Network Exchange Data Sets

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Fall 2012

Data were collected at the University of South Carolina Laboratory for Sociological Research, 1989-1998 using ExNet, a computer program written by J. Skvoretz that implements experiments on networks of exchange relations using a local area network of workstations, managing subject-to-subject interaction and experimenter monitoring of interaction. Data collection was supported by the following grants:

These data have been used in the following papers (among others):

Lovaglia, M.J., J. Skvoretz, B. Markovsky, and D. Willer. 1996. "Automated Theoretical Analysis of Exchange Networks: Prerequisites and Prospects." *Connections* 19:38-52.

Lovaglia, M., J. Skvoretz, B. Markovsky, and D. Willer. 1995. "Assessing Fundamental Power Differences in Exchange Networks: Iterative GPI." *Current Research in Social Psychology* 1: 8-15.

Lovaglia, M., J. Skvoretz, D. Willer, and B. Markovsky. 1995. "Negotiated Exchanges in Social Networks." *Social Forces* 75: 123-155. Reprinted in *Network Exchange Theory* edited by D. Willer. Westport, CT: Praeger, pp. 157-184, 1999.)

Markovsky, B., J. Skvoretz, D. Willer, M. Lovaglia and J. Erger. 1993. "The Seeds of Weak Power: An Extension of Network Exchange Theory." *American Sociological Review* 58: 197-209.

Skvoretz, J. and T. Burkett. 1994. "Information and the Distribution of Power in Exchange Networks." *Journal of Mathematical Sociology* 19: 263-278.

Skvoretz, J. and M. Lovaglia. 1995. "Who Exchanges with Whom: Structural Determinants of Exchange Frequency in Negotiated Exchange Networks." *Social Psychology Quarterly* 58: 163-177.

Skvoretz, J. and D. Willer. 1993. "Exclusion and Power: A Test of Four Theories of Power in Exchange Networks." *American Sociological Review* 58: 801-818. Reprinted in *Network Exchange Theory* edited by D. Willer. Westport, CT: Praeger, pp. 129-154, 1999.)

Skvoretz, J. and D. Willer. 1991. "Power in Exchange Networks: Setting and Structural Variations." *Social Psychology Quarterly* 54: 224-238.

Skvoretz, J., D. Willer and T.J. Fararo. 1993. "Toward Models of Power Development in Exchange Networks." *Sociological Perspectives* 36: 95-115.

Skvoretz, J. and P. Zhang. 1997. "Actors' Responses to Outcomes in Exchange Networks: The Process of Power Development." *Sociological Perspectives* 40: 183-197.

Willer, D. 1999. Editor. *Network Exchange Theory.* Westport, CT: Praeger

Willer, D. and J. Skvoretz. 1997. "Network Connection and Exchange Ratios: Theory, Predictions, and Experimental Tests." *Advances in Group Processes* 14: 199-234. Reprinted in *Network Exchange Theory* edited by D. Willer. Westport, CT: Praeger, pp. 195-226, 1999.)

Organization of Data Files

Individual data files have the following organization. Each record begins with one of five identifiers: IA, IB, IC, ID, or D. The first four refer to records with initialization information. The fifth signifies a data record. The record identified by IA lists the network name, the id of the run, and the number of ties in the network. The record identified by IB lists the number of subjects and the number of periods. The record identified by IC is a list of elements, each element a list of five items: two positions that are connected to each other in alphabetical order, a number indicating the structural contrast holding between the two positions, a number indicating the presumptive advantage of the first position over the second position (+1 if advantaged, 0 if no advantage, -1 if disadvantaged), and a number indicating the advantage of the second position over the first position (again +1 if advantaged, 0 if no advantage, -1 if disadvantaged). The record identified by ID stipulates the rotation of subjects through positions by periods so if there are k periods, the first k entries are the positions occupied by the first subject in period 1 through period k, the next k entries are the positions occupied by the second subject in period 1 through period k and so on. Records IC and ID end with $$.

