N O T I C E

THIS DOCUMENT HAS BEEN REPRODUCED FROM MICROFICHE. ALTHOUGH IT IS RECOGNIZED THAT CERTAIN PORTIONS ARE ILLEGIBLE, IT IS BEING RELEASED IN THE INTEREST OF MAKING AVAILABLE AS MUCH INFORMATION AS POSSIBLE

AgRISTARS

EW-L0-00702
JSC-16374

OCT 0 6 1980

Early Warning and Crop Condition Assessment

A Joint Program for
Agriculture and
Resources Inventory
Surveys Through
Aerospace
Remote Sensing

September 1980

LIMITED AREA COVERAGE/HIGH RESOLUTION PICTURE TRANSMISSION (LAC/HRPT) TAPE IJ GRID PIXEL EXTRACTION PROCESSOR USER'S MANUAL
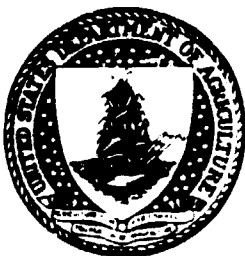
S. O. O'Brien

Lockheed Engineering and Management Services Company, Inc.
Houston, Texas 77058

Lyndon B. Johnson Space Center
Houston, Texas 77058

1. Report No. JSC-16374; EW-LO-00702	2. Government Accession No.	3. Recipient's Catalog No.
4. Title and Subtitle Limited Area Coverage/High Resolution Picture Transmission (LAC/HRPT) Tape IJ Grid Pixel Extraction Processor User's Manual		5. Report Date August 1980
		6. Performing Organization Code
7. Author(s) S. O. O'Brien Lockheed Engineering and Management Services Company, Inc.		8. Performing Organization Report No LEMSCO-15326
		10. Work Unit No.
9. Performing Organization Name and Address Lockheed Engineering and Management Services Company, Inc. 1830 NASA Road 1 Houston, Texas 77058		
		11. Contract or Grant No. NAS 9-15800
		13. Type of Report and Period Covered Procedures document
12. Sponsoring Agency Name and Address National Aeronautics and Space Administration Lyndon B. Johnson Space Center Houston, Texas 77058 *J.D. Erickson, Tech. Mon.*		
		14. Sponsoring Agency Code

15. Supplementary Notes

16. Abstract

The program, LACREG, extracts all pixels that are contained in a specific IJ grid section. The pixels, along with a header record are stored in a disk file defined by the user. The program will extract up to 99 IJ grid sections.

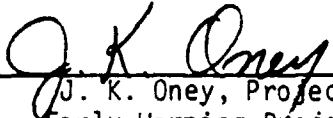| 17. Key Words (Suggested by Author(s)) IJ grid sections LAC/HRPT data tapes	18. Distribution Statement		
19. Security Classif. (of this report) Unclassified	20. Security Classif. (of this page) Unclassified	21. No. of Pages 14	22. Price*

LIMITED AREA COVERAGE/HIGH RESOLUTION
PICTURE TRANSMISSION (LAC/HRPT) TAPE
IJ GRID PIXEL EXTRACTION PROCESSOR
USER'S MANUAL

Job Order 73-368

PREPARED BY

S. O. O'Brien

APPROVED BY
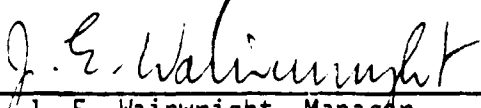
J. K. Oney, Project Manager
Early Warning Project Office

J. E. Wainwright, Manager
Development and Evaluation Department

LOCKHEED ENGINEERING AND MANAGEMENT SERVICES COMPANY, INC.

Under Contract NAS 9-15800

For

Earth Observations Division
Space and Life Sciences Directorate
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
LYNDON B. JOHNSON SPACE CENTER
HOUSTON, TEXAS

CONTENTS

FIGURES

LIMITED AREA COVERAGE/HIGH RESOLUTION PICTURE TRANSMISSION (LAC/HRDT) TAPE IJ GRID PIXEL EXTRACTION PROCESSOR

1. GENERAL INFORMATION

1.1 SYSTEM NAME

LACREG Processor.

1.2 PRIMARY USER

Early Warning/Crop Condition Assessment Project Personnel.

1.3 DEVELOPING ORGANIZATION

Lockheed Engineering and Management Services Company, Inc., Houston, Texas, S. O. O'Brien.

1.4 COMPUTER FACILITY

The LACREG Processor runs on a DEC PDP 11/70 computer system under the IAS operating system. It is implemented on the USDA FAS computer facility in Houston, Texas.

