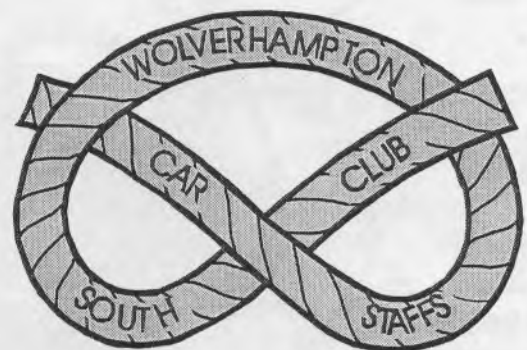


The Bulldog Rally

23rd OCTOBER 2004

MANAGEMENT PACK



CONTENTS

	PAGE
□ SHREWSBURY MAP	2
□ MANAGEMENT CAR ROUTE MAP	3
□ TULIP MANAGEMENT ROUTE AND SERVICE AREA MAPS	4
□ SERVICE VAN ROUTE MAP	13
□ NOTES FOR SERVICE CREWS, SERVICING & SERVICE AREAS	14
□ RALLY ROUTE BY MAP REFERENCE	16
□ STAGE MAPS	17

SHREWSBURY

Not to Scale

ALBRIGHTON HALL HOTEL
RALLY HQ, DOCUMENTATION
REFRESHMENTS, RESULTS,
PRIZEGIVING

From Stage 9
(Not service)