Records identified by D have eight elements following D: period (number), round (number), deal-number (number), sender (position letter), receiver (position letter), sender-share (number), action-type (offer/O, counteroffer/C, offer-acceptance/A, offer-rejection/R, exchange/E) and time-of-action-from-round-beginning (seconds). An action is coded as an offer when it is the first action in a negotiation or it follows an action by the same negotiator in a pair before a response is made by the other negotiator in that pair. An action is coded as a counteroffer if it is an offer made in response to an offer by a partner before the partner takes another action. Acceptances and rejections are actions that respond to a particular offer by a partner without offering new terms. In most runs, exchange occurs when an offer made by one partner is accepted by the other partner and then confirmed by the first partner. However, in runs made after August 1996, the protocol was changed so that all offers were bona fide, that is, acceptance by the receiver completed the exchange. The change in protocol was occasioned in part by the increasing size and complexity of the networks investigated.

Here is one example.

```
IA L4EIIE   021694B   3
IB  4  1
IC A B 1 -1  1 B C 1  0   0 C D 1  1 -1 $$
ID A B C D $$
D 1 1 1 D C 16 O   3.24
D 1 1 1 A B 15 O   3.35
D 1 1 1 B A 22 C   5.43
D 1 1 1 B A 23 O   9.55
D 1 1 1 A B 14 C  11.09
```

The network name is L4EIIE, and its glossary entry describes it as a network of four positions connected as depicted below with experienced actors in the A and D positions and inexperienced actors in the B and C positions. The run-id is 021694B which is the date of the run (February 16, 1994) with B signifying that it was the second run of that day. There are three ties in the structure, four actors and only one period. Positions A and B are structurally distinct

and A is disadvantaged over B while B is advantaged over A with respect to the first (1) and only structural contrast. Positions B and C are not structurally distinct with respect to the first (or any) structural contrast and so B is coded as having 0 advantage over C and C as having 0 advantage over B. Positions C and D are structurally distinct (in the same way that A and B are) with respect to the first structural contrast with C having advantage over D and D being disadvantaged over C. Since there is only one period there is no rotation so subject 1 occupies position A throughout the run, subject 2 occupies position B, etc. The first data record says that in period 1, round 1, deal-number 1, the subject in position D sent an offer to C in which the share to D was 16 points (and so the share to C was 24-16=8 points) at the 3.25 second mark. The second data record says that in period 1, round 1, deal-number 1, A sent an offer to B for a share of 15 to A (and so 9 to B) at the 3.35 second mark. The third data record says that B sent a counteroffer to A for a share of 22 to B (and so 2 to A) at the 5.43 second mark. The fourth record says that B revised his/her offer upward at the 9.55 second mark to A for a share of 23 to B (and so 1 to A).
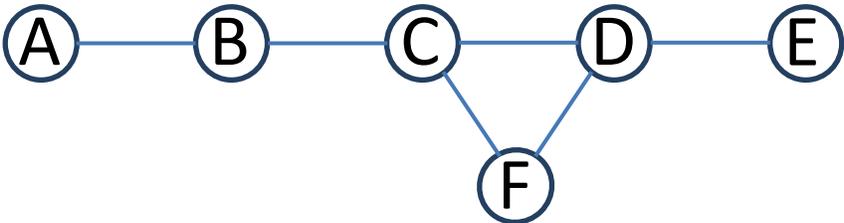
Here is another example.

```
IA BORG    041994B   6
IB  6  6
IC A B 1 -1  1 B C 2  1 -1 C D 3  1 -1 C F 4  1 -1 D E 5  1 -1 D F 6  1 -1 $$
ID F C A E B D C F B D A E A E F C D B B D C F E A E A D B F C D B E A C F $$
D 1  1 1 B A 20 O   7.36
D 1  1 1 C B 14 O   9.72
D 1  1 1 B C 21 C  10.93
D 1  1 1 E D  8 O  12.96
```

The network name is BORG, and its glossary entry describes it as a network of six positions connected as in the figure below. The run-id is 041994B which is the date of the run (April 19, 1994) with B signifying that it was the second run of that day. There are six ties in the structure, six actors and six periods. All pairs of positions are structurally distinct from one another so there are a total of 6 structural contrasts. Positions A and B are in the first structural contrast and A is disadvantaged over B while B is advantaged over A. Positions B and C are in the second structural contrast with B advantaged over C and C disadvantaged over B. Positions C and D are in the third structural contrast with C advantaged over D and D disadvantaged over C and so on. The ID record stipulates the rotation: subject1 starts in position F in period 1, moves to position C in period 2, then A in period 3, then E in period 4, then B in period 5, and ends in position D in period 6, while subject2 starts in position C, moves to F, then B, then D, then A, and ends in E and so on. The first data record says that in period 1, round 1, deal-number 1, the subject in

position B sent an offer to A in which the share to B was 20 points (and so 4 to A) at the 7.36 second mark.

