

8/24/90
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ERICA CD ROM 1
-or-
ERICA's Greatest Hits

Welcome to the first ERICA CD ROM. We have endeavored to provide the highest quality data sets on this CD, but there may be problems and errors. If you find any, please report them to the Data Center immediately. Periodically, or upon request, we will notify researchers of any reported problems in the data, or any changes in the software. If you have not received this CD directly from that Data Center, you might want to drop us a note with your name and address so that we can put you on our CD mailing list. We anticipate that news letters will be sent out around January and July of 1991. You can reach us at:

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Acknowledgements

Preparing the data sets for this CD took substantial work. It would not have been possible without the help of many people. Dr. Ron Hadlock, the ERICA Field Director, provided invaluable help with the ship and buoy data; Dr. Norman Donaldson of AES supplied a lot of data, and provided complete information on Canadian data sets. Mr. Sam McCown of NCDC provided most of the U.S. surface, upper air, and SST data. We also owe our thanks to Vin Lally and Claude Morel of NCAR, Gerry Crescenti of WHOI, and the staff of NCAR/RAF and NOAA/OAO. The ACARS commercial aircraft reports were provided by NOAA/PROFS; the geographic data were obtained from Dennis Josephs, NCAR Data Support Section.

Robert Cohen, Dr. Jing Guo, and Chuck Browne all worked on the data sets at the Data Center.

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Data Distribution Policy

Over 100 copies of this CD are being distributed to ERICA scientists at no charge. Additional copies are available for \$35 each. Data are also available on EXAbyte tapes (each holds 2.3 gigabytes), magnetic tapes (40 or 130 megabytes/tape for 1600 and 6250 bpi, respectively), floppy disks (IBM or Macintosh), and paper. Prices, effective 9/1/90, are listed below. We anticipate that data will be available on DAT tapes by mid-1991. The satellite and aircraft digital data will be distributed in large quantities only on EXAbyte and DAT tapes.

CD ROM:	\$35
EXAbyte tapes:	\$35/Gbyte
magnetic tapes	
for sets on the CD:	\$75
for other sets:	\$50
floppy disks:	\$10
paper	\$.10/page

The CD Data Sets

Each data set comes completely equipped with its own documentation and sample program. The sample program is not intended to access all of the data (usually), but only what can easily be displayed on a computer screen. To access other parameters you must add variables and change the format statements. The programs usually request a file name to read from. You must also provide the path to the file (i.e. if the data file is in a different directory or folder you must supply that information in the filename). The ways to do that vary from computer to computer - see your own FORTRAN documentation for details. You must compile the programs yourself.

Our goal has been to provide data sets which are convenient and simple. Almost all of the data sets are in ASCII; record lengths are relatively short, and, since each data set is divided into daily files, the file sizes are usually small. Units have been changed to decimal degrees for latitude and longitude (instead of degrees and minutes). All temperatures have been converted to Celsius and wind speeds have been converted to meters per second. Relative humidity is with respect to water regardless of the temperature. We would be happy to hear any suggestions or criticism.

The data on this CD is divided into 14 directories, which are listed below. The numbers appearing next to the data set name are the sections in the ERICA Data Users Guide that describe the set. In some cases there is no section in the DUG describing the set, since the set was developed after the Guide was released.

- P3FLD - Compressed P3 Flight Level Data, version 2 (2.1.1)
- NCARFLD - Compressed NCAR Flight Level Data, version 2 (2.2.1)
- OTHERAC - PIREPS from PROFS, ACARS, version 2 (2.3.2)
 WC-130 Flight Level Data, version 2 (2.3.1)
- SND2 - Master Sounding Files, version 2 (3.1.1)
 (Including balloon sonde, drop sonde, and research aircraft soundings.)
- SST14 - 14 km ASCII SST files, version 2 (5.8.1)
- SST50 - 50 km ASCII SST files, version 2 (5.8.1)
- EDC3280 - EDC Reformatted NCDC Surface Hourly Airways (TD-3280),
 version 4 (6.3.1)
- DATSAV - EDC Reformatted DATSAV Surface Data, version 2 (6.3.4)
- CANHLY - EDC Reformatted Canadian Surface Hourly, version 1
- MESONET - EDC Refomatted Nova Scotia Mesonet Data, version 1
- SHIP - EDC Combined TD-1129 Format Ship Data, version 5 (6.5.3)

(Including NCDC, Canadian, and U.S. Navy data)

BUOY - EDC Combined Buoy and C-MAN Data, version 1 (6.5.8)
(Including drifting buoys, AES and WHOI moored buoys, NWS
buoys, and C-MAN sites.)

