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**A Techniques Development Laboratory
Computer Program NWS TDL CP 95-1**



**AN ALTERNATIVE PROGRAM TO PILEEDIT
FOR GENERATING AN AFOS TRANS FILE**

**Silver Spring, Md.
December 1995**

**U. S. DEPARTMENT OF
COMMERCE**

**National Oceanic and
Atmospheric Administration**

**National Weather
Service**

PREFACE

The Techniques Development Laboratory's (TDL's) computer program (CP) series is a subset of TDL's technical memorandum series. The CP series documents computer programs written at TDL primarily for the Automation of Field Operations and Services (AFOS) computers.

The format for the series follows that given in the AFOS Handbook 5, Reference Handbook, Volume 6: Applications Programs, Part 1: Policy and Procedures, published by the Office of Technical Services/AFOS Operations Division.

NOAA Techniques Development Laboratory Computer Program NWS TDL

- CP 83-1 Gross Sectional Analysis of Wind Speed and Richardson Number. Gilhousen, Kemper, and Vercelli, May 1983. (PB83-205062)
- CP 83-2 Simulation of Spilled Oil Behavior in Bays and Coastal Waters. Hess, October 1983. (PB84-122597)
- CP 83-3 AFOS-Era Forecast Verification. Heffernan, Newton, and Miller, October 1983. (PB84-129303)
- CP 83-4 AFOS Monitoring of Terminal Forecasts. Vercelli, December 1983. (PB84-145697LL)
- CP 83-5 Generalized Exponential Markov (GEM) Updating Procedure for AFOS. Herrmann, December 1983. (PB84-154822LL)
- CP 84-1 AFOS Display of MDR Data on Local Map Background. Newton, July 1984. (PB84-220797)
- CP 84-2 AFOS Surface Observation Decoding. Perrotti, September 1984. (PB85-137586)
- CP 84-3 AFOS-Era Forecast Verification. Miller, Heffernan, and Ruth, September 1984. (PB86-148319LL)
- CP 85-1 AFOS Monitoring of Terminal Forecasts. Vercelli and Norman, May 1985. (PB85-236388LL)
- CP 85-2 AFOS Terminal Forecast Decoding. Vercelli, Norman, and Heffernan, October 1985. (PB86-147360LL)
- CP 85-3 AFOS-Era Forecast Verification. Ruth, Miller, and Heffernan, October 1985. (PB86-148319LL)
- CP 87-1 AFOS Terminal Aerodrome Forecast Formatting. Wantz and Eggers, July 1987. (PB88-10449LL)
- CP 87-2 AFOS-Era Forecast Verification. Ruth and Alex, July 1987. (PB88-125570LL)
- CP 87-3 Forecast Review. Wolf, July 1987. (PB88-125588LL)
- CP 87-4 AFOS Monitoring of MDR Data Using Flash Flood Guidance. Norman and Newton, October 1987. (PB88-137450LL)
- CP 87-5 AFOS Terminal Forecast Quality Control. Vercelli and Leaphart, December 1987. (PB88-169925LL)
- CP 88-1 AFOS Terminal Forecast Decoding. Vercelli and Leaphart, August 1988. (PB89-101240LL)
- CP 89-1 Structure Flow Diagram Generator. Adams, March 1989. (PB89-195978AS)
- CP 89-2 String Search. Adams, March 1989. (PB89-195986AS)
- CP 89-3 Extended Memory Library for AFOS Applications. Leaphart, June 1989. (PB92-216290)

(Continued on inside back cover)

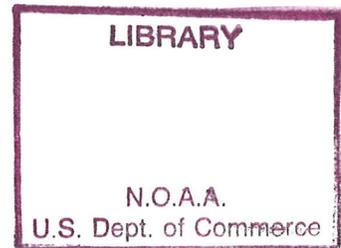
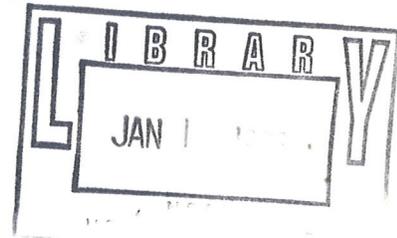
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**AN ALTERNATIVE PROGRAM TO PILEIT
FOR GENERATING AN AFOS TRANS FILE**

James F. Wantz

**Techniques Development Laboratory
Silver Spring, Md.
December 1995**



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AN ALTERNATIVE PROGRAM TO PILEEDIT FOR GENERATING AN AFOS TRANS FILE

James F. Wantz

1. INTRODUCTION

The program KEYSADD is a Real-Time Disk Operating System (RDOS) (Data General Corporation 1974 and 1978) background utility intended as a supplement to the PILEEDIT which is an Automation of Field Operations and Services (AFOS) (National Weather Service (NWS 1989a, 1989b, and 1994) command. Like PILEEDIT, KEYSADD allows for the addition, deletion, and modification of AFOS keys by creating a file named "TRANS" (Blackburn 1987). There is a 16-word "TRANS" file record written for each key changed. As with PILEEDIT, the program can be run several times, and it will keep appending to the existing TRANS file. It doesn't matter whether the TRANS file was created using PILEEDIT or KEYSADD, the result will be the same.

