
* USAF STABILITY AND CONTROL DIGITAL DATCOM *
* PROGRAM REV. JAN 96 DIRECT INQUIRIES TO: *
* WRIGHT LABORATORY (WL/FIGC) ATTN: W. BLAKE *
* WRIGHT PATTERSON AFB, OHIO 45433 *
* PHONE (513) 255-6764, FAX (513) 258-4054 *

1 CONERR - INPUT ERROR CHECKING
0 ERROR CODES - N* DENOTES THE NUMBER OF OCCURENCES OF EACH ERROR
0 A - UNKNOWN VARIABLE NAME
0 B - MISSING EQUAL SIGN FOLLOWING VARIABLE NAME
0 C - NON-ARRAY VARIABLE HAS AN ARRAY ELEMENT DESIGNATION - (N)
0 D - NON-ARRAY VARIABLE HAS MULTIPLE VALUES ASSIGNED
0 E - ASSIGNED VALUES EXCEED ARRAY DIMENSION
0 F - SYNTAX ERROR

0***** INPUT DATA CARDS *****

CASEID Project Rascal 72 UAV

\$FLTCON NMACH=5.0,MACH(1)=0.0294,0.04408,
0.05877,0.07347,0.08816\$
\$FLTCON NALPHA=5.0,ALSCHD=-10.0,-5.0,0.,5.0,10.0\$
\$FLTCON NALT=5.0,ALT=0.0,100.0,200.0,300.0,400.0,WT=5.34,LOOP=2.0\$
\$OPTINS SREF=4.64,CBARR=0.7905,BLREF=6.04,\$
\$SYNTHS XCG=1.125,ZCG=0.0547,XW=1.0168,ZW=0.2902,ALIW=2.,
XH=3.456,ZH=0.0824,ALIH=2.,XV=3.463,ZV=0.0824,\$
\$BODY NX=20.,
X(1)=0.,0.1923,0.3847,0.5771,0.8244,1.0167,
1.154249,1.346579,1.538976,1.731373,1.923704,2.1161,2.308497,2.500828,
2.693244,2.885621,3.077952,3.270369,3.462746,3.655076,
S(1)=0.0686613,0.1288141,0.1618586,0.1877797,0.377868,0.3022812,0.2896834,
0.2770856,0.2644878,0.231905,0.2061158,0.1794692,0.1546033,0.1282205,0.10
0.0790166,0.0572507,0.0412232,0.0275041,0.0160276,
ZU(1)=0.10995,0.10995,0.10995,0.123669,0.288562,0.343504,0.329785,0.302281,
0.288562,0.247339,0.23362,0.206116,0.192397,0.178612,0.151174,0.137389,
0.123669,0.10995,0.096165,0.082446,
ZL(1)=-0.10995,-0.23362,-0.28856,-0.31607,-0.5359,-0.31607,-0.30228,
-0.30228,-0.28856,-0.27484,-0.26106,-0.24734,-0.21983,-0.20612,-0.1924,
-0.17861,-0.16489,-0.15117,-0.13739,-0.12367,\$

NACA W 4 4312

\$WGPLNF CHRDT=0.54167,SSPNE=2.86719,SSPN=3.0208,CHRD=0.99479,SAVSI=0.0,
CHSTAT=0.25,TWISTA=0.0,DHDADI=2.0,TYPE=1.0\$
\$SYMFLP SPANFI=0.0137,SPANFO=1.0031,CHRDFO=0.10441,CHRDFI=0.1832,
NDELTA=5.,DELTA=-20.,-10.,0.,10.,20.,FTYPE=1.0,
NTYPE=1.0,CB=0.0429,TC=0.0396,PHETE=0.275,PHETEP=0.275,\$

NACA-H-4-0009

\$HTPLNF CHRD=0.5496,CHRD=0.3298,SSPN=1.0031,SSPNE=0.9894,
SAVSI=0.,CHSTAT=0.,DHDADI=0.,TYPE=1.,TWISTA=0.0,\$

NACA-V-4-0009

\$VTPLNF CHRD=0.7969,CHRD=0.3298,SSPN=0.65957,SSPNE=0.6046,
SAVSI=25.,CHSTAT=0.,TYPE=1.,\$
\$SYMFLP FTYPE=1.0,NDELTA=6.0,DELTA(1)=0.0,-10.0,-20.0,-30.0,-40.0,-45.0,

PHETE=0.0522,PHETEP=0.0,CHRDFI=0.1786,CHRDFO=0.1786,SPANFI=0.02748,
SPANFO=1.0995,NTYPE=1.0,\$

DAMP

BUILD

SAVE

NEXT CASE

TRIM

SAVE

NEXT CASE

\$ASYFLP SPANFI=1.1688,SPANFO=2.514,CHRDFI=0.1369,CHRDFO=0.1369,
STYPE=4.0,NDELTA=5.,DELTAL=20.,10.,0.,-10.,-20.,
DELTAR=-20.,-10.,0.,10.,20.,\$

NEXT CASE

1 THE FOLLOWING IS A LIST OF ALL INPUT CARDS FOR THIS CASE.

0

CASEID Project Rascal 72 UAV

\$FLTCON NMACH=5.0,MACH(1)=0.0294,0.04408,
0.05877,0.07347,0.08816\$

\$FLTCON NALPHA=5.0,ALSCHD=-10.0,-5.0,0.,5.0,10.0\$

\$FLTCON NALT=5.0,ALT=0.0,100.0,200.0,300.0,400.0,WT=5.34,LOOP=2.0\$

\$OPTINS SREF=4.64,CBARR=0.7905,BLREF=6.04,\$

\$SYNTHS XCG=1.125,ZCG=0.0547,XW=1.0168,ZW=0.2902,ALIW=2.,

XH=3.456,ZH=0.0824,ALIH=2.,XV=3.463,ZV=0.0824,\$

\$BODY NX=20.,

X(1)=0.,0.1923,0.3847,0.5771,0.8244,1.0167,

1.154249,1.346579,1.538976,1.731373,1.923704,2.1161,2.308497,2.500828,

2.693244,2.885621,3.077952,3.270369,3.462746,3.655076,

S(1)=0.0686613,0.1288141,0.1618586,0.1877797,0.377868,0.3022812,0.2896834,

0.2770856,0.2644878,0.231905,0.2061158,0.1794692,0.1546033,0.1282205,0.10

0.0790166,0.0572507,0.0412232,0.0275041,0.0160276,

ZU(1)=0.10995,0.10995,0.10995,0.123669,0.288562,0.343504,0.329785,0.302281,

0.288562,0.247339,0.23362,0.206116,0.192397,0.178612,0.151174,0.137389,

0.123669,0.10995,0.096165,0.082446,

ZL(1)=-0.10995,-0.23362,-0.28856,-0.31607,-0.5359,-0.31607,-0.30228,

-0.30228,-0.28856,-0.27484,-0.26106,-0.24734,-0.21983,-0.20612,-0.1924,

-0.17861,-0.16489,-0.15117,-0.13739,-0.12367,\$

NACA W 4 4312

\$WGPLNF CHRDTDP=.54167,SSPNE=2.86719,SSPN=3.0208,CHRD=0.99479,SAVSI=0.0,

CHSTAT=0.25,TWISTA=0.0,DHDADI=2.0,TYPE=1.0\$

\$SYMFLP SPANFI=0.0137,SPANFO=1.0031,CHRDFO=0.10441,CHRDFI=0.1832,

NDELTA=5.,DELTA=-20.,-10.,0.,10.,20.,FTYPE=1.0,

NTYPE=1.0,CB=0.0429,TC=0.0396,PHETE=0.275,PHETEP=0.275,\$

NACA-H-4-0009

\$HTPLNF CHRDR=0.5496,CHRDTDP=0.3298,SSPN=1.0031,SSPNE=0.9894,

SAVSI=0.,CHSTAT=0.,DHDADI=0.,TYPE=1.,TWISTA=0.0,\$

NACA-V-4-0009

\$VTPLNF CHRDR=0.7969,CHRDTDP=0.3298,SSPN=0.65957,SSPNE=0.6046,

SAVSI=25.,CHSTAT=0.,TYPE=1.,\$

\$SYMFLP FTYPE=1.0,NDELTA=6.0,DELTA(1)=0.0,-10.0,-20.0,-30.0,-40.0,-45.0,

PHETE=0.0522,PHETEP=0.0,CHRDFI=0.1786,CHRDFO=0.1786,SPANFI=0.02748,

SPANFO=1.0995,NTYPE=1.0,\$

DAMP

BUILD
SAVE
NEXT CASE

0 INPUT DIMENSIONS ARE IN FT, SCALE FACTOR IS 1.0000

1 AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION
OF DATCOM

WING SECTION DEFINITION

0 IDEAL ANGLE OF ATTACK = 1.12591 DEG.

ZERO LIFT ANGLE OF ATTACK = -3.45103 DEG.

IDEAL LIFT COEFFICIENT = 0.54407

ZERO LIFT PITCHING MOMENT COEFFICIENT = -0.08548

MACH ZERO LIFT-CURVE-SLOPE = 0.09729 /DEG.

LEADING EDGE RADIUS = 0.01587 FRACTION CHORD

MAXIMUM AIRFOIL THICKNESS = 0.12000 FRACTION CHORD

DELTA-Y = 3.16898 PERCENT CHORD

0 MACH= 0.0294 LIFT-CURVE-SLOPE = 0.09728 /DEG. XAC = 0.25450

0 MACH= 0.0441 LIFT-CURVE-SLOPE = 0.09733 /DEG. XAC = 0.25454

0 MACH= 0.0588 LIFT-CURVE-SLOPE = 0.09738 /DEG. XAC = 0.25484

0 MACH= 0.0735 LIFT-CURVE-SLOPE = 0.09746 /DEG. XAC = 0.25495

0 MACH= 0.0882 LIFT-CURVE-SLOPE = 0.09752 /DEG. XAC = 0.25502

1 AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION
OF DATCOM

HORIZONTAL TAIL SECTION DEFINITION

0 IDEAL ANGLE OF ATTACK = 0.00000 DEG.

ZERO LIFT ANGLE OF ATTACK = 0.00000 DEG.

IDEAL LIFT COEFFICIENT = 0.00000

ZERO LIFT PITCHING MOMENT COEFFICIENT = 0.00000

MACH ZERO LIFT-CURVE-SLOPE = 0.09830 /DEG.

LEADING EDGE RADIUS = 0.00893 FRACTION CHORD

MAXIMUM AIRFOIL THICKNESS = 0.09000 FRACTION CHORD

DELTA-Y = 2.37673 PERCENT CHORD

0 MACH= 0.0294 LIFT-CURVE-SLOPE = 0.09840 /DEG. XAC = 0.25651

0 MACH= 0.0441 LIFT-CURVE-SLOPE = 0.09839 /DEG. XAC = 0.25646

0 MACH= 0.0588 LIFT-CURVE-SLOPE = 0.09846 /DEG. XAC = 0.25650
 0 MACH= 0.0735 LIFT-CURVE-SLOPE = 0.09853 /DEG. XAC = 0.25644
 0 MACH= 0.0882 LIFT-CURVE-SLOPE = 0.09864 /DEG. XAC = 0.25648
 1 AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION
 OF DATCOM

VERTICAL TAIL SECTION DEFINITION

0 IDEAL ANGLE OF ATTACK = 0.00000 DEG.

ZERO LIFT ANGLE OF ATTACK = 0.00000 DEG.

IDEAL LIFT COEFFICIENT = 0.00000

ZERO LIFT PITCHING MOMENT COEFFICIENT = 0.00000

MACH ZERO LIFT-CURVE-SLOPE = 0.09830 /DEG.

LEADING EDGE RADIUS = 0.00893 FRACTION CHORD

MAXIMUM AIRFOIL THICKNESS = 0.09000 FRACTION CHORD

DELTA-Y = 2.37673 PERCENT CHORD

0 MACH= 0.0294 LIFT-CURVE-SLOPE = 0.09840 /DEG. XAC = 0.25651
 0 MACH= 0.0441 LIFT-CURVE-SLOPE = 0.09839 /DEG. XAC = 0.25646
 0 MACH= 0.0588 LIFT-CURVE-SLOPE = 0.09846 /DEG. XAC = 0.25650
 0 MACH= 0.0735 LIFT-CURVE-SLOPE = 0.09853 /DEG. XAC = 0.25644
 0 MACH= 0.0882 LIFT-CURVE-SLOPE = 0.09864 /DEG. XAC = 0.25648

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 1 AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION
 OF DATCOM

CHARACTERISTICS AT ANGLE OF ATTACK AND IN SIDESLIP WING-BODY-VERTICAL TAIL-HORIZONTAL TAIL CONFIGURATION Project Rascal 72 UAV

----- FLIGHT CONDITIONS -----						----- REFERENCE					
DIMENSIONS -----											
MACH	ALTITUDE	VELOCITY	PRESSURE	TEMPERATURE	REYNOLDS	REF.					
REFERENCE LENGTH	MOMENT	REF. CENTER									
NUMBER	NUMBER					AREA	LONG.	LAT.	HORIZ	VERT	
FT	FT/SEC	LB/FT**2	DEG R	1/FT	FT**2	FT	FT	FT	FT	FT	
0 0.029	0.00	32.82	2.1162E+03	518.670	2.0781E+05	4.640	0.790	6.040	1.125		
0.055											
0	-----DERIVATIVE (PER DEGREE)-----										
0 ALPHA	CD	CL	CM	CN	CA	XCP	CLA	CMA	CYB	CNB	CLB
0											
-10.0	0.047	-0.499	0.1863	-0.499	-0.040	-0.373	9.296E-02	-2.822E-02	-8.803E-03	5.190E-04	
-9.163E-04											
-5.0	0.031	-0.027	0.0137	-0.030	0.029	-0.460	9.495E-02	-3.387E-02			-9.183E-04
0.0	0.040	0.451	-0.1524	0.451	0.040	-0.338	1.002E-01	-3.704E-02			-9.183E-04
5.0	0.076	0.975	-0.3567	0.978	-0.010	-0.365	1.021E-01	-4.442E-02			-9.241E-04

10.0 0.136 1.472 -0.5966 1.473 -0.122 -0.405 9.669E-02 -5.154E-02 -9.274E-04
0 ALPHA Q/QINF EPSLON D(EPSLON)/D(ALPHA)
0

-10.0 0.951 -2.095 0.461
-5.0 0.910 0.208 0.459
0.0 1.000 2.492 0.453
5.0 1.000 4.736 0.423
10.0 1.000 6.725 0.398

1 AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION
OF DATCOM

DYNAMIC DERIVATIVES
WING-BODY-VERTICAL TAIL-HORIZONTAL TAIL CONFIGURATION
Project Rascal 72 UAV

----- FLIGHT CONDITIONS ----- REFERENCE
DIMENSIONS -----
MACH ALTITUDE VELOCITY PRESSURE TEMPERATURE REYNOLDS REF.
REFERENCE LENGTH MOMENT REF. CENTER
NUMBER NUMBER AREA LONG. LAT. HORIZ VERT
FT FT/SEC LB/FT**2 DEG R 1/FT FT**2 FT FT FT FT
0 0.029 0.00 32.82 2.1162E+03 518.670 2.0781E+05 4.640 0.790 6.040 1.125
0.055

DYNAMIC DERIVATIVES (PER DEGREE)
0 -----PITCHING----- ----ACCELERATION----- -----ROLLING-----
-----YAWING-----
0 ALPHA CLQ CMQ CLAD CMAD CLP CYP CNP CNR
CLR
0
-10.00 1.625E-01 -2.979E-01 4.252E-02 -1.316E-01 -7.832E-03 -5.325E-04 6.666E-04
-7.063E-04 -1.307E-03
-5.00 4.054E-02 -1.254E-01 -8.043E-03 -1.021E-03 9.320E-06 -7.545E-04
2.837E-04
0.00 4.396E-02 -1.360E-01 -8.558E-03 -1.522E-03 -6.561E-04 -7.463E-04
1.922E-03
5.00 4.110E-02 -1.272E-01 -8.659E-03 -2.088E-03 -1.395E-03 -6.700E-04
3.724E-03
10.00 3.863E-02 -1.195E-01 -8.067E-03 -2.605E-03 -2.100E-03 -5.381E-04
5.386E-03

0*** VEHICLE WEIGHT = 5.34 LB.
0*** LEVEL FLIGHT LIFT COEFFICIENT = 0.89881

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1 AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION
OF DATCOM

CHARACTERISTICS AT ANGLE OF ATTACK AND IN SIDESLIP
WING-BODY-VERTICAL TAIL-HORIZONTAL TAIL CONFIGURATION
Project Rascal 72 UAV

----- FLIGHT CONDITIONS ----- REFERENCE
DIMENSIONS -----
MACH ALTITUDE VELOCITY PRESSURE TEMPERATURE REYNOLDS REF.
REFERENCE LENGTH MOMENT REF. CENTER
NUMBER NUMBER AREA LONG. LAT. HORIZ VERT

	FT	FT/SEC	LB/FT**2	DEG R	1/FT	FT**2	FT	FT	FT	FT		
0	0.044	0.00	49.21	2.1162E+03	518.670	3.1157E+05	4.640	0.790	6.040	1.125		
0.055												
0	-----DERIVATIVE (PER DEGREE)-----											
0	ALPHA	CD	CL	CM	CN	CA	XCP	CLA	CMA	CYB	CNB	CLB
0												
	-10.0	0.045	-0.499	0.1873	-0.500	-0.043	-0.375	9.305E-02	-2.826E-02	-8.803E-03	4.929E-04	
	-9.167E-04											
	-5.0	0.029	-0.027	0.0141	-0.030	0.027	-0.473	9.504E-02	-3.403E-02			-9.189E-04
	0.0	0.038	0.451	-0.1530	0.451	0.038	-0.339	1.003E-01	-3.720E-02			-9.192E-04
	5.0	0.071	0.975	-0.3579	0.978	-0.014	-0.366	1.021E-01	-4.457E-02			-9.253E-04
	10.0	0.128	1.472	-0.5987	1.472	-0.130	-0.407	9.668E-02	-5.175E-02			-9.289E-04
0			ALPHA	Q/QINF	EPSLON	D(EPSLON)/D(ALPHA)						
0												

1
0

10.0 0.957 -2.095 0.461
-5.0 0.917 0.208 0.459
0.0 1.000 2.492 0.453
5.0 1.000 4.737 0.423
10.0 1.000 6.726 0.398

1
0

AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION
OF DATCOM

DYNAMIC DERIVATIVES
WING-BODY-VERTICAL TAIL-HORIZONTAL TAIL CONFIGURATION
Project Rascal 72 UAV

----- FLIGHT CONDITIONS -----						----- REFERENCE				
DIMENSIONS -----										
MACH	ALTITUDE	VELOCITY	PRESSURE	TEMPERATURE	REYNOLDS	REF.				
REFERENCE LENGTH	MOMENT REF.	CENTER								
NUMBER	NUMBER				AREA	LONG.	LAT.	HORIZ	VERT	
FT	FT/SEC	LB/FT**2	DEG R	1/FT	FT**2	FT	FT	FT	FT	
0	0.044	0.00	49.21	2.1162E+03	518.670	3.1157E+05	4.640	0.790	6.040	1.125
0.055										

DYNAMIC DERIVATIVES (PER DEGREE)

0 -----PITCHING----- -----ACCELERATION----- -----ROLLING-----
-----YAWING-----

0	ALPHA	CLQ	CMQ	CLAD	CMAD	CLP	CYP	CNP	CNR
CLR									
0									
	-10.00	1.631E-01	-2.997E-01	4.281E-02	-1.324E-01	-7.832E-03	-5.196E-04	6.931E-04	
	-6.983E-04	-1.308E-03							
	-5.00		4.082E-02	-1.263E-01	-8.042E-03	-1.023E-03	6.503E-06	-7.489E-04	
	2.838E-04								
	0.00		4.396E-02	-1.360E-01	-8.557E-03	-1.540E-03	-6.924E-04	-7.371E-04	
	1.924E-03								
	5.00		4.110E-02	-1.272E-01	-8.657E-03	-2.122E-03	-1.465E-03	-6.499E-04	
	3.727E-03								
	10.00		3.862E-02	-1.195E-01	-8.061E-03	-2.653E-03	-2.198E-03	-5.013E-04	
	5.390E-03								

0*** VEHICLE WEIGHT = 5.34 LB.
0*** LEVEL FLIGHT LIFT COEFFICIENT = 0.39983

----- FLIGHT CONDITIONS -----							----- REFERENCE				
DIMENSIONS -----											
MACH	ALTITUDE	VELOCITY	PRESSURE	TEMPERATURE	REYNOLDS	REF.					
REFERENCE LENGTH	MOMENT	REF. CENTER									
NUMBER			NUMBER	AREA	LONG.	LAT.	HORIZ	VERT			
FT	FT/SEC	LB/FT**2	DEG R	1/FT	FT**2	FT	FT	FT	FT		
0.059	0.00	65.61	2.1162E+03	518.670	4.1540E+05	4.640	0.790	6.040	1.125		
0.055											
0	-----DERIVATIVE (PER DEGREE)-----										
0 ALPHA	CD	CL	CM	CN	CA	XCP	CLA	CMA	CYB	CNB	CLB
0											
-10.0	0.043	-0.500	0.1882	-0.500	-0.044	-0.377	9.313E-02	-2.833E-02	-8.804E-03	4.745E-04	
-9.171E-04											
-5.0	0.028	-0.028	0.0145	-0.030	0.026	-0.483	9.511E-02	-3.417E-02		-9.196E-04	
0.0	0.036	0.451	-0.1534	0.451	0.036	-0.340	1.003E-01	-3.733E-02		-9.201E-04	
5.0	0.068	0.976	-0.3588	0.978	-0.017	-0.367	1.021E-01	-4.469E-02		-9.264E-04	
10.0	0.123	1.473	-0.6003	1.472	-0.135	-0.408	9.666E-02	-5.190E-02		-9.302E-04	
0											
0											
	ALPHA		Q/QINF	EPSLON	D(EPSLON)/D(ALPHA)						
	-10.0		0.961	-2.096	0.461						
	-5.0		0.921	0.208	0.459						
	0.0		1.000	2.493	0.453						
	5.0		1.000	4.738	0.423						
	10.0		1.000	6.727	0.398						

FLIGHT CONDITIONS						REFERENCE				
DIMENSIONS										
MACH	ALTITUDE	VELOCITY	PRESSURE	TEMPERATURE	REYNOLDS	REF.				
REFERENCE LENGTH	MOMENT	REF. CENTER								
NUMBER			NUMBER	AREA	LONG.	LAT.	HORIZ	VERT		
FT	FT/SEC	LB/FT**2	DEG R	1/FT	FT**2	FT	FT	FT	FT	
0.059	0.00	65.61	2.1162E+03	518.670	4.1540E+05	4.640	0.790	6.040	1.125	
0.055										
DYNAMIC DERIVATIVES (PER DEGREE)										
0	-----PITCHING-----		-----ACCELERATION-----		-----ROLLING-----					
-----YAWING-----										
0	ALPHA	CLQ	CMQ	CLAD	CMAD	CLP	CYP	CNP	CNR	
CLR										
0										
-10.00	1.637E-01	-3.011E-01	4.302E-02	-1.331E-01	-7.833E-03	-5.124E-04	7.083E-04			
-6.933E-04	-1.309E-03									

-5.00	4.103E-02	-1.270E-01	-8.043E-03	-1.024E-03	4.892E-06	-7.452E-04
2.840E-04						
0.00	4.399E-02	-1.361E-01	-8.558E-03	-1.550E-03	-7.132E-04	-7.314E-04
1.925E-03						
5.00	4.112E-02	-1.272E-01	-8.655E-03	-2.142E-03	-1.506E-03	-6.379E-04
3.730E-03						
10.00	3.863E-02	-1.195E-01	-8.056E-03	-2.681E-03	-2.254E-03	-4.797E-04
5.394E-03						

0*** VEHICLE WEIGHT = 5.34 LB.

0*** LEVEL FLIGHT LIFT COEFFICIENT = 0.22493

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1 AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION
OF DATCOM

CHARACTERISTICS AT ANGLE OF ATTACK AND IN SIDESLIP
WING-BODY-VERTICAL TAIL-HORIZONTAL TAIL CONFIGURATION
Project Rascal 72 UAV

----- FLIGHT CONDITIONS -----						----- REFERENCE				
DIMENSIONS -----										
MACH	ALTITUDE	VELOCITY	PRESSURE	TEMPERATURE	REYNOLDS	REF.				
REFERENCE LENGTH	MOMENT	REF. CENTER								
NUMBER			NUMBER	AREA	LONG.	LAT.	HORIZ	VERT		
FT	FT/SEC	LB/FT**2	DEG R	1/FT	FT**2	FT	FT	FT	FT	
0.073	0.00	82.02	2.1162E+03	518.670	5.1930E+05	4.640	0.790	6.040	1.125	
0.055										
0	-----DERIVATIVE (PER DEGREE)-----									
0 ALPHA	CD	CL	CM	CN	CA	XCP	CLA	CMA	CYB	CNB
0										
-10.0	0.042	-0.500	0.1890	-0.500	-0.045	-0.378	9.320E-02	-2.842E-02	-8.804E-03	4.602E-04
-9.176E-04										
-5.0	0.027	-0.028	0.0148	-0.030	0.025	-0.492	9.519E-02	-3.426E-02		-9.202E-04
0.0	0.035	0.451	-0.1537	0.451	0.035	-0.340	1.004E-01	-3.739E-02		-9.209E-04
5.0	0.067	0.976	-0.3591	0.978	-0.018	-0.367	1.022E-01	-4.470E-02		-9.274E-04
10.0	0.122	1.473	-0.6007	1.472	-0.136	-0.408	9.663E-02	-5.191E-02		-9.314E-04
0	ALPHA Q/QINF EPSLON D(EPSLON)/D(ALPHA)									
0										
	-10.0	0.965	-2.096	0.461						
	-5.0	0.924	0.208	0.459						
	0.0	1.000	2.494	0.453						
	5.0	1.000	4.739	0.423						
	10.0	1.000	6.728	0.398						

1 AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION
OF DATCOM

DYNAMIC DERIVATIVES
WING-BODY-VERTICAL TAIL-HORIZONTAL TAIL CONFIGURATION
Project Rascal 72 UAV

----- FLIGHT CONDITIONS -----						----- REFERENCE				
DIMENSIONS -----										
MACH	ALTITUDE	VELOCITY	PRESSURE	TEMPERATURE	REYNOLDS	REF.				
REFERENCE LENGTH	MOMENT	REF. CENTER								
NUMBER			NUMBER	AREA	LONG.	LAT.	HORIZ	VERT		

FT	FT/SEC	LB/FT**2	DEG R	1/FT	FT**2	FT	FT	FT	FT
0 0.073	0.00	82.02	2.1162E+03	518.670	5.1930E+05	4.640	0.790	6.040	1.125
0.055									

DYNAMIC DERIVATIVES (PER DEGREE)

0 -----PITCHING----- -----ACCELERATION----- -----ROLLING-----
 -----YAWING-----

0 ALPHA	CLQ	CMQ	CLAD	CMAD	CLP	CYP	CNP	CNR
CLR								

0	-10.00	1.640E-01	-3.021E-01	4.319E-02	-1.336E-01	-7.835E-03	-5.126E-04	7.084E-04
	-6.906E-04	-1.311E-03						
	-5.00		4.121E-02	-1.275E-01	-8.045E-03	-1.024E-03	4.887E-06	-7.426E-04
2.842E-04								
	0.00		4.401E-02	-1.362E-01	-8.559E-03	-1.550E-03	-7.133E-04	-7.288E-04
1.928E-03								
	5.00		4.113E-02	-1.273E-01	-8.654E-03	-2.143E-03	-1.506E-03	-6.351E-04
3.735E-03								
	10.00		3.864E-02	-1.196E-01	-8.050E-03	-2.681E-03	-2.254E-03	-4.769E-04
5.399E-03								

0*** VEHICLE WEIGHT = 5.34 LB.