LIVESTOCK MARKET
NOISE CHECK
SCRUTINEERING
TRAILER PARK
FINISH

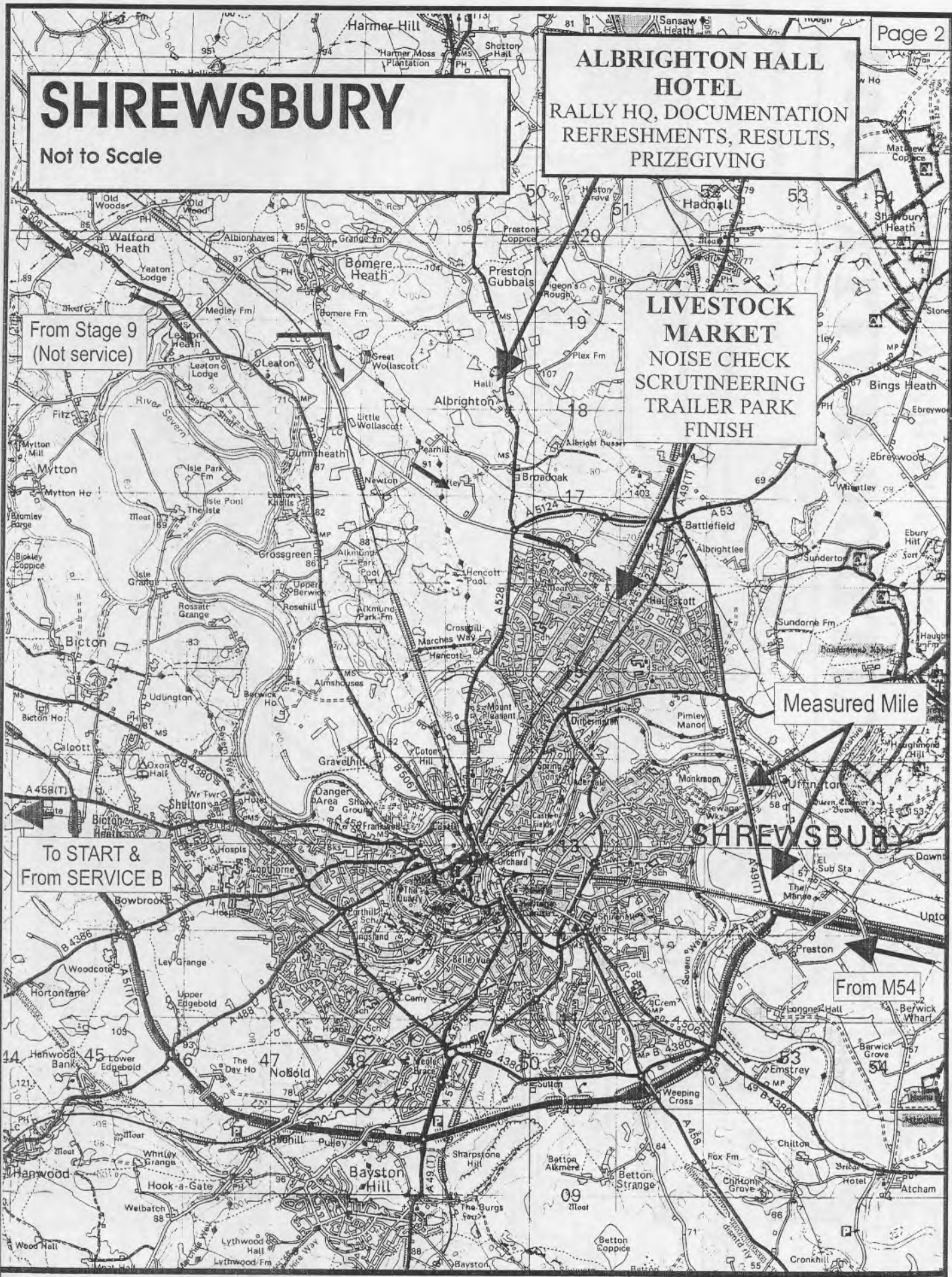
Measured Mile

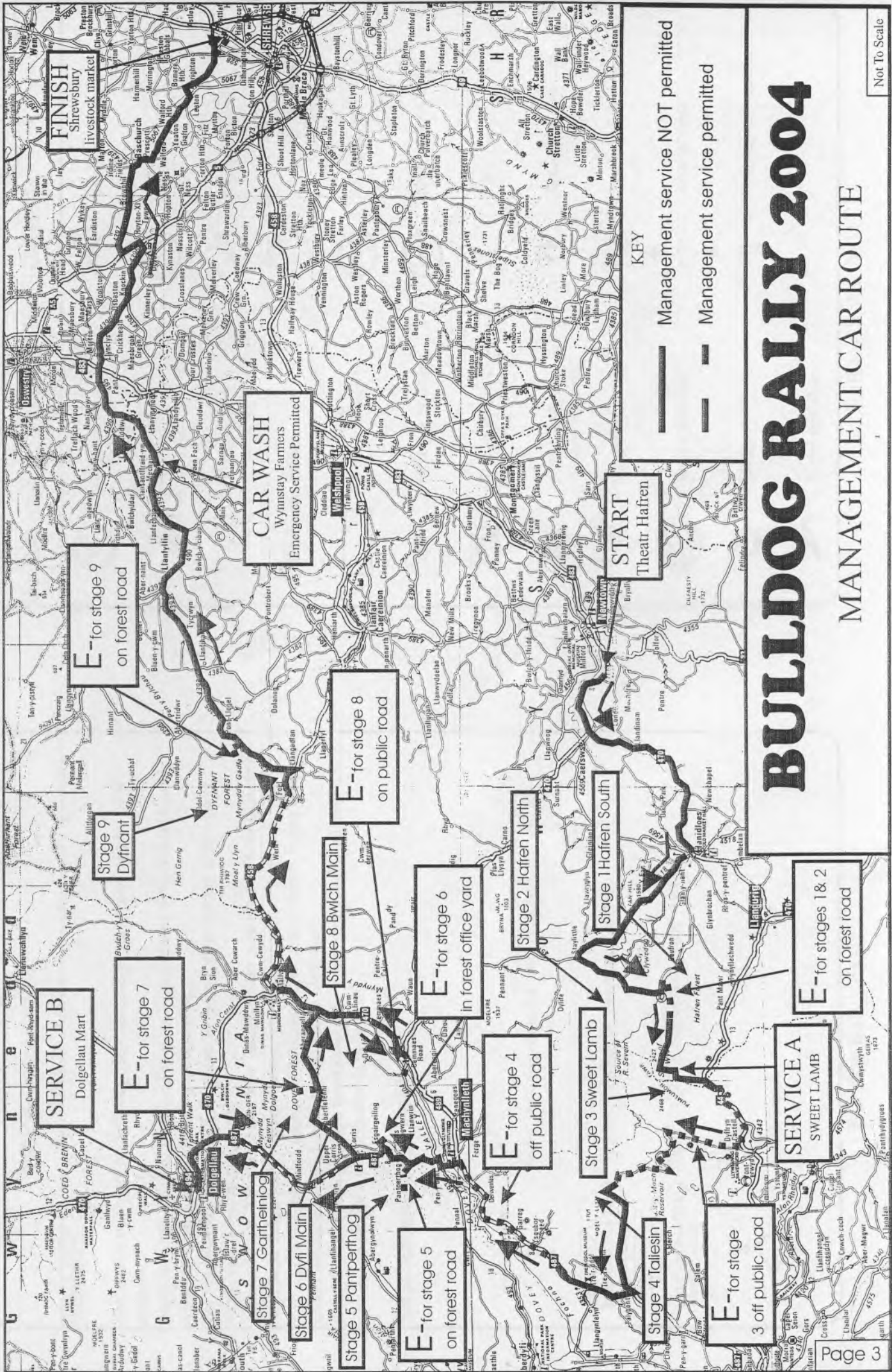
To START &
From SERVICE B

From M54

SHREWSBURY

BULLDOG RALLY 2004





Not To Scale

KEY

— Management service NOT permitted

- - - Management service permitted

BULLDOG RALLY 2004

MANAGEMENT CAR ROUTE

SERVICE A
SWEET LAMB

E- for stages 1 & 2
on forest road

Stage 1 Hafren North

Stage 3 Sweet Lamb

E- for stage 4
off public road

E- for stage 6
in forest office yard

Stage 8 Bwch Main

E- for stage 8
on public road

CAR WASH
Wymstay Farmers
Emergency Service Permitted

E- for stage 9
on forest road

SERVICE B
Dolgellau Mart

E- for stage 7
on forest road

Stage 9
Dyfnant

Stage 6 Dyfl Main

E- for stage 5
on forest road

E- for stage
3 off public road

Stage 4 Ialiesin


START
Theatr Hafren

FINISH
Shrewsbury
livestock market

Introduction

The Road book describes the management car route for the whole rally by 'tulip' diagrams.
 Junctions where the route is obvious have not been included, drivers should simply continue on the road on which they are travelling.
 The names quoted as appearing on a sign posts were those present at the time of survey and cannot be guaranteed.
 All speed limits, 'Give Way' and 'Stop' junctions have been shown. Please observe them as the Police know you are coming.
 Please drive carefully and quietly on Public roads, especially near to forests as they are narrow and there are local residents who will be using them.
 A **thick black line in the right hand side** of the information column indicates that Emergency service is **not** permitted in these areas.



