Navigation Log

Date	From	To	Pilot	Aircraft

Pre-flight Log

From	TrT	Varn	TrM	MSA	Level	TAS	WV	HdgT	HdgM	GS	Dist	EET	Dest	FF	Burn
a	b	c	d	e	f	g	h	i	j	k	l	m	n	o	p
n'	Map	Map	b + c	Map	e	f, PFM	Met	b, g & h	i + c	b, g & h	Map	l / k		g, PFM	o,m
							/					:			
							/					:			
							/					:			
							/					:			
							/					:			
										Total:				**Total:**	

In-flight Log

From	ATD	TrM	Level	HdgC	GS	Dist	EET	ETA1	ETA2	Next Point	Fuel Burn	Fuel Plan	Fuel Act.	Fuel OK?
q	r	s	t	u	v	w	x	y	z	aa	ab	ac	ad	ae
a	Clock	d	f	j, deviation	k	Map	w / v	y' + x	r + x	n	p	ac' - p	Gauges	ad > ac?
	:						:	:	:					
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En Route Information

Location	Comms		VOR		Runway		**Clearances**:
	Callsign	Freq	Callsign	Freq	Elev	Brg	
						/	
						/	
						/	
						/	
						/	
						/	

Descriptions of Each Column

Column	Parameter	Remarks
a	Point of departure	Point where leg originates
b	True track	Measure on map
c	Variation	Read from isogonals on map
d	Magnetic track	Add true track and variation (subtract for Easterly)
e	Minimum safe altitude	Determine from map with 1000’ or 2000’ vertical clearance from nearby obstacles (5 NM)
f	Level	Height, altitude or ground level (e.g. A075 or F075 or F075/A055 for climb/descent).
g	True airspeed	Check in Pilot’s Flight Manual according to level
h	Wind velocity	Obtain from weather office for level chosen (direction and speed e.g. 270/15)
i	True heading	Calculate from true track, wind and true airspeed, using graphic computer
j	Magnetic heading	Add true heading and variation (subtract for Easterly)
k	Groundspeed	Calculate from true track, wind and true airspeed, using graphic computer
l	Distance	Measure on map
m	Estimated elapsed time	Divide distance by groundspeed, or use slide computer
n	Destination	Point where leg ends
o	Fuel flow	Planned fuel flow from PFM (GPH or l /h)
p	Fuel Burn	Amount of fuel required on this leg (USG or l , depending on column *p*)
q	Point of departure	Point where leg originates
r	Actual time (UTC HH:MM)	Actual time when point start point of leg is passed (complete in flight)
s	True track	From corresponding leg in pre-flight log
t	Level	From corresponding leg in pre-flight log
u	Compass heading	Adjust magnetic heading for compass deviation, using swing card in aircraft
v	Groundspeed	From pre-flight table
w	Distance	Measure on map (in nautical miles)
x	Estimated elapsed time (H:MM)	Divide distance by groundspeed (in hours:minutes e.g. 0:43)
y	Estimated time of arrival (UTC)	Actual takeoff time plus estimated cumulative leg time (calculate after departure)
z	Revised ETA (UTC)	Revised estimate, using actual time at start of leg plus estimated leg time (calculate when ETA shifts)
aa	Next point	End of current leg
ab	Fuel Burn	Actual amount of fuel planned for consumption on this leg
ac	Fuel Plan	Amount of fuel supposed to be left in the tanks after this leg
ad	Fuel Actual	Amount of fuel actually left after this leg (should be equal to or greater than planned)
ae	Fuel OK?	Yes if Fuel Actual > Fuel Plan. No if Fuel Actual < Fuel Plan

Instructions for completing the Navigation Log

Each column is headed by a name, a label (a letter identifying that column) and a Source block. The Source block indicates where the information for that block must come from. Fill in each column from the sources indicated.

Example: The *HdgT* column is also known as Column *i*, and must be filled in using information found in columns *b*, *g* and *h*. Column *y* is filled in from the previous value of *y* in the previous line (*y*') and *x* from the current line. A brief explanation of each column is included below.

Title Block: First fill in the title block, with the date, departure point, destination, pilot and aircraft particulars.

Pre-Flight Log: Now fill in the *Pre-flight Log*, with one line per leg, regardless of length. Each leg is identified by departure and destination points, indicated in the first and third last columns respectively. Start a new leg only where direction changes or a landing is made.

You may also want to insert some "dummy" legs:

- Start with a short leg from the point of departure to a prominent landmark, from where the next leg can commence at a known airspeed and with a known heading. This technique ensures that manoeuvring in the circuit during departure does not confuse the navigation calculations.
- If you are going to do a touch-and-go landing or a taxi-back landing at an airfield along the route, include a dummy leg (e.g. FAWB-FAWB) to make allowance for the time and fuel required for this exercise. You may have to allow 10 or 20 minutes, with a commensurate amount of fuel. The previous leg would then end at the airfield (e.g. T-junction to FAWB), the dummy leg (e.g. FAWB-FAWB) would cover the activities at the airfield, and the next leg (e.g. FAWB-Toll road) would cover the next leg *en route*.

In-Flight Log: The third table, labelled *In-flight Log*, is used during the actual flight. All columns except the shaded ones (*r*, *y*, *z* and *ad*) must be completed before flight. Break the legs from the previous table into parts, using suitable intermediate checkpoints. Some of the legs can be copied across from the *Pre-Flight Log* without any further subdivision, while long legs may need several intermediate checkpoints.

En Route Information: The final block, *En Route Information*, contains callsigns and frequencies, as well as VOR and runway information, for each location during the flight. Use a single line for every location. The *Clearances* block can be used to take down clearances and other information obtained during the flight.

Follow-Up Pages: If you have too much information for any of the tables, consider starting a second log for the last portion of the flight. Enter the cumulative numbers for the first log into the first line of the second sheet, so that you don't forget to add up the relevant distances, times or fuel burn.

In Flight

The shaded columns (*r*, *y*, *z*, *ad* and *ae*) can only be filled in during the flight. Once you have taken off, fill in the actual takeoff time in column *r*. Calculate an ETA for every turning point (including the destination) in column *y* against each turning point, before establishing radio contact with Information. Write each actual time in column *r* as it happens. Revise ETAs as they change, using column *z*. Monitor fuel burn, using columns *ad* and *ae*. Write down clearances in the space provided. Enjoy!