0*** LEVEL FLIGHT LIFT COEFFICIENT = 0.14393

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1 AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION
 OF DATCOM

CHARACTERISTICS AT ANGLE OF ATTACK AND IN SIDESLIP WING-BODY-VERTICAL TAIL-HORIZONTAL TAIL CONFIGURATION Project Rascal 72 UAV

----- FLIGHT CONDITIONS ----- ----- REFERENCE
 DIMENSIONS -----

MACH	ALTITUDE	VELOCITY	PRESSURE	TEMPERATURE	REYNOLDS	REF.
REFERENCE	LENGTH	MOMENT	REF.	CENTER		

NUMBER	NUMBER	AREA	LONG.	LAT.	HORIZ	VERT
FT	FT/SEC	LB/FT**2	DEG R	1/FT	FT**2	FT
0 0.088	0.00	98.42	2.1162E+03	518.670	6.2314E+05	4.640
0.055						0.790
						6.040
						1.125

0 -----DERIVATIVE (PER DEGREE)-----

0 ALPHA	CD	CL	CM	CN	CA	XCP	CLA	CMA	CYB	CNB	CLB
0											

-10.0	0.042	-0.501	0.1896	-0.500	-0.046	-0.379	9.326E-02	-2.850E-02	-8.804E-03	4.486E-04
	-9.181E-04									
	-5.0	0.026	-0.028	0.0151	-0.030	0.024	-0.500	9.525E-02	-3.434E-02	-9.208E-04
	0.0	0.034	0.452	-0.1538	0.452	0.034	-0.341	1.004E-01	-3.744E-02	-9.217E-04
	5.0	0.066	0.976	-0.3594	0.979	-0.019	-0.367	1.022E-01	-4.472E-02	-9.283E-04
	10.0	0.121	1.473	-0.6010	1.472	-0.137	-0.408	9.661E-02	-5.192E-02	-9.324E-04

0 ALPHA Q/QINF EPSLON D(EPSLON)/D(ALPHA)

0				
	-10.0	0.967	-2.097	0.461
	-5.0	0.927	0.208	0.459
	0.0	1.000	2.494	0.453
	5.0	1.000	4.740	0.423
	10.0	1.000	6.729	0.398

----- FLIGHT CONDITIONS -----						----- REFERENCE				
DIMENSIONS -----										
MACH	ALTITUDE	VELOCITY	PRESSURE	TEMPERATURE	REYNOLDS	REF.				
REFERENCE LENGTH	MOMENT	REF. CENTER								
NUMBER				NUMBER	AREA	LONG.	LAT.	HORIZ	VERT	
FT	FT/SEC	LB/FT**2	DEG R	1/FT	FT**2	FT	FT	FT	FT	
0.088	0.00	98.42	2.1162E+03	518.670	6.2314E+05	4.640	0.790	6.040	1.125	
0.055										

-----PITCHING-----			-----ACCELERATION-----			-----ROLLING-----			
-----YAWING-----									
0	ALPHA	CLQ	CMQ	CLAD	CMAD	CLP	CYP	CNP	CNR
CLR									
0									
	-10.00	1.644E-01	-3.030E-01	4.333E-02	-1.340E-01	-7.836E-03	-5.128E-04	7.084E-04	
	-6.886E-04	-1.313E-03							
	-5.00		4.135E-02	-1.279E-01	-8.047E-03	-1.024E-03	4.895E-06	-7.405E-04	
	2.844E-04								
	0.00		4.404E-02	-1.363E-01	-8.561E-03	-1.551E-03	-7.133E-04	-7.267E-04	
	1.930E-03								
	5.00		4.115E-02	-1.273E-01	-8.654E-03	-2.143E-03	-1.506E-03	-6.329E-04	
	3.740E-03								
	10.00		3.866E-02	-1.196E-01	-8.046E-03	-2.682E-03	-2.254E-03	-4.747E-04	
	5.406E-03								

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OF DATCOM

AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION

----- FLIGHT CONDITIONS -----						----- REFERENCE					
DIMENSIONS -----											
MACH	ALTITUDE	VELOCITY	PRESSURE	TEMPERATURE	REYNOLDS	REF.					
REFERENCE LENGTH	MOMENT	REF. CENTER									
NUMBER	NUMBER				AREA	LONG.	LAT.	HORIZ	VERT		
FT	FT/SEC	LB/FT**2	DEG R	1/FT	FT**2	FT	FT	FT	FT		
0.029	100.00	32.81	2.1086E+03	518.313	2.0724E+05	4.640	0.790	6.040	1.125		
0.055											
0	-----DERIVATIVE (PER DEGREE)-----										
0 ALPHA	CD	CL	CM	CN	CA	XCP	CLA	CMA	CYB	CNB	CLB
0	-10.0	0.047	-0.499	0.1863	-0.499	-0.040	-0.373	9.296E-02	-2.822E-02	-8.803E-03	5.192E-04
	-9.163E-04										

-5.0	0.031	-0.027	0.0137	-0.030	0.029	-0.460	9.495E-02	-3.387E-02	-9.183E-04
0.0	0.040	0.451	-0.1524	0.451	0.040	-0.338	1.002E-01	-3.704E-02	-9.183E-04
5.0	0.076	0.975	-0.3567	0.978	-0.010	-0.365	1.021E-01	-4.442E-02	-9.241E-04
10.0	0.136	1.472	-0.5966	1.473	-0.122	-0.405	9.669E-02	-5.154E-02	-9.274E-04

0
0

ALPHA Q/QINF EPSLON D(EPSLON)/D(ALPHA)

-10.0	0.951	-2.095	0.461
-5.0	0.910	0.208	0.459
0.0	1.000	2.492	0.453
5.0	1.000	4.736	0.423
10.0	1.000	6.725	0.398

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0

AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION
OF DATCOM

DYNAMIC DERIVATIVES
WING-BODY-VERTICAL TAIL-HORIZONTAL TAIL CONFIGURATION
Project Rascal 72 UAV

----- FLIGHT CONDITIONS -----						----- REFERENCE				
DIMENSIONS -----										
MACH	ALTITUDE	VELOCITY	PRESSURE	TEMPERATURE	REYNOLDS	REF.				
REFERENCE LENGTH	MOMENT	REF. CENTER								
NUMBER			NUMBER	AREA	LONG.	LAT.	HORIZ	VERT		
FT	FT/SEC	LB/FT**2	DEG R	1/FT	FT**2	FT	FT	FT	FT	
0.029	100.00	32.81	2.1086E+03	518.313	2.0724E+05	4.640	0.790	6.040	1.125	
0.055										

DYNAMIC DERIVATIVES (PER DEGREE)

-----PITCHING-----		-----ACCELERATION-----		-----ROLLING-----						
-----YAWING-----										
0 ALPHA	CLQ	CMQ	CLAD	CMAD	CLP	CYP	CNP	CNR		
CLR										
0										
-10.00	1.625E-01	-2.979E-01	4.252E-02	-1.316E-01	-7.832E-03	-5.326E-04	6.664E-04			
-7.064E-04	-1.307E-03									
-5.00		4.054E-02	-1.254E-01	-8.043E-03	-1.021E-03	9.341E-06	-7.545E-04			
2.837E-04										
0.00		4.396E-02	-1.360E-01	-8.558E-03	-1.522E-03	-6.558E-04	-7.464E-04			
1.922E-03										
5.00		4.110E-02	-1.272E-01	-8.659E-03	-2.088E-03	-1.394E-03	-6.702E-04			
3.724E-03										
10.00		3.863E-02	-1.195E-01	-8.067E-03	-2.604E-03	-2.100E-03	-5.384E-04			
5.386E-03										

0*** VEHICLE WEIGHT = 5.34 LB.

0*** LEVEL FLIGHT LIFT COEFFICIENT = 0.90207

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AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION
OF DATCOM

CHARACTERISTICS AT ANGLE OF ATTACK AND IN SIDESLIP
WING-BODY-VERTICAL TAIL-HORIZONTAL TAIL CONFIGURATION
Project Rascal 72 UAV

----- FLIGHT CONDITIONS -----						----- REFERENCE				
DIMENSIONS -----										

----- FLIGHT CONDITIONS -----						----- REFERENCE				
DIMENSIONS -----										
MACH	ALTITUDE	VELOCITY	PRESSURE	TEMPERATURE	REYNOLDS	REF.				
REFERENCE	LENGTH	MOMENT	REF.	CENTER						
NUMBER	NUMBER				AREA	LONG.	LAT.	HORIZ	VERT	
FT	FT/SEC	LB/FT**2	DEG R	1/FT	FT**2	FT	FT	FT	FT	
0.059	100.00	65.58	2.1086E+03	518.313	4.1426E+05	4.640	0.790	6.040	1.125	
0.055										
DYNAMIC DERIVATIVES (PER DEGREE)										
0	-----PITCHING-----		----ACCELERATION----		-----ROLLING-----					
-----YAWING-----										
0	ALPHA	CLQ	CMQ	CLAD	CMAD	CLP	CYP	CNP	CNR	
CLR										

```

0
-10.00 1.637E-01 -3.011E-01 4.302E-02 -1.331E-01 -7.833E-03 -5.124E-04 7.083E-04
-6.933E-04 -1.309E-03
-5.00 4.103E-02 -1.270E-01 -8.043E-03 -1.024E-03 4.892E-06 -7.453E-04
2.840E-04
0.00 4.399E-02 -1.361E-01 -8.558E-03 -1.550E-03 -7.132E-04 -7.315E-04
1.925E-03
5.00 4.112E-02 -1.272E-01 -8.655E-03 -2.142E-03 -1.506E-03 -6.379E-04
3.730E-03
10.00 3.863E-02 -1.195E-01 -8.056E-03 -2.681E-03 -2.254E-03 -4.798E-04
5.394E-03
0*** VEHICLE WEIGHT = 5.34 LB.
0*** LEVEL FLIGHT LIFT COEFFICIENT = 0.22575

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AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION
OF DATCOM

CHARACTERISTICS AT ANGLE OF ATTACK AND IN SIDESLIP
WING-BODY-VERTICAL TAIL-HORIZONTAL TAIL CONFIGURATION
Project Rascal 72 UAV

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----- FLIGHT CONDITIONS -----							----- REFERENCE						
DIMENSIONS -----													
MACH	ALTITUDE	VELOCITY	PRESSURE	TEMPERATURE	REYNOLDS	REF.							
REFERENCE LENGTH	MOMENT	REF. CENTER											
NUMBER	NUMBER		AREA	LONG.	LAT.	HORIZ	VERT						
FT	FT/SEC	LB/FT**2	DEG R	1/FT	FT**2	FT	FT	FT	FT				
0 0.073	100.00	81.99	2.1086E+03	518.313	5.1788E+05	4.640	0.790	6.040	1.125				
0.055													
0	-----DERIVATIVE (PER DEGREE)-----												
0 ALPHA	CD	CL	CM	CN	CA	XCP	CLA	CMA	CYB	CNB	CLB		
0													
-10.0	0.042	-0.500	0.1889	-0.500	-0.045	-0.378	9.320E-02	-2.842E-02	-8.804E-03	4.604E-04			
-9.176E-04													
-5.0	0.027	-0.028	0.0148	-0.030	0.025	-0.492	9.519E-02	-3.426E-02		-9.202E-04			
0.0	0.035	0.451	-0.1536	0.451	0.035	-0.340	1.004E-01	-3.739E-02		-9.209E-04			
5.0	0.067	0.976	-0.3591	0.978	-0.018	-0.367	1.022E-01	-4.470E-02		-9.274E-04			
10.0	0.122	1.473	-0.6006	1.472	-0.136	-0.408	9.663E-02	-5.191E-02		-9.314E-04			
0	ALPHA Q/QINF EPSLON D(EPSLON)/D(ALPHA)												
0													
	-10.0	0.965	-2.096	0.461									
	-5.0	0.924	0.208	0.459									
	0.0	1.000	2.494	0.453									
	5.0	1.000	4.739	0.423									
	10.0	1.000	6.728	0.398									

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1
AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION
OF DATCOM

DYNAMIC DERIVATIVES
WING-BODY-VERTICAL TAIL-HORIZONTAL TAIL CONFIGURATION
Project Rascal 72 UAV

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----- FLIGHT CONDITIONS -----							----- REFERENCE				
DIMENSIONS -----											

0.0	1.000	2.494	0.453
5.0	1.000	4.740	0.423
10.0	1.000	6.729	0.398

1 AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION
OF DATCOM

DYNAMIC DERIVATIVES
WING-BODY-VERTICAL TAIL-HORIZONTAL TAIL CONFIGURATION
Project Rascal 72 UAV

----- FLIGHT CONDITIONS -----						----- REFERENCE				
DIMENSIONS -----										
MACH	ALTITUDE	VELOCITY	PRESSURE	TEMPERATURE	REYNOLDS	REF.				
REFERENCE LENGTH	MOMENT	REF. CENTER								
NUMBER			NUMBER	AREA	LONG.	LAT.	HORIZ	VERT		
FT	FT/SEC	LB/FT**2	DEG R	1/FT	FT**2	FT	FT	FT	FT	
0 0.088	100.00	98.38	2.1086E+03	518.313	6.2143E+05	4.640	0.790	6.040	1.125	
0.055										

DYNAMIC DERIVATIVES (PER DEGREE)

-----PITCHING-----		-----ACCELERATION-----		-----ROLLING-----						
-----YAWING-----										
0 ALPHA	CLQ	CMQ	CLAD	CMAD	CLP	CYP	CNP	CNR		
CLR										
0										
-10.00	1.644E-01	-3.030E-01	4.333E-02	-1.340E-01	-7.836E-03	-5.128E-04	7.084E-04			
-6.886E-04	-1.313E-03									
-5.00		4.135E-02	-1.279E-01	-8.047E-03	-1.024E-03	4.895E-06	-7.406E-04			
2.844E-04										
0.00		4.404E-02	-1.363E-01	-8.561E-03	-1.551E-03	-7.133E-04	-7.267E-04			
1.930E-03										
5.00		4.115E-02	-1.273E-01	-8.654E-03	-2.143E-03	-1.506E-03	-6.330E-04			
3.740E-03										
10.00		3.866E-02	-1.196E-01	-8.046E-03	-2.682E-03	-2.254E-03	-4.747E-04			
5.406E-03										
0*** VEHICLE WEIGHT = 5.34 LB.										

1 AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION
OF DATCOM

CHARACTERISTICS AT ANGLE OF ATTACK AND IN SIDESLIP
WING-BODY-VERTICAL TAIL-HORIZONTAL TAIL CONFIGURATION
Project Rascal 72 UAV

----- FLIGHT CONDITIONS -----						----- REFERENCE					
DIMENSIONS -----											
MACH	ALTITUDE	VELOCITY	PRESSURE	TEMPERATURE	REYNOLDS	REF.					
REFERENCE LENGTH	MOMENT	REF. CENTER									
NUMBER			NUMBER	AREA	LONG.	LAT.	HORIZ	VERT			
FT	FT/SEC	LB/FT**2	DEG R	1/FT	FT**2	FT	FT	FT	FT		
0 0.029	200.00	32.80	2.1010E+03	517.957	2.0667E+05	4.640	0.790	6.040	1.125		
0.055											
0											
-----DERIVATIVE (PER DEGREE)-----											
0 ALPHA	CD	CL	CM	CN	CA	XCP	CLA	CMA	CYB	CNB	CLB
0											

-10.0	0.047	-0.499	0.1863	-0.499	-0.040	-0.373	9.296E-02	-2.822E-02	-8.803E-03	5.194E-04
-9.163E-04										
-5.0	0.031	-0.027	0.0137	-0.030	0.029	-0.460	9.495E-02	-3.387E-02		-9.183E-04
0.0	0.040	0.451	-0.1524	0.451	0.040	-0.338	1.002E-01	-3.704E-02		-9.183E-04
5.0	0.076	0.975	-0.3567	0.978	-0.010	-0.365	1.021E-01	-4.442E-02		-9.241E-04
10.0	0.136	1.472	-0.5966	1.473	-0.122	-0.405	9.669E-02	-5.154E-02		-9.274E-04
0			ALPHA	Q/QINF	EPSLON	D(EPSLON)/D(ALPHA)				
0										

-10.0	0.951	-2.095	0.461
-5.0	0.910	0.208	0.459
0.0	1.000	2.492	0.453
5.0	1.000	4.736	0.423
10.0	1.000	6.725	0.398

1 AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION
OF DATCOM

DYNAMIC DERIVATIVES
WING-BODY-VERTICAL TAIL-HORIZONTAL TAIL CONFIGURATION
Project Rascal 72 UAV

----- FLIGHT CONDITIONS -----						----- REFERENCE				
DIMENSIONS -----										
MACH	ALTITUDE	VELOCITY	PRESSURE	TEMPERATURE	REYNOLDS	REF.				
REFERENCE LENGTH	MOMENT REF. CENTER									
NUMBER			NUMBER	AREA	LONG.	LAT.	HORIZ	VERT		
	FT	FT/SEC	LB/FT**2	DEG R	1/FT	FT**2	FT	FT	FT	FT
0.029	200.00	32.80	2.1010E+03	517.957	2.0667E+05		4.640	0.790	6.040	1.125
0.055										

DYNAMIC DERIVATIVES (PER DEGREE)

-----PITCHING-----		-----ACCELERATION-----		-----ROLLING-----		-----YAWING-----		
0 ALPHA	CLQ	CMQ	CLAD	CMAD	CLP	CYP	CNP	CNR
CLR								
0								
-10.00	1.625E-01	-2.978E-01	4.252E-02	-1.315E-01	-7.832E-03	-5.327E-04	6.662E-04	
-7.064E-04	-1.307E-03							
-5.00		4.053E-02	-1.254E-01	-8.043E-03	-1.021E-03	9.362E-06	-7.545E-04	
2.837E-04								
0.00		4.396E-02	-1.360E-01	-8.558E-03	-1.522E-03	-6.555E-04	-7.465E-04	
1.922E-03								
5.00		4.110E-02	-1.272E-01	-8.659E-03	-2.087E-03	-1.394E-03	-6.703E-04	
3.724E-03								
10.00		3.863E-02	-1.195E-01	-8.067E-03	-2.604E-03	-2.099E-03	-5.386E-04	
5.386E-03								

0*** VEHICLE WEIGHT = 5.34 LB.

1 AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION
OF DATCOM

CHARACTERISTICS AT ANGLE OF ATTACK AND IN SIDESLIP
WING-BODY-VERTICAL TAIL-HORIZONTAL TAIL CONFIGURATION
Project Rascal 72 UAV

----- FLIGHT CONDITIONS -----	----- REFERENCE
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DIMENSIONS -----

MACH	ALTITUDE	VELOCITY	PRESSURE	TEMPERATURE	REYNOLDS	REF.
REFERENCE LENGTH	MOMENT	REF. CENTER				
NUMBER	NUMBER	AREA	LONG.	LAT.	HORIZ	VERT
FT	FT/SEC	LB/FT**2	DEG R	1/FT	FT**2	FT
0.044	200.00	49.17	2.1010E+03	517.957	3.0986E+05	4.640
0.055						0.790
						6.040
						1.125

-----DERIVATIVE (PER DEGREE)-----											
0 ALPHA	CD	CL	CM	CN	CA	XCP	CLA	CMA	CYB	CNB	CLB
-10.0	0.045	-0.499	0.1873	-0.500	-0.043	-0.375	9.305E-02	-2.826E-02	-8.803E-03	4.933E-04	
-9.167E-04											
-5.0	0.029	-0.027	0.0141	-0.030	0.027	-0.473	9.504E-02	-3.403E-02		-9.189E-04	
0.0	0.038	0.451	-0.1530	0.451	0.038	-0.339	1.003E-01	-3.720E-02		-9.192E-04	
5.0	0.071	0.975	-0.3579	0.978	-0.014	-0.366	1.021E-01	-4.457E-02		-9.253E-04	
10.0	0.128	1.472	-0.5986	1.472	-0.130	-0.407	9.668E-02	-5.174E-02		-9.289E-04	
0		ALPHA	Q/QINF	EPSLON	D(EPSLON)/D(ALPHA)						
0											
		-10.0	0.957	-2.095	0.461						
		-5.0	0.917	0.208	0.459						
		0.0	1.000	2.492	0.453						
		5.0	1.000	4.737	0.423						
		10.0	1.000	6.726	0.398						

1
AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION
OF DATCOM

DYNAMIC DERIVATIVES WING-BODY-VERTICAL TAIL-HORIZONTAL TAIL CONFIGURATION Project Rascal 72 UAV

----- FLIGHT CONDITIONS -----						----- REFERENCE				
DIMENSIONS -----										
MACH	ALTITUDE	VELOCITY	PRESSURE	TEMPERATURE	REYNOLDS	REF.				
REFERENCE LENGTH	MOMENT	REF. CENTER								
NUMBER			NUMBER	AREA	LONG.	LAT.	HORIZ	VERT		
	FT	FT/SEC	LB/FT**2	DEG R	1/FT	FT**2	FT	FT	FT	FT
0.044	200.00	49.17	2.1010E+03	517.957	3.0986E+05		4.640	0.790	6.040	1.125
0.055										
DYNAMIC DERIVATIVES (PER DEGREE)										
0	-----PITCHING-----			-----ACCELERATION-----		-----ROLLING-----				
-----YAWING-----										
0 ALPHA	CLQ	CMQ	CLAD	CMAD	CLP	CYP	CNP	CNR		
CLR										
0										
-10.00	1.631E-01	-2.997E-01	4.280E-02	-1.324E-01	-7.832E-03	-5.198E-04	6.928E-04			
-6.984E-04	-1.308E-03									
-5.00		4.082E-02	-1.263E-01	-8.042E-03	-1.023E-03	6.538E-06	-7.489E-04			
2.838E-04										
0.00		4.396E-02	-1.360E-01	-8.557E-03	-1.539E-03	-6.919E-04	-7.373E-04			
1.924E-03										
5.00		4.110E-02	-1.272E-01	-8.657E-03	-2.122E-03	-1.464E-03	-6.501E-04			
3.727E-03										
10.00		3.862E-02	-1.195E-01	-8.061E-03	-2.653E-03	-2.197E-03	-5.018E-04			

0*** VEHICLE WEIGHT = 5.34 LB.

CHARACTERISTICS AT ANGLE OF ATTACK AND IN SIDESLIP
WING-BODY-VERTICAL TAIL-HORIZONTAL TAIL CONFIGURATION
Project Rascal 72 UAV

----- FLIGHT CONDITIONS -----					----- REFERENCE						
DIMENSIONS -----											
MACH	ALTITUDE	VELOCITY	PRESSURE	TEMPERATURE	REYNOLDS	REF.					
REFERENCE LENGTH	MOMENT	REF. CENTER									
NUMBER	NUMBER		AREA	LONG.	LAT.	HORIZ	VERT				
FT	FT/SEC	LB/FT**2	DEG R	1/FT	FT**2	FT	FT	FT	FT		
0.059	200.00	65.56	2.1010E+03	517.957	4.1313E+05	4.640	0.790	6.040	1.125		
0.055											
0	-----DERIVATIVE (PER DEGREE)-----										
0 ALPHA	CD	CL	CM	CN	CA	XCP	CLA	CMA	CYB	CNB	CLB
0											
-10.0	0.043	-0.500	0.1882	-0.500	-0.044	-0.377	9.312E-02	-2.833E-02	-8.804E-03	4.749E-04	
-9.171E-04											
-5.0	0.028	-0.028	0.0145	-0.030	0.026	-0.483	9.511E-02	-3.417E-02			-9.196E-04
0.0	0.036	0.451	-0.1534	0.451	0.036	-0.340	1.003E-01	-3.733E-02			-9.201E-04
5.0	0.068	0.976	-0.3588	0.978	-0.017	-0.367	1.021E-01	-4.469E-02			-9.264E-04
10.0	0.123	1.473	-0.6003	1.472	-0.135	-0.408	9.666E-02	-5.190E-02			-9.302E-04
0		ALPHA	Q/QINF	EPSLON	D(EPSLON)/D(ALPHA)						
0											
		-10.0	0.961	-2.096	0.461						
		-5.0	0.921	0.208	0.459						
		0.0	1.000	2.493	0.453						
		5.0	1.000	4.738	0.423						
		10.0	1.000	6.727	0.398						

DYNAMIC DERIVATIVES
WING-BODY-VERTICAL TAIL-HORIZONTAL TAIL CONFIGURATION
Project Rascal 72 UAV

----- FLIGHT CONDITIONS -----						----- REFERENCE			
DIMENSIONS -----									
MACH	ALTITUDE	VELOCITY	PRESSURE	TEMPERATURE	REYNOLDS	REF.			
REFERENCE	LENGTH	MOMENT	REF. CENTER						
NUMBER	NUMBER			AREA	LONG.	LAT.	HORIZ	VERT	
FT	FT/SEC	LB/FT**2	DEG R	1/FT	FT**2	FT	FT	FT	FT
0.059	200.00	65.56	2.1010E+03	517.957	4.1313E+05	4.640	0.790	6.040	1.125
0.055									
DYNAMIC DERIVATIVES (PER DEGREE)									
0	-----PITCHING-----		----ACCELERATION----		-----ROLLING-----				
-----YAWING-----									
0	ALPHA	CLQ	CMQ	CLAD	CMAD	CLP	CYP	CNP	CNR
CLR									

0
 -10.00 1.636E-01 -3.011E-01 4.302E-02 -1.331E-01 -7.833E-03 -5.124E-04 7.083E-04
 -6.934E-04 -1.309E-03
 -5.00 4.103E-02 -1.269E-01 -8.043E-03 -1.024E-03 4.892E-06 -7.453E-04
 2.840E-04
 0.00 4.399E-02 -1.361E-01 -8.558E-03 -1.550E-03 -7.132E-04 -7.315E-04
 1.925E-03
 5.00 4.112E-02 -1.272E-01 -8.655E-03 -2.142E-03 -1.506E-03 -6.379E-04
 3.730E-03
 10.00 3.863E-02 -1.195E-01 -8.056E-03 -2.681E-03 -2.254E-03 -4.798E-04
 5.394E-03
 0*** VEHICLE WEIGHT = 5.34 LB.

1 AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION
 OF DATCOM

CHARACTERISTICS AT ANGLE OF ATTACK AND IN SIDESLIP
 WING-BODY-VERTICAL TAIL-HORIZONTAL TAIL CONFIGURATION
 Project Rascal 72 UAV

----- FLIGHT CONDITIONS -----						----- REFERENCE				
DIMENSIONS -----										
MACH	ALTITUDE	VELOCITY	PRESSURE	TEMPERATURE	REYNOLDS	REF.				
REFERENCE LENGTH	MOMENT	REF. CENTER								
NUMBER	NUMBER					AREA	LONG.	LAT.	HORIZ	VERT
FT	FT/SEC	LB/FT**2	DEG R	1/FT	FT**2	FT	FT	FT	FT	FT
0 0.073	200.00	81.96	2.1010E+03	517.957	5.1646E+05	4.640	0.790	6.040	1.125	
0.055										
0	-----DERIVATIVE (PER DEGREE)-----									
0 ALPHA	CD	CL	CM	CN	CA	XCP	CLA	CMA	CYB	CNB
0										
-10.0	0.042	-0.500	0.1889	-0.500	-0.045	-0.378	9.320E-02	-2.842E-02	-8.804E-03	4.606E-04
-9.176E-04										
-5.0	0.027	-0.028	0.0148	-0.030	0.025	-0.492	9.519E-02	-3.426E-02		-9.202E-04
0.0	0.035	0.451	-0.1536	0.451	0.035	-0.340	1.004E-01	-3.739E-02		-9.209E-04
5.0	0.067	0.976	-0.3591	0.978	-0.018	-0.367	1.022E-01	-4.470E-02		-9.274E-04
10.0	0.122	1.473	-0.6006	1.472	-0.136	-0.408	9.663E-02	-5.191E-02		-9.314E-04
0	ALPHA Q/QINF EPSLON D(EPSLON)/D(ALPHA)									
0										
	-10.0	0.965	-2.096	0.461						
	-5.0	0.924	0.208	0.459						
	0.0	1.000	2.494	0.453						
	5.0	1.000	4.739	0.423						
	10.0	1.000	6.728	0.398						

1 AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION
 OF DATCOM

DYNAMIC DERIVATIVES
 WING-BODY-VERTICAL TAIL-HORIZONTAL TAIL CONFIGURATION
 Project Rascal 72 UAV

----- FLIGHT CONDITIONS -----						----- REFERENCE				
DIMENSIONS -----										
MACH	ALTITUDE	VELOCITY	PRESSURE	TEMPERATURE	REYNOLDS	REF.				

-10.0	0.967	-2.097	0.461
-5.0	0.927	0.208	0.459
0.0	1.000	2.494	0.453
5.0	1.000	4.740	0.423

10.0 1.000 6.729 0.398
 1 AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION
 OF DATCOM

DYNAMIC DERIVATIVES
 WING-BODY-VERTICAL TAIL-HORIZONTAL TAIL CONFIGURATION
 Project Rascal 72 UAV

----- FLIGHT CONDITIONS ----- REFERENCE
 DIMENSIONS -----
 MACH ALTITUDE VELOCITY PRESSURE TEMPERATURE REYNOLDS REF.
 REFERENCE LENGTH MOMENT REF. CENTER
 NUMBER NUMBER AREA LONG. LAT. HORIZ VERT
 FT FT/SEC LB/FT**2 DEG R 1/FT FT**2 FT FT FT FT
 0 0.088 200.00 98.35 2.1010E+03 517.957 6.1973E+05 4.640 0.790 6.040 1.125
 0.055

DYNAMIC DERIVATIVES (PER DEGREE)
 0 -----PITCHING----- ----ACCELERATION----- -----ROLLING-----
 -----YAWING-----
 0 ALPHA CLQ CMQ CLAD CMAD CLP CYP CNP CNR
 CLR
 0
 -10.00 1.644E-01 -3.029E-01 4.332E-02 -1.340E-01 -7.836E-03 -5.128E-04 7.084E-04
 -6.886E-04 -1.313E-03
 -5.00 4.135E-02 -1.279E-01 -8.047E-03 -1.024E-03 4.895E-06 -7.406E-04
 2.844E-04
 0.00 4.404E-02 -1.363E-01 -8.561E-03 -1.551E-03 -7.133E-04 -7.268E-04
 1.930E-03
 5.00 4.115E-02 -1.273E-01 -8.654E-03 -2.143E-03 -1.506E-03 -6.330E-04
 3.740E-03
 10.00 3.866E-02 -1.196E-01 -8.046E-03 -2.682E-03 -2.254E-03 -4.748E-04
 5.406E-03
 0*** VEHICLE WEIGHT = 5.34 LB.

1 AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION
 OF DATCOM

CHARACTERISTICS AT ANGLE OF ATTACK AND IN SIDESLIP
 WING-BODY-VERTICAL TAIL-HORIZONTAL TAIL CONFIGURATION
 Project Rascal 72 UAV

----- FLIGHT CONDITIONS ----- REFERENCE
 DIMENSIONS -----
 MACH ALTITUDE VELOCITY PRESSURE TEMPERATURE REYNOLDS REF.
 REFERENCE LENGTH MOMENT REF. CENTER
 NUMBER NUMBER AREA LONG. LAT. HORIZ VERT
 FT FT/SEC LB/FT**2 DEG R 1/FT FT**2 FT FT FT FT
 0 0.029 300.00 32.79 2.0934E+03 517.600 2.0610E+05 4.640 0.790 6.040 1.125
 0.055
 0 -----DERIVATIVE (PER DEGREE)-----
 0 ALPHA CD CL CM CN CA XCP CLA CMA CYB CNB CLB
 0
 -10.0 0.047 -0.499 0.1862 -0.499 -0.040 -0.373 9.296E-02 -2.822E-02 -8.803E-03 5.196E-04
 -9.163E-04

-5.0	0.031	-0.027	0.0137	-0.030	0.029	-0.460	9.495E-02	-3.386E-02	-9.183E-04
0.0	0.040	0.451	-0.1524	0.451	0.040	-0.338	1.002E-01	-3.704E-02	-9.183E-04
5.0	0.076	0.975	-0.3567	0.978	-0.009	-0.365	1.021E-01	-4.442E-02	-9.241E-04
10.0	0.136	1.472	-0.5966	1.473	-0.122	-0.405	9.669E-02	-5.154E-02	-9.274E-04

0
0

ALPHA Q/QINF EPSLON D(EPSLON)/D(ALPHA)

-10.0	0.951	-2.095	0.461
-5.0	0.910	0.208	0.459
0.0	1.000	2.492	0.453
5.0	1.000	4.736	0.423
10.0	1.000	6.725	0.398

1 AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION
OF DATCOM

DYNAMIC DERIVATIVES
WING-BODY-VERTICAL TAIL-HORIZONTAL TAIL CONFIGURATION
Project Rascal 72 UAV

----- FLIGHT CONDITIONS -----						----- REFERENCE				
DIMENSIONS -----										
MACH	ALTITUDE	VELOCITY	PRESSURE	TEMPERATURE	REYNOLDS	REF.				
REFERENCE LENGTH	MOMENT	REF. CENTER								
NUMBER			NUMBER	AREA	LONG.	LAT.	HORIZ	VERT		
FT	FT/SEC	LB/FT**2	DEG R	1/FT	FT**2	FT	FT	FT	FT	
0.029	300.00	32.79	2.0934E+03	517.600	2.0610E+05	4.640	0.790	6.040	1.125	
0.055										

DYNAMIC DERIVATIVES (PER DEGREE)

0	-----PITCHING-----		-----ACCELERATION-----		-----ROLLING-----				
-----YAWING-----									
0	ALPHA	CLQ	CMQ	CLAD	CMAD	CLP	CYP	CNP	CNR
CLR									
0	-10.00	1.625E-01	-2.978E-01	4.252E-02	-1.315E-01	-7.832E-03	-5.328E-04	6.660E-04	
	-7.065E-04	-1.307E-03							
	-5.00		4.053E-02	-1.254E-01	-8.043E-03	-1.021E-03	9.383E-06	-7.546E-04	
	2.837E-04								
	0.00		4.396E-02	-1.360E-01	-8.558E-03	-1.522E-03	-6.553E-04	-7.465E-04	
	1.922E-03								
	5.00		4.110E-02	-1.272E-01	-8.659E-03	-2.087E-03	-1.393E-03	-6.705E-04	
	3.724E-03								
	10.00		3.863E-02	-1.195E-01	-8.067E-03	-2.604E-03	-2.098E-03	-5.389E-04	
	5.386E-03								

0*** VEHICLE WEIGHT = 5.34 LB.

1 AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION
OF DATCOM

CHARACTERISTICS AT ANGLE OF ATTACK AND IN SIDESLIP
WING-BODY-VERTICAL TAIL-HORIZONTAL TAIL CONFIGURATION
Project Rascal 72 UAV

----- FLIGHT CONDITIONS -----						----- REFERENCE				
DIMENSIONS -----										
MACH	ALTITUDE	VELOCITY	PRESSURE	TEMPERATURE	REYNOLDS	REF.				

----- FLIGHT CONDITIONS -----							----- REFERENCE				
DIMENSIONS -----											
MACH	ALTITUDE	VELOCITY	PRESSURE	TEMPERATURE	REYNOLDS	REF.					
REFERENCE LENGTH	MOMENT	REF. CENTER									
NUMBER	NUMBER		AREA	LONG.	LAT.	HORIZ	VERT				
FT	FT/SEC	LB/FT**2	DEG R	1/FT	FT**2	FT	FT	FT	FT		
0.059	300.00	65.54	2.0934E+03	517.600	4.1200E+05	4.640	0.790	6.040	1.125		
0.055											
-----DERIVATIVE (PER DEGREE)-----											
0 ALPHA	CD	CL	CM	CN	CA	XCP	CLA	CMA	CYB	CNB	CLB
0	-10.0	0.043	-0.500	0.1882	-0.500	-0.044	-0.377	9.312E-02	-2.833E-02	-8.804E-03	4.750E-04
	-9.171E-04										
	-5.0	0.028	-0.028	0.0145	-0.030	0.026	-0.483	9.511E-02	-3.416E-02		-9.196E-04
	0.0	0.036	0.451	-0.1534	0.451	0.036	-0.340	1.003E-01	-3.733E-02		-9.201E-04
	5.0	0.068	0.976	-0.3588	0.978	-0.017	-0.367	1.021E-01	-4.469E-02		-9.264E-04
	10.0	0.123	1.473	-0.6003	1.472	-0.135	-0.408	9.666E-02	-5.190E-02		-9.302E-04
0											
0	ALPHA		Q/QINF	EPSLON	D(EPSLON)/D(ALPHA)						
		-10.0	0.961	-2.096	0.461						
		-5.0	0.921	0.208	0.459						
		0.0	1.000	2.493	0.453						
		5.0	1.000	4.738	0.423						
		10.0	1.000	6.727	0.398						

FLIGHT CONDITIONS						REFERENCE				
DIMENSIONS										
MACH	ALTITUDE	VELOCITY	PRESSURE	TEMPERATURE	REYNOLDS	REF.				
REFERENCE LENGTH	MOMENT	REF. CENTER								
NUMBER	NUMBER				AREA	LONG.	LAT.	HORIZ	VERT	
FT	FT/SEC	LB/FT**2	DEG R	1/FT	FT**2	FT	FT	FT	FT	
0.059	300.00	65.54	2.0934E+03	517.600	4.1200E+05	4.640	0.790	6.040	1.125	
0.055										
DYNAMIC DERIVATIVES (PER DEGREE)										
0	-----PITCHING-----		----ACCELERATION----			-----ROLLING-----				
-----YAWING-----										
0	ALPHA	CLQ	CMQ	CLAD	CMAD	CLP	CYP	CNP	CNR	
CLR										
0										
-10.00	1.636E-01	-3.010E-01	4.301E-02	-1.331E-01	-7.833E-03	-5.124E-04	7.083E-04			
-6.934E-04	-1.309E-03									

0 0.073 300.00 81.93 2.0934E+03 517.600 5.1505E+05 4.640 0.790 6.040 1.125
0.055

DYNAMIC DERIVATIVES (PER DEGREE)

0 -----PITCHING----- -----ACCELERATION----- -----ROLLING-----
-----YAWING-----

0 ALPHA CLQ CMQ CLAD CMAD CLP CYP CNP CNR
CLR

0
-10.00 1.640E-01 -3.021E-01 4.318E-02 -1.336E-01 -7.835E-03 -5.126E-04 7.084E-04
-6.907E-04 -1.311E-03
-5.00 4.120E-02 -1.275E-01 -8.045E-03 -1.024E-03 4.887E-06 -7.427E-04
2.842E-04
0.00 4.401E-02 -1.362E-01 -8.559E-03 -1.550E-03 -7.133E-04 -7.288E-04
1.928E-03
5.00 4.113E-02 -1.273E-01 -8.654E-03 -2.143E-03 -1.506E-03 -6.352E-04
3.735E-03
10.00 3.864E-02 -1.196E-01 -8.050E-03 -2.681E-03 -2.254E-03 -4.770E-04
5.399E-03

0*** VEHICLE WEIGHT = 5.34 LB.

1 AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION
OF DATCOM

CHARACTERISTICS AT ANGLE OF ATTACK AND IN SIDESLIP
WING-BODY-VERTICAL TAIL-HORIZONTAL TAIL CONFIGURATION
Project Rascal 72 UAV

----- FLIGHT CONDITIONS ----- ----- REFERENCE
DIMENSIONS -----

MACH ALTITUDE VELOCITY PRESSURE TEMPERATURE REYNOLDS REF.
REFERENCE LENGTH MOMENT REF. CENTER
NUMBER NUMBER AREA LONG. LAT. HORIZ VERT
FT FT/SEC LB/FT**2 DEG R 1/FT FT**2 FT FT FT FT
0 0.088 300.00 98.31 2.0934E+03 517.600 6.1803E+05 4.640 0.790 6.040 1.125
0.055

0 -----DERIVATIVE (PER DEGREE)-----
0 ALPHA CD CL CM CN CA XCP CLA CMA CYB CNB CLB

0
-10.0 0.042 -0.501 0.1896 -0.500 -0.046 -0.379 9.326E-02 -2.850E-02 -8.804E-03 4.491E-04
-9.181E-04

-5.0 0.026 -0.028 0.0150 -0.030 0.024 -0.500 9.525E-02 -3.434E-02 -9.208E-04
0.0 0.034 0.452 -0.1538 0.452 0.034 -0.341 1.004E-01 -3.744E-02 -9.217E-04
5.0 0.066 0.976 -0.3594 0.979 -0.019 -0.367 1.022E-01 -4.472E-02 -9.283E-04
10.0 0.121 1.473 -0.6010 1.472 -0.137 -0.408 9.661E-02 -5.193E-02 -9.324E-04

0 ALPHA Q/QINF EPSLON D(EPSLON)/D(ALPHA)
0

-10.0 0.967 -2.097 0.461
-5.0 0.927 0.208 0.459
0.0 1.000 2.494 0.453
5.0 1.000 4.740 0.423
10.0 1.000 6.729 0.398

1 AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION
OF DATCOM

DYNAMIC DERIVATIVES
WING-BODY-VERTICAL TAIL-HORIZONTAL TAIL CONFIGURATION
Project Rascal 72 UAV

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----- FLIGHT CONDITIONS -----
DIMENSIONS -----
MACH ALTITUDE VELOCITY PRESSURE TEMPERATURE REYNOLDS REF.
REFERENCE LENGTH MOMENT REF. CENTER
NUMBER NUMBER AREA LONG. LAT. HORIZ VERT
      FT  FT/SEC  LB/FT**2  DEG R  1/FT  FT**2  FT  FT  FT  FT
0 0.088 300.00  98.31 2.0934E+03 517.600 6.1803E+05 4.640 0.790 6.040 1.125
0.055

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DYNAMIC DERIVATIVES (PER DEGREE)
0 -----PITCHING----- ----ACCELERATION----- -----ROLLING-----
-----YAWING-----
0 ALPHA CLQ CMQ CLAD CMAD CLP CYP CNP CNR
CLR
0
-10.00 1.644E-01 -3.029E-01 4.332E-02 -1.340E-01 -7.836E-03 -5.128E-04 7.084E-04
-6.887E-04 -1.313E-03
-5.00 4.135E-02 -1.279E-01 -8.047E-03 -1.024E-03 4.895E-06 -7.406E-04
2.844E-04
0.00 4.404E-02 -1.363E-01 -8.561E-03 -1.551E-03 -7.133E-04 -7.268E-04
1.930E-03
5.00 4.115E-02 -1.273E-01 -8.654E-03 -2.143E-03 -1.506E-03 -6.330E-04
3.740E-03
10.00 3.866E-02 -1.196E-01 -8.046E-03 -2.682E-03 -2.254E-03 -4.748E-04
5.406E-03
0*** VEHICLE WEIGHT = 5.34 LB.

