Illustrative Risks to the Public in the Use of Computer Systems and Related Technology: Summary of RISKS voting items 1 June 2020

For recent items, try the search engine at http://www.risks.org. Also, the ACM SIGSOFT Software Engineering Notes (*SEN*) have for many years contained highlights of items from online RISKS, along with one-liners of additional items of note. All of the *SEN* issues are now online: `http://www.sigsoft.org/SEN/` All of the RISKS issues are at www.risks.org, with a lovely search facility courtesy of Lindsay Marshall at Newcastle.

Copyright 2020, Peter G. Neumann, SRI International EL243, Menlo Park CA 94025-3493 (e-mail Neumann@csl.sri.com; http://www.CSL.sri.com/neumann; telephone 1-650-859-2375; fax 1-650-859-2844): Editor, ACM SIGSOFT Software Engineering Notes, 1976–93, Assoc.Ed., 1994–; Chairman of the ACM Computers and Public Policy (CCPP) 1985-2019; Moderator of the Risks Forum (comp.risks); cofounder with Lauren Weinstein of People For Internet Responsibility (http://www.pfir.org).

This list summarizes items that have appeared in the Internet Risks Forum Digest (RISKS) – which I moderate (comp.risks newsgroup) – and/or published ACM SIGSOFT *Software Engineering Notes* (**SEN**). In this collection of mostly one-liner summaries, (R i j) denotes RISKS volume i issue j; (S vol no:page) denotes an issue of **SEN,** where there has been one volume per year, with vol 33 being the year 2008; page numbers are given fairly regularly from 1993 on; (SAC vol no) indicates an item in the quarterly SIGSAC Security and Control Review, where vol 16 is 1998, which was the final volume. The RISKS-relevant **SEN** material prior to 1995 is summarized in my Computer-Related Risks book (see below). All issues of **SEN** are now online, thanks to Will Tracz:
http://www.acm.org/sigsofthttp://www.acm.org/sigsoft

Some incidents are well documented, while others need further study. A few are of questionable authenticity, and are noted as such (“bogus???”).

Descriptor Symbols

The following descriptor symbols characterize each entry.

! = Loss of life/lives; * = Potentially life-critical or safety problem

V = Overall system or subsystem sur**V**i**V**ability problems (with respect to diVerse adVersities, including attacks *and* malfunctions). Startlingly many cases fit this category; many V-unflagged cases also represent failures to continue performing properly, or delays, or other cases of misuse that could have led to much more serious survivability problems.

$ = Loss of resources, primarily financial

S = **S**ecurity/integrity/misuse problem; P = **P**rivacy/rights abuse or concern

H = Intentional **H**uman misuse (e.g., user-administrator-operator-penetrator)

h = Accidental **H**uman misuse or other inadvertence

a = Event attributed to animal(s)

I = **I**nsider; O = **O**utsider; A = Inadequate **A**uthentication, **A**ccess control, or **A**ccountability

d = System **D**evelopment problems

e = Improper **E**volution/maintenance/upgrade. (H,h,i,f,d,e involve human foibles.)

r = Problems with **R**equirements for system or operation (including the overall system concept)

f = **F**laws (or **F**eatures in design, or hardware/software implementation)

i = Mis**I**nterpretation/confusion/human errors at a man-system **I**nterface; documentation problems

m = Hardware **M**alfunction attributable to system deficiencies, the physical environment, acts of God, etc.

M = **M**alfunction or misuse specifically due to electronic or other interference

+ = Beneficial; - = problematic with none of the above categories

@ = This item is also listed in another category

Election Problems

We have reported election problems in *Software Engineering Notes* and RISKS for many years. Many of these problems are summarized below. More recently, in the 2000 election, particularly in Florida, the chickens of neglect have come home to roost, exemplifying everything we have been saying all these many years – and more. Similar to the 1988 fiasco where a 210,000-ballot undervote occurred in the Senate Race in four counties run by BCR/Cronus, 19,000 votes were disqualified for the presidential race in Palm Beach County, and many more in Broward County – perhaps because of the confusion raised by the butterfly ballots. There are also some reports of the left-hand and right-hand pages being improperly aligned, so that a vote for one candidate actually counted for another candidate. Dimpled chad became important – perhaps resulting in part from blocked and never-cleaned chad trays (and there was a lot of extra chad resulting the invalidated multiple votes!). There were many irregularities involving improper voter disenfranchisement, with at least 91,000 voters being unable to vote because of a largely erroneous list of supposed convicted felons – including one election commissioner who found herself incorrectly on the list, and was apparently the only one to block use of the list in her region.

Also, see the CACM Inside Risks articles from November 1990 (PGN), 1992, 1993, 2000 (Rebecca Mercuri), January 2002 (Mercuri), as well as November 2003, 2005, 2006, and 2007 (various authors). (http://www.csl.sri.com/neumann/insiderisks.html).

Numerous problems are noted in the on-line RISKS, along with various commentaries (R 21 10-14). We note that punched-card systems are inherently flaky (!), and that even optical scanning is problematic, but that direct-recording electronic systems tend to be subject to serious potentials for fraud and manipulation. Internet voting is a disaster waiting to happen in light of the inadequate security of the Internet, personal computer systems, and subvertible servers. For example, the SERVE system appears to be seriously flawed. Proposals to vote from automated teller machines (R 21 15-16) are also problematic, and basically undesirable. Election 2000 demonstrated once again that we need to reexamine

the entire election process objectively, and devise less-easily subvertible checks and balances that can provide much greater assurance. Election 2002 still had vastly too many problems, many of which have not been eliminated for Election 2004.

Integrity throughout the election process is essential. And yet we repeatedly hear about unexplained anomalies (enumerated below, including the 1984 articles by David Burnham noted below) and various suspicions of fraud – some with convictions. For example, Ransom Shoup II (purveyor of the ShoupTronic election machines) was convicted of two felony counts – election fraud and conspiracy to commit election fraud. In 1996, Senator Chuck Hagel was CEO of the election company (now a part of ES&S) used by most of Nebraska in his first-term election (e.g., see Thom Hartmann, If you want to win an election, just control the voting machines, *The Hill*, 31 Jan 2003 – R 22 55); this may not have affected the outcome, but the early denial of the association is certainly ethically curious. In 1999, 22 people were indicted in Louisiana and 9 admitted guilt in a huge bribery/kickback election scam involving the acquisition of Sequoia voting systems.

Numerous Web sites are springing up with timely information in addition to mine and Rebecca's. For example, see David Dill's Voter Verification Newsletter and subscribe: www.VerifiedVoting.org Also, see Lynn Landes's Web site www.ecotalk.org/VotingSecurity.htm and particularly www.ecotalk.org/VotingMachineErrors.htm for considerable detail on election fraud and irregularities. Another useful site is http://www.epic.org/privacy/voting/.

If you are seriously interested in what might be needed for a high-integrity election process, and a further study of the inherent risks, see the outstanding University of Pennsylvania PhD thesis http://www.notablesoftware.com/evote.html of Rebecca Mercuri (mercuri@acm.org), *Electronic Vote Tabulation Checks and Balances*, 2000. What we are calling the Mercuri Method involves voter-verified paper ballot-images that become part of the official records. Useful URLs for various other relevant organizations are included at the end of that Web site. See also "Explanation of Voter-Verified Ballot Systems" (Rebecca Mercuri, S 27 5:15-16, R 22 17). See also my later comments (S 28 2:16-17) based on R 22 36 and R 22 38.

If the risks of voting concern you, including potential conflicts of interest among owners, you might find some provocative information at http://www.ecotalk.org/VotingSecurity.htm, clicking on Ownership – privatizing, monopolizing, and politicizing the voting process. You can report voting irregularities you see for posting at http://www.VoteWatch.us/.

S Role of standards (Roy Saltman)(S 18 1:17); see also (R 14 08-11) [Roy has retired from NBS/NIST, and was evidently the government person most knowledgeable about punched-card systems. He is still active.] See "Accuracy, Integrity, and Security in Computerized Vote-Tallying, Roy G. Saltman, National Bureau of Standards (now NIST) special publication, 1988, for a definitive report.

+/-? US Federal Election Commission Voting Systems Standards update: draft available (R 21 51); the final version is on the FEC Web site at http://www.fec.gov. It still fails to address some of the most important integrity issues.

@$SH See Jeff Burbank's wonderful invited talk at EVT/WOTE 2010, Outsmarting Regulators: Gambling in Nevada, based on his book, *License to Steal*, **huge** relevance to election systems.

..... **U.S. election events, 1984 and before:**

1982: Elkhart, Indiana, program failed in midstream, programmer rebooted or patched the system on the fly during the election process. (S 10 3:8); more in (S 10 4)

SH 1984: Series of articles by David Burnham in *The New York Times*, (29Jul, 30Jul, 4Aug, 21Aug, 23Sep, 24Sep, 18Dec 1985) documents vulnerabilities to tampering in Computer Election Systems (then the dominant electronic vendor); elections with their machines challenged in Indiana, WVirginia, and Maryland, with rigging suspected in the 1984 election in the first two states; Federal Election Commission standards inadequate; Texas also investigated numerous discrepancies, involving Business Records Corporation (which subsequently was involved in the Florida fiasco of 1988) – formerly known as Computer Election Systems; NSA asked to investigate if CES systems were open to fraud; California and Florida also investigated; Michael Shamos quoted – CES systems equipment "is a security nightmare open to tampering in a multitude of ways." The Burnham articles are a startling warning shot that was almost completely ignored. [Most lawsuits later thrown out: not guilty or lack of evidence, particularly in the absence of audit trails!].

1984: McCloskey McIntyre Congresional election in Illinois long questioned, with only a few votes making the difference depending on which were thrown out in which recount. Other problems in Dade County in 1984, West Virginia, St. Louis (S 10 3:8)

S[H?] Election frauds, lawsuits, spaghetti code, same memory locations used for multiple races simultaneously, undocumented GOTOs, COBOL ALTER verb allowing self-modifying code, calls to undocumented/unknown subroutines, bypassable audit trails (Eva Waskell, S 11 3); Report from the Computerized Voting Symposium, August 1986 (S 11 5)

h Clerical error blamed for election computer program mishap (S 11 5)

SHrf System designs, bad software engineering, standards (Eva Waskell, S 11 3)

S[H?] Alabama, Georgia election irregularities (S 12 1)

Sh Texas beefs up security of computerized voting (S 12 1)

..... **1988 U.S. election events:**

SH Computers in Elections (see the excellent article by Ronnie Dugger, *The New Yorker*, 7 Nov 1988, and several cited reports); 1988 problems in Florida – 210,000 votes fewer for Senate race (Connie Mack vs. Buddy Mackay) than for President in 4 counties administered by Business Records Corporation, part of Cronus Industries of Dallas, Texas (*The New York Times*, 12 Nov 1988, S 14 1:20, R 7 78); jammed chad slots? post-election multiply punched ballots? at least one disappearing ballot box reported? other possible scenarios?

