

L&A Testing Schematic for Instant Runoff Voting

Caleb Kleppner, Center for Voting and Democracy, 415-824-2735

February 13, 2003

11 ballot types, 1 card for IRV races and 1 card for ballot measures, approx 650 precincts

Election Test Decks: 1 test deck per ballot type, with candidates receiving the same number of votes in each ballot type to deal with ballot rotation. The output data file and 1st, 2nd and 3rd choice vote totals should be identical.

Exception Test Decks: 1 test deck per ballot type designed so that the output of each each 11 Exception Test Decks is identical.

Manually prepare data files that correspond to the output of the scanning of an Election Test Deck and the scanning of both the Election Test Deck and the Exception Test Deck. These become the two “gold standards” that every output data file can be compared to.

For each ballot type, pick 1 (or a few) precincts and scan the Election Test Deck and the Exception test deck. For all other precincts in that ballot type, scan only the Election Test deck. The output is a data file and 1st, 2nd and 3rd choice vote totals on the Eagle’s tape.

Once all ballots have been scanned in all precincts, perform the automated IRV tabulation on the 1,300 data files.

After scanning the appropriate test deck or test decks in each precinct on the Eagle and each precinct on the IV-C, you have the following outputs:

1. 1st, 2nd, 3rd choice vote totals, undervotes and overvotes on the Eagle tapes
2. 2 datafiles corresponding to each precinct: Eagle (precint) and IV-C (AV and provisional)
3. Round by round vote totals from the IRV results

The first step is to compare the numbers on the totals tape to the pre-determined numbers that correspond to each precinct (either the Election Test Deck totals or the combined Election Test Deck and Exception Test Deck).

Then compare each data file to the “gold standard” data file that it should equal. Either use an Excel macro or a simple program to scan through all 1,300 data files, compare them to the corresponding “gold standard” data file, and report any discrepancies.

Then perform a manual IRV tabulation using a spreadsheet or a separate program on the data contained in the 1,300 files. Determine vote totals for each candidate by round until a winner hits a majority of continuing ballots.

Compare each candidate’s vote totals by round from the manual tally with the vendors IRV tally and see if they match.

This process allows the verification of:

1. The scanning and storing of each individual vote and ranking in the test decks;
2. The storing of vote totals in the Data Pack on the Eagle with the rankings stored in the PCM card; and
3. The overall, final IRV tabulation.