will the sovereign be deposed?

Summer 1455 Retreats

Austrian A3 retreats to Carniola.

Orders

Austria(): A1 AUSTRIA to Tyrolea
A3 Carniola to Carinthia (ELIMINATED!)
A4 SLAVONIA supports A3

France(): A1 SAVOY besieges
A2 Turin supports A1 (DISLODGED, retreat Como, Swiss, Avignon, Provence, Saluzzo, OTB)
A3 SARDINIA to Pisa
F1 WESTERN TYRRHENIAN SEA transports A3
F2 WESTERN GULF OF LYON to Sardinia

- Milan(): A1 MILAN to Tyrolea
A2 GENOA to Savoy
A3 MONTFERRAT supports A6
A4 Bologna to LUCCA
A6 Pavia to TURIN
G1 MILAN converts to A5
- Naples(): NMR! A1 AQUILA holds
A2 Albania holds (DISLODGED, retreat Ragusa, OTB)
A3 SALERNO holds
F1 IONIAN SEA holds
F2 LOWER ADRIATIC holds
F3 Palermo holds (DISLODGED, retreat Eastern Gulf of Lyon, Messina, OTB)
- Papacy(): A1 Pistoia to PISA
A2 FLORENCE supports A1
A3 SPOLETO to Aquila
F1 ANCONA to Lower Adriatic
- Turks(): A1 BARI holds
A2 Herzegovina to ALBANIA
F1 DURAZZO supports A2
F2 BAY OF TUNIS supports F3
F3 Western Mediterranean to PALERMO
- Venice(): A1 CROATIA supports A4
A2 TRENTO supports A3
A3(EM) Friuli to CARINTHIA
A4 Carinthia to CARNIOLA
F1 DALMATIA supports A1
F2 UPPER ADRIATIC supports A4

If you are in the game, a red check will appear next to the country you are playing.

Standby call for Naples!!! If you are the standby, a red check will appear here ().

Press

Austria - World: Without help from outside, Venice will control my corner of the world soon.

Borgia - Turk: I am trying to pay back your aid. Hence the attack on Naples.

Milan - France: The EAGLE has landed.

Milan - France: Gullible, am I?

Milan - Naples: You obviously will soon have a "TURKEY'S" FEATHER in your cap. Can you divert a unit to help me? Just to remind you -- the CARDINAL rule is to strike down the guy with 3 DIE ROLLS.

Milan - Naples/Turks: If you don't help me, my GOOSE is cooked, and yours will be, too!

Milan - Papacy: I will put my money where my mouth is, and hopefully some of Venice's, too. Then we'll PLUCK you dry.

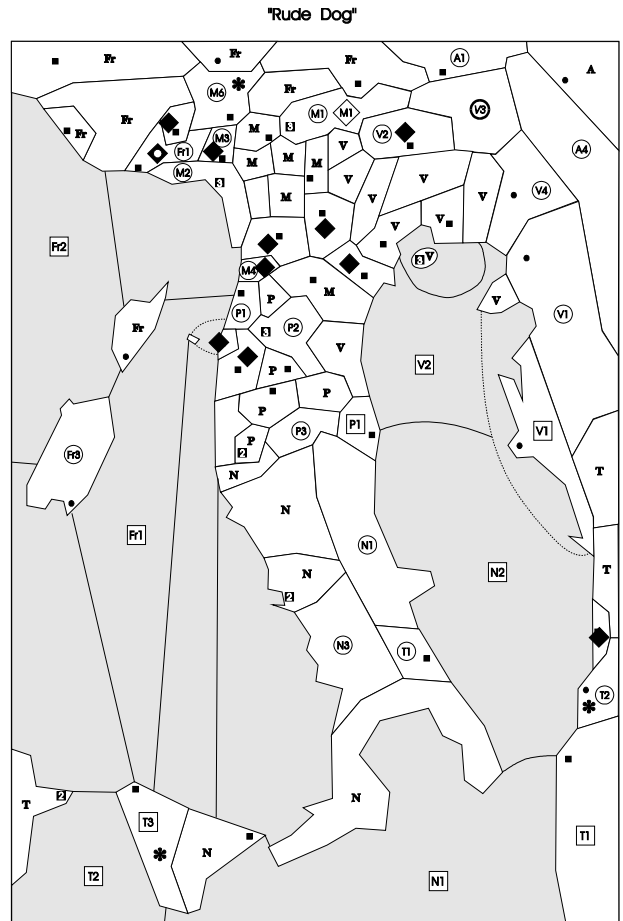
Milan - Venice: How's it going on the anti-Austrian front, good buddy? He looks like he's hanging on by a WING and a prayer.

Papacy - France: Hope you didn't try it! I say we work together to try and muzzle your neighbor dog. He has quite a bark....

Pope - Austria: I wish I could help but your only salvation from Venice is from Milan. Milan should worry less about me and more about his real enemies.

Pope - Bologna army: Enjoy my city while you can little boy. I'll be burying my foot in your ass soon enough!

Pope - Doge: I gratefully acknowledge your previous transport. Perhaps I was a bit hasty in some of my assessments of Venice.



○ Army □ Fleet ◇ Garrison ◆ Autonomous Garrison ◆ Besieged Autonomous Garrison

Pope - Italy: Perhaps that Sforza chap should be renamed the Mouth from Milan. Does anyone actually take his ranting seriously?

Venice - Austria: How did your words from last season's press taste?

Venice - Milan: Don't worry about me. Just go about your business with France.

Spring 1455 Income

Provinces and cities that are underlined do not produce income while those that are in italics could change hands depending on retreats.

Provinces

AUS:	Austria, Hungary, Slavonia	(3)
FRA:	Avignon, Swiss, Provence, Marseilles, Corsica, Sardinia, Como, Tyrolea	(8)
MIL:	Pavia, Milan, Fornova, Piacenza, Cremona, Parma, Genoa, Turin, Bologna, Lucca, Montferrat	(11)
NAP:	Capua, Naples, Salerno, Otranto, Aquila, Messina, Tivoli	(7)
PAP:	Ancona, Urbino, Perugia, Rome, Spoleto, Florence, Arezzo, Pistoia, Pisa	(9)
TUR:	Bosnia, Herzegovina, Albania, Durazzo, Tunis, Bari, Palermo	(7)
VEN:	Bergamo, Brescia, Verona, Padua, Vicenza, Treviso, Friuli, Venice, Istria, Carniola, Trent, Carinthia, Dalmatia, Croatia, Romagna	(15)

Seas

FRA:	Western Gulf of Lyon, Western Tyrrhenian Sea	(2)
NAP:	Ionian Sea, Lower Adriatic	(2)
TUR:	Bay of Tunis	(1)
VEN:	Upper Adriatic	(1)

Cities

AUS:	Austria, Hungary	(2)
FRA:	Avignon, Swiss, Marseilles, Corsica, Sardinia, Tyrolea	(6)
MIL:	Pavia, Milan(3), Cremona, Genoa(3), Turin, Bologna	(10)
NAP:	Naples(2), Messina	(3)
PAP:	Ancona, Perugia, Rome(2), Florence(3), Arezzo, Pisa	(9)
TUR:	Albania, Durazzo, Tunis(2), Bari, Palermo	(6)
VEN:	Padua, Treviso, Venice(3), Carniola, Dalmatia, Croatia	(8)

Totals

Coun	Var	Prov	Seas	City	Gross	Treas	Tot
AUS	3	3	0	2	8	1	9
FRA	4	8	2	6	20	4	24
MIL	7	11	0	10	28	4	32
NAP	3	7	2	3	15	2	17
PAP	10	9	0	9	28	0	28
TUR	4	7	1	6	18	5	23
VEN	8	15	1	8	32	3	35

Game Summary

Coun	1454			1455		
	Spr	Sum	Fal	Spr	Sum	Fal
Aus:	3	3	3	4	3	2
Flo:	2	3	2	0	0	0
Fra:	4	6	6	6	7	6
Mil:	3	3	3	4	5	6
Nap:	4	4	3	4	4	2
Pap:	4	5	5	6	6	6
Tur:	3	3	4	4	3	5
Ven:	4	5	5	5	5	6

Mailman's Bane

Turn 5 Opinion Polls and Campaign Results

Deadline for Turn 6 Conferences and Cabinet: 8/4 Friday

Opinion Polls

Hamburg: SPD wins the bid at 600 DM and buys 2 (1200 DM spent). Turns SPD +1 and Grüne -2.