DOC - CD ROM Documentation
(Including this file and the text of the ERICA Data Users'
Guide, version 1.)

GEOG - North American Detailed Elevation and Land Use Data Sets,
(Including global elevation, percent water, and surface
characteristic data.)

Documentation

Documentation for these data sets can be found in the data's directory. Since much of the documentation that we received has been hardcopy, there is a considerable volume of hardcopy that is distributed with each CD on microfiche. We have tried to include enough (digital) documentation with each data set so that if the hardcopy is lost, the CD does not become useless. If you cannot arrange access to a microfiche machine, contact the data center for paper copies of whatever documents you are interested in.

For data sets which are EDC reformatted or compacted version of the data sets, the documentation on the CD supercedes the hardcopy documentation, which describes the original (unreformatted) data sets.

PLEASE NOTE: The text copy of the ERICA Data Users' Guide which is included in the DOC directory on the CD is no longer fully accurate. In all cases where it disagrees with a data set's documentation, believe the documentation that goes with the data set. The ERICA DUG needs to be, and will be, updated. Please contact the ERICA Data Manager if you have any questions.

Other ERICA Data Sets

This CD contains only a fraction of the volume of ERICA data. Radar data (from ground stations and aircraft), satellite data, and NMC gridded data are examples of ERICA data sets that are not on this CD. In the coming months these sets will be worked on at the ERICA Data Center. Contact the ERICA Data Manager for more details on any data set.

Julian Calendar

The Julian Calendar for the ERICA Field Study is reproduced below for convenience, as Julian day appears frequently in the data set names.

Calendar Day							November 1988						
Su	M	Tu	W	Th	F	Sa	Su	M	Tu	W	Th	F	Sa
		1	2	3	4	5			306	307	308	309	310
6	7	8	9	10	11	12	311	312	313	314	315	316	317
13	14	15	16	17	18	19	318	319	320	321	322	323	324
20	21	22	23	24	25	26	325	326	327	328	329	330	331
27	28	29	30				332	333	334	335			

December 1988

Calendar Day							Julian Day of the Year							
Su	M	Tu	W	Th	F	Sa	Su	M	Tu	W	Th	F	Sa	
				1	2	3						336	337	338
4	5	6	7	8	9	10	339	340	341	342	343	344	345	
11	12	13	14	15	16	17	346	347	348	349	350	351	352	
18	19	20	21	22	23	24	353	354	355	356	357	358	359	
25	26	27	28	29	30	31	360	361	362	363	364	365	366	

January 1989

Calendar Day							Julian Day of the Year						
Su	M	Tu	W	Th	F	Sa	Su	M	Tu	W	Th	F	Sa
1	2	3	4	5	6	7	1	2	3	4	5	6	7
8	9	10	11	12	13	14	8	9	10	11	12	13	14
15	16	17	18	19	20	21	15	16	17	18	19	20	21
22	23	24	25	26	27	28	22	23	24	25	26	27	28
29	30	31					29	30	31				

February 1989

Calendar Day							Julian Day of the Year							
Su	M	Tu	W	Th	F	Sa	Su	M	Tu	W	Th	F	Sa	
			1	2	3	4					32	33	34	35
5	6	7	8	9	10	11	36	37	38	39	40	41	42	
12	13	14	15	16	17	18	43	44	45	46	47	48	49	
19	20	21	22	23	24	25	50	51	52	53	54	55	56	
26	27	28					57	58	59					

March 1989

Calendar Day							Julian Day of the Year							
Su	M	Tu	W	Th	F	Sa	Su	M	Tu	W	Th	F	Sa	
			1	2	3	4					60	61	62	63
5	6	7	8	9	10	11	64	65	66	67	68	69	70	
12	13	14	15	16	17	18	71	72	73	74	75	76	77	
19	20	21	22	23	24	25	78	79	80	81	82	83	84	
26	27	28	29	30	31		85	86	87	88	89	90		

ERICA Intensive Observation Periods

For reference to ERICA IOPs, the list below includes Julian days.