..... **1992 U.S. election events:**

m Misaligned Votomatic in Berkeley caused mispunched cards (S 18 1:15)

S? Sandia helps NM develop "uncrackable" phone voting system (S 18 1:15)

hf Oregon computer error reversed election results (S 18 1:16)

hf Programming error reverses DistAtty election landslide in Oregon (S 18 1:16)

h Ventura Cty CA votes reversed on 13 state propositions (S 18 1:16)

h/H? Another voting machine misaligned, biased toward Bush (S 18

1:16)

..... **1996 U.S. election events:**

+ Hanging chad removal in punch-card ballots overturns Massachusetts primary election (S 22 1:21)

? Louisiana results questioned because of evidence of misrecorded votes

Ethics? Senator Hagel of Nebraska was CEO of the company whose voting machines got him elected, and had denied the connection (R 22 55)

..... **1998 U.S. election events:**

h ABC News accidentally posted test election results before the election (they were correct in 61 out of 70 Senate and Governor races!); Fox TV did a similar thing for a Yankee-Padre World Series game (R 20 05)

..... **2000 U.S. election events:**

hifm(H?) U.S. and Florida Presidential race complexities discussed (S 26 2:7-9), relating to RISKS items and others (R 21.09-15) [noted at the beginning of the section]. Sanity in the Election Process (Lauren Weinstein and PGN, R 21 12). Statement by Don Dillman on Palm Beach ballot layout (R 21 12). The early recount process showed many irregularities (R 21 12). Perspective from PGN (R 21 13) reminds us of many earlier warnings from 1985 (David Burnham) and 1988 (Ronnie Dugger, who quoted Willis Ware: "There is probably a Chernobyl or a Three Mile Island waiting to happen in some election, just as a Richter 8 earthquake is waiting to happen in California.") (R 21 13). Discussions on Internet and electronic voting by PGN, Rebecca Mercuri, and Lauren Weinstein (R 21 14), and others (R 21 13-14). Criteria for voting systems (Rebecca Mercuri's PhD thesis, http://www.notablesoftware.com), also Fred Cohen (R 21 15-16). Testimony of Doug Jones before U.S. Civil Rights Commission (R 21 20). DUMvoting 1.0, Gene N. Haldeman's parody on Dell/Unisys/Microsoft consortium (R 21 20). Later study by Doug Jones shows certain specific slots were more likely to jam and result in pregnant chad in Votomatic machines used in Florida (S 27 1:17, R 21 70-71), which could be relevant to the 1988 Florida Senate race as well. (See Mack/Mackay election, noted above.) Discussion of the Caltech/MIT report and what Los Angeles County is doing about it in attempting to upgrade to all-electronic systems (S 27 1:17, R 21 70)

h Exit polls blamed for misleading results in disputed Florida counties, although those polls seemingly correctly reflected the intent of voters whose ballots were invalid! (R 21 11, S 26 1:17)

f(h or H?) Florida election erroneous disenfranchisement of thousands of voters also traced to bogus Choicepoint data; Choicepoint blames its data aggregator, DBT (R 21 42)

m?f? Report of Diebold voting machines in Volusia County FL registering -16,022 votes for Al Gore! (R 22 93,94)

fmhH 4 to 6 *million* votes uncounted in 2000 U.S. election (S 26 6:15, R 21 51)

Sfh Broward County FL officials consider letting students hack election systems, but later overruled (S 26 6:15, R 21 61)

fe New voting protocol and new ballot tally system in Cochise County AZ special election resulted in miscounting (R 21 07; S 26 1:21)

S Vote auction Web site moves overseas after being outlawed (R 21 11, S 26 1:18)

..... **Other year 2000 items:**

fS? Contribution from Douglas W. Jones, Chair of Iowa State Board of Examiners for Voting Machines and Electronic Voting Systems (S 26 1:15-16, R 21 10). This updates his earlier report on risks in electronic voting in Iowa (R 18 15).

dfeiSPHh NSF workshop on feasibility of e-voting, commentary by Avi Rubin and others (S 26 1:16-17, R 21 10-11)

Sf House Science Committee hearings on electronic and other voting systems, 22 May 2001: testimony by Stephen Ansolabehere, Rebecca Mercuri, Roy Saltman, Douglas Jones (R 21 44)

SP Risks of receipts for voting machines (R 21 23); potential risks in "open" development of voter data standards (R 21 33)

fHh Discussion of the use of ATMs for voting (R 21 15-16)

f$ Also in 2000, Pennsylvania county wins $1M for faulty MicroVote computer voting machines (R 21 10)

SHA Minnesota election fraud accused in e-mail sent by Christine Gunhus (using a Hotmail alias) disparaging her husband Senator Rod Gram's opponent; identity revealed by X-Originating-IP: header sent from a campaign computer, and by GUIDs included in Word documents! (But Gram lost.) (R 21 50)

Shmf New Mexico: at least 678 votes lost in 2000 early voting, greater than the presidential margin (R 23 50, correction R 23 51);

..... **2001 U.S. election events:**

f Programming error scrambles San Bernadino election results (S 27 1:15, R 21 74)

VSm Implications of power outage during Nov 2001 Pennsylvania election (R 21 80)

m Mercer County NJ voting problems 2001 due to Anthrax scare delaying Internet voting info (S 27 1:16, R 21 74)

h Election problems before the election in Virginia result from 2000 census redistricting; electronic rolls lost 18,000 voters (S 27 1:17, R 21 74)

@hP Erroneous law-enforcement data from Choicepoint: Privacy Foundation's Richard Smith discovered he had been dead since 1976, and had aliases with Texas convicts; Chicago woman misidentified as shoplifter and drug dealer, and fired. (Florida election erroneous disenfranchisement of thousands of voters also traced to bogus Choicepoint data; Choicepoint blames its data aggregator, DBT.) (R 21 42)

..... **2002 U.S. election events:**

h Compton California Mayoral election screwup from lack of randomization of candidate ordering (S 27 3:16, R 21 91)

SP Miami-Dade OKs touchscreen voting for Nov 2002 (S 27 3:16-17, R 21 90,92,93)

SAf Palm Beach's new electronic voting machines have problems (S 27 6:15, R 22 16) and more on lack of accountability (S 27 6:16, R 22 17)

fmiSP(HI?) Florida Primary 2002 problems: touchscreen machines not working, showing the wrong candidate, or nonworking authorization cards; some huge voter delays, Governor authorized two-hour extensions although some already shut-down machines could not be restarted; lame testing; purchase contract makes it a felony violation if any devices provided for internal examination; serious reliability problems reported in Georgia and Maryland; comments from the Georgia Secretary of State (R 22 25); comments from Mercuri on MIT/Caltech press release (R 22 26);

fmiSP(HI?) U.S. general election 2002: Glitches widely reported in FL, TX, AL, NV, GA, CA, SC, NE, NJ; Voter News Service outage (R 22 38); iVotronic machines lose 294 votes in Wake

County NC (R 22 33); 2-3 hour waits in Florida early voting result from voter anticipation of election day problems! (R 22 34); factual errors reported in CNN article, particularly regarding use of old FEC standards, not new, and still voluntary; other errors (R 22 36); in FL Palm Beach and Broward counties and Georgia, voters found touch-screen machines that showed votes for untouched candidates; Broward programming error omitted 34,000 votes; 70,000 absentee and Spanish-language ballots missing from turnout but (supposedly) included in counts; Houston voters in 5 precincts had straight-party votes rejected; half of the Pulaski County AK had not been assigned precincts after redistricting, were not allowed to vote; NE long-shot candidate was given a premarked ballot for his opponent (R 22 36); more on exit polls (R 22 35,37); Broward County vote total short by 104,000 votes (R 22 36-37); 67 memory cards misplaced in Georgia, representing 2,180 ballots (R 22 37); "The right to have the vote counted is infringed, and we have lost the integrity of our voting system, when the ease with which ballots can be manipulated is greater than the ease with which the manipulation can be detected." (Kevin Craig, 2000) www.electionguardians.org (R 22 37); chip glitch hands victory to wrong candidate in Nebraska (R 22 38); Voters can report election irregularities at VoteWatch.us (R 22 38); problem in White Plains NY with sticking lever machine (R 22 44); vote only by mail in Oregon (R 22 35)

Sm?f?H? 2002 unofficial election results in Alabama reversed, cause still unexplained: electronic results wrong, hardcopy results correct (R 22 60-61, S 28 3:10)

fiSP(HI?) Columns by Lynn Landes on questionable ownership of voting machine companies (felons, etc.), also citing VoteScam, 1992 book by James and Kenneth Collier; interactive modems capable of controlling voting machines in real-time (R 22 25,37-38); ideal voting systems? (R 22 34); further discussion of the Mercuri Method, alternatives, and butterfly ballots again, and other discussions (R 22 27-31,38)

SHPfi Boston gets Diebold AccuVote marked-paper reader systems, seemingly lacking in assurance of correct tabulation (but at least recounts by independent systems are possible – if requested) (R 22 39)

SH? Diebold AccuVote system integrity questioned in Georgia because of the use of an unprotected FTP site for storing election software, election results files, upgrade files, etc. (for example, see *The Register*, 8 Feb 2003; surprising Max Cleland defeat linked?

SPH Powervote electronic vote machines open to tampering: bogus ballot face (R 22 44)

*m Explosion of nickel-cadmium batteries used in electronic voting (R 22 28)

Sf Panel reports DoD SERVE System fatally flawed; bureaucrats in denial (R 23 14-15)

SHf How to Hack an Election; Maryland (R 23 17); Physical security of voting machines (R 23 20); blank page anomaly (R 23 24)

SH Online poll rigging (R 23 13)

S+/- Avi Rubin's experiences as an election judge: http://www.avirubin.com/judge.html (R 23 25)

S(Denial of Service!) Many new e-voting machines won't boot in San Diego County (California) primary election (R 23 25)

fh Lost e-votes could flip Napa County race: Sequoia Optech optical scanner failed to record votes, detected by random 1% recount (R 23 27)

m Many California voters turned away in Alameda and San Diego Counties in 2004 primary; Diebold DRE authorization machines failed, supply of paper ballots ran out; 200 calls for help from poll workers (R 23 27)

..... **2003 U.S. election events:**

SH Chief of Diebold voting machine company writes Republicans in fund-raiser he is "committed to helping Ohio deliver its electoral votes to the President next year." (R 22 89, S 28 6:11)

SH "According to election industry officials, electronic voting systems are absolutely secure, because they are protected by passwords and tamperproof audit logs. But the passwords can easily be bypassed, and in fact the audit logs can be altered. Worse, the votes can be changed without anyone knowing, even the County Election Supervisor who runs the election system." (R 22 83)

fS(H?) Avi Rubin et al. analyze serious flaws in Diebold electronic voting systems (R 22 82)

mh Voting tech problems galore in Mississippi: locked precincts, machine malfunctions, erroneous ballots, voters given wrong ballots (R 22 83)

f?m?SH? (who knows?) NYCity: Blank ovals sensed as votes, legitimate votes disqualified as overvotes (R 22 75)

H? UC Riverside student arrested for allegedly derailing student election, casting 800 votes for a fabricated candidate (R 22 78)

f?m?SH? Boone County Indiana's MicroVote election software returned about 144,000 votes with only 19,000 registered voters; final review counted 5,352 votes (R 23 03)

f More voting snafus in Palm Beach and Broward Counties: Florida House District 91, 6Jan2004, winner Ellyn Bogdanoff by only 12 votes over Oliver Parker, out of 10,844 cast ballots, with 137 supposedly blank ballots in the only item in a special election; no mandated recount possible with ES&S touch-screen voting (R 23 12)

Sie Data transfer Excel-COBOL loses voter data in 2003 Greenville Mississippi election (R 22 95)

hi$ Grant Parish, Louisiana, election results reversed by doubled absentee counts; new election to be held (R 23 02)

SH Hackers break in to VoteHere (which claims "best-of-breed security") (R 23 12)

ei Pleasanton CA school board election displays instructions for the previous election (R 23 01)

SHfe At least eight Fairfax County VA WinVote machines failed, seals were broken, and machines fixed (!) for reuse (R 23 01,02); more problems in Fairfax CO: WinVote machines subtract one in each hundred votes for a particular candidate (R 23 02)

S(m/f/H) Analysis of California recall data confirms doubts about voting systems (R 22 94-96)

Se California halts e-vote certification of Diebold machines after uncertified software installed in Alameda County CA (R 23 01,03); also, outsiders could make changes to vote-counting software (R 23 03); Diebold machines in 17 California counties had not been state-certified, three had not been Federally certified; changes after certification commonplace! (R 23 07); At least FIVE convicted felons among Diebold voting subsidiary employees (R 23 07)