Rheinland-Pfalz: FDP wins the bid at 2600 DM and buys 3 (7800 DM spent). Turns FDP +1 and SPD -1.

Niedersachsen: Grüne wins the bid at 1200 DM and buys 1 (1200 DM spent). Turns Grüne +1 and FDP -1.

Campaign Results

Niedersachsen

Grüne turns in 4 campaign days for 8 vote share

SPD turns in 1 campaign day for 2 vote share

CDU turns in 2 campaign days for 1 vote share

Rheinland-Pfalz

Grüne turns in 4 campaign days for 24 vote share

Hamburg

Grüne turns in 4 campaign days for 4 vote share.

SPD turns in 4 campaign days for 8 vote share

CDU turns in 9 campaign days for 5 vote share

FDP turns in 8 campaign days for 16 vote share

Election Results

Grüne has (3 + 3) * 14 for 84 votes

SPD has (4 + 1) * 22 for 110 votes

CDU has (2 + 1) * 5 for 15 votes

FDP has (3 + 0) * 14 for 42 votes

SPD is the victor with a plurality, and so moves NATO JA into Bonn.

SPD gains 4 party bases, Grüne gains 3, FDP gains 3, and CDU gains 2.

Financing:

CDU gains 2600 DM, declining contributions.

FDP gains 4100 DM, declining contributions.

Grüne gains 3200 DM, declining contributions.

SPD gains 4300 DM, declining contributions.

Players

<u>CDU</u>		<u>Grüne</u>		<u>FDP</u>		<u>SPD</u>	
Player:	Bill Scharf	Player:	Dave Anderson	Player:	Sean Cousins	Player:	Andy Lewis
Campaign Days:	11	Campaign Days:	15	Campaign Days:	14	Campaign Days:	5
Media Tokens:	2	Media Tokens:	2	Media Tokens:	3	Media Tokens:	0
Conferences:	None	Conferences:	Special	Conferences:	None	Conferences:	Special
Platform:	<u>Freugeutliche Grundordnung</u>	Platform:	<u>Umweltshutz</u>	Platform:	<u>Marktwirtschaft</u>	Platform:	<u>Gewerkschaft</u>
	Atomkraft JA		NATO JA		Atomkraft JA		Atomkraft JA
	35-Stunden-Woche NEIN		Steuersenkung NEIN		Steuersenkung NEIN		NATO JA
	NATO JA		35-Stunden-Woche NEIN		35-Stunden-Woche NEIN		Steuersenkung NEIN
	§218 NEIN		§218 JA		§218 JA		§218 JA

Player order for turn 5 is: Grüne, SPD, CDU, FDP

Your Available Ministers: _____

Your Available Cash: _____

Provinces

Rheinland-Pfalz

	CDU	Grüne	FDP	SPD
Campaign Days	4	0	1	4
Vote Share	10	40	1	0
Media Tokens	1	2	0	2
Trend	0	+2	-1	+1

Issues: NATO JA
 35-Stunden-Woche NEIN
 Steuersenkung NEIN
 Atomkraft NEIN

Mandate Range: 4 - 9
 CDU Parteiboss

Niedersachsen

	CDU	Grüne	FDP	SPD
Campaign Days	0	0	0	6
Vote Share	1	8	0	4
Media Tokens	0	1	0	3
Trend	-1	+1	-1	+1

Issues: NATO JA
 Steuersenkung JA
 35-Stunden-Woche JA

Mandate Range: 6 - 11

Available Issues

Steuersenkung JA (x2)	Atomkraft NEIN (x3)
35-Stunden-Woche JA	Marktwirtschaft (x2)
NATO NEIN (x3)	35-Stunden-Woche NEIN
Freiheitliche Grundordnung	§218 JA (x2)
NATO JA	Umweltschutz

Bonn

	CDU	Grüne	FDP	SPD
Media Tokens	2	0	2	0
Party Bases	24	23	36	32
Votes	1583	659	1635	1154

Issues: Atomkraft JA (x3), §218 JA, Steuersenkung NEIN (x2), NATO JA.

Dog Breath

Turn 14

Deadline for Turn 15 Commander Actions: 8/4 Friday

Errata

Last turn, Last Chance Cafe actually bought two population factors rather than two robots.

Commander Actions

BarterTown (York) opens the bidding on Ecoplants at 30 and gets it (Or2, Or2, Wa5, Wa6, Ti7, Wa8). Discards Wa6.

Last Chance Cafe (Lewis) opens the bidding on a Space Station at 120 and New Earth gets it for 144 (Or3, Wa6, Wa7, Wa7, Wa7, Wa8, Mi18, MTi, MTi). Opens the bidding on Ecoplants at 40 and gets it (Wa5, Or5, MWa). Buys a titanium factory (Ti12, Mi18), and a robot (Or1, Or1, Or2, Wa6)

Basset Base Beta (Koehler) opens the bidding on a Laboratory at 100 and Dealer's Den gets it for 125 (Wa8, MWa, Ti13, MWa, MTi). Buys 2 titanium factories (Ti7, Ti9, MTi) and 1 population (Wa10)

Fangland (Kinsel) opens the bidding on a warehouse at 25 and gets it for 26 (Ti10, Ti11, HE discount). Buys a titanium factory (MWa) and a population (Or2, Or3).

Dealer's Den (Anderson) moves a population from an ore factory to man the research factory.

New Earth (Scharf) moves a population from an ore factory to man the Space Station.

NODNOL (Cochran) NMR! Discards Or2, Or4, Or5, Wa9, Wa9.

Interstellar Mining and Pizza Delivery (S. Cousins) buys titanium factories (Wa8, Wa8, MTi) and moves two population from the water factories to man them.

