TRANSPOSING RATES

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A set of three different letters can be transposed in six ways. There are a number of these groups where all possible combinations are legitimate terms; for example the letters AER yield the following six words, all of which are listed in Web 2.

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
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<tbody>
<tr>
<td>AER</td>
<td>obsolete spelling of air, ear, ere and oar</td>
</tr>
<tr>
<td>ARE</td>
<td>a unit of superficial area, 100 square metres</td>
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<tr>
<td>EAR</td>
<td>the fruiting spike of any cereal</td>
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<tr>
<td>ERA</td>
<td>one of the major divisions of geological time</td>
</tr>
<tr>
<td>RAE</td>
<td>a sail yard (local, Scottish)</td>
</tr>
<tr>
<td>REA</td>
<td>another name for the East Indian herb turmeric</td>
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</tbody>
</table>

Moving up to the next level, it is possible to transpose a group of four different letters in 24 ways. Finding a complete set of 24 transpositions may at first glance seem impossible, but this feat has now been achieved using the letters AEST. Although some of the terms and references are rather obscure, it is an accomplishment unlikely to be equalled with any other set of four letters. Following are the 24 transpositions of AEST, with their definitions and sources.

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
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<tbody>
<tr>
<td>AEST</td>
<td>obsolete form of 'east' (OED)</td>
</tr>
<tr>
<td>AETS</td>
<td>Shetland Islands dialectic form of 'eats' (EDD)</td>
</tr>
<tr>
<td>ASE</td>
<td>an old word meaning 'to set up, place' (OED)</td>
</tr>
<tr>
<td>AST</td>
<td>a populated place listed in the OSNG, USSR</td>
</tr>
<tr>
<td>ASES</td>
<td>the sweetsop tree (Web 2)</td>
</tr>
<tr>
<td>A-TSE</td>
<td>a populated place listed in the OSNG, People's Republic of China</td>
</tr>
<tr>
<td>EAST</td>
<td>to veer from north or south toward east, to orient (Web 2)</td>
</tr>
<tr>
<td>EATS</td>
<td>food, things to eat (Web 2)</td>
</tr>
<tr>
<td>ESAT</td>
<td>a surname: there are two listed in the 1983 Melbourne, Australia TD, and Isaac ESAT appears in the January 1982 Paris, France TD</td>
</tr>
<tr>
<td>ESTA</td>
<td>a feminine given name, meaning 'I am' in Latin (WNB)</td>
</tr>
<tr>
<td>ETAS</td>
<td>plural of 'eta', the seventh letter of the Greek alphabet (Web 2)</td>
</tr>
<tr>
<td>ETSA</td>
<td>variant of 'ltsa', a large village in the Faiyum Province, Upper Egypt (CL)</td>
</tr>
<tr>
<td>SAET</td>
<td>dialectic form of 'saith', the mature coal-fish (EDD)</td>
</tr>
<tr>
<td>SATE</td>
<td>to satisfy or gratify to the full (Web 2)</td>
</tr>
<tr>
<td>SEAT</td>
<td>a kind of chisel used to cut hot iron (Web 2)</td>
</tr>
<tr>
<td>SETA</td>
<td>one of the spinelike feathers at the base of the bill of certain birds (Web 2)</td>
</tr>
<tr>
<td>STAE</td>
<td>a populated place listed in the OSNG, Sweden</td>
</tr>
</tbody>
</table>
STEa a dialectic variant of 'sty', a ladder or stair (EDD)
TAES plural of 'tae', Scottish variant of 'toe' (Web 2)
TASE variant of 'teise', to stretch or bend a bow (OED)
TEAS evening meals (Web 2)
TSEA variant of 'teesa', an Indian buzzard (FW)
TSAE the name of a mysterious marquis who apparently invented the manufacture of paper from the inner bark of trees, ends of hemp, old rags, and fishing nets; Marquis TSAE is mentioned in EB 11th Edition, 1911, Volume V, 662, in the article on China
TSE-A a variant spelling of Sia, a New Mexico Keresan tribe (HAINM)

There are 120 ways to transpose a set of five different letters. While researching at this level, all efforts have been concentrated on the groups AELST and AERST which seem to be the most productive. Achieving a full solution of 120 transpositions is likely to remain just a dream; however it is possible to get halfway, even with the restrictions on acceptability which have been imposed. Allowable are hyphenated, apostrophized and two-word terms, as well as pluralized first names and surnames. Not permitted are purely foreign words, such as 'slaet' which appears in 'Slaet op den trommele', the title of a weekly political journal published in Utrecht, Netherlands (NUC). Also disallowed are initials such as ATESL (Association of Teachers of English as a Second Language) and the use of surname and initials, for example S.L. TAE or EAST R. All contrived terms of any nature are similarly unacceptable.