```

1 AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION
OF DATCOM

CHARACTERISTICS AT ANGLE OF ATTACK AND IN SIDESLIP
WING-BODY-VERTICAL TAIL-HORIZONTAL TAIL CONFIGURATION
Project Rascal 72 UAV

```

----- FLIGHT CONDITIONS -----
DIMENSIONS -----
MACH ALTITUDE VELOCITY PRESSURE TEMPERATURE REYNOLDS REF.
REFERENCE LENGTH MOMENT REF. CENTER
NUMBER NUMBER AREA LONG. LAT. HORIZ VERT
      FT  FT/SEC  LB/FT**2  DEG R  1/FT  FT**2  FT  FT  FT  FT
0 0.029 400.00  32.77 2.0858E+03 517.244 2.0554E+05 4.640 0.790 6.040 1.125
0.055
0 -----DERIVATIVE (PER DEGREE)-----
0 ALPHA CD CL CM CN CA XCP CLA CMA CYB CNB CLB
0
-10.0 0.047 -0.499 0.1862 -0.499 -0.040 -0.373 9.296E-02 -2.822E-02 -8.803E-03 5.197E-04
-9.163E-04
-5.0 0.031 -0.027 0.0137 -0.030 0.029 -0.460 9.495E-02 -3.386E-02 -9.183E-04
0.0 0.040 0.451 -0.1524 0.451 0.040 -0.338 1.002E-01 -3.703E-02 -9.183E-04
5.0 0.076 0.975 -0.3567 0.978 -0.009 -0.365 1.021E-01 -4.442E-02 -9.241E-04

```

10.0 0.136 1.472 -0.5966 1.473 -0.122 -0.405 9.669E-02 -5.154E-02 -9.274E-04
0 ALPHA Q/QINF EPSLON D(EPSLON)/D(ALPHA)
0

-10.0 0.951 -2.095 0.461
-5.0 0.910 0.208 0.459
0.0 1.000 2.492 0.453
5.0 1.000 4.736 0.423
10.0 1.000 6.725 0.398

1 AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION
OF DATCOM

DYNAMIC DERIVATIVES
WING-BODY-VERTICAL TAIL-HORIZONTAL TAIL CONFIGURATION
Project Rascal 72 UAV

----- FLIGHT CONDITIONS ----- REFERENCE
DIMENSIONS -----
MACH ALTITUDE VELOCITY PRESSURE TEMPERATURE REYNOLDS REF.
REFERENCE LENGTH MOMENT REF. CENTER
NUMBER NUMBER AREA LONG. LAT. HORIZ VERT
FT FT/SEC LB/FT**2 DEG R 1/FT FT**2 FT FT FT FT
0 0.029 400.00 32.77 2.0858E+03 517.244 2.0554E+05 4.640 0.790 6.040 1.125
0.055

DYNAMIC DERIVATIVES (PER DEGREE)
0 -----PITCHING----- ----ACCELERATION----- -----ROLLING-----
-----YAWING-----
0 ALPHA CLQ CMQ CLAD CMAD CLP CYP CNP CNR
CLR
0
-10.00 1.625E-01 -2.978E-01 4.252E-02 -1.315E-01 -7.832E-03 -5.329E-04 6.658E-04
-7.065E-04 -1.307E-03
-5.00 4.053E-02 -1.254E-01 -8.043E-03 -1.021E-03 9.404E-06 -7.546E-04
2.837E-04
0.00 4.396E-02 -1.360E-01 -8.558E-03 -1.521E-03 -6.550E-04 -7.466E-04
1.922E-03
5.00 4.110E-02 -1.272E-01 -8.659E-03 -2.087E-03 -1.393E-03 -6.706E-04
3.724E-03
10.00 3.863E-02 -1.195E-01 -8.067E-03 -2.603E-03 -2.098E-03 -5.392E-04
5.386E-03
0*** VEHICLE WEIGHT = 5.34 LB.

1 AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION
OF DATCOM

CHARACTERISTICS AT ANGLE OF ATTACK AND IN SIDESLIP
WING-BODY-VERTICAL TAIL-HORIZONTAL TAIL CONFIGURATION
Project Rascal 72 UAV

----- FLIGHT CONDITIONS ----- REFERENCE
DIMENSIONS -----
MACH ALTITUDE VELOCITY PRESSURE TEMPERATURE REYNOLDS REF.
REFERENCE LENGTH MOMENT REF. CENTER
NUMBER NUMBER AREA LONG. LAT. HORIZ VERT
FT FT/SEC LB/FT**2 DEG R 1/FT FT**2 FT FT FT FT

0	0.044	400.00	49.14	2.0858E+03	517.244	3.0817E+05	4.640	0.790	6.040	1.125		
0.055												
0	-----DERIVATIVE (PER DEGREE)-----											
0	ALPHA	CD	CL	CM	CN	CA	XCP	CLA	CMA	CYB	CNB	CLB
0												
	-10.0	0.045	-0.499	0.1873	-0.500	-0.043	-0.375	9.305E-02	-2.826E-02	-8.803E-03	4.936E-04	
	-5.0	0.029	-0.027	0.0141	-0.030	0.027	-0.472	9.504E-02	-3.402E-02		-9.189E-04	
	0.0	0.038	0.451	-0.1530	0.451	0.038	-0.339	1.003E-01	-3.719E-02		-9.192E-04	
	5.0	0.071	0.975	-0.3578	0.978	-0.014	-0.366	1.021E-01	-4.456E-02		-9.253E-04	
	10.0	0.128	1.472	-0.5986	1.472	-0.130	-0.407	9.668E-02	-5.174E-02		-9.289E-04	
0				ALPHA	Q/QINF	EPSLON	D(EPSLON)/D(ALPHA)					
0												

	-10.0	0.957	-2.095	0.461
	-5.0	0.916	0.208	0.459
	0.0	1.000	2.492	0.453
	5.0	1.000	4.737	0.423
	10.0	1.000	6.726	0.398

1 AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION OF DATCOM

DYNAMIC DERIVATIVES
WING-BODY-VERTICAL TAIL-HORIZONTAL TAIL CONFIGURATION
Project Rascal 72 UAV

----- FLIGHT CONDITIONS -----						----- REFERENCE				
DIMENSIONS -----										
MACH	ALTITUDE	VELOCITY	PRESSURE	TEMPERATURE	REYNOLDS	REF.				
REFERENCE LENGTH	MOMENT REF. CENTER									
NUMBER			NUMBER	AREA	LONG.	LAT.	HORIZ	VERT		
FT	FT/SEC	LB/FT**2	DEG R	1/FT	FT**2	FT	FT	FT	FT	
0	0.044	400.00	49.14	2.0858E+03	517.244	3.0817E+05	4.640	0.790	6.040	1.125
0.055										

DYNAMIC DERIVATIVES (PER DEGREE)									
0	-----PITCHING-----			-----ACCELERATION-----			-----ROLLING-----		
	-----YAWING-----								
0	ALPHA	CLQ	CMQ	CLAD	CMAD	CLP	CYP	CNP	CNR
CLR									
0									
	-10.00	1.631E-01	-2.997E-01	4.280E-02	-1.324E-01	-7.832E-03	-5.200E-04	6.924E-04	
	-5.00		4.081E-02	-1.263E-01	-8.042E-03	-1.022E-03	6.574E-06	-7.490E-04	
	0.00		4.396E-02	-1.360E-01	-8.557E-03	-1.539E-03	-6.915E-04	-7.374E-04	
	5.00		4.110E-02	-1.272E-01	-8.657E-03	-2.121E-03	-1.464E-03	-6.504E-04	
	10.00		3.862E-02	-1.195E-01	-8.061E-03	-2.652E-03	-2.196E-03	-5.022E-04	

0*** VEHICLE WEIGHT = 5.34 LB.

1 AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION OF DATCOM

CHARACTERISTICS AT ANGLE OF ATTACK AND IN SIDESLIP
WING-BODY-VERTICAL TAIL-HORIZONTAL TAIL CONFIGURATION
Project Rascal 72 UAV

----- FLIGHT CONDITIONS -----					----- REFERENCE						
DIMENSIONS -----											
MACH	ALTITUDE	VELOCITY	PRESSURE	TEMPERATURE	REYNOLDS	REF.					
REFERENCE LENGTH	MOMENT	REF. CENTER									
NUMBER	NUMBER		AREA	LONG.	LAT.	HORIZ	VERT				
FT	FT/SEC	LB/FT**2	DEG R	1/FT	FT**2	FT	FT	FT	FT		
0.059	400.00	65.52	2.0858E+03	517.244	4.1087E+05	4.640	0.790	6.040	1.125		
0.055											
-----DERIVATIVE (PER DEGREE)-----											
0 ALPHA	CD	CL	CM	CN	CA	XCP	CLA	CMA	CYB	CNB	CLB
0											
-10.0	0.043	-0.500	0.1882	-0.500	-0.044	-0.377	9.312E-02	-2.833E-02	-8.804E-03	4.752E-04	
-9.171E-04											
-5.0	0.028	-0.028	0.0145	-0.030	0.026	-0.483	9.511E-02	-3.416E-02		-9.196E-04	
0.0	0.036	0.451	-0.1534	0.451	0.036	-0.340	1.003E-01	-3.733E-02		-9.201E-04	
5.0	0.068	0.976	-0.3588	0.978	-0.017	-0.367	1.021E-01	-4.469E-02		-9.264E-04	
10.0	0.123	1.473	-0.6003	1.472	-0.135	-0.408	9.666E-02	-5.190E-02		-9.302E-04	
0											
0											
	ALPHA		Q/QINF	EPSLON	D(EPSLON)/D(ALPHA)						
	-10.0		0.961	-2.096	0.461						
	-5.0		0.921	0.208	0.459						
	0.0		1.000	2.493	0.453						
	5.0		1.000	4.738	0.423						
	10.0		1.000	6.727	0.398						

DYNAMIC DERIVATIVES
WING-BODY-VERTICAL TAIL-HORIZONTAL TAIL CONFIGURATION
Project Rascal 72 UAV

FLIGHT CONDITIONS					REFERENCE				
DIMENSIONS									
MACH	ALTITUDE	VELOCITY	PRESSURE	TEMPERATURE	REYNOLDS	REF.			
REFERENCE LENGTH	MOMENT	REF. CENTER							
NUMBER	NUMBER				AREA	LONG.	LAT.	HORIZ	VERT
FT	FT/SEC	LB/FT**2	DEG R	1/FT	FT**2	FT	FT	FT	FT
0.059	400.00	65.52	2.0858E+03	517.244	4.1087E+05	4.640	0.790	6.040	1.125
0.055									
DYNAMIC DERIVATIVES (PER DEGREE)									
PITCHING			ACCELERATION			ROLLING			
YAWING									
ALPHA	CLQ	CMQ	CLAD	CMAD	CLP	CYP	CNP	CNR	
CLR									
0									
-10.00	1.636E-01	-3.010E-01	4.301E-02	-1.331E-01	-7.833E-03	-5.124E-04	7.083E-04		
-6.934E-04	-1.309E-03								
-5.00	4.103E-02		-1.269E-01	-8.043E-03	-1.024E-03	4.892E-06	-7.454E-04		
2.840E-04									

1 AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION
OF DATCOM

----- FLIGHT CONDITIONS -----						----- REFERENCE				
DIMENSIONS -----										
MACH	ALTITUDE	VELOCITY	PRESSURE	TEMPERATURE	REYNOLDS	REF.				
REFERENCE	LENGTH	MOMENT	REF.	CENTER						
NUMBER					NUMBER	AREA	LONG.	LAT.	HORIZ	VERT
FT	FT/SEC	LB/FT**2	DEG R	1/FT	FT**2	FT	FT	FT	FT	
0.073	400.00	81.90	2.0858E+03	517.244	5.1364E+05	4.640	0.790	6.040	1.125	
0.055										
-----DERIVATIVE (PER DEGREE)-----										
0 ALPHA	CD	CL	CM	CN	CA	XCP	CLA	CMA	CYB	CNB
0										
-10.0	0.042	-0.500	0.1889	-0.500	-0.045	-0.378	9.320E-02	-2.842E-02	-8.804E-03	4.609E-04
-9.176E-04										
-5.0	0.027	-0.028	0.0148	-0.030	0.025	-0.491	9.518E-02	-3.426E-02		-9.202E-04
0.0	0.035	0.451	-0.1536	0.451	0.035	-0.340	1.004E-01	-3.739E-02		-9.209E-04
5.0	0.067	0.976	-0.3591	0.978	-0.018	-0.367	1.022E-01	-4.470E-02		-9.274E-04
10.0	0.122	1.473	-0.6006	1.472	-0.136	-0.408	9.663E-02	-5.191E-02		-9.314E-04
0		ALPHA	Q/QINF	EPSLON	D(EPSLON)/D(ALPHA)					
0										
		-10.0	0.964	-2.096	0.461					
		-5.0	0.924	0.208	0.459					
		0.0	1.000	2.494	0.453					
		5.0	1.000	4.739	0.423					
		10.0	1.000	6.728	0.398					

1 AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION
OF DATCOM

FLIGHT CONDITIONS						REFERENCE				
DIMENSIONS										
MACH	ALTITUDE	VELOCITY	PRESSURE	TEMPERATURE	REYNOLDS	REF.				
REFERENCE LENGTH	MOMENT	REF. CENTER								
NUMBER	NUMBER				AREA	LONG.	LAT.	HORIZ	VERT	
FT	FT/SEC	LB/FT**2	DEG R	1/FT	FT**2	FT	FT	FT	FT	
0.073	400.00	81.90	2.0858E+03	517.244	5.1364E+05	4.640	0.790	6.040	1.125	
0.055										

DYNAMIC DERIVATIVES (PER DEGREE)

0 -----PITCHING----- ----ACCELERATION----- -----ROLLING-----
 -----YAWING-----

0 ALPHA	CLQ	CMQ	CLAD	CMAD	CLP	CYP	CNP	CNR
---------	-----	-----	------	------	-----	-----	-----	-----

CLR

0

-10.00	1.640E-01	-3.020E-01	4.318E-02	-1.336E-01	-7.835E-03	-5.126E-04	7.084E-04
--------	-----------	------------	-----------	------------	------------	------------	-----------

-6.908E-04 -1.311E-03

-5.00		4.120E-02	-1.275E-01	-8.045E-03	-1.024E-03	4.887E-06	-7.427E-04
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2.842E-04

0.00		4.401E-02	-1.362E-01	-8.559E-03	-1.550E-03	-7.133E-04	-7.289E-04
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1.928E-03

5.00		4.113E-02	-1.273E-01	-8.654E-03	-2.143E-03	-1.506E-03	-6.352E-04
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3.735E-03

10.00		3.864E-02	-1.196E-01	-8.050E-03	-2.681E-03	-2.254E-03	-4.770E-04
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5.399E-03

0*** VEHICLE WEIGHT = 5.34 LB.