Like PILEEDIT, KEYSADD can be executed while AFOS is running, but you must still terminate AFOS and run EDITMERGE (NWS 1989b) and then the AFOS MODIFY macro before the database changes are actually made. Unlike PILEEDIT, however, KEYSADD permits the addition of many TRANS file records with the same characteristics without the need of specifying the characteristics more than once. On the other hand, PILEEDIT, which must be invoked from an Alphanumeric Display Module (ADM), requires the entry of detailed database information for each AFOS key to be added, deleted, or modified. This can prove to be quite tedious when more than a couple of keys are to be changed.

As already mentioned, when it is time to actually make the changes to the AFOS database, it will be necessary to terminate AFOS and run the RDOS background program EDITMERGE followed by an AFOS MODIFY (AFOSZMOD). Though EDITMERGE and AFOSZMOD do each take several minutes to run, the really tedious part of PILEEDIT is keying in detailed information for each AFOS product. KEYSADD reduces the amount of tedious work required.

NWS modernization during the next few years will require that a substantial number of changes be made to the AFOS database. KEYSADD will facilitate in making these changes.

2. METHODOLOGY AND SOFTWARE STRUCTURE

The KEYSADD program consists of one file: KEYSADD.SV. Only one version is required for both Release 3 and Release 4 of AFOS System-Z. The program automatically determines the correct release and permits keys to be added to 4 files (data files 0 through 3) if executing on release 3 or to 8 files (data files 0 through 7) if executing on release 4.

KEYSADD, uses the AFOS key search feature KSCRF (NWS 1989b) to access the DATAKEY0 (NWS 1989b) records for existing AFOS keys when the specified AFOS key is to be added, deleted, or modified. The program will not permit a key to be added if it is already in the AFOS database. Similarly, you cannot delete or modify a key that doesn't exist. A structure flow diagram is shown in Fig. 1.

3. PROCEDURES

Before running KEYSADD, the file KEYSADD.SV must reside in, or be linked to, the master partition SYSZ. At the background terminal you should type KEYSADD [enter]. The first thing you will see is the add/delete/modify menu. See the Appendix for some sample sessions of KEYSADD.

4. CAUTIONS

1. When adding keys one at a time using KEYSADD, the user should enter keys carefully in order to produce a good TRANS file.
2. Care should be taken so as to not enter "duplicate keys." If duplicate keys are entered, an error message will be printed and the TRANS file will have to be recreated.
3. Under normal circumstances, the program will not allow more than 1000 keys to be created for a single TRANS file. However, if for some reason the program indicates that there are more than 1000 keys in the TRANS file, delete the TRANS file and rerun the program. It is recommended that only 500 Keys be created at one time, because the TRANSPRINT program only prints the first 500 key entries in the TRANS file. The user should use the TRANSPRINT program to verify that the key contains the desired characteristics.
4. The AFOS database should be backed up before running KEYSADD and EDITMERGE.

5. REFERENCES

- Data General Corporation, 1974: RDOS/DOS User's Handbook. Ordering No. 093-000053, Data General Corporation, Southboro, Massachusetts, 235 pp.
- _____, 1978: RDOS/DOC User's Handbook. Ordering No. 093-000105, Data General Corporation, Southboro, Massachusetts, 216 pp.
- National Weather Service, 1989a: AFOS Handbook No. 2, Vol. 1, National Oceanic and Atmospheric Administration, U.S. Department of Commerce.
- _____, 1989b: AFOS Handbook No. 5, Vol. 6 Part 2, National Oceanic and Atmospheric Administration, U.S. Department of Commerce.
- _____, 1994: Guide to AFOS System Z. National Oceanic and Atmospheric Administration, U.S. Department of Commerce.
- Blackburn, Alan, 1987: The TRANS file deciphered. Eastern Region Computer Program Brief ERCPB No. 19 National Weather Service, NOAA, U.S. Department of Commerce, 2 pp.