My thanks to Philip Cohen and Murray Pearse for their contributions to this project. Without their assistance some of the transpositions would not have been recorded in the survey. If anybody comes across one that has been missed, such as TALSE, EALTS, ESTAR or SEART, no matter how obscure the reference, please write to the Editor with your information.

AELST Transposals

AELST variant of Aalst, a town in northwest Belgium (NCCN)
AELTS Nicholas van AELTS was a Flemish painter born in 1529 (DBR)
ALEST superlative form of 'ale', early spelling of 'hale'; healthy (OED)
ALETS lets go, an obsolete term (OED)
ALSET although, a conjunction (DOST)
ALSTE surname of J. ALSTE, who is listed in the 1983 Melbourne, Australia TD
ALTES surname of Ernest Eugene ALTES, a French violinist and conductor, 1830-99 (DUB)
ASELT surname of Jos A ASELT, who is listed in the 1975/76 Brooklyn, New York TD
ASLET obsolete adverbial phrase meaning 'oblique' (OED)
ASTEL a board or plank (OED)
ASTLE a small community in Cheshire, England (CODEP)
ATESL variant of 'atelts'; counts up (OED, 1297 quotation)
ATLES variant of 'ettles'; intends (OED)
ATSEL surname of Tamash ATSEL, a Hungarian writer better
ELAST variant of 'elest', a fault or defect (DOST)
ELATS places named ELAT, such as the one in Israel (TAW), and a small community on Great Kei Island in the Banda Sea, off the southwest coast of Papua-New Guinea (EB, 10th Edition, 1903)
ELSTA surname of Fanny ELSTA, a Norwegian writer born in 1899 (NUC)
ELTAS plural of 'elta', anger (EDD, Addenda)
ETALS places named ETAL, such as a village in Northumberland, England (EB, 10th Edition, 1903), and an atoll in the central Caroline Islands (EB, 9th Edition, 1876)
ETLAS small towns such as ETLA in southern Mexico (EB, 10th Edition, 1903)
LAEST a very early form of 'last' and 'least' (OED)
LAETS plural of 'laet', a person of status between a freeman and a slave in Old English (OED)
LAET variant of 'lasset', the ermine or miniver (OED)
LASTE 14-18th century spelling of 'last', a wooden model of the foot on which shoe-makers shape boots and shoes (OED)
LATES looks, manners, behaviour (OED)
LEAST smallest, slightest (OED)
LEATS open watercourses (OED)
LESTA variant of the feminine given name 'Esther' (WNB)
LETAS females named LETA, diminutive of 'Letitia' (WNB)
LETSA surname of George LETSA, who is listed in the January 1982 North Virginia TD; also, a stream called LETSA Va given in the OSNG, Burma
SAILT 2nd person singular form of the archaic verb 'shulen', to shovel (MED)
SALET variant of 'sallet' and 'salad' (Web 2)
SALTE 14-16th century spelling of 'salt' (OED)
SATEL variant of 'sadel', Middle English form of 'saddle' (MED)
SEALT the earliest known spelling of 'salt' (OED)
SEATL an archaic spelling of 'settle' (OED)
SEATL variant of 'sallet', a salad (SND)
SLATA a village in northern Russia (NVAH)
SETAL pertaining to setae, stiff hairs or bristles (OED)
SETLA variant of 'westen-setla', a dweller in the wilderness (ASD)
SLATE to assail with reproof or abuse (OED)
SLEAT to incite, set on (OED)
STAEI variant of 'stale', a handle (EDD)
STEAL that has lost its freshness (OED)
STEAL the stalk or stem of a plant (OED)
STELA an upright slab bearing sculptured designs (OED)
TAELS plural of 'tael', the Chinese ounce (OED)
TAESL an archaic form of 'teasel' (OED)
TAELS things told so as to violate secrecy (OED)
TASEL an obsolete form of 'teasel' (OED)
TASEL another obsolete form of 'teasel' (OED)
TEELS small fresh-water fowl (OED)
TELAS plural of 'tela', a tissue (Web 2)
TELSA surname of Chas TELSA, who is listed in the 1981/82 West Suburban Boston TD
TESAL a populated place in Mexico listed in the OSNG, Mexico
TESLA the SI unit of magnetic flux density (OED, Se-Z Supplement)
TSALE variant of Tsa-Lieh, a populated place in China listed in the OSNG, Mainland China
TSE-LA a place in Tibet (TAW)

