

OPTIONS NODECK,LIST,XREF,NOREL,OBJ(P)

THE LIST OF OPTIONS USED DURING THIS ASSEMBLY IS-- NODECK,LIST,XREF,NOREL,OBJ

0000	1	#ZTRAC	START	0
	2		PRINT	ON,NODATA
	3	*	@SYS	EXP-N
	214+		PRINT	ON
	215	*	@FXD	EXP-N
	620+		PRINT	ON
	621	*	@SPF	EXP-N
	1084+		PRINT	ON
	1085	*	@HDW	EXP-N
	1270+		PRINT	ON
	1271	*	@CAN	EXP-N
	1374+		PRINT	ON
	1375	*	@CY0	EXP-N
	1448+		PRINT	ON

#ZTRAC -- TRACE SYSTEM OVERLAYS

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT	VER 15, MOD 00	29/05/22	PAGE	3
		1450		*****				
		1451	*	5703-XM1 COPYRIGHT IBM CORP. 1970				*
		1452	*	REFER TO INSTRUCTIONS ON COPY RIGHT NOTICE, 120-2083				*
		1453	*					*
		1454		*****				*
		1455	*	*STATUS -				*
		1456	*	VERSION 1 MODIFICATION 0				*
		1457	*					*
		1458	*	*FUNCTION				*
		1459	*	ZTRACE IS USED FOR TRACING SYSTEM OVERLAYS LOADED VIA NBLOAD.				*
		1460	*	AS EACH PROGRAM IS LOADED, ITS SIX CHARACTER PROGRAM NAME IS				*
		1461	*	PRINTED AT HARDWARE LEFT MARGIN.				*
		1462	*					*
		1463	*	*ENTRY POINTS				*
		1464	*	THE FIRST EXECUTABLE INSTRUCTION IMMEDIATLY FOLLOWING THE PROGRAM				*
		1465	*	HEADER IS THE ONLY ENTRY POINT. ZTRACE IS ALWAYS LOADED AND				*
		1466	*	CALLED BY NBLOAD.				*
		1467	*					*
		1468	*	*INPUT				*
		1469	*	REGISTER 1 (@BR) MUST CONTAIN THE LOAD ADDRESS OF ZTRACE.				*
		1470	*					*
		1471	*	*OUTPUT				*
		1472	*	THE PROGRAM HEADER IS PRINTED AT HARDWARE LEFT MARGIN ON THE				*
		1473	*	MATRIX PRINTER. REGISTERS 1 AND 2 REMAIN UNCHANGED.				*
		1474	*					*
		1475	*	*EXTERNAL REFERENCES				*
		1476	*	\$BLOAD - BASE VALUE FOR NBLOAD.				*
		1477	*	\$BLDPL - NBLOAD INTERNAL DPL.				*
		1478	*	\$DISKN - ENTRY TO DISK IOCS, DKDISK.				*
		1479	*	\$WAITF - WAIT DPL.				*
		1480	*	\$PRPOS - POSITION OF PRINT HEAD.				*
		1481	*	\$BLRTN - RETURN ADDRESS TO NBLOAD.				*
		1482	*	\$HISTE - OBR ENTRY.				*
		1483	*	\$INDR2 - ERROR INDICATOR.				*
		1484	*	\$IOIND - HARD ERROR INDICATOR.				*
		1485	*					*
		1486	*	*EXITS, NORMAL				*
		1487	*	NORMAL EXIT IS TO NBLOAD AT LOCATION \$BLRTN.				*
		1488	*					*
		1489	*	*EXITS, ERROR				*
		1490	*	NONE				*
		1491	*					*
		1492	*	*TABLES/WORKAREAS				*
		1493	*	N/A				*
		1494	*					*
		1495	*	*ATTRIBUTES				*
		1496	*	NATURALLY RELOCATABLE				*
		1497	*					*
		1498	*	*CHARACTER CODE DEPENDENCY				*
		1499	*	N/A				*
		1500	*					*
		1501	*	*NOTES				*
		1502	*	ERROR PROCEDURES				*
		1503	*	ZTRACE PERFORMS THE REQUIRED ERP FOR THE MATRIX PRINTER.				*
		1504	*	A SINGLE PRINTER ERROR WILL BE RETRIED. BEFORE THE RETRY IS				*
		1505	*					*