1 AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION
 OF DATCOM

CHARACTERISTICS AT ANGLE OF ATTACK AND IN SIDESLIP
 WING-BODY-VERTICAL TAIL-HORIZONTAL TAIL CONFIGURATION
 Project Rascal 72 UAV

----- FLIGHT CONDITIONS -----						----- REFERENCE				
DIMENSIONS -----										
MACH	ALTITUDE	VELOCITY	PRESSURE	TEMPERATURE	REYNOLDS	REF.				
REFERENCE LENGTH	MOMENT	REF. CENTER								
NUMBER	NUMBER		AREA	LONG.	LAT.	HORIZ	VERT			
FT	FT/SEC	LB/FT**2	DEG R	1/FT	FT**2	FT	FT	FT	FT	

0 0.088	400.00	98.28	2.0858E+03	517.244	6.1634E+05	4.640	0.790	6.040	1.125
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0.055

0 -----DERIVATIVE (PER DEGREE)-----

0 ALPHA	CD	CL	CM	CN	CA	XCP	CLA	CMA	CYB	CNB	CLB
---------	----	----	----	----	----	-----	-----	-----	-----	-----	-----

0

-10.0	0.042	-0.501	0.1896	-0.500	-0.046	-0.379	9.326E-02	-2.850E-02	-8.804E-03	4.493E-04
-------	-------	--------	--------	--------	--------	--------	-----------	------------	------------	-----------

-9.181E-04

-5.0	0.027	-0.028	0.0150	-0.030	0.024	-0.499	9.525E-02	-3.434E-02		-9.208E-04
------	-------	--------	--------	--------	-------	--------	-----------	------------	--	------------

0.0	0.034	0.452	-0.1538	0.452	0.034	-0.341	1.004E-01	-3.744E-02		-9.217E-04
-----	-------	-------	---------	-------	-------	--------	-----------	------------	--	------------

5.0	0.066	0.976	-0.3594	0.979	-0.019	-0.367	1.022E-01	-4.472E-02		-9.283E-04
-----	-------	-------	---------	-------	--------	--------	-----------	------------	--	------------

10.0	0.121	1.473	-0.6010	1.472	-0.137	-0.408	9.661E-02	-5.193E-02		-9.324E-04
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0

ALPHA Q/QINF EPSLON D(EPSLON)/D(ALPHA)

0

-10.0	0.967	-2.097	0.461
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-5.0	0.927	0.208	0.459
------	-------	-------	-------

0.0	1.000	2.494	0.453
-----	-------	-------	-------

5.0	1.000	4.740	0.423
-----	-------	-------	-------

10.0	1.000	6.729	0.398
------	-------	-------	-------

1 AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION
 OF DATCOM

DYNAMIC DERIVATIVES
 WING-BODY-VERTICAL TAIL-HORIZONTAL TAIL CONFIGURATION

Project Rascal 72 UAV

```

----- FLIGHT CONDITIONS -----
DIMENSIONS -----
MACH ALTITUDE VELOCITY PRESSURE TEMPERATURE REYNOLDS REF.
REFERENCE LENGTH MOMENT REF. CENTER
NUMBER NUMBER AREA LONG. LAT. HORIZ VERT
      FT FT/SEC LB/FT**2 DEG R 1/FT FT**2 FT FT FT FT
0 0.088 400.00 98.28 2.0858E+03 517.244 6.1634E+05 4.640 0.790 6.040 1.125
0.055

```

```

DYNAMIC DERIVATIVES (PER DEGREE)
0 -----PITCHING----- ----ACCELERATION----- -----ROLLING-----
-----YAWING-----
0 ALPHA CLQ CMQ CLAD CMAD CLP CYP CNP CNR
CLR
0
-10.00 1.644E-01 -3.029E-01 4.332E-02 -1.340E-01 -7.836E-03 -5.128E-04 7.084E-04
-6.887E-04 -1.313E-03
-5.00 4.135E-02 -1.279E-01 -8.047E-03 -1.024E-03 4.895E-06 -7.407E-04
2.844E-04
0.00 4.404E-02 -1.363E-01 -8.561E-03 -1.551E-03 -7.133E-04 -7.268E-04
1.930E-03
5.00 4.115E-02 -1.273E-01 -8.654E-03 -2.143E-03 -1.506E-03 -6.331E-04
3.740E-03
10.00 3.866E-02 -1.196E-01 -8.046E-03 -2.682E-03 -2.254E-03 -4.748E-04
5.406E-03
0*** VEHICLE WEIGHT = 5.34 LB.

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0
TRIM
SAVE
NEXT CASE
0 INPUT DIMENSIONS ARE IN FT, SCALE FACTOR IS 1.0000