- IOP 1. (344) 1209/1200Z - (345) 1210/1930Z
- IOP 2. (347) 1212/1500Z - (350) 1215/0000Z
- IOP 3. (352) 1217/0000Z - (354) 1219/0000Z
- IOP 4. (003) 0103/1200Z - (006) 0106/1200Z
- LOP 4A. (011) 0111/1200Z - (014) 0114/0000Z
- IOP 5. (018) 0118/1800Z - (020) 0120/1200Z
- LOP 5A. (020) 0120/1200Z - (021) 0121/1800Z
- LOP 6P. (026) 0126/1500Z - (028) 0128/0600Z
- IOP 6. (039) 0208/0800Z - (040) 0209/0100Z
- IOP 7. (043) 0212/0600Z - (044) 0213/1200Z
- IOP 8. (055) 0224/0600Z - (056) 0226/1200Z

Line Feeds, Carriage Returns, and You

A problem that came up with this CD was the problem of record delimiters. In text files (such as this one) a special character is stored at the end of each record (i.e. at the end of each line of text). In UNIX systems the line feed is used (a.k.a. LF, ^J, or ascii character 0A). On the Macintosh the carriage return is used (a.k.a.

CR, ^M, or ascii character 0D). IBM PC compatibles use both CR and LF (in that order) on their text files. Note that this is software dependent in that word processing software may be able to read files with different record delimiters than those described here.

Since we want this CD to be accessible on all of these computers, each record of the text files has a CR and a LF (in that order). When these files are displayed with a UNIX-based word processor each line has a ^M at the end of it. On the Mac each line has a little square at the beginning (which is the Mac way of displaying non-printable characters, such as LF).

The additional characters should not bother your compiler, but if it does, use some kind of global change feature in your editor to remove the extra characters.

Although we were originally planning to add CRs to data files, so that they too could be examined with a word processor, we decided not to when we realized that the introduction of an extra byte at the end of each record might cause programming complications. Instead we have included a program in the DOC directory which will add CRs to the end of each line of a text file. The program, addcr.f, can easily be modified to add LFs, remove CRs, or whatever other weird requirement your computer and software might be more comfortable with.

When running a FORTRAN program which does formatted reads, the record delimiter is used by the program to find the start of the next record. This is reflected in the fact that a formatted FORTRAN read will always advance the file position pointer one entire record, no matter how many bytes have been read. On our computers the FORTRAN read recognized either CRs or LFs as record delimiters. The data files on this CD have LFs.

The only data files to which CRs have been added are the aircraft one-minute data files and the sounding data comment files.

Overview of the specific files on the ERICA CD-ROM #1

This is a directory of the contents of the ERICA CD-ROM #1. For each directory, the total size including documentation (in megabytes - 1 Mb = 1024*1024 = 1,048,576 bytes) is given below the directory name. This total size is either exact or a close approximation of the space used.

Next to the directory name is a brief listing of the files contained within that directory. Most data files on the CD have a similar format: name[*jjj*].dat, where name is a data-set-specific name and [*jjj*] stands for the Julian date of the data contained within that file. In the comments column the range of days (represented by the Julian date -> 291 to 366 from 1988, 001 to 075 from 1989) are given for each set so named this way.

Exact sizes in bytes of specific files are given in the Size column to give an idea of the filesizes in each set, and to also compare with the filesize on the CD.

