

Calculation of Initial Heading and Great Circle Distances.  
Comparisons with Calculations by F/O Seal in Form 441 Flight Plan  
Chemnitz 5/6-March-1945

=RQDTrack+DEGREES(ASIN(Win

Start	End	Latitude	Long.	Radians	Radians	Seale					
				Latitude	Long.	F/O Seale	Initial	"Course	True	VARN	
						RQD Track	Heading	True"	Heading		
Base	"A" TP2	54.5022	-1.4424	0.95124	-0.02518	174	173	177	176	11	188
"A" TP2	"B" Reading	53.5000	-1.2500	0.93375	-0.02182	175	175	178	177	11	189
"B" Reading	"C" England Coast	51.4543	-0.9781	0.89805	-0.01707	128	127	118	117	10	128
"C" England Coast	"D" French Coast	50.8182	0.3647	0.88694	0.00636	128	128	118	117	9	127
"D" French Coast	"E" TP4	50.2257	1.5589	0.8766	0.02721	128	128	118	117	9	127
"E" TP4	"F" TP5	50.0000	2.0000	0.87266	0.03491	90	89	77	76	8	85
"F" TP5	"G" TP6	50.0000	5.0000	0.87266	0.08727	72	71	57	56	7	64
"G" TP6	"H" TP7	50.5000	7.3333	0.88139	0.12799	79	79	62	62	6	68
"H" TP7	"I" TP8	50.7500	9.5000	0.88575	0.16581	56	54	42	42	5	47
"I" TP8	"J" TP9	51.6333	11.5333	0.90117	0.20129	100	100	84	83	4	88
"J" TP9	"Z" (On Track)	51.5000	12.6667	0.89884	0.22108	166	166	163	162	4	167
"Z" (On Track)	"T/A" Target Chemnitz	51.2500	12.7627	0.89448	0.22275	166	167	163	162	4	167
"T/A" Target Chemnitz	"K" TP11	50.8278	12.9214	0.88711	0.22552	166	163	163	162	4	167
"K" TP11	"L" TP12	50.6667	13.0000	0.8843	0.22689	237	237	247	246	4	251
"L" TP12	"M" TP13	50.2500	12.0000	0.87703	0.20944	287	288	298	298	4	302
"M" TP13	"N" TP14	50.5833	10.3333	0.88285	0.18035	224	224	232	232	5	237
"N" TP14	"Y" (On Track)	49.7500	9.0833	0.8683	0.15853	273	276	286	286	6	292
"Y" (On Track)	"E" TP15	49.9123	6.0000	0.87113	0.10472	273	273	282	282	8	290
"E" TP15	"D" French Coast	50.0000	2.0000	0.87266	0.03491	308	309	312	312	9	321
"D" French Coast	"C" England Coast	50.2257	1.5589	0.8766	0.02721	308	308	312	312	9	321
"C" England Coast	"B" Reading	50.8182	0.3647	0.88694	0.00636	308	308	312	312	10	322
"B" Reading	"A" TP17	51.4543	-0.9781	0.89805	-0.01707	355	355	353	353	11	4
"A" TP17	Base	53.5000	-1.2500	0.93375	-0.02182	354	354	352	352	11	3
Base		54.5022	-1.4424	0.95124	-0.02518						

$$\hat{y}, \text{ TAS} = 0.02375X_1 + 0.5985X_2 - 3.41581, \text{ Adjusted R}^2: 0.9963$$

$dS/\text{TAS} * \sin(\text{RADIANS}(\text{RQDTrack} - \text{WindD} + 180)))$

"Distance To Run"	Cave Great Circle Distance	Wind Direction Deg. True	Est. Wind Speed (Mph)	R.A.S.	Seale Height	Seale Temp	True Air Speed (Mph)	Cave TAS	Error in TAS	Seale D.R. G/S	Ground Speed (Mph)	D.R. Time	Fuel Used (1 gal/mile)	Cumulative Weight lost
71	70	345	42	170	8500	-8	192	191	0.31%	234	233	18.0	71	510
143	142	345	42	170	8500	-8	192	191	0.31%	234	233	36.6	143	1,538
73	73	360	45	170	8500	-8	192	191	0.31%	219	217	20.2	73	2,063
66	67	360	45	170	8500	-8	192	191	0.31%	219	217	18.5	66	2,537
24	25	360	45	170	8500	-8	192	191	0.31%	219	217	6.9	24	2,709
134	133	360	45	170	8500	-8	192	191	0.31%	189	187	42.7	134	3,672
109	109	360	55	158	13000	-20	190	190	0.21%	167	167	39.3	109	4,455
97	97	360	60	160	15500	-26	200	200	0.00%	180	180	32.4	97	5,152
108	107	360	60	160	15500	-26	200	200	0.00%	161	161	40.0	108	5,928
49	50	360	60	165	15500	-26	206	206	0.15%	210	208	14.4	49	6,280
17	18	360	60	165	15500	-26	206	206	0.15%	263	264	4.1	17	6,402
31	30	360	60	165	15500	-26	206	206	0.15%	263	264	6.8	31	6,625
12	12	360	60	180	15500	-26	225	225	0.00%	284	283	2.5	12	6,711
52	53	360	47	195	15000	-25	242	242	0.04%	262	264	12.0	52	7,085
78	77	355	44	200	8000	-11	222	221	0.27%	202	201	22.9	78	7,646
79	80	355	37	195	5500	-6	208	207	0.72%	228	230	20.8	79	8,214
137	138	360	45	180	9000	-9	204	204	0.20%	197	196	42.2	137	9,199
178	178	345	35	200	5000	-2	214	211	1.31%	200	201	53.3	178	10,478
24	25	330	30	180	2500	4	182	182	0.11%	154	154	9.8	24	10,650
66	67	330	30	180	2500	4	182	182	0.11%	154	154	26.1	66	11,124
73	73	330	30	180	2500	4	182	182	0.11%	154	154	28.5	73	11,649
143	142	340	30	180	2500	4	182	182	0.11%	155	153	55.7	143	12,677
71	70	340	30	180	2500	4	182	182	0.11%	155	153	27.5	71	13,187

MAPE:

0.24%

1835

1835

1836 Statute Miles