TM(ADC)820/303/00A

TECHNICAL MEMORANDUM

(TM Series)

This document was produced by SDC in performance of contract AF 19(628)-1648, Air Defense Command Program, for Air Defense Command.

SAGE Unique-to-Site Environmental Data and Equipment Assignments Duluth ADS

by

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22 March 1963

SYSTEM DEVELOPMENT CORPORATION
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INTRODUCTION

This volume of the TM(ADC)820 Series contains the official SAGE unique-to-site environmental data and equipment assignments which are to be used in adapting the Model 9.1 computer programs and in Simplex Data Distribution Unit terminal assignments for the Duluth Air Defense Sector. Certain adaptation data such as facility locations, characteristics, and other related data which apply to all sectors, is presented in volumes 3 through 7 of this TM series. The reader is referred to Volume ∅ of this series for a detailed list of contents of all volumes.

SAGE Unique-to-Site Equipment Review (USER) Committee signatures appear on page 5 of this document, with initials indicating approval, concurrence or review, as appropriate.

ADCM 55-32 currently defines adaptation data as being of two categories: 1) ADC Controlled Data; and 2) Field Controlled Data. A portion of this document is ADC Controlled Data and therefore constitutes a reason for the ADC Foreword page and NORAD Preface page authorizing the use of this data. However, since this document also contains Field Controlled Data, e.g.: "Times-2" display data; Manual Input data; etc, it is noted here that the aforementioned military preface and foreword page do not in any way usurp the position of the Division and Sector Commanders as delegated in ADCM 55-32, but instead reflect recognition of data forwarded by those Commanders to SDC.

Discrepancies noticed in any part of this document by SDC on-site programming teams should be forwarded to the authors utilizing current established procedures. Revisions to this document will be published as data changes occur or when practical. Changes to previous data will be indicated by use of a " ⊳ " next to the data change.

SERIES CONTENTS

LIST OF EFFECTIVE PAGES

This page is a reference of changes to this volume and contains a complete index of all effective pages.

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USER COMMITTEE SIGNATURES

	APPROVAL	CONCURRENCE	REVIEW
APASTO			
SDC (DAS)			
WE/ADES			
IBM			

The SAGE Unique-to-Site Equipment Review (USER) Committee signatures appearing on this page only apply to the following sections:

Section 2.4	LRI drum channel assignments
Section 6.2	Lateral-Tell input channel assignments
Section 6.3	Ground-to-ground data link output assignments
Section 6.4	Ground-to-air data link output assignments
Section 6.5	Teletype output assignments

All other sections of this document need not be reviewed by the USER committee. This page will only be reissued when changes to the above mentioned sections are made.

INDEX PAGE

1.0 SECTOR POSITIONAL DATA

SECTOR - DULUTH

REGION - 30TH AMP NO. 002

1.1 SECTOR PROGRAM BOUNDARIES

1.1.1 MODE I BOUNDARY

REF	LATITUDE	LONGITUDE
01	055 00 00	088 00 00
02	050 00 00	088 00 00
03	043 35 00	091 10 00
04	043 30 00	094 00 00
05	049 00 00	095 09 00
06	055 00 00	095 09 00
07	OPEN TO NORTH	

1.1.2 MODE II BOUNDARIES

MODE IIA - SAULT STE MARIE *

REF	LATITUDE	LONGITUDE
01	055 00 00	080 30 00
02	048 00 00	080 30 00
03	045 00 00	080 30 00
04	044 06 00	085 00 00
05	043 40 00	086 50 00
06	043 37 30	089 00 00
07	043 35 00	091 10 00
08	043 30 00	094 00 00
09	049 00 00	095 09 00
10	055 00 00	095 09 00
11	OPEN TO NORTH	

MODE IIB - GRAND FORKS

REF	LATITUDE	LONGITUDE
01	055 00 00	088 00 00
02	050 00 00	088 00 00
03	043 35 00	091 10 00
04	043 30 00	094 00 00
05	043 30 00	094 30 00
06	043 30 00	098 00 00
07	055 00 00	098 00 00
08	OPEN TO NORTH	