```

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1 AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION
OF DATCOM

```

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WING SECTION DEFINITION
0 IDEAL ANGLE OF ATTACK = 1.12591 DEG.

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ZERO LIFT ANGLE OF ATTACK = -3.45103 DEG.

IDEAL LIFT COEFFICIENT = 0.54407

ZERO LIFT PITCHING MOMENT COEFFICIENT = -0.08548

MACH ZERO LIFT-CURVE-SLOPE = 0.09729 /DEG.

LEADING EDGE RADIUS = 0.01587 FRACTION CHORD

MAXIMUM AIRFOIL THICKNESS = 0.12000 FRACTION CHORD

DELTA-Y = 3.16898 PERCENT CHORD

0 MACH= 0.0294 LIFT-CURVE-SLOPE = 0.09728 /DEG. XAC = 0.25450
0 MACH= 0.0441 LIFT-CURVE-SLOPE = 0.09733 /DEG. XAC = 0.25454
0 MACH= 0.0588 LIFT-CURVE-SLOPE = 0.09738 /DEG. XAC = 0.25484
0 MACH= 0.0735 LIFT-CURVE-SLOPE = 0.09746 /DEG. XAC = 0.25495
0 MACH= 0.0882 LIFT-CURVE-SLOPE = 0.09752 /DEG. XAC = 0.25502
1 AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION
OF DATCOM

HORIZONTAL TAIL SECTION DEFINITION

0 IDEAL ANGLE OF ATTACK = 0.00000 DEG.

ZERO LIFT ANGLE OF ATTACK = 0.00000 DEG.

IDEAL LIFT COEFFICIENT = 0.00000

ZERO LIFT PITCHING MOMENT COEFFICIENT = 0.00000

MACH ZERO LIFT-CURVE-SLOPE = 0.09830 /DEG.

LEADING EDGE RADIUS = 0.00893 FRACTION CHORD

MAXIMUM AIRFOIL THICKNESS = 0.09000 FRACTION CHORD

DELTA-Y = 2.37673 PERCENT CHORD

0 MACH= 0.0294 LIFT-CURVE-SLOPE = 0.09840 /DEG. XAC = 0.25651
0 MACH= 0.0441 LIFT-CURVE-SLOPE = 0.09839 /DEG. XAC = 0.25646
0 MACH= 0.0588 LIFT-CURVE-SLOPE = 0.09846 /DEG. XAC = 0.25650
0 MACH= 0.0735 LIFT-CURVE-SLOPE = 0.09853 /DEG. XAC = 0.25644
0 MACH= 0.0882 LIFT-CURVE-SLOPE = 0.09864 /DEG. XAC = 0.25648
1 AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION
OF DATCOM

VERTICAL TAIL SECTION DEFINITION

0 IDEAL ANGLE OF ATTACK = 0.00000 DEG.

ZERO LIFT ANGLE OF ATTACK = 0.00000 DEG.

IDEAL LIFT COEFFICIENT = 0.00000

ZERO LIFT PITCHING MOMENT COEFFICIENT = 0.00000

MACH ZERO LIFT-CURVE-SLOPE = 0.09830 /DEG.

LEADING EDGE RADIUS = 0.00893 FRACTION CHORD

MAXIMUM AIRFOIL THICKNESS = 0.09000 FRACTION CHORD

DELTA-Y = 2.37673 PERCENT CHORD

0 MACH= 0.0294 LIFT-CURVE-SLOPE = 0.09840 /DEG. XAC = 0.25651
0 MACH= 0.0441 LIFT-CURVE-SLOPE = 0.09839 /DEG. XAC = 0.25646
0 MACH= 0.0588 LIFT-CURVE-SLOPE = 0.09846 /DEG. XAC = 0.25650
0 MACH= 0.0735 LIFT-CURVE-SLOPE = 0.09853 /DEG. XAC = 0.25644
0 MACH= 0.0882 LIFT-CURVE-SLOPE = 0.09864 /DEG. XAC = 0.25648
1

WING-BODY-VERTICAL TAIL-HORIZONTAL TAIL CONFIGURATION

----- FLIGHT CONDITIONS ----- REFERENCE
DIMENSIONS -----
MACH ALTITUDE VELOCITY PRESSURE TEMPERATURE REYNOLDS REF.
REFERENCE LENGTH MOMENT REF. CENTER
NUMBER NUMBER AREA LONG. LAT. HORIZ VERT
FT FT/SEC LB/FT**2 DEG R 1/FT FT**2 FT FT FT FT
0 0.029 100.00 32.81 2.1086E+03 518.313 2.0724E+05 4.640 0.790 6.040 1.125
0.055
0 -----DERIVATIVE (PER DEGREE)-----
0 ALPHA CD CL CM CN CA XCP CLA CMA CYB CNB CLB
0
-10.0 0.047 -0.499 0.1863 -0.499 -0.040 -0.373 9.296E-02 -2.822E-02 -8.803E-03 5.192E-04
-9.163E-04
-5.0 0.031 -0.027 0.0137 -0.030 0.029 -0.460 9.495E-02 -3.387E-02 -9.183E-04
0.0 0.040 0.451 -0.1524 0.451 0.040 -0.338 1.002E-01 -3.704E-02 -9.183E-04
5.0 0.076 0.975 -0.3567 0.978 -0.010 -0.365 1.021E-01 -4.442E-02 -9.241E-04
10.0 0.136 1.472 -0.5966 1.473 -0.122 -0.405 9.669E-02 -5.154E-02 -9.274E-04
0 ALPHA Q/QINF EPSLON D(EPSLON)/D(ALPHA)
0
-10.0 0.951 -2.095 0.461
-5.0 0.910 0.208 0.459
0.0 1.000 2.492 0.453
5.0 1.000 4.736 0.423
10.0 1.000 6.725 0.398
0*** VEHICLE WEIGHT = 5.34 LB.
0*** LEVEL FLIGHT LIFT COEFFICIENT = 0.90207

1 AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION
OF DATCOM

CHARACTERISTICS AT ANGLE OF ATTACK AND IN SIDESLIP WING-BODY-VERTICAL TAIL-HORIZONTAL TAIL CONFIGURATION

----- FLIGHT CONDITIONS ----- REFERENCE
DIMENSIONS -----
MACH ALTITUDE VELOCITY PRESSURE TEMPERATURE REYNOLDS REF.
REFERENCE LENGTH MOMENT REF. CENTER
NUMBER NUMBER AREA LONG. LAT. HORIZ VERT
FT FT/SEC LB/FT**2 DEG R 1/FT FT**2 FT FT FT FT
0 0.044 100.00 49.19 2.1086E+03 518.313 3.1071E+05 4.640 0.790 6.040 1.125
0.055
0 -----DERIVATIVE (PER DEGREE)-----
0 ALPHA CD CL CM CN CA XCP CLA CMA CYB CNB CLB
0
-10.0 0.045 -0.499 0.1873 -0.500 -0.043 -0.375 9.305E-02 -2.826E-02 -8.803E-03 4.931E-04

-9.167E-04

-5.0	0.029	-0.027	0.0141	-0.030	0.027	-0.473	9.504E-02	-3.403E-02	-9.189E-04
0.0	0.038	0.451	-0.1530	0.451	0.038	-0.339	1.003E-01	-3.720E-02	-9.192E-04
5.0	0.071	0.975	-0.3579	0.978	-0.014	-0.366	1.021E-01	-4.457E-02	-9.253E-04
10.0	0.128	1.472	-0.5986	1.472	-0.130	-0.407	9.668E-02	-5.175E-02	-9.289E-04

0
0

	ALPHA	Q/QINF	EPSLON	D(EPSLON)/D(ALPHA)
-10.0	0.957	-2.095	0.461	
-5.0	0.917	0.208	0.459	
0.0	1.000	2.492	0.453	
5.0	1.000	4.737	0.423	
10.0	1.000	6.726	0.398	

0*** VEHICLE WEIGHT = 5.34 LB.

1 AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION
OF DATCOM

CHARACTERISTICS AT ANGLE OF ATTACK AND IN SIDESLIP
WING-BODY-VERTICAL TAIL-HORIZONTAL TAIL CONFIGURATION

----- FLIGHT CONDITIONS -----						----- REFERENCE				
DIMENSIONS -----										
MACH	ALTITUDE	VELOCITY	PRESSURE	TEMPERATURE	REYNOLDS	REF.				
REFERENCE LENGTH	MOMENT	REF. CENTER								
NUMBER			NUMBER	AREA	LONG.	LAT.	HORIZ	VERT		
	FT	FT/SEC	LB/FT**2	DEG R	1/FT	FT**2	FT	FT	FT	FT
0 0.059	100.00	65.58	2.1086E+03	518.313	4.1426E+05	4.640	0.790	6.040	1.125	
0.055										
0	-----DERIVATIVE (PER DEGREE)-----									
0 ALPHA	CD	CL	CM	CN	CA	XCP	CLA	CMA	CYB	CNB CLB
0										
-10.0	0.043	-0.500	0.1882	-0.500	-0.044	-0.377	9.312E-02	-2.833E-02	-8.804E-03	4.747E-04
-9.171E-04										
-5.0	0.028	-0.028	0.0145	-0.030	0.026	-0.483	9.511E-02	-3.417E-02		-9.196E-04
0.0	0.036	0.451	-0.1534	0.451	0.036	-0.340	1.003E-01	-3.733E-02		-9.201E-04
5.0	0.068	0.976	-0.3588	0.978	-0.017	-0.367	1.021E-01	-4.469E-02		-9.264E-04
10.0	0.123	1.473	-0.6003	1.472	-0.135	-0.408	9.666E-02	-5.190E-02		-9.302E-04

0
0

	ALPHA	Q/QINF	EPSLON	D(EPSLON)/D(ALPHA)
-10.0	0.961	-2.096	0.461	
-5.0	0.921	0.208	0.459	
0.0	1.000	2.493	0.453	
5.0	1.000	4.738	0.423	
10.0	1.000	6.727	0.398	

0*** VEHICLE WEIGHT = 5.34 LB.

1 AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION
OF DATCOM

CHARACTERISTICS AT ANGLE OF ATTACK AND IN SIDESLIP
WING-BODY-VERTICAL TAIL-HORIZONTAL TAIL CONFIGURATION

----- FLIGHT CONDITIONS -----						----- REFERENCE				
DIMENSIONS -----										

MACH ALTITUDE VELOCITY PRESSURE TEMPERATURE REYNOLDS REF.											
REFERENCE LENGTH MOMENT REF. CENTER											
NUMBER					NUMBER	AREA	LONG.	LAT.	HORIZ	VERT	
FT	FT/SEC	LB/FT**2	DEG R	1/FT	FT**2	FT	FT	FT	FT	FT	
0.088	100.00	98.38	2.1086E+03	518.313	6.2143E+05		4.640	0.790	6.040	1.125	
0.055											
0	-----DERIVATIVE (PER DEGREE)-----										
0 ALPHA	CD	CL	CM	CN	CA	XCP	CLA	CMA	CYB	CNB	CLB
0											
-10.0	0.042	-0.501	0.1896	-0.500	-0.046	-0.379	9.326E-02	-2.850E-02	-8.804E-03	4.488E-04	
-9.181E-04											
-5.0	0.026	-0.028	0.0150	-0.030	0.024	-0.500	9.525E-02	-3.434E-02		-9.208E-04	
0.0	0.034	0.452	-0.1538	0.452	0.034	-0.341	1.004E-01	-3.744E-02		-9.217E-04	
5.0	0.066	0.976	-0.3594	0.979	-0.019	-0.367	1.022E-01	-4.472E-02		-9.283E-04	
10.0	0.121	1.473	-0.6010	1.472	-0.137	-0.408	9.661E-02	-5.193E-02		-9.324E-04	
0	ALPHA Q/QINF EPSLON D(EPSLON)/D(ALPHA)										
0											
	-10.0	0.967	-2.097	0.461							
	-5.0	0.927	0.208	0.459							
	0.0	1.000	2.494	0.453							
	5.0	1.000	4.740	0.423							
	10.0	1.000	6.729	0.398							

0*** VEHICLE WEIGHT = 5.34 LB.

1 AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION OF DATCOM

CHARACTERISTICS AT ANGLE OF ATTACK AND IN SIDESLIP
WING-BODY-VERTICAL TAIL-HORIZONTAL TAIL CONFIGURATION

----- FLIGHT CONDITIONS -----					----- REFERENCE						
DIMENSIONS -----											
MACH ALTITUDE VELOCITY PRESSURE TEMPERATURE REYNOLDS REF.											
REFERENCE LENGTH MOMENT REF. CENTER											
NUMBER					NUMBER	AREA	LONG.	LAT.	HORIZ	VERT	
FT	FT/SEC	LB/FT**2	DEG R	1/FT	FT**2	FT	FT	FT	FT	FT	
0.029	200.00	32.80	2.1010E+03	517.957	2.0667E+05		4.640	0.790	6.040	1.125	
0.055											
0	-----DERIVATIVE (PER DEGREE)-----										
0 ALPHA	CD	CL	CM	CN	CA	XCP	CLA	CMA	CYB	CNB	CLB
0											
-10.0	0.047	-0.499	0.1863	-0.499	-0.040	-0.373	9.296E-02	-2.822E-02	-8.803E-03	5.194E-04	
-9.163E-04											
-5.0	0.031	-0.027	0.0137	-0.030	0.029	-0.460	9.495E-02	-3.387E-02		-9.183E-04	
0.0	0.040	0.451	-0.1524	0.451	0.040	-0.338	1.002E-01	-3.704E-02		-9.183E-04	
5.0	0.076	0.975	-0.3567	0.978	-0.010	-0.365	1.021E-01	-4.442E-02		-9.241E-04	
10.0	0.136	1.472	-0.5966	1.473	-0.122	-0.405	9.669E-02	-5.154E-02		-9.274E-04	
0	ALPHA Q/QINF EPSLON D(EPSLON)/D(ALPHA)										
0											
	-10.0	0.951	-2.095	0.461							
	-5.0	0.910	0.208	0.459							
	0.0	1.000	2.492	0.453							
	5.0	1.000	4.736	0.423							

10.0 1.000 6.725 0.398
 0*** VEHICLE WEIGHT = 5.34 LB.

1 AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION
 OF DATCOM

CHARACTERISTICS AT ANGLE OF ATTACK AND IN SIDESLIP
 WING-BODY-VERTICAL TAIL-HORIZONTAL TAIL CONFIGURATION

----- FLIGHT CONDITIONS -----							----- REFERENCE -----				
DIMENSIONS -----											
MACH	ALTITUDE	VELOCITY	PRESSURE	TEMPERATURE	REYNOLDS	REF.					
REFERENCE LENGTH	MOMENT	REF. CENTER									
NUMBER					NUMBER	AREA	LONG.	LAT.	HORIZ	VERT	
FT	FT/SEC	LB/FT**2	DEG R	1/FT	FT**2	FT	FT	FT	FT	FT	
0.044	200.00	49.17	2.1010E+03	517.957	3.0986E+05	4.640	0.790	6.040	1.125		
0.055											
0	-----DERIVATIVE (PER DEGREE)-----										
0 ALPHA	CD	CL	CM	CN	CA	XCP	CLA	CMA	CYB	CNB	CLB
0											
-10.0	0.045	-0.499	0.1873	-0.500	-0.043	-0.375	9.305E-02	-2.826E-02	-8.803E-03	4.933E-04	
-9.167E-04											
-5.0	0.029	-0.027	0.0141	-0.030	0.027	-0.473	9.504E-02	-3.403E-02		-9.189E-04	
0.0	0.038	0.451	-0.1530	0.451	0.038	-0.339	1.003E-01	-3.720E-02		-9.192E-04	
5.0	0.071	0.975	-0.3579	0.978	-0.014	-0.366	1.021E-01	-4.457E-02		-9.253E-04	
10.0	0.128	1.472	-0.5986	1.472	-0.130	-0.407	9.668E-02	-5.174E-02		-9.289E-04	
0	ALPHA Q/QINF EPSLON D(EPSLON)/D(ALPHA)										
0											
	-10.0	0.957	-2.095	0.461							
	-5.0	0.917	0.208	0.459							
	0.0	1.000	2.492	0.453							
	5.0	1.000	4.737	0.423							
	10.0	1.000	6.726	0.398							
0*** VEHICLE WEIGHT =			5.34 LB.								

0*** VEHICLE WEIGHT = 5.34 LB.

CHARACTERISTICS AT ANGLE OF ATTACK AND IN SIDESLIP
 WING-BODY-VERTICAL TAIL-HORIZONTAL TAIL CONFIGURATION

----- FLIGHT CONDITIONS -----							----- REFERENCE -----				
DIMENSIONS -----											
MACH	ALTITUDE	VELOCITY	PRESSURE	TEMPERATURE	REYNOLDS	REF.					
REFERENCE LENGTH	MOMENT	REF. CENTER									
NUMBER					NUMBER	AREA	LONG.	LAT.	HORIZ	VERT	
FT	FT/SEC	LB/FT**2	DEG R	1/FT	FT**2	FT	FT	FT	FT	FT	
0.059	200.00	65.56	2.1010E+03	517.957	4.1313E+05	4.640	0.790	6.040	1.125		
0.055											
0	-----DERIVATIVE (PER DEGREE)-----										
0 ALPHA	CD	CL	CM	CN	CA	XCP	CLA	CMA	CYB	CNB	CLB
0											
-10.0	0.043	-0.500	0.1882	-0.500	-0.044	-0.377	9.312E-02	-2.833E-02	-8.804E-03	4.749E-04	
-9.171E-04											
-5.0	0.028	-0.028	0.0145	-0.030	0.026	-0.483	9.511E-02	-3.417E-02		-9.196E-04	
0.0	0.036	0.451	-0.1534	0.451	0.036	-0.340	1.003E-01	-3.733E-02		-9.201E-04	

5.0	0.068	0.976	-0.3588	0.978	-0.017	-0.367	1.021E-01	-4.469E-02	-9.264E-04
10.0	0.123	1.473	-0.6003	1.472	-0.135	-0.408	9.666E-02	-5.190E-02	-9.302E-04

0
0

ALPHA	Q/QINF	EPSLON	D(EPSLON)/D(ALPHA)
-10.0	0.961	-2.096	0.461
-5.0	0.921	0.208	0.459
0.0	1.000	2.493	0.453
5.0	1.000	4.738	0.423
10.0	1.000	6.727	0.398

0*** VEHICLE WEIGHT = 5.34 LB.

1 AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION
OF DATCOM

CHARACTERISTICS AT ANGLE OF ATTACK AND IN SIDESLIP
WING-BODY-VERTICAL TAIL-HORIZONTAL TAIL CONFIGURATION

----- FLIGHT CONDITIONS -----							----- REFERENCE				
DIMENSIONS -----											
MACH	ALTITUDE	VELOCITY	PRESSURE	TEMPERATURE	REYNOLDS	REF.					
REFERENCE LENGTH	MOMENT	REF. CENTER									
NUMBER	NUMBER		AREA	LONG.	LAT.	HORIZ	VERT				
FT	FT/SEC	LB/FT**2	DEG R	1/FT	FT**2	FT	FT	FT	FT		
0.073	200.00	81.96	2.1010E+03	517.957	5.1646E+05	4.640	0.790	6.040	1.125		
0.055											
0	-----DERIVATIVE (PER DEGREE)-----										
0 ALPHA	CD	CL	CM	CN	CA	XCP	CLA	CMA	CYB	CNB	CLB
0											
-10.0	0.042	-0.500	0.1889	-0.500	-0.045	-0.378	9.320E-02	-2.842E-02	-8.804E-03	4.606E-04	
-9.176E-04											
-5.0	0.027	-0.028	0.0148	-0.030	0.025	-0.492	9.519E-02	-3.426E-02		-9.202E-04	
0.0	0.035	0.451	-0.1536	0.451	0.035	-0.340	1.004E-01	-3.739E-02		-9.209E-04	
5.0	0.067	0.976	-0.3591	0.978	-0.018	-0.367	1.022E-01	-4.470E-02		-9.274E-04	
10.0	0.122	1.473	-0.6006	1.472	-0.136	-0.408	9.663E-02	-5.191E-02		-9.314E-04	

0
0

ALPHA	Q/QINF	EPSLON	D(EPSLON)/D(ALPHA)
-10.0	0.965	-2.096	0.461
-5.0	0.924	0.208	0.459
0.0	1.000	2.494	0.453
5.0	1.000	4.739	0.423
10.0	1.000	6.728	0.398

0*** VEHICLE WEIGHT = 5.34 LB.

0*** LEVEL FLIGHT LIFT COEFFICIENT = 0.14497

1
1 AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION
OF DATCOM

CHARACTERISTICS AT ANGLE OF ATTACK AND IN SIDESLIP
WING-BODY-VERTICAL TAIL-HORIZONTAL TAIL CONFIGURATION

----- FLIGHT CONDITIONS -----							----- REFERENCE			
DIMENSIONS -----										
MACH	ALTITUDE	VELOCITY	PRESSURE	TEMPERATURE	REYNOLDS	REF.				
REFERENCE LENGTH	MOMENT	REF. CENTER								

NUMBER					NUMBER		AREA	LONG.	LAT.	HORIZ	VERT
FT	FT/SEC	LB/FT**2	DEG R	1/FT	FT**2	FT	FT	FT	FT	FT	
0 0.088	200.00	98.35	2.1010E+03	517.957	6.1973E+05	4.640	0.790	6.040	1.125		
0.055											
0	-----DERIVATIVE (PER DEGREE)-----										
0 ALPHA	CD	CL	CM	CN	CA	XCP	CLA	CMA	CYB	CNB	CLB
0											
-10.0	0.042	-0.501	0.1896	-0.500	-0.046	-0.379	9.326E-02	-2.850E-02	-8.804E-03	4.490E-04	
-9.181E-04											
-5.0	0.026	-0.028	0.0150	-0.030	0.024	-0.500	9.525E-02	-3.434E-02		-9.208E-04	
0.0	0.034	0.452	-0.1538	0.452	0.034	-0.341	1.004E-01	-3.744E-02		-9.217E-04	
5.0	0.066	0.976	-0.3594	0.979	-0.019	-0.367	1.022E-01	-4.472E-02		-9.283E-04	
10.0	0.121	1.473	-0.6010	1.472	-0.137	-0.408	9.661E-02	-5.193E-02		-9.324E-04	
0	ALPHA Q/QINF EPSLON D(EPSLON)/D(ALPHA)										
0											
	-10.0	0.967	-2.097	0.461							
	-5.0	0.927	0.208	0.459							
	0.0	1.000	2.494	0.453							
	5.0	1.000	4.740	0.423							
	10.0	1.000	6.729	0.398							

0*** VEHICLE WEIGHT = 5.34 LB.

0*** LEVEL FLIGHT LIFT COEFFICIENT = 0.10068

1 AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION OF DATCOM

CHARACTERISTICS AT ANGLE OF ATTACK AND IN SIDESLIP
WING-BODY-VERTICAL TAIL-HORIZONTAL TAIL CONFIGURATION

----- FLIGHT CONDITIONS -----					----- REFERENCE						
DIMENSIONS -----											
MACH	ALTITUDE	VELOCITY	PRESSURE	TEMPERATURE	REYNOLDS	REF.					
REFERENCE LENGTH	MOMENT	REF. CENTER									
NUMBER	NUMBER	NUMBER	NUMBER	NUMBER	NUMBER	NUMBER	NUMBER	NUMBER	NUMBER	NUMBER	
FT	FT/SEC	LB/FT**2	DEG R	1/FT	FT**2	FT	FT	FT	FT	FT	
0 0.029	300.00	32.79	2.0934E+03	517.600	2.0610E+05	4.640	0.790	6.040	1.125		
0.055											
0	-----DERIVATIVE (PER DEGREE)-----										
0 ALPHA	CD	CL	CM	CN	CA	XCP	CLA	CMA	CYB	CNB	CLB
0											
-10.0	0.047	-0.499	0.1862	-0.499	-0.040	-0.373	9.296E-02	-2.822E-02	-8.803E-03	5.196E-04	
-9.163E-04											
-5.0	0.031	-0.027	0.0137	-0.030	0.029	-0.460	9.495E-02	-3.386E-02		-9.183E-04	
0.0	0.040	0.451	-0.1524	0.451	0.040	-0.338	1.002E-01	-3.704E-02		-9.183E-04	
5.0	0.076	0.975	-0.3567	0.978	-0.009	-0.365	1.021E-01	-4.442E-02		-9.241E-04	
10.0	0.136	1.472	-0.5966	1.473	-0.122	-0.405	9.669E-02	-5.154E-02		-9.274E-04	
0	ALPHA Q/QINF EPSLON D(EPSLON)/D(ALPHA)										
0											
	-10.0	0.951	-2.095	0.461							
	-5.0	0.910	0.208	0.459							
	0.0	1.000	2.492	0.453							
	5.0	1.000	4.736	0.423							
	10.0	1.000	6.725	0.398							

----- FLIGHT CONDITIONS -----							----- REFERENCE				
DIMENSIONS -----											
MACH	ALTITUDE	VELOCITY	PRESSURE	TEMPERATURE	REYNOLDS	REF.					
REFERENCE LENGTH	MOMENT	REF. CENTER									
NUMBER			NUMBER	AREA	LONG.	LAT.	HORIZ	VERT			
FT	FT/SEC	LB/FT**2	DEG R	1/FT	FT**2	FT	FT	FT	FT		
0.059	300.00	65.54	2.0934E+03	517.600	4.1200E+05	4.640	0.790	6.040	1.125		
0.055											
0											
-----DERIVATIVE (PER DEGREE)-----											
0 ALPHA	CD	CL	CM	CN	CA	XCP	CLA	CMA	CYB	CNB	CLB
0											
-10.0	0.043	-0.500	0.1882	-0.500	-0.044	-0.377	9.312E-02	-2.833E-02	-8.804E-03	4.750E-04	
-9.171E-04											

-5.0	0.028	-0.028	0.0145	-0.030	0.026	-0.483	9.511E-02	-3.416E-02	-9.196E-04
0.0	0.036	0.451	-0.1534	0.451	0.036	-0.340	1.003E-01	-3.733E-02	-9.201E-04
5.0	0.068	0.976	-0.3588	0.978	-0.017	-0.367	1.021E-01	-4.469E-02	-9.264E-04
10.0	0.123	1.473	-0.6003	1.472	-0.135	-0.408	9.666E-02	-5.190E-02	-9.302E-04

0
0

	ALPHA	Q/QINF	EPSLON	D(EPSLON)/D(ALPHA)
-10.0	0.961	-2.096	0.461	
-5.0	0.921	0.208	0.459	
0.0	1.000	2.493	0.453	
5.0	1.000	4.738	0.423	
10.0	1.000	6.727	0.398	

0*** VEHICLE WEIGHT = 5.34 LB.

1 AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION
OF DATCOM

CHARACTERISTICS AT ANGLE OF ATTACK AND IN SIDESLIP
WING-BODY-VERTICAL TAIL-HORIZONTAL TAIL CONFIGURATION

----- FLIGHT CONDITIONS -----						----- REFERENCE					
DIMENSIONS -----											
MACH	ALTITUDE	VELOCITY	PRESSURE	TEMPERATURE	REYNOLDS	REF.					
REFERENCE LENGTH	MOMENT	REF. CENTER									
NUMBER	NUMBER					AREA	LONG.	LAT.	HORIZ	VERT	
FT	FT/SEC	LB/FT**2	DEG R	1/FT	FT**2	FT	FT	FT	FT	FT	
0.073	300.00	81.93	2.0934E+03	517.600	5.1505E+05	4.640	0.790	6.040	1.125		
0.055											
0	-----DERIVATIVE (PER DEGREE)-----										
0 ALPHA	CD	CL	CM	CN	CA	XCP	CLA	CMA	CYB	CNB	CLB
0											
-10.0	0.042	-0.500	0.1889	-0.500	-0.045	-0.378	9.320E-02	-2.842E-02	-8.804E-03	4.607E-04	
-9.176E-04											
-5.0	0.027	-0.028	0.0148	-0.030	0.025	-0.492	9.519E-02	-3.426E-02		-9.202E-04	
0.0	0.035	0.451	-0.1536	0.451	0.035	-0.340	1.004E-01	-3.739E-02		-9.209E-04	
5.0	0.067	0.976	-0.3591	0.978	-0.018	-0.367	1.022E-01	-4.470E-02		-9.274E-04	
10.0	0.122	1.473	-0.6006	1.472	-0.136	-0.408	9.663E-02	-5.191E-02		-9.314E-04	

0
0

	ALPHA	Q/QINF	EPSLON	D(EPSLON)/D(ALPHA)
-10.0	0.964	-2.096	0.461	
-5.0	0.924	0.208	0.459	
0.0	1.000	2.494	0.453	
5.0	1.000	4.739	0.423	
10.0	1.000	6.728	0.398	

0*** VEHICLE WEIGHT = 5.34 LB.

1 AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION
OF DATCOM

CHARACTERISTICS AT ANGLE OF ATTACK AND IN SIDESLIP
WING-BODY-VERTICAL TAIL-HORIZONTAL TAIL CONFIGURATION

----- FLIGHT CONDITIONS -----						----- REFERENCE				
DIMENSIONS -----										
MACH	ALTITUDE	VELOCITY	PRESSURE	TEMPERATURE	REYNOLDS	REF.				

REFERENCE LENGTH				MOMENT REF. CENTER							
NUMBER	FT	FT/SEC	LB/FT**2	DEG R	1/FT	FT**2	FT	FT	FT	FT	
0 0.029	400.00	32.77	2.0858E+03	517.244	2.0554E+05		4.640	0.790	6.040	1.125	
0.055											
0											
-----DERIVATIVE (PER DEGREE)-----											
0 ALPHA	CD	CL	CM	CN	CA	XCP	CLA	CMA	CYB	CLB	
0											
-10.0	0.047	-0.499	0.1862	-0.499	-0.040	-0.373	9.296E-02	-2.822E-02	-8.803E-03	5.197E-04	
-9.163E-04											
-5.0	0.031	-0.027	0.0137	-0.030	0.029	-0.460	9.495E-02	-3.386E-02		-9.183E-04	
0.0	0.040	0.451	-0.1524	0.451	0.040	-0.338	1.002E-01	-3.703E-02		-9.183E-04	
5.0	0.076	0.975	-0.3567	0.978	-0.009	-0.365	1.021E-01	-4.442E-02		-9.241E-04	
10.0	0.136	1.472	-0.5966	1.473	-0.122	-0.405	9.669E-02	-5.154E-02		-9.274E-04	
0			ALPHA	Q/QINF	EPSLON	D(EPSLON)/D(ALPHA)					
0											
			-10.0	0.951	-2.095	0.461					
			-5.0	0.910	0.208	0.459					
			0.0	1.000	2.492	0.453					
			5.0	1.000	4.736	0.423					
			10.0	1.000	6.725	0.398					

0*** VEHICLE WEIGHT = 5.34 LB.

1 AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION OF DATCOM

CHARACTERISTICS AT ANGLE OF ATTACK AND IN SIDESLIP
WING-BODY-VERTICAL TAIL-HORIZONTAL TAIL CONFIGURATION

----- FLIGHT CONDITIONS -----						----- REFERENCE				
DIMENSIONS -----										
MACH	ALTITUDE	VELOCITY	PRESSURE	TEMPERATURE	REYNOLDS	REF.				
REFERENCE LENGTH	MOMENT	REF. CENTER								
NUMBER	FT	FT/SEC	LB/FT**2	DEG R	1/FT	FT**2	FT	FT	FT	FT
0 0.059	400.00	65.52	2.0858E+03	517.244	4.1087E+05		4.640	0.790	6.040	1.125
0.055										
0										
-----DERIVATIVE (PER DEGREE)-----										
0 ALPHA	CD	CL	CM	CN	CA	XCP	CLA	CMA	CYB	CLB
0										
-10.0	0.043	-0.500	0.1882	-0.500	-0.044	-0.377	9.312E-02	-2.833E-02	-8.804E-03	4.752E-04
-9.171E-04										
-5.0	0.028	-0.028	0.0145	-0.030	0.026	-0.483	9.511E-02	-3.416E-02		-9.196E-04
0.0	0.036	0.451	-0.1534	0.451	0.036	-0.340	1.003E-01	-3.733E-02		-9.201E-04
5.0	0.068	0.976	-0.3588	0.978	-0.017	-0.367	1.021E-01	-4.469E-02		-9.264E-04
10.0	0.123	1.473	-0.6003	1.472	-0.135	-0.408	9.666E-02	-5.190E-02		-9.302E-04
0			ALPHA	Q/QINF	EPSLON	D(EPSLON)/D(ALPHA)				
0										
			-10.0	0.961	-2.096	0.461				
			-5.0	0.921	0.208	0.459				
			0.0	1.000	2.493	0.453				
			5.0	1.000	4.738	0.423				
			10.0	1.000	6.727	0.398				

0*** VEHICLE WEIGHT = 5.34 LB.

1 AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION
OF DATCOM

CHARACTERISTICS AT ANGLE OF ATTACK AND IN SIDESLIP
WING-BODY-VERTICAL TAIL-HORIZONTAL TAIL CONFIGURATION

----- FLIGHT CONDITIONS -----							----- REFERENCE				
DIMENSIONS -----											
MACH	ALTITUDE	VELOCITY	PRESSURE	TEMPERATURE	REYNOLDS	REF.					
REFERENCE LENGTH	MOMENT	REF. CENTER									
NUMBER			NUMBER	AREA	LONG.	LAT.	HORIZ	VERT			
	FT	FT/SEC	LB/FT**2	DEG R	1/FT	FT**2	FT	FT	FT	FT	
0 0.073	400.00	81.90	2.0858E+03	517.244	5.1364E+05		4.640	0.790	6.040	1.125	
0.055											
0	-----DERIVATIVE (PER DEGREE)-----										
0 ALPHA	CD	CL	CM	CN	CA	XCP	CLA	CMA	CYB	CNB CLB	
0											
-10.0	0.042	-0.500	0.1889	-0.500	-0.045	-0.378	9.320E-02	-2.842E-02	-8.804E-03	4.609E-04	
-9.176E-04											
-5.0	0.027	-0.028	0.0148	-0.030	0.025	-0.491	9.518E-02	-3.426E-02		-9.202E-04	
0.0	0.035	0.451	-0.1536	0.451	0.035	-0.340	1.004E-01	-3.739E-02		-9.209E-04	
5.0	0.067	0.976	-0.3591	0.978	-0.018	-0.367	1.022E-01	-4.470E-02		-9.274E-04	
10.0	0.122	1.473	-0.6006	1.472	-0.136	-0.408	9.663E-02	-5.191E-02		-9.314E-04	
0	ALPHA Q/QINF EPSLON D(EPSLON)/D(ALPHA)										
0											
	-10.0	0.964	-2.096	0.461							
	-5.0	0.924	0.208	0.459							
	0.0	1.000	2.494	0.453							
	5.0	1.000	4.739	0.423							
	10.0	1.000	6.728	0.398							
0***	VEHICLE WEIGHT =		5.34 LB.								

0*** VEHICLE WEIGHT = 5.34 LB.

1 AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION
OF DATCOM

CHARACTERISTICS AT ANGLE OF ATTACK AND IN SIDESLIP
WING-BODY-VERTICAL TAIL-HORIZONTAL TAIL CONFIGURATION

----- FLIGHT CONDITIONS -----						----- REFERENCE				
DIMENSIONS -----										
MACH	ALTITUDE	VELOCITY	PRESSURE	TEMPERATURE	REYNOLDS	REF.				
REFERENCE LENGTH	MOMENT	REF. CENTER								
NUMBER	NUMBER					AREA	LONG.	LAT.	HORIZ	VERT
FT	FT/SEC	LB/FT**2	DEG R	1/FT	FT**2	FT	FT	FT	FT	FT
0 0.088	400.00	98.28	2.0858E+03	517.244	6.1634E+05	4.640	0.790	6.040	1.125	
0.055										
0	-----DERIVATIVE (PER DEGREE)-----									
0 ALPHA	CD	CL	CM	CN	CA	XCP	CLA	CMA	CYB	CNB CLB
0										
-10.0	0.042	-0.501	0.1896	-0.500	-0.046	-0.379	9.326E-02	-2.850E-02	-8.804E-03	4.493E-04
-9.181E-04										
-5.0	0.027	-0.028	0.0150	-0.030	0.024	-0.499	9.525E-02	-3.434E-02		-9.208E-04

IDEAL LIFT COEFFICIENT = 0.00000

ZERO LIFT PITCHING MOMENT COEFFICIENT = 0.00000