SHhfme California Secretary of State requires voter-verified paper audit trail by 2006 (R 22 04)

Smf$ Broward County FL considers dumping $17 million in touch

voting machines or retrofitting voter-verified audit trails, after serious errors (R 22 93)

SHfm Avante Vote-Trakker voter-verified ballot printout mechanisms disabled by registrar when discrepancy occurred (R 23 03); What if DRE and paper trail disagree? DISABLE the system immediately (R 23 06)

SHfm Congressional Research Service report raises more questions about electronic voting machines (R 23 03)

S$ Nevada to apply slot-machine security to e-voting hardware? (R 23 06)

SH(I/O) Another case of electronic vote-tampering? IEEE standards process broken (R 22 92); unsecure wireless communications would satisfy draft IEEE standards (R 23 02)

SP Sensitive voter information publicly up for grabs (R 23 07,09,10)

Hm Mechanical voting machines also risky (R 23 03); Why not just mark a piece of paper? Much of the rest of the world does. (R 23 06-08,10-12)

SHf VoteHere reports computer break-in (R 23 10)

+/- Essay on social aspects of electronic voting (R 23 10)

..... **2004 U.S. election events:**

$f California bans Diebold e-vote machines (R 23 35)

$fh Republicans walk out on Federal civil rights hearing on voting machines (R 23 32)

SPhie Florida's list of felons ineligible to vote in 2004 is still full of eligible voters (R 23 44)

Sfd eVoting standards and testing (R 23 40)

Sfi Washington State primary irregularities (R 23 53)

SHVfmie Some thoughts on the November 2004 U.S. election process: almost everything in the election process was a potential weak link. (S 30 1:15-17) Numerous anomalies were reported: Palm Beach County logged 88,000 more votes than voters; A Franklin County Ohio machine error gave Bush 3,893 extra votes; Broward County FL balloting for Amendment 4, software counted backwards after reaching $2^{15} - 1$, in signed 16-bit field, in tabulating absentee ballots; numerous reports of screens "jumping" votes from Kerry to Bush; many cases of long lines and long waits only in certain politically skewed precincts, legitimate voters who were disenfranchised, special optical scan pens that were not capable of being tallied, and so on. Many other problems include weak standards and secret system evalutions, partisan oversight, inadequate funding for NIST and Election Assistance Commission, poor training, dirty tricks (S 30 1, elaborating on R 23 58,59); Better standards needed for elections (R 23 59; S 30 1; more in R 23 61)

rfmhiSHPV etc. More on election standards, voting anomalies, and the electoral process (R 23 61,62)

f Preferential voting software breaks down in San Francisco (R 23 58-59; S 30 1:17)

SHPhi Perils of database matching on voter purges (R 23 45; S 30 1:17-18)

SPHhmf, etc. Rebecca Mercuri's challenge at Black Hat Convention (R 23 47); The Mr Micawber Syndrome relating to incidents (R 23 47); Al Kolwicz evicted for submitting real accuracy/logic tests in Boulder County (R 23 48); Obion County Tennessee vote counting problems, failing to count early votes (R 23 49); Sequoia's new paper audit-trail system demo failed to record test votes cast by California State Senators (R 23 50); that Sequoia system used in Nevada in 2004 (R 23 52,53); Maryland rules against opponents of e-voting machines (R 23 53); Robert Heinlein scenario in "The Moon is a Harsh Mistress" (1966): computerized voting with no audit trail or ability to recount (R 23 53) Touchscreen voting spawns glitches (R 23 58)

SHA Ohio: Columbus Ohio voters report fake elections board calls as election 2004 neared (R 23 57); Thieves steal campaign computers with sensitive information in Toledo (R 23 57);

SHf Diebold GEMS central tabulator contains a stunning security hole: two-digit code alters results; this is a real doozer (R 23 52)

SPfff (you-gotta-be-kidding department) Missouri military absentees in 2004 could have absentee ballots scanned, sent by unencrypted e-mail to Omega Technologies (partisan "trusted third party"), which then faxes the printed version to the appropriate precinct! Signed waivers of your privacy rights required. (R 23 52)

S+ California Secretary of State Kevin Shelley (who mandated voter-verified paper trail by 2006) established more stringent requirements for touch-screen machines (R 23 45); Gov. Schwarzenegger signs California paper trail bill into law (R 23 55)

SHhmf etc. Lost records of 2002 Florida vote raise 2004 concern (R 23 46); Alabama 2003, ES&S machines reversed the governor's race, not detected until long afterward! Bev Harris records 51 cases in which voting machines recorded the wrong outcomes, including Wayne County NC (reversed in time); 100% error in Orange County in 1998 bond issue (yes/no reversed) (R 23 51; more on Bev Harris's crusade, R 23 45 [her predictions were fairly prescient])

SHf Multiple security vulnerabilities in Diebold Optical Scan 1.94w used to tally 25M votes in 2004 (R 23 94-95; S 30 4:27-28)

..... **2005 U.S. election events:**

SH Ballots "enhanced" by L.A. City Clerk (R 23 79; S 30 3:37)

mfhH? Seven voting machines under scrutiny in Wayne County PA; 211 votes counted with 163 cast (R 23 90; S 30 4:27)

f,m,h Legal docs expose various risks in routine Diebold maintenance in North Carolina (R 24 06; S 30 6:25)

fmhi Voting glitches from the 7 Nov 2005 election (Joe Hall, R 24 10): San Joaquin County, CA: misplaced memory cartridge; Cumberland County, PA: software error forces recount; Harwinton, CT: Voting machine snafu may lead to challenge; Pasquotank Co., NC: 14-vote gap questioned Lucas Co., OH: State plans to investigate voting chaos; Wichita County, TX: Human errors hamper voting; Montgomery County, OH: 'Human error' creates doubt about phantom votes

..... **2006 U.S. election events:**

Shi EFF sues North Carolina over electronic voting-machine certification (R 24 12)

fmhi? Texas voting recount halted; discrepancies of 20% between count and report (R 24 21)

fm Computer problems with voting system invalidated U.Wisconsin-Madison student council election; then, failed again due to software errors (R 24 23,24)

f Brennan Center study finds many flaws in three vendors' systems (R 24 38)

f Princeton analysis of Diebold Accuvote-TS security (R 24 42); another report (R 24 39)

f More on voting in Ohio (R 24 40); Cuyahoga County report (R 24 43)

SP Avi Rubin's experience as an election official (R 24 42-43); another experience (R 24 44)

Sf Florida's voting system certification inadequate (Rebecca Mercuri, R 24 50, S 32 1)

SPfhi, etc. Bo Lipari's weblog on election problems: an excerpt (R 24 47, S 32 1)

$SfhiV etc. Five U.S. House election results unresolved after 2 weeks: Mexico 1st Congressional district, with a .5% difference; North Carolina 8th Congressional district, with a .025% difference; North Carolina Court of Appeals, with a .24% difference; Williamson County, Texas, the votes each recorded 3 times. (R 24 47, S 32 1) Report blames Denver election woes on flawed software (R 24 52, S 32 1)

Bo Lipari's weblog on election problems: an excerpt (R 24 47); Rebecca Mercuri's analysis of Florida's voting system certification (R 24 50); Report blames Denver election woes on flawed software (R 24 52); Audit finds many faults in Cleveland's 2006 Voting (R 24 65)

$Sfhi etc. Analysis of computerized voting machines in Florida (Arthur J. Byrnes, with PGN comment on Noel Runyan's report Improving Access to Voting (R 24 63); Florida trying to sell off new DREs (R 24 86)

..... **2007 U.S. election events:**

SPfmhi Major summer study produced ten public reports on Sequoia, Hart, and Diebold election systems: California Secretary of State Debra Bowen's Top-To-Bottom Review http://www.sos.ca.gov/elections/elections_vsr.htm (S 32 6:26, November 2007) A one-page summary by Matt Bishop and David Wagner is in the November 2007 Inside Risks column in the *Communications of the ACM*,
http://www.csl.sri.com/neumann/insiderisks07.html#209
See also an excellent analysis by Bruce Schneier (R 24 79); Indications of Sanity? California Secretary of State Debra Bowen likes *paper* ballots (R 25 25)

f$hi Alameda County judge invalidates e-voting results in close ballot measure because Diebold machines were unauditable (R 24 84)

f Ohio's Hamilton Township election result reversed; blamed on ES&S programming error (R 24 91)

SH Netcraft shows Ohio Secretary of State Web site indirecting apparently illegally (R 24 65)

+ Overreliance on voting technology? Paper and other low-tech alternatives (R 24 80); Also, see also Ron Rivest's three ThreeVotingProtocols:
http://people.csail.mit.edu/rivest/publications.html

SPf E-voting predicament: Not-so-secret ballots; time-stamps permit votes to be tracked (R 24 81)

..... **2008 U.S. election events:**

Vfm Florida "total network failure" halts early voting in Palm Beach County primary; voter registration database inaccessible (R 25 03)

MV Ohio vote tampering opportunity? Use PDA and a magnet. (R 24 93)

f Colorado decertifies voting machines (R 24 93)

SHP Election commission laptops stolen in Tennessee (R 25 01)

+ Voting machine usability testing (MIT *Technology Review*) (R 25 04)

SHf Nasty undetectable scanner attack on Diebold AccuVote Optical Scan: AccuBasic malware (R 25 08)

SHf One way not to conduct Internet voting: Democratic Party's Global Primary (R 25 06)

f Arkansas ES&S voting machines flipped race results, cast votes in wrong race (R 25 18)

SPhi NC State voter site exposes voter addresses (R 25 24)

SP Rogue code could skew election system integrity (R 25 21)

fhi Strange Yahoo! Annual Meeting vote count: corrected changes exactly 100 or 200 million votes! (R 25 27)

V Obama's widespread Democratic fundraising overwhelms Federal Election Commision computers (R 25 17)

fhi Risks in Instant Runoff/Approval Voting (R 25 18,19,20-24)

fh Diebold (now Premier) initally blamed on interference with anti-virus software (R 25 29-30), then blamed on software flaw in the GEMS back-end system – which had existed for at least 10 years and could have caused votes to be lost (R 25 30). More generally, critical systems should not have to trust untrustworthy components – but that's reality! (R 25 30,32,33); U.S. Govt effort on malware damage: Aurora (R 25 34)

fm Washington D.C. 9 Sep 2008 primary early results included extra 1542 votes, which later vanished; blamed on defective memory cartridge (R 25 35)

fVSHhi Officials say flaws at polls will remain in Nov 2008 elections (R 25 29)

fVSHhi States throw out costly electronic voting machines (R 25 30,32,33)

Sfhi Thousands Face Mix-Ups in Voter Registrations due to voter registration systems (R 25 40) Sfhi Dan Wallach's analysis of vote-flipping in the Hart Intercivic e-slate systems (R 25 41):
http://accurate-voting.org/2008/10/22/vote-flipping-on-hart-intercivic-eslate-systems/

Sfhi Various reports of straight-party voting anomalies: AES in New Mexico, Alabama, and likely elsewhere (R 25 41)

Sfhi Two-minute time-out on some Diebold/Premier e-voting machines (R 25 40)

SHi Ohio Secretary of State's Web Site Hacked; voter suppression tactics (R 25 40)

SHhi Two reports on deceptive practices in elections (R 25 41); article on voter fraud (not much) and disenfranchisement (lots) (R 25 43)

S+? N.J. officials order paper trail upgrades to voting machines (R 25 51)

SHVf Premier Election Systems (formerly Diebold) delete button for erasing audit logs in GEMS software (R 25 60); Premier admits in CAlifornia hearing that audit logs do not record e significant events (R 25 61)