Guide to Network Types

Each network has a name and a string describing the connections in that network. Most descriptor strings are organized into two substrings separated by the symbol #. The first substring lists in alphabetical order, each position, the number of exchanges it may make in a round, and the number of exchanges it must make in a round to earn points for the round. The second string lists the pairs of positions that may exchange and a number indicating the number of exchanges that pair may complete on each round. Occasionally, descriptor strings have additional information in a third substring.

Unless otherwise noted, all subjects are equally experienced, subjects can view ongoing negotiations of others with their partners, and each run has four rounds per period and as many periods as there are positions in the network since subjects rotate through all positions.

Listed after the description are the data files for that network.

Three Position Networks

3LINE – AB11BC11#AB1AC1. Each position may make only one exchange and must make one exchange to earn points in a round. Each exchange pair may make one exchange per round. All offers are bona fide.

<div align="center">

960919A.DAT
961003A.DAT
961008A.DAT
961017B.DAT
961017C.DAT
961022B.DAT
961022C.DAT
961023A.DAT
961023B.DAT
961024A.DAT
961026B.DAT
961029A.DAT

</div>

BR2NI – A22B11C11#AB1AC1. Position A may make two exchanges per round and must make both to earn. All others may make only one exchange and must make one to earn points. Each exchange pair may make one exchange per round.

<div align="center">

920211A.DAT
920211B.DAT
920213A.DAT
920219C.DAT
930204D.DAT

</div>

BR2SI – A22B11C11#AB1AC1#S. Position A may make two exchanges per round and must make both to earn points and is forced to make the exchanges sequentially, first with B and then with C. All others may make only one exchange and must make one to earn points. Each exchange pair may make one exchange per round.

<div align="center">

920220A.DAT
920303A.DAT
930923B.DAT (only 3 periods)
931025B.DAT
940208A.DAT

</div>

NBR2 –A21B21C11#AB2AC1. Positions A and B may make two exchanges per round and must make one to earn points. Position C may make only one exchange and must make one to earn points. The AB exchange pair may make two exchanges per round and the AC pair, one exchange per round.

<div align="center">

920122A.DAT
920123A.DAT
920127A.DAT

</div>

<div align="center">920130C.DAT</div>

NBR22 –A21B21C21#AB2AC2.   All positions may make two exchanges per round and must make one to earn points. All exchange pairs may make two exchanges per round.

<div align="center">901018A.DAT</div>
<div align="center">901018B.DAT</div>

NBR2R –A21B21C11#AB2AC1#R. All positions may make two exchanges per round and must make one to earn points. All exchange pairs may make two exchanges per round. Rotation of subjects over six periods differs from rotation in standard NBR2.

<div align="center">900925A.DAT</div>
<div align="center">901009B.DAT</div>
<div align="center">901009C.DAT</div>
<div align="center">901009D.DAT</div>
<div align="center">901017A.DAT</div>

NBR2V -- A41B21C31#AB2AC3. Position A may make four exchanges per round, position B may make two exchanges and position C may make three exchanges. All positions must make one exchange to earn points in a round. The AB exchange pair may make two exchanges per round and the AC pair, three exchanges per round.

<div align="center">910212A.DAT</div>
<div align="center">910212B.DAT</div>

TRI – A11B11C11#AB1AC1AD1. Each position may make only one exchange and must make one exchange to earn points in a round. Each exchange pair may make one exchange per round.

<div align="center">901030B.DAT</div>
<div align="center">901106B.DAT</div>

ALLBOX − A11B11C11D11#AB1AC1AD1BC1BD1CD1. Each position may make only one exchange and must make one exchange to earn points in a round. Each exchange pair may make one exchange per round.