The Commanders

Order	Outpost Name	Commander	Factories	Upgrades	VP
1	Last Chance Cafe	Andy Lewis	OrF, OrF, WaF, WaF, WaF, WaF, WaF, WaF, TIF, TIF, TIF	No, HE, Ro, Wa, 2OL, 2Ec	37
2	BarterTown	Andy York	OrF, OrF, WaF, WaF, WaF, WaF, TIF, TIF, TIF, TIF, TIF, TIF, ReF	HE, No, Ou, La, Ec	37
3	New Earth	Bill Scharf	OrF, OrF, WaF, WaF, WaF, TIF, TIF, TIF, TIF	HE, No, 2Wa, Ro, OL, SS	33
4	Dealer's Den	Dave Anderson	OrF, OrF, WaF, WaF, WaF, WaF, TIF, TIF, TIF, TIF, TIF, ReF	No, HE, Ro, Wa, Ou, La	32
5	Basset Base Beta	Steve Koehler	OrF, OrF, WaF, WaF, WaF, TIF, TIF, TIF, TIF, TIF, TIF, TIF, TIF	No, HE, Wa, Ou	31
6	Fangland	Kevin Kinsel	OrF, OrF, WaF, WaF, WaF, WaF, TIF, TIF, TIF, TIF	No, HE, 2Wa, Ec, Ou	29
7	NODNOL	Dean Cochran	OrF, OrF, WaF, WaF	6DL, 2Sc, 3OL	23
8	Interstellar Mining and Pizza Delivery	Sean Cousins	OrF, OrF, WaF, WaF, TIF, TIF, TIF, TIF, TIF, TIF, TIF	DL, HE, No, Ro	19

Available Upgrades

New arrivals: Orbital Lab, Laboratory, Planetary Cruiser, Space Station, Moon Base

Upgrade	Minimum Bid	Available	Not Yet Delivered
Scientists (Sc)	40	0	5
Orbital Lab (OL)	50	1	0
Robots (Ro)	50	3	0
Laboratory (La)	100	1	4
Ecoplants (EP)	30	0	3
Outpost (Ou)	100	0	3
Space Stations (SS)	120	1	5
Planetary Cruiser (PC)	160	1	6
Moon Base (MB)	200	1	6

Income

Existing cards: _____

New cards: _____

Mega Water recipients: BarterTown, Last Chance Cafe, Fangland
 Mega Titanium recipients: BarterTown, Basset Base Beta (2), Fangland, New Earth, Dealer's Den, Interstellar Mining and Pizza Delivery

Notes

I would like to thank Dan Eisenhut for his unused standby orders. In fact, I liked them so much, **will Dan Eisenhut please submit standby orders for NODNOL!**

"Fenris Wolf"

**Epoch V Franks, Vikings, Holy Roman Empire, and Sung Dynasty
 Deadline for Seljuk Turks, Mongols, and Epoch VI Empire Selection: 8/4 Friday**

Hellfighters (Lewis) plays Barbarians from the Alps. *Central Massif* (vs. Romans, B: 5, 3; R: 6; loses). VIKINGS: Plays Population Expansion. Army *Scandinavia*, fleet *North Sea* (vs. Flintstones, H: 6, 1; F: 1, wins), fleet *Atlantic Ocean*, army *Shatts Plateau* (vs. Arabs, V: 6, 1; A: 4, 4; wins), army *Appalachia*, army *Western Gaul*, army *Northern Gaul* (vs. Romans, V: 3, 1; R: 1; wins), army *Central Massif* (vs. Romans, V: 6, 3; R: 1; wins), army *Albion* (vs. Romans, V: 6, 3; R: 6; V: 6, 2; R: 3; wins), army *Highlands*, army *Northern Apennines* (vs. Byzantines, V: 5, 4; B: 3, 2; wins). Points: Dominance in Northern Europe (4) and Eurasia (2), Presence in Middle East (2), North Africa (2), Southern Europe (2), and North America (1), one Sea (1) for 14 points.

Quantum Coyotes (Kinsel) plays Barbarians from the Alps. *Dalmatia* (vs. Byzantines, Ba: 5, 4; By: 4; wins), *Northern Gaul* (vs. Vikings, B: 6, 6; V: 5; wins), *Northern Apennines* (vs. Vikings, B: 2, 1; V: 3; loses). HOLY ROMAN EMPIRE: Capital and army in *Central Europe* (Hun army destroyed), army *Lower Rhine*, *Northern Gaul*, *Dalmatia*, *Western Gaul* (vs. Vikings, H: 6, 1; V: 1; wins), *Northern Apennines* (vs. Vikings, H: 3, 3; V: 5; loses), *Northern Apennines* (vs. Vikings, H: 3, 3; V: 1; wins), *Southern Apennines* (vs. Byzantines, H: 5, 1; B: 1; wins, City destroyed), *Central Massif* (vs. Vikings, H: 5, 4; V: 4; wins), *Baltic Seaboard* (vs. Anglo-Saxons, H: 4, 2; A: 5; loses). Points: Dominance in Northern Europe (4) and Southern Europe (6), Presence in China (3), India (3), North Africa (2), Eurasia (1), and Southeast Asia (2), two Capitals (4), 3 Cities (3), one Sea (1), two Monuments (2) for 31 points.

The Flintstones (Geggus) plays Disaster in the *Arabian Peninsula*. Monument destroyed, Capital reduced to a City. CHOLA: Capital and army

in *Eastern Ghats* (Gupta army retreats to *Eastern Deccan*), fleet *Bay of Bengal* (vs. Wesley, F: 5, 4; W: 1; wins), army *Western Ghats*, army *Western Deccan* (vs. Guptas, C: 3, 1; G: 5; loses), army *Western Deccan* (vs. Guptas, C: 6, 3; G: 3; wins), army *Upper Indus* (vs. Mauryans, C: 6, 5; M: 1; wins, City eliminated), army *Lower Indus* (vs. Arabs, C: 5, 4; A: 2; wins, City eliminated), army *Persian Salt Desert* (vs. Arabs, C: 2, 1; A: 5, 4; loses). Builds Monument in *Eastern Ghats*. Points: Dominance in India (6) and China (6), Presence in Southern Europe (3), Northern Europe (2), Middle East (2), and Southeast Asia (2), one Capital (2), two Cities (2), one Sea (1), four Monuments (4) for 30 points.

Olde Sea Dogge (Cowles) plays Plague in *Irrawaddy* (3 Chou armies die). SUNG DYNASTY: Capital and army in *Szechuan* (T'ang army retreats to *Wei River*), army *Wei River* (vs. T'ang, S: 4, 3; T: 4; S: 6, 5; T: 3; S: 6, 4; T: 1; wins), *Yangtse Kian* (vs. Khmers, S: 5, 2; K: 6; loses), *Yangtse Kian* (vs. Khmers, S: 5, 2; K: 3; wins), *Irrawaddy*, *Mekong* (vs. Khmers, S: 4, 3; K: 4, 1; S: 5, 3; K: 3, 2; wins, Capital reduced to a City), fleet *South China Sea* (vs. Coyotes, S: 6, 1; C: 4; wins), army *Maylayan Peninsula* (vs. Maylayan Kingdom, S: 6, 3; M: 4+1; wins, City eliminated), *Taurim Basin* (vs. T'ang, S: 5, 3; T: 2; wins). Builds Monument in *Szechuan*. Points: Dominance in China (6) and Southeast Asia (4), Presence in Northern Europe (2), Southern Europe (3), North America (1), two Capitals (4), two Cities (2), three Seas (3), five Monuments (5) for 30 points.

Purple People Eaters (C. Cousins) have the SELJUK TURKS.

Wesley Crusher Returns (Anderson) has the MONGOLS.