Sf Fairfax County Virginia voting glitches: $3 + 3 + 1 + 3 = 0$ (R 25 61)

S+- Discussion of 'Security by Obscurity' (R 25 61)

Sf(H?) Sequoia Voting Systems agreed to reveal sensitive system information after DC primaries recorded more votes than votes (R 25 72); Sequoia e-voting machines manipulated without any insider information (R 25 76)

..... **2009 U.S. election events:**

+- NY voter voted absentee, then died before the election; ballot ruled invalid, resulting in a tie (R 25 68,69)

..... **2010 U.S. election events:**

$SHI Clay County Kentucky insider election fraud trial resolution: Jury convicts all five defendents in vote-buying and election-rigging indictments, including a former circuit court judge; long-term election fraud in 2002, 2004, 2006 (Bill Estep, 25

Mar 2010) (R 25 76-77)

..... **2011 election events:**

Indiana Secretary of State indicted for seven felony counts including voter fraud (26 37)

Colorado Saguache County election fraud case goes to grand jury (26 37)

Estonian voting system flawed (R 26 38)

Risks of outsourcing elections in the Netherlands (R 26 34)

Risks of Oscar voting process (R 26 34); Oscar e-voting problems worse than feared (R 27 13); Rush Holt on Oscar Voting (R 27 17)

India: system failure impedes voting on a constitutional amendment: 169 votes recorded as 149 (R 26 40)

NY Assembly candidate effectively shoots himself in the foot, defeated by his own law (R 26 36)

Risks of playing computerized poker, by analogy to voting! (R 26 38)

Diebold repairman accused of loading fake money into ATMs (R 26 46)

New Court Filing Reveals How the 2004 Ohio Presidential Election Was Hacked (R 26 50)

National Popular Vote Returns in California legislation (R 26 50)

New Jersey Cumberland County primary election cover-up, destroyed evidence, Sequoia misreporting (R 26 59)

Alleged Absentee Ballot Fraud in Florida (R 26 60)

E-voting remains insecure, despite paper trail (R 26 60)

Americans Elect first voting – and it is broken! (R 26 63)

An experience with online elections (R 26 63)

Software reliability testing for the space shuttle – and elections (R 26 69)

Risks and aircraft control – how does voting fit into this? (R 26 69,70)

Has America's Stolen Election Process Finally Hit Prime Time? NAACP petitioning the United Nations over disenfranchisement; Justice Department calls South Carolina's voter ID law discriminatory; Election Assistance Commission finds voting machines programmed to be partisan (R 26 70)

..... **2012 U.S. election events:**

E-voting system awards election to wrong candidates in Florida village; Sequoia (R 26 78)

Small coding mistake led to big Internet voting system failure (PGN, R 26 73)

Internet voting redux: felony case in New Mexico; Tory Party in Canada robocalls (R 26 75); Internet Voting a 'disaster in waiting' (R 26 75); DHS Cybersecurity Chief criticizes online voting (R 26 76)

Board of Elections does nothing as hundreds of Bronx votes go missing (R 26 75)

DDoS attack disrupts Canadian political party leadership vote (R 26 77)

Doug Jones and Barbara Simons, "Broken Ballots: Why Your Vote Won't Count" (R 26 77)

Real solution: election day registration? or eliminating of voter the need for voter registration(R 26 81)

NJ mayor hacks oppositional website (R 26 85)

Risks from computers in elections? 90% of U.S. electronic systems can be accessed remotely without public awareness! (R 26 80)

Internet Voting Still Faces Hurdles in U.S. (R 26 86)

"Why voting machines still suck" (R 26 85)

The Power of Individual Voters to Transform Their Government (R 26 81-84)

Stuxnet Parallels to Voting Security (Rebecca T. Mercuri, R 26 91)

Major Snafu in New Zealand Election was 'Human Error' (R 26 92,93)

Internet Voting Systems at Risk (R 26 96)

More on election risks: Brennan Center study outlines how officials can cure election design defects, save votes (R 26 96)

Tracking Voters with 'Political Cookies' (R 26 91)

Washington State wants to register voters via Facebook (R 26 93,94)

How to avoid an Elections-Ontario-style data-breach fiasco (R 26 94)

Elections Ontario data loss victims could top four million (R 26 98, 27 01)

Overseas voter receives two dangerous spam messages, titled "Your Ballot is Now Available" (R 27 03)

No Fundamental Right to a Secret Ballot? (R 27 03)

Doug Jones: guest editorial on voter registration (R 27 01)

Roles of governments in election oversight and accountability; PGN views before and after the 2012 election (R 27 06, S 38 1)

Elections and Hurricanes: After the Aftermath of the Math (R 27 08)

Changing voter registration addresses in WA and MD: Alex Halderman's demos (R 27 05)

Numerous voting machines count the wrong candidate? (R 27 05)

Covington anomaly: mistaken attribution: Obama-Biden listed as Republicans (R 27 08)

Virginia city's ballot listing Obama as Republican, Romney as Democrat (27 08)

Paper prophets: Why e-voting is on the decline in the U.S. (R 27 05)

NJ e-mail voting article on Freedom-to-Tinker: LtGov issues misleading/erroneous directive to voters after the huge 2012 hurricane (Andrew W. Appel (R 27 06)

Last-minute fiddling with voting machines in Ohio; adding untested/uncertified components; ES&S experimental patches (R 27 06,08)

Huffington Post blog on Recount Roulette (R 27 06)

Barbara Simons and Douglas W. Jones, Internet Voting in the U.S., *Comm. ACM, 55,* 10, pp. 68-77, October 2012 (R 27 06)

Error and Fraud at Issue as Absentee Voting Rises (R 27 04)

Romney and Obama campaign websites leak personal information (R 27 06)

Two items from Thom Hartmann and Sam Sacks, The Daily Take blog ((R 27 09):

1. Anonymous, Karl Rove, and 2012 Election Fix? Unless Anonymous presents evidence to support its claims that Rove planned to steal the presidential election for the GOP, its work will be relegated to the status of Internet antics – and the dustbins of history.
2. Why Anonymous' Claims about Election Rigging Can't Be Ignored, Given historical trends, why is it inconceivable to some that Karl Rove may have tried to electronically rig the election of 2012 in three states?

ORCA, Mitt Romney's high-tech get-out-the-vote program, crashed on Election Day (R 27 09); "Unleashed! Project Orca, the campaign killer whale" (R 27 09)

What's in a vote? Only your entire personal profile: "All politics is personal' is truer than ever in the big data era." (R 27 05)

Summary of experiences on the 2012 election, by Douglas W Jones:

I spent election day 2012 monitoring incident reports from polling places around the country. In doing this, I observed a number of patterns that seem worthy of note... Well worth reading. (R 27 08,09); Election day experiences, by Jeremy Epstein. Well worth reading. (R 27 08)

Unusual risk for US voting machines: a spider in Rehoboth MA (R 27 08)

51-vote margin in Alaska state senate race prompts recount (R 27 10)

Estonia gets to vote online. Why can't America? (R 27 08); 3 reasons why Estonia's e-voting is irrelevant to the U.S. (R 27 09)

Wall Street software failure (1 Aug 2012 Wall Street glitch that cost Knight Capital $440M), & relationship to voting; one of eight servers incorrectly upgraded (R 27 57)

..... **2013 U.S. election events:**

12 Common Election Security Myths, Not surprising to RISKS readers, but pithy. (R 27 15)

How much does a botnet cost? and what about Internet voting? (R 27 18)

Election screw-ups in Kenyan election: "everything that could go wrong did." (27 20)

Hacking the Papal Election, excellent item with interesting lessons, by Bruce Schneier (27 20,21)

Cyberattack on Florida election raises questions (R 27 21)

Tom Coburn Amendment limiting National Science Foundation political science research funding passes U.S. Senate (R 27 21) [Some research is excluded, although something related to election integrity might actually fall into this category. PGN]

US election fraud "because page after page of signatures are all in the same handwriting," and that nobody raised any red flags "because election workers in charge of verifying their validity were the same people faking the signatures." (R 27 27)

Online ballot fraud in Miami (R 27 35)

Doonesbury, 10 Mar 2013: Q: It's always a pleasure to welcome to the show Jim 'Honest Man' Andrews. So, Jim, Trying times for your GOP pals?

JA: Well, we've obviously had to ask some tough questions, such as, is voter suppression alone enough for us to win future elections? Are gerrymandering, roll purges, ID laws, registration hurdles, disinformation, early voting cutbacks, unequal resources and caging lists **really** getting the job done? Clearly not! It's time to get serious and double down with state-by-state **election rigging.**

Q: So there's been some soul-seaching?

JA: Hell, yeah! We can't just keep doing things the same old way.

Asmussen in the *San Francisco Chronicle*, *The Excess Democrat*, 15 March 2013: Close Pope Vote Controversy: Pope Francis announced – or is he?

Karl Rove Claims Ohio Still Not Decided on Pope. [...] Romney won't concede to Bergoglio.

Reclaiming the American Republic from the corruption of election funding (R 27 25)

Insider Threats, FBI NCIC and elsewhere (R 27 37)

Online ballot fraud in Miami: bogus ballot requests for 2,046 Miami-Dade voters (R 27 35)

Our Founding Fathers wisely recognized the risks in voting (R 27 52, critiques (R 27 53,55)

Surveillance State Puts U.S. Elections at Risk of Manipulation (R 27 60)

Judge Posner recants his previous ruling on the lack of evidence that Voter ID would cause any disenfranchisement. He now writes that he was *guilty* of upholding a law "now widely regarded as a means of voter suppression rather than of fraud prevention.' (R 27 56)

Voter ID laws: Voter Suppression's New Pretext (R 27 61)

Virginia Voter purge list would have incorrectly disenfranchised about one-third of the people on the list (R 27 56)

Diebold Charged With Bribery, Falsifying Docs, 'Worldwide Pattern of Criminal Conduct' (R 27 58, two items not necessarily election related, but noted here because of Diebold's past involvements in voting – including the five convicted felons working in their voting system subsidiary)

@Internet gambling: Play at your own risk [resembles Internet voting!] (R 27 60)

Chinese hackers attacked crucial U.S. government election website (CNN, R 27 64)

..... **Other election items in the U.S.:**

- Drunks have full disclosure for breath-measuring software; voters do not (R 24 13,14); subsequent court ruling denies disclosure

Sfde Voting machine engineer sues, alleges machine design flaws (Bev Harris via Susan Marie Weber, R 22 59, S 28 3:10)

S(H?) Senator Frist's on-line poll on Iraq removed, claiming tampering (R 22 62, S 28 3:10-11)

Sfm Electronic voting: computer reliability aspects (R 23 11)

h Missouri legal decision questions automatic ballot counting (S 13 2)

m Computer miscounts votes on a May 1988 StarWars (Strategic Defense Initiative) Dellums-Boxer amendment in the House of Representatives to kill SDI funding (358 ayes for the amendment, & 237 nays, which added up to much more than 435!!! A manual recount showed the amendment was actually *defeated*, 299 to 118.) (S 13 3:4)

Electronic voting on CAFTA in the U.S. House: decisive pledged *no* vote not recorded because Congressman's "*electronic voting card failed*." (R 23 96; S 30 4:28)

*h Computer data-entry error in vote tallying (2828, not 28) (S 13 4)

f/h? 8 Durham NC precincts had correct totals counted twice (S 15 1)

f/h? Virginia governor's race also had totals counted twice (S 15 1)

h Undeleted leftover test data reverses Yonkers NY election results (S 15 1:12)

rf Manual districts required live fudging of Michigan election system (S 15 1)

f Another experience with voting machines in Fairfax County VA (S 15 1)

SHAO Absentee ballot fraud detected in Colorado since 1984 (S 18 1:18); 11 indicted in Costella Cty CO; 2536 voters with pop. 2278 (R 15 41)

fh Other risks in unaccountable computerized elections (S 19 1:6)

m CMU elections suspended because roster database system was down (S 19 2:8)

SH Cat registered as voter to show risks (no pawtograph required) (S 20 1:16)

m Static electricity affects ballot counting (S 22 1:18)

VSH San Jose State voting computer crashes, "fixed". (S 18 1:18)

$f NY City electronic voting machines still unaccepted after spending $20M (R 19 06) (Note: 1940s lever machines still in use in 2000 election!)