*BASED ON INITIAL CONFIGURATION OF SMADS PRIOR TO OTADS OPS DATE

1.2 MAJOR WORLD GEOREFS SURROUNDING X1 AREA

SWITCH CODE	GEOREF	SWITCH CODE	GEOREF	SWITCH CODE	GEOREF
1	FJ	4	GJ	7	HJ
2	FK	5	GK	8	HK
3	FL	6	GL	9	HL

1.3 ADJACENT AUTOMATIC AND MANUAL SECTORS

AUTOMATIC SECTOR NAME	AUTO LTR. DSG.	SECTOR REF.NO. (EQ.ID.)	D/L TIED	AMP NO.	SWITCH CODE	MAN LTR. DSG.	MANUAL SECTOR NAME **
CHICAGO	K	10	YES	007	0 *		
					1		
SYRACUSE	Y	4		003	2		
DETROIT	G	3		006	3	UF	ARMSTRONG
SIOUX CITY	L	4		022	4	UD	SIOUX LOOKOUT
MINOT	P	6		019	5	TF	BEAUSEJOUR
S.S.MARIE	V	6	YES	014	6		
OTTAWA	M	7		027	7		
GRAND FORKS	T	8	YES	011	8		
					9		

*SWITCH NO. 0 ON 10PB MODULES AND SWITCH NO. 10 ON 15PB MODULES
**ONLY MDC'S WITH DC TTY OUTPUT ARE INDICATED

1.4 LAND SEA LINES - NONE

1.5 AIR DEFENSE IDENTIFICATION ZONE - CADIZ

REF		LATITUDE	LONGITUDE
01	NORTHERN	052 00 00	102 00 00
02		054 00 00	096 00 00
03		054 00 00	078 00 00
01	SOUTHERN	049 00 00	100 00 00
02		051 00 00	096 00 00
03		051 00 00	078 00 00

1.6 SECTOR MINIMUM ENROUTE ALTITUDE. 2500 FEET

1.7 TACAN TRANSMITTER NEAREST SECTOR CENTER

LATITUDE	LONGITUDE
046 50 01	092 10 57

1.8 MAGNETIC VARIATION LINES

MAGNETIC VARIATION AT SECTOR CENTER 2 DEGREES EAST

LINE NO.	VARIATION	NORTHERN POINTS LATITUDE	NORTHERN POINTS LONGITUDE	SOUTHERN POINTS LATITUDE	SOUTHERN POINTS LONGITUDE
1	8 DEG E	055 00 00	096 32 00	043 00 00	095 25 00
2	6 DEG E	055 00 00	095 27 00	043 00 00	093 20 00
3	4 DEG E	055 00 00	094 22 00	043 00 00	090 06 00
4	2 DEG E	055 00 00	093 26 00	043 00 00	088 50 00
5	0 DEG	055 00 00	092 29 00	043 00 00	086 33 00
6	2 DEG W	055 00 00	091 19 00	044 00 00	085 20 00
7	4 DEG W	055 00 00	090 08 00	044 00 00	083 24 00
8	6 DEG W	055 00 00	088 57 00	044 00 00	081 27 00
9	8 DEG W	055 00 00	087 46 00	045 00 00	079 55 00

1.9 X2 DISPLAY DATA

X2 DISPLAY CENTER LATITUDE	X2 DISPLAY CENTER LONGITUDE
049 44 55	090 03 29

		X2 DISPLAY VERTICES LATITUDE	X2 DISPLAY VERTICES LONGITUDE
1	NE	055 40 48	078 24 03
2	SE	042 46 59	081 14 50
3	SW	042 53 34	099 03 56
4	NW	055 50 10	101 31 30