1.5 REFERENCES

1.5.1   NOAA POLAR ORBITER DATA (TIROS N) USERS GUIDE PRELIMINARY VERSION - JANUARY 1979

1.5.2   DEC-11-LMFUA-B-D   FORTRAN IV USERS GUIDE

1.5.3   DEC-11-LFSMA-A-D   RSX 11D FORTRAN SPECIAL SUBROUTINE REFERENCE MANUAL

2. SYSTEM DESCRIPTION

2.1 PURPOSE

The purpose of the LACREG processor is to extract the pixels, in up to
99 given IJ grid sections, from the LAC/HRPT tapes and write them to
disk.

2.2 USAGE

The LACREG processor is set up as a batch run. The input will be a
LAC/HRPT 1600 BPI tape data set, one or two tapes, and a control card
deck as described in section 3. The output will be a disk file consisting
of 1 logical record per each of 4 channels for each IJ set requested. The
name of the disk file will be user specified and the format is defined in
section 5.1.2.

2

3. INPUT

3.1 TYPE OF INPUT

3.1.1 TAPE

LAC/HRPT tape see reference 1.5.1 for format information.

3.1.2 DISK

Not Applicable.

3.1.3 CARD

The processor requires the following system control and data cards.
See figure 1 for deck set-up.

```
Col 1
↓
$JOB ERLYWARN2 LACREG 300
$MOUNT/FOR/DENSITY:1600 MM: TAPE-IN XX1:
          where TAPE-IN is input tape identifier
$ASSIGN XX1: 1
$RUN LACREG
N where N  = file number to start processing
M where M  = number of tapes to process
L where L  = number of IJ's to process, range = 01-99.
FFFFFF.TTT;V  File name of output disk file
XXX,YYY  There will be up to 99 of
    .       these cards where       ·
    .         XXX = 3 digit value for I
    .         YYY = 3 digit value for J
XXZ,YYZ
$EOD - This card will be omitted if there are 99 of the data cards for
       IJ values
$DISMOUNT  XX1:
$EOJ
```

$EOD

$DISMOUNT XX1:

$EOD

100,119

·
·
·
·

100,104

100,103

100,102

100,101

100,100

20

TSTDAT.DAT

2

1

$RUN LACREG

$ASSIGN XX1:1

$MOUNT/FOR/DENSITY:1600 MM:TAPEIN XX1:

$JOB ERLYWARN2 LACREG 300

(Front of deck)
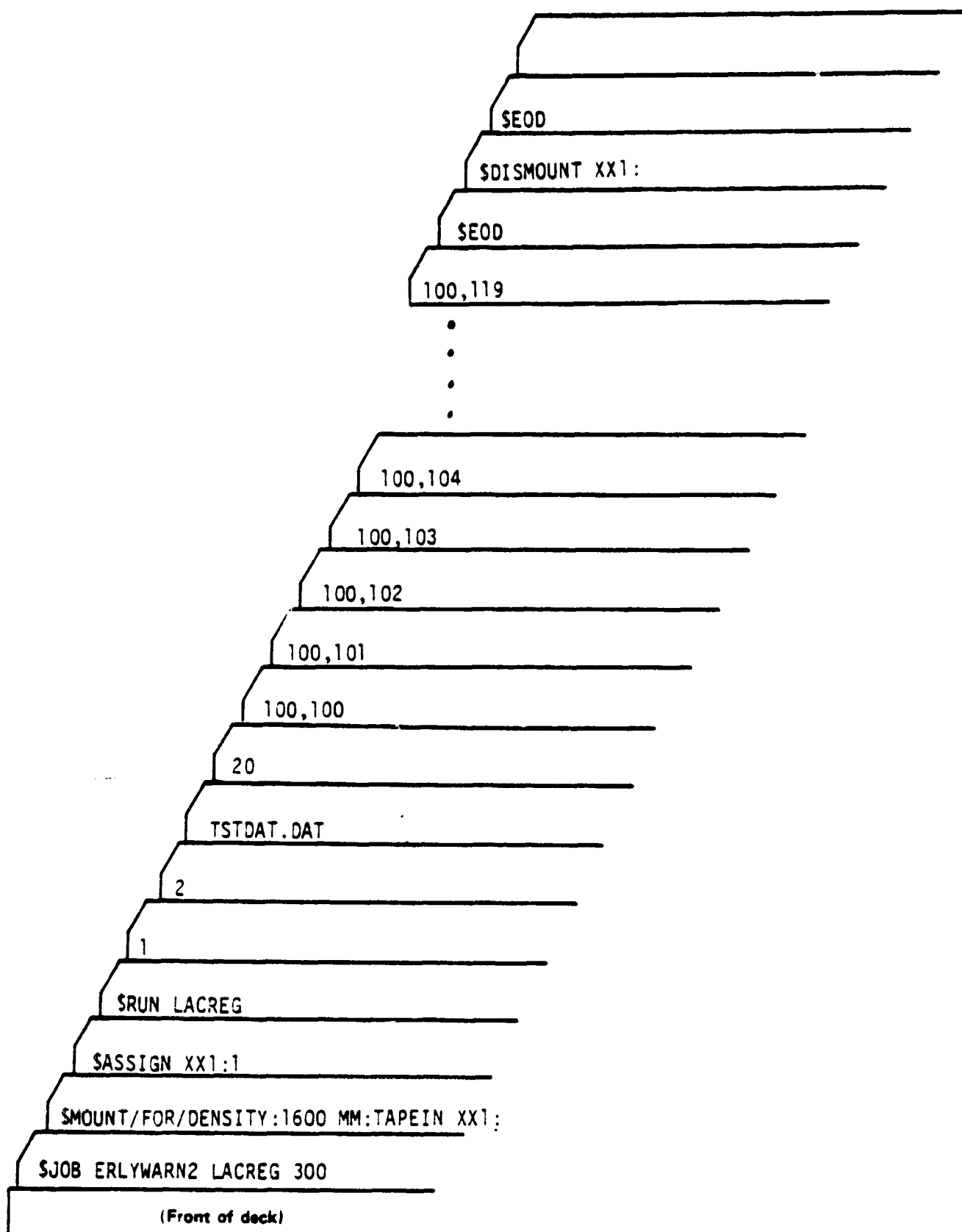
Figure 1. Deck Setup Example