MACH ZERO LIFT-CURVE-SLOPE = 0.09830 /DEG.

LEADING EDGE RADIUS = 0.00893 FRACTION CHORD

MAXIMUM AIRFOIL THICKNESS = 0.09000 FRACTION CHORD

DELTA-Y = 2.37673 PERCENT CHORD

0 MACH= 0.0294 LIFT-CURVE-SLOPE = 0.09840 /DEG. XAC = 0.25651
0 MACH= 0.0441 LIFT-CURVE-SLOPE = 0.09839 /DEG. XAC = 0.25646
0 MACH= 0.0588 LIFT-CURVE-SLOPE = 0.09846 /DEG. XAC = 0.25650
0 MACH= 0.0735 LIFT-CURVE-SLOPE = 0.09853 /DEG. XAC = 0.25644
0 MACH= 0.0882 LIFT-CURVE-SLOPE = 0.09864 /DEG. XAC = 0.25648
1 AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION
OF DATCOM

VERTICAL TAIL SECTION DEFINITION

0 IDEAL ANGLE OF ATTACK = 0.00000 DEG.

ZERO LIFT ANGLE OF ATTACK = 0.00000 DEG.

IDEAL LIFT COEFFICIENT = 0.00000

ZERO LIFT PITCHING MOMENT COEFFICIENT = 0.00000

MACH ZERO LIFT-CURVE-SLOPE = 0.09830 /DEG.

LEADING EDGE RADIUS = 0.00893 FRACTION CHORD

MAXIMUM AIRFOIL THICKNESS = 0.09000 FRACTION CHORD

DELTA-Y = 2.37673 PERCENT CHORD

0 MACH= 0.0294 LIFT-CURVE-SLOPE = 0.09840 /DEG. XAC = 0.25651
0 MACH= 0.0441 LIFT-CURVE-SLOPE = 0.09839 /DEG. XAC = 0.25646
0 MACH= 0.0588 LIFT-CURVE-SLOPE = 0.09846 /DEG. XAC = 0.25650
0 MACH= 0.0735 LIFT-CURVE-SLOPE = 0.09853 /DEG. XAC = 0.25644
0 MACH= 0.0882 LIFT-CURVE-SLOPE = 0.09864 /DEG. XAC = 0.25648
1 AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION
OF DATCOM

CHARACTERISTICS AT ANGLE OF ATTACK AND IN SIDESLIP
WING-BODY-VERTICAL TAIL-HORIZONTAL TAIL CONFIGURATION

----- FLIGHT CONDITIONS -----					----- REFERENCE				
DIMENSIONS -----									
MACH	ALTITUDE	VELOCITY	PRESSURE	TEMPERATURE	REYNOLDS	REF.			
NUMBER	REFERENCE LENGTH	MOMENT REF. CENTER	NUMBER	AREA	LONG.	LAT.	HORIZ	VERT	
FT	FT/SEC	LB/FT**2	DEG R	1/FT	FT**2	FT	FT	FT	FT

0	0.029	0.00	32.82	2.1162E+03	518.670	2.0781E+05	4.640	0.790	6.040	1.125		
0.055												
0	-----DERIVATIVE (PER DEGREE)-----											
0	ALPHA	CD	CL	CM	CN	CA	XCP	CLA	CMA	CYB	CNB	CLB
0												
	-10.0	0.047	-0.499	0.1863	-0.499	-0.040	-0.373	9.296E-02	-2.822E-02	-8.803E-03	5.190E-04	
	-9.163E-04											
	-5.0	0.031	-0.027	0.0137	-0.030	0.029	-0.460	9.495E-02	-3.387E-02		-9.183E-04	
	0.0	0.040	0.451	-0.1524	0.451	0.040	-0.338	1.002E-01	-3.704E-02		-9.183E-04	
	5.0	0.076	0.975	-0.3567	0.978	-0.010	-0.365	1.021E-01	-4.442E-02		-9.241E-04	
	10.0	0.136	1.472	-0.5966	1.473	-0.122	-0.405	9.669E-02	-5.154E-02		-9.274E-04	
0			ALPHA	Q/QINF	EPSLON	D(EPSLON)/D(ALPHA)						
0												

	-10.0	0.951	-2.095	0.461
	-5.0	0.910	0.208	0.459
	0.0	1.000	2.492	0.453
	5.0	1.000	4.736	0.423
	10.0	1.000	6.725	0.398

0*** VEHICLE WEIGHT = 5.34 LB.

0*** LEVEL FLIGHT LIFT COEFFICIENT = 0.89881

1 AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION OF DATCOM

CHARACTERISTICS OF HIGH LIFT AND CONTROL DEVICES
WING PLAIN TRAILING-EDGE FLAP CONFIGURATION

----- FLIGHT CONDITIONS -----						----- REFERENCE -----				
DIMENSIONS -----										
MACH	ALTITUDE	VELOCITY	PRESSURE	TEMPERATURE	REYNOLDS	REF.				
REFERENCE LENGTH	MOMENT REF. CENTER									
NUMBER			NUMBER	AREA	LONG.	LAT.	HORIZ	VERT		
FT	FT/SEC	LB/FT**2	DEG R	1/FT	FT**2	FT	FT	FT	FT	
0	0.029	0.00	32.82	2.1162E+03	518.670	2.0781E+05	4.640	0.790	6.040	1.125
0.055										

-----YAWING MOMENT COEFFICIENT,CN,DUE TO CONTROL DEFLECTION-----					
0(DELTA-DELTAR)=	40.0	20.0	0.0	-20.0	-40.0
0ALPHA					
0					
-10.0	3.196E-03	1.829E-03	0.000E+00	-1.829E-03	-3.196E-03
-5.0	-3.013E-04	-1.724E-04	0.000E+00	1.724E-04	3.013E-04
0.0	-3.910E-03	-2.237E-03	0.000E+00	2.237E-03	3.910E-03
5.0	-7.871E-03	-4.504E-03	0.000E+00	4.504E-03	7.871E-03
10.0	-1.154E-02	-6.601E-03	0.000E+00	6.601E-03	1.154E-02
0					
0		DELTAL	DELTAR	(CL)ROLL	
0					
	20.0	-20.0	7.4041E-02		
	10.0	-10.0	4.2447E-02		
	0.0	0.0	0.0000E+00		
	-10.0	10.0	-4.2447E-02		
	-20.0	20.0	-7.4041E-02		

1 AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION OF DATCOM

CHARACTERISTICS AT ANGLE OF ATTACK AND IN SIDESLIP WING-BODY-VERTICAL TAIL-HORIZONTAL TAIL CONFIGURATION

----- FLIGHT CONDITIONS -----						----- REFERENCE					
DIMENSIONS -----											
MACH	ALTITUDE	VELOCITY	PRESSURE	TEMPERATURE	REYNOLDS	REF.					
REFERENCE LENGTH	MOMENT	REF. CENTER									
NUMBER			NUMBER	AREA	LONG.	LAT.	HORIZ	VERT			
	FT	FT/SEC	LB/FT**2	DEG R	1/FT	FT**2	FT	FT	FT	FT	
0.044	0.00	49.21	2.1162E+03	518.670	3.1157E+05	4.640	0.790	6.040	1.125		
0.055											
0	-----DERIVATIVE (PER DEGREE)-----										
0 ALPHA	CD	CL	CM	CN	CA	XCP	CLA	CMA	CYB	CNB	CLB
0											
-10.0	0.045	-0.499	0.1873	-0.500	-0.043	-0.375	9.305E-02	-2.826E-02	-8.803E-03	4.929E-04	
-9.167E-04											
-5.0	0.029	-0.027	0.0141	-0.030	0.027	-0.473	9.504E-02	-3.403E-02			-9.189E-04
0.0	0.038	0.451	-0.1530	0.451	0.038	-0.339	1.003E-01	-3.720E-02			-9.192E-04
5.0	0.071	0.975	-0.3579	0.978	-0.014	-0.366	1.021E-01	-4.457E-02			-9.253E-04
10.0	0.128	1.472	-0.5987	1.472	-0.130	-0.407	9.668E-02	-5.175E-02			-9.289E-04
0	ALPHA Q/QINF EPSLON D(EPSLON)/D(ALPHA)										
0											
		-10.0	0.957	-2.095	0.461						
		-5.0	0.917	0.208	0.459						
		0.0	1.000	2.492	0.453						
		5.0	1.000	4.737	0.423						
		10.0	1.000	6.726	0.398						
0*** VEHICLE WEIGHT = 5.34 LB.											
0*** LEVEL FLIGHT LIFT COEFFICIENT = 0.39983											
1 AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION OF DATCOM											

CHARACTERISTICS OF HIGH LIFT AND CONTROL DEVICES

WING PLAIN TRAILING-EDGE FLAP CONFIGURATION

----- FLIGHT CONDITIONS -----						----- REFERENCE				
DIMENSIONS -----										
MACH	ALTITUDE	VELOCITY	PRESSURE	TEMPERATURE	REYNOLDS	REF.				
REFERENCE LENGTH	MOMENT	REF. CENTER								
NUMBER			NUMBER	AREA	LONG.	LAT.	HORIZ	VERT		
FT	FT/SEC	LB/FT**2	DEG R	1/FT	FT**2	FT	FT	FT	FT	
0.044	0.00	49.21	2.1162E+03	518.670	3.1157E+05	4.640	0.790	6.040	1.125	
0.055										
0	-----YAWING MOMENT COEFFICIENT,CN,DUE TO CONTROL									
DEFLECTION-----										
0(DELTA-L-DELTA R)=	40.0	20.0	0.0	-20.0	-40.0					
0ALPHA										
0										
-10.0	3.203E-03	1.833E-03	0.000E+00	-1.833E-03	-3.203E-03					
-5.0	-3.021E-04	-1.728E-04	0.000E+00	1.728E-04	3.021E-04					
0.0	-3.919E-03	-2.242E-03	0.000E+00	2.242E-03	3.919E-03					
5.0	-7.888E-03	-4.514E-03	0.000E+00	4.514E-03	7.888E-03					
10.0	-1.156E-02	-6.615E-03	0.000E+00	6.615E-03	1.156E-02					
0										

0 DELTAL DELTAR (CL)ROLL
0

20.0	-20.0	7.4185E-02
10.0	-10.0	4.2529E-02
0.0	0.0	0.0000E+00
-10.0	10.0	-4.2529E-02
-20.0	20.0	-7.4185E-02

1 AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION
OF DATCOM

CHARACTERISTICS AT ANGLE OF ATTACK AND IN SIDESLIP
WING-BODY-VERTICAL TAIL-HORIZONTAL TAIL CONFIGURATION

----- FLIGHT CONDITIONS ----- REFERENCE
DIMENSIONS -----
MACH ALTITUDE VELOCITY PRESSURE TEMPERATURE REYNOLDS REF.
REFERENCE LENGTH MOMENT REF. CENTER
NUMBER NUMBER AREA LONG. LAT. HORIZ VERT
FT FT/SEC LB/FT**2 DEG R 1/FT FT**2 FT FT FT FT
0 0.059 0.00 65.61 2.1162E+03 518.670 4.1540E+05 4.640 0.790 6.040 1.125
0.055
0 -----DERIVATIVE (PER DEGREE)-----
0 ALPHA CD CL CM CN CA XCP CLA CMA CYB CNB CLB
0
-10.0 0.043 -0.500 0.1882 -0.500 -0.044 -0.377 9.313E-02 -2.833E-02 -8.804E-03 4.745E-04
-9.171E-04
-5.0 0.028 -0.028 0.0145 -0.030 0.026 -0.483 9.511E-02 -3.417E-02 -9.196E-04
0.0 0.036 0.451 -0.1534 0.451 0.036 -0.340 1.003E-01 -3.733E-02 -9.201E-04
5.0 0.068 0.976 -0.3588 0.978 -0.017 -0.367 1.021E-01 -4.469E-02 -9.264E-04
10.0 0.123 1.473 -0.6003 1.472 -0.135 -0.408 9.666E-02 -5.190E-02 -9.302E-04
0 ALPHA Q/QINF EPSLON D(EPSLON)/D(ALPHA)
0
-10.0 0.961 -2.096 0.461
-5.0 0.921 0.208 0.459
0.0 1.000 2.493 0.453
5.0 1.000 4.738 0.423
10.0 1.000 6.727 0.398

0*** VEHICLE WEIGHT = 5.34 LB.

0*** LEVEL FLIGHT LIFT COEFFICIENT = 0.22493

1 AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION OF
DATCOM

CHARACTERISTICS OF HIGH LIFT AND CONTROL DEVICES
WING PLAIN TRAILING-EDGE FLAP CONFIGURATION

----- FLIGHT CONDITIONS ----- REFERENCE
DIMENSIONS -----
MACH ALTITUDE VELOCITY PRESSURE TEMPERATURE REYNOLDS REF.
REFERENCE LENGTH MOMENT REF. CENTER
NUMBER NUMBER AREA LONG. LAT. HORIZ VERT
FT FT/SEC LB/FT**2 DEG R 1/FT FT**2 FT FT FT FT
0 0.059 0.00 65.61 2.1162E+03 518.670 4.1540E+05 4.640 0.790 6.040 1.125
0.055
0 -----YAWING MOMENT COEFFICIENT,CN,DUE TO CONTROL
DEFLECTION-----

0(DELTAL-DELTAR)= 40.0 20.0 0.0 -20.0 -40.0

0ALPHA

0

-10.0	3.209E-03	1.836E-03	0.000E+00	-1.836E-03	-3.209E-03
-5.0	-3.026E-04	-1.732E-04	0.000E+00	1.732E-04	3.026E-04
0.0	-3.926E-03	-2.246E-03	0.000E+00	2.246E-03	3.926E-03
5.0	-7.902E-03	-4.522E-03	0.000E+00	4.522E-03	7.902E-03
10.0	-1.158E-02	-6.626E-03	0.000E+00	6.626E-03	1.158E-02

0

0	DELTAL	DELTAR	(CL)ROLL
---	--------	--------	----------

0

20.0	-20.0	7.4287E-02
10.0	-10.0	4.2587E-02
0.0	0.0	0.0000E+00
-10.0	10.0	-4.2587E-02
-20.0	20.0	-7.4287E-02

1

AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION
OF DATCOM

CHARACTERISTICS AT ANGLE OF ATTACK AND IN SIDESLIP
WING-BODY-VERTICAL TAIL-HORIZONTAL TAIL CONFIGURATION

----- FLIGHT CONDITIONS ----- ----- REFERENCE
DIMENSIONS -----

MACH	ALTITUDE	VELOCITY	PRESSURE	TEMPERATURE	REYNOLDS	REF.			
REFERENCE LENGTH	MOMENT REF. CENTER								
NUMBER			NUMBER	AREA	LONG.	LAT.	HORIZ	VERT	
FT	FT/SEC	LB/FT**2	DEG R	1/FT	FT**2	FT	FT	FT	FT
0 0.073	0.00	82.02	2.1162E+03	518.670	5.1930E+05	4.640	0.790	6.040	1.125

0.055

0

-----DERIVATIVE (PER DEGREE)-----

0 ALPHA	CD	CL	CM	CN	CA	XCP	CLA	CMA	CYB	CNB	CLB
-10.0	0.042	-0.500	0.1890	-0.500	-0.045	-0.378	9.320E-02	-2.842E-02	-8.804E-03	4.602E-04	

-9.176E-04

-5.0	0.027	-0.028	0.0148	-0.030	0.025	-0.492	9.519E-02	-3.426E-02		-9.202E-04
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0.0	0.035	0.451	-0.1537	0.451	0.035	-0.340	1.004E-01	-3.739E-02		-9.209E-04
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5.0	0.067	0.976	-0.3591	0.978	-0.018	-0.367	1.022E-01	-4.470E-02		-9.274E-04
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10.0	0.122	1.473	-0.6007	1.472	-0.136	-0.408	9.663E-02	-5.191E-02		-9.314E-04
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0

0	ALPHA	Q/QINF	EPSLON	D(EPSLON)/D(ALPHA)
---	-------	--------	--------	--------------------

0

-10.0	0.965	-2.096	0.461
-5.0	0.924	0.208	0.459
0.0	1.000	2.494	0.453
5.0	1.000	4.739	0.423
10.0	1.000	6.728	0.398

0*** VEHICLE WEIGHT = 5.34 LB.

0*** LEVEL FLIGHT LIFT COEFFICIENT = 0.14393

1

AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION OF
DATCOM

CHARACTERISTICS OF HIGH LIFT AND CONTROL DEVICES
WING PLAIN TRAILING-EDGE FLAP CONFIGURATION

----- FLIGHT CONDITIONS ----- ----- REFERENCE

DIMENSIONS -----

MACH	ALTITUDE	VELOCITY	PRESSURE	TEMPERATURE	REYNOLDS	REF.			
REFERENCE LENGTH	MOMENT	REF. CENTER							
NUMBER			NUMBER	AREA	LONG.	LAT.	HORIZ	VERT	
FT	FT/SEC	LB/FT**2	DEG R	1/FT	FT**2	FT	FT	FT	
0.073	0.00	82.02	2.1162E+03	518.670	5.1930E+05	4.640	0.790	6.040	1.125

0.055
0 -----YAWING MOMENT COEFFICIENT,CN,DUE TO CONTROL

DEFLECTION-----

0(DELTA-DELTA R)= 40.0 20.0 0.0 -20.0 -40.0

0ALPHA

0									
-10.0	3.214E-03	1.839E-03	0.000E+00	-1.839E-03	-3.214E-03				
-5.0	-3.031E-04	-1.734E-04	0.000E+00	1.734E-04	3.031E-04				
0.0	-3.932E-03	-2.250E-03	0.000E+00	2.250E-03	3.932E-03				
5.0	-7.914E-03	-4.529E-03	0.000E+00	4.529E-03	7.914E-03				
10.0	-1.159E-02	-6.635E-03	0.000E+00	6.635E-03	1.159E-02				

0									
0		DELTA L	DELTA R	(CL)ROLL					
0									

20.0	-20.0	7.4366E-02
10.0	-10.0	4.2633E-02
0.0	0.0	0.0000E+00
-10.0	10.0	-4.2633E-02
-20.0	20.0	-7.4366E-02

1 AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION
OF DATCOM

CHARACTERISTICS AT ANGLE OF ATTACK AND IN SIDESLIP
WING-BODY-VERTICAL TAIL-HORIZONTAL TAIL CONFIGURATION

----- FLIGHT CONDITIONS ----- REFERENCE
DIMENSIONS -----

MACH	ALTITUDE	VELOCITY	PRESSURE	TEMPERATURE	REYNOLDS	REF.			
REFERENCE LENGTH	MOMENT	REF. CENTER							
NUMBER			NUMBER	AREA	LONG.	LAT.	HORIZ	VERT	
FT	FT/SEC	LB/FT**2	DEG R	1/FT	FT**2	FT	FT	FT	
0.088	0.00	98.42	2.1162E+03	518.670	6.2314E+05	4.640	0.790	6.040	1.125

0.055
0 -----DERIVATIVE (PER DEGREE)-----

0 ALPHA	CD	CL	CM	CN	CA	XCP	CLA	CMA	CYB	CNB	CLB
0											
-10.0	0.042	-0.501	0.1896	-0.500	-0.046	-0.379	9.326E-02	-2.850E-02	-8.804E-03	4.486E-04	
-9.181E-04											
-5.0	0.026	-0.028	0.0151	-0.030	0.024	-0.500	9.525E-02	-3.434E-02		-9.208E-04	
0.0	0.034	0.452	-0.1538	0.452	0.034	-0.341	1.004E-01	-3.744E-02		-9.217E-04	
5.0	0.066	0.976	-0.3594	0.979	-0.019	-0.367	1.022E-01	-4.472E-02		-9.283E-04	
10.0	0.121	1.473	-0.6010	1.472	-0.137	-0.408	9.661E-02	-5.192E-02		-9.324E-04	

0 ALPHA Q/QINF EPSLON D(EPSLON)/D(ALPHA)
0

-10.0	0.967	-2.097	0.461
-5.0	0.927	0.208	0.459
0.0	1.000	2.494	0.453

5.0 1.000 4.740 0.423
10.0 1.000 6.729 0.398

0*** VEHICLE WEIGHT = 5.34 LB.

0*** LEVEL FLIGHT LIFT COEFFICIENT = 0.09996

1 AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION OF
DATCOM

CHARACTERISTICS OF HIGH LIFT AND CONTROL DEVICES
WING PLAIN TRAILING-EDGE FLAP CONFIGURATION

----- FLIGHT CONDITIONS ----- REFERENCE

DIMENSIONS -----

MACH ALTITUDE VELOCITY PRESSURE TEMPERATURE REYNOLDS REF.
REFERENCE LENGTH MOMENT REF. CENTER

NUMBER	AREA	LONG.	LAT.	HORIZ	VERT				
FT	FT/SEC	LB/FT**2	DEG R	1/FT	FT**2	FT	FT	FT	FT
0 0.088	0.00	98.42	2.1162E+03	518.670	6.2314E+05	4.640	0.790	6.040	1.125

0.055

0 -----YAWING MOMENT COEFFICIENT,CN,DUE TO CONTROL

DEFLECTION-----

0(DELTAL-DELTAR)= 40.0 20.0 0.0 -20.0 -40.0

0ALPHA

0

-10.0 3.218E-03 1.842E-03 0.000E+00 -1.842E-03 -3.218E-03

-5.0 -3.035E-04 -1.737E-04 0.000E+00 1.737E-04 3.035E-04

0.0 -3.937E-03 -2.253E-03 0.000E+00 2.253E-03 3.937E-03

5.0 -7.924E-03 -4.534E-03 0.000E+00 4.534E-03 7.924E-03

10.0 -1.161E-02 -6.642E-03 0.000E+00 6.642E-03 1.161E-02

0

0 DELTAL DELTAR (CL)ROLL

0

20.0 -20.0 7.4431E-02

10.0 -10.0 4.2670E-02

0.0 0.0 0.0000E+00

-10.0 10.0 -4.2670E-02

-20.0 20.0 -7.4431E-02

1

AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION
OF DATCOM

CHARACTERISTICS AT ANGLE OF ATTACK AND IN SIDESLIP
WING-BODY-VERTICAL TAIL-HORIZONTAL TAIL CONFIGURATION

----- FLIGHT CONDITIONS ----- REFERENCE

DIMENSIONS -----

MACH ALTITUDE VELOCITY PRESSURE TEMPERATURE REYNOLDS REF.
REFERENCE LENGTH MOMENT REF. CENTER

NUMBER	AREA	LONG.	LAT.	HORIZ	VERT				
FT	FT/SEC	LB/FT**2	DEG R	1/FT	FT**2	FT	FT	FT	FT
0 0.029	100.00	32.81	2.1086E+03	518.313	2.0724E+05	4.640	0.790	6.040	1.125

0.055

0 -----DERIVATIVE (PER DEGREE)-----

0 ALPHA CD CL CM CN CA XCP CLA CMA CYB CNB CLB

0

-10.0 0.047 -0.499 0.1863 -0.499 -0.040 -0.373 9.296E-02 -2.822E-02 -8.803E-03 5.192E-04

-9.163E-04

-5.0	0.031	-0.027	0.0137	-0.030	0.029	-0.460	9.495E-02	-3.387E-02	-9.183E-04
0.0	0.040	0.451	-0.1524	0.451	0.040	-0.338	1.002E-01	-3.704E-02	-9.183E-04
5.0	0.076	0.975	-0.3567	0.978	-0.010	-0.365	1.021E-01	-4.442E-02	-9.241E-04
10.0	0.136	1.472	-0.5966	1.473	-0.122	-0.405	9.669E-02	-5.154E-02	-9.274E-04

0
0

ALPHA	Q/QINF	EPSLON	D(EPSLON)/D(ALPHA)
-10.0	0.951	-2.095	0.461
-5.0	0.910	0.208	0.459
0.0	1.000	2.492	0.453
5.0	1.000	4.736	0.423
10.0	1.000	6.725	0.398

0*** VEHICLE WEIGHT = 5.34 LB.
0*** LEVEL FLIGHT LIFT COEFFICIENT = 0.90207
1 AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION OF DATCOM

CHARACTERISTICS OF HIGH LIFT AND CONTROL DEVICES
WING PLAIN TRAILING-EDGE FLAP CONFIGURATION

----- FLIGHT CONDITIONS -----						----- REFERENCE				
DIMENSIONS -----										
MACH	ALTITUDE	VELOCITY	PRESSURE	TEMPERATURE	REYNOLDS	REF.				
REFERENCE LENGTH	MOMENT	REF. CENTER								
NUMBER			NUMBER	AREA	LONG.	LAT.	HORIZ	VERT		
	FT	FT/SEC	LB/FT**2	DEG R	1/FT	FT**2	FT	FT	FT	
0.029	100.00	32.81	2.1086E+03	518.313	2.0724E+05	4.640	0.790	6.040	1.125	
0.055										

0 -----YAWING MOMENT COEFFICIENT,CN,DUE TO CONTROL DEFLECTION-----

0(DELTAL-DELTAR)=	40.0	20.0	0.0	-20.0	-40.0
0ALPHA					
0					
-10.0	3.196E-03	1.829E-03	0.000E+00	-1.829E-03	-3.196E-03
-5.0	-3.013E-04	-1.724E-04	0.000E+00	1.724E-04	3.013E-04
0.0	-3.910E-03	-2.237E-03	0.000E+00	2.237E-03	3.910E-03
5.0	-7.870E-03	-4.504E-03	0.000E+00	4.504E-03	7.870E-03
10.0	-1.154E-02	-6.601E-03	0.000E+00	6.601E-03	1.154E-02
0					
0					
0					
	DELTAL	DELTAR	(CL)ROLL		
	20.0	-20.0	7.4040E-02		
	10.0	-10.0	4.2446E-02		
	0.0	0.0	0.0000E+00		
	-10.0	10.0	-4.2446E-02		
	-20.0	20.0	-7.4040E-02		

1 AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION OF DATCOM

CHARACTERISTICS AT ANGLE OF ATTACK AND IN SIDESLIP
WING-BODY-VERTICAL TAIL-HORIZONTAL TAIL CONFIGURATION

----- FLIGHT CONDITIONS -----						----- REFERENCE				
DIMENSIONS -----										
MACH	ALTITUDE	VELOCITY	PRESSURE	TEMPERATURE	REYNOLDS	REF.				
REFERENCE LENGTH	MOMENT	REF. CENTER								

NUMBER				NUMBER		AREA	LONG.	LAT.	HORIZ	VERT	
FT	FT/SEC	LB/FT**2	DEG R	1/FT	FT**2	FT	FT	FT	FT	FT	
0.044	100.00	49.19	2.1086E+03	518.313	3.1071E+05	4.640	0.790	6.040	1.125		
0.055											
0	-----DERIVATIVE (PER DEGREE)-----										
0 ALPHA	CD	CL	CM	CN	CA	XCP	CLA	CMA	CYB	CNB	CLB
0											
-10.0	0.045	-0.499	0.1873	-0.500	-0.043	-0.375	9.305E-02	-2.826E-02	-8.803E-03	4.931E-04	
-9.167E-04											
-5.0	0.029	-0.027	0.0141	-0.030	0.027	-0.473	9.504E-02	-3.403E-02		-9.189E-04	
0.0	0.038	0.451	-0.1530	0.451	0.038	-0.339	1.003E-01	-3.720E-02		-9.192E-04	
5.0	0.071	0.975	-0.3579	0.978	-0.014	-0.366	1.021E-01	-4.457E-02		-9.253E-04	
10.0	0.128	1.472	-0.5986	1.472	-0.130	-0.407	9.668E-02	-5.175E-02		-9.289E-04	
0	ALPHA Q/QINF EPSLON D(EPSLON)/D(ALPHA)										
0											

-10.0	0.957	-2.095	0.461
-5.0	0.917	0.208	0.459
0.0	1.000	2.492	0.453
5.0	1.000	4.737	0.423
10.0	1.000	6.726	0.398

0*** VEHICLE WEIGHT = 5.34 LB.

0*** LEVEL FLIGHT LIFT COEFFICIENT = 0.40128

1 AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION OF DATCOM

CHARACTERISTICS OF HIGH LIFT AND CONTROL DEVICES WING PLAIN TRAILING-EDGE FLAP CONFIGURATION

----- FLIGHT CONDITIONS -----						----- REFERENCE				
DIMENSIONS -----										
MACH	ALTITUDE	VELOCITY	PRESSURE	TEMPERATURE	REYNOLDS	REF.				
REFERENCE LENGTH	MOMENT	REF. CENTER								
NUMBER	NUMBER		AREA	LONG.	LAT.	HORIZ	VERT			
FT	FT/SEC	LB/FT**2	DEG R	1/FT	FT**2	FT	FT	FT	FT	
0.044	100.00	49.19	2.1086E+03	518.313	3.1071E+05	4.640	0.790	6.040	1.125	
0.055										
0	-----YAWING MOMENT COEFFICIENT,CN,DUE TO CONTROL									
DEFLECTION-----										
0(DELTA-DELTAR)=	40.0	20.0	0.0	-20.0	-40.0					
0ALPHA										
0										
-10.0	3.203E-03	1.833E-03	0.000E+00	-1.833E-03	-3.203E-03					
-5.0	-3.020E-04	-1.728E-04	0.000E+00	1.728E-04	3.020E-04					
0.0	-3.919E-03	-2.242E-03	0.000E+00	2.242E-03	3.919E-03					
5.0	-7.888E-03	-4.514E-03	0.000E+00	4.514E-03	7.888E-03					
10.0	-1.156E-02	-6.615E-03	0.000E+00	6.615E-03	1.156E-02					
0										
0										
0										
	DELTAL	DELTAR	(CL)ROLL							
	20.0	-20.0	7.4184E-02							
	10.0	-10.0	4.2528E-02							
	0.0	0.0	0.0000E+00							
	-10.0	10.0	-4.2528E-02							
	-20.0	20.0	-7.4184E-02							

CHARACTERISTICS AT ANGLE OF ATTACK AND IN SIDESLIP
WING-BODY-VERTICAL TAIL-HORIZONTAL TAIL CONFIGURATION

----- FLIGHT CONDITIONS -----								----- REFERENCE			
DIMENSIONS -----											
MACH	ALTITUDE	VELOCITY	PRESSURE	TEMPERATURE	REYNOLDS	REF.					
REFERENCE LENGTH	MOMENT	REF. CENTER									
NUMBER	NUMBER				AREA	LONG.	LAT.	HORIZ	VERT		
FT	FT/SEC	LB/FT**2	DEG R	1/FT	FT**2	FT	FT	FT	FT		
0 0.059	100.00	65.58	2.1086E+03	518.313	4.1426E+05	4.640	0.790	6.040	1.125		
0.055											
0	-----DERIVATIVE (PER DEGREE)-----										
0 ALPHA	CD	CL	CM	CN	CA	XCP	CLA	CMA	CYB	CNB	CLB
0											
-10.0	0.043	-0.500	0.1882	-0.500	-0.044	-0.377	9.312E-02	-2.833E-02	-8.804E-03	4.747E-04	
-9.171E-04											
-5.0	0.028	-0.028	0.0145	-0.030	0.026	-0.483	9.511E-02	-3.417E-02		-9.196E-04	
0.0	0.036	0.451	-0.1534	0.451	0.036	-0.340	1.003E-01	-3.733E-02		-9.201E-04	
5.0	0.068	0.976	-0.3588	0.978	-0.017	-0.367	1.021E-01	-4.469E-02		-9.264E-04	
10.0	0.123	1.473	-0.6003	1.472	-0.135	-0.408	9.666E-02	-5.190E-02		-9.302E-04	
0	ALPHA Q/QINF EPSLON D(EPSLON)/D(ALPHA)										
0											
	-10.0	0.961	-2.096	0.461							
	-5.0	0.921	0.208	0.459							
	0.0	1.000	2.493	0.453							
	5.0	1.000	4.738	0.423							
	10.0	1.000	6.727	0.398							

0*** VEHICLE WEIGHT = 5.34 LB.

0*** LEVEL FLIGHT LIFT COEFFICIENT = 0.22575

CHARACTERISTICS OF HIGH LIFT AND CONTROL DEVICES
WING PLAIN TRAILING-EDGE FLAP CONFIGURATION

----- FLIGHT CONDITIONS -----						----- REFERENCE				
DIMENSIONS -----										
MACH	ALTITUDE	VELOCITY	PRESSURE	TEMPERATURE	REYNOLDS	REF.				
REFERENCE LENGTH	MOMENT	REF. CENTER								
NUMBER	NUMBER				AREA	LONG.	LAT.	HORIZ	VERT	
FT	FT/SEC	LB/FT**2	DEG R	1/FT	FT**2	FT	FT	FT	FT	
0 0.059	100.00	65.58	2.1086E+03	518.313	4.1426E+05	4.640	0.790	6.040	1.125	
0.055										
0	-----YAWING MOMENT COEFFICIENT,CN,DUE TO CONTROL									
DEFLECTION-----										
0(DELTA-DELTAR)=	40.0	20.0	0.0	-20.0	-40.0					
0ALPHA										
0										
-10.0	3.209E-03	1.836E-03	0.000E+00	-1.836E-03	-3.209E-03					
-5.0	-3.026E-04	-1.732E-04	0.000E+00	1.732E-04	3.026E-04					
0.0	-3.925E-03	-2.246E-03	0.000E+00	2.246E-03	3.925E-03					
5.0	-7.902E-03	-4.522E-03	0.000E+00	4.522E-03	7.902E-03					

10.0 -1.158E-02 -6.626E-03 0.000E+00 6.626E-03 1.158E-02

0

0 DELTAL DELTAR (CL)ROLL

0

20.0 -20.0 7.4286E-02

10.0 -10.0 4.2587E-02

0.0 0.0 0.0000E+00

-10.0 10.0 -4.2587E-02

-20.0 20.0 -7.4286E-02

1

OF DATCOM

AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION

CHARACTERISTICS AT ANGLE OF ATTACK AND IN SIDESLIP
WING-BODY-VERTICAL TAIL-HORIZONTAL TAIL CONFIGURATION

----- FLIGHT CONDITIONS ----- REFERENCE

DIMENSIONS -----

MACH ALTITUDE VELOCITY PRESSURE TEMPERATURE REYNOLDS REF.

REFERENCE LENGTH MOMENT REF. CENTER

NUMBER NUMBER AREA LONG. LAT. HORIZ VERT

FT FT/SEC LB/FT**2 DEG R 1/FT FT**2 FT FT FT FT

0 0.073 100.00 81.99 2.1086E+03 518.313 5.1788E+05 4.640 0.790 6.040 1.125

0.055

0

-----DERIVATIVE (PER DEGREE)-----

0 ALPHA CD CL CM CN CA XCP CLA CMA CYB CNB CLB

0

-10.0 0.042 -0.500 0.1889 -0.500 -0.045 -0.378 9.320E-02 -2.842E-02 -8.804E-03 4.604E-04

-9.176E-04

-5.0 0.027 -0.028 0.0148 -0.030 0.025 -0.492 9.519E-02 -3.426E-02 -9.202E-04

0.0 0.035 0.451 -0.1536 0.451 0.035 -0.340 1.004E-01 -3.739E-02 -9.209E-04

5.0 0.067 0.976 -0.3591 0.978 -0.018 -0.367 1.022E-01 -4.470E-02 -9.274E-04

10.0 0.122 1.473 -0.6006 1.472 -0.136 -0.408 9.663E-02 -5.191E-02 -9.314E-04

0

ALPHA Q/QINF EPSLON D(EPSLON)/D(ALPHA)

0

-10.0 0.965 -2.096 0.461

-5.0 0.924 0.208 0.459

0.0 1.000 2.494 0.453

5.0 1.000 4.739 0.423

10.0 1.000 6.728 0.398

0*** VEHICLE WEIGHT = 5.34 LB.

0*** LEVEL FLIGHT LIFT COEFFICIENT = 0.14445

1

DATCOM

AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION OF

CHARACTERISTICS OF HIGH LIFT AND CONTROL DEVICES

WING PLAIN TRAILING-EDGE FLAP CONFIGURATION

----- FLIGHT CONDITIONS ----- REFERENCE

DIMENSIONS -----

MACH ALTITUDE VELOCITY PRESSURE TEMPERATURE REYNOLDS REF.

REFERENCE LENGTH MOMENT REF. CENTER

NUMBER NUMBER AREA LONG. LAT. HORIZ VERT

FT FT/SEC LB/FT**2 DEG R 1/FT FT**2 FT FT FT FT

0 0.073 100.00 81.99 2.1086E+03 518.313 5.1788E+05 4.640 0.790 6.040 1.125

0.055

0 -----YAWING MOMENT COEFFICIENT,CN,DUE TO CONTROL
DEFLECTION-----