930923A.DAT
931101A.DAT
931111A.DAT
931115A.DAT
931117A.DAT
940214A.DAT
940214C.DAT
940216C.DAT
940217C.DAT
940222C.DAT
940224A.DAT

BR31 − A11B11C11D11#AB1AC1AD1. Each position may make only one exchange and must make one exchange to earn points in a round. Each exchange pair may make one exchange per round.

890622A.DAT
890626A.DAT
890711A.DAT
921103A.DAT
921110C.DAT
921112C.DAT
921119A.DAT
921119C.DAT

BR31M − A11B11C11D11#AB1AC1AD1#M. Each position may make only one exchange and must make one exchange to earn points in a round. Each exchange pair may make one exchange per round. Ongoing negotiations of others with a subject's partners are masked.

891026A.DAT
891026B.DAT
891031A.DAT

BR32 − A21B11C11D11#AB1AC1AD1. Position A may make two exchanges per round but need only make one to earn points. All others may make only one exchange and must make one to earn points. Each exchange pair may make one exchange per round.

890626B.DAT
890629A.DAT
890714A.DAT
920923B.DAT
921027F.DAT

921028C.DAT
921029A.DAT
921029F.DAT

BR32M – A21B11C11D11#AB1AC1AD1#M. Position A may make two exchanges per round but need only make one to earn points. All others may make only one exchange and must make one to earn points. Each exchange pair may make one exchange per round. Ongoing negotiations of others with a subject's partners are masked.
891030A.DAT
891030B.DAT
891102A.DAT

BR33 – A31B11C11D11#AB1AC1AD1. Position A may make three exchanges per round but need only make one to earn points. All others may make only one exchange and must make one to earn points. Each exchange pair may make one exchange per round.
890628A.DAT
890629B.DAT
890711C.DAT
940207A.DAT
940207B.DAT
940208B.DAT
940209A.DAT
940210B.DAT

BR3IE – A22B11C11D11#AB1AC1AD1. Position A may make two exchanges per round and must make two to earn points. All others may make only one exchange and must make one to earn points. Each exchange pair may make one exchange per round.
920128A.DAT
920130B.DAT
920217B.DAT
920218B.DAT
921026A.DAT

BR3IN – A32B11C11D11#AB1AC1AD1. Position A may make three exchanges per round and must make two to earn points. All others may make only one exchange and must make one to earn points. Each exchange pair may make one exchange per round.
920217A.DAT
920218A.DAT
920219A.DAT
920219B.DAT
921028A.DAT

BR3NI – A33B11C11D11#AB1AC1AD1. Position A may make three exchanges per round and must make all three to earn points. All others may make only one exchange and must make one to earn points. Each exchange pair may make one exchange per round.

<div align="center">

920122B.DAT
920130A.DAT
920212A.DAT
920212B.DAT
921026D.DAT

</div>

BR3SI – A33B11C11D11#AB1AC1AD1#S. Position A may make three exchanges per round and must make all three to earn points and is forced to make the exchanges sequentially, first with B, then with C and then with D. All others may make only one exchange and must make one to earn points. Each exchange pair may make one exchange per round.

<div align="center">

920318A.DAT
920318C.DAT
920804A.DAT
921028D.DAT
921029G.DAT

</div>

CEN31 -- A11B11C11D11#AB1AC1AD1#SC. . Each position may make only one exchange and must make one exchange to earn points in a round. Each exchange pair may make one exchange per round. However, the A position is occupied by a simulated actor who after some randomly determined delay accepts the best offer available. Subjects occupy and rotate among the B, C and D positions.

<div align="center">

910402A.DAT
910403A.DAT
910404A.DAT
910410A.DAT
910410B.DAT
910411B.DAT

</div>

CEN33 – A31B11C11D11#AB1AC1AD1#SC. . Position A may make three exchanges per round but make only one exchange to earn points in a round. Each exchange pair may make one exchange per round. However, the A position is occupied by a simulated actor who after some randomly determined delay accepts the best offers available. Subjects occupy and rotate among the B, C and D positions.

<div align="center">

911125A.DAT
920303B.DAT
920304C.DAT
920305A.DAT
920305B.DAT
920305C.DAT

</div>

DBOX – A11B11C11D11#AB1AC1AD1BC1CD1. Each position may make only one exchange and must make one exchange to earn points in a round. Each exchange pair may make one exchange per round.