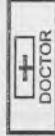
















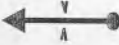



Key to symbols used in the Road Book

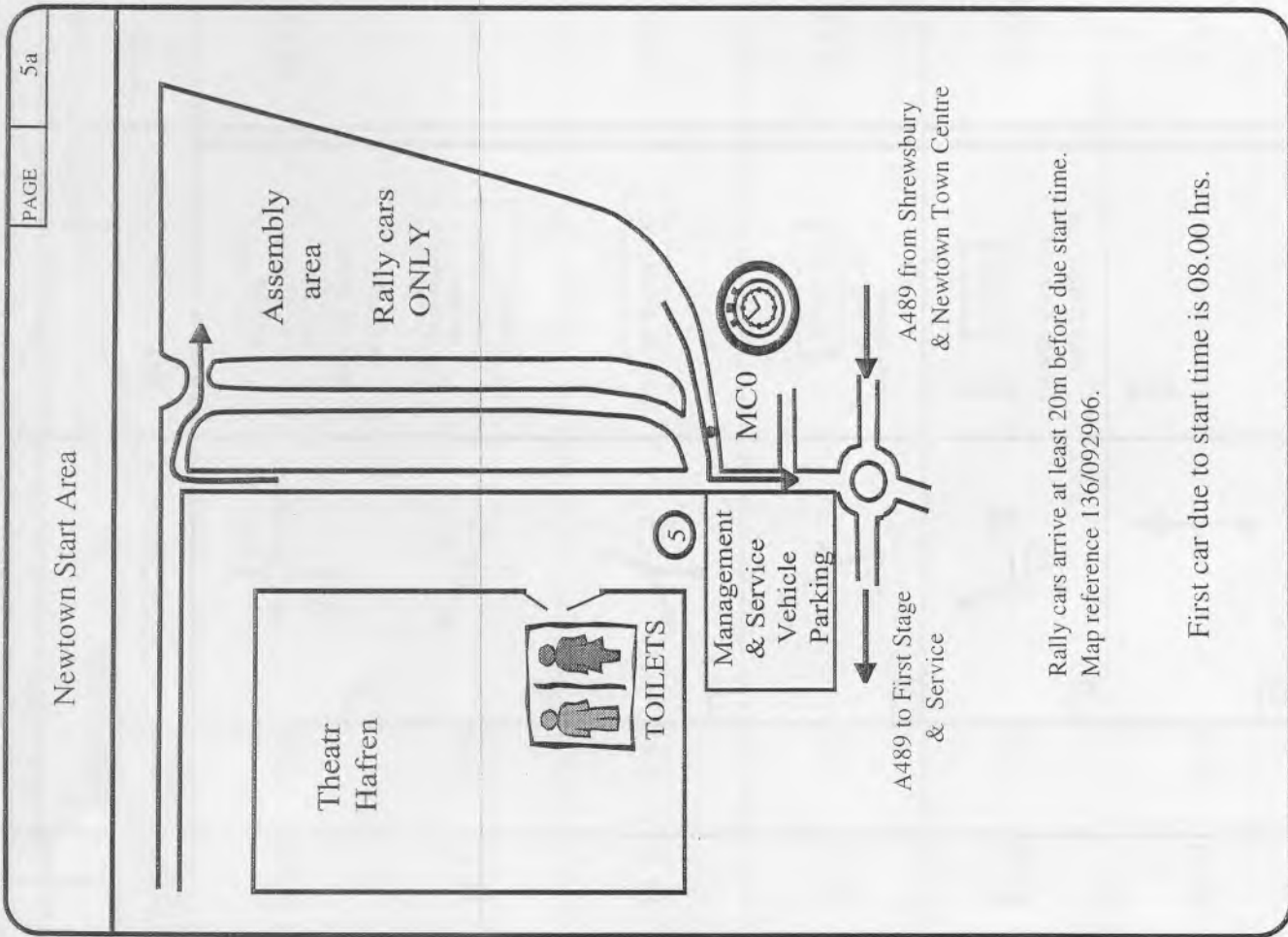
 Tulip'. Approach from dot. Depart towards arrowhead.

 Sign Post - Enclosing directions to follow.
 DOLGELLAU
 MACHYNLLETH
 B4381(A458)







 Sign Post - Enclosing directions **not** to follow.
 DOLGELLAU
 MACHYNLLETH
 B4381(A458)

 Traffic Island.










	Radio Point		Service
	Doctor		Time Control
	Traffic Lights		Passage Control
	Bridge		Stage Start Control
	Village or Town		Flying finish
	House or building		Stage Finish Control
	Telephone kiosk		Care
	Speed limit in miles per hour		Great Care
	Give Way to main road		Extreme Care
	Stop at junction		Brow or crest
	No Entry		Two way rally traffic
	Petrol available		



NEW TOWN		DIRECTION	INFORMATION	MILES to TC
Start	PAGE			
TO SWEET LAMB		DIRECTION	INFORMATION	MILES to TC
MILES	DISTANCE			
TOTAL	INTERVAL			
0.00	0.00		Start	30.57
0.03	0.03		Llangurig (A470) Machynlleth A489	30.54
4.42	4.39		A470 LLANIDLOES LLANGURIG ABERYSTWYTH (A44)	26.15
6.20	1.78		LLANDINUM	24.37
11.72	5.52		LLANIDLOES B4518 Slow and quiet through Llanidloes.	18.85

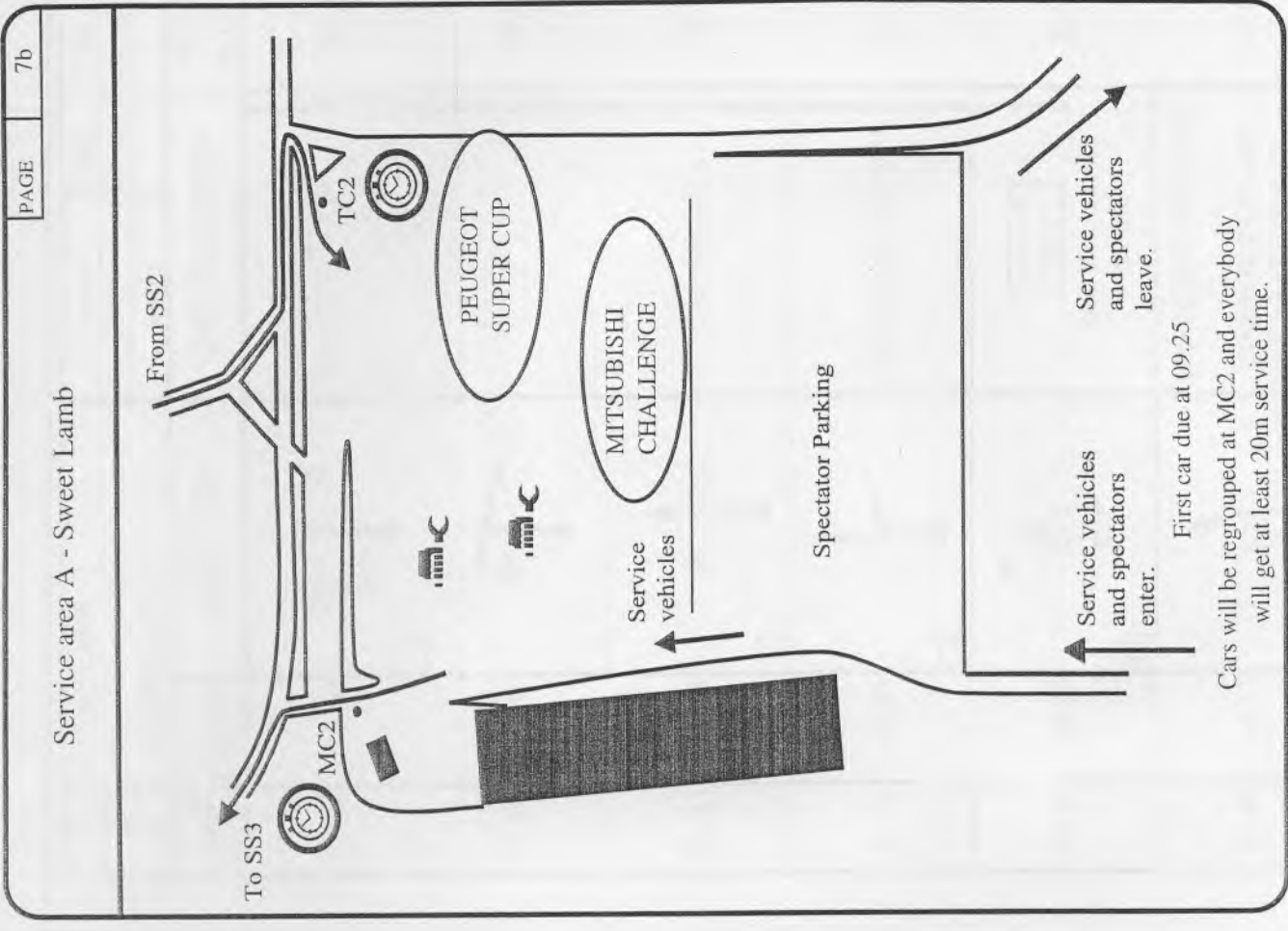
NEW TOWN TO SWEET LAMB		Start	PAGE	6a
		Service A	DISTANCE	30.57 MILES
MILES		INFORMATION		
TOTAL	INTERVAL	DIRECTION		
12.28	0.56		Staylittle Penfordd Las B4518 DO NOT follow rally car!	18.29
12.37	0.09		Penfordd Las Staylittle Llanbrynmair B4518	18.20
19.71	7.34		LLWYNYGOG	10.86
20.13	0.42		LLWYNYGOG Slow and quiet past village please.	10.44
21.48	1.35		HAFREN CARE! Two way rally traffic	9.09
22.23	0.75		No signpost our way	8.34

