

## Withdrawn Routines

This document lists all those routines that have been present in earlier Marks of the Library (back as far as Mark 6), but have since been withdrawn. Copies of these documents may be obtained from NAG upon request. The document gives the names of the routines which are now recommended as their replacements. Another document ‘Advice on Replacement Calls for Withdrawn/Superseded Routines’ gives more detailed guidance for those routines withdrawn since Mark 13.

<b>Withdrawn Routine</b>	<b>Mark of Withdrawal</b>	<b>Recommended Replacement</b>
C02ADF	15	C02AFF
C02AEF	16	C02AGF
C05AAF	9	C05ADF
C05ABF	9	C05ADF
C05ACF	9	C05ADF
C05NAF	10	C05NBF or C05NCF
C05PAF	8	C05PBF or C05PCF
C06AAF	9	C06ECF or C06FRF
C06ABF	9	C06EAF or C06FPF
C06ACF	12	C06EKF or C06FKF
C06ADF	12	C06FFF
D01AAF	8	D01AJF
D01ABF	8	D01AJF
D01ACF	9	D01BDF
D01ADF	8	D01BAF or D01BBF
D01AEF	8	D01BAF or D01BBF
D01AFF	8	D01BAF or D01BBF
D01AGF	9	D01AJF
D01FAF	11	D01GBF
D02AAF	8	D02PDF and related routines
D02ABF	8	D02PCF and related routines
D02ADF	9	D02HAF or D02GAF
D02AFF	9	D02TGF
D02AHF	8	D02CJF or D02QFF
D02AJF	8	D02EJF or D02NBF and related routines
D02BAF	18	D02PCF and associated D02P routines
D02BBF	18	D02PCF and associated D02P routines
D02BDF	18	D02PCF and associated D02P routines
D02CAF	18	D02CJF
D02CBF	18	D02CJF
D02CGF	18	D02CJF
D02CHF	18	D02CJF
D02EAF	18	D02EJF
D02EBF	18	D02EJF
D02EGF	18	D02EJF
D02EHF	18	D02EJF
D02PAF	18	D02PDF and associated D02P routines
D02QAF	14	D02QFF, D02QWF and D02QXF
D02QBF	13	D02NBF and related routines
D02QDF	17	D02NBF or D02NCF
D02QQF	17	not needed except with D02QDF
D02XAF	18	D02PXF and associated D02P routines
D02XBF	18	D02PXF and associated D02P routines
D02XGF	14	D02QZF
D02XHF	14	D02QZF
D02YAF	18	D02PDF and associated D02P routines
D03PAF	17	D03PCF

Withdrawn Routine	Mark of Withdrawal	Recommended Replacement
D03PBF	17	D03PCF
D03PGF	17	D03PCF
E01ACF	15	E01DAF and E02DEF
E01ADF	9	E01BAF
E02DBF	16	E02DEF
E04AAF	7	E04ABF
E04BAF	7	E04BBF
E04CDF	7	E04UCF
E04CEF	7	E04JAF
E04CFF	8	E04UCF
E04CGF	13	E04JAF
E04DBF	13	E04DGF
E04DCF	7	E04UCF or E04KDF
E04DDF	8	E04UCF or E04KDF
E04DEF	13	E04KAF
E04DFE	13	E04KCF
E04EAF	8	E04LBF
E04EBF	13	E04LAF
E04FAF	8	E04FCF or E04FDF
E04FBF	7	E04FCF or E04FDF
E04FDF	19	E04FYF
E04GAF	8	E04GBF, E04GCF, E04GDF or E04GEF
E04GCF	19	E04GYF
E04HAF	7	E04UCF
E04HBF	16	no longer required
E04HFF	19	E04HYF
E04JAF	19	E04JYF
E04JBF	16	E04UCF
E04KAF	19	E04KYF
E04KBF	16	E04UCF
E04KCF	19	E04KZF
E04LAF	19	E04LYF
E04MBF	18	E04MFF
E04NAF	18	E04NFF
E04UAF	13	E04UCF
E04UPF	19	E04UNF
E04VAF	12	E04UCF
E04VBF	12	E04UCF
E04VCF	17	E04UCF
E04VDF	17	E04UCF
E04WAF	12	E04UCF
E04ZAF	12	E04ZCF
E04ZBF	12	no longer required
F01AAF	17	F07ADF (SGETRF/DGETRF) and F07AJF (SGETRI/DGETRI)
F01ACF	16	F01ABF
F01AEF	18	F07FDF (SPOTRF/DPOTRF) and F08SEF (SSYGST/DSYGST)
F01AFF	18	F06YJF (STRSM/DTRSM)
F01AGF	18	F08FEF (SSYTRD/DSYTRD)
F01AHF	18	F08FGF (SORMTR/DORMTR)
F01AJF	18	F08FEF (SSYTRD/DSYTRD) and F08FFF (SORGTR/DORGTR)
F01AKF	18	F08NEF (SGEHRD/DGEHRD)
F01ALF	18	F08NGF (SORMHR/DORMHR)
F01AMF	18	F08NSF (CGEHRD/ZGEHRD)
F01ANF	18	F08NTF (CUNMHR/ZUNMHR)
F01APF	18	F08NFF (SORGHR/DORGHR)