Players

Player Name	Player Faction Name	Empire Strength Points	Victory Points
Kevin Kinsel	Quantum Coyotes	39	104
Murray Cowles	Olde Sea Dogge	46	95
Caleb Cousins	Purple People Eaters	48	74
Dave Anderson	Wesley Crusher Returns	49	61
Andy Lewis	Hellfighters	50	83
Chris Geggus	The Flintstones	56	119

Final Positions

Purple People Eaters (C. Cousins) Fleet in *Red Sea*. ARABS: City, Monument, and army in *Middle Tigris*, City and army each in *Lower Tigris* and *Arabian Peninsula*, Monument and army in *Zagros*, one army each in *Palestine*, *Levant*, *Persian Salt Desert*, *Nile Delta*, *Libya*, *Upper Tigris*, *Nubia*, and *Southern Iberia*.

The Flintstones (Geggus) Fleet in *Bay of Bengal*. ROMANS: Army and City in *Pindus*, one army each in *Western Iberia*, and *Western Anatolia*. ANGLO-SAXONS: Army in *Baltic Seaboard*. T'ANG DYNASTY: Army and Monument in *Great Plain of China*, one army in *Chekiang*. CHOLA: Capital, army, and Monument in *Eastern Ghats*, army each in *Western Ghats*, *Western Deccan*, *Upper Indus*, *Lower Indus*.

Olde Sea Dogge (Cowles) Fleets in *Black Sea*, *Eastern Mediterranean*, and *South China Sea*. NORTH AMERICAN MIGRANTS: One army each in *West Indies* and *Great Plains*. HAN DYNASTY: Monument, City, Fortress, and army in *Yellow River*. BYZANTINES: Capital and army in *Balkans*, one army each in *Crete* and *Morea*. SUNG DYNASTY: Capital, Monument, and army in *Szechuan*, army and Monument each in *Taurim Basin*, *Wei River*, and *Yangtse Kian*, army and City in *Mekong*, army each in *Irrawaddy* and *Malayan Peninsula*.

Wesley Crusher Returns (Anderson) MAYANS: Army, Capital, and fort in *Central America*. GUPTAS: Capital and two armies in *Eastern Deccan*, City and army in *Ganges Delta*, one army in *Ceylon*.

Quantum Coyotes (Kinsel) ARYANS: 2 armies in *Hindu Kush*, 1 army in *Turanian Plain*. NILE KINGDOM: Army, City, and Fort in *Upper Nile*. MAURYANS: Army in *Ganges Valley*. KHMERS: One army each in *Si-Kyang* and *East Indies*. HOLY ROMAN EMPIRE: Capital and army in *Central Europe*, Monument and army in *Southern Apennines*, one army each in *Lower Rhine*, *Northern Gaul*, *Western Gaul*, *Central Massif*, *Northern Apennines*, *Dalmatia*.

Hellfighters (Lewis) Fleets in *North Sea* and *Atlantic Ocean*. SYTHEANS: Army in *Persian Plateau*. CIVIL WAR: One army in *Pyrenees*. HUNS: Two armies in *Northern European Plain*, one army each in *Western Steppes*, *Eastern Steppes*, *Caucuses*, *Eastern Anatolia*. VIKINGS: One army each in *Scandinavia*, *Shatts Plateau*, *Appalachia*.

Your event cards are: _____

Epoch VI Empire Draw

Your Empire is: _____

Prairie Dog

Turn 9

Deadline Turn 10: 8/4 Friday

Segment 1

Andy: Card 5 -- Shoot (at John Henry), segment 1 of 2
John Henry: Card 5 -- Aim (at Andy), segment 1 of 2
Ronnie: Card 1 -- Advance, ahead right (to H17), segment 1 of 2
Laundry Boy: Card 5 -- Aim (at Andy), segment 1 of 2

Segment 2

Andy: Card 5 -- Shoot (at John Henry), segment 2 of 2, 6 aim points, range 2, hit, BE (becomes LEG), STUN 3, STAGGER, SERIOUS 2, LEG 4. 2 delay points, DROP (4 more delay points), staggers to E18 facing D18, loses aim
John Henry: Card 5 -- Aim (at Andy), segment 2 of 2
Ronnie: Card 1 -- Advance, ahead right (to H17), segment 2 of 2
Laundry Boy: Card 5 -- Aim (at Andy), segment 2 of 2

Segment 3

Andy: Card 2 -- Advance (ahead right), segment 1 of 2
John Henry: Delay
Ronnie: Card 10 - Jab (at Andy), segment 1 of 2
Laundry Boy: Card (6) -- Throw (bottle at Andy), segment 1 of 2

Segment 4

Andy: Card 2 -- Advance (ahead right), segment 2 of 2, DROP, no delay points
John Henry: Delay
Ronnie: Card 10 -- Jab (at Andy), segment 2 of 2, hit CRIT, STUN 3, SERIOUS 1, 1 delay point
Laundry Boy: Card (6) -- Throw (bottle at Andy), segment 2 of 2, 4 aim points, range 2, hit, SIDE, LIGHT 1, 1 delay point

Segment 5

Andy: Delay
John Henry: Delay
Ronnie: Pass
Laundry Boy: Card (10) -- Duck (Andy), segment 1 of 1

End of Turn

Andy loses 1 delay point.
John Henry loses 3 delay points.

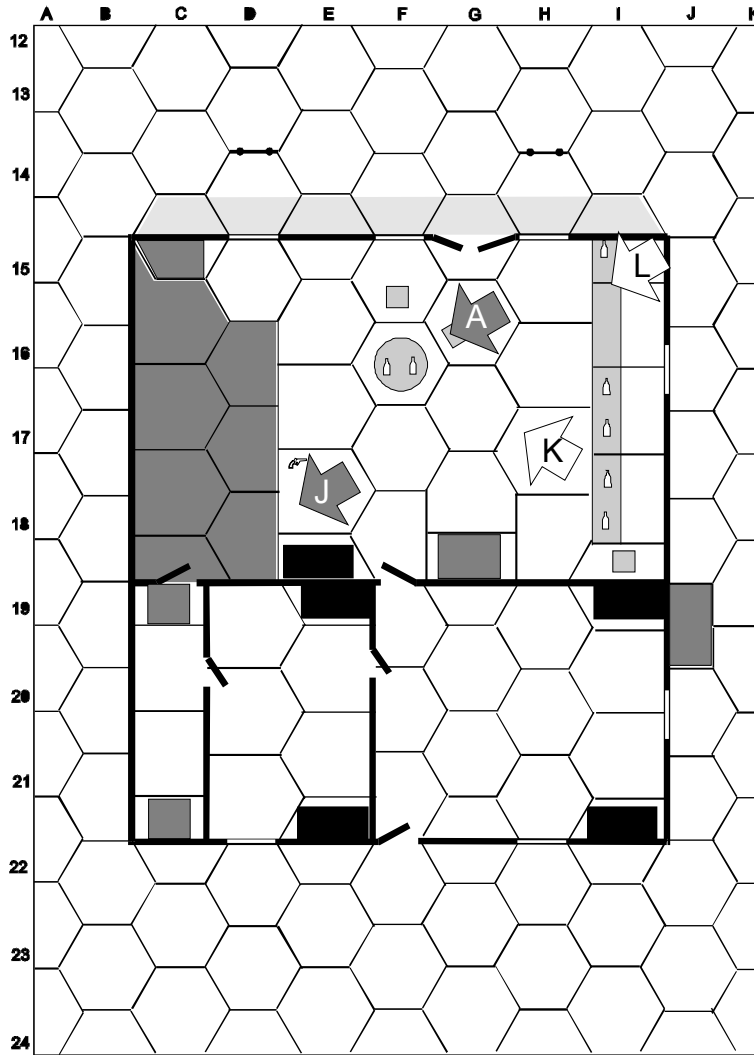
Start of Turn 10

Andy gains 2 delay points from wounds.
John Henry gains 2 delay points from wounds.