Bulldog Rally 2004

NEW TOWN TO SWEET LAMB		Start	PAGE	6b
		Service A	DISTANCE	30.57 MILES
MILES		INFORMATION		
TOTAL	INTERVAL	DIRECTION		
22.28	0.05			8.29
24.73	2.45		SEVERN WAY Onto gravel.	5.84
24.89	0.16			5.68
24.97	0.08		Emergency service for 0.5 miles - CARE! Rally cars approach	5.60
25.43	0.46		E service for 0.3 miles to left - CARE! Rally cars approach. Follow arrows to E service 2	5.14
26.77	1.34			3.80

Bulldog Rally 2004

NEW TOWN TO SWEET LAMB		Start	PAGE	7a
MILES		DISTANCE 30.57 MILES		
TOTAL	INTERVAL	INFORMATION		
28.24	1.47			2.33
28.57	0.33		START OF EMERGENCY SERVICE Care - two way rally traffic.	2.00
30.03	1.46			0.54
30.31	0.28			0.26
30.51	0.20			0.06
30.57	0.06		Enter SERVICE A - DO NOT STOP IN CONTROL AREA	0.00

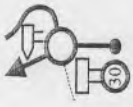
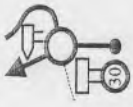












SWEET LAMB TO DOLGELLAU		Service A	PAGE	8a
		Service B	DISTANCE	50.52 MILES
MILES		INFORMATION		MILES to TC
TOTAL	INTERVAL			
			Leave Service A - follow arrows to public road	
			Zero Trip at public road	50.52
0.00	0.00		CARE - rally cars from right - DO NOT PARK! Start of emergency service	47.72
2.80	2.80		EMERGENCY SERVICE	43.30
7.22	4.42		NANT Y MOCH DO NOT PARK ON CARRIAGEWAY	33.79
16.73	9.51		End of emergency service Continue on tarmac - DO NOT FOLLOW RALLY CAR	29.09
21.43	4.70			



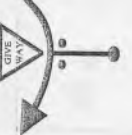
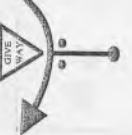








Bulldog Rally 2004

SWEET LAMB TO DOLGELLAU		Service A	PAGE	8b
		Service B	DISTANCE	50.52 MILES
MILES		INFORMATION		MILES to TC
TOTAL	INTERVAL			
21.93	0.50		TAL Y BONT	28.59
21.98	0.05			28.54
23.33	1.35		TRE TALLIESIN	27.19
26.78	3.45		Rally cars from right - DO NOT PARK	23.74
27.73	0.95		FFWRNAIS FURNACE Start of emergency service	22.79
31.86	4.13		EMERGENCY SERVICE DO NOT PARK ON CARRIAGEWAY	18.66

Bulldog Rally 2004

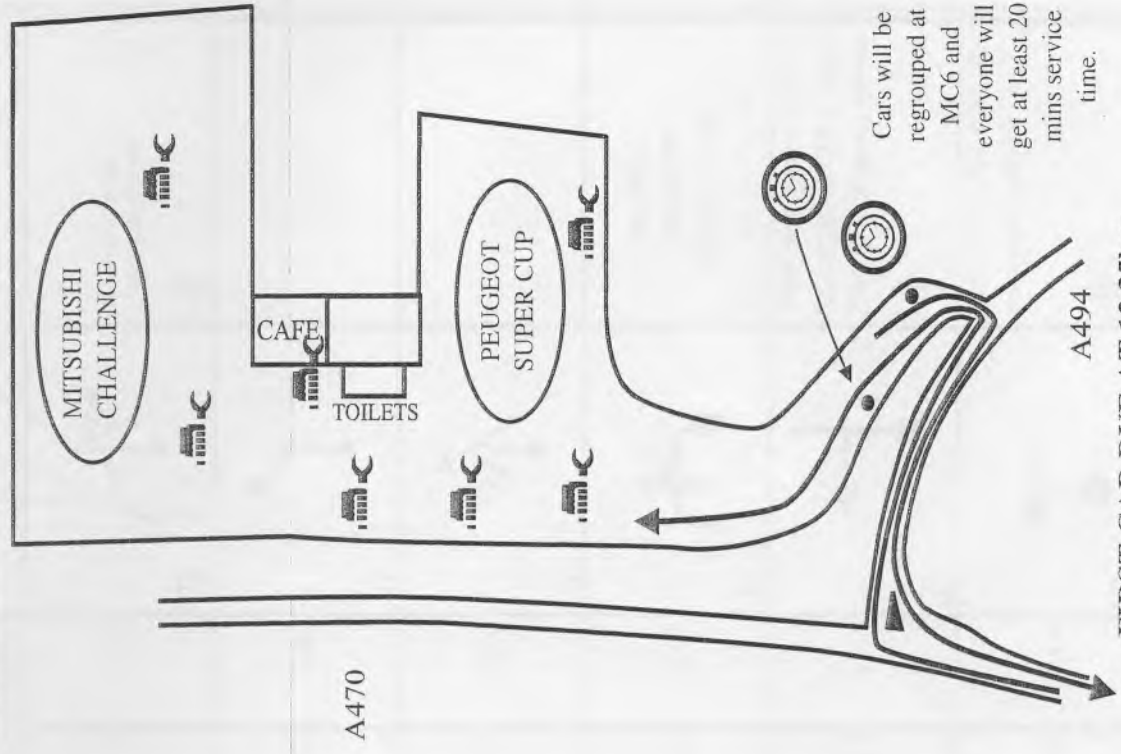
SWEET LAMB TO DOLGELLAU		Service A	PAGE	9a
		Service B	DISTANCE	50.52 MILES
MILES		INFORMATION		
TOTAL	INTERVAL	DIRECTION		
		MILES to TC		
33.60	1.74			16.92
		Dolgellau A487 Drenewydd Newtown A489 Machynlleth		
33.77	0.17			16.75
		Machynlleth Mini Roundabouts		
34.70	0.93			15.82
		DOLGELLAU A487(A470)		
34.88	0.18			15.64
36.57	1.69			13.95
		PANTPERTHOG Onto gravel.		
36.83	0.26			13.69
		Emergency service along exit road from stage. Do not block exit road.		

