

Sample BSW risk assessment

Risk rating: Likelihood (outcome)

	Less Significant Injury	Significant Injury	Major Injury
Unlikely	Minor Risk	Low Risk	Medium Risk
Possible	Low Risk	Medium Risk	High Risk
Probable	Medium Risk	High Risk	STOP

Risk level: Action and Timescales

Low Consider if the risk can be reduced further. Monitoring is required to ensure that the controls are maintained.

Medium Risk reduction measures should be implemented with a defined period.

High Give priority to removing or reducing the risk urgent action should be taken.

STOP Work activity should not be started or continued until the risk has been removed or at least reduced.h

School:	UTC South Durham	Group Leader:	Ian Neal/Steve Brain/Mike Donnelly
Activity/Visit:	British Science Week – Radio station	Date of Visit:	12 March 2024 (tbc)
Educational /Visit Objectives:	To introduce students to amateur radio, leading to a licence for some.		

Potential Hazard	Who might be harmed	What are you doing already?	Current Risk Level	Any further action by whom and when	Review Date	New Risk Level
HF burns from antenna	Anyone	EMF (ICNIRP) “worst case” analysis (attached) shows that there should be a 2.5m exclusion zone around the antenna at ground level.	Medium	<ol style="list-style-type: none"> 1. There should be no-one in the area where the antenna is erected 2. The exclusion zone itself will be enforced strictly by tape and observation – transmitting will be stopped if anyone is seen to enter the zone. 	20/1/24	Minor
Antenna erection	Those students involved	<p>The antenna is pre-constructed so will need no soldering or cutting of wires. It just needs to be erected. Strict instructions will be given to students before they begin the erection of the antenna covering:</p> <ul style="list-style-type: none"> • working with wires; • risk of manual handling a big ungainly item; • where to stand to be safe. 	Medium	<p>Observation by staff, including enforcement of instructions and close observation as the antenna goes up – the most hazardous part of the operation.</p> <p>While the antenna is not heavy, it is very ungainly because of its length.</p>	20/1/24	Low

Antenna fall or collapse	Anyone nearby	The antenna will be erected according to its operating instructions, including correct guying and “anti-collapse” fixings.	Medium	There should be no-one in the area where the antenna is erected. This will be enforced by observation during use.	20/1/24	Minor
Trip hazard – connecting cables. There will be lots of connecting cables on the equipment, including mains and low voltage (12V)	Anyone		Medium	Cabling will be kept tidy – this will be a session learning point.	20/1/24	Minor
Trip hazard - Main antenna cable	All those involved	There will be a 30m cable running from the room being used for the session to the antenna.	Low	<ol style="list-style-type: none"> 1. The cable will be running “loose” and will be easily seen. 2. There should be no-one in the area where the cable is running 	20/1/24	Minor
Electric shock	All those operating	The equipment all runs at low voltage (12v or less). The only unit running at mains voltage is the power supply which will need to be PAT tested before use in school.	Low	PAT testing of power supply which reduces mains to c.12V (carried out and certified 25/1/24).	25/1/24	Minor



Completed by	Ian Neal	Approved by	
Role	Trustee	Role	
Signature	Ian Neal	Signature	
Date	20/1/24	Date	

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EMF Calculator Results

Ian Neal M0KEO

DX Commander 10m FT8

Radio

Band	10m
Frequency	28.9MHz
Transmit mode	FT8
Mode factor	42% (-3.8dB)
Transmitter power	100W (20dBW)
Transmit % in 6 minutes	50% (-3dB)
Average power from transmitter	21W (13.2dBW)
Peak power from transmitter	100W (20dBW)

Feeder

Cable type	M&P Ultraflex 7
Loss per 100m	-3dB
Cable length	30m
Feeder loss	-0.9dB
Second feeder losses	0dB
Other losses	0dB
Average power into antenna	17.1W (12.3dBW)
Peak power into antenna	81.3W (19.1dBW)

Antenna

Antenna type	Quarter wave vertical
Antenna gain	3.2 (5dBi)
Mainlobe EIRP	54W (17.3dBW)
Antenna polarization	Vertical
Height of antenna	0m
Directivity factor	0dB
Average EIRP	54W (17.3dBW)
Peak EIRP	257W (24.1dBW)



Further assessment required (average power >10W or peak power >100W EIRP)

Please use one of the methods below

ITU-T K.52

ICNIRP 1998 limits

Compliance distance	2.3m
Vertical separation	0m
Required horizontal separation	2.3m

ITU-T K.52

ICNIRP 2020 limits

Compliance distance	2.3m
Vertical separation	0m
Required horizontal separation	2.3m