6. PROGRAM INFORMATION AND PROCEDURES FOR INSTALLATION AND EXECUTION

PART A: PROGRAM INFORMATION and INSTALLATION PROCEDURE

PROGRAM NAME: KEYSADD ALL ID: Revision No.: 01.05

FUNCTION: Creates or appends entries to an AFOS TRANS file from the RDOS background.

PROGRAM INFORMATION:

Development Programmer:

James F. Wantz

Location: Techniques Development
Laboratory

Phone: 301-713-0056

Language: FORTRAN IV/Rev 5.57
MAC Assembler/Rev 6.30

Save file creation dates: KEYSADD

Original release/revision 01.00 -

Maintenance Programmer:

James F. Wantz

Location: Techniques Development
Laboratory

Phone: 301-713-0056

September 1995

Running time:

Less than 2 seconds/TRANS key record.

Disk space: Program files -

39 RDOS blocks

Data files:

TRANS -

5 RDOS blocks

PROGRAM REQUIREMENTS

Program files:

NAME

KEYSADD.SV

Data files:

NAME

Disk location

READ/WRITE

COMMENTS

TRANS

Master directory

R/W

Created or appended
to by KEYSADD

AFOS Products:

NONE

LOAD LINE

RLDR/A/P KEYSADD URREV ADDLMD RANGES WRTRANS STATE DCSORT INITAR ILEN ^
BMOVE ICEQAL <BG UTIL FORT AFOSE>.LB KEYSADD.LM/L

PROGRAM INSTALLATION

1. Move the executable module, KEYSADD.SV, to the master partition (usually SYSZ) or to an applications directory with links to the master directory. Under any circumstances, make sure you create proper links if you use an applications directory.

PART B: PROGRAM EXECUTION and ERROR CONDITIONS

PROGRAM NAME: KEYSADD

AAL ID: Revision No.: 01.00

PROGRAM EXECUTION

1. Run KEYSADD.

At the background terminal only, type: KEYSADD. You will be presented with a menu asking whether you wish to add, delete, or modify keys in the database. Next, a menu asking whether you wish to enter a range of keys or specify one key at a time will be displayed. If in the range option and you want to add keys, you should specify a sequence of keys that already exist in the AFOS database. You will then be prompted for the new category to add. An example of this would be if you wanted to add METAR products from Anniston, Alabama to Mobile, Alabama you would enter "BHMSAOANB" when prompted for the beginning key, and "BHMSAOMOB" when prompted for the ending key. Then when you are asked to supply the new category, you would enter "MTR". The program would write the key records from BHMTRANB to BHMTRMOB into the TRANS file. On the other hand, if you specify keys to be added one at a time, you will be asked how many keys and then prompted for new key names. If a key already exists, the program will tell you, and you will be asked to try again.

Definition of switches:

GLOBAL

NONE.

LOCAL

NONE.

PROGRAM ERROR CONDITIONS

ERROR CONDITIONS

MEANING

Duplicate key

Duplicate key found in TRANS file. User must delete entire TRANS file and start over.

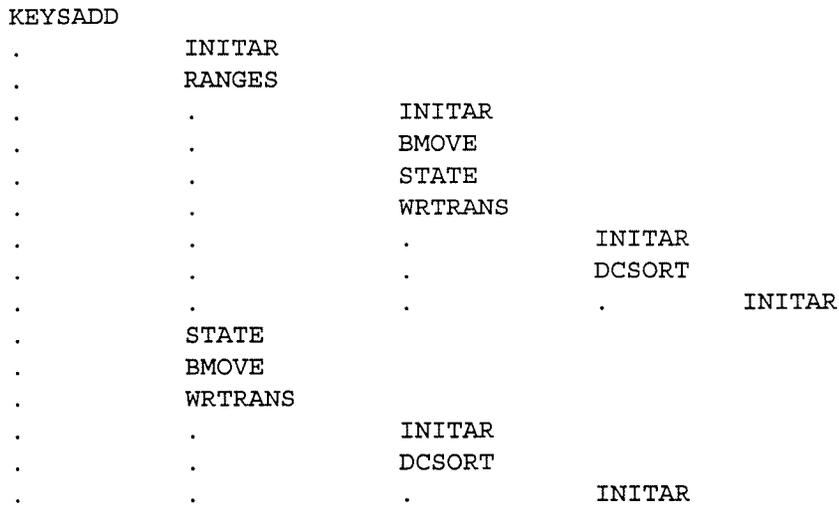


Figure 1. Structure diagram for program KEYSADD.