Westerners

Side	Player	Character	Location	Bonus Cards	Skills	Delay	Endurance	Comments
A	Dave Anderson	Andy (A)	H16 > G17	4, 6, 9	None	3	21	SERIOUS 1 DOWN
B	Steve Koehler	John Henry (J)	F17 > F18	5, 6, 8, 9	Brawling +2	5	32	GUN ARM 1 SERIOUS 2 LEG 4 DOWN
C	James Pratt	Ronnie (K)	H18 > G18	5, 8	Brawling +2	0	15	
D	Paul Bolduc	Laundry Boy(L)	I15* > H15	1, 4, 5, 6, 7	Brawling +2	0	18	

Prairie Dog



Weapons

Character	Holstered	Gun Hand	Other Hand	Both Hands	Ammo
Andy	Knife	C45, uncocked	Empty	Empty	C45: O O O O O
John Henry	C45, Knife	Empty	Empty	Chair	C45: O O O O O O
Ronnie	None	Knife	Empty	Empty	n/a
Laundry Boy	None	Empty	Empty	Empty	n/a

Press

John Henry - Andy: Andy, you cowardly maggot! How dare you shoot a gun in a friendly bar fight! What a geek!

Canine

Turn 3 Bidding to Combat

Deadline Turn 3 Combat: 8/4 Friday

Players

ATREIDES:	Ray Carpenter	BENE GESSERIT	Steve Koehler
EMPEROR	Bill Scharf	FREMEN	Paul Bolduc
GUILD	Chris Hurley	HARKONNENS	Dave Anderson
LANSRAAD	Andy Lewis		

Combat

Carthag: Lansraad vs. Bene Gesserit. Lansraad are the aggressors. Available leaders: Lansraad: All, Bene Gesserit: All.

Arrakeen: Atreides vs. Emperor. Atreides are the aggressors. Available leaders: Atreides: All, Emperor: All.

Cielago North: Bene Gesserit vs. Lansraad. Bene Gesserit are the aggressors. Available leaders: Bene Gesserit: All, Lansraad: All.

Bidding

The Emperor agrees to pay the Bene Gesserit 4 spice because of the Residual Poison.

- CARD 1 () goes to the Bene Gesserit for 4 spice
- CARD 2 () goes to the Lansraad for 3 spice.
- CARD 3 () goes to the Lansraad for 3 spice.
- CARD 4 () goes to the Fremen for 3 spice.
- CARD 5 () goes to the Fremen for 5 spice.
- CARD 6 () goes to the Guild for 1 spice.

Notes

Will Debbie Osborne please submit standby orders for the Atreides!

Final Positions

Atreides: 6 tokens Arrakeen, 6 tokens Rock Outcroppings (14), 8 tokens off-planet

Revival and Movement

The Bene Gesserit choose not to coexist in Hagga Basin, Cielago North, and Carthag.

Revival

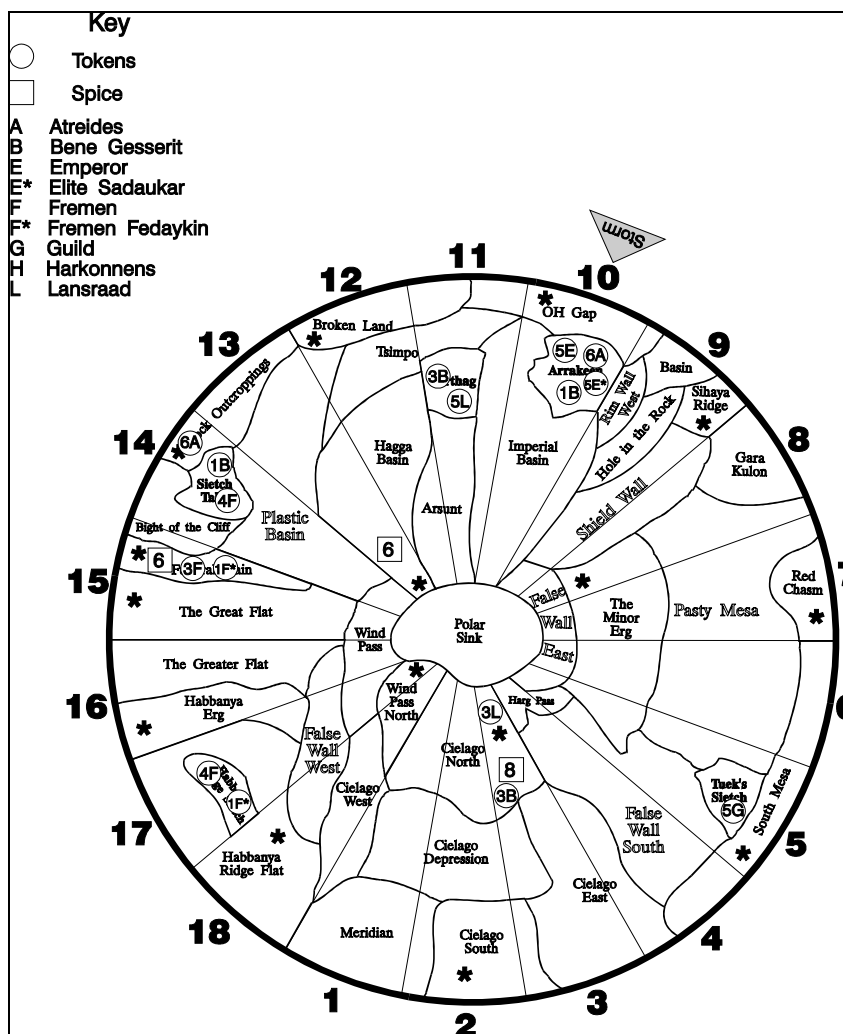
- Atreides:** 2 tokens
- Fremen:** 3 tokens (1 Fedaykin)

Shipping

- Bene Gesserit:** ships 1 token to Carthag.
- Emperor:** ships 10 tokens (5 Elite Sadaukar) to Arrakeen (1 Bene Gesserit token to Polar Sink).
- Fremen:** ships 4 tokens (1 Fedaykin) to Funeral Plain
- Lansraad:** ships 7 tokens to Carthag (1 Bene Gesserit token to Polar Sink).

Movement

- Bene Gesserit:** moves 3 tokens Polar Sink - Cielago North (3)
- Fremen:** moves 4 tokens Broken Land - Plastic Basin - Sietch Tabr
- Lansraad:** moves 3 tokens Carthag - Imperial Basin - Polar Sink - Cielago North (3)



- Bene Gesserit:** 3 tokens Cielago North (3), 1 token Arrakeen, 1 token Sietch Tabr, 3 tokens Carthag, 12 tokens off-planet
- Emperor:** 10 tokens (5 Elite Sadaukar) Arrakeen, 10 tokens off-planet
- Fremen:** 5 tokens (1 Fedaykin) in Habbanya Ridge Sietch, 4 tokens Sietch Tabr, 4 tokens (1 Fedaykin) Funeral Plain, 7 tokens (1 Fedaykin) in the tanks
- Guild:** 5 tokens Tuek's Sietch, 15 tokens off-planet
- Harkonnens:** 7 tokens off-planet, 13 tokens in the tanks
- Lansraad:** 12 tokens off-planet, 5 tokens Carthag, 3 tokens Cielago North (3)

Your spice: _____
 Your cards: _____

Anubis

Turn 4 Planning to Outbound Naval Movement

Deadline Turn 4 Land Through Homebound Naval Movement: 8/4 Friday

The French experience internal problems, preventing them from sending an expedition. The other powers find calm waters on the voyage.