Bulldog Rally 2004







SWEET LAMB TO DOLGELLAU		Service A	PAGE	9b
		Service B	DISTANCE	50.52 MILES
MILES		INFORMATION		
TOTAL	INTERVAL	DIRECTION		
		MILES to TC		
36.83	0.00			13.69
			Emergency service allowed. Do not block entrance or exit. Return with rally car to road after E5	
37.08	0.25			13.44
			Onto asphalt.	
38.84	1.76			11.68
			DO NOT FOLLOW RALLY CAR ESGAIRGEILIOG CEINWS	
38.97	0.13			11.55
			EMERGENCY SERVICE IN FORESTRY YARD	
38.97	0.00			11.55
			Emergency service allowed in forest office yard.	
39.10	0.13			11.42

Bulldog Rally 2004







Service area B - Dolgellau









SWEET LAMB TO DOLGELLAU		Service A	PAGE	10a
MILES		Service B	DISTANCE	50.52 MILES
TOTAL	INTERVAL	INFORMATION		MILES to TC
41.19	2.09	↕		9.33
47.57	6.38	DOLGELLAU A470 ↕		2.95
50.42	2.85	BALA A494 ↕		0.10
50.52	0.10	ENTER SERVICE B DO NOT STOP IN CONTROL AREA ↕		0.00

Dolgellau TO Emergency service 9		Service B Stage 9		PAGE DISTANCE 43.05 MILES		11a MILES TO TC	
MILES INTERVAL		DIRECTION		INFORMATION		MILES TO TC	
0.00	0.00		Service B Zero trip as joining public road.	0	43.05	↕	
0.08	0.08		MACHYNLLETH (A487) LLANGURIG A470	1	42.97	↕	
0.73	0.65			2	42.32	↕	
2.93	2.20		MACHYNLLETH A487	3	40.12	↕	
8.64	5.71		Slow and quiet through CORRIS UCHAF	4	34.41	↕	
9.31	0.67		CANOLFAN AIGRCHU RECYCLING CENTRE	5	33.74	↕	


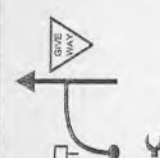




Bulldog Rally 2004

Dolgellau TO Emergency service 9		Service B Stage 9		PAGE DISTANCE 43.05 MILES		11b MILES TO TC	
MILES INTERVAL		DIRECTION		INFORMATION		MILES TO TC	
9.41	0.10		6	Slow and quiet, very narrow road.	33.64	↕	
10.27	0.86		7		32.78		
10.37	0.10		8		32.68		
13.80	3.43		9	DO NOT FOLLOW RALLY CAR	29.25		
14.95	1.15		10	Turn on to gravel road - ignore NO ENTRY sign - Start of emergency service	28.10	↕	
14.95	0.00		11	Return to public road after emergency service	28.10	↕	

Bulldog Rally 2004







Dolgellau TO Emergency service 9		Service B	12a
Emergency service 9		Stage 9	DISTANCE 43.05 MILES
MILES		MILES to TC	
TOTAL	INTERVAL		
15.16	0.21		27.89
16.45	1.29		26.60
16.85	0.40		26.20
17.50	0.65		25.55
17.91	0.41		25.14
21.75	3.84		21.30
		ABERANGELL DO NOT FOLLOW RALLY CAR	
		CARE SPECTATORS!	
		MACHYNLLETH A489	

Bulldog Rally 2004






Dolgellau TO Emergency service 9		Service B	12b
Emergency service 9		Stage 9	DISTANCE 43.05 MILES
MILES		MILES to TC	
TOTAL	INTERVAL		
22.12	0.37		20.93
22.12	0.00		20.93
22.49	0.37		20.56
23.92	1.43		19.13
25.05	1.13		18.00
28.58	3.53		14.47
		EMERGENCY SERVICE for 0.5 miles from junction DO NOT PARK ON CARRIAGEWAY	
		NEW TOWN WELSHPOOL A489 RETURN TO MAIN ROAD	
		DOLGELLAU A470 WELSHPOOL TRALLWNG (A458)	
		CWMLLINAU	
		TRALLWNG WELSHPOOL A458	

Bulldog Rally 2004

		Dolgellau		Service B		PAGE		13	
		TO		Stage 9		DISTANCE		43.05 MILES	
		Emergency service 9							
		MILES		DIRECTION		INFORMATION		MILES to TC	
TOTAL	INTERVAL								
37.82	9.24			FOEL		5.23			
37.95	0.13			Continue straight on - DO NOT FOLLOW RALLY CAR		5.10			
39.20	1.25			LLANFYLLIN B4395		3.85			
40.90	1.70					2.15			
42.45	1.55			PARC LLWYDIARTH		0.60			
43.05	0.60			Start of emergency service for 0.25 miles PARC LLWYDIARTH		0.00			