+? A little humor: use of "*fixed*" vs "*repaired*" (S 18 1:18)
m Computer disk crash gives ballots with 2 candidates omitted (S 20 1:17)
hfm 1995 San Francisco elections (S 21 2:19)
mfie Problems in Montgomery County election, 7 Nov 1995: anti-moisture spray effects, delays, bad operator initialization, phantom votes (R 17 50,56)
h Risks of global editing in voting context: name 'Pollack' changed to 'Turnoutack' (S 14 5)
Sm A. Appel and S. Govindavajhala, "Using Memory Errors to Attack a Virtual Machine, it IEEE Symposium on Security and Privacy, 2003. (R 23 48) [Not specific to voting systems, but relevant!]
SHf Washington voting for state quarter design hijacked by computer mischief (R 24 24)
SHfhi Stolen Votes and Elections: see Richard Hayes Phillips, Witness to a Crime: A Citizen's Audit of an American Election, Canterbury Press, Rome NY, March 2008, ISBN 978-0-9798722-3-5 (R 25 39)

..... **Internet and remote voting:**

Internet voting systems are potentially even riskier than electronic voting systems, especially if you (and everyone else) can vote from anywhere in the world on a PC with inadequate security using code that you have downloaded from some supposedly trustworthy site on the Internet. The California Commission studying Internet voting suggested that the risks were too high for such a balloting method to be used, although it considered using such a scheme under carefully controlled physical surroundings. See http://www.pfir.org/statements/2000-02 for a discussion by Lauren Weinstein of risks in Internet voting, and later by PGN, Rebecca Mercuri, and Lauren Weinstein (S 26 2:, R 21 14), and others (R 21 13-14).
SPf More on risks in Internet voting: NSF report (R 21 28-30,32,34)
rSH Garciaparricide in 1999 All-Star balloting? 25,259 on-line votes cast by a Perl devotee; 22-vote max detected: same e-mail address; needed IP spoofing (R 20 47-48)
SAOf Vote early, vote often for your favorite California quarter design – via the Internet (R 22 49)
SP 2000 Arizona Democratic primary allows Internet voting (R 20 83) and more people voted that way than all votes in the 1996 election. Needs for privacy and anonymity difficult to meet (R 20 84); crypto for voting (R 20 85);
fSH Problems with Australian ABC TV show online voting scores (R 21 06; S 26 1:33)
f? College election.com online voting glitch (R 21 28)
SH Large-scale fraud in Dutch election choosing new name for merged towns of Leidschendam and Voorburg (S 27 1:16, R 21 70)
SPH E-voting and international law (S 27 2:11-12, R 21 81)
SH 1998 People Magazine Most Beautiful People poll winner Hank the Angry Drunken Dwarf! 1998 Kesmai employees instructed to vote early vote often for Kesmai game award (S 27 3:18, R 21 90)
SH Microsoft "astroturf" campaign stuffing an e-ballot box (S 27 2:12, R 21 87)
SH Vivendi suspects electronic vote fraud (S 27 3:18, R 22 05)
SP UK tries remote voting in Liverpool and Sheffield in May 2002, using SMS (R 21 90, R 22 03,05); Web voting in Wybunbury and Maw Green (R 22 04)
Sf Internet voting: in the Netherlands (R 23 48,55); in Canada (R 23 53); in Switzerland (R 23 55); Internet voting contrasted with voter-verified paper audit trails (R 23 55); "Internet voting should not be considered secure until the electoral authorities are confident enough to give immunity from prosecution to anyone hacking the election, and to offer a substantial prize for anyone who can produce evidence that they have attacked it successfully." Martyn Thomas (R 23 56; comments 58,59)
SHf DC Internet voting trial intermediate results (R 26 18); later results: easily hacked ballots, modified software, unencrypted IDs and PINs, accessible routing infrastructure and unprotected security cameras (R 26 19)
fm, etc. National Academies/CSTB report on Electronic Voting, 2005 (R 24 04)

..... **Other Election Problems:**

f Quebec election prediction bug: wrong pick [1981] (S 10 2 pp 25-26, 11 2)
Sf Calgary Online student election; software flaws mix up voters, block some from voting (R 23 29)
S+/- Electronic voting in Canada: intelligent report on Access, Integrity, and Participation (R 23 53)
$Sfhim Electronic voting blamed for 2006 Quebec municipal election 'disaster' (R 24 46, S 32 1)
fh Votes and candidates misaligned in Calgary 2001 election through misalphabetization of d'Arras as Arras (S 27 1:16, R 21 70)
$f Votes lost in Toronto (S 14 1, 14 5); Toronto district finally abandons computerized voting; year-old race still unresolved (S 15 2)
SHm SQL Slammer DDoS attack disrupted the 25 Jan 2003 NDP leadership convention voting in Toronto (election.com) (R 22 59)
hfi Alberta vote-by-phone fiasco (S 20 2:8)
- Canadian law disenfranchises one million people who do not have street names and numbers; later rectified (R 24 88,90)
$SHPfhi NEDAP, the Dutch voting machine reprogrammed to play chess! (R 24 61,62); Yet another risk of voting computers: shoulder-surfing in the Netherlands (R 24 60); Dutch government suspends computer voting (R 24 84); E-Voting banned by Dutch government (R 25 17)
$SPfhi Opposition to e-voting grows in France (R 24 62); French elections bring down foreign Web sites (R 24 65)
SH Election fraud in the UK? (R 21 50,51)
SP(+/-) UK publishes security requirements for e-voting (Cuddy and Mercuri response, R 22 40)
SH BBC Website article on risks with e-voting: Yet every time we get to look inside a piece of software or a security system that has been developed in secret, and built on the top of a compromise between acceptable levels of risk and the cost of doing it properly, we find holes and errors. (R 22 83)
SP+ The shape of elections to come in England: paper ballots continue, electronic voting considered (R 22 95)
f UK Elections: Web and text vote trials dropped (R 24 03; S 30 6:25)
SPf E-vote 'threat' to UK democracy (R 24 71,84)
Software Error sends out wrong ballots for the UK general election (R 26 04)
+? Church of England has certified software for its elections (S 17 1)
SP Electronic voting in Ireland in spring 2002 (S 27 3:16, R 21 93)
Sf Irish Labour Party urges suspension of e-voting until flaws addressed (R 23 01)

Sf Ireland scraps electronic voting plans (R 23 35) and The Netherlands accepts the same technology despite secret evaluation (R 23 39)

S$ Ireland E-voting an 'unmitigated disaster'; Dutch, Germans abandoned same system (R 25 61)

SHO Colombian vote count delayed by DoS attacks (R 25 97)

SHfm Future of e-voting in doubt in Japan: reliability, credibility, other concerns (R 25 05)

mH? Philippines election power failure affected only the area of the computer center; on reboot, the computer immediately declared the underdog to be the winner (S 10 3:8, *The Washington Post* 10 Jun 1985)

$SPfhi Philippine Internet voting system challenged (R 24 64)

fSAP New Zealand electoral Web site for registering and updating; authentication consists of full name and date of birth! (R 21 41,44)

SAfe Electronic voting systems: more on system integrity and accountability (R 22 66); New South Wales forced to hand-count poll result after inadequately tested computer upgrade (R 22 69); crash of Will County, Illinois, Web site for tallying and publishing election results after being deluged with bogus requests (R 22 69)

h 6000 moved Australian voters lost from computer election rolls (S 14 6)

fm DB and WWW on one machine mess up 2001 Australian Capital Territory election (S 27 1:15, R 21 71-72); see earlier anticipation (R 21 67)

fh Risks with automated counting of preferential ballots in 2001 Australian Senate elections (S 27 1:15-16, R 21 77)

f/h/H? Computer error in Cape Town election affects results (R 18 17)

h Read-ahead synchronization glitch and/or eager operator causes large data entry error, giving wrong winner in Rome Italy city election (S 15 1)

f German parliament election: program rounds up Greens' 4.97%, but 5% needed to count; corrected error gives Social Democrats one-seat majority (S 17 3)

h Wrong result in German Bundestag elections due to FAX of double-sided results pages (R 20 04)

f Swedish election results delayed by computer errors, 140% returns (S 17 1)

$h Mis-set parameter invalidates Oslo parliamentary election (S 19 1:5)

S? Tampering blamed for lost Peruvian candidacy signatures (S 20 1:18)

SH Electronic ballots eschewed in India due to rigging fears (S 16 3)

SH Security Analysis of India's Electronic Voting Machines (Halderman et al., R 26 05); ensuing debate at EVT/WOTE 2010 (part of USENIX Security) (R 26 14); Subsequent detailed article by Alex Halderman (R 26 20), and Trust the Vote – not! (Rebecca Mercuri) (R 26 20)

Incidentally, the EVT/WOTE 2010 workshop also had a highly relevant talk by Jeff Burbank (author of *License to Steal*) on insider misuse in the gaming industry R 26 14). See also British Columbia Online Casino taken offline within hours (R 26 14). For those who believe that gambling oversight is orders of magnitude better than voting, they are both inadequate! [PGN]

Sfi Bulgarian parliament e-voting authentication based on member's weight (S 27 2:12, R 21 88-89)

S Injured technician's inability to provide the password delays vote count in Mali (S 27 3:18, R 22 05)

SHf Olympics' ice skating judging rigging leads to strange proposal for nonaudited electronic randomized voting scheme! (S 27 3:18, S 21 92)

m Mice chew up paper ballots in Bangkok election (S 27 3:18, R 21 98)

h How to rig an election by clever redistricting (R 22 05)

hi Brazilian computer blocked twins, like-named siblings from voting (S 12 1) (This problem may still have existed in 1994, unless new report was old.) (R 16 45)

fe Voting machine inflexibility causes postponement of Brazil's standard time cutover from daylight time because law requires 8 to 5 voting (R 22 33); Brazil modified 3% of their machines to use the Mercuri Method (R 22 24) – see article in November 2002 IEEE Spectrum.