Planning

Dutch buy 2 soldiers (\$20) and 1 ship (\$12) and maintain 2 ships (\$8) for \$40.

English buys 2 soldiers (\$20) and maintain 3 ships (\$12) for \$32

French NMR! maintains 4 ships (\$16) for \$16

Portuguese maintains 4 ships (\$16), buy 4 soldiers (\$40) for \$56

Swedes maintain 4 ships (\$16), buy 4 soldiers (\$40) for \$56.

Discovery

Dutch prospector in Area L discovers nothing.

English prospector in Area K discovers a mine.

French prospectors in Area Y discover nothing.

Outbound Naval Movement

Dutch: To anchorage L. Dice: 1, 1, 2, 5. No losses.

English: To anchorage K. Dice: 2, 4, 5. No losses

French: None.

Portuguese: To anchorage R. Dice: 3, 4, 5, 5. No losses.

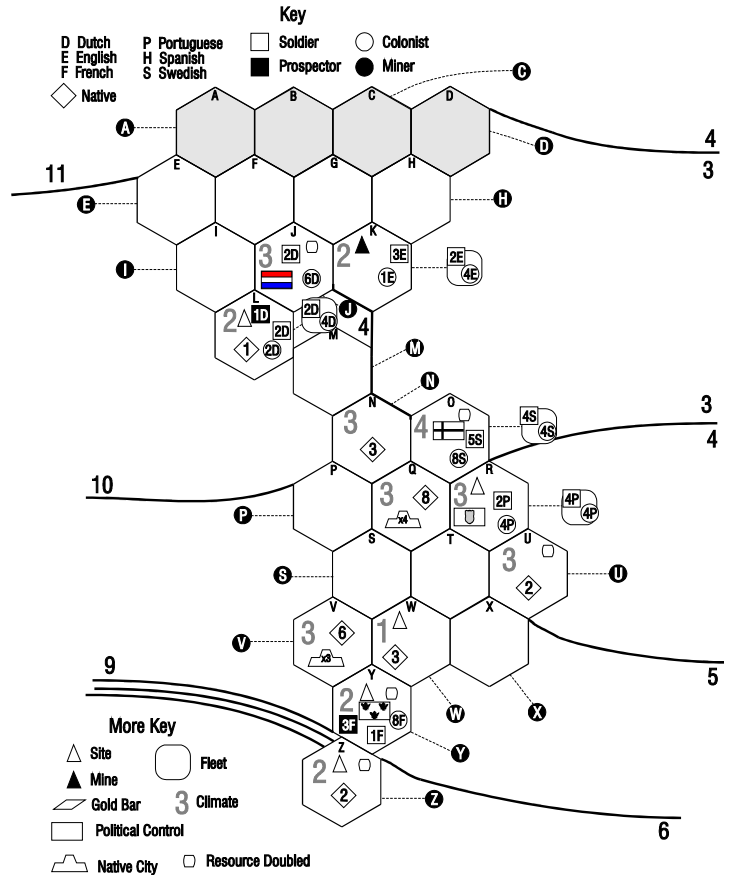
Swedes: To anchorage O. Dice: 3, 3, 5. No losses.

Initiative

French, Swedes, Dutch, Portuguese, English

Players

Country	Player	Money	Available Soldiers	Ships	Colonists
Dutch	Dan Eisenhut	\$15	13	3	4
English	Sean Cousins	\$25	21	3	4
French	Jeremy Gerson?	\$81	16	4	0
Portuguese	Bill Scharf	\$4	13	4	4
Swedes	Andy Lewis	\$49	9	4	4



Dog Food

Turn 1

Deadline Turn 2: 8/4 Friday

1st: Dan Eisenhut (Dell/Naga Trading Corp) Rolls Used: 4 4

Galactic Base - Y - R - B - R - B - Interstellar Biosphere.

Discovers Dell (Out of the cup pops Demand for Spice at 4b, Demand for Spice at 4b, Demand for Dust at 7a, and Servo-Mechanisms at 7b), collects IOU, buys one Finest Dust for \$10.

2nd: Steve Koehler (Eeepeeep/Basset Imports, Ltd.) Rolls Used: 6 * 4

Picks up Fare to 2. Galactic Base - R - B - Y - B - R - B - R - Cobbleport(o) - Cobbleport(s)

Discovers Cholos (Out of the cup pops Mulch Wine at 3, Servo-Mechanism at 7b, Voll Silk at 1b, and Rock Videos at 4b), collects IOU, trades IOU for Designer Genes

3rd: Andy Lewis (Humans/Cash & Carrie) Rolls Used: 2 2 6

Galactic Base - NC6 - ? (It's an Open Port).

Discovers the Graw (out of the cup pops Demand for Perfume at 3, Demand for Grease at 9a, Bionic Perfume at 1a, and Chicle Liquor at 7a). Picks up IOU and trades it in for 2 Space Spice.

4th: Pete Gaughan (Whynoms/Appaloosa Limited Produce

Organization) Rolls Used: (3 * 2) 3

Galactic Base - NC3 - NC3 - NC3 - ? (It's a Red 20 penalty marker) - NC3 - R - Y - A - Dryport(o)
Observe _____.