#ZTRAC -- TRACE SYSTEM OVERLAYS

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT	VER 15, MOD 00 29/05/22 PAGE 4
		1506	*	ATTEMPTED A HALT (CODE '123') IS ISSUED. FOLLOWING OPERATOR	*
		1507	*	INTERVENTION, THE CARRIER IS RETURNED TO LEFT MARGIN, THE	*
		1508	*	FORMS EJECTED ONE LINE, AND THE PRINT OPERATION RETRIED.	*
		1509	*	A SECOND FAILURE WILL CAUSE THE HARD I/O ERROR INDICATOR	*
		1510	*	SET AND EXIT MADE TO NBLOAD. THE ERROR WILL THEN BE RECORDED	*
		1511	*	AS DKDISK IS CALLED. RECOVERABLE ERRORS CAUSE AN OBR ENTRY	*
		1512	*	TO BE PLACED AT \$HISTE AND THE ERROR INDICATOR SET. IN	*
		1513	*	ADDITION TO ATTACHMENT ERROR RECOVERY, A CHECK IS MADE FOR	*
		1514	*	END-OF-FORMS. THE PROGRAM WILL LIGHT THE PRINTER ATTENTION	*
		1515	*	INDICATOR AND LOOP UNTIL THE PROBLEM IS CORRECTED.	*
		1516	*		*
		1517	*	REGISTER USAGE	*
		1518	*	REGISTERS 1 AND 2 ARE USED FOR BASE ADDRESSING THEY ARE	*
		1519	*	LOADED BY NBLOAD BEFORE EXECUTING ZTRACE.	*
		1520	*		*
		1521	*	SAVED/RESTORED AREAS	*
		1522	*	N/A	*
		1523	*		*
		1524	*	MODIFICATION CONSIDERATIONS	*
		1525	*	ZTRACE CANNOT EXCEED 256 BYTES IN LENGTH. IT MUST REMAIN	*
		1526	*	NATURALLY RELOCATABLE.	*
		1527	*		*
		1528	*	REQUIRED MODULES	*
		1529	*	@SYSEQ - GENERAL SYSTEM EQUATES	*
		1530	*	@FXDEQ - NUCLEUS LOCATION EQUATES	*
		1531	*	@HDWEQ - HARDWARE VALUE EQUATES	*
		1532	*	@CY0EQ - CYLINDER ZERO EQUATES	*
		1533	*	@HLTEQ - HALT INDICATOR EQUATES	*
		1534	*		*
		1535	*	OTHER	*
		1536	*	N/A	*
		1537	*	*****	*