PRODUCT	TRANS	PURGE	FILE	REPL	BKGD
ABQMTRABQ	A	24H	3	0	
ABQMTRALM	A	4M	4	0	
ABQMTRCAO	A	4M	5	0	
ABQMTRCNM	A	4M	6	0	
ABQMTRCVN	A	4M	0	0	
ABQMTRCVS	A	4M	7	0	
ABQMTRDMN	A	4M	0	0	
ABQMTRE23	A	4M	1	0	
ABQMTRE28	A	4M	2	0	
ABQMTRE33	A	4M	3	0	
ABQMTRFMN	A	48M	4	0	
ABQMTRGNT	A	4M	5	0	
ABQMTRGUP	A	4M	6	0	
ABQMTRHMN	A	48M	7	0	
ABQMTRHOB	A	4M	0	0	
ABQMTRLAM	A	4M	1	0	
ABQMTRLRU	A	4M	2	0	
ABQMTRLVS	A	4M	3	0	
ABQMTRONM	A	4M	4	0	
ABQMTRP70	A	4M	5	0	
ABQMTRROW	A	4M	6	0	
ABQMTRSAF	A	4M	7	0	
ABQMTRSKX	A	4M	0	0	
ABQMTRSRR	A	4M	1	0	
ABQMTRSVC	A	4M	2	0	
ABQMTRTCC	A	24M	3	0	
ABQMTRTCS	A	4M	4	0	
CLEMTRCAK	A	12H	7	0	
CLEMTRCGF	A	12H	7	0	
CLEMTRCLE	A	12H	7	0	
CLEMTRCMH	A	12H	7	0	
CLEMTRCVG	A	12H	7	0	
CLEMTRDAY	A	12H	7	0	
CLEMTRFDY	A	12H	7	0	
CLEMTRFFO	A	12H	7	0	
MIAROBFML	A	6M	6	0	
MIAROBMIA	D	3M	4	0	
RDUROBHAT	D	3M	7	2	
RDUROBMHX	A	6M	6	0	
WBCROBLWX	A	6M	6	0	
WBCROBNHK	D	6M	6	2	

Figure 2. Sample TRANSOUT.SC file from the TRANSPRINT showing TRANS file records created by KEYSADD. Up to 500 TRANS file records can be printed using TRANSPRINT. Listed are AFOS products, action to be taken (Add or Delete), number of hours or versions to be retained, location of the data file (for Release 4.0, files range from 0 to 7), replenish products and map background for graphics products

APPENDIX

Example 1. An example of running KEYSADD more than once. In the first run the operator chooses to write "delete AFOS key" records one at a time to the TRANS file, and then reruns KEYSADD placing "add key" records into the same file.

```
R
KEYSADD
***** WELCOME TO KEYSADD: THE TRANS FILE BUILDER *****
      IMPORTANT INSTRUCTIONS FOLLOW!
      AFTER RUNNING THIS PROGRAM YOU MUST TERMINATE AFOS AND RUN
      EDITMERGE. THEN RUN AFOSZMOD
WHAT DO YOU WANT TO DO TO THE AFOS DATABASE?
ADD, DELETE OR MODIFY (A/D/M)
D      (delete keys)
DO YOU WANT TO ENTER KEYS ONE AT A TIME OR SPECIFY A RANGE?
  O --ONE AT A TIME
  R --RANGE OF KEYS
O      (specifies one at a time)
ENTER A BLANK LINE (HIT RETURN) WHEN YOU ARE DONE DELETING KEYS
AFOS PRODUCT TO BE DELETED?
KEY #      1
RDUROBHAT
AFOS PRODUCT TO BE DELETED?
KEY #      2
WBCROBNHK
AFOS PRODUCT TO BE DELETED?
KEY #      3
MIAROBMIA
AFOS PRODUCT TO BE DELETED?
KEY #      4 (hit return without typing anything else)

NUMBER OF RECORDS ADDED THIS SESSION:      3
TOTAL NUMBER OF RECORDS IN TRANS FILE:      3
PROGRAM COMPLETE--KEYS ADDED
DO YOU WISH TO APPEND MORE RECORDS TO THE TRANS FILE?
  M --MORE RECORDS TO THE TRANS FILE
  Q --QUIT THE PROGRAM
M      (M--therefore causes the program to execute again)
***** WELCOME TO KEYSADD: THE TRANS FILE BUILDER *****
      IMPORTANT INSTRUCTIONS FOLLOW!
      AFTER RUNNING THIS PROGRAM YOU MUST TERMINATE AFOS AND RUN
      EDITMERGE. THEN RUN AFOSZMOD
WHAT DO YOU WANT TO DO TO THE AFOS DATABASE?
ADD, DELETE OR MODIFY (A/D/M)
A      (this time we want to add key records)
DO YOU WANT TO ENTER KEYS ONE AT A TIME OR SPECIFY A RANGE?
  O --ONE AT A TIME
  R --RANGE OF KEYS
O      (specify each key identifier)
ENTER THE PRODUCT CHARACTERISTICS YOU DESIRE:

PURGE BY TIME? (H) VERSIONS? (M):
```

