



# Bell Laboratories

SUBJECT: NEW MANUAL PAGE FOR XPR

DATE: 11/15/82

FROM: J. E. Defenderfer

Attached is the new manual page for xpr which produces printed listings and/or cross references (x-refs) of source files. The new version is on the development machines.

In summary, the changes to xpr are:

- A new option, `-d`, which produces x-refs of "definitions" (i.e. defined symbols, structure and union definitions, and typedef's). A definition x-ref is particularly useful for header file listings.
- New options, `-mo0`, which facilitate listings intended for double sided copying (e.g. UNIX opsys listings).
- A new option, `-j`, which causes file names rather than file numbers to appear in the x-refs. This is most useful when you produce listings via another program like `spr`, and you also want the x-refs of `xpr`.
- Improvements in the heuristic parsing of C files to reflect new C features and remove selected deficiencies.

**Some Notes on General Use.** A few comments on the three options of `xpr` which are frequently used, `-w<wid>`, `-l`, and `-h`:

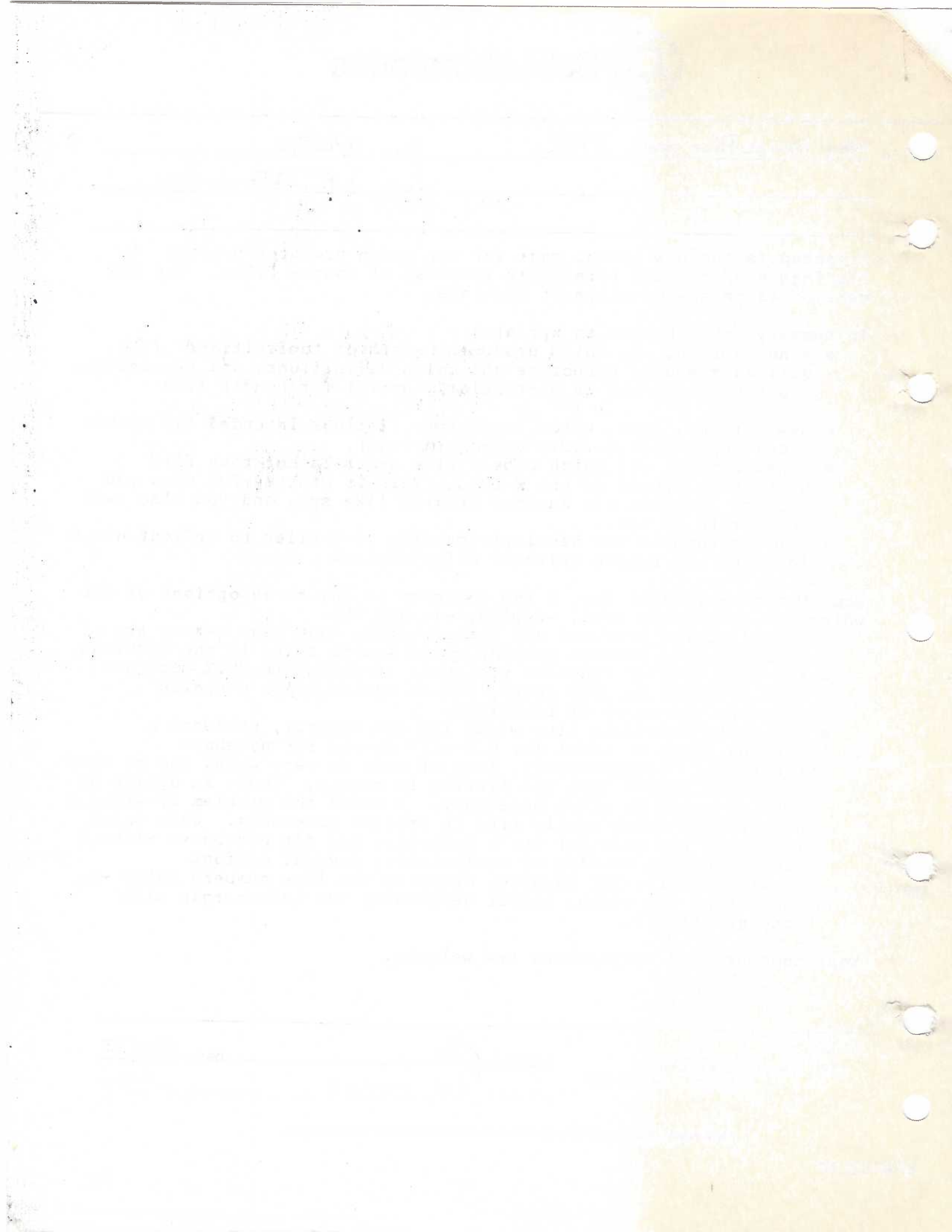
- The `-l` option produces all three x-refs. The best x-refs are produced when headers precede other source files in the listings.
- For code without function prologues (frequent in UNIX code and less frequent in SCCS code), the `-h` option helps visually identify the start of functions.
- `xpr`, with a default line width (72 characters), produces a listing which is ideal for 8.5"x11" sheets for notebook insertion. Unfortunately, lots of code is very wide, and so many lines are folded that the listing is crummy. Thus, an option of `-w80` or `-w100` is often necessary. I avoid the problem by writing narrow code which easily fits in program notebooks. Code which is barely too wide for `xpr`'s defaults, may fit notebooks without excessive line folding by manipulating several options simultaneously; for example, dropping the line numbers using `-n`, increasing the width, and/or decreasing the left margin with `-c<page offset>`.