4. PROCESSING

4.1 INTERACTIVE

Not applicable.

4.2 BATCH

The user must submit the deck of cards as described above with a Batch Job Request form. The request form is as follows:

BATCH JOB REQUEST	NAME: Susanne O'Brien	DATE SUBMITTED 6/5/80

REQUEST INSTRUCTIONS:

Please mount tape labelled McCrary TAPE 1 on one drive. Run job. When the following message appears on TTO:

> *****
>
> *REPLACE MOUNTED TAPE WITH NEXT TAPE IN SEQUENCE
>
> *****

then replace the tape labelled TAPE 1 with tape labelled TAPE 2 and type C to complete job.

Note: If all data are contained on one tape, the instructions will be to only: mount tape and run job.

COMPLETION DATE	OPERATOR

4.3 EXECUTION FLOW

```
        ┌──────┐
       │ Tape  │                              ╔══════╗
      │   2    │                             ╔══════╗ I,J
     ┌──────┐   │                           ╔══════╗ I,J
    │ LAC/   │(opt)                        │ NAME.DAT;1
   │ HRPT    │   │                        │
   │ Tape 1  │   │                       │ 1 or 2
    └─────────┘                           └──────────┘
         │                                      │
          │                                    │
           ╲                                  ╱
            ╲                                ╱
             ╲                              ╱
              ╲                            ╱
               ▼                          ▼
              ┌──────────────────────────┐
              │                          │
              │        LACREG            │
              │       PROCESSOR          │
              │                          │
              └──────────────────────────┘
                 ╱                    ╲
