Looking After Your Barometer

By

R. E. Rose, F.B.H.I.

Looking After Your Barometer

by

R. E. ROSE, F.B.H.I.

Produced by

R. E. ROSE, F.B.H.I.
Antique Clock and
Barometer Restoration
and Materials
731 Sidcup Road,
Eltham, London, S.E.9
Tel: 081-859 4754

Printed by SMD PRINT CENTRE
218 Broadway, Bexleyheath, Kent. DA6 7AU
Tel: 081-303 5755

CONTENTS

1. GENERAL

This book is designed to be of assistance to anyone owning an antique barometer, but who has little knowledge of how to protect it from their own mishandling. It can be of great assistance to the Barometer trader or repairer to pass on to the customer to avoid having to set up barometers themselves and for ease of explanation.

Every example cannot be covered in a book of any size as different forms and principles are never-ending, but it will cover the vast majority of barometers made to a common design. If a particular example is not dealt with in this book, it is quite likely the general idea can be gained anyway, perhaps under a different heading.

Basic barometer terms are used throughout which should be understood with the help of the drawings.

It is important that barometers are hung by strong screws. A sturdy screw relative to the weight of the barometer should be used and put into the wall at a downwards angle. Remember that the screw is only as strong as its fixing, so decent wallplugs should also be used. Picture hooks are not a good idea. Remember also to check the strength of the hanging plate on the back of the barometer itself.

Hang your barometer at the correct height. A Banjo Barometer needs the dial clearly visible with easy access to the setting hand knob. A Stick Barometer or a Fitzroy Barometer needs to be quite low as the height of mercury in the tube requires to be read at eye level especially when using a vernier scale.

Most mercury barometers need to be plugged for transit; how to do this is described in the text, but leave the instrument plugged while you are fitting the screw in the wall. Unplug only when you are ready to finally hang it.

Mercury Barometers are always best moved and kept at an angle of 45 degrees even when plugged. If air enters the tube it may render the tube useless and it may have to be replaced. Place the barometer inside a plastic dustbin sack in case of any accident, to retain the mercury safely.

Aneroid barometers can be carried without any precaution.

Mercury is a dangerous substance, so great care should be taken to avoid any spillage. When removing a plug, always make sure the tiniest drop of mercury is not still attached to the woollen end; wipe it on the edge of the glass tube before final removal. Mercury can enter the bloodstream through the pores of the skin, so never touch it. It also contaminates brass and other metals, especially gilding, and is then only removed by a specialist.

Any amount of mercury spillage should be cleared up immediately. Large amounts should be put into a glass vessel and given to your barometer restorer for safe disposal. Picking it up can be difficult, but a teaspoon is usually easiest – then throw the spoon away. For tiny specks, for example, on a carpet, where it has penetrated the fibres, can be hoovered-up and the contents may be discarded completely in the hoover bag.

The value of new instrument quality mercury is quite high, but the value of contaminated mercury from an old

tube is nil, so if it is necessary to clear up any spilt mercury never think you are giving your barometer restorer something for nothing, as he is doing an environmental favour by disposing of it safely.

Due to the hazards of mercury, a mercurial barometer cannot be taken on board an aeroplane with mercury in the tube. The tube will have to be vacated of mercury by your restorer or from where you purchased the barometer and refilled when it arrives at its destination. The refilling must also be carried out by a specialist; it is not advisable to do it yourself.

2. BANJO OR WHEEL BAROMETER

PLUGGING. A barometer must be plugged before it is moved. Follow figure 1. To do this, gently lift the barometer off the wall and slowly lower it onto the floor. Quick up and down vertical movements can cause air bubbles to get into the tube. Turn the barometer with the back of it facing you and open the long back door. The arrangement you will see is as in figure 2. Tilt the barometer forwards to an angle of approximately 45 degrees and you will notice that the mercury will rise to the top of the tube A. Now you need to retain the two silk cords into position to stop them coming off the pulley – for this you can use a piece of stiff card attached with a drawing pin. Now remove the larger left hand glass weight from the main tube, making sure you do not bring out any mercury with it. This weight can now be left hanging outside the main tube. Take your tube plug and slide the cork C up the wire B. Push the woollen end D into the neck of the tube E tightly, then slide down the cork into the mouth of the tube tightly. When