930209B.DAT
930211C.DAT
930211D.DAT
930223D.DAT
930303A.DAT
930304B.DAT
931027A.DAT

L4 – A11B11C11D11#AB1BC1CD1. Each position may make only one exchange and must make one exchange to earn points in a round. Each exchange pair may make one exchange per round.

890620A.DAT
890623A.DAT
890711B.DAT
911029A.DAT
911029B.DAT
911030A.DAT
911107A.DAT
911113A.DAT

L4EIIE – A11B11C11D11#AB1BC1CD1. Each position may make only one exchange and must make one exchange to earn points in a round. Each exchange pair may make one exchange per round. Experienced subjects occupy the A and D positions and inexperienced subjects the B and C positions.

930927A.DAT
930928A.DAT
930929C.DAT (only 9 rounds total)
930930A.DAT
931004A.DAT
931004B.DAT
931005B.DAT
931006B.DAT
931007A.DAT
931103A.DAT
940214D.DAT
940215B.DAT
940216A.DAT
940216B.DAT
940221A.DAT
940224B.DAT
940405A.DAT

940406A.DAT
940407B.DAT
940411A.DAT
940412A.DAT

L4I – A11B22C22D11#AB1BC1CD1. Positions B and C may make two exchanges per round and must make two exchanges to earn points in a round. Positions A and D may make one exchange per round and must make one exchange to earn points in a round. Each exchange pair may make one exchange per round.

901113A.DAT
901113F.DAT
901114A.DAT
901204A.DAT
930202B.DAT

L4IEEI – A11B11C11D11#AB1BC1CD1. Each position may make only one exchange and must make one exchange to earn points in a round. Each exchange pair may make one exchange per round. Inexperienced subjects occupy the A and D positions and experienced subjects the B and C positions.

930927B.DAT
930929A.DAT
931005A.DAT
931006A.DAT
931102A.DAT
931102B.DAT
931104A.DAT
931109A.DAT
931109B.DAT
931110C.DAT
931111B.DAT
940217A.DAT
940217B.DAT
940222B.DAT
940223A.DAT
940412B.DAT

L4N – A11B21C21D11#AB1BC1CD1. Positions B and C may make two exchanges per round and must make one exchange to earn points in a round. Positions A and D may make one exchange per round and must make one exchange to earn points in a round. Each exchange pair may make one exchange per round.

930224C.DAT
930302D.DAT
930319A.DAT
930327A.DAT

930330B.DAT

L4SC – A11B11C11D11#AB1BC1CD1#SC. Each position may make only one exchange and must make one exchange to earn points in a round. Each exchange pair may make one exchange per round. The B and C positions are occupied by simulated actors who can only accept offers from others and offer equal divisions to each other. The A and D positions are occupied by subjects who rotate between the two positions for two periods of eight rounds.

<div align="center">

920721C.DAT

920724B.DAT

920731A.DAT

920930A.DAT

920930B.DAT

921001B.DAT

</div>

STEM – A11B11C11D11#AB1AC1AD1CD1. Each position may make only one exchange and must make one exchange to earn points in a round. Each exchange pair may make one exchange per round. In four runs all subjects are inexperienced. In another four runs, all subjects are experienced (defined as having participated in one other run of a different network). In another three runs, the subjects were experienced in a particular way by having participated in a BR31SI run.

<div align="center">

900918A.DAT (Inexperienced)

900918B.DAT (Inexperienced)

900918C.DAT (Inexperienced)

900919A.DAT (Inexperienced)

901023A.DAT (Experienced)

901023B.DAT (Experienced)

901024A.DAT (Experienced)

910206B.DAT (Experienced)

920728B.DAT (After sequential inclusion)

920805A.DAT (After sequential inclusion)

920805B.DAT (After sequential inclusion)

</div>

STEM2 – A21B11C21D21#AB1AC1AD1CD1. Positions A, C, and D may make two exchanges per round and must make one exchange to earn points. Position B may make one exchange and must make one exchange to earn points. Each exchange pair may make one exchange per round.