Withdrawn Routine	Mark of Withdrawal	Recommended Replacement
F01ATF	18	F08NHF (SGEBAL/DGEBAL)
F01AUF	18	F08NJF (SGEBAK/DGEBAK)
F01AVF	18	F08NVF (CGEBAL/ZGEBAL)
F01AWF	18	F08NWF (CGEBAK/ZGEBAK)
F01AXF	18	F08BEF (SGEQPF/CGEQPF)
F01AYF	18	F08GEF (SSPTRD/DSPTRD)
F01AZF	18	F08GGF (SOPMTR/DOPMTR)
F01BCF	18	F08FSF (CHETRD/ZHETRD) and F08FTF (CUNGTR/ZUNGTR)
F01BDF	18	F07FDF (SPOTRF/DPOTRF) and F08SEF (SSYGST/DSYGST)
F01BEF	18	F06YFF (STRMM/DTRMM)
F01BFF	8	F07GDF (SPPTRF/DPPTRF) or F07PDF (SSPTRF/DSPTRF)
F01BHF	9	F02WEF
F01BJF	9	F08HEF (SSBTRD/DSBTRD)
F01BKF	9	F02WDF
F01BMF	9	F07BDF (SGBTRF/DGBTRF)
F01BNF	17	F07FRF (CPOTRF/ZPOTRF)
F01BPF	17	F07FRF (CPOTRF/ZPOTRF) and F07FWF (CPOTRI/ZPOTRI)
F01BQF	16	F07GDF (SPPTRF/DPPTRF) or F07PDF (SSPTRF/DSPTRF)
F01BTF	18	F07ADF (SGETRF/DGETRF)
F01BWF	18	F08HEF (SSBTRD/DSBTRD)
F01BXF	17	F07FDF (SPOTRF/DPOTRF)
F01CAF	14	F06QHF
F01CBF	14	F06QHF
F01CCF	7	F06QFF
F01CDF	15	F01CTF
F01CEF	15	F01CTF
F01CFE	14	F06QFF
F01CGF	15	F01CTF
F01CHF	15	F01CTF
F01CJF	8	F01CRF
F01CLF	16	F06YAF (SGEMM/DGEMM)
F01CMF	14	F06QFF
F01CNF	13	F06EFF (SCOPY/DCOPY)
F01CPF	13	F06EFF (SCOPY/DCOPY)
F01CQF	13	F06FBF
F01CSF	13	F06PEF (SSPMV/DSPMV)
F01DAF	13	F06EAF (SDOT/DDOT)
F01DBF	13	X03AAF
F01DCF	13	F06GAF (CDOTU/ZDOTU)
F01DDF	13	X03ABF
F01DEF	14	F06EAF (SDOT/DDOT)
F01LBF	18	F07BDF (SGBTRF/DGBTRF)
F01LZF	15	F08KEF (SGEBRD/DGEBRD) and F08KFF (SORGBR/DORGBR) or F08KGF (SORMBR/DORMBR)
F01MAF	19	F11JAF
F01NAF	17	F07BRF (CGBTRF/ZGBTRF)
F01QAF	15	F08AEF (SGEQRF/DGEQRF)
F01QBF	15	F01QJF
F01QCF	18	F08AEF (SGEQRF/DGEQRF)
F01QDF	18	F08AGF (SORMQR/DORMQR)
F01QEF	18	F08AFF (SORGQR/DORGQR)
F01QFF	18	F08BEF (SGEQPF/DGEQPF)
F01RCF	18	F08ASF (CGEQRF/ZGEQRF)
F01RDF	18	F08AUF (CUNMQR/ZUNMQR)
F01REF	18	F08ATF (CUNGQR/ZUNGQR)
F01RFF	18	F08BSF (CGEQPF/ZGEQPF)