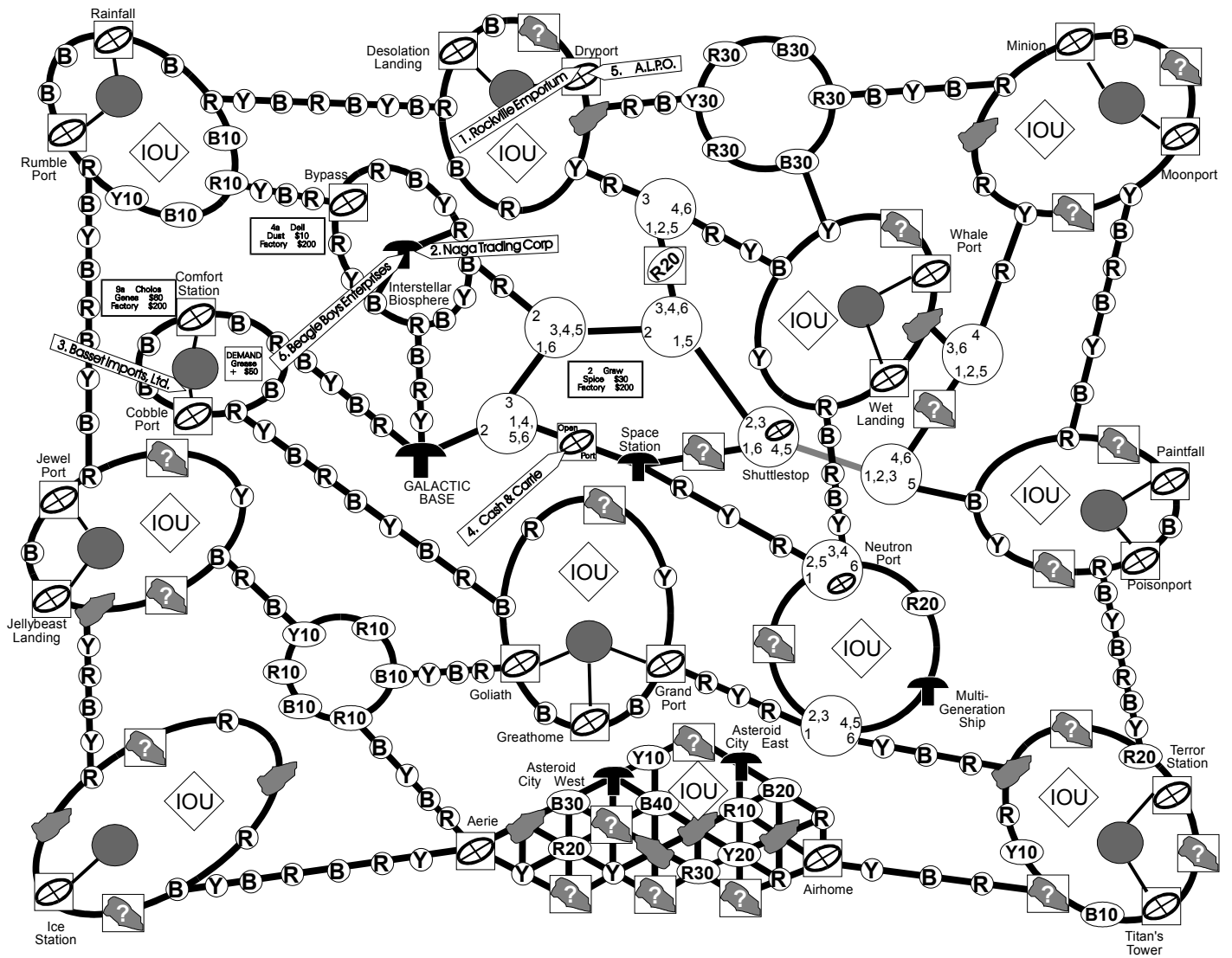
5th: Eddy Mattei (Niks/Beagle Boys Enterprise) Rolls Used: 2 2 5

Galactic Base - Y - R - B - R - B - Interstellar Biosphere
Buys one Finest Dust for \$10.

6th: Chris Geggus (Qossuth/Rockville Emporium) Rolls Used: 3 * 3

Galactic Base - NC3 - NC3 - NC3 - R20 - NC3 - R - Y - A - Dryport(o)

Observes _____.



Goods and Demands in undiscovered cultures:

1a (Nillis): two Bionic Perfume

1b (Volois): two Voll Silk

3 (Niks): two Mulch Wine, Demand +\$60 for Perfume,

4b (Humans): three Demand +\$40 for Space Spice, one Rock Videos

5 (Shenna): Nothing

6 (Yxklyx): one Immortal Grease, one Fare to 4b for \$120

7a (Zum): three Chicle Liquor, one Demand +\$50 for Finest Dust

7b (Eeepeep): one Fare to Base for \$110, two Demand +\$50 for Immortal Grease, two Servo-Mechanism

8 (Whynoms): Nothing

9b (Wollow): one Megalith Paperweight

10 (Qossuth): one Fare to Base for \$150, one Demand +\$60 for Designer Genes

1. Rockville Emporium \$120 Torch Scout 2: 3 (Times 3) Hold1 Hold2 Hull	2. Naga Trading Corp \$119 Scow Scout 2: 2 3 4 5 (Use 2) Hold1 Hold2 Hull Finest Dust 4a/\$50 \$300	3. Basset Imports, Ltd. \$140 Rocket Scout 2: 1 4 (Use 1 * 4) Hold1 Hold2 Hull Designer Genes 9a/\$120 FARE Base to 2 \$160	4. Cash & Carrie \$140 Normal Scout 2: 3 3 4 Hold1 Hold2 Hull Space Spice 2/\$80 Space Spice 2/\$80	5. AL.P.O. \$120 Fast Scout 2: 3 5 (Double one) Hold1 Hold2 Hull	6. Beagle Boys Enterprises \$115 Sports Scout 2: 1 1 2 6 (Use 3) Hold1 Hold2 Hull Finest Dust 4a/\$50
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Trivia Quiz

You get 2 points for a solo answer, 1 point for sharing the correct answer with one other person, and ½ point for sharing the answer with two or more people. And so, without further ado, the answers to last issues questions:

Q1. Describe the three steps in the malting process.

A1. Malting consists of three stages. In the first stage, the grain is soaked for a period of time. This raises the moisture content of the grain from about 13% to well over 40%. This triggers the second stage: germination. In this stage, the grain actually starts to sprout, which releases enzymes which start

to break down the starchy mass of the kernel into fermentable sugars. The final step in the process is kilning. In this step, the grain is dried, which stops the germination. The moisture content is reduced to 3-4% and any roots that have grown are broken off.

Andy Lewis, Kevin Wilson, and Dan Eisenhut each receive ½ point.

Q2. What is the difference between “top fermentation” and “bottom fermentation”?

A2. The difference between top and bottom fermentation lies primarily in the type of yeast used and particularly in what happens to the yeast at the conclusion of the fermentation. In top fermentation, the yeast floats to the top of the tank while in bottom fermentation, the yeast settles to the bottom. Ales are produced using top fermentation while lagers are produced through bottom fermentation.

Andy Lewis, Kevin Wilson, and Dan Eisenhut each receive ½ point.

Q3. What are the six different categories of beer?

A3. There are actually more than six categories when you get into some of the more obscure varieties. Acceptable answers were: Lager, Ale, Bock, Stout, Porter, Pilsner, Martzen, Malt Liquor, and Wiessbier.

Andy Lewis, Kevin Wilson, and Dan Eisenhut each receive ½ point.

Q4. What is the Reinheitsgebot Law and what does it specify?

A4. The Reinheitsgebot Law is also known as the German Beer Purity Law. It states that the only ingredients that can legally be used in beer are water, malted barley, hops, and yeast.

Andy Lewis receives 2 points.

Q5. What makes a dark beer dark?

A5. Dark beer is dark because the grain from which it is fermented has been roasted (usually right after the kilning in the malting process), which produces caramelized sugars.

Andy Lewis and Dan Eisenhut each receive 1 point.

Current Scores

Andy Lewis	5	Jeremy Gerson	3
Kevin Wilson	3	Chris Geggus	2½
Dan Eisenhut	2½	Kevin Kinsel	1½
Steve Koehler	1½	Bill Scharf	1
Dave Anderson	½	Caleb Cousins	½
Ward Narhi	½	Debbie Osborne	½
Bob Robles	½		

New Questions

Topic: Astronomy

1. In order from hottest to coolest, what are the stellar spectral classifications?
2. Define a “parsec.”
3. In 1054 AD, Chinese astronomers recorded the appearance of a new star bright enough to be visible even during daylight. What is that object now?
4. On average, how long does it take a photon to travel from the center of the sun to its photosphere?
5. What is the Hertzsprung-Russell Diagram?

Pedagogy

In the last issue, I described a bit about the four fundamental forces of the universe. This time, I will take a look at modern efforts to unify those forces and how that relates to the early universe.