0(DELTAL-DELTAR)= 40.0 20.0 0.0 -20.0 -40.0

0ALPHA

0

-10.0 3.214E-03 1.839E-03 0.000E+00 -1.839E-03 -3.214E-03

-5.0 -3.031E-04 -1.734E-04 0.000E+00 1.734E-04 3.031E-04

0.0 -3.932E-03 -2.250E-03 0.000E+00 2.250E-03 3.932E-03

5.0 -7.914E-03 -4.528E-03 0.000E+00 4.528E-03 7.914E-03

10.0 -1.159E-02 -6.635E-03 0.000E+00 6.635E-03 1.159E-02

0

0 DELTAL DELTAR (CL)ROLL

0

20.0 -20.0 7.4365E-02

10.0 -10.0 4.2632E-02

0.0 0.0 0.0000E+00

-10.0 10.0 -4.2632E-02

-20.0 20.0 -7.4365E-02

1

AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION
OF DATCOM

CHARACTERISTICS AT ANGLE OF ATTACK AND IN SIDESLIP
WING-BODY-VERTICAL TAIL-HORIZONTAL TAIL CONFIGURATION

----- FLIGHT CONDITIONS ----- REFERENCE

DIMENSIONS -----

MACH ALTITUDE VELOCITY PRESSURE TEMPERATURE REYNOLDS REF.

REFERENCE LENGTH MOMENT REF. CENTER

NUMBER NUMBER AREA LONG. LAT. HORIZ VERT

FT FT/SEC LB/FT**2 DEG R 1/FT FT**2 FT FT FT FT

0 0.088 100.00 98.38 2.1086E+03 518.313 6.2143E+05 4.640 0.790 6.040 1.125

0.055

0

-----DERIVATIVE (PER DEGREE)-----

0 ALPHA CD CL CM CN CA XCP CLA CMA CYB CNB CLB

0

-10.0 0.042 -0.501 0.1896 -0.500 -0.046 -0.379 9.326E-02 -2.850E-02 -8.804E-03 4.488E-04

-9.181E-04

-5.0 0.026 -0.028 0.0150 -0.030 0.024 -0.500 9.525E-02 -3.434E-02 -9.208E-04

0.0 0.034 0.452 -0.1538 0.452 0.034 -0.341 1.004E-01 -3.744E-02 -9.217E-04

5.0 0.066 0.976 -0.3594 0.979 -0.019 -0.367 1.022E-01 -4.472E-02 -9.283E-04

10.0 0.121 1.473 -0.6010 1.472 -0.137 -0.408 9.661E-02 -5.193E-02 -9.324E-04

0

ALPHA Q/QINF EPSLON D(EPSLON)/D(ALPHA)

0

-10.0 0.967 -2.097 0.461

-5.0 0.927 0.208 0.459

0.0 1.000 2.494 0.453

5.0 1.000 4.740 0.423

10.0 1.000 6.729 0.398

0*** VEHICLE WEIGHT = 5.34 LB.

0*** LEVEL FLIGHT LIFT COEFFICIENT = 0.10032

1

AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION OF
DATCOM

CHARACTERISTICS OF HIGH LIFT AND CONTROL DEVICES

WING PLAIN TRAILING-EDGE FLAP CONFIGURATION

----- FLIGHT CONDITIONS ----- REFERENCE

DIMENSIONS -----

MACH	ALTITUDE	VELOCITY	PRESSURE	TEMPERATURE	REYNOLDS	REF.			
REFERENCE LENGTH	MOMENT	REF. CENTER							
NUMBER			NUMBER	AREA	LONG.	LAT.	HORIZ	VERT	
FT	FT/SEC	LB/FT**2	DEG R	1/FT	FT**2	FT	FT	FT	FT
0.088	100.00	98.38	2.1086E+03	518.313	6.2143E+05	4.640	0.790	6.040	1.125
0.055									
0	-----YAWING MOMENT COEFFICIENT,CN,DUE TO CONTROL								
DEFLECTION-----									
0(DELTA-DELTAR)= 40.0 20.0 0.0 -20.0 -40.0									
0ALPHA									
0									
-10.0	3.218E-03	1.841E-03	0.000E+00	-1.841E-03	-3.218E-03				
-5.0	-3.035E-04	-1.737E-04	0.000E+00	1.737E-04	3.035E-04				
0.0	-3.937E-03	-2.253E-03	0.000E+00	2.253E-03	3.937E-03				
5.0	-7.924E-03	-4.534E-03	0.000E+00	4.534E-03	7.924E-03				
10.0	-1.161E-02	-6.642E-03	0.000E+00	6.642E-03	1.161E-02				
0									
0		DELTA	DELTAR	(CL)ROLL					
0									
		20.0	-20.0	7.4430E-02					
		10.0	-10.0	4.2669E-02					
		0.0	0.0	0.0000E+00					
		-10.0	10.0	-4.2669E-02					
		-20.0	20.0	-7.4430E-02					
1	AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION								
OF DATCOM									

CHARACTERISTICS AT ANGLE OF ATTACK AND IN SIDESLIP
WING-BODY-VERTICAL TAIL-HORIZONTAL TAIL CONFIGURATION

----- FLIGHT CONDITIONS ----- REFERENCE

DIMENSIONS -----

MACH	ALTITUDE	VELOCITY	PRESSURE	TEMPERATURE	REYNOLDS	REF.					
REFERENCE LENGTH	MOMENT	REF. CENTER									
NUMBER			NUMBER	AREA	LONG.	LAT.	HORIZ	VERT			
FT	FT/SEC	LB/FT**2	DEG R	1/FT	FT**2	FT	FT	FT	FT		
0.029	200.00	32.80	2.1010E+03	517.957	2.0667E+05	4.640	0.790	6.040	1.125		
0.055											
0	-----DERIVATIVE (PER DEGREE)-----										
0 ALPHA	CD	CL	CM	CN	CA	XCP	CLA	CMA	CYB	CNB	CLB
0											
-10.0	0.047	-0.499	0.1863	-0.499	-0.040	-0.373	9.296E-02	-2.822E-02	-8.803E-03	5.194E-04	
-9.163E-04											
-5.0	0.031	-0.027	0.0137	-0.030	0.029	-0.460	9.495E-02	-3.387E-02			-9.183E-04
0.0	0.040	0.451	-0.1524	0.451	0.040	-0.338	1.002E-01	-3.704E-02			-9.183E-04
5.0	0.076	0.975	-0.3567	0.978	-0.010	-0.365	1.021E-01	-4.442E-02			-9.241E-04
10.0	0.136	1.472	-0.5966	1.473	-0.122	-0.405	9.669E-02	-5.154E-02			-9.274E-04
0			ALPHA	Q/QINF	EPSLON	D(EPSLON)/D(ALPHA)					
0											
			-10.0	0.951	-2.095	0.461					

-5.0	0.910	0.208	0.459
0.0	1.000	2.492	0.453
5.0	1.000	4.736	0.423
10.0	1.000	6.725	0.398

0*** VEHICLE WEIGHT = 5.34 LB.

0*** LEVEL FLIGHT LIFT COEFFICIENT = 0.90534

1 AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION OF DATCOM

CHARACTERISTICS OF HIGH LIFT AND CONTROL DEVICES

WING PLAIN TRAILING-EDGE FLAP CONFIGURATION

----- FLIGHT CONDITIONS ----- REFERENCE

DIMENSIONS -----

MACH	ALTITUDE	VELOCITY	PRESSURE	TEMPERATURE	REYNOLDS	REF.
NUMBER	FT	FT/SEC	LB/FT**2	DEG R	1/FT	FT**2
0.029	200.00	32.80	2.1010E+03	517.957	2.0667E+05	4.640

LONG.	LAT.	HORIZ	VERT
FT	FT	FT	FT
0.790	6.040	1.125	

0 -----YAWING MOMENT COEFFICIENT,CN,DUE TO CONTROL

DEFLECTION-----

0(DELTA-DELTA)= 40.0 20.0 0.0 -20.0 -40.0

0ALPHA

0

-10.0	3.196E-03	1.829E-03	0.000E+00	-1.829E-03	-3.196E-03
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-5.0	-3.013E-04	-1.724E-04	0.000E+00	1.724E-04	3.013E-04
------	------------	------------	-----------	-----------	-----------

0.0	-3.910E-03	-2.237E-03	0.000E+00	2.237E-03	3.910E-03
-----	------------	------------	-----------	-----------	-----------

5.0	-7.870E-03	-4.504E-03	0.000E+00	4.504E-03	7.870E-03
-----	------------	------------	-----------	-----------	-----------

10.0	-1.154E-02	-6.601E-03	0.000E+00	6.601E-03	1.154E-02
------	------------	------------	-----------	-----------	-----------

0

DELTA	DELTA	(CL)ROLL
-------	-------	----------

0

20.0	-20.0	7.4039E-02
------	-------	------------

10.0	-10.0	4.2446E-02
------	-------	------------

0.0	0.0	0.0000E+00
-----	-----	------------

-10.0	10.0	-4.2446E-02
-------	------	-------------

-20.0	20.0	-7.4039E-02
-------	------	-------------

1 AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION OF DATCOM

CHARACTERISTICS AT ANGLE OF ATTACK AND IN SIDESLIP

WING-BODY-VERTICAL TAIL-HORIZONTAL TAIL CONFIGURATION

----- FLIGHT CONDITIONS ----- REFERENCE

DIMENSIONS -----

MACH	ALTITUDE	VELOCITY	PRESSURE	TEMPERATURE	REYNOLDS	REF.
NUMBER	FT	FT/SEC	LB/FT**2	DEG R	1/FT	FT**2
0.044	200.00	49.17	2.1010E+03	517.957	3.0986E+05	4.640

LONG.	LAT.	HORIZ	VERT
FT	FT	FT	FT
0.790	6.040	1.125	

0 -----DERIVATIVE (PER DEGREE)-----

ALPHA	CD	CL	CM	CN	CA	XCP	CLA	CMA	CYB	CNB	CLB
-------	----	----	----	----	----	-----	-----	-----	-----	-----	-----

0

-10.0	0.045	-0.499	0.1873	-0.500	-0.043	-0.375	9.305E-02	-2.826E-02	-8.803E-03	4.933E-04
-9.167E-04										
-5.0	0.029	-0.027	0.0141	-0.030	0.027	-0.473	9.504E-02	-3.403E-02		-9.189E-04
0.0	0.038	0.451	-0.1530	0.451	0.038	-0.339	1.003E-01	-3.720E-02		-9.192E-04
5.0	0.071	0.975	-0.3579	0.978	-0.014	-0.366	1.021E-01	-4.457E-02		-9.253E-04
10.0	0.128	1.472	-0.5986	1.472	-0.130	-0.407	9.668E-02	-5.174E-02		-9.289E-04

0
0

	ALPHA	Q/QINF	EPSLON	D(EPSLON)/D(ALPHA)
-10.0	0.957	-2.095	0.461	
-5.0	0.917	0.208	0.459	
0.0	1.000	2.492	0.453	
5.0	1.000	4.737	0.423	
10.0	1.000	6.726	0.398	

0*** VEHICLE WEIGHT = 5.34 LB.
0*** LEVEL FLIGHT LIFT COEFFICIENT = 0.40274
1 AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION OF DATCOM

CHARACTERISTICS OF HIGH LIFT AND CONTROL DEVICES
WING PLAIN TRAILING-EDGE FLAP CONFIGURATION

----- FLIGHT CONDITIONS -----						----- REFERENCE				
DIMENSIONS -----										
MACH	ALTITUDE	VELOCITY	PRESSURE	TEMPERATURE	REYNOLDS	REF.				
REFERENCE LENGTH	MOMENT	REF. CENTER								
NUMBER			NUMBER	AREA	LONG.	LAT.	HORIZ	VERT		
	FT	FT/SEC	LB/FT**2	DEG R	1/FT	FT**2	FT	FT	FT	FT
0 0.044	200.00	49.17	2.1010E+03	517.957	3.0986E+05		4.640	0.790	6.040	1.125
0.055										

0 -----YAWING MOMENT COEFFICIENT,CN,DUE TO CONTROL DEFLECTION-----

0(DELTAL-DELTAR)= 40.0 20.0 0.0 -20.0 -40.0

0ALPHA

-10.0	3.203E-03	1.833E-03	0.000E+00	-1.833E-03	-3.203E-03
-5.0	-3.020E-04	-1.728E-04	0.000E+00	1.728E-04	3.020E-04
0.0	-3.919E-03	-2.242E-03	0.000E+00	2.242E-03	3.919E-03
5.0	-7.888E-03	-4.514E-03	0.000E+00	4.514E-03	7.888E-03
10.0	-1.156E-02	-6.615E-03	0.000E+00	6.615E-03	1.156E-02

0					
0		DELTAL	DELTAR	(CL)ROLL	
0					
	20.0	-20.0	7.4183E-02		
	10.0	-10.0	4.2528E-02		
	0.0	0.0	0.0000E+00		
	-10.0	10.0	-4.2528E-02		
	-20.0	20.0	-7.4183E-02		

1 AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION OF DATCOM

CHARACTERISTICS AT ANGLE OF ATTACK AND IN SIDESLIP
WING-BODY-VERTICAL TAIL-HORIZONTAL TAIL CONFIGURATION

----- FLIGHT CONDITIONS -----						----- REFERENCE				
DIMENSIONS -----										

MACH	ALTITUDE	VELOCITY	PRESSURE	TEMPERATURE	REYNOLDS	REF.					
REFERENCE LENGTH	MOMENT	REF. CENTER									
NUMBER	NUMBER	AREA	LONG.	LAT.	HORIZ	VERT					
FT	FT/SEC	LB/FT**2	DEG R	1/FT	FT**2	FT					
0.059	200.00	65.56	2.1010E+03	517.957	4.1313E+05	4.640 0.790 6.040 1.125					
0.055											
0	-----DERIVATIVE (PER DEGREE)-----										
0 ALPHA	CD	CL	CM	CN	CA	XCP	CLA	CMA	CYB	CNB	CLB
0											
-10.0	0.043	-0.500	0.1882	-0.500	-0.044	-0.377	9.312E-02	-2.833E-02	-8.804E-03	4.749E-04	
-9.171E-04											
-5.0	0.028	-0.028	0.0145	-0.030	0.026	-0.483	9.511E-02	-3.417E-02		-9.196E-04	
0.0	0.036	0.451	-0.1534	0.451	0.036	-0.340	1.003E-01	-3.733E-02		-9.201E-04	
5.0	0.068	0.976	-0.3588	0.978	-0.017	-0.367	1.021E-01	-4.469E-02		-9.264E-04	
10.0	0.123	1.473	-0.6003	1.472	-0.135	-0.408	9.666E-02	-5.190E-02		-9.302E-04	
0	ALPHA Q/QINF EPSLON D(EPSLON)/D(ALPHA)										
0											

-10.0	0.961	-2.096	0.461
-5.0	0.921	0.208	0.459
0.0	1.000	2.493	0.453
5.0	1.000	4.738	0.423
10.0	1.000	6.727	0.398

0*** VEHICLE WEIGHT = 5.34 LB.

0*** LEVEL FLIGHT LIFT COEFFICIENT = 0.22657

1 AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION OF DATCOM

CHARACTERISTICS OF HIGH LIFT AND CONTROL DEVICES WING PLAIN TRAILING-EDGE FLAP CONFIGURATION

----- FLIGHT CONDITIONS -----						----- REFERENCE					
DIMENSIONS -----											
MACH	ALTITUDE	VELOCITY	PRESSURE	TEMPERATURE	REYNOLDS	REF.					
REFERENCE LENGTH	MOMENT	REF. CENTER									
NUMBER	NUMBER	AREA	LONG.	LAT.	HORIZ	VERT					
FT	FT/SEC	LB/FT**2	DEG R	1/FT	FT**2	FT					
0.059	200.00	65.56	2.1010E+03	517.957	4.1313E+05	4.640 0.790 6.040 1.125					
0.055											
0	-----YAWING MOMENT COEFFICIENT,CN,DUE TO CONTROL										
DEFLECTION-----											
0(DALTAL-DALTAR)=	40.0	20.0	0.0	-20.0	-40.0						
0ALPHA											
0											
-10.0	3.209E-03	1.836E-03	0.000E+00	-1.836E-03	-3.209E-03						
-5.0	-3.026E-04	-1.732E-04	0.000E+00	1.732E-04	3.026E-04						
0.0	-3.925E-03	-2.246E-03	0.000E+00	2.246E-03	3.925E-03						
5.0	-7.902E-03	-4.522E-03	0.000E+00	4.522E-03	7.902E-03						
10.0	-1.158E-02	-6.626E-03	0.000E+00	6.626E-03	1.158E-02						
0											
0	DELTAL DELTAR (CL)ROLL										
0											
	20.0	-20.0	7.4285E-02								
	10.0	-10.0	4.2586E-02								
	0.0	0.0	0.0000E+00								

-10.0 10.0 -4.2586E-02
-20.0 20.0 -7.4285E-02

1 AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION
OF DATCOM

CHARACTERISTICS AT ANGLE OF ATTACK AND IN SIDESLIP
WING-BODY-VERTICAL TAIL-HORIZONTAL TAIL CONFIGURATION

----- FLIGHT CONDITIONS -----						----- REFERENCE					
DIMENSIONS -----											
MACH	ALTITUDE	VELOCITY	PRESSURE	TEMPERATURE	REYNOLDS	REF.					
REFERENCE LENGTH	MOMENT	REF. CENTER									
NUMBER	NUMBER					AREA	LONG.	LAT.	HORIZ	VERT	
FT	FT/SEC	LB/FT**2	DEG R	1/FT	FT**2	FT	FT	FT	FT	FT	
0 0.073	200.00	81.96	2.1010E+03	517.957	5.1646E+05	4.640	0.790	6.040	1.125		
0.055											
0	-----DERIVATIVE (PER DEGREE)-----										
0 ALPHA	CD	CL	CM	CN	CA	XCP	CLA	CMA	CYB	CNB	CLB
0											
-10.0	0.042	-0.500	0.1889	-0.500	-0.045	-0.378	9.320E-02	-2.842E-02	-8.804E-03	4.606E-04	
-9.176E-04											
-5.0	0.027	-0.028	0.0148	-0.030	0.025	-0.492	9.519E-02	-3.426E-02		-9.202E-04	
0.0	0.035	0.451	-0.1536	0.451	0.035	-0.340	1.004E-01	-3.739E-02		-9.209E-04	
5.0	0.067	0.976	-0.3591	0.978	-0.018	-0.367	1.022E-01	-4.470E-02		-9.274E-04	
10.0	0.122	1.473	-0.6006	1.472	-0.136	-0.408	9.663E-02	-5.191E-02		-9.314E-04	
0	ALPHA Q/QINF EPSLON D(EPSLON)/D(ALPHA)										
0											
	-10.0	0.965	-2.096	0.461							
	-5.0	0.924	0.208	0.459							
	0.0	1.000	2.494	0.453							
	5.0	1.000	4.739	0.423							
	10.0	1.000	6.728	0.398							

0*** VEHICLE WEIGHT = 5.34 LB.

0*** LEVEL FLIGHT LIFT COEFFICIENT = 0.14497

1 AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION OF
DATCOM

CHARACTERISTICS OF HIGH LIFT AND CONTROL DEVICES
WING PLAIN TRAILING-EDGE FLAP CONFIGURATION

----- FLIGHT CONDITIONS -----						----- REFERENCE				
DIMENSIONS -----										
MACH	ALTITUDE	VELOCITY	PRESSURE	TEMPERATURE	REYNOLDS	REF.				
REFERENCE LENGTH	MOMENT	REF. CENTER								
NUMBER	NUMBER					AREA	LONG.	LAT.	HORIZ	VERT
FT	FT/SEC	LB/FT**2	DEG R	1/FT	FT**2	FT	FT	FT	FT	FT
0 0.073	200.00	81.96	2.1010E+03	517.957	5.1646E+05	4.640	0.790	6.040	1.125	
0.055										
0	-----YAWING MOMENT COEFFICIENT,CN,DUE TO CONTROL									
DEFLECTION-----										
0(DELTA-DELTAR)=		40.0	20.0	0.0	-20.0	-40.0				
0ALPHA										
0										
-10.0	3.214E-03	1.839E-03	0.000E+00	-1.839E-03	-3.214E-03					
-5.0	-3.031E-04	-1.734E-04	0.000E+00	1.734E-04	3.031E-04					

0.0	-3.932E-03	-2.250E-03	0.000E+00	2.250E-03	3.932E-03
5.0	-7.914E-03	-4.528E-03	0.000E+00	4.528E-03	7.914E-03
10.0	-1.159E-02	-6.634E-03	0.000E+00	6.634E-03	1.159E-02

0					
0		DELTAL	DELTAR	(CL)ROLL	
0					
	20.0	-20.0	7.4364E-02		
	10.0	-10.0	4.2632E-02		
	0.0	0.0	0.0000E+00		
	-10.0	10.0	-4.2632E-02		
	-20.0	20.0	-7.4364E-02		

1 AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION OF DATCOM

CHARACTERISTICS AT ANGLE OF ATTACK AND IN SIDESLIP
WING-BODY-VERTICAL TAIL-HORIZONTAL TAIL CONFIGURATION

----- FLIGHT CONDITIONS -----						----- REFERENCE					
DIMENSIONS -----											
MACH	ALTITUDE	VELOCITY	PRESSURE	TEMPERATURE	REYNOLDS	REF.					
REFERENCE LENGTH	MOMENT REF. CENTER										
NUMBER				NUMBER	AREA	LONG.	LAT.	HORIZ	VERT		
FT	FT/SEC	LB/FT**2	DEG R	1/FT	FT**2	FT	FT	FT	FT		
0 0.088	200.00	98.35	2.1010E+03	517.957	6.1973E+05	4.640	0.790	6.040	1.125		
0.055											
0					-----DERIVATIVE (PER DEGREE)-----						
0 ALPHA	CD	CL	CM	CN	CA	XCP	CLA	CMA	CYB	CNB	CLB
0											
-10.0	0.042	-0.501	0.1896	-0.500	-0.046	-0.379	9.326E-02	-2.850E-02	-8.804E-03	4.490E-04	
-9.181E-04											
-5.0	0.026	-0.028	0.0150	-0.030	0.024	-0.500	9.525E-02	-3.434E-02		-9.208E-04	
0.0	0.034	0.452	-0.1538	0.452	0.034	-0.341	1.004E-01	-3.744E-02		-9.217E-04	
5.0	0.066	0.976	-0.3594	0.979	-0.019	-0.367	1.022E-01	-4.472E-02		-9.283E-04	
10.0	0.121	1.473	-0.6010	1.472	-0.137	-0.408	9.661E-02	-5.193E-02		-9.324E-04	
0			ALPHA	Q/QINF	EPSLON	D(EPSLON)/D(ALPHA)					
0											
	-10.0	0.967	-2.097	0.461							
	-5.0	0.927	0.208	0.459							
	0.0	1.000	2.494	0.453							
	5.0	1.000	4.740	0.423							
	10.0	1.000	6.729	0.398							

0*** VEHICLE WEIGHT = 5.34 LB.

0*** LEVEL FLIGHT LIFT COEFFICIENT = 0.10068

1 AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION OF DATCOM

CHARACTERISTICS OF HIGH LIFT AND CONTROL DEVICES
WING PLAIN TRAILING-EDGE FLAP CONFIGURATION

----- FLIGHT CONDITIONS -----						----- REFERENCE				
DIMENSIONS -----										
MACH	ALTITUDE	VELOCITY	PRESSURE	TEMPERATURE	REYNOLDS	REF.				
REFERENCE LENGTH	MOMENT REF. CENTER									
NUMBER				NUMBER	AREA	LONG.	LAT.	HORIZ	VERT	
FT	FT/SEC	LB/FT**2	DEG R	1/FT	FT**2	FT	FT	FT	FT	

0 0.088 200.00 98.35 2.1010E+03 517.957 6.1973E+05 4.640 0.790 6.040 1.125
0.055

0 -----YAWING MOMENT COEFFICIENT,CN,DUE TO CONTROL
DEFLECTION-----

0(DELTA-DELTAR)= 40.0 20.0 0.0 -20.0 -40.0

0ALPHA

0

-10.0	3.218E-03	1.841E-03	0.000E+00	-1.841E-03	-3.218E-03
-5.0	-3.035E-04	-1.737E-04	0.000E+00	1.737E-04	3.035E-04
0.0	-3.937E-03	-2.253E-03	0.000E+00	2.253E-03	3.937E-03
5.0	-7.924E-03	-4.534E-03	0.000E+00	4.534E-03	7.924E-03
10.0	-1.161E-02	-6.642E-03	0.000E+00	6.642E-03	1.161E-02

0

0	DELTAL	DELTAR	(CL)ROLL
0			

20.0 -20.0 7.4429E-02

10.0 -10.0 4.2669E-02

0.0 0.0 0.0000E+00

-10.0 10.0 -4.2669E-02

-20.0 20.0 -7.4429E-02

1 AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION
OF DATCOM

CHARACTERISTICS AT ANGLE OF ATTACK AND IN SIDESLIP
WING-BODY-VERTICAL TAIL-HORIZONTAL TAIL CONFIGURATION

----- FLIGHT CONDITIONS ----- REFERENCE
DIMENSIONS -----

MACH	ALTITUDE	VELOCITY	PRESSURE	TEMPERATURE	REYNOLDS	REF.			
REFERENCE LENGTH	MOMENT REF. CENTER								
NUMBER	NUMBER	AREA	LONG.	LAT.	HORIZ	VERT			
FT	FT/SEC	LB/FT**2	DEG R	1/FT	FT**2	FT	FT	FT	FT
0 0.029	300.00	32.79	2.0934E+03	517.600	2.0610E+05	4.640	0.790	6.040	1.125

0.055

0 -----DERIVATIVE (PER DEGREE)-----

0 ALPHA	CD	CL	CM	CN	CA	XCP	CLA	CMA	CYB	CNB	CLB
0											

-10.0	0.047	-0.499	0.1862	-0.499	-0.040	-0.373	9.296E-02	-2.822E-02	-8.803E-03	5.196E-04
-9.163E-04										

-5.0	0.031	-0.027	0.0137	-0.030	0.029	-0.460	9.495E-02	-3.386E-02		-9.183E-04
------	-------	--------	--------	--------	-------	--------	-----------	------------	--	------------

0.0	0.040	0.451	-0.1524	0.451	0.040	-0.338	1.002E-01	-3.704E-02		-9.183E-04
-----	-------	-------	---------	-------	-------	--------	-----------	------------	--	------------

5.0	0.076	0.975	-0.3567	0.978	-0.009	-0.365	1.021E-01	-4.442E-02		-9.241E-04
-----	-------	-------	---------	-------	--------	--------	-----------	------------	--	------------

10.0	0.136	1.472	-0.5966	1.473	-0.122	-0.405	9.669E-02	-5.154E-02		-9.274E-04
------	-------	-------	---------	-------	--------	--------	-----------	------------	--	------------

0

ALPHA Q/QINF EPSLON D(EPSLON)/D(ALPHA)

0

-10.0 0.951 -2.095 0.461

-5.0 0.910 0.208 0.459

0.0 1.000 2.492 0.453

5.0 1.000 4.736 0.423

10.0 1.000 6.725 0.398

0*** VEHICLE WEIGHT = 5.34 LB.

0*** LEVEL FLIGHT LIFT COEFFICIENT = 0.90862

1 AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION OF

CHARACTERISTICS OF HIGH LIFT AND CONTROL DEVICES

WING PLAIN TRAILING-EDGE FLAP CONFIGURATION

CHARACTERISTICS AT ANGLE OF ATTACK AND IN SIDESLIP WING-BODY-VERTICAL TAIL-HORIZONTAL TAIL CONFIGURATION

0	ALPHA	Q/QINF	EPSLON	D(EPSLON)/D(ALPHA)
---	-------	--------	--------	--------------------

0				
	-10.0	0.957	-2.095	0.461
	-5.0	0.916	0.208	0.459
	0.0	1.000	2.492	0.453
	5.0	1.000	4.737	0.423
	10.0	1.000	6.726	0.398

0*** VEHICLE WEIGHT = 5.34 LB.

0*** LEVEL FLIGHT LIFT COEFFICIENT = 0.40420

1 AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION OF DATCOM

CHARACTERISTICS OF HIGH LIFT AND CONTROL DEVICES WING PLAIN TRAILING-EDGE FLAP CONFIGURATION

----- FLIGHT CONDITIONS -----					----- REFERENCE -----				
DIMENSIONS -----									
MACH	ALTITUDE	VELOCITY	PRESSURE	TEMPERATURE	REYNOLDS	REF.			
REFERENCE LENGTH	MOMENT REF. CENTER								
NUMBER	NUMBER				AREA	LONG.	LAT.	HORIZ	VERT
FT	FT/SEC	LB/FT**2	DEG R	1/FT	FT**2	FT	FT	FT	FT
0 0.044	300.00	49.16	2.0934E+03	517.600	3.0902E+05	4.640	0.790	6.040	1.125
0.055									

0 -----YAWING MOMENT COEFFICIENT,CN,DUE TO CONTROL DEFLECTION-----

0(DELTAL-DELTAR)= 40.0 20.0 0.0 -20.0 -40.0

0ALPHA

0									
-10.0	3.203E-03	1.833E-03	0.000E+00	-1.833E-03	-3.203E-03				
-5.0	-3.020E-04	-1.728E-04	0.000E+00	1.728E-04	3.020E-04				
0.0	-3.918E-03	-2.242E-03	0.000E+00	2.242E-03	3.918E-03				
5.0	-7.888E-03	-4.514E-03	0.000E+00	4.514E-03	7.888E-03				
10.0	-1.156E-02	-6.615E-03	0.000E+00	6.615E-03	1.156E-02				

0									
0		DELTAL	DELTAR	(CL)ROLL					
0									
	20.0	-20.0	7.4182E-02						
	10.0	-10.0	4.2527E-02						
	0.0	0.0	0.0000E+00						
	-10.0	10.0	-4.2527E-02						
	-20.0	20.0	-7.4182E-02						

1 AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION OF DATCOM

CHARACTERISTICS AT ANGLE OF ATTACK AND IN SIDESLIP WING-BODY-VERTICAL TAIL-HORIZONTAL TAIL CONFIGURATION

----- FLIGHT CONDITIONS -----					----- REFERENCE -----				
DIMENSIONS -----									
MACH	ALTITUDE	VELOCITY	PRESSURE	TEMPERATURE	REYNOLDS	REF.			
REFERENCE LENGTH	MOMENT REF. CENTER								
NUMBER	NUMBER				AREA	LONG.	LAT.	HORIZ	VERT
FT	FT/SEC	LB/FT**2	DEG R	1/FT	FT**2	FT	FT	FT	FT
0 0.059	300.00	65.54	2.0934E+03	517.600	4.1200E+05	4.640	0.790	6.040	1.125
0.055									

0 -----DERIVATIVE (PER DEGREE)-----

	ALPHA	CD	CL	CM	CN	CA	XCP	CLA	CMA	CYB	CNB	CLB
-10.0	0.043	-0.500	0.1882	-0.500	-0.044	-0.377	9.312E-02	-2.833E-02	-8.804E-03	4.750E-04		
-5.0	0.028	-0.028	0.0145	-0.030	0.026	-0.483	9.511E-02	-3.416E-02			-9.196E-04	
0.0	0.036	0.451	-0.1534	0.451	0.036	-0.340	1.003E-01	-3.733E-02			-9.201E-04	
5.0	0.068	0.976	-0.3588	0.978	-0.017	-0.367	1.021E-01	-4.469E-02			-9.264E-04	
10.0	0.123	1.473	-0.6003	1.472	-0.135	-0.408	9.666E-02	-5.190E-02			-9.302E-04	

0
0
ALPHA Q/QINF EPSLON D(EPSLON)/D(ALPHA)

-10.0	0.961	-2.096	0.461
-5.0	0.921	0.208	0.459
0.0	1.000	2.493	0.453
5.0	1.000	4.738	0.423
10.0	1.000	6.727	0.398

0*** VEHICLE WEIGHT = 5.34 LB.

0*** LEVEL FLIGHT LIFT COEFFICIENT = 0.22739

1 AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION OF DATCOM

CHARACTERISTICS OF HIGH LIFT AND CONTROL DEVICES WING PLAIN TRAILING-EDGE FLAP CONFIGURATION

FLIGHT CONDITIONS						REFERENCE				
DIMENSIONS										
MACH	ALTITUDE	VELOCITY	PRESSURE	TEMPERATURE	REYNOLDS	REF.				
NUMBER	FT	FT/SEC	LB/FT**2	DEG R	1/FT	FT**2	FT	FT	FT	FT
0.059	300.00	65.54	2.0934E+03	517.600	4.1200E+05	4.640	0.790	6.040	1.125	

0.055

0 -----YAWING MOMENT COEFFICIENT,CN,DUE TO CONTROL
DEFLECTION-----

0(DELTAL-DELTAR)= 40.0 20.0 0.0 -20.0 -40.0

0ALPHA

0

-10.0	3.209E-03	1.836E-03	0.000E+00	-1.836E-03	-3.209E-03
-5.0	-3.026E-04	-1.731E-04	0.000E+00	1.731E-04	3.026E-04
0.0	-3.925E-03	-2.246E-03	0.000E+00	2.246E-03	3.925E-03
5.0	-7.902E-03	-4.522E-03	0.000E+00	4.522E-03	7.902E-03
10.0	-1.158E-02	-6.626E-03	0.000E+00	6.626E-03	1.158E-02

0

0

0

DELTAL	DELTAR	(CL)ROLL
20.0	-20.0	7.4284E-02
10.0	-10.0	4.2586E-02
0.0	0.0	0.0000E+00
-10.0	10.0	-4.2586E-02
-20.0	20.0	-7.4284E-02

1 AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION OF DATCOM

CHARACTERISTICS AT ANGLE OF ATTACK AND IN SIDESLIP WING-BODY-VERTICAL TAIL-HORIZONTAL TAIL CONFIGURATION

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----- FLIGHT CONDITIONS -----
DIMENSIONS -----
MACH ALTITUDE VELOCITY PRESSURE TEMPERATURE REYNOLDS REF.
REFERENCE LENGTH MOMENT REF. CENTER
NUMBER NUMBER AREA LONG. LAT. HORIZ VERT
      FT  FT/SEC  LB/FT**2  DEG R  1/FT      FT**2  FT  FT  FT  FT
0 0.073  300.00  81.93  2.0934E+03  517.600  5.1505E+05      4.640  0.790  6.040  1.125
0.055
0
-----DERIVATIVE (PER DEGREE)-----
0 ALPHA  CD  CL  CM  CN  CA  XCP  CLA  CMA  CYB  CNB  CLB
0
-10.0  0.042 -0.500  0.1889 -0.500 -0.045 -0.378  9.320E-02 -2.842E-02 -8.804E-03  4.607E-04
-9.176E-04
-5.0  0.027 -0.028  0.0148 -0.030  0.025 -0.492  9.519E-02 -3.426E-02      -9.202E-04
0.0  0.035  0.451 -0.1536  0.451  0.035 -0.340  1.004E-01 -3.739E-02      -9.209E-04
5.0  0.067  0.976 -0.3591  0.978 -0.018 -0.367  1.022E-01 -4.470E-02      -9.274E-04
10.0  0.122  1.473 -0.6006  1.472 -0.136 -0.408  9.663E-02 -5.191E-02      -9.314E-04
0
ALPHA  Q/QINF  EPSLON  D(EPSLON)/D(ALPHA)
0
-10.0  0.964 -2.096  0.461
-5.0  0.924  0.208  0.459
0.0  1.000  2.494  0.453
5.0  1.000  4.739  0.423
10.0  1.000  6.728  0.398