#ZTRAC -- TRACE SYSTEM OVERLAYS

ERR	LOC	OBJECT	CODE	ADDR	STMT	SOURCE	STATEMENT	VER 15, MOD 00 29/05/22 PAGE 5
				1539	*	HDR	#ZTRAC	
				1540	*****			
				1541	*	PROGRAM HEADER FOR DISK LOAD		*
				1542	*****			
				1543	*#	ZTRA EQU	X'1B9C'	DISK ADDR OF ?ZTRAC
				1544	*#	\$\$\$ZTR EQU	X'1000'	CORE LOAD ADDRESS OF IZTRAC
				1545	*#	S@ZTR EQU	001	SECTOR CNT OF ?ZTRAC
1000				1546		ORG	\$\$\$ZTR	CORE LOAD ADDRESS
				1000 1547	\$\$\$\$\$	EQU	*	FIRST LOCATION IN PROGRAM
1000	7BE3D9C1C340			1005 1548		DC	CL6'#TRAC'	PROGRAM NAME
1006	59			1006 1549		DC	IL1'089'	PROGRAM NUMBER OF ?ZTRAC
				1007 1550	#ZTRA	EQU	*	ENTRY POINT TO PROGRAM
				1551	*** END OF EXPANSION ***			
				1000 1553	ZTRBSE	EQU	\$\$\$\$\$\$	BASE ADDRESS
				0522 1554		USING	\$BLOAD,@XR	INDEX VALUE POINTING TO NBLOAD
				1000 1555		USING	ZTRBSE,@BR	DUMMY BASE ADDRESS FOR ZTRACE
				1007 1556	ZTRACE	EQU	*	MODULE ENTRY POINT
1007	74 01 87			1557		ST	ZTRDPL+@DBFR2(,@BR),@BR	CALCULATE SCTR BUFFER ADDRESS
100A	5E 00 86 7B			1558		ALC	ZTRDPL+@DBFR2-1(1,@BR),ZTRONE(,@BR)	* FOLLOWING ZTRACE
100E	6C 01 84 59			1559		MVC	ZTRDPL+@DSAD(@DADDR,@BR),\$BLDPL+@DSAD(,@XR)	SET OVERLAY
				1560	*			
1012	74 01 1E			1561		ST	ZTR020(,@BR),@BR	CALCULATE DPL ADDRESS
1015	5E 01 1E 81			1562		ALC	ZTR020(@CADDR,@BR),ZTRDPD(,@BR)	*
1019	C0 87 0025			1563		B	\$DISKN	READ FIRST SECTOR OF OVERLAY
101D	0000			101E 1564	ZTR020	DC	AL2(*-*)	DPL ADDRESS
101F	C0 87 0025			1565		B	\$DISKN	WAIT FOR OP COMPLETE
1023	057F			1024 1566		DC	AL2(\$WAITF)	ADDRESS OF 'WAIT' DPL
1025	74 01 7D			1567		ST	ZTRPCA(,@BR),@BR	CALCULATE PCF ADDRESS BY
1028	5E 01 7D 7F			1568		ALC	ZTRPCA(@CADDR,@BR),ZTRPCD(,@BR)	* ADDING IN DISP
102C	4C 00 8D 03C2			1569	ZTR030	MVC	ZTRTAB(1,@BR),\$PRPOS	SET TAB CNT
1031	5F 00 8D 7B			1570		SLC	ZTRTAB(1,@BR),ZTRONE(,@BR)	GET TRUE HDW TAB COUNT
1035	F2 82 03			1571		JL	ZTR050	DON'T SET CHAIN BIT IF TAB 0
1038	7A 80 8B			1572		SBN	ZTRETN(,@BR),@RETRN	SET CHAIN BIT TO DO TAB
103B	71 E4 87			1573	ZTR050	LIO	ZTRDPL+@DBFR2(,@BR),@PDAR	LOAD DATA LSR
103E	71 E6 7D			1574		LIO	ZTRPCA(,@BR),@PCAR	LOAD CONROL LSR
1041	F3 E0 00			1575		SIO	@PSIOR,@PSIOQ	PRINT 6 BYTE OVERLAY NAME
				1576	*			
1044	F1 E2 00			1577		APL	@PBUSY	WAIT ON OP COMPLETE
1047	71 E2 7B			1578	ZTR100	LIO	ZTRONE(,@BR),@PLITE	TURN ON END-OF-FORMS LAMP
104A	D1 E1 47			1579		TIO	ZTR100(,@BR),@PFORM	LOOP IF END-OF-FORMS
104D	71 E2 7A			1580		LIO	ZTROFF(,@BR),@PLITE	TURN OFF FORMS LAMP
1050	D1 E0 57			1581	ZTR120	TIO	ZTRERR(,@BR),@PERR	BRANCH IF PRINTER ERROR
1053	C0 87 0550			1582	ZTR200	B	\$BLRTN	RETURN TO FINISH NBLOAD
				1583	*****			