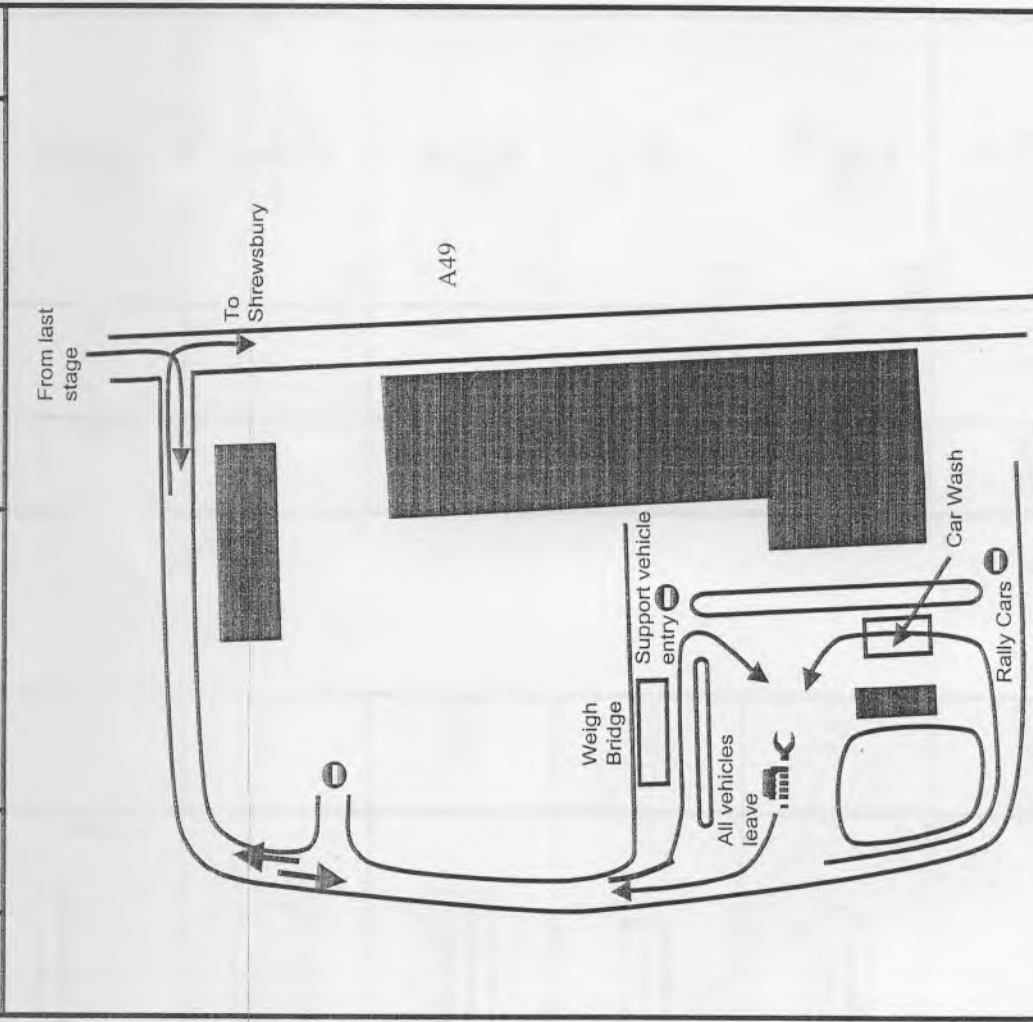
Emergency service 9		Stage 9	PAGE	14a
TO		Finish	DISTANCE	38.41 MILES
Shrewsbury				
MILES	DIRECTION		INFORMATION	MILES to TC
	TOTAL	INTERVAL		
-	-		Return to public road	-
0.00	0.00		ZERO TRIP AT PUBLIC ROAD	38.41
0.19	0.19			38.22
0.90	0.71		DO NOT STOP IN CONTROL	37.51
8.26	7.36		Llanfyllin A490	30.15
8.52	0.26		LLANFYLLIN	29.89

Bulldog Rally 2004

Emergency service 9		Stage 9	PAGE	14b
TO		Finish	DISTANCE	38.41 MILES
Shrewsbury				
MILES	DIRECTION		INFORMATION	MILES to TC
	TOTAL	INTERVAL		
11.00	2.48		Llansantffraid -ym-Mechain B4393	27.41
12.41	1.41		LLANFECHAIN	26.00
14.44	2.03		LLANSANTFFRAID -YM-MECHAIN	23.97
14.62	0.18		Meifod Dolgelu Maekynlleth	23.79
14.68	0.06		WYNNSTAY Turn right into Wynnstay plc for emergency service OR straight on to Shrewsbury & FINISH	23.73

Bulldog Rally 2004

TO	Emergency service 9	Stage 9	PAGE	15
	Shrewsbury	Finish	DISTANCE	38.41 mls



Emergency Service & Car Wash
 - Wynnstay Farmers plc



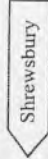


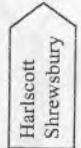
Bulldog Rally 2004

Emergency service 9		Stage 9	PAGE	16a
TO		Finish	DISTANCE	38.41 MILES
Shrewsbury				
MILES	DIRECTION	INFORMATION	MILES to TC	
			TOTAL	INTERVAL
0.00		Leave Wymstay plc. Zero trip as joining public road.	0.00	0.00
3.03		Oswestry A495 (A483) Shrewsbury	3.03	3.03
5.13		Knockin B4396 Shrewsbury (A5)	2.10	2.10
8.46		KNOCKIN	3.33	3.33
10.80		Dovanston Kimberley	2.34	2.34
11.10			0.30	0.30


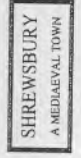




Bulldog Rally 2004

Emergency service 9		Stage 9	PAGE	16b
TO		Finish	DISTANCE	38.41 MILES
Shrewsbury				
MILES	DIRECTION	INFORMATION	MILES to TC	
			TOTAL	INTERVAL
11.59		SHOTATTON CROSSROADS	0.49	0.49
11.86		Ruyton XI Towns Baschurch B4397	0.27	0.27
13.41		RUYTON XI TOWNS	1.55	1.55
13.74			0.33	0.33
13.84			0.10	0.10
14.60			0.76	0.76