<div align="center">

901106A.DAT

</div>

Five Position Networks

5L3 – A11B11C11D11E11#AB1AC1AD1BC1DE1. Each position may make only one exchange and must make one exchange to earn points in a round. Each exchange pair may make one exchange per round. All offers are bona fide. There are four periods of ten rounds each.

<div align="center">

980205A.DAT
980205B.DAT
980206A.DAT
980212A.DAT
980212B.DAT
980213A.DAT
980226A.DAT
980226C.DAT

</div>

5LINE – A11B11C11D11E11#AB1BC1CD1DE1. Each position may make only one exchange and must make one exchange to earn points in a round. Each exchange pair may make one exchange per round. All offers are bona fide. Identical to the L5 structure except for the change in negotiation protocol.

<div align="center">

960919B.DAT
960919C.DAT
961002A.DAT
961003B.DAT
961003C.DAT
961017A.DAT
970326B.DAT
970327A.DAT
980305B.DAT
980402A.DAT

</div>

BR4NI – A44B11C11D11E11#AB1AC1AD1AE1. Position A may make four exchanges per round and must make all four to earn points in a round. All others may make only one exchange and must make one to earn points. Each exchange pair may make one exchange per round.

<div align="center">

911106A.DAT
911114A.DAT
920121A.DAT
920122C.DAT
920916A.DAT

</div>

FRD – A11B11C11D11E11#AB1AC1AD1AE1BC1BD1.   Each position may make only one exchange and must make one exchange to earn points in a round. Each exchange pair may make one exchange per round. All offers are bona fide. There are four periods of 10 rounds each.

<div align="center">

980327A.DAT
980402B.DAT

</div>

980403A.DAT
                    980409A.DAT
                    980409B.DAT
                    980410A.DAT

KITE – A11B11C11D11E11#AB1AC1AD1AE1BC1DE1.   Each position may make only one exchange and must make one exchange to earn points in a round. Each exchange pair may make one exchange per round.

                    901030A.DAT
                    901031A.DAT
                    901106C.DAT
                    910130B.DAT
                    910130L.DAT
                    910226B.DAT

L5 – A11B11C11D11E11#AB1BC1CD1DE1. Each position may make only one exchange and must make one exchange to earn points in a round. Each exchange pair may make one exchange per round.

                    930922B.DAT
                    931103B.DAT
                    940210A.DAT
                    940329B.DAT
                    940331B.DAT

L5I – A11B22C22D22E11#AB1BC1CD1DE1. The B, C, and D positions may make two exchanges per round and must make two to earn points in a round. The A and E positions may make only one exchange and must make one exchange to earn points in a round. Each exchange pair may make one exchange per round.

                    930204C.DAT
                    930222G.DAT
                    930225B.DAT
                    930322A.DAT
                    930331A.DAT

NT2 – A21B21C21D21E21#AB2BC2BD2DE2. Each position may make two exchanges per round and must make one to earn points in a round. Each exchange pair may make two exchanges per round.

                    910220B.DAT
                    910227A.DAT
                    910227E.DAT
                    910321A.DAT

P5E5N1 – A11B11C11D11E11#AC1BC1CD1CE1DE1. Each position may make only one exchange and must make one exchange to earn points in a round. Each exchange pair may make one exchange per round. All offers are bona fide. There are four periods of 10 rounds each.

961026A.DAT
961029B.DAT
961030A.DAT
961030B.DAT
961031A.DAT
961104A.DAT
961106A.DAT
961106B.DAT
961106C.DAT
961107A.DAT
961107B.DAT
961111A.DAT
970121C.DAT

T – A11B11C11D11E11#AB1BC1BD1DE1. Each position may make only one exchange and must make one exchange to earn points in a round. Each exchange pair may make one exchange per round.

930920A.DAT
930922A.DAT
931026A.DAT
931026B.DAT
931028A.DAT

TB3 – A11B31C11D11E11#AB1BC1BD1DE1.   Each position except B may make only one exchange and must make one exchange to earn points in a round. Position B may make three exchanges per round and must make one exchange to earn points in a round. Each exchange pair may make one exchange per round.

910219F.DAT
910220C.DAT
910327A.DAT
910328A.DAT
960919B.DAT
960919C.DAT

BORG – A11B11C11D11E11F11#AB1BC1CD1CF1DE1DF1.   Each position may make only one exchange and must make one exchange to earn points in a round. Each exchange pair may make one exchange per round.