#ZTRAC -- TRACE SYSTEM OVERLAYS

ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT	VER 15, MOD 00 29/05/22 PAGE 6
		1585		*****	
1057 70 E2 79		1586	ZTRERR SNS	ZTRSNS(,@BR),@PSNSQ SENSE ERROR STATUS	
105A 1C 07 0435 7D		1587	MVC	\$HISTE+#HSEND,ZTROBR(#HISLN,@BR) SET HISTORY ENTRY	
105F 3A 04 03D5		1588	SBN	\$INDR2,\$ERPND SET ERROR TO BE LOGGED INDR	
1063 7C 6F 52		1589	MVI	ZTR120+@D1(,@BR),ZTRHRD-ZTRBSE SET HARD ERROR BRANCH	
1066 7C 05 8A		1590	MVI	ZTRPRT(,@BR),5 RESTORE PRINT CNT	
1069 F0 00 00		1591	HPL	*-*,*-* HALT ON INITIAL ERROR	
106A		1592	ORG	*-2 PLACE HALT CODE	
106A 0070	106B	1593	DC	AL2(@HPRER) PRINTER SOFT HALT	
106C D0 87 2C		1594	B	ZTR030(,@BR) GO RETRY OP	
		1595		*****	
	106F	1596	ZTRHRD EQU	* ENTRY TO HARD ERROR ROUTINE	
106F 3A 20 03D2		1597	SBN	\$IOIND,\$HRDER GET HARD ERROR INDR	
1073 D0 87 53		1598	B	ZTR200(,@BR) GO EXIT LOG HARD ERROR	
		1599		*****	
	0070	1600	@HPRER EQU	X'0070' MATRIX PRINTER ERROR SOFT HALT	
1076 E0		1076 1601	DC	AL1(@PSIOQ) PRINTER Q BYTE	
1077 00		1077 1602	DC	AL1(@PSIOR) PRINTER R BYTE	
1078		1079 1603	ZTRSNS DS	CL2 SENSE BYTES	
107A 0001		107B 1604	ZTRONE DC	XL2'0001' CONSTANT OF ONE	
107C		107D 1605	ZTRPCA DS	CL2 PCF ADDRESS	
		107D 1606	ZTROBR EQU	ZTRPCA LAST BYTE OF OBR ENTRY	
		107A 1607	ZTROFF EQU	ZTRONE-1 TURN FORMS LAMP OFF CTRL	
107E 0088		107F 1608	ZTRPCD DC	AL2(ZTRPCF-ZTRBSE) DISP OF PCF IN ZTRACE	
1080 0082		1081 1609	ZTRDPD DC	AL2(ZTRDPL-ZTRBSE) DISP OF DPL WITHIN ZTRACE	
		1610	*ZTRDPL DPL	FUNC-@DGET,CNT-1	
		1082 1611	ZTRDPL EQU	* DISK PARAMETER LIST	
1082 01		1082 1612	DC	AL1(@DGET) REQUESTED FUNCTION	
1083 00		1083 1613	DC	AL1(*-*) CYLINDER ADDRESS	
1084 00		1084 1614	DC	AL1(*-*) HEAD/SECTOR/DRIVE/DISK SPEC	
1085 01		1085 1615	DC	AL1(1) SECTOR COUNT	
1086 0000		1087 1616	DC	AL2(*-*) BUFFER ADDRESS	
		1617	***	END OF EXPANSION ***	
		1088 1619	ZTRPCF EQU	* FIRST BYTE OF PRINT PCF	
1088 85C005		108A 1620	ZTRPRT DC	XL3'85C005' CARRIER RTN, PRINT 6 (CHAINED)	
108B 05		108B 1621	ZTRETN DC	XL1'05' CARRIER RTN	
108C 2000		108D 1622	ZTRTAB DC	XL2'2000' TAB TO CURRENT PRINT POS	
		1623		*****	

#ZTRAC -- TRACE SYSTEM OVERLAYS						
ERR LOC	OBJECT CODE	ADDR	STMT	SOURCE STATEMENT	VER 15, MOD 00	29/05/22 PAGE 7
			1625 *	PATCH		
			1626 *****			
			1627 *	PATCH AREA 1	*	
			1628 *****			
			1629 *			
			1630 *	CALCULATE AREA LEFT IN THIS SECTOR		
			1631 *			
1100		108E	1632 \$\$\$\$L1 EQU *		START OF PATCH AREA 1	
			1633 ORG *,256,0		SET LOC CNTR TO NEXT SECTOR	
		1100	1634 \$\$\$T1 EQU *		DEFINE ADDR OF SCTR BNDRY	
108E			1635 ORG \$\$\$\$L1		SET LOC CNTR TO START OF	
			1636 *		* PATCH AREA	
108E		10FF	1637 \$\$\$\$S1 DS CL(\$\$\$T1-\$\$\$\$L1)		PATCH AREA	
			1638 *****			
			1639 *** END OF EXPANSION ***			
		FFFF	1640	END		
TOTAL STATEMENTS IN ERROR IN THIS ASSEMBLY = 0						