Directory	File(s)	Size	Comments
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DOC 80 kilobytes	CDROM.DOC, intro.dug, chap2, chap3, chap4, chap5, chap6, chap7, addcr.f		These files contain the text of the ERICA Data Users' Guide, as well as this file which you are now reading, and the program addcr.f

P3FLD 119.7 Mb	p3fld.doc, rdedcp3.f, rd1min.f, rdp3t.f, minute2.f, E101041E.DAT, E*.DAT, e101041e.1mn, e*.1mn	5046400 bytes 118.5 Mb total 46937 bytes 1.1 Mb total	There are 26 sets of P3 data (DAT, 1mn files). The DAT files are approximately 5 Mb in size, while the 1mn files run about 45k.
NCARFLD 43.8 Mb	ncarfld.doc, rdncar.f, ELcoarse.f, SLcoarse.f, el011611.bin, el*.bin, sl012411.bin, sl*.bin, el011611.1mn, el*.1mn, sl012411.1mn, sl*.1mn, el01161.hdr, el*.hdr, sl012411.hdr, sl*.hdr,	2805920 bytes 20.2 Mb total 738760 bytes 17.9 Mb total 37822 bytes 254.5k total, 10551 bytes 288.2k total, 40663 bytes 754.5k total 41915 bytes 982.4k total	There are 19 sets of Electra data (hdr, bin, and 1mn). The bin data are the largest and range in size from 12k to 3 Mb, averaging 1.5 Mb. There are 24 sets of Sabreliner data. The Sabreliner bin data range from 0.5 Mb to 1 Mb. average 40k average 11k (all el*.hdr files are same size)
OTHERAC 3.9 Mb	acars.doc, rdacars.f, acars002.dat, acars[jjj].dat wc130.doc, wc130.dat	7281 bytes 54629 bytes	There are 39 data files - of these, 12 are roughly 6k, and 26 are about 100-150k. Day 355 is about 57k. The days included are: 343-353, 002-006, 010-013, 017-019, 025-028, 038-040, 042-044, 054-057, and pre-ERICA 025-026.
SND2 100 Mb	psnd2ecd.doc, readpsnd.f, es2sites.doc, e2update.doc, e1notes.doc, e2com.doc, e2count.doc, e2format.doc, e2notes.doc, e2table.doc, sample.doc, pes20101.com, pes2*.com, pes20101.snd, pes2*.snd,	10933 bytes 1.3 Mb total, 11k average 1127952 bytes 98 Mb total, 1.1 Mb average	The daily files ('.com' for comment, '.snd' for sounding) run from 12/01/88 (1201) to 2/28/89 (0228). There are 90 com files and 90 snd files total.
SST14 5.0 Mb	sstascii.doc, rdsst14.f, sst14.001, sst14.[jjj]	139468 bytes	All data files are the same size. The days included are: 001, 004, 008, 011, 015, 018, 022, 024, 025, 029, 032, 036, 039, 043, 046, 050, 053, 057, 060, 064, 065, 067, 071, 074, 078, 328, 332, 335, 339, 342, 346, 349, 353, 354, 356, 360, 363

quality	scdist.f, scomp.buoy, scomp.doc, scomp.f, scomp.res, scomp.sdif, sread.f, srel.f, srel.res, sstsoft.doc, swrite.f	98410 bytes 98343 bytes 98343 bytes 45621 bytes	This is a subdirectory within SST14.
SST50 2.1 Mb	sstascii.doc, rdsst50.f, ssta50.003, ssta50.[jjj]	58028 bytes	All data files are the same size. The days included are: 003, 007, 010, 014, 017, 021, 024, 028, 031, 035, 038, 042, 045, 049, 052, 056, 059, 063, 066, 070, 073, 077, 080, 084, 320, 326, 327, 331, 334, 338, 341, 345, 348, 352, 355, 359, 362, 366
EDC3280 106.9 Mb	edc3280.doc, rdtd3280.f, edc3280.sit, src001.dat, src[jjj].dat, xtra.dec, xtra.jan, xtra.feb, xtrapw.obs	921536 bytes 365390 bytes 472140 bytes 551440 bytes 107490 bytes	There are data for days 336-366, and 001-059.
DATSAV 32.5 Mb	datsav2.doc, datsav2.stn, rddatsav.f, datmiss, ds001.dat, ds[jjj].dat	379134 bytes	The data files are roughly of similar size to ds001.dat. jjj varies between 002 - 059 and between 336 - 366.
CANHLY 31 Mb	canhly.doc, rdcan28.f, can001.dat, can[jjj].dat	333147 bytes	There are data for days 336 - 366, and 001 - 060.
MESONET 12.0 Mb	mesonet.doc, rdmeso.f, meso.001, meso.[jjj],	147836 bytes	The daily data range in size from 75k to 165k. The data go from 330 - 366, and from 001 - 060.
SHIP 9.8 Mb	ship.doc, rdship.f, exact.dec, exact.jan, exact.feb, inexact.dec, inexact.jan, inexact.feb, ship001.dat, ship[jjj].dat	48000 bytes	The daily files range from 336 - 366 and from 001 - 059.
BUOY 6.6 Mb	edcbuoy.doc, rdbuoy.f, buoy001.dat, buoy[jjj].dat	48328 bytes	There are 151 data files, from 291-366, and 001-075. The data file sizes vary from as low as 1.5k (outside

