

Fly environmental team's to designated location's around the Great Lake's to take test sample's of water.

Be sure to watch your compass and fly at the correct altitude for your heading
Reset time to "Day" for each flight.
Navigation by NDBs, VORs and Dead Reckoning.

The flights must be flown in the order as shown below.

Report flights as GL-01 through GL-12.

1 Chicago, IL to Menominee, WI: KCGX to KMNM

GL-01.fsn flight plan

<u>From</u>	<u>To</u>	<u>Freq.</u>	<u>Hdg.</u>	<u>NM</u>	<u>Remarks</u>
KCGX	HRK VOR	117.7	352	55.2	Tune VOR to 117.7 MHz. Dep Rwy 36, climb 6500 Track 352 Deg. Outbound until HRK VOR Rec'd.
HRK VOR	BJB VOR	109.8	342	41.9	Track 342 Deg. Outbound from HRK VOR until BJB VOR Rec'd. Cross BJB VOR at 7500ft
BJB VOR	MTW VOR	111	26	44	Track 026deg. Outbound from BJB VOR until MTW VOR Rec'd. Cross MTW VOR at 6500ft
MTW VOR	SG NDB	332	311	25.3	Track 311 deg. Outbound from MTW VOR until SG NDB rec'd. Cross SG NDB at 7500ft Begin 350fpm descent 3 minutes after passing SG NDB
SG NDB	OCQ NDB	388	20	30.1	Track 388 Deg. Outbound from SG NDB until OCQ NDB Rec'd.
OCQ NDB	TN NDB	239	41	14.4	Track 239 Deg. Outbound from OCQ NDB until TN NDB Rec'd.
TN NDB	KMNM	Rwy 3	32	4.3	Land Rwy 3, Menominee - Marinette Twin Co. Apt. Field Elev = 623ft.
Leg Dist= 218NM					

2 Menominee, MI to Marquette, MI: KMNM to KMQT

GL-02.fsn flight plan

<u>From</u>	<u>To</u>	<u>Freq.</u>	<u>Hdg.</u>	<u>NM</u>	<u>Remarks</u>
KMNM	ESC VOR	110.8	36	42.8	Tune VOR to 110.8 MHz. Dep Rwy 3, climb to 7500ft. Track 036deg. Outbound until ESC VOR Rec'd
ESC VOR	ISQ VOR	110.4	72	41.2	Track 072 deg. Outbound from ESC VOR until ISQ VOR Rec'd
ISQ VOR	SSM VOR	112.2	77	81.5	Track 077 deg. Outbound from ISQ VOR until SSM VOR Rec'd. Cross SSM VOR at 6500ft.
SSM VOR	Y98 APT		286	67.3	Track 286 Deg. Outbound from SSM VOR to Y98 airport. Tune Nav to 110.5
Y98 APT	Fix 01	110.5	272	69	Track 272deg. Outbound from Y98 Apt. until ILS Localiser centres Begin 350fpm descent 16 minutes after passing Y98 Apt.
Fix 01	KMQT	Rwy 26	259	15.5	Land Rwy 26, Marquette Co. Apt. Field Elev.= 1417 Ft.
Leg Dist= 303.7NM					

3 Marquette, MI to Thunder Bay, Ontario Canada; KMQT to CYQT. GL-03.fsn flight plan.

<u>From</u>	<u>To</u>	<u>Freq.</u>	<u>Hdg.</u>	<u>NM</u>	<u>Remarks</u>
KMQT	MQT VOR	116.7	256	1.5	Tune VOR to 116.7 MHz. Dep Rwy 26, climb to 6500ft. Track 256 Deg. Outbound until MQT VOR Rec'd.
MQT VOR	CM NDB	275	319	48.6	Track 319 Deg. Outbound from MQT VOR until CM NDB Rec'd.
CM NDB	OGM NDB	375	250	42.6	Track 250 Deg. Outbound from CM NDB until OGM NDB Rec'd.
OGM NDB	ENV NDB	254	254	66.2	Track 254 Deg. Outbound from OGM NDB until ENV NDB Rec'd.
ENV NDB	SUW NDB	260	278	49.7	Track 278 Deg. Outbound from ENV NDB until SUW NDB Rec'd. Cross SUW NDB at 5500ft.
SUW NDB	TWM NDB	243	32	26.2	Track 032 Deg. Outbound from SUW NDB until TMW NDB Rec'd.
TWM NDB	BFW NDB	350	48	18	Track 048 Deg. Outbound from TMW NDB until BFW NDB Rec'd.
BFW NDB	CKC NDB	358	50	54.6	Track 050 Deg. Outbound from BFW NDB until CKC NDB Rec'd.
CKC NDB	YQT VOR	114.1	58	45.4	Track 058 Deg. Outbound from CKC NDB until VQT VOR Rec'd. Begin 350 fpm decent 5 minutes after passing CKC NDB.
YQT VOR	CYQT APT.	Rwy 7	32	8.1	Land Rwy 7, Thunder Bay Apt. Field Elev.= 653 Ft.
Leg Dist= 361.0 NM					