930921B.DAT
931025A.DAT
931104B.DAT
940329A.DAT
940414A.DAT
940419B.DAT

BOXSTEM – A11B11C11D11E11F11#AB1AD1BC1CD1DE1EF1. Each position may make only one exchange and must make one exchange to earn points in a round. Each exchange pair may make one exchange per round. All offers are bona fide. There are 10 rounds in four periods.

961002C.DAT
961007C.DAT
961009B.DAT
961010B.DAT
961010C.DAT
961022A.DAT
961125A.DAT
961125B.DAT
961126A.DAT
961126B.DAT
961127A.DAT
961127B.DAT
961128A.DAT

BR53 – A31B11C11D11E11F11#AB1AC1AD1AE1AF1. Position A may make three exchanges per round and must make one to earn points. All others may make only one exchange and must make one to earn points. Each exchange pair may make one exchange per round.

920127B.DAT
920304A.DAT
920304B.DAT
920304D.DAT
920923D.DAT

BR55 – A51B11C11D11E11F11#AB1AC1AD1AE1AF1. Position A may make five exchanges per round but need only make one to earn points. All others may make only one exchange and must make one to earn points. Each exchange pair may make one exchange per round.

920324A.DAT
920928A.DAT
920929A.DAT

921021C.DAT

921022B.DAT

BR5IE – A33B11C11D11E11F11#AB1AC1AD1AE1AF1. Position A may make three exchanges per round and must make three to earn points. All others may make only one exchange and must make one to earn points. Each exchange pair may make one exchange per round.

920129A.DAT

920129B.DAT

920129C.DAT

920210A.DAT

921001A.DAT

BR5IN – A53B11C11D11E11F11#AB1AC1AD1AE1AF1. Position A may make five exchanges per round and must make three to earn points. All others may make only one exchange and must make one to earn points. Each exchange pair may make one exchange per round.

920317A.DAT

920318D.DAT

920319A.DAT

920323B.DAT

920930C.DAT

BR5NI – A55B11C11D11E11F11#AB1AC1AD1AE1AF1. Position A may make five exchanges per round and must make five to earn points. All others may make only one exchange and must make one to earn points. Each exchange pair may make one exchange per round.

911105A.DAT

920123B.DAT

920213B.DAT

920302A.DAT

920921A.DAT

BR5SI -- A55B11C11D11E11F11#AB1AC1AD1AE1AF1#S. Position A may make five exchanges per round and must make all five to earn points and is forced to make the exchanges sequentially, first with B, then C, then D, then E, and then F. All others may make only one exchange and must make one to earn points. Each exchange pair may make one exchange per round.

920722A.DAT

920724A.DAT (only 3 rds in period 4)

920728A.DAT

920804B.DAT

920928B.DAT

DBR2 – A21B11C11D21E11F11#AC1AD1AF1BD1DE1. Positions A and D may make two exchanges per round and must make one to earn points. All others may make only one

exchange and must make one to earn points. Each exchange pair may make one exchange per round.

<div align="center">

910129B.DAT
910205A.DAT
910206D.DAT
910227D.DAT
910403C.DAT

</div>

DBR21IE -- A11B11C21D33E11F11#AC1BC1CD1DE1DF1. Position C may make two exchanges per round and must make one to earn points on a round. Position D may make three exchanges and must make all three to earn points. All others may make only one exchange and must make one to earn points. Each exchange pair may make one exchange per round.

<div align="center">

930202C.DAT
930210B.DAT
930223C.DAT
930224D.DAT
930403A.DAT

</div>

HEM – A21B21C11D11E11F11#AB1AC1AD1BE1BF1.   Positions A and B may make two exchanges per round and must make one to earn points. All others may make only one exchange and must make one to earn points. Each exchange pair may make one exchange per round.

<div align="center">

920326A.DAT
920330A.DAT
920331A.DAT

</div>

KSTEM – A11B11C11D11E11F11#AB1AC1AD1AE1BC1DE1EF1.   Each position may make only one exchange and must make one exchange to earn points in a round. Each exchange pair may make one exchange per round.