Withdrawn Routine	Mark of Withdrawal	Recommended Replacement
F02AAF	18	F02FAF
F02ABF	18	F02FAF
F02ADF	18	F02FDF
F02AEF	18	F02FDF
F02AFF	18	F02EBF
F02AGF	18	F02EBF
F02AHF	8	F02ECF
F02AJF	18	F02GBF
F02AKF	18	F02GBF
F02ALF	8	F02GCF
F02AMF	18	F08JEF (SSTEQR/DSTEQR)
F02ANF	18	F08PSF (CHSEQR/ZHSEQR)
F02APF	18	F08PEF (SHSEQR/DHSEQR)
F02AQF	18	F08PEF (SHSEQR/DHSEQR) and F08QKF (STREVC/DTREVC)
F02ARF	18	F08PSF (CHSEQR/ZHSEQR) and F08QXF (CTREVC/ZTREVC)
F02ATF	8	F08PKF (SHSEIN/DHSEIN)
F02AUF	8	F08PXF (CHSEIN/ZHSEIN)
F02AVF	18	F08JFF (SSTERF/DSTERF)
F02AWF	18	F02HAF
F02AXF	18	F02HAF
F02AYF	18	F08JSF (CSTEQR/ZSTEQR)
F02BBF	19	F02FCF
F02BCF	19	F02ECF
F02BDF	19	F02GCF
F02BEF	18	F08JFF (SSTEBZ/DSTEBZ) and F08JKF (SSTEIN/DSTEIN)
F02BFF	18	F08JFF (SSTEBZ/DSTEBZ)
F02BKF	18	F08PKF (SHSEIN/DHSEIN)
F02BLF	18	F08PXF (CHSEIN/ZHSEIN)
F02BMF	9	F08HEF (SSBTRD/DSBTRD) and F08JJF (SSTEBZ/DSTEBZ)
F02SWF	18	F08KEF (SGBEQR/DGEBQR)
F02SXF	18	F08KFF (SORGBR/DORGBR) or F08KGF (SORMBR/DORMBR)
F02SYF	18	F08MEF (SBDSQR/DBDSQR)
F02SZF	15	F08MEF (SBDSQR/DBDSQR)
F02UWF	18	F08KSF (CGEBRD/ZGEBRD)
F02UXF	18	F08KTF (CUNGBR/ZUNGBR) or F08KUF (CUNMBR/ZUNMBR)
F02UYF	18	F08MSF (CBDSQR/ZBDSQR)
F02WAF	16	F02WEF
F02WBF	14	F02WEF
F02WCF	14	F02WEF
F03AGF	17	F07HDF (SPBTRF/DPBTRF)
F03AHF	17	F07ARF (CGETRF/ZGETRF)
F03AJF	8	F01BRF
F03AKF	8	F01BSF
F03ALF	9	F07BDF (SGBTRF/DGBTRF)
F03AMF	17	none – see the F03 Chapter Introduction
F04AKF	17	F07ASF (CGETRS/ZGETRS)
F04ALF	17	F07HEF (SPBTRS/DPBTRS)
F04ANF	18	F08AGF (SORMQR/DORMQR) and F06PJF (STRSV/DTRSV)
F04APF	8	F04AXF
F04AQF	16	F07GEF (SPPTRS/DPPTRS) or F07PEF (SSPTRS/DSPTRS)
F04AUF	9	F04JGF
F04AVF	9	F07BEF (SGBTRS/DGBTRS)
F04AWF	17	F07FSF (CPOTRS/ZPOTRS)
F04AYF	18	F07AEF (SGETRS/DGETRS)
F04AZF	17	F07FEF (SPOTRS/DPOTRS)