4 Thunder Bay, Ontario Canada to Sault Ste Marie MI; CYQT to CYAM. GL-04.fsn flight plan

<u>From</u>	<u>To</u>	<u>Freq.</u>	<u>Hdg.</u>	<u>NM</u>	<u>Remarks</u>
CYQT	YTJ NDB	250	77	89.9	Tune NDB to 250.0 KHz. Dep Rwy 7, climb to 7500ft. Track 077 Deg. Outbound until YTJ NDB Rec'd.
YTJ NDB	YSP VOR	115.9	101	33.1	Track 101 Deg. Outbound from YTJ NDB until YSP VOR Rec'd.
YSP VOR	XZ NDB	205	130	76.4	Track 130 Deg. Outbound from YSP VOR until XZ NDB Rec'd. Cross XZ NDB at 6500ft.
XZ NDB	Fix 01	108.2	202	85.1	Track 202deg Outbound until ERY VOR received. When DME reads 21NM turn to 112deg.
Fix 01	CYAM Apt	109.5	112	34.7	Intercept ILS LOC and land Rwy 12 Sault Ste Marie Apt. Field Elev. 630ft.
Leg Dist= 319.3NM					

5 Sault Ste Marie, MI to Collingwood, Ontario, Canada; CYAM to CNY3. GL-05.fsn flight plan

<u>From</u>	<u>To</u>	<u>Freq.</u>	<u>Hdg.</u>	<u>NM</u>	<u>Remarks</u>
CYAM	YEL NDB	276	102	78.5	Tune NDB to 276.0 KHz. Dep Rwy 12, climb to 7500ft. Track 102deg. Outbound until YEL NDB Rec'd
YEL NDB	SB NDB	362	86	72.4	Track 086 Deg. Outbound from YEL NDB until SB NDB Rec'd.
SB NDB	CPX4 APT.		147	36.7	Track 147 Deg. Outbound from SB NDB to CPX4 Airport.
CPX4 APT.	F7 NDB	353	170	59.4	Track 170 Deg. Outbound from CPX4 Airport until F7 NDB Rec'd. Cross F7 NDB at 6500ft.
F7 NDB	YEE VOR	112.8	187	41.3	Track 187 Deg. Outbound from F7 NDB until YEE VOR Rec'd. Begin 350 fpm decent 8 minutes after passing F7 NDB.
YEE VOR	CPE7 Apt		218	13.3	Track 218deg. Outbound until CPE7 Apt sighted.
CPE7 Apt	CNY3 Apt	Rwy 31	300	9.6	Land Rwy 31, Collingwood Apt. Field Elev.=728ft.
Leg Dist = 311.2NM					

6 Collingwood, Ontario, Canada to Grosse, ILE Mun, MI; CNY3 to KONZ. GL-06.fsn flight plan

<u>From</u>	<u>To</u>	<u>Freq.</u>	<u>Hdg.</u>	<u>NM</u>	<u>Remarks</u>
CNY3 Apt	CYOS Apt		296	30.7	Dep Rwy 31, climb to 6500ft. Track 296deg. Outbound until CYOS Apt sighted.
CYOS Apt	VV NDB	326	302	15.7	Track 302 Deg. Outbound from CWOS Airport until VV NDB Rec'd.
VV NDB	CNR4 Apt		337	37.5	Track 337 Deg. Outbound from VV NDB to CNR4 Airport.
CNR4 APT.	D7 NDB	350	186	61.8	Track 186 Deg. Outbound from CNR4 Airport until D7 NDB Rec'd.
D7 NDB	GD NDB	261	199	28	Track 199 Deg. Outbound from D7 NDB until CD NDB Rec'd.
GD NDB	ZR NDB	404	211	53.1	Track 211 Deg. Outbound from CD NDB until ZR NDB Rec'd.
ZR NDB	UIZ NDB	215	249	35.9	Track 249 Deg. Outbound from ZR NDB until UIZ NDB Rec'd. Begin 350 fpm decent 13 minutes after passing ZR NDB.
UIZ NDB	DM NDB		207	28.5	Track 207 Deg. Outbound from UIZ NDB until DM NDB Rec'd.
DM NDB	KONZ Apt	Rwy 17	172	7.1	Land Rwy 17, Grosse ILE MUN Field Elev.= 591 Ft.