AERST Transposals
AERST a very early form of 'erst', first (OED)
AERTS surname of Egidius AERTS, a Belgian musician and composer, 1822-53 (DUB)
AREST an obsolete form of 'arrest' and 'erst' (OED)
ARETS reckon, ascribes, imputes (Web 2)
ARSTE a surname which appears six times in the January 1982 Hamburg, West Germany TD
ARTES plural of 'arte', a 14-17th century spelling of 'art' (OED)
ASTER in sponges, a star-shaped spicule (Web 2)
ASTER a surname appearing four times in the 1981 Oslo, Norway TD
ASTERS plural of 'ater', a 15th century spelling of 'eater' (OED)
ASTRA variant of the feminine given name 'Esther' (WNB)
ASTRES amount of assessment on property for local purposes (OED)
ARTES plural of 'arte', a Scottish form of 'earth' (SND)
ARTRE a hearth, a home (OED)
ARTRE a surname appearing twice in the January 1982 Paris, France TD
ARTSRA a small town in northern Saudi Arabia (EB, 10th Edition, 1903)
ARTSRE a very early form of the noun 'rest' (OED)
ARTETS surname of Willem RAETS, a 16th century Flemish mathematician (DUB)
ARTETS plural of 'rete', an obsolete form of 'rate' (OED)

There are a
RESAT past tense of 'resit', to sit (an examination) again (OED, O-Scz Supplement)

RESTA a surname appearing four times in the 1983 Melbourne, Australia TD

RETAS females named RETA, a variant of 'Rita' (WNB)

SA'EERT a former subdivision of the province of Kurdistan in Turkey (EB, 9th Edition, 1876)

SAETR the name of a farm in Norway, recorded in NG, Volume 19; SAETR is an old Norse word meaning 'mountain pasture' (see etymology of 'saeter' in OED, O-Scz Supplement)

SARET a small desert town in Algeria (EB, 10th Edition, 1903)

SARTA the modern Syriac cursive script (Web 2)

SETAR variant of 'sitar'; a long-necked, guitar-like Indian musical instrument (OED, Se-Z Supplement)

SETRA a place in Egypt (IG)

TESAR a surname which appears four times in the 1983 Melbourne, Australia TD

TSEAR surname of S. Y. TSEAR, who is listed in the 1983 and 1986 Metropolitan Toronto, Canada TD

TSEERA a populated place in Burma, listed in the OSNG, Burma

There are a total of 60 AELST and 63 AERST transposals.
REFERENCES

ASD  An Anglo-Saxon Dictionary, Bosworth & Toller, 1964
CASD  A Concise Anglo-Saxon Dictionary, J.R. Clark Hall, 1960
CL  The Columbia-Lippincott Gazetteer of the World, 1952
CODEP  The Concise Oxford Dictionary of English Place-names, Eilert Ekwall, 1960
DBR  Dictionary of Biographical Reference, L.B. Phillips, 1871
DOST  Dictionary of the Older Scottish Tongue
DUB  Dictionary of Universal Biography, Albert Hyamson, 1951
EB  The Encyclopedia Britannica
EDD  The English Dialect Dictionary
FW  Funk & Wagnalls New Standard Dictionary of the English Language, Unabridged
HAIMN  Handbook of American Indians North of Mexico, edited by F.W. Hodge, 1907
IG  Index Geographicus, London, 1864
MED  Middle English Dictionary, edited by Hans Kurath, 1956
NCCN  New Century Cyclopedia of Names, 1954
NG  Norske Gaardnavne (A Register of Norwegian Farm-Names), Oluf Rygh, 1936
NUC  The National Union Catalogue, pre-1956 Imprints, a cumulative author list representing Library of Congress printed cards and titles reported by other American libraries, Mansell, 1969
NVAH  Namen-Verzeichnis zu Andrees Handatlas, 1924
NYTOI  New York Times Obituaries Index, 1858–1968
OAS  Onomasticon Anglo-Saxonicum, W.G. Searle, 1897
OED  The Oxford English Dictionary
OSNG  Official Standard Names Gazetteer (a series of references published by the US Board on Geographic Names)
SND  The Scottish National Dictionary
TAW  The Times Atlas of the World
TD  Telephone Directory
TIG  The Times Index-Gazetteer, 1965
WNB  What to Name the Baby, Evelyn Wells, 1953

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