2.0 RADAR DATA

2.1 LONG RANGE RADARS, LRR-HF-ALRR

MULTIPLEXED GAP FILLER RADARS

SWCH. CODE*	SITE DESIG.	NO.OF TIED HF'S	LTR. DSG.	MODE	AMP NO.	SWCH. CODE	SITE DESIG.	SWCH. CODE	SITE DESIG.
0	P-34	2	A	IIA	093	0	P-34A	3	
						1		4	P-34E
						2		5	P-34F
1	**P-35	2	B	I	094	0	P-35G	3	
						1	P-35B	4	
						2	P-35C	5	P-35F
2	C-14	2	C	IIA/OL	012	0		3	
						1	C-14B	4	
						2	C-14C	5	
3	**SM-132	2	D	I	148	0	SM-132A	3	
						1		4	
						2		5	
4	**P-69	2	E	I	123	0		3	P-69D
						1	P-69B	4	———
						2	P-69C	5	———
5	P-16	2	F	IIA/OL	073	0	P-16A	3	
						1		4	
						2		5	
6	P-19	2	G	IIA/OL	078	0	P-19A	3	P-19D
						1	P-19B	4	
						2	P-19C	5	P-19N
7	P-66	2	H	IIA	121	0	P-66A	3	———
						1		4	———
						2	———	5	
8	**SM-138	2	J	I	151				
9	P-17	2	K	IIB/OL	075	0	P-17A	3	
						1	P-17B	4	
						2		5	
10	P-18	2	L	IIB/OL	076				
11	**C-16	2	M	I	015	0	C-16A	3	C-16D
						1	C-16B	4	C-16E
						2	C-16C	5	
12	**C-15	2	N	I	015				
13	C-17	2	P	IIB/OL	016				

*SAME AS REFERENCE NO.MINUS 1, ID CODE, AND WARNING LIGHT NUMBER. TO OBTAIN LRR PROGRAM CHANNEL NUMBER ADD 35, TO OBTAIN MKX PROGRAM CHANNEL NUMBER ADD 49

** 6 LRR'S WITH THE MOST MODE I COVERAGE.

GFR IDENTITY NUMBER AND SWITCH CODE BASED ON IMPLEMENTATION OF SPCR 1579

2.2 GAP FILLER RADARS

	GFR CH NO *	SITE IDENT		AMP NO.	TIED LRR SWCH CODE	GFR SWCH CODE **
	0	P-35B	I	099	1	1
	1	P-35C	I	100	1	2
	2	P-69B	I	131	4	1
	3	P-69C	I	132	4	2
	4	P-69D	I	133	4	3
	5	SM-132A	I	160	3	0
	6	P-35F	I	101	1	5
	7	P-17B	IIB/OL	069	9	1
	8	P-35G	I	182	1	0
Δ	9	C-16E	I	135	11	4
Δ	10	C-16D	IIA/OL	134	11	3
	11	C-16B	I	031	11	1
	12	C-16C	I	032	11	2
	13	C-16A	I	030	11	0
	14	P-16A	IIA/OL	067	5	0
	15	P-19A	IIA	070	6	0
	16	P-19B	IIA	071	6	1
	17	P-19C	IIA	072	6	2
	18	P-19D	IIA/OL	073	6	3
	19	P-66A	IIA	122	7	0
Δ	20					
Δ Δ	21					
Δ	22					
	23	P-17A	IIB	068	9	0
	24	C-14B	IIA	028	2	1
	25	C-14C	IIA	029	2	2
	26	P-34A	IIA	096	0	0
	27	P-34E	IIA	097	0	4
	28	P-34F	IIA	098	0	5
	29					
	30					
	31	P-19N	IIA	075	6	5
	32	THRU 34 BLANK				

*SAME AS REFERENCE NUMBER MINUS 1
**GFR SWITCH CODE BASED ON IMPLEMENTATION OF SPCR 1579

2.3 LOCATION OF POINT NOT WITHIN ANY HF SHADOW AREA

NO SUCH POINT DUE TO SITE CONSTRUCTION PROJECTS

2.4 LRR DRUM CHANNEL ASSIGNMENTS

SDDU CONNECTIONS

SITE LOCATION	TELCO TERMINAL	I.B.M. TERMINAL	CHANNEL NUMBER	SITE IDENT
		DRUM FIELD 1 (35)		
P-35	3F- 1	3F- 1	1	0001
	3F- 2	3F- 2	2	0001
P-66	3F- 3	3F- 3	3	0111
	3F- 4	3F- 4	4	0111
P-69	3F- 5	3F- 5	5	0100
	3E- 6	3E- 6	6	0100
SM-132	3E- 7	3E- 7	7	0011
	3E- 8	3E- 8	8	0011
C-16	3E- 9	3E-11	11	1011
	3E-10	3E-12	12	1011
C-15	3D-11	3D-13	13	1100
	3D-12	3D-14	14	1100
C-17	3D-13	3D-15	15	1101
	3D-14	3D-16	16	1101
	3D-15	3D-17	17	
	3C-16	3C-18	18	
		DRUM FIELD 2 (37)		
SM-138	3C-17	3C-19	19	1000
	3C-18	3C-20	20	1000
P-17	3C-19	3C-21	21	1001
	3C-20	3C-22	22	1001
P-19	3B-21	3B-23	23	0110
	3B-22	3B-24	24	0110
P-16	3B-23	3B-25	25	0101
	3B-24	3B-26	26	0101
P-18	3B-25	3B-29	29	1010
	3A-26	3A-30	30	1010
P-34	3A-27	3A-31	31	0000
	3A-28	3A-32	32	0000
C-14	3A-29	3A-33	33	0010
	3A-30	3A-34	34	0010
	4F-31	4F-35	35	
	4F-32	4F-36	36	