Your comments and suggestions are welcome.

Copy to:  
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THIS FORM IS DESIGNED FOR INFORMAL HANDWRITTEN MEMORANDA.



## NAME

xpr - Make listing and cross reference of C program

## USAGE

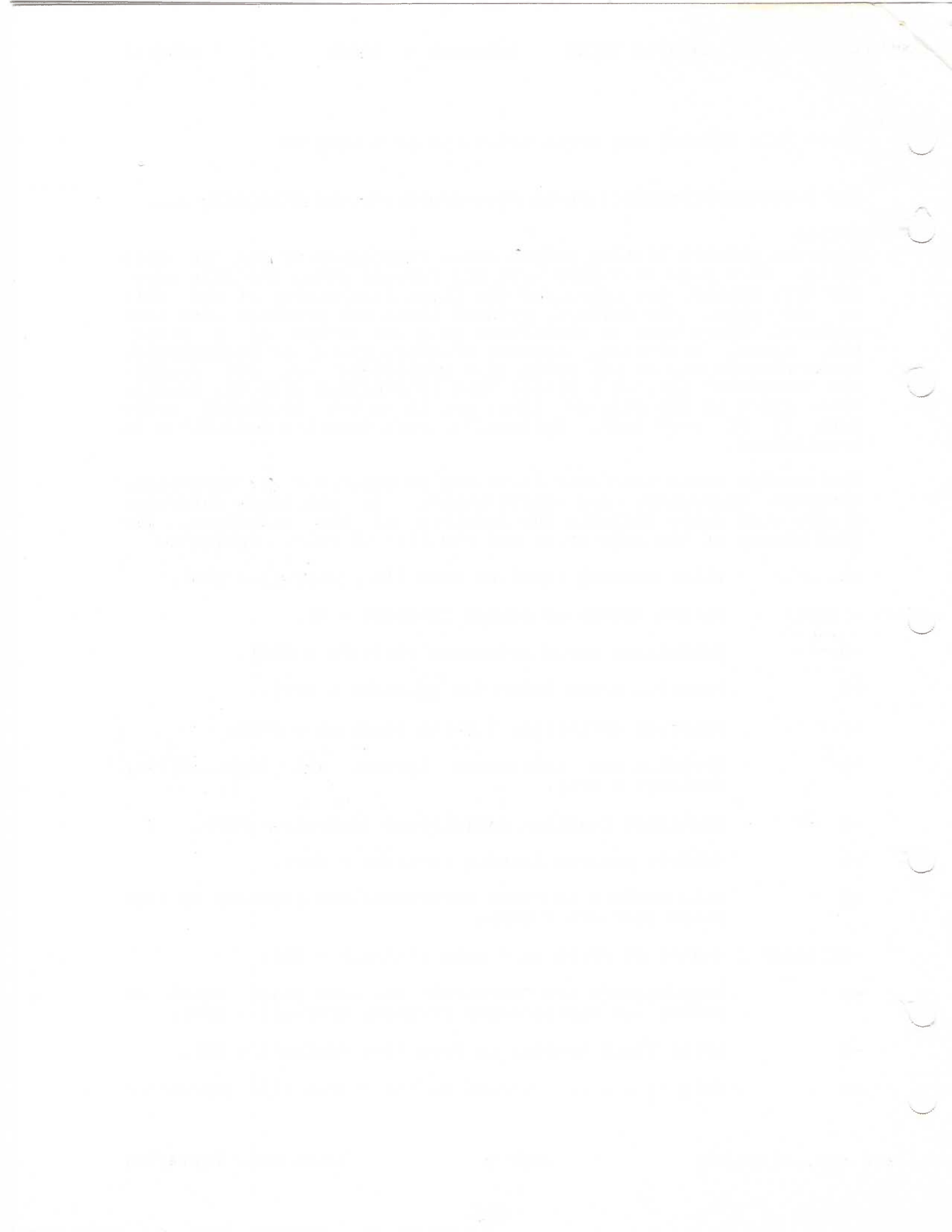
xpr [-bc<col>dfFghijl<lines>mnoOsuvw<wid>x<num>] file file ....