                ╱                      ╲
               ╱                        ╲
              ▼                          ▼
        ┌──────────┐              ┌──────────────┐
       │  DISK     │             │               │
       │  I,J      │             │   REPORT      │
       │  DATA     │             │               │
        └──────────┘              └──────────────┘
```
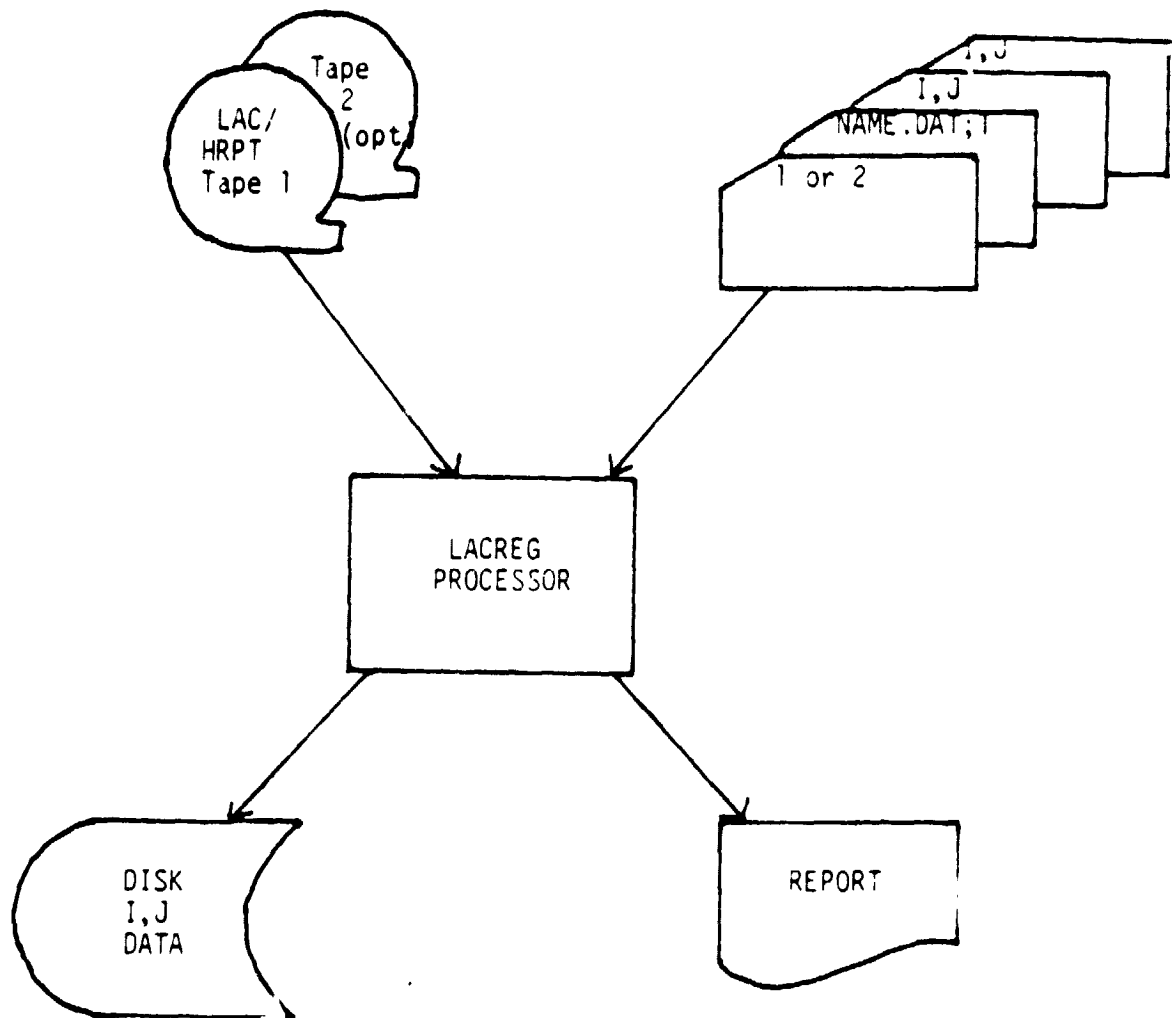
5. OUTPUT

5.1 TYPES OF OUTPUT

5.1.1 TAPE

None.

5.1.2 DISK

The I, J. data extracted is written to a disk file. Each file consists of one logical record per each channel (4 channels) for each I, J for which pixels are extracted. Each record is 2560 words in size and has the following format:

Word	Data Type	Contents
1	I	i value
2	I	J value
3	I	Channel number
4	I	Count of number of pixels extracted for this I, J.
5-6	R	Slope coefficient for this channel
7-8	R	Intercept coefficient for this channel
9-10	R	Latitude of start of search interval for IJ data on first line where this IJ has data
11-12	R	Longitude of start of search interval for IJ data on first line where this IJ has data
13-14	R	Zenith angle of LATLON point in words 7-8 and 9-10
15-16	R	Latitude of stop point for search interval for IJ data on the first line where this IJ has data
17-18	R	Longitude of stop point for search interval for IJ data on the first line where this IJ has data
19-20	R	Zenith angle of LATLON point in words 15-16 and 17-18
21-24	R	Not used
25-2560	I	Pixel data

5.1.3 PAPER

The output will contain verification data for each IJ, its scan lines and start and stop pixels on each scan line. The final lines of the report will contain the pixel count extracted for each I, J.

6. SPECIAL INSTRUCTIONS OR RESTRICTIONS

None