M (versions)

NUMBER OF HOURS/VERSIONS (0-127): 6
ENTER DATA FILE NUMBER (0-7:) 6
ENTER A MAP BACKGROUND (0-99)
IF THE PRODUCT IS NOT A GRAPHIC, ENTER 0: 0
MASS MEDIA HEADER (0-3) 0
ENTER STATE ID(S) (SS,SS,SS,SS) & STRIKE A CARRIAGE RETURN

REPLENISH PRIORITY (0-3)? 0
ENTER A BLANK LINE (HIT RETURN) WHEN YOU ARE DONE ADDING KEYS
ENTER PRODUCT TO BE ADDED:
KEY # 1
RDUROBMHX
ENTER PRODUCT TO BE ADDED:
KEY # 2
MIAROBMFL
ENTER PRODUCT TO BE ADDED:
KEY # 3
WBCROBLWX
ENTER PRODUCT TO BE ADDED:
KEY # 4 (hit return to terminate entry)

NUMBER OF RECORDS ADDED THIS SESSION: 3
TOTAL NUMBER OF RECORDS IN TRANS FILE: 6
PROGRAM COMPLETE--KEYS ADDED
DO YOU WISH TO APPEND MORE RECORDS TO THE TRANS FILE?
M --MORE RECORDS TO THE TRANS FILE
Q --QUIT THE PROGRAM
Q (return control to RDOS)
THANKS FOR USING KEYSADD
STOP

Example 2. Adding a range of keys. In this session the user preserves the existing characteristics of the products he/she is using to create a new set of key records.

```
R
KEYSADD
***** WELCOME TO KEYSADD: THE TRANS FILE BUILDER *****
      IMPORTANT INSTRUCTIONS FOLLOW!
      AFTER RUNNING THIS PROGRAM YOU MUST TERMINATE AFOS AND RUN
      EDITMERGE. THEN RUN AFOSZMOD
WHAT DO YOU WANT TO DO TO THE AFOS DATABASE?
ADD, DELETE OR MODIFY (A/D/M)
D
DO YOU WANT TO ENTER KEYS ONE AT A TIME OR SPECIFY A RANGE?
  O --ONE AT A TIME
  R --RANGE OF KEYS
O

ENTER A BLANK LINE (HIT RETURN) WHEN YOU ARE DONE DELETING KEYS
AFOS PRODUCT TO BE DELETED?
KEY #      1
WBCRON_BNHK (user had to hit a backspace to get the correct id)
AFOS PRODUCT TO BE DELETED?
KEY #      2
RDUROBHAT
AFOS PRODUCT TO BE DELETED?
KEY #      3
NEWROBSIL
AFOS PRODUCT TO BE DELETED?
KEY #      4
NEWROBLCH
AFOS PRODUCT TO BE DELETED?
KEY #      5
Q (Mistake 2)
KEY TOO SHORT --TRY AGAIN
KEY #      5
NEWROBLCH (Mistake 3 --duplicate key)
AFOS PRODUCT TO BE DELETED?
KEY #      6

NUMBER OF RECORDS ADDED THIS SESSION:      5
TOTAL NUMBER OF RECORDS IN TRANS FILE:    5
KEY: NEWROBLCH IS DUPLICATED IN TRANS FILE
PROGRAM COMPLETE--KEYS ADDED
DO YOU WISH TO APPEND MORE RECORDS TO THE TRANS FILE?
  M --MORE RECORDS TO THE TRANS FILE
  Q --QUIT THE PROGRAM
Q
THANKS FOR USING KEYSADD
STOP
```

(Continued from inside front cover)

Computer Program NWS TDL

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- CP 93-1 AFOS Profiler Software System. Battel, Leaphart, Moeller, and Petrie, August 1993. (PB94-112711)
- CP 93-2 AFOS Surface Observation Decoding. Beasley, September 1993. (PB94-112042)
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- CP 93-5 Retrieving Alphanumeric and Graphic Products from the AFOS Database through the Background Partition. Beasley, November 1993. (PB94-143245)
- CP 93-6 NOAA Weather Radio Climatological Data Reports. Calkins and Battel, December 1993. (PB94-143252)
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