



Industry-wide Disaster Recovery Test

OCTOBER 9, 2004
Preliminary Results

TEST OBJECTIVES

- In April, FIA IT Division hosted meetings with exchanges, clearing organizations and firms to determine the need for a test, scope and date:
 - Establish the benefits of conducting an industry-wide test
 - Establish a common date for testing between all U.S. futures exchanges and their constituencies
 - Test firm back-up to exchange back-up sites
 - Verify connectivity
 - Test exchange of a small but meaningful sample of orders

BACKGROUND

- First industry-wide disaster recovery test in the U.S. financial services sector (due largely to the good working relationship between exchanges and firms).
- While individual testing is common, it was the first time some firms had the opportunity to test their back-up sites with the exchange back-up sites.
- Committee established and conference calls were held between May and October (bi-weekly and weekly).
 - Clearinghouses
 - Exchanges
 - FCMs, clearing firms and non-clearing firms
 - Key service providers
 - Independent software vendors
- Test briefings were held in Chicago and New York in July/August and September

BACKGROUND

- The test was held Saturday, October 9 from 8:00 a.m. until 4:30 p.m. EDT
- Participation in the test was not mandatory.
- Each exchange developed its own test script and recruited member firms.
- To encourage firm participation, FIA agreed not to release firm names.
- Post-test interviews with firms and survey forms were used to determine results.

PARTICIPATING EXCHANGES/CLEARINGHOUSES

- CBOE Futures Exchange
- Chicago Board of Trade
- Chicago Mercantile Exchange
- Eurex US
- The Clearing Corporation
- New York Board of Trade
- New York Clearing Corporation
- New York Mercantile Exchange

CBOE FUTURES EXCHANGE

- Tested connectivity to production CBOEdirect trading platform
- Scripted trade entry for VIX futures contracts.
- Trades were transmitted to The Clearing Corp.'s back-up systems.
- The Clearing Corp. produced end-of-day files and transmitted them to The Options Clearing Corp. back-up systems.

CHICAGO BOARD OF TRADE

- Tested connectivity to eCBOT production trading platform.
- No order entry–connectivity was confirmed via successful system login message.
- CME Clearing generated a subset of October 8th trades to member firms
- Trade confirmations sent from CME Clearing
- EFP, change records, PCS and large trader records were accepted

CHICAGO MERCANTILE EXCHANGE

- Tested connectivity to GLOBEX production trading platform via CME remote back-up site.
- Scripted order entry in Eurodollars, Euro FX, Japanese Yen, CPI, Goldman Sachs Index, Hogs, NASDAQ, NASDAQ eMini, S&P and S&P eMini futures contracts.
- Ex-pit, block trade information was received via CME remote site portal URL.
- Trade reporting and SPAN files were generated from 10/7 trade date.
- PCS and large trader information were submitted by member firms.
- Trade registry data and SPAN files were accessible via FTP.

THE CLEARING CORP.

- Tested firm connectivity to back-up clearing system.
- No scripted trade entry—confirmed system connectivity via successful system login message.
- Previous business day clearing reports were transmitted to member firms:
 - Match off files
 - Report files
 - SPAN files
- PCS, ex-pit and large trader information was not accepted.

EUREX US

- Tested firms connectivity to Eurex production trading platform.
- No scripted order entry—connectivity was confirmed via successful system login message.
- The Clearing Corp. transmitted the previous business day's clearing reports:
 - Match off files
 - Report files
 - SPAN files

NEW YORK BOARD OF TRADE

- Tested firm connectivity to NYBOT back-up trading floor and back-up Electronic Order Routing system.
- Scripted order entry for cotton and sugar futures contracts.
- Order entry via back-up phone lines, NYBOT EOR and member firms' order routing systems.
- Members phones forwarded to NYBOT back-up trading floor facility
- Trade entry via TIPS system for test trades, ex-pit, large trader and PCS information.
- NYCC produced end of day files:
 - Match off files, report files and SPAN files.

NEW YORK MERCANTILE EXCHANGE

- Tested firm connectivity to eACCESS back-up trading platform.
- Order entry via scripted trade entry in Crude Oil, Natural Gas, Heating Oil, Gasoline, Silver and Gold futures contracts.
- Fill reporting to member firms.
- End-of-day clearing reports produced via NYMEX Clearing:
 - Ex-pit, PCS, large trader information
 - 591 Member Trade Register report

OVERALL TEST RESULTS

- Seven U.S. futures exchanges and clearinghouses and more than 80 firms participated in the test

■ Organization	# of firms tested	% of total volume
– CBOE Futures	6	35%
– CBOT	58	97%
– CME	52	98%
– Clearing Corp.	24	39%
– Eurex US	32	38%
– NYBOT/NYCC	28	99%
– NYMEX/COMEX	36	90%+

Firms tested represent 96% of the U.S. trading volume.

LESSONS LEARNED

- Test objectives were met with improvements identified for next exercise.
- Support for industry-wide disaster recovery testing strong.
- Feedback from member firms, exchanges and clearinghouses indicates this was a valuable and worthwhile exercise.
- The industry should do more common testing in the future.

LESSONS LEARNED (CONT'D)...

- Test design issues:
 - More time for testing
 - Faster turnaround time on reports
 - More pre-testing
 - More support from front-end vendors
 - More personnel needed
 - More coordination among exchange scripts

LESSONS LEARNED (CONT'D)...

■ Disaster Recovery glitches uncovered during the test:

- MQ, FTP and RJE connectivity to exchange/clearing house post-trade processes
- Incorrect/invalid network router addressing
- Invalid network IP addresses
- Invalid/outdated passwords
- Exchange's control center phone system

LESSONS LEARNED (CONT'D)...

- Industry DR professionals said that the test:
 - Helped them document more business continuity procedures.
 - Allowed them to test connectivity with the exchange's DR site.
 - Heightened awareness internally of DR/BC issues.
 - Uncovered single points of failure.
 - Underscored the need for cross-training.

LESSONS LEARNED (CONT'D)...

- Large Broker/Dealer Perspective:
 - It is far too operationally risky to test from disaster recovery sites. At best B/Ds tested connectivity from DR sites.
 - The need for an national “industry-wide” test, as opposed to regional tests, is not apparent, particularly since no clearing cycles were run.
 - Making available multiple weekend dates to coordinate external and internal DR tests very desirable.
 - Number of staff required for a single “industry” test is cost prohibitive. How many “industries” are we in?

NEXT STEPS

- Finalize results
- Survey firms and exchanges for input on future tests
- Form disaster recovery test steering committee
- Determine test plan for 2005
 - Tentative date: October 15, 2005