SP Nigerians to use fingerprint scanning technology in elections; lower-level officials hoard registration forms (R 22 30)

SHf Phantom voting in Israeli Knesset; no security (R 22 76,79)

SHPhfi Secret-ballot e-voting in Tel Aviv University (R 23 11)

SM Cosmic ray blamed for failure of 2003 Belgian voting system adding extra 4,100 votes! (R 23 46, with discussion R 23 47)

S+ Shm Venezuela postpones election due to computer problems (R 20 89); Voter-verified e-voting in Venezuelan election deemed sound (R 23 52); Venezuela constitution bans recounting of votes ... (R 27 25)

SH Election candidates' Web pages hacked during Finnish election (R 23 58)

SP Voting machines in Ireland and The Netherlands (R 24 36, S 31 6:33-34)

Sfhi Finnish E-Voting System Loses 2% of Votes (R 25 43); usability issue (R 25 54)

Vfm Israeli Labor primaries postponed: electronic systems fail (R 25 47)

In Malaysia, online election battles take a nasty turn (R 27 28)

'Ultra-secure' online primary in France disrupted by multiple and fake voting (R 27 32)

Azerbaijan releases election results – before the election started (R 27 53)

..... **Related technology problems**

@+? Use of 'unpredictable auditable random numbers' in casino/gaming systems, possibly relevant in elections? (R 22 57)

@S? New cell phones well suited to wireless gambling (resembling the voting machine situation?)! (R 22 55)

h? Counting error on SMS poll evicts wrong contestant from 'Big Brother'; caught in audit! (R 23 46)

SP+ Ron Rivest's ThreeBallot paper approach, eschews cryptography, hinders vote selling (R 24 44); Rivest-Smith three approaches to reducing electoral fraud (R 25 02) http://people.csail.mit.edu/rivest/publications.html

Sfe Voting machines with incredibly poorly written software (R 26 19)

SHO Hacker almost derailed Mandela election in South Africa (R 26 19)

Sf Wall Street software failure and its relationship to voting (R 27 57)

..... **More Recent Items, not yet categorized, chronological**

Chinese hackers attacked crucial U.S. government election website (CNN, R 27 64)

Oregon voter registration database hacked, then offline for 10 days
Estonian Internet voting system (R 27 90,94))
Hack the Vote: The perils of the online ballot box; over 30 states allow some kind of Internet voting. (R 27 96)
New bugs found in software that caused Heartbleed cyberthreat; Scytl vulnerable despite claims (R 27 96)
CyberBerkut attempt to alter Ukrainian election (R 27 96)
Iowa parties ponder Internet voting (R 27 96)
Dan Wallach's talk at NSF on STAR-Vote: A Secure, Transparent, Auditable, and Reliable Voting System (R 27 93)
Voting in Australia (R 27 94)
Hong Kong electronic voting system cyber-attacked (R 28 04-07)
[Also noted above in security, but relevant here:] How thin is the line between hacking online polls and hacking online elections? (R 28 07)
Travis County Developing Electronic Voting System With a Paper Trail (R 28 09)
Why Internet voting is a very dangerous idea (R 28 23,24); [We've been around this one for many years, but it's like whack-a-mole – it keeps popping up again. PGN]
Human cryptography is the key to online voting (R 28 18,19)
Los Angeles proposes voter lottery! You Just Might Win $50,000 (R 28 18,20,21)
Online voting hazards (Barbara Simons, R 28 33)
Internet voting hack alters PDF ballots in transmission (Zimmerman/Kiniry R 28 36)
Electronic Election Fraud Apparent in Brazil; Done in America Today? (R 28 37)
Australia rules out e-voting (R 28 37)
Risks of assuming votes are accurate (R 28 33-36)
Absentee ballot of deceased Boston mayor not counted (R 28 34); No risk of overturning Senator's election due to dead voters (R 28 35)
Election polling information via Twitter? (R 28 37)
Could e-voting be on its way in the UK (R 28 44,45); UK Commission recommends digital voting by 2020 (R 28 47) [They are clearly not reading RISKS. PGN]
E-voting in Australia (R 28 55)
Can Open-Source Voting Tech Fix the U.S. Elections System? [Maybe we need a Can-Open-er to open up the proprietary systems? PGN] (R 28 51-53)
Australia's iVote subject to FREAK? (R 28 57); Australia's iVote is busted already (R 28 57)
Virginia decertified WinVote voting system (Jeremy Epstein, R 28 59)
WSU statistician sues seeking Kansas voting machine paper tapes (R 28 59)
Australia government attacks researchers who reveal online election flaws (R 28 59)
Computer scientists use Twitter data to predict UK general election result (R 28 62,64)
New incredibly cumbersome online voting system: "Maybe Online Voting Isn't A Pipe Dream After All." (R 28 66)
House of Discards: Wikipedia pre-election edits (R 28 66)
Online election hacking – long history in Central America: Columbia, Costa Rica, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Venezuela (R 29 46); but elections don't have to be online to be hacked (R 29 47)
55-million Philippine voters' personal information exposed (R 29 48); compare this with the breach of 93.4-million Mexicans' data noted above.
OkCupid study reveals the perils of big-data science: 70,000 online dating-site users' very personal info released (R 29 53)
Repubs hijack U.S. Election Assistance Commission (R 29 45)
Bucking the trend on voting rights: VA restores more than 200,000 people having completed felony convictions. (R 29 48)
Hackers disrupt Russian Internet Primaries (R 29 55)
What you need to know about election apps and your personal data: Presidential primary apps can gather a lot of information and may expose sensitive data. (R 29 49)
Side comment on the Alaska K-12 test item above: if they cannot get that kind of system right, what should we expect for Internet voting? (R 29 45)
Andrew Appel TEDx Talk: Internet Voting??? (R 29 47)
Voter ID laws may have actually increased the likelihood of voter fraud by hackers (R 29 51)
Republican National Convention eschews use of electronic voting at their convention; cybersecurity fears lead to paper ballots (R 29 50)
Whistleblowing overshadowed when SQL injection unauthorized access. Florida man charged with felony after accessing county election supervisor's computers. (R 29 52-53)
Dilbert and voting machines (R 29 50)
Russia hacking into US politics (PGN, R 29 64)
Why Online Voting is a Danger to Democracy (David Dill, R 29 56)
Online petition for second EU referendum may have been manipulated: massive number of bogus non-UK signers, including 39,000 supposed residents of Vatican City (population 800) (R 29 59)
London Mayoral election count resorted to spreadsheets manually querying a bug-stricken database (R 29 57)
How to hack an election in seven minutes (Andrew Appel, R 29 67)
EPIC, Verified Voting, Common Cause release report on ballot secrecy (R 29 70)
California Governor Jerry Brown signed a bill that permits voters to take selfies with their completed ballot (PGN, R 29 81)
The Computer Voting Revolution Is Already Crappy, Buggy, and Obsolete: Memphis election had numerous votes that were never counted, mostly from precincts with heavy concentration of black voters. The Diebold GEMS election management system failed to detect this. (R 29 80)
Follow-up on how to hack an election in seven minutes (R 29 68,69,71); Hacking elections is easy! (R 29 74); Undetectable election hacking? (R 29 82,83); We should be worried about the hacking of electronic voting machines (R 29 74); Sowing doubt is seen as prime danger in hacking voting systems (R 29 77); The DNC hack shows how we've dropped the ball on cyberdefense (R 29 75)
U.S. government officially accuses Russia of hacking campaign to interfere with elections, including by hacking the computers of the Democratic National Committee and other political organizations. (R 29 82)
Gene Spafford: Many hurdles preventing emergence of online voting (R 29 82)
Russian hacking of Democratic National Committee accounts was wider than believed, compromising private e-mail of more than

100 party officials and groups (R 29 68); Julian Assange blames a DNC staffer for the leak to WikiLeaks (R 29 68); Hacker Releases More Democratic Party Documents (R 29 69); New documents released from hack of the Democratic Party, attributed to Guccifer 2.0. (R 29 77)

Russian hackers reportedly targeted voter registration systems in Illinois and Arizona. (R 29 73); Bob Sullivan interviewed Harri Hursti on this topic and more (R 29 81)

Colin Powell, in Hacked Emails, Shows Scorn for Trump and Irritation at Clinton (R 29 77); After Colin Powell's hacked emails, am I next? (Henry Baker, R 29 77)

FL state election officials deny problems even as databases are hacked; Congressman Joe Garcia's former chief of staff will head to jail for orchestrating a fraudulent, online absentee-ballot request scheme during last year's election. (R 29 73)

Voice pitch and voting patterns: how voice pitch influences our choice of leaders (R 29 74)

Hackers had a chance to hamper voting by deleting records: In June, attackers managed to steal administrative login credentials from a U.S. county official. (R 29 74)

Emailgate: How media mistakes let AP create a fake identity for Hillary Clinton (R 29 68)

Closely Watched Ballots: risks of poll observers (R 29 72)

Hacking the Vote: the Security of Our Election Systems (R 29 69,70)

The Success of the Voter Fraud Myth (R 29 78)

Cyberprotections contemplated for U.S. election systems (Mark Rockwell, R 29 67)

Statistical study of voting results: significant disparities between Dem primary and Dem exit polls? 10% in one case (R 29 69)

Austrian presidential election postponed, revote required; inadequate glue code on ballots (R 29 76)

Chemistry group throws out election results after fears of vote rigging (R 20 71)

Which Way Do you Vote? Facebook automates determination of your preferences (R 29 72)

Donald Trump's Lack of Respect for Science Is Alarming (R 29 70)

Inside Facebook's (Totally Insane, Unintentionally Gigantic, Hyperpartisan) Political-Media Machine (R 29 73)

For the Debaters: What Shall We Do About the Tech Careening Our Way? (R 29 78)

Squirrels and voting: the former took down the latter (Mark Thorson, R 29 90) Election Assistance Commission (agency in charge of U.S. Election standards and best practices) was hacked. (R 30 03)

Europe braces for Russian hacking in upcoming elections (R 30 01)

Spread of Fake News Provokes Anxiety in Italy (R 29 96)

Undetectable election hacking? [Extensive ongoing discussion] (R 29 84-90); Australia has begun registering voters automatically. (R 29 88,89); German voting system, for comparison: registration implicit in dwelling; voting cards; paper ballots (R 29 88,90)

Fake News Expert On How False Stories Spread And Why People Believe Them (R 30 01)

'Fake News' gives new meaning to 'No news is good news'; Long list of media items (R 29 93); More on election integrity: we need paper audits (R 29 94) – but that's not enough (R 29 95); Russian propaganda effort helped spread 'fake news' during election, experts say (R 29 94,95); Did Russian Agents Influence the U.S. Election with Fake News? (R 29 95) Enough is Enough (R 29 94); According to Snopes, Fake News Is Not the Problem: blame the media (R 29 94);; Mr. Trump's Lies About the Vote (NYTimes editorial, R 29 95); Inside a Fake News Sausage Factory: 'This Is All About Income' (R 29 95); Trump's presidential hires and advisors own a hell of a lot of fake news sites (R 29 95); Fake News and the Internet Shell Game (R 29 95); How The 2016 Election Blew Up In Facebook's Face (R 29 94) Why Trump and Fake News are Putting the Pressure on Facebook (R 29 95); How Fake and False News Distort Google and Others (R 29 95);

On the CIA assessment: Russia intervened in the 2016 election (R 30 01); Russia hacking the DNC (R 30 01)

The Perfect Weapon: How Russian Cyberpower Invaded the U.S. (R 30 01)

Google, democracy, and the truth about Internet search (R 29 96); Tech companies target online terrorist propaganda (R 29 96); Big risk in nomenclature: fake news vs lies! (R 29 96); Fake news (R 29 96)

Russian Hackers Launch Targeted Cyberattacks Hours After Trump's Win (R 29 91)

Russian Hackers Faked Gmail Password Form To Invade DNC Email System (R 29 86); Private security group says Russia was behind John Podesta email hack (R 29 87); Interview with Charles Delavan on Podesta's e-mail (R 30 02)

Why Russia Is Using the Internet to Undermine Western Democracy (R 29 96); CIA assessment: Russia intervened in the 2016 election (R 29 96); Trump supporters bought bogus Obama conspiracy theory peddled by Fox Business (R 29 96)

(Old item:) Whoever would win the White House, This Year's Big Loser Is Email! (R 29 87)

Slate Interview with Charles Delavan (the person who assured John Podesta that a phishing email attack that stole Podesta's Gmail password was 'a legitimate email'). Very strange story resulting from *The New York Times* quoting Delavan as saying he recognized it was a hoax, but meant to type 'illegitimate'! (R 30 02)

Researchers just demonstrated how to hack the official vote count with a $30 card (R 29 91)

Election Math: detailed analysis of polling data with actual returns, since 2004 (R 29 92); CompSci Prof. Halderman: Want to Know if the Election was Hacked? Look at the Ballots (R 29 94); Election Audit in Wisconsin: Wisconsin Elections Commission receives two Presidential election recount petitions (R 29 94)