The fundamental premise on which unification theories are based is on a principle called spontaneous symmetry breaking. In general terms, this means that under certain circumstances, the symmetry of a system could be disrupted. Take for example, water. Liquid water is symmetrical: It looks pretty much the same from any direction. Freeze it, however, and the symmetry is broken. The molecules form a crystal lattice which looks different in different directions. This is applied to unification theory in this way: At the beginning of the universe, the forces all looked and acted pretty much the same. As the universe cooled off, however, the different forces “crystallized” out. Hence, first gravity, then the strong nuclear force, then electromagnetism and the weak nuclear forces started to assume characteristics that were different both from each other, and from the original metaforce.

The first effort of unifying forces actually occurred last century. At that time, it was thought that electricity and magnetism were different forces. Maxwell informed the world differently. He proved that any moving electrical charge produced a magnetic field, thus making electricity and magnetism different aspects of the same force: Electromagnetism.

The world had to wait until 1967 before the next unification theory. At that time, Steven Weinberg (and independently Abdus Salam and John Ward) introduced the “electroweak” force, unifying electromagnetism and the weak nuclear force. The basic premise of this theory was that there are four massless particles that transmit this force. Two of those particles have no electric charge, while the other two do. Now, since there are no known particles with no mass that possess an electric charge, a way had to be found around this difficulty. They did so by using what is called the “Higgs mechanism.” By this mechanism, each of the massless particles would have a massive companion. When the energy levels of the universe dropped sufficiently, three of these particle pairs would merge, producing the W^- , W^+ , and Z^0 intermediate vector bosons. The last massless particle, the photon, would remain massless. This should leave one massive Higgs particle observable. At this point I do not know if the particle has been observed in particle accelerator experiments.

A similar theory was proposed in 1974 in an attempt to unify the strong nuclear force with the electroweak force. This theory proposed that there were 24 massless particles that mediate the combined force. The Higgs mechanism would allow 12 of these to attain rest mass. These particles are called X-bosons and would have masses on the order of 10^{15} times the mass of a proton, leading some physicists to refer to them as “intermediate vector baseballs.” (That’s physicist humor for you.) In the next round of symmetry breaking, eight of the remaining massless bosons would acquire mass, becoming gluons. That leaves us with the familiar electroweak symmetry breaking described above.

There have been many attempts to unify gravity with the other three forces, none of which have been successful. The main reason why is that no one has yet been able to develop a quantum theory of gravity. There have been several tries, but all have failed the test of experimentation. It has been said that the great tragedy of science is that so often a beautiful theory is slain by an ugly fact. Nowhere has this proven more true than in the quest for a quantum theory of gravity. The first of those who tried -- and failed -- in this endeavor was Albert Einstein himself, the discoverer of the quintessential classical theory of gravity, General Relativity. Einstein had a philosophic bias against quantum theory, however. His famous quote, “God does not play dice.” sums up how he felt about the inherently random aspect of quantum theory. Since that time, many theories have been tried and discarded. One of the most promising, for a while, was one called Supergravity. In this theory, every particle is associated with a particle of “adjacent” spin. Therefore, a spin 1 particle would be associated with a spin ½ particle, spin 2 with spin 3/2, etc. Since the graviton has spin 2, it would be associated with a particle called a gravitino, with spin 3/2. Since the gravitino is a fermion, which obeys the Pauli Exclusion Principle, force exchanges involving the gravitino would have to involve *pairs* of gravitinos, and the force would be a repulsive one. Since the force would involve the exchange of pairs of (perhaps) massive particles, it would be a very short range force.

Experimental evidence seems to conclude that certain predictions made by the Supergravity theory do not pan out. Current speculation rests on Superstring theories. These theories postulate that particles, instead of being dimensionless points, are actually one-dimensional strings or perhaps even two-dimensional loops. Particles would interact with one another by either joining to form longer strings or larger loops, or by breaking down into

shorter strings or smaller loops. In any event, things are changing all of the time as each theory *du jour* gets exposed to the rigors of experiment. That's science for you.

Next time, I will be discussing more about the early universe and about why the universe must have had a beginning.

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Tim Broyles 50729 Seadon Chesterfield, MI 48047 (810) 949-3074	Pete Gaughan 1236 Detroit Ave. #7 Concord, CA 94520-3651 gaughan@netcom.com (510) 825-2165	Steve Koehler "Devil Dog" 2906 Saint Field Place Charlotte, NC 28270 YXHY13C@Prodigy.com (704) 544-2849	James Pratt "Falcon" 939 Asbury St. San Jose, CA 95126 (408) 294-6446	Jason Wilke "Rock-it Man" 2042 Dalton Ave. Deltona, FL 32725 wilke@suvax1.stetson.edu (904) 789-7764
Ray Carpenter 195 Hartford Road #30C New Britain, CT 06053 yxhy13d@prodigy.com (203) 826-7194	Chris Geggus "Davey Boy Smith" 10 Talbrook, Brentwood Essex, CM14 4PY UK	Andy Lewis "Marmaduke" 102 Corn Tassel Ct. Rehoboth Beach, DE 19971 a.lewis16@genie.geis.com (302) 227-5551	Bob Robles "Howler" 67 Tara Rd. Orinda, CA 94563 76350.2203@compuserve.com (510) 254-6354	Kevin Wilson 373 Gateford Dr. Ballwin, MO 63021 kevin_wilson.mmi@notes.worldcom.com (314) 391-9865
Dean Cochran "Fang" 9812 Luders Ave. Garden Grove, CA 92644 (714) 537-0453	Jeremy Gerson 2550 W. 225th Pl. Torrance, CA 90505	Edoardo Mattei Viale Sartorio, 95 00147 - Roma, Italia Ed.Mattei@agora.stm.it	Bob Rutherford c/o AJ Redmer 4701 Doyle Street Suite 10 Emeryville Ca 94608	Andrew York "Greyhound" P.O. Box 2307 Universal City, TX 78148-1307 73210.3053@compuserve.com (210) 658-6066
Caleb Cousins 96 Cedar St. #4 Bangor, ME 04401 (207) 941-8568	Ken Goldstien "Dealer Dog" 7667 Kittyhawk Ave. Los Angeles, CA 90045-1733 (310) 641-2309		Bill Scharf "Doge" 4814 Walnut Grove Ave. Rosemead, CA 91770 (818) 286-4428	

Standbys

Anybody who gets onto my standby list automatically receives one free issue of *S.O.B.* In addition, if you actually submit standby orders, you get another free issue. So, lets get those people standing by. The current standby list is:

Machiavelli (gunboat and regular): Steve Koehler, Andy York, Bill Scharf, Bob Robles, Jason Wilke, Kevin Kinsel **Dune:** Steve Koehler, Paul Bolduc, Debbie Osborne **New World:** Dan Eisenhut, Kevin Kinsel **Merchant of Venus:** Andy York, Paul Bolduc, Dan Eisenhut, Debbie Osborne **Die Macher:** Andy York **Outpost:** Andy York, Dave Anderson, Roy Vij, Dan Eisenhut **History of the World:** Andy Lewis, Dan Eisenhut, Paul Bolduc **Stellar Conquest:** Andy York, Paul Bolduc, Dean Cochran **Gunslinger:** Paul Bolduc

Standby Calls

Debbie Osborne for the Atreides in "Canine", Dan Eisenhut for NODNOL in "Dog Breath", and you, if checked () for Naples in "Rude Dog"