```

0*** VEHICLE WEIGHT = 5.34 LB.

0*** LEVEL FLIGHT LIFT COEFFICIENT = 0.14550

1 AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION OF DATCOM

CHARACTERISTICS OF HIGH LIFT AND CONTROL DEVICES WING PLAIN TRAILING-EDGE FLAP CONFIGURATION

```

----- FLIGHT CONDITIONS -----
DIMENSIONS -----
MACH ALTITUDE VELOCITY PRESSURE TEMPERATURE REYNOLDS REF.
REFERENCE LENGTH MOMENT REF. CENTER
NUMBER NUMBER AREA LONG. LAT. HORIZ VERT
      FT  FT/SEC  LB/FT**2  DEG R  1/FT      FT**2  FT  FT  FT  FT
0 0.073  300.00  81.93  2.0934E+03  517.600  5.1505E+05      4.640  0.790  6.040  1.125
0.055
0
-----YAWING MOMENT COEFFICIENT,CN,DUE TO CONTROL
DEFLECTION-----
0(DELTA-DELTAR)= 40.0  20.0  0.0 -20.0 -40.0
0ALPHA
0
-10.0  3.214E-03  1.839E-03  0.000E+00 -1.839E-03 -3.214E-03
-5.0  -3.031E-04 -1.734E-04  0.000E+00  1.734E-04  3.031E-04
0.0  -3.932E-03 -2.250E-03  0.000E+00  2.250E-03  3.932E-03
5.0  -7.914E-03 -4.528E-03  0.000E+00  4.528E-03  7.914E-03
10.0  -1.159E-02 -6.634E-03  0.000E+00  6.634E-03  1.159E-02
0
0 DELTAL DELTAR (CL)ROLL
0
20.0 -20.0 7.4363E-02

```

10.0	-10.0	4.2631E-02
0.0	0.0	0.0000E+00
-10.0	10.0	-4.2631E-02
-20.0	20.0	-7.4363E-02

1 AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION OF DATCOM

CHARACTERISTICS AT ANGLE OF ATTACK AND IN SIDESLIP
WING-BODY-VERTICAL TAIL-HORIZONTAL TAIL CONFIGURATION

----- FLIGHT CONDITIONS -----						----- REFERENCE					
DIMENSIONS -----											
MACH	ALTITUDE	VELOCITY	PRESSURE	TEMPERATURE	REYNOLDS	REF.					
REFERENCE LENGTH	MOMENT REF. CENTER										
NUMBER				NUMBER	AREA	LONG.	LAT.	HORIZ	VERT		
FT	FT/SEC	LB/FT**2	DEG R	1/FT	FT**2	FT	FT	FT	FT		
0 0.088	300.00	98.31	2.0934E+03	517.600	6.1803E+05	4.640	0.790	6.040	1.125		
0.055											
0	-----DERIVATIVE (PER DEGREE)-----										
0 ALPHA	CD	CL	CM	CN	CA	XCP	CLA	CMA	CYB	CNB	CLB
0											
-10.0	0.042	-0.501	0.1896	-0.500	-0.046	-0.379	9.326E-02	-2.850E-02	-8.804E-03	4.491E-04	
-9.181E-04											
-5.0	0.026	-0.028	0.0150	-0.030	0.024	-0.500	9.525E-02	-3.434E-02		-9.208E-04	
0.0	0.034	0.452	-0.1538	0.452	0.034	-0.341	1.004E-01	-3.744E-02		-9.217E-04	
5.0	0.066	0.976	-0.3594	0.979	-0.019	-0.367	1.022E-01	-4.472E-02		-9.283E-04	
10.0	0.121	1.473	-0.6010	1.472	-0.137	-0.408	9.661E-02	-5.193E-02		-9.324E-04	
0	ALPHA Q/QINF EPSLON D(EPSLON)/D(ALPHA)										
0											
	-10.0	0.967	-2.097	0.461							
	-5.0	0.927	0.208	0.459							
	0.0	1.000	2.494	0.453							
	5.0	1.000	4.740	0.423							
	10.0	1.000	6.729	0.398							

0*** VEHICLE WEIGHT = 5.34 LB.

0*** LEVEL FLIGHT LIFT COEFFICIENT = 0.10105

1 AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION OF DATCOM

CHARACTERISTICS OF HIGH LIFT AND CONTROL DEVICES
WING PLAIN TRAILING-EDGE FLAP CONFIGURATION

----- FLIGHT CONDITIONS -----						----- REFERENCE				
DIMENSIONS -----										
MACH	ALTITUDE	VELOCITY	PRESSURE	TEMPERATURE	REYNOLDS	REF.				
REFERENCE LENGTH	MOMENT REF. CENTER									
NUMBER				NUMBER	AREA	LONG.	LAT.	HORIZ	VERT	
FT	FT/SEC	LB/FT**2	DEG R	1/FT	FT**2	FT	FT	FT	FT	
0 0.088	300.00	98.31	2.0934E+03	517.600	6.1803E+05	4.640	0.790	6.040	1.125	
0.055										
0	-----YAWING MOMENT COEFFICIENT,CN,DUE TO CONTROL DEFLECTION-----									
0(DELTA L-DELTA R)=	40.0	20.0	0.0	-20.0	-40.0					
0ALPHA										
0										

-10.0	3.218E-03	1.841E-03	0.000E+00	-1.841E-03	-3.218E-03
-5.0	-3.035E-04	-1.737E-04	0.000E+00	1.737E-04	3.035E-04
0.0	-3.937E-03	-2.253E-03	0.000E+00	2.253E-03	3.937E-03
5.0	-7.924E-03	-4.534E-03	0.000E+00	4.534E-03	7.924E-03
10.0	-1.161E-02	-6.642E-03	0.000E+00	6.642E-03	1.161E-02

0
0
0

	DELTAL	DELTAR	(CL)ROLL
--	--------	--------	----------

20.0	-20.0	7.4428E-02
10.0	-10.0	4.2668E-02
0.0	0.0	0.0000E+00
-10.0	10.0	-4.2668E-02
-20.0	20.0	-7.4428E-02

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OF DATCOM

AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION

CHARACTERISTICS AT ANGLE OF ATTACK AND IN SIDESLIP
WING-BODY-VERTICAL TAIL-HORIZONTAL TAIL CONFIGURATION

----- FLIGHT CONDITIONS -----					----- REFERENCE				
DIMENSIONS -----									
MACH	ALTITUDE	VELOCITY	PRESSURE	TEMPERATURE	REYNOLDS	REF.			
REFERENCE LENGTH	MOMENT	REF. CENTER							
NUMBER			NUMBER	AREA	LONG.	LAT.	HORIZ	VERT	
	FT	FT/SEC	LB/FT**2	DEG R	1/FT	FT**2	FT	FT	FT
0.029	400.00	32.77	2.0858E+03	517.244	2.0554E+05	4.640	0.790	6.040	1.125
0.055									

-----DERIVATIVE (PER DEGREE)-----											
0 ALPHA	CD	CL	CM	CN	CA	XCP	CLA	CMA	CYB	CNB	CLB
-10.0	0.047	-0.499	0.1862	-0.499	-0.040	-0.373	9.296E-02	-2.822E-02	-8.803E-03	5.197E-04	
-9.163E-04											
-5.0	0.031	-0.027	0.0137	-0.030	0.029	-0.460	9.495E-02	-3.386E-02		-9.183E-04	
0.0	0.040	0.451	-0.1524	0.451	0.040	-0.338	1.002E-01	-3.703E-02		-9.183E-04	
5.0	0.076	0.975	-0.3567	0.978	-0.009	-0.365	1.021E-01	-4.442E-02		-9.241E-04	
10.0	0.136	1.472	-0.5966	1.473	-0.122	-0.405	9.669E-02	-5.154E-02		-9.274E-04	

0
0

ALPHA	Q/QINF	EPSLON	D(EPSLON)/D(ALPHA)
-------	--------	--------	--------------------

-10.0	0.951	-2.095	0.461
-5.0	0.910	0.208	0.459
0.0	1.000	2.492	0.453
5.0	1.000	4.736	0.423
10.0	1.000	6.725	0.398

0*** VEHICLE WEIGHT = 5.34 LB.

0*** LEVEL FLIGHT LIFT COEFFICIENT = 0.91192

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DATCOM

AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION OF

CHARACTERISTICS OF HIGH LIFT AND CONTROL DEVICES
WING PLAIN TRAILING-EDGE FLAP CONFIGURATION

----- FLIGHT CONDITIONS -----					----- REFERENCE				
DIMENSIONS -----									
MACH	ALTITUDE	VELOCITY	PRESSURE	TEMPERATURE	REYNOLDS	REF.			
REFERENCE LENGTH	MOMENT	REF. CENTER							

MACH	ALTITUDE	VELOCITY	PRESSURE	TEMPERATURE	REYNOLDS	REF.			
REFERENCE LENGTH	MOMENT	REF. CENTER							

NUMBER				NUMBER		AREA	LONG.	LAT.	HORIZ	VERT
FT	FT/SEC	LB/FT**2	DEG R	1/FT	FT**2	FT	FT	FT	FT	FT
0 0.029	400.00	32.77	2.0858E+03	517.244	2.0554E+05	4.640	0.790	6.040	1.125	
0.055										
0	-----YAWING MOMENT COEFFICIENT,CN,DUE TO CONTROL									
DEFLECTION-----										
0(DELTAL-DELTAR)=	40.0	20.0	0.0	-20.0	-40.0					
0ALPHA										
0										
-10.0	3.196E-03	1.829E-03	0.000E+00	-1.829E-03	-3.196E-03					
-5.0	-3.013E-04	-1.724E-04	0.000E+00	1.724E-04	3.013E-04					
0.0	-3.909E-03	-2.237E-03	0.000E+00	2.237E-03	3.909E-03					
5.0	-7.870E-03	-4.504E-03	0.000E+00	4.504E-03	7.870E-03					
10.0	-1.154E-02	-6.601E-03	0.000E+00	6.601E-03	1.154E-02					
0										
0		DELTAL	DELTAR	(CL)ROLL						
0										
		20.0	-20.0	7.4038E-02						
		10.0	-10.0	4.2444E-02						
		0.0	0.0	0.0000E+00						
		-10.0	10.0	-4.2444E-02						
		-20.0	20.0	-7.4038E-02						
1	AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION									
OF DATCOM										
CHARACTERISTICS AT ANGLE OF ATTACK AND IN SIDESLIP										
WING-BODY-VERTICAL TAIL-HORIZONTAL TAIL CONFIGURATION										
----- FLIGHT CONDITIONS -----						----- REFERENCE				
DIMENSIONS -----										
MACH	ALTITUDE	VELOCITY	PRESSURE	TEMPERATURE	REYNOLDS	REF.				
REFERENCE LENGTH	MOMENT	REF. CENTER								
NUMBER										
FT	FT/SEC	LB/FT**2	DEG R	1/FT	FT**2	FT	FT	FT	FT	FT
0 0.044	400.00	49.14	2.0858E+03	517.244	3.0817E+05	4.640	0.790	6.040	1.125	
0.055										
0	-----DERIVATIVE (PER DEGREE)-----									
0 ALPHA	CD	CL	CM	CN	CA	XCP	CLA	CMA	CYB	CNB
0										
-10.0	0.045	-0.499	0.1873	-0.500	-0.043	-0.375	9.305E-02	-2.826E-02	-8.803E-03	4.936E-04
-9.167E-04										
-5.0	0.029	-0.027	0.0141	-0.030	0.027	-0.472	9.504E-02	-3.402E-02		-9.189E-04
0.0	0.038	0.451	-0.1530	0.451	0.038	-0.339	1.003E-01	-3.719E-02		-9.192E-04
5.0	0.071	0.975	-0.3578	0.978	-0.014	-0.366	1.021E-01	-4.456E-02		-9.253E-04
10.0	0.128	1.472	-0.5986	1.472	-0.130	-0.407	9.668E-02	-5.174E-02		-9.289E-04
0		ALPHA	Q/QINF	EPSLON	D(EPSLON)/D(ALPHA)					
0										
		-10.0	0.957	-2.095	0.461					
		-5.0	0.916	0.208	0.459					
		0.0	1.000	2.492	0.453					
		5.0	1.000	4.737	0.423					
		10.0	1.000	6.726	0.398					
0***	VEHICLE WEIGHT = 5.34 LB.									

0*** LEVEL FLIGHT LIFT COEFFICIENT = 0.40567

1 AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION OF
DATCOM

CHARACTERISTICS OF HIGH LIFT AND CONTROL DEVICES
WING PLAIN TRAILING-EDGE FLAP CONFIGURATION

----- FLIGHT CONDITIONS -----						----- REFERENCE				
DIMENSIONS -----										
MACH	ALTITUDE	VELOCITY	PRESSURE	TEMPERATURE	REYNOLDS	REF.				
REFERENCE LENGTH	MOMENT	REF. CENTER								
NUMBER			NUMBER	AREA	LONG.	LAT.	HORIZ	VERT		
	FT	FT/SEC	LB/FT**2	DEG R	1/FT	FT**2	FT	FT	FT	FT
0 0.044	400.00	49.14	2.0858E+03	517.244	3.0817E+05	4.640	0.790	6.040	1.125	
0.055										
0	-----YAWING MOMENT COEFFICIENT,CN,DUE TO CONTROL									
DEFLECTION-----										
0(DELTA-DELTAR)=	40.0	20.0	0.0	-20.0	-40.0					
0ALPHA										
0										
-10.0	3.203E-03	1.833E-03	0.000E+00	-1.833E-03	-3.203E-03					
-5.0	-3.020E-04	-1.728E-04	0.000E+00	1.728E-04	3.020E-04					
0.0	-3.918E-03	-2.242E-03	0.000E+00	2.242E-03	3.918E-03					
5.0	-7.888E-03	-4.514E-03	0.000E+00	4.514E-03	7.888E-03					
10.0	-1.156E-02	-6.615E-03	0.000E+00	6.615E-03	1.156E-02					
0										
0			DELTA L	DELTA R	(CL)ROLL					
0										
			20.0	-20.0	7.4181E-02					
			10.0	-10.0	4.2527E-02					
			0.0	0.0	0.0000E+00					
			-10.0	10.0	-4.2527E-02					
			-20.0	20.0	-7.4181E-02					

1 AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION
OF DATCOM

CHARACTERISTICS AT ANGLE OF ATTACK AND IN SIDESLIP
WING-BODY-VERTICAL TAIL-HORIZONTAL TAIL CONFIGURATION

----- FLIGHT CONDITIONS -----							----- REFERENCE				
DIMENSIONS -----											
MACH	ALTITUDE	VELOCITY	PRESSURE	TEMPERATURE	REYNOLDS	REF.					
REFERENCE LENGTH	MOMENT	REF. CENTER									
NUMBER			NUMBER	AREA	LONG.	LAT.	HORIZ	VERT			
	FT	FT/SEC	LB/FT**2	DEG R	1/FT	FT**2	FT	FT	FT	FT	
0 0.059	400.00	65.52	2.0858E+03	517.244	4.1087E+05	4.640	0.790	6.040	1.125		
0.055											
0	-----DERIVATIVE (PER DEGREE)-----										
0 ALPHA	CD	CL	CM	CN	CA	XCP	CLA	CMA	CYB	CNB	
0											
-10.0	0.043	-0.500	0.1882	-0.500	-0.044	-0.377	9.312E-02	-2.833E-02	-8.804E-03	4.752E-04	
-9.171E-04											
-5.0	0.028	-0.028	0.0145	-0.030	0.026	-0.483	9.511E-02	-3.416E-02		-9.196E-04	
0.0	0.036	0.451	-0.1534	0.451	0.036	-0.340	1.003E-01	-3.733E-02		-9.201E-04	
5.0	0.068	0.976	-0.3588	0.978	-0.017	-0.367	1.021E-01	-4.469E-02		-9.264E-04	

10.0 0.123 1.473 -0.6003 1.472 -0.135 -0.408 9.666E-02 -5.190E-02 -9.302E-04
0 ALPHA Q/QINF EPSLON D(EPSLON)/D(ALPHA)
0

-10.0 0.961 -2.096 0.461
-5.0 0.921 0.208 0.459
0.0 1.000 2.493 0.453
5.0 1.000 4.738 0.423
10.0 1.000 6.727 0.398

0*** VEHICLE WEIGHT = 5.34 LB.

0*** LEVEL FLIGHT LIFT COEFFICIENT = 0.22821

1 AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION OF
DATCOM

CHARACTERISTICS OF HIGH LIFT AND CONTROL DEVICES

WING PLAIN TRAILING-EDGE FLAP CONFIGURATION

----- FLIGHT CONDITIONS ----- REFERENCE

DIMENSIONS -----

MACH ALTITUDE VELOCITY PRESSURE TEMPERATURE REYNOLDS REF.
REFERENCE LENGTH MOMENT REF. CENTER

NUMBER	AREA	LONG.	LAT.	HORIZ	VERT				
FT	FT/SEC	LB/FT**2	DEG R	1/FT	FT**2	FT	FT	FT	FT
0 0.059	400.00	65.52	2.0858E+03	517.244	4.1087E+05	4.640	0.790	6.040	1.125

0.055

0 -----YAWING MOMENT COEFFICIENT,CN,DUE TO CONTROL

DEFLECTION-----

0(DELTAL-DELTAR)= 40.0 20.0 0.0 -20.0 -40.0

0ALPHA

0

-10.0	3.209E-03	1.836E-03	0.000E+00	-1.836E-03	-3.209E-03
-5.0	-3.026E-04	-1.731E-04	0.000E+00	1.731E-04	3.026E-04
0.0	-3.925E-03	-2.246E-03	0.000E+00	2.246E-03	3.925E-03
5.0	-7.902E-03	-4.521E-03	0.000E+00	4.521E-03	7.902E-03
10.0	-1.158E-02	-6.625E-03	0.000E+00	6.625E-03	1.158E-02

0

0 DELTAL DELTAR (CL)ROLL

0

20.0	-20.0	7.4283E-02
10.0	-10.0	4.2585E-02
0.0	0.0	0.0000E+00
-10.0	10.0	-4.2585E-02
-20.0	20.0	-7.4283E-02

1 AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION
OF DATCOM

CHARACTERISTICS AT ANGLE OF ATTACK AND IN SIDESLIP

WING-BODY-VERTICAL TAIL-HORIZONTAL TAIL CONFIGURATION

----- FLIGHT CONDITIONS ----- REFERENCE

DIMENSIONS -----

MACH ALTITUDE VELOCITY PRESSURE TEMPERATURE REYNOLDS REF.
REFERENCE LENGTH MOMENT REF. CENTER

NUMBER	AREA	LONG.	LAT.	HORIZ	VERT				
FT	FT/SEC	LB/FT**2	DEG R	1/FT	FT**2	FT	FT	FT	FT
0 0.073	400.00	81.90	2.0858E+03	517.244	5.1364E+05	4.640	0.790	6.040	1.125

0.055
0
-----DERIVATIVE (PER DEGREE)-----
0 ALPHA CD CL CM CN CA XCP CLA CMA CYB CNB CLB
0
-10.0 0.042 -0.500 0.1889 -0.500 -0.045 -0.378 9.320E-02 -2.842E-02 -8.804E-03 4.609E-04
-9.176E-04
-5.0 0.027 -0.028 0.0148 -0.030 0.025 -0.491 9.518E-02 -3.426E-02 -9.202E-04
0.0 0.035 0.451 -0.1536 0.451 0.035 -0.340 1.004E-01 -3.739E-02 -9.209E-04
5.0 0.067 0.976 -0.3591 0.978 -0.018 -0.367 1.022E-01 -4.470E-02 -9.274E-04
10.0 0.122 1.473 -0.6006 1.472 -0.136 -0.408 9.663E-02 -5.191E-02 -9.314E-04
0
ALPHA Q/QINF EPSLON D(EPSLON)/D(ALPHA)
0

-10.0 0.964 -2.096 0.461
-5.0 0.924 0.208 0.459
0.0 1.000 2.494 0.453
5.0 1.000 4.739 0.423
10.0 1.000 6.728 0.398

0*** VEHICLE WEIGHT = 5.34 LB.

0*** LEVEL FLIGHT LIFT COEFFICIENT = 0.14603

1 AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION OF DATCOM

CHARACTERISTICS OF HIGH LIFT AND CONTROL DEVICES WING PLAIN TRAILING-EDGE FLAP CONFIGURATION

----- FLIGHT CONDITIONS ----- REFERENCE
DIMENSIONS -----
MACH ALTITUDE VELOCITY PRESSURE TEMPERATURE REYNOLDS REF.
REFERENCE LENGTH MOMENT REF. CENTER
NUMBER NUMBER AREA LONG. LAT. HORIZ VERT
FT FT/SEC LB/FT**2 DEG R 1/FT FT**2 FT FT FT FT
0 0.073 400.00 81.90 2.0858E+03 517.244 5.1364E+05 4.640 0.790 6.040 1.125

0.055
0
-----YAWING MOMENT COEFFICIENT,CN,DUE TO CONTROL
DEFLECTION-----
0(DELTA-DELTA R)= 40.0 20.0 0.0 -20.0 -40.0
0ALPHA
0
-10.0 3.214E-03 1.839E-03 0.000E+00 -1.839E-03 -3.214E-03
-5.0 -3.031E-04 -1.734E-04 0.000E+00 1.734E-04 3.031E-04
0.0 -3.932E-03 -2.250E-03 0.000E+00 2.250E-03 3.932E-03
5.0 -7.913E-03 -4.528E-03 0.000E+00 4.528E-03 7.913E-03
10.0 -1.159E-02 -6.634E-03 0.000E+00 6.634E-03 1.159E-02

0
0
0
DELTA DELTA R (CL)ROLL
20.0 -20.0 7.4362E-02
10.0 -10.0 4.2631E-02
0.0 0.0 0.0000E+00
-10.0 10.0 -4.2631E-02
-20.0 20.0 -7.4362E-02

1 AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION OF DATCOM

CHARACTERISTICS AT ANGLE OF ATTACK AND IN SIDESLIP

WING-BODY-VERTICAL TAIL-HORIZONTAL TAIL CONFIGURATION

----- FLIGHT CONDITIONS -----					----- REFERENCE						
DIMENSIONS -----											
MACH	ALTITUDE	VELOCITY	PRESSURE	TEMPERATURE	REYNOLDS	REF.					
REFERENCE LENGTH	MOMENT	REF. CENTER									
NUMBER	NUMBER				AREA	LONG.	LAT.	HORIZ	VERT		
FT	FT/SEC	LB/FT**2	DEG R	1/FT	FT**2	FT	FT	FT	FT		
0.088	400.00	98.28	2.0858E+03	517.244	6.1634E+05	4.640	0.790	6.040	1.125		
0.055											
0	-----DERIVATIVE (PER DEGREE)-----										
0 ALPHA	CD	CL	CM	CN	CA	XCP	CLA	CMA	CYB	CNB	CLB
0											
-10.0	0.042	-0.501	0.1896	-0.500	-0.046	-0.379	9.326E-02	-2.850E-02	-8.804E-03	4.493E-04	
-9.181E-04											
-5.0	0.027	-0.028	0.0150	-0.030	0.024	-0.499	9.525E-02	-3.434E-02		-9.208E-04	
0.0	0.034	0.452	-0.1538	0.452	0.034	-0.341	1.004E-01	-3.744E-02		-9.217E-04	
5.0	0.066	0.976	-0.3594	0.979	-0.019	-0.367	1.022E-01	-4.472E-02		-9.283E-04	
10.0	0.121	1.473	-0.6010	1.472	-0.137	-0.408	9.661E-02	-5.193E-02		-9.324E-04	
0	ALPHA Q/QINF EPSLON D(EPSLON)/D(ALPHA)										
0											
	-10.0	0.967	-2.097	0.461							
	-5.0	0.927	0.208	0.459							
	0.0	1.000	2.494	0.453							
	5.0	1.000	4.740	0.423							
	10.0	1.000	6.729	0.398							

0*** VEHICLE WEIGHT = 5.34 LB.

0*** LEVEL FLIGHT LIFT COEFFICIENT = 0.10142

1 AUTOMATED STABILITY AND CONTROL METHODS PER APRIL 1976 VERSION OF DATCOM

CHARACTERISTICS OF HIGH LIFT AND CONTROL DEVICES

WING PLAIN TRAILING-EDGE FLAP CONFIGURATION

----- FLIGHT CONDITIONS -----							----- REFERENCE			
DIMENSIONS -----										
MACH	ALTITUDE	VELOCITY	PRESSURE	TEMPERATURE	REYNOLDS	REF.				
REFERENCE LENGTH	MOMENT	REF. CENTER								
NUMBER	NUMBER				AREA	LONG.	LAT.	HORIZ	VERT	
FT	FT/SEC	LB/FT**2	DEG R	1/FT	FT**2	FT	FT	FT	FT	
0.088	400.00	98.28	2.0858E+03	517.244	6.1634E+05	4.640	0.790	6.040	1.125	
0.055										
0	-----YAWING MOMENT COEFFICIENT,CN,DUE TO CONTROL									
DEFLECTION-----										
0(DELTA-DELTAR)=		40.0	20.0	0.0	-20.0	-40.0				
0ALPHA										
0										
-10.0	3.218E-03	1.841E-03	0.000E+00	-1.841E-03	-3.218E-03					
-5.0	-3.035E-04	-1.737E-04	0.000E+00	1.737E-04	3.035E-04					
0.0	-3.937E-03	-2.253E-03	0.000E+00	2.253E-03	3.937E-03					
5.0	-7.923E-03	-4.534E-03	0.000E+00	4.534E-03	7.923E-03					
10.0	-1.161E-02	-6.641E-03	0.000E+00	6.641E-03	1.161E-02					
0										
0	DELTA L		DELTA R		(CL)ROLL					

0

20.0	-20.0	7.4427E-02
10.0	-10.0	4.2668E-02
0.0	0.0	0.0000E+00
-10.0	10.0	-4.2668E-02
-20.0	20.0	-7.4427E-02

1 THE FOLLOWING IS A LIST OF ALL INPUT CARDS FOR THIS CASE.

0

1 END OF JOB.