More than 21,000 ballots in Colorado were not counted because of signature discrepancies, ID problems. Almost 1% of all ballots cast. First time for mail-in ballots. (R 30 02)

Don't like a political blog? Go after their advertising revenue (R 30 01)

Hacking elections? 'Merrilly' we loll along!?? Denise Merrill: "I think it probably is the least likely [to] see something be rigged because I can't even imagine how you could do that." [This person clearly needs to be reading RISKS! (R 29 85)

Hacking elections, the CIA, Russians, Chinese, and more: Jack Goldsmith (former Justice official) says U.S.'s own electoral meddling leaves little room for complaint. [Very candid item, too long for *SEN*.] (R 29 85); Election rigging? (R 29 87)

Serious Computer Glitches Can Be Caused By Cosmic Rays; bit flip added 4,096 extra votes in 2003. (R 30 15)

DHS: elections are critical infrastructure (R 30 07)

Obama Strikes Back at Russia for Election Hacking, tossing out 35 intelligence operatives (R 30 06)

Voter fraud? (Probably not what the President expects.) Tom Bonier reported that someone with the name and birthdate of Steve Doocy (Fox News Co-host of Fox & Friends) apparently voted in both the Republican primaries in Florida and New Jersey. (R 30 11); Several top republicans (including Tiffany Trump, Steve Bannon, Steven Mnuchin) are registered in more than one state. That's not illegal, although Bannon apparently never lived in the house in Florida at which he was registered. That's illegal. (R 30 12); Trump's Vote Fraud Guru is Registered in Three States: Gregg Phillips, whose unsubstantiated claim that the election was marred by 3-million illegal votes was tweeted by the president, was listed on the rolls in Alabama, Texas and Mississippi, according to voting records and (R 30 13)

Recounts or no, U.S. elections still vulnerable to rigging, disruption: Most Pennsylvania voters used antiquated machines that store votes electronically, without printed ballots or other paper-based backups. There was basically nothing to recount. (R 30 05)

Russian hacker group accused of interfering in the 2016 election updates its 'Xagent' malware for Macs, steals passwords, screenshots, (R 30 14)

Dutch election will be counted by hand: The Netherlands reverts to paper ballots and hand counting to thwart hackers. (R 30 14-16)

France blocks 24,000 cyberattacks amid fears that Russia may try to influence French presidential election (R 30 08)

Will Blockchain-Based Election Systems Make E-Voting Possible? (R 30 10)

Forged Racist Emails Cause Stir at University of Michigan – perhaps related to voting audits (R 30 14)

Aging voting machines: an old risk (R 30 18)

Russian cyberhacks on the U.S. electoral system far wider than previously known (R 30 33)

Securing our election systems? (Slate, R 30 32)

Russia's alleged election interference - suspects and investigators (R 30 26); Leaked classified NSA document released by The Intercept (although redacted) details Russian military intelligence hacking before the election (R 30 31); Obama's secret struggle to retaliate against Putin for hacking in 21 states to influence the election (R 30 34)' Europe has been working to expose Russian meddling for years: Official and unofficial groups use a variety of tactics to counter fake news promulgated by Moscow. (R 30 35)

Brexit voter registration site may have been hacked by a foreign cyber-attack, MPs say in report (R 30 24)

Critics see signs of interference in French vote: state-run Russian news operations disperse slanted reports (R 30 25); Macron condemns 'massive' hacking attack in French election (R 30 28); Twitter bots are being weaponized to spread information on the French presidential campaign hack. 5% of the accounts tweeting #MacronGate make up 40% of Tweets. (R 30 28);

How fake news and hoaxes have tried to derail Jakarta's election: In Indonesia, the rise of fake news, hoaxes, and misleading information online has cast a pall over an already bitterly divided election in the capital, Jakarta. BBC Indonesian's Christine Franciska looks at why activists are describing this as a dark era in Indonesia's digital life. (R 30 25)

How the Macron campaign slowed cyber-attackers (R 30 29)

Counter intelligence in the French elections - this changes cybersecurity forever. (R 30 29) Voters cite Turkish leader's record as he claims a slim victory: Noting irregularities, opposition party seeks recount. The pro-Kurdish party noted that as many as 3M votes lacked an official stamp and should be invalidated. Teams of European observers also had complaints. Unlevel playing field with Erdogan's state of emergency. Opposition party people arrested. *No* campaigners physically intimidated, rallies limited. That seems to be a recipe for a *fair* election rather than a *good* one or an *excellent* one – if you subscribe to a different meaning of *fair.* (R 30 25)

Hong Kong privacy watchdog blasts electoral office for massive data breach: Officials under fire for keeping details on city's 3.78 million voters on laptop that was stolen the day after chief executive election. (R 30 34)

Researcher finds 6.7M Georgia's voter records exposed on the Internet (R 30 34)

Auditors: MD Board of Elections exposed 600,000 voter records to potential hacking, plus poor ballot security, disaster preparedness, contracting, and bookkeeping! (R 30 26)

California Secession Bid Fails: Leader Is Living in Russia (R 30 25)

Bobby Tables and electoral fraud: There could be a new threat, should SQL be involved in the counting process. As usual, it involves SQL-injection, or the Bobby Tables attack (named after the famous XKCD comic). Basically it injects a DROP TABLE command. (R 30 27); This was first reported in 2010, and the attack was apparently unsuccessful. (R 30 28); More (R 30 29,30)

Russian election hacking efforts, wider than previously known, draw little scrutiny (NYTimes, R-30.45)

Hackers demonstrate how to crack into electronic voting machines in minutes (Luly Friesdat, R 30 41)

Hackers plan to break into 30 voting machines to put election meddling to the test (R 30 40); Security This Week: The Very Best Hacks From Black Hat and DEF CON (R 30 41); After DEF CON demonstrations of every machine being compromised, Virginia scraps touchscreen voting machines (R 30 46)

Propaganda flowed heavily into battleground states around election, study says (R 27 47)

PC-Wahl in the German elections (R 27 47)

Yet another trove of sensitive US voter records has leaked (R 27 47)

How the Indiana GOP used uneven early-voting rules to tamp down Democratic votes, expand Republican votes! (R 30 43)

Russian cyberattack targeted elections vendor tied to voting-day disruptions? Or, was it administrative errors? (R 30 43); Russian Internet Research Agency planted $100,000 political ads in fake Facebook accounts (R 30 46)

WikiLeaks Turned Down Leaks on Russian Government During U.S. Presidential Campaign (R 30 44)

Site tracks Russian propaganda on social media (R 30 42)

Facebook helped blunt Russian meddling in French elections (R 30 40)

World's most hi-tech voting system raises cyber-defences (R 30 40)

Chaos Computer Club Russia-Proofing Germany's Elections (R 30 36)

Staying humble is key to staying safe, says Israel's cyber-chief; electoral system is secure! (R 30 36); To avoid cyberattacks, Israel urged to manually count election results (R 30 38)

U.S. Voting Machine Supplier Leaks 1.8 Million Chicago Voter

Records (R 30 44)

Happy 4th of July! Show Us Your Papers: Commission on Election Integrity demanding crown-jewel personal information; considerable blowback (R 30 36,37); would be illegal in California (R 30 36); More on the request for states to provide all personal info on voters (R 30 37); Requested voter details may be gold for cybercriminals: "Kobach could be setting up a one-stop shop of personal information that would be a treasure trove not only for shady online entrepeneurs, but also for identity thieves and criminal hackers." (R 30 37)

To Protect Voting, Use Open-Source Software (R 30 42)

Former National Security Advisor Tom Donilon advocates for Paper ballots (R 30 38)

Government meddling, election hacks and sundry items: Canadian documentary on other governments past interference in Russian elections (R 30 36)

Open-source voting in San Francisco? (R 30 45)

Facebook admits that the Russians interfered with UK Brexit vote (R 30 50); Russia used 150,000 Twitter accounts to meddle in the Brexit vote, posting 45,000 messages in 48 hours during the referendum (R 30 50)

Russia Tried to Use Pokemon Go to Destabilize U.S. Election (R 30 48)

Politico's Morning Cybersecurity on paperless electronic voting machines; NJ needs to decertify them, because the state law to count the paper records has been ignored. (R 30 48)

Hacker study: Russia could get into U.S. voting machines that contain foreign-made hardware and software (R 30 48)

Inside story: How Russians hacked the Democrats emails (R 30 49)

Improving election integrity and security? Possible signs of U.S, bipartisanship? (R 30 51)

Dutch agencies provide crucial intel about Russia's interference in US-elections (volkskrant, R 39 54)

DHS exec: Russians penetrated US voter registrations in 2016 (NBC, R 30 54) Russian interference in 2016 elections: Indictment bares russian network to twist 2016 vote; Mueller chronicles a social-media war; Sees 'Unwitting' ties to Trump forces; To create rifts, Russians liked Facebook most; Trump quiet in a U.S. war on meddling; Russian trolls were sloppy, but U.S. indictment still 'points to the Kremlin'; In Trump Administration, a sharp divide over election interference; How Russians exploited web to tangle vote (all in R 30 56). House Committee votes to terminate the Election Assistance Commission, as well as public financing for presidential elections. (R 30 55) [Money is the root of all weevils?]; To stir discord in 2016, Russians (through the Internet Research Agency) turned most often to Facebook (R 30 56); Are Bots a Danger for Political Election Campaigns? (R 30 56)

The Myth of the Hacker-Proof Voting Machine: Election officials have insisted that machines can't be remotely compromised because they're not connected to the Internet. But security experts point out potential crucial compromises. (R 30 56,57)

Iowa Lottery fraud resolved (PGN, R 30 68)

Hacking voting machine vendors (J.M. Porup, CSO Online, R 30 63); Online voting is impossible to secure. Why are some governments using it? (30 68)

American elections are too easy to hack. We must take action now (R 30 66,67); America continues to ignore the risks of election hacking (R 30 69); Bruce Schneier on Securing Elections (R 30 69) Russia Tried to Undermine Confidence in Voting Systems, Senators Say (R 30 69) Virginia election officials assigned 26 voters to the wrong district (R 30 69) Facebook, Cambridge Analytica, etc.: How Trump Consultants Exploited the Facebook Data of Millions, harvesting private information from the Facebook profiles of more than 50 million users without their permission. (R 30 59); Revealed: 50 million Facebook profiles harvested for Cambridge Analytica in major data breach (R 30 60); Cambridge Analytica Suspends C.E.O. Amid Facebook Data Scandal (R 30 60); 3 simple ways we give up a ton of very personal information to Facebook and Random Apps (R 30 60); Even Without Cambridge Analytica, the Trump Campaign Already Had Everyone's Data (R 30 61); Facebook's Ties With Kogan and Cambridge Were Even Cozier Than We Thought (R 30 67); [See related but more generic items above.]

