A New Approach to the Ten Square” in the February 2002 Word Ways unsuccessfully sought to construct a ten-square out of names such as Elmer Davis or James Smith, all belonging to living United States residents or deceased Social Security beneficiaries. Steve Root suggested that present-day computer power permits a more ambitious program: instead of processing independent 5x5 chunks of first and last names, why not construct full ten-squares consisting of names of all lengths?

The website http://www.census.gov/genealogy/names yields 7 male and female two-letter first names having probabilities of at least 0.004. Similarly, there are 112, 348, 644, 726, 534 and 25 such first names of 3 through 8 letters. Each of the two-letter first names can be matched with 390 eight-letter last names, again with probabilities exceeding 0.004, for a total of 2730 hypothetical ten-letter names. Similarly, the 731, 907, 700, 410, 61 and 14 last names of 7 through 2 letters can be combined with first names to yield a total of 1,184,786 hypothetical people. Steve then reduced this to 500,347 names having the largest combined probability of occurrence, and started the computer looking, a job of several days duration.

The computer came up with 84 squares of candidates. Those listed below contain people found in telephone white pages, the number given by the integer at the foot of each column (+ indicates ten or more). A * identifies one or more people listed in the Social Security death records, and a blank identifies someone listed in other Internet files (see below).

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AIDARANGEL SARARANGEL LEOWADDELL
IRENELLOWRY ADELELOWRY EMMAENELEY
DEANANNEIL REGINANEIL OMAARGALVAN
ANNIENANCE ALICENANCE WARREN Lind
RENEPARHAM RENEPARHAM ANGELHANNA
ALANAMOORE ALANAMOORE DEANHOPPER
NONAROBLES NONAROBLES DELLapoole
GWHOLMES GWENHOLMES ELVINPOOLE
ERICAREESE ERICAREESE LEANNELLIS
LYLEMESSELY LYLEMESSELY LYNDAREESE
272954881 +*1754881 11592+3335
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EVERANDALL EVERANDALL EVERANDALL
VERANEELY VERANEELY VERANEELY
ERICGALVAN ERICGALVAN ERICGALVAN
RACHELLIND RACHELLIND RACHELLIND
ANGEHLANNA ANGEHLANNA ANGEHLANNA
NEALHOPPER NEALHERMAN NEALHARMAN
DELLapoole DELLaroche DELLaroche
ALVINPOOLE ALVINMCRAE ALVINMCRAE
LEANELLIS LEANNAHALL LEANNAHALL
LYNDAREESE LYNDANEELY LYNDANEELY
1194223+35 119423*462 119423*462
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EVERAND ALLL EVERAND ALLL ELOLAODELL
EVERANEELEY EVERANEELEY ESTELLALEE
ERICGALVAN ERICGALVAN OTTOLARSON
RACHELLIND RACHELLIND LEONABRINK
ANGELHANNA ANGELHANNA ALLANREECE
NEALHILTON NEALHOLDER OLABRANDON
DELLALAYNE DELLALEARLY DARENDUNN
ALVINTYREE ALVINDAVID ELDIEDUPRE
LEANNONEAL LEANNERICE LEONCONRAD
LYANDANEELY LYANDARYDER LENKENNEDY
11942*2112 1194231+4 *9+*311162
LEOLAODELL LEOLAODELL EDDIEPONCE
ESTELLALEE ESTELLALEE DEANESEWELL
OTTOLARSON OTTOLARSON DANETTELLEE
LEONABRINK LEONABRINK INEZHENSON
ALLANREECE ALLANREECE ESTHERROSA
OLABRANDON OLABRANDON PETERGANTT
DARENDUNN DARENDUNN OWENRAINLEY
ELSIEDUPRE ELSIEDUPRE NELSONNOEL
LEONCONRAD LEONCONRAD CLEOSTEEL
LENKENNEDY LENKENNEDY ELENATYLER
*9+*312162 *9+*311162 2+221232+
PEARLISAAC PEARLISAAC PEARLISAAC
EDNAAARANDA EDNAAARANDA EDNAAARANDA
ANNERENNER ANDYRENNER ANDRENNER
RAERRANDALL RAYRANDALL RAERRANDALL
LARABERGER LARABERGER LARABERGER
IRENELARGE IRENELARGE IRENELARGE
SANDRAHORN SANDRAHORN SANDRADORN
ANNAGROGAN ANNAGROGAN ANNAGROGAN
ADELEGRACE ADELEGRACE ADELEGRACE
CARLRENNER CARLRENNER CARLRENNER
427111+6*+ 423+11+6*+ 42711156*
PEARLISAAC OLGANEWELL OLGANEWELL
EDNAAARANDA LEONADALEY LEONADALEY
ANDYRENNER GORDONLNN GORDONLNN
RAYRANDALL ANDYMATSON ANDYMATSON
LARABERGER NAOMIBEARD NAOMIBEERS
IRENELARGE EDNABARBEE EDNABORDEN
SANDRADORN WALTERHAHN WALTERGARY
ANNAGROGAN ELSABACON ELISEDAVID
ADELEGRACE LENOHEREOWE LENOHEREICE
CARLRENNER LYNNDENNEY LYNNSNYDER
423+1156*+ 11+131+18 11+1*2+36+
Nona Robles came in fourth among 178 women in the Schofield Hawaii 25k race on October 1, 2000. John and Elisa Bacon are missionaries to Indian Land, USA. Lynda Ryder gave a conference paper at the 1995 meeting of the Aboriginal Studies Association, and is a member of the Etobicoke Rotary Club. Lynda Bandy received her BA in Spanish from the University of South Carolina, and is a teacher in the Dade County (Florida) public schools.

The paragraph below can be skipped by the non-mathematically-inclined reader.

If 500,326 names can generate 84 ten-squares, a simple scaling argument predicts that approximately 320,000 names should generate, on the average, one square. (In actuality, it took some 400,000 names to yield one square.) In the February 1993 Word Ways, Chris Long, forming “words” by drawing ten letters independently and at random according to their relative occurrences in English text, predicted that a set of 247,718 such “words” would, on the average, be needed to produce a single ten-square. As can be seen from Steve Root’s experience, this estimate is optimistic—in reality, well over three hundred thousand words are needed.