Bulldog Rally 2004

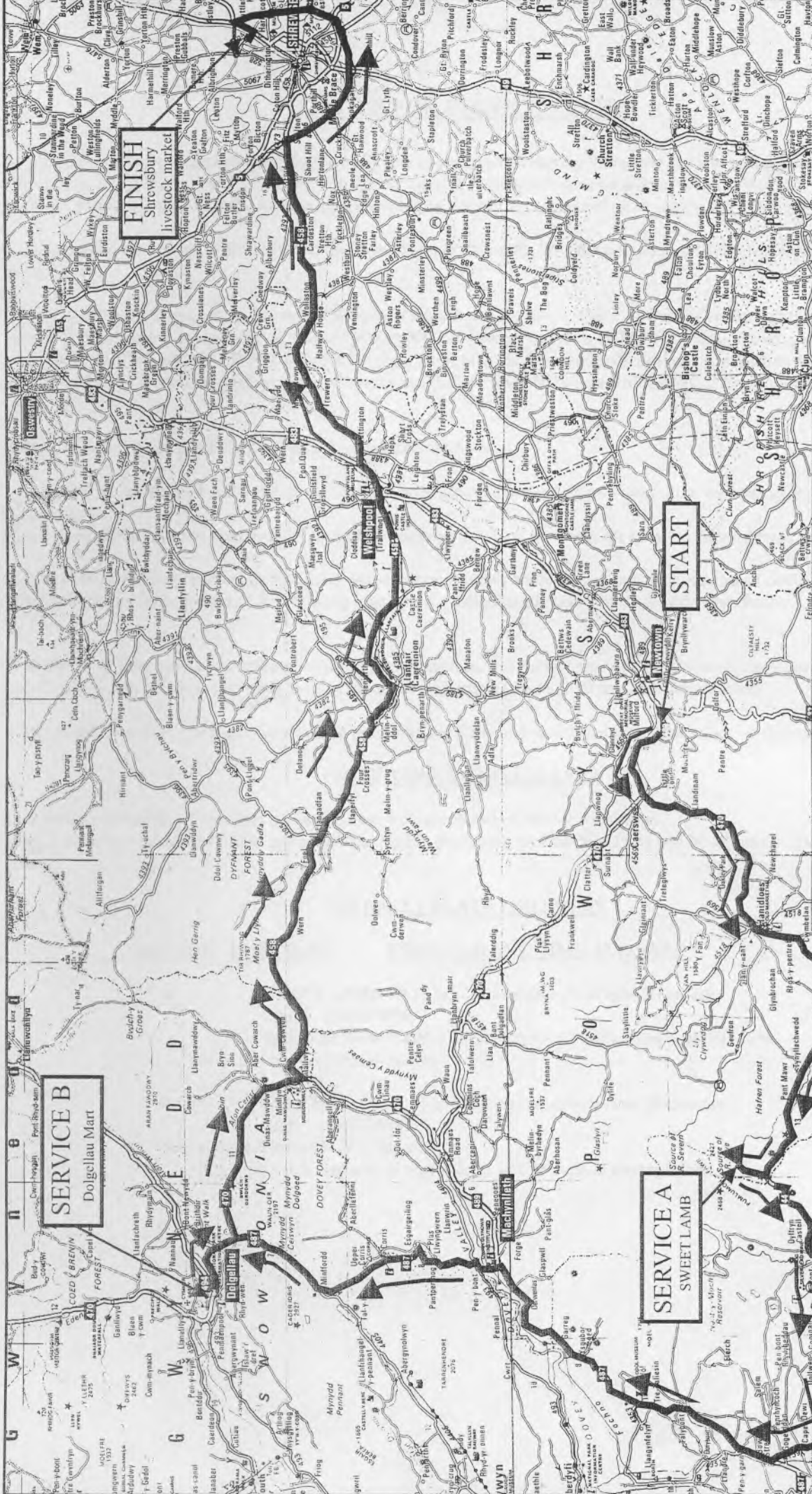
Emergency service 9		17a	
TO		PAGE	
Shrewsbury		DISTANCE 38.41 MILES	
MILES		INFORMATION	
INTERVAL		DIRECTION	
TOTAL		MILES to TC	
15.75	1.15		7.98
16.08	0.33		7.65
16.89	0.81		6.84
20.03	3.14		3.70
20.49	0.46		3.24
20.60	0.11		3.13

Bulldog Rally 2004

Emergency service 9		17b	
TO		PAGE	
Shrewsbury		DISTANCE 38.41 MILES	
MILES		INFORMATION	
INTERVAL		DIRECTION	
TOTAL		MILES to TC	
22.67	2.07		1.06
22.79	0.12		0.94
23.14	0.35		0.59
23.59	0.45		0.14
23.65	0.06		0.08
23.73	0.08		0.00

Bulldog Rally 2004

Cattle Market -
**FINISH DO NOT
GO THROUGH
CONTROL**



BULLDOG RALLY 2004

SERVICE ROUTE

SERVICE B
Doigellau Mart

SERVICE A
SWEET LAMB

NOTES FOR SERVICE CREWS

Read these instructions carefully, and exercise care and courtesy when driving through towns and villages on route. Each registered Service Vehicle is issued with a Rally Service Plate which must be affixed to the vehicle's windscreen. This plate will bear the letter 'S' and a number corresponding to that of the competitor receiving the Service Pack where practical.

Each Management vehicle will have similar plate but bearing the prefix 'M', to be fixed to the vehicle and be on display at all times.

Service Crews and Management Crews **MUST** follow the instructions given regarding Service Areas and the route between them. Any Competitor whose Service or Management Vehicle is *observed* in an OUT OF BOUNDS area will be penalised 10 minutes for the first offence and by EXCLUSION from the results for the second offence; any Competitor *receiving assistance* from a Service or Management Vehicle in an OUT OF BOUNDS area will be EXCLUDED on the **first offence** (see Art.17.8).

All the above vehicles will be allowed into the main Service Area.

Time Controls are situated at the exit of each main service area and service crews must follow the instructions of marshals at these controls.

Regrouping will operate in service areas A and B, to close up any gaps and keep the rally together as much as possible.

Judges of Fact will be patrolling the road sections and service crews are reminded that their associated competing car may be penalised for any infringement of the servicing regulations - including excessive noise, bad driving manners, etc. (see Art. 17.6).

In the event of their competitor retiring within a special stage, service crews may wait at the start of the stage until it closes and they will then be allowed to enter to retrieve the car under the instruction of the stage commander.

As usual the various Police Authorities will be observing the Rally and speed checks may be expected during the event.

SERVICING & SERVICE AREA

Competitors are reminded that they are responsible for the conduct of their service crews.

ONLY vehicles registered with the organisers and visibly displaying their Service Plate will be allowed to enter the service area.

NO RALLY PLATE - NO ENTRY

<u>SERVICE</u>	<u>LOCATION</u>	<u>FIRST CAR DUE TIME ALLOWED</u>
A	SWEET LAMB	09.25 hrs. Minimum service time 20 minutes Entry - 135/840828 Service in Sweet Lamb rally complex – follow arrows to service area. N.B. Limited facilities available.
B	DOLGELLAU	12.35 hrs. Minimum service time 20 minutes Entry - 124/735181 1/2 Servicing in Farmers Mart complex. Hot food and drinks will be available as well as male & female toilets.