Leg Dist= 298.8NM

7 Grosse ILE MUN,MI to Oshawa, Ontario Canada; KONZ to CYOO. GL-07.fsn flight plan.

<u>From</u>	<u>To</u>	<u>Freq.</u>	<u>Hdg.</u>	<u>NM</u>	<u>Remarks</u>
KONZ Apt	4L NDB	236	81	49.9	Tune NDB to 236.0 KHz. Dep Rwy 4, climb to 7500ft. Track 081 Deg. Outbound until 4L NDB Rec'd.
4L NDB	7B NDB	375	65	51	Track 065 Deg. Outbound from 4L NDB until 7B NDB Rec'd..
7B NDB	B NDB	266	77	55.3	Track 077 Deg. Outbound until B NDB Rec'd
B NDB	YZD NDB	356	31	39.1	Track 031 Deg. Outbound from B NDB until YZD NDB Rec'd. begin 350 fpm descent immediately after YZD NDB.
YZD NDB	Fix 01	117.35	35	18.6	Track 035 Deg. Outbound bearing until YSO VOR Rec'd. When DME reads 14NM turn right to 121 Degs.
Fix 01	CYOO Apt	111.35	121	18.5	Land Rwy 12, Oshawa Apt. Field Elev=456ft.

Leg Dist= 239NM

8 Oshawa, Ontario Canada to Niagara Falls,NY; CYOO to KIAG. GL-08.fsn flight plan.

<u>From</u>	<u>To</u>	<u>Freq.</u>	<u>Hdg.</u>	<u>NM</u>	<u>Remarks</u>
CYOO	6M NDB	283	88	70.5	Tune NDB to 283.0 KHz. Dep Rwy 12, climb to 7500ft. Track 088 Deg. Outbound until 6M NDB Rec'd.
6M NDB	2R NDB	373	108	8.5	Track 108 Deg. Outbound from 6M NDB until 2R NDB Rec'd.
2R NDB	YGK NDB	263	84	22.9	Track 084 Deg. Outbound from 2R NDB until YGK NDB Rec'd.
YGK NDB	ART VOR	109.8	144	31.1	Track 144 Deg. Outbound from YGK NDB until ART VOR Rec'd. Cross ART VOR at 6500ft.
ART VOR	SY NDB	242	189	50.5	Track 189 Deg. Outbound from ART VOR until SY NDB Rec'd.
SY NDB	RO NDB	400	282	67.9	Track 282 Deg. Outbound from SY NDB until RO NDB Rec'd.
RO NDB	IA NDB	329	279	56.2	Track 279 Deg. Outbound from RO NDB until IA NDB Rec'd. Begin 350 fpm decent 11 minutes after passing RO NDB.
IA NDB	KIAG APT.	Rwy 28	280	4.1	Land Rwy 28R, Niagara Falls INTL, Field Elev.= 587 Ft.

Leg Dist= 311.9 NM

9 Niagara Falls,NY to Grosse ILE Mun, MI; KIAG to KONZ. GL-09.fsn flight plan.

<u>From</u>	<u>To</u>	<u>Freq.</u>	<u>Hdg.</u>	<u>NM</u>	<u>Remarks</u>
KIAG	DKK VOR	116.2	209	14.3	Tune Nav 1 to 116.2 MHz. Dep Rwy 28R, climb to 6500ft. Track 209 Deg. Outbound until DKK VOR Rec'd
DKK VOR	ER NDB	349	247	51.3	Track 247 Deg. Outbound from DKK VOR until ER NDB Rec'd
ER NDB	GF NDB	521	251	61.1	Track 251 Deg. Outbound from ER NDB until GF NDB Rec'd.
GF NDB	CL NDB	344	244	26.3	Track 244 Deg. Outbound from GF NDB until CL NDB Rec'd.
CL NDB	PCW NDB	423	291	42.1	Track 291 Deg. Outbound from CL NDB until PCW NDB Rec'd.
PCW NDB.	48R Apt		335	29.4	Track 335 Deg. Outbound from PCW NDB until Mills Field 48R sighted. Begin 350 fpm descent 3 minutes after passing PCW NDB.
48R Apt	KONZ	Rwy 4	46	6.6	Land Rwy 4, Grosse ILE MUN, Field Elev.= 591 Ft.
Leg Dist= 262.7 NM					