<div align="center">

930920B.DAT
930921A.DAT
930924B.DAT
931027B.DAT
931028B.DAT
940209B.DAT
940328A.DAT
940330B.DAT

</div>

L5S – A11B11C11D11E11F11#AB1BC1CD1CF1DE1. Each position may make only one exchange and must make one exchange to earn points in a round. Each exchange pair may make one exchange per round.

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930301A.DAT
930301B.DAT
930324A.DAT

</div>

930329B.DAT
930329D.DAT

7LINE – A11B11C11D11E11F11G11#AB1BC1CD1DE1EF1FG1. Each position may make only one exchange and must make one exchange to earn points in a round. Each exchange pair may make one exchange per round. All offers are bona fide. There are 10 rounds per period and four periods.

961001A.DAT (ends with period 2 round 7)
961002B.DAT (ends with period 4 round 1)
961002E.DAT
961007A.DAT
961007B.DAT
961009A.DAT
961009C.DAT
961010A.DAT
970121B.DAT
970325B.DAT
980226B.DAT
980305A.DAT
980305C.DAT

N7804 – A11B11C11D11E11F11G11#AB1AC1AD1AE1AF1BC1BD1CG1. Each position may make only one exchange and must make one exchange to earn points in a round. Each exchange pair may make one exchange per round. All offers are bona fide. There are 10 rounds per period and four periods.

980326A.DAT
980326B.DAT
980402C.DAT
980416A.DAT

QM52IE – A21B11C11D11E11F11G22#AB1AC1AD1AE1AF1BG1CG1DG1EG1FG1. Positions A and B may make two exchanges per round. Position A must make one exchange to earn points and position G must make two exchanges to earn points. All others may make only one exchange and must make one to earn points. Each exchange pair may make one exchange per round.

930201A.DAT
930203D.DAT
930209C.DAT
930222F.DAT
930303B.DAT

BR751 − A51B11C11D11E11F11G11H11#AB1AC1AD1AE1AF1AG1AH1.   Position A may make five exchanges per round but need only make one to earn points. All others may make only one exchange and must make one to earn points. Each exchange pair may make one exchange per round.

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920921B.DAT

920924B.DAT

920929A.DAT

921111F.DAT

921123A.DAT

</div>

BR755 − A55B11C11D11E11F11G11H11#AB1AC1AD1AE1AF1AG1AH1.   Position A may make five exchanges per round and must make five to earn points. All others may make only one exchange and must make one to earn points. Each exchange pair may make one exchange per round.

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921020A.DAT

921020B.DAT

921021A.DAT

921021B.DAT

921022A.DAT

</div>

BR771 − A71B11C11D11E11F11G11H11#AB1AC1AD1AE1AF1AG1AH1.   Position A may make seven exchanges per round and must make one to earn points. All others may make only one exchange and must make one to earn points. Each exchange pair may make one exchange per round.

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920921C.DAT

920922D.DAT

921019C.DAT

921110A.DAT

921117A.DAT

</div>

BR775 − A75B11C11D11E11F11G11H11#AB1AC1AD1AE1AF1AG1AH1.   Position A may make seven exchanges per round and must make five to earn points. All others may make only one exchange and must make one to earn points. Each exchange pair may make one exchange per round.

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921019A.DAT

921027B.DAT

921028B.DAT

921029B.DAT

921109B.DAT

</div>

BR7NI − A77B11C11D11E11F11G11H11#AB1AC1AD1AE1AF1AG1AH1.   Position A may make seven exchanges per round and must make seven to earn points. All others may make only one

exchange and must make one to earn points. Each exchange pair may make one exchange per round.

920923A.DAT
920929C.DAT
921001C.DAT
921019B.DAT
921109A.DAT

STR   –   A11B11C11D11E11F11G11H11I11J11#AB1BC1BD1BF1BH1DE1EF1FG1GH1GI1GJ1IJ1. Each position may make only one exchange and must make one exchange to earn points in a round. Each exchange pair may make one exchange per round. All offers are bona fide. There are four periods of 8 rounds each.

970303A.DAT
970303B.DAT
970304A.DAT
970325A.DAT
970326A.DAT
970326C.DAT
970327B.DAT
970329A.DAT