The designated SERVICE ROUTE

Start to Sweet Lamb

A487 from Newtown to Caersws
A470 from Caersws to Llangurig
A44 Llangurig to Sweet Lamb

Sweet Lamb to Dolgellau

A44 & A4159 from Sweet Lamb to Bow Street
A487 from Bow Street & Machynlleth to Cross Foxes
A470 from Cross Foxes to junction A494
A494 from A470 to Farmers Mart

Dolgellau to Shrewsbury

A494 from Farmers Mart to A470
A470 from junction A494 to Mallwyd
A458 from Mallwyd to Welshpool & A5 at Shrewsbury A5 east from A458 to A49
A49 from A458 to Battlefield roundabout then to finish.

SUMMARY OF COMPETITOR'S RALLY MILEAGES

<u>Rally Section</u>	<u>Road Miles</u>	<u>Stage Miles</u>	<u>No. Of Stages</u>
Start to Service A	26	21	2
Service A to Service B	44	26	4
Service B to Finish	76	29	3

MANAGEMENT SERVICE

Regulation Article 17.2. Each Service or Management Vehicle must be registered with the Organisers, giving its vehicle registration number, before an official plate is issued for it. The use of a Service or Management plate on a vehicle not previously registered with the Organisers is an offence for which a penalty up to **EXCLUSION** may be applied.

Article 17.4 Emergency servicing will be permitted on the Bulldog and Bulldog Clubmans Rallies in designated areas after some Special Stages, from Management Vehicles displaying the appropriate Management Plate. These plates may only be used on conventional saloon cars or their estate car derivatives, or on certain 4x4 off-road leisure vehicles, subject to approval by the Organisers. The use of roof racks is not permitted. These vehicles must follow the instructions issued by the Organisers in the Service Pack, which will specify sections of the rally route which are Out of Bounds to Management Vehicles. Application for a Management Plate must be made on the Official Entry Form (see Article 8.8). The Organisers reserve the right to restrict or refuse any application for additional plates.

AREAS OF 'NO EMERGENCY SERVICE' ARE DESIGNATED IN THE ROAD BOOK BY A THICK LINE ON THE RIGHT HAND SIDE OF THE 'INFORMATION' COLUMN

Where emergency service is permitted on the public highway competitors must be completely off the carriageway when stopped and not in a area restricted to less than 40 miles an hour.

LOCATIONS WHERE EMERGENCY SERVICE IS PERMITTED

Between START & stage 1 – Road Book(RB) diagram 1 to diagram 4 (A489&A470)
Between stage 1 & 2 – RB 1 to RB 2 (Forest road after stage 1)
Between stage 2 & service A – RB 1 to RB 3 (Forest road after stage 2)
Between service A & stage 3 – NO EMERGENCY SERVICE PERMITTED
Between stage 3 & stage 4 – RB 2 to RB 5 (OFF carriageway along A470 & unclassified road)
Between stage 4 & stage 5 – RB 2 to RB 4 (Only after PC OFF carriageway along A487)
Between stage 4 & stage 5 – RB 9 (on forest road)
Between stages 5 & stage 6 – RB 2 (on forest road)
Between stage 6 & service B – RB 2 (forest office yard)
Between stage 6 & service B – RB 4 to RB 5 (on A487 only OFF carriageway)
Between service B & stage 7 – NO EMERGENCY SERVICE PERMITTED
Between stage 7 & stage 8 – RB 1 to RB 2 (on forest road)
Between stage 8 & stage 9 – RB 5 to RB 6 (only OFF carriageway along B4404)
Between stage 8 & stage 9 – RB 8 to RB 12 (A487 only OFF carriageway)
Between stage 9 & Finish – RB 1 (On the first 0.25 miles of forest road only)
Between stage 9 & Finish – RB 10 (In Wynnstay Farmers only)

ROUTE DEFINED BY REFERENCE

ROUTE	INFORMATION	MAP REFERENCE	APPROACH	DEPART	Car 1
	Assembly point	136/ 092½906			
MC0		092½905½		W	08.00
via		954845	NE	NW	
via		908845	N	SW	
ATC1	Stage 1 – Hafren South	873849½	E		08.37
FTC1		845864½		E	
via		853½866	SW	E	
via		861½866½	W	N	
PC1		859½890½	SE	N	
ATC2	Stage 2 – Hafren North	871902½	NE	NW	09.03
FTC2		831870		S	
via		829853	NW	SE	
TC2	Service A – Sweet Lamb	831850	N		10.07
MC2	Sweet Lamb service out	135/ 829½849½		NW	
via		827½850	E	N	
ATC3	Stage 3 – Sweet Lamb	828851½	S		10.09
FTC3		799843		S	
PC3		799841½		SW	
via		749½812	E	NW	
via		723909½	SE	NE	
ATC4	Stage 4 – Taliesin	737½919	SW	N	10.50
FTC4		678937	NW		
PC4		683½950	SW	NE	
via		748042½	SW	N	
ATC5	Stage 5 - Pantperthog	124/ 736½054	S		11.29
FTC5		744055½		SE	
via		749½050	N		
PC5		135/ 748042½	N	E	
via		124/ 755060	SE	NE	
ATC6	Stage 6 - Dyfi Main	756068	SW		11.54
FTC6		763067½		SW	
PC6		757060½	NE	NW	
via		755060	NE	NW	
TC6	Service B - Dolgellau	734½181½	E		12.36
MC6	Dolgellau service out	734½181½		E	
via		746088	S	SE	
via		755080	W	NE	
via		794109	SW	NE	
ATC7	Stage 7 - Gartheiniog	804116¾		S	13.46
FTC7		813109		NW	
PC7		813½105	NW	S	
ATC8	Stage 8 - Bwlch Main	813104	N		14.11
FTC8		807½075		SE	
via		815067	NW	S	
PC8		817064	N	SW	
via		135/ 816041	W	NE	
via		125/ 991115	W	NW	
ATC9	Stage 9 Dyfnant	991138	SW		15.05
FTC9		018150		E	
PC9		032156	S	NE	
via		172184	NW	NE	
via	Enter Wynnstay yard - Car wash	126/ 220202½	W	S	15.47
via	Leave Wynnstay yard	220202½	S	E	
via		282241	NW	E	
via		365½217	W	NW	
via		424½222	W	S	
via		475187	W	S	
via		497165	N	E	
via		510157½	NW	NE	
MC9	Finish control	510½159	SW		16.42