10 Grosse ILE Mun, MI to Alpena Co. Reg, MI; KONZ to KAPN. GL-10.fsn flight plan.

<u>From</u>	<u>To</u>	<u>Freq.</u>	<u>Hdg.</u>	<u>NM</u>	<u>Remarks</u>
KONZ	DE NDB	338	13	24.3	Tune NDB to 338.0 KHz. Dep Rwy 4, climb to 7500ft. Track 013 Deg. Outbound until DE NDB Rec'd.
DE NDB	PH NDB	332	52	30.3	Track 052 Deg. Outbound from DE NDB until PH NDB Rec'd. Cross PH NDB at 6500ft.
PH NDB	ECK VOR	114	354	25.3	Track 345 Deg. Outbound from PH NDB until ECK VOR Rec'd.
ECK VOR	BAX VOR	108.2	346	33.7	Track 346 Deg. Outbound from ECK VOR until BAX VOR Rec'd.
BAX VOR	HYX NDB	385	246	43.4	Track 246 Deg. Outbound from BAX VOR until HYX NDB Rec'd.
HYX NDB	BHW NDB	236	354	50	Track 354 Deg. Outbound from HYX NDB until BHW NDB Rec'd. Cross BWH NDB at 7500ft.
BHW NDB	ASP VOR	116.1	74	31.9	Track 074 Deg. Outbound from BHW NDB until ASP VOR Rec'd. Begin 350 fpm descent 2 minutes before passing ASP VOR.
ASP VOR	AP NDB	206	353	31.5	Track 353 Deg. Outbound from ASP VOR until AP NDB Rec'd.
AP NDB	KAPN APT.	Rwy 1	5	6.3	Land Rwy 1, Alpena Co. Reg, Field Elev.= 689 Ft.
Leg Dist= 276.7 NM					

11 Alpena Co. Reg, MI to Mason Co, MI; KAPN to KLDM GL-11.fsn flight plan

<u>From</u>	<u>To</u>	<u>Freq.</u>	<u>Hdg.</u>	<u>NM</u>	<u>Remarks</u>
KAPN	PZQ NDB	215	338	23.1	Tune NDB to 215.0 KHz. Dep Rwy 1, climb to 6500ft. Track 338 Deg. Outbound until PZQ NDB Rec'd.
PZQ NDB	PLN VOR	111.8	296	38	Track 296 Deg. Outbound from PZQ NDB until PLN VOR Rec'd.
PLN VOR	CVX NDB	222	237	32	Track 237 Deg. Outbound from PLN VOR until CVX NDB Rec'd.
CVX NDB	TV NDB	365	196	34.8	Track 196 Deg. Outbound from CVX NDB until TV NDB Rec'd.
TV NDB	Y04 APT.		307	19.5	Track 307 Deg. Outbound from TV NDB to Y04 airport.
Y04 APT.	MBL VOR	111.4	208	42.3	Track 208 Deg. Outbound from Y04 airport until MBL VOR Rec'd. Begin 350 fpm decent 13 minutes after passing Y04 Apt.
MBL VOR	Fix 01		192	17.1	Track 192 deg Outbound from MBL VOR until DME reads 17NM, then turn right to 254 Deg.
Fix 01	KLDM APT.	Rwy 25	254	5	Land Rwy 25, Mason Co., Field Elev.= 643 Ft.
Leg Dist= 212.0NM					

12 Mason Co. MI to Meigs Field, IL; KLDM to KCGX

GL-12.fsn flight plan

From	To	Freq.	Hdg.	NM	Remarks
KLDM	MK NDB	219	171	51.4	Tune NDB to 219.0 KHz. Dep Rwy 25, climb to 7500ft. Cross MK NDB at 6500ft. Track 171 Deg. Outbound until MK NDB Rec'd.
MK NDB	HLM NDB	233	182	19.4	Track 193 Deg. Outbound from MK NDB until HLM NDB Rec'd.
HLM NDB	BE NDB	397	193	40.8	Track 193 Deg. Outbound from HLM NDB until BE NDB Rec'd.
BE NDB	MGC NDB	203	224	33.7	Track 224 Deg. Outbound from BE NDB until MGC NDB Rec'd.
MGC NDB	GY NDB	236	253	24.2	Track 253 Deg. Outbound from MGC NDB until GY NDB Rec'd. Begin 350 fpm decent 5 minutes after passing MGC NDB.
GY NDB	Fix 01		315	17.3	Track 315 Deg. Outbound. Follow coast until Meigs sighted.
Fix 01	KCGX		360	5NM	Land Rwy 36, Meigs Field. Field Elev = 591 ft.
Leg Dist = 190.7NM					