<b>Withdrawn Routine</b>	<b>Mark of Withdrawal</b>	<b>Recommended Replacement</b>
F04LDF	18	F07BEF (SGBTRS/DGBTRS)
F04MAF	19	F11JCF
F04MBF	19	F11GAF, F11GBF and F11GCF (or F11JCF or F11JEF)
F04NAF	17	F07BSF (CGBTRS/ZGBTRS)
F05ABF	14	F06EJF (SNRM2/DNRM2)
F06QGF	16	F06RAF, F06RCF and F06RJF
F06VGF	16	F06UAF, F06UCF and F06UJF
G01ACF	9	G04BBF
G01BAF	16	G01EBF
G01BBF	16	G01EDF
G01BCF	16	G01ECF
G01BDF	16	G01EEF
G01CAF	16	G01FBF
G01CBF	16	G01FDF
G01CCF	16	G01FCF
G01CDF	16	G01FEF
G01CEF	18	G01FAF
G02CJF	16	G02DAF and G02DGF
G04ADF	17	G04BCF
G04AEF	17	G04BBF
G04AFF	17	G04CAF
G05AAF	7	G05CAF
G05ABF	7	G05DAF
G05ACF	7	G05DBF
G05ADF	7	G05DDF
G05AEF	7	G05DDF
G05AFF	7	G05DEF
G05AGF	7	G05DFE
G05AHF	7	G05FFF
G05AJF	7	G05FFF
G05AKF	7	G05FFF
G05ALF	7	G05FEF
G05AMF	7	G05FEF
G05ANF	7	G05DHF
G05APF	7	G05DJF
G05AQF	7	G05DKF
G05ARF	7	G05EXF
G05ASF	7	G05EDF
G05ATF	7	G05EBF
G05AUF	7	G05EFF
G05AVF	7	G05ECF
G05AWF	7	G05EXF
G05AZF	7	G05EYF
G05BAF	7	G05CBF
G05BBF	7	G05CCF
G05DGF	16	G05FFF
G05DLF	16	G05FEF
G05DMF	16	G05FEF
G08ABF	16	G08AGF
G08ADF	16	G08AHF, G08AKF and G08AJF
G08CAF	16	G08CBF
G13DAF	17	G13DMF
H01ABF	12	E04MFF
H01ADF	12	E04MFF
H01AEF	9	E04MFF
H01AFF	12	E04MFF
H01BAF	12	E04MFF

<b>Withdrawn Routine</b>	<b>Mark of Withdrawal</b>	<b>Recommended Replacement</b>
H02AAF	12	E04NCF
H02BAF	15	H02BBF
M01AAF	13	M01DAF
M01ABF	13	M01DAF
M01ACF	13	M01DBF
M01ADF	13	M01DBF
M01AEF	13	M01DEF and M01EAF
M01AFF	13	M01DEF and M01EAF
M01AGF	13	M01DFE and M01EBF
M01AHF	13	M01DFE and M01EBF
M01AJF	16	M01DAF, M01ZAF and M01CAF
M01AKF	16	M01DAF, M01ZAF and M01CAF
M01ALF	13	M01DBF, M01ZAF and M01CBF
M01AMF	13	M01DBF, M01ZAF and M01CBF
M01ANF	13	M01CAF
M01APF	16	M01CAF
M01AQF	13	M01CBF
M01ARF	13	M01CBF
M01BAF	13	M01CCF
M01BBF	13	M01CCF
M01BCF	13	M01CCF
M01BDF	13	M01CCF
P01AAF	13	P01ABF
X02AAF	16	X02AJF
X02ABF	16	X02AKF
X02ACF	16	X02ALF
X02ADF	14	X02AJF and X02AKF
X02AEF	14	X02AMF
X02AFF	14	X02AMF
X02AGF	16	X02AMF
X02BAF	14	X02BHF
X02BCF	14	X02AMF
X02BDF	14	X02AMF
X02CAF	17	not needed except with F01BTF and F01BXF

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