Instant Runoff Voting (R 30 66,67)

Top Voting Machine Vendor Admits It Installed Remote-Access Software on Systems Sold to States (Kim Zetter, Motherboard, R 30 76)

Deep Fakes: A Looming Challenge for Privacy, Democracy, and National Security (SSRN, R 30 78)

Reporter Shows The Links Between The Men Behind Brexit And The Trump Campaign (R 30 77)

Facebook says it has uncovered a sophisticated coordinated disinformation operation ahead of the 2018 midterm elections (R 30 78); Facebook Identifies New Influence Operations Spanning Globe. (R 30 81)

Trump Jr. and Other Aides Met With Gulf Emissary Offering Help to Win Election (R 30 70)

More on securing elections (R 30 70,71)

180,000 Voters accidentally left off LA County polling place rosters (R 30 72)

CBC Ontario election results included 'Not a Number': Vote Share = 17,467, Votes = NaN% (R 30 72)

West Virginia Becomes First State to Test Mobile Voting by Blockchain in a Federal Election (R 30 73)

Rosenstein reveals how the Justice Department is fighting attacks on US elections (R 30 76); How the Russians hacked the DNC and passed its emails to WikiLeaks (R 30 76); Russia exploited Twitter for disinformation as early as 2014, targeting local news (R 30 76)

The Midterm Elections Are in Serious Danger of Being Hacked, Thanks to Trump (R 30 79)

Election screw-up: 670 ballots in a precinct with 276 voters, and other tales from Georgia's primary (R 30 79)

West Virginia to introduce mobile phone voting for midterm elections, but election integrity and computer security experts expressed alarm at the prospect of voting by phone, and one went so far as to call it "a horrific idea." (R 30 79)

West Virginia to offer mobile blockchain voting app for overseas voters in November election. (R 30 80); Are Blockchains the answer for secure elections? Probably not! (R 30 80)

Can hackers tamper with your vote? Researchers show it's possible in nearly 30 states (R 30 80); Hacking the US mid-terms? It's child's play (R 30 80); An 11-Year-Old Changed The Results Of Florida's Presidential Vote At A Hacker Convention. Discuss. (R 30 80)

'Putin is afraid of one thing'; article on Facebook discovering a 17-month apparently Russian influence campaign [Quite relevant

item.] (R 30 79)

SwissPost invites you to hack a developing online voting system (R 30 81) with all the usual risks including detected vulnerabilities *not* being reported and subsequently exploited.

I just hacked a state election. I'm 17. And I'm not even a very good hacker (R 30 81)

Thwarted hack attempt on DNC voter database was a false alarm. Fake DNC log-in page had been created. (R 30 81P

How social media took us from Tahrir Square to Donald Trump: To understand how digital technologies went from instruments for spreading democracy to weapons for attacking it, you have to look beyond the technologies themselves. (Zeynep Tufekci, R 30 81)

Tech Giants Are Becoming Defenders of Democracy. Now What? (R 30 81)

How to Rig an Election (historical lesson, R 30 83); John Kerry: 2004 Vote Tampering in Ohio? (R 30 83);

The Plot to Subvert an Election: Unraveling the Russia Story So Far (R 30 84); Here's the science behind the Brexit vote and Trump's rise (R 30 84); Frustration and Finger-Pointing as GOP Pulls Out of Deal Talks on Hacked Materials (R 30 83); US voter records from 19 states sold on hacking forum (R 30 87)

Operation Infektion: Russian disinformation campaign rules of deployment (R 30 92)

Kim Zetter: The Crisis of Election Security (R 30 85); ES&S voting machine used in half of U.S. is vulnerable to attack (R 30 85); In Georgia, a legal battle over electronic vs. paper voting (R 30 84); Wisconsin Officials Prepare for Potential Election Hackers (R 30 84); Racist Robocalls Target Andrew Gillum, Democratic Nominee for Florida Governor (R 30 82)

Texas straight-ticket voters report ballot concerns: State says vote-flipping due voters, not Hart Intercivic ; Dan Wallach reports on the failure mode having been reported years ago and never fixed. (R 30 89)

Australian risks of voting systems (R 30 88,89)

U.S. Begins First Cyberoperation Against Russia Aimed at Protecting Elections (R 30 89)

Risks of voting systems (R 30 88); Election integrity (R 30 87); election security (R 30 87,88)

U.S. Begins First Cyberoperation Against Russia Aimed at Protecting Elections (R 30 88)

Democrat pushes changes to protect Senators' personal accounts from continued threats (R 30 84)

Bolton says he is conducting offensive cyber-action to thwart would-be election disrupters (R 30 90)

File-Sharing Software on State Election Servers Could Expose Them to Intruders (R 30 91)

Commentary on November 2018 Florida election recounts (R 30 92); 670 ballots in a precinct with 276 voters, and other tales from Georgia's primary (R 30 92,93); Voting Machine Manual Instructed Election Officials to Use Weak Passwords (R 30 92); Electionland/ProPublica had a lovely collection of election problems already in the wee hours of election evening (R 30 92)

SecDef Mattis: Putin tried to 'muck around' with U.S. midterms (R 30 94); How Trump, ISIS, and Russia have mastered the Internet as a weapon (R 30 94); Manafort Accused of Sharing Trump Campaign Data With Russian Associate (R 31 02)

Disinformation and fake news: House of Commons DCMS Committee (R 31 07)

Psy-Group interferes with local California election (R 31 07)

Texas straight-ticket voters report ballot concerns; vendor blames voters for vote flipping! (R 30 95)

How Volunteers for India's Ruling Party Are Using WhatsApp to Fuel Fake News Ahead of Elections (R 31 04)

How a little-known Democratic firm cashed in on the wave of midterm money (R 31 03)

U.S. Cyber Command operation disrupted Internet access of Russian troll factory on day of 2018 midterms (R 31 08);

Facebook busts Israel-based 'fake news' campaign to disrupt elections; Israeli TV Eurovision webcast hacked with fake missile alert (R 31 25)

Election systems in 50 states were targeted in 2016 (R 31 19); National: Mueller report highlights scope of election security challenge; Mueller Report: Russia Funded US Election Snooping, Manipulation with Bitcoin; Mueller report says Russian hacking once went through Arizona server (R 31 20); Russian hackers were in position to alter Florida voter rolls (R 31 21); FBI can't say with certainty that Florida voter databases not affected by 2016 hack (R 31 25)

The Philippines, World's top Internet user, taps 10 government fake-news busters for elections (R 31 22); Twitter network uses fake accounts to promote Netanyahu (R 31 15)

Israeli election technical problem prevented vote counts from reflecting correct results; resulted from a format change improper update (R 31 18)

More on the SwissPost voting machine hacking challenge: Three independent research groups have announced a vulnerability that permits undetectable insertion of bogus votes. (R 31 11); More (R 31 16)

Online voting, again: Colorado (R 31 14); Vote-by-phone tech trend scaring the life out of security experts (R 31 25); U.S. Senate election security bill requires paper ballots (R 31 25)

ElectionGuard, new e-voting support system by Microsoft: verifiable, secure, auditable, open-source (R 31 24)

Russia hacked us: We made it far too easy – and still do: hacking targeted all 50 U.S. states (R 31 27); Senate Intelligence report on election integrity (R 31 34); More on Mueller and interference (R 31 28);

Moscow's blockchain voting system cracked a month before election (R 31 38)

The scramble to secure America's voting machines (R 31 35); The state of our elections security: not good. (R 31 35); 16 Million Americans Will Vote on Hackable Paperless Machines (R 31 38): Judge Bars Georgia From Using Current Voting Technology in 2020 (R 31 38); Texas County purchases paperless (unauditable) DRE machines over expert security objections; Rockdale population seemingly doubled overnight. (R 31 33); VR Systems remotely accessed Durham county computer before 2016 election (R 31 28); Election rules are an obstacle to cybersecurity of presidential campaigns (R 31 28); What was learned trying to secure congressional campaigns (R 31 28)

Russian Secret Weapon Against U.S. 2020 Election Revealed In New Cyberwarfare Report (R 31 46); CIA informant extracted from Russia had sent secrets to U.S. for decades, confirmed Putin ordered 2016 election meddling (R 31 42); A Nation Divided: U.S. politics taking physical/emotional toll on Americans (R 31 44)

An Op-Ed from the Future on Election Security – wonderful satire

bringing in many past risks to enlighten folks who don't read RISKS and other sources of election fiascos (Alex Stamos, R 31 41)
Hackers say they took over vote scanners like those coming to Georgia (R 31 44)
White House mistakenly sends Trump-Ukraine talking points to Democrats (R 31 44)
How Russia meddles abroad for profit: cash, trolls and a cult leader (in Madagascar) (R 31 47)
Security researchers warn of online voting risks (R 31 47)
Trolling is now mainstream political discourse (R 31 47)
UK Conservative Party scolded for rebranding Twitter account (R 31 48)
Investigation finds BC firm delivered micro-targeted political ads without ensuring consent (R 31 49)
Russian Secret Weapon Against U.S. 2020 Election Revealed In New Cyberwarfare Report (R 31 46); CIA informant extracted from Russia had sent secrets to U.S. for decades, confirmed Putin ordered 2016 election meddling (R 31 42); A Nation Divided: U.S. politics taking physical/emotional toll on Americans (R 31 44)
An Op-Ed from the Future on Election Security – wonderful satire bringing in many past risks to enlighten folks who don't read RISKS and other sources of election fiascos (Alex Stamos, R 31 41)
Hackers say they took over vote scanners like those coming to Georgia (R 31 44)
White House mistakenly sends Trump-Ukraine talking points to Democrats (R 31 44)
How Russia meddles abroad for profit: cash, trolls and a cult leader (in Madagascar) (R 31 47)
Security researchers warn of online voting risks (R 31 47)
Trolling is now mainstream political discourse (R 31 47)
UK Conservative Party scolded for rebranding Twitter account (R 31 48)
Investigation finds BC firm delivered micro-targeted political ads without ensuring consent (R 31 49)
Russian Secret Weapon Against U.S. 2020 Election Revealed In New Cyberwarfare Report (R 31 46); CIA informant extracted from Russia had sent secrets to U.S. for decades, confirmed Putin ordered 2016 election meddling (R 31 42); A Nation Divided: U.S. politics taking physical/emotional toll on Americans (R 31 44)
An Op-Ed from the Future on Election Security – wonderful satire bringing in many past risks to enlighten folks who don't read RISKS and other sources of election fiascos (Alex Stamos, R 31 41)
Hackers say they took over vote scanners like those coming to Georgia (R 31 44)
White House mistakenly sends Trump-Ukraine talking points to Democrats (R 31 44)
How Russia meddles abroad for profit: cash, trolls and a cult leader (in Madagascar) (R 31 47)
Security researchers warn of online voting risks (R 31 47)
Trolling is now mainstream political discourse (R 31 47)
UK Conservative Party scolded for rebranding Twitter account (R 31 48)
Investigation finds BC firm delivered micro-targeted political ads without ensuring consent (R 31 49)
Investigation finds BC firm delivered micro-targeted political ads without ensuring consent (R 31 49)
Risks in the Iowa Tally fiasco (PGN, R 31 56)
Can Legislatures Safely Vote by Internet? (R 31 67,68); Internet online voting, once again (R 31 72); Online voting is too vulnerable (R 31 76,77,79); Why a Data-Security Expert Fears U.S. Voting Will Be Hacked (R 31 74); States Expand Internet Voting Experiments Amid Pandemic, Raising Security Fears (R 31 75)
Electronic voting systems: So now both America and Russia have deployed thoroughly unimpressive electronic voting systems that claimed to have a blockchain feature. (R 31 59);
The App That Broke the Iowa Caucus, an inside look; this item includes a PGN note on Rachel Maddow's mention on 6 Feb 2020 of the 2002 New Hampshire Sununu election in which a massive DDoS disrupted the Democratic get-out-the vote effort. The same strategy was used to disrupt the 2020 Iowa Caucus, piggybacking on an emergency URL for help was that posted. (R 31 57) How the Iowa Caucuses Came Crashing Down (R 31 59)
Voatz: Ballots, Blockchains, and Boo-boos? MIT security analysis of the application pinpoints a number of weaknesses, including the opportunity for hackers to alter, stop, or expose how an individual user has voted. (R 31 58); New Pressure on Voatz for false claims in Oregon (R 31 70)
AI, ethics, and future elections (R 31 58)
Reliability of Pricey New Voting Machines Questioned (R 31 60)
ElectionGuard (R 31 60,62)
California man arrested on charges his DDoSes took down candidate's website (R 31 60)
A high-school student created a fake 2020 candidate. Twitter verified it (R 31 60)