of the ERICA timeframe) to 90k, with the average at roughly 50-60k.

GEOG
26.6 Mb

	geog.doc,	6857 bytes	
ten_min	navygeog.doc readnav.f, rdedcxxx.f, edcelv10.dat, edcwat10.dat, edcchr10.dat, edcnav10.dat, direct.nav	18467 bytes 7751 bytes 4221 bytes 2374272 bytes 2374272 bytes 2374272 bytes 3816720 bytes 82671 bytes	There are three subdirectories within GEOG - ten_min, thrty_sc, and landuse.
thrty_sc	terr30.doc, unfold30.f, check30.f, read30.f, fold30.f, terr30.dat, direct.30	10607 bytes 3670 bytes 2279 bytes 3662 bytes 3158 bytes 16206000 bytes 84315 bytes	
landuse	landuse.doc, rdedcuse.f, edcuse.dat, direct.use	5514 bytes 5966 bytes 429030 bytes 33390 bytes	

ERICA CD-ROM #1 Microfiche directory

This is a directory of the documentation on the six pages of microfiche that accompany the ERICA CD-ROM #1. This documentation is also sent along with the disc in hardcopy form; the fiche serves as a backup copy. Each microfiche holds 98 pages of text.

Fiche No. 1: NCAR documentation

Doc #	Documentation Name	Page #
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	NCAR cover page	1
1	6/20/90 Error Memorandum	2
2	NCAR Bulletin No. 9	10
3	NCAR Bulletin No. 23 (pg 1-24)	74

Fiche No. 2: More NCAR Documentation

Doc #	Documentation Name	Page #
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1	NCAR Bulletin No. 23 (pg 25-49)	1
2	NCAR Bulletin No. 24	26
3	NCAR Bulletin No. 25	61
4	Sabreliner Data Quality Report	68
5	Technical Field Support Report	81

Fiche No. 3: Son of NCAR Documentation

Doc #	Documentation Name	Page #
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1	Sabreliner Research Flt. Repts.	1
2	CONCNC Error Memorandum	50

3	Electra Data Quality Report	52
4	Electra Project Tech. Report	68

Fiche No. 4: NCAR, CANHLY, DATSAV, SHIP Documentation

Doc #	Documentation Name	Page #
1	Electra Research Flt. Repts.	1
	CANHLY cover page	19
2	CANHLY documentation	20
	DATSAV cover page	39
3	DATSAV documentation	40
	SHIP cover page	48
4	SHIP documentation	49

Fiche No. 5: P3FLD, EDC3280 Documentation

Doc #	Documentation Name	Page #
	P3 cover page	1
1	P3 documentation	2
	EDC3280 cover page	57
2	EDC3280 documentation (pg 1-42)	58

Fiche No. 6: EDC3280, Mesonet, SST Documentation

Doc #	Documentation Name	Page #
1	EDC3280 documentation (pg 43-44)	1
	Mesonet cover page	3
2	Mesonet documentation	4
	SST cover page	63
3	SST documentation	64