## DESCRIPTION

Produces printed listing and/or cross references of one or more files. Each page is headed with the current date, the file name, the file number, the page, and the first line number of the file on the page. By default, printed lines are prefixed with line numbers. Lines over 72 characters long are folded at a blank, tab, comma, semicolon, closing bracket, brace, or parenthesis; lines without any of the seven fold characters are not folded. The "overflow" text of a folded line is prefixed with the leading white space of the original line, and it is not truncated again even if it very long. Optionally, each function definition is highlighted.

Optionally, cross reference lists may be generated for functions, external variables, and definitions. In the cross reference lists, each entry includes the function of the reference, the line number of the reference, and the line of code. Options:

- b Print nesting level on each line (default = OFF).
- c<col> Column offset of output (default = 4).
- d — Definition cross reference (default = OFF).
- f — Function cross reference (default = OFF).
- F — Function definition listing (default = OFF).
- g — Global cross references (across all input files) (default = OFF).
- h — Highlight function definitions (default = OFF).
- i Inhibit program listing (default = OFF).
- j — File numbers in cross references are replaced by file names (default = OFF).
- l<lines> Number of lines in a page (default = 66).
- m Page headers are "mirrored" for even pages which is useful for double sided printing (default = OFF).
- n Print lines numbers on each line (default = ON).
- o Skip to odd page before starting next file (default =



OFF).

- O Skip to odd pages before all files (default = OFF).
- S Substitute the next argument as the printed name of the next file processed.
- v Variable cross reference (default = OFF).
- w<wid> Width of printed lines, which does not include the column offset, line numbering, or nesting level (default = 72).
- x<num> Set file number of next processed file.
- ! Selects the set of options, "gfFvd", which opts for all cross references and each to be global.

xpr will read the environmental parameter, XPR, as a set of options to the program. Thus, you may reset any of the defaults listed above. Each invocation of an OFF/ON flag toggles that flag. You may put options between file names to change the treatment of subsequent files. If you call xpr with no arguments, then it tells you how to use it. If you call it with an argument of just "--", then standard input is read as a file.

#### FILES

/tmp/FcxXXXXXX - Temp sort file for function x-ref  
/tmp/VcxXXXXXX - Temp sort file for variable x-ref  
/tmp/DcxXXXXXX - Temp sort file for definition x-ref

#### BUGS

Uses heuristics to produce the cross reference; in particular, "defines" can be used in such a way as to really screw the cross references up. References to external variables are not collected until the program encounters an external declaration for that variable; thus, the ordering of the files may cause a difference on the variable cross reference although the function cross reference is often correct regardless of the ordering.