3.0 AIRBASE DATA

3.1 MANNED INTERCEPTOR AIR BASES AND SQUADRONS

REF*	NAME	DSG	MODE-TYPE INDICATOR I	IIA	IIB	MODE	SWCH CODE	SQUADRONS UNIT	DSG	AMP NO.
01	DULUTH MINN	DLH	S	S	S	I	14	11 FIS	VN	032
								179 ANG	ML	032
02	K.I.SAWYER MICH	SAW	R	S	R	IIA	13	62 FIS	EK	063
03	GRAND FORKS ND	RDR	R	R	S	IIB	12	18 FIS	LL	048
04	KINCHELOE AFB MICH	INR	R	S	R	IIA	11	438 FIS	KH	064
05	WURTSMITH AFB MICH	OSC	R	S	R	IIA	10	445 FIS	JK	170
06	MINN-ST PAUL MINN	MSP	S	S	S	I	9			099
07	FARGO ND	FAR	R	R	S	IIB	8	178 ANG	MP	037
08	SIOUX FALLS SD	FSD	R	R	S	IIB	7	175 ANG	PP	143
09	LAKEHEAD ONT	CT	S	S	S	I	6			068
10	VOLK AFB WISC	VOK	R	S	R	IIA	5			163
11	SIOUX CITY, IOWA	SUX	R	R	R	OL	4			142
12	DES MOINES, IOWA	DSM	R	R	R	OL	3			028
13	TRUAX AFB, WISC	MSN	R	R	R	OL	2			155
14	ALPENA MICH	APN	R	S	R	IIA	1			002
15	WINNIPEG MAN	WG	R	R	S	IIB	0			169

*SAME AS A/B CHANNEL NUMBER PLUS ONE

3.2 SAC/MATS BASES

	NAME	3 LTR DESIG	MODE*	AMP NO.
1	DULUTH, MINN	DLH	I	109
2	MINN-ST PAUL,MINN	MSP	I	063
3	GRAND FORKS, ND	RDR	II	038
4	KINCHELOE, MICH	INR	II	046
5	K.I.SAWYER AFB	SAW	II	080
6	WURTSMITH, MICH	OSC	II	100

*MODE IS DEFINED HERE AS INCLUDING A 50 MILE OVERLAP ZONE

4.0 BOMARC DATA

4.1 BOMARC A BASES - NONE

4.2 BOMARC B BASES

REF	NAME	MODE	EQ.ID.	SQ. CHAN. NO.*	SQ. ID. NO.	2 LTR. DESIG.	AMP NO.	PARENT SECTOR	MODE II CONTROL
1	DULUTH	I	23	3	0	HM	011	DU	GF
2	KINCHELOE	IIA	24	10	1	TM	014	SM	DU
3	NORTH BAY	LTELL	NOT TIED	6		LM	021	SM**	
4	NIAGARA	LTELL	NOT TIED	8		NM	020	SY	DE
5	LA MACAZA	LTELL	NOT TIED	11		UM	015	BA**	

*TRACK MODULE SWITCH CODE
**BASED ON INITIAL CONFIGURATION PRIOR TO OTTAWA OPS DATE

5.0 ARMY AIR DEFENSE COMMAND POST(AADCP) DATA

SWCH CODE*	NAME	OPTION	MODE	EQ.ID.	AMP NO.	PARENT SECTOR	MODE II CONTROL	OVERLAP COVERAGE
1	MINN-ST PAUL	AUTO	I	12	014	DU	GF	CH,SM,SC
2								
3								
4								
5								
6								
7								
8	CHICAGO	LTL	OL		003	CH	DE	SM,DU
9	MILWAUKEE	LTL	OL		013	CH	DE	SM,DU
10	LINCOLN-OFF.	LTL	OL		010	SC	CH	GF,DU

*SAME AS AADCP NUMBER

6.4 GROUND TO AIR DATA LINK OUTPUT ASSIGNMENTS

OUTPUT LINE	TELCO TERMINAL	I.B.M. TERMINAL	FUNCTION
	OUTPUT SECTION ADDRESS 1		
G/A-1	2F- 1	2F- 1	FD RADIO SITES
G/A-2	2F- 2	2F- 2	
	OUTPUT SECTION ADDRESS 6		
G/A-3	2F- 8	2F- 8	BOMARC A SITES
G/A-4	2F- 9	2F- 9	
	OUTPUT SECTION ADDRESS 7		
G/A-5	2F-10	2F-10	
G/A-6	2F-11	2F-11	
	OUTPUT SECTION ADDRESS 5		
G/A-7	2F-13	2F-13	TD RADIO SITES P-16, P-18, P-19, P-17, P-34, P-35, P-66, P-69, SM-132, SM-138, C-14, C-15, C-16, C-17
G/A-8	2F-12	2F-12	

6.5 TELETYPE OUTPUT ASSIGNMENTS

OUTPUT SECTION ADDRESS 3

OUTPUT LINE	TELCO TERMINAL	I.B.M. TERMINAL	ORA	SITE NAME	TYPE
TTY- 1	2B- 1	2B- 1			
TTY- 2	2B- 2	2B- 2	1	FINLAND, MINN	NCC
TTY- 3	2B- 3	2B- 3	2	BEAUSEJOUR, MAN	MDC
TTY- 4	2B- 4	2B- 4	3	SIOUX LOOKOUT, ONT	MDC
TTY- 5	2B- 5	2B- 5	4	ARMSTRONG, ONT	MDC
TTY- 6	2B- 6	2B- 6			
TTY- 7 THRU TTY-23 NOT USED					
TTY-24	2B-24	2B-24	23	QUALITY CONTROL	
TTY-25	2B-25	2B-25	24	FIX	

(last page)

6.6 LATERAL-TELL ROUTING TABLE - FIRST STOP

SECTOR DSG	SECTOR REFERENCE NUMBER 1ST ROUTE	2ND ROUTE	3RD ROUTE	4TH ROUTE	5TH ROUTE
1					
2					
3	10	6			
4	10	6			
5					
6	10	6			
7	10				
8	10	8			
9	10	6			
10					
11	8				
12					
13					
14	6				
15					
16					
17					
18					
19	8	10			
20	8	10			
21					
22	10	8			
23					
24					
25					
26					
27					
28					
29					
30					
31					

7.0 MANUAL INPUTS

SSR NO.	NAME/IDENT	TYPE	55-20 DESIG	SSR NO.	NAME/IDENT	TYPE	55-20 DESIG
01	C-15	MDC	UF	10			
02	C-16	MDC	UD	11			
03	C-17	MDC	TF	12			
04	P-69	NCC	UB	13			
05	C-14	MDC	VE	14			
▷ 06	C-119	MDC	VF	15			
07	BIRD	MCL	HB	16			
08	CRANBERRY PORT.	MCL	HC	17			

22 March 1963 TM(ADC)820/303/00A

DISTRIBUTION LIST

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APASTO

AD8CP-E
AD8CP-T

RCAF

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SYSTEM DEVELOPMENT CORPORATION

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USG DAS (6)	4365	FIB Team Heads -	Truax
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FIB HQ	24191		Grand Forks

UNCLASSIFIED

System Development Corporation,
Santa Monica, California
SAGE UNIQUE-TO-SITE ENVIRONMENTAL
DATA AND EQUIPMENT ASSIGNMENTS
DULUTH ADS.
Scientific rept., TM(ADC)-820/303/00A,
by D. M. McDaniel. 22 March 1963.
15p.
(Contract AF 19(628)-1648,
Air Defense Command Program, for Air
Defense Command)

Unclassified report

DESCRIPTORS: Air Defense Command.

Identifiers: SAGE Model 9. UNCLASSIFIED

UNCLASSIFIED

Presents change pages for TM(ADC)-820/303/00,
"SAGE Unique-to-Site Environmental Data
and Equipment Assignments Duluth ADS",
by D. M. McDaniel, dated 15 November 1962.

UNCLASSIFIED