TUBE PLUGGING

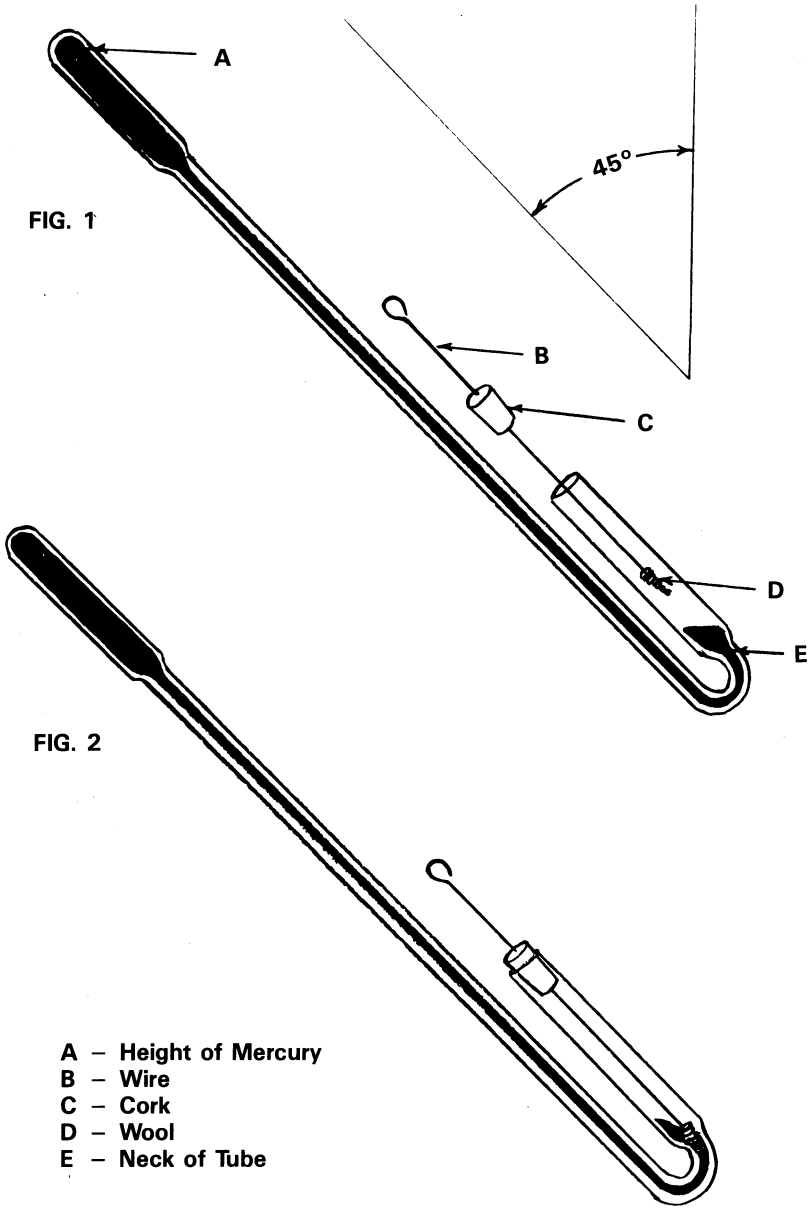


FIGURE 1

BANJO TUBE IN USE

A – Vacuum
B – Height of Mercury
C – Main Weight
D – Pulley
E – Silk Cords
F – Counterweights
G – Guide Tube

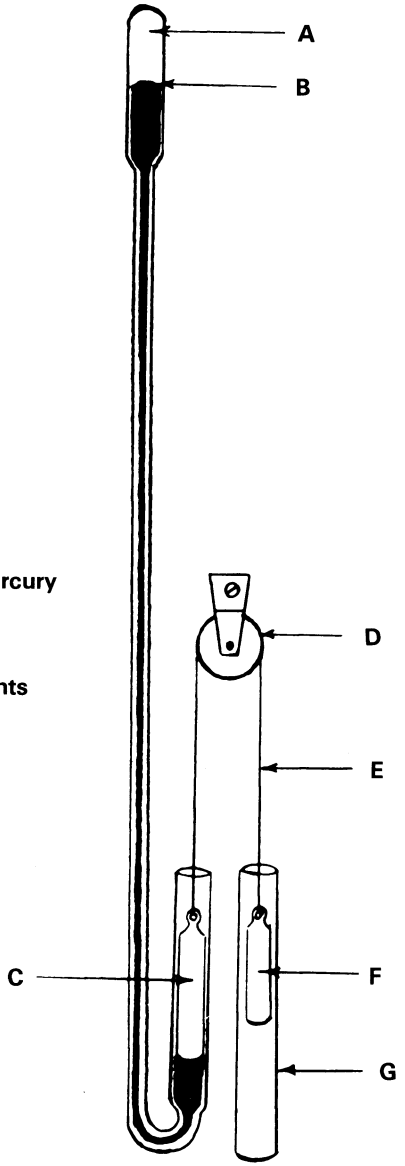


FIGURE 2

the barometer is returned to its upright 90 degree position, the height of mercury should now remain, filling the end of the tube. Other than a piece of tissue to stop the main glass weight rattling around, the barometer is now ready for transit.

Two points to note are that the silk threads, if correctly fitted, and of the correct length, should not exceed more than 1½ turns and so should not tangle but can be fed back onto the pulley by gently pulling on the cords. However, many restorers will fit lines which are much too long and they will knot themselves if allowed to get slack; therefore, it is a wise precaution to secure them as stated.

The other point is that, if your tube has air bubbles inside, then the tube will probably have to be replaced, see figure 3. The tube should still be plugged with a cork to stop mercury spillage. Due to the fact that the vacuum has been lost by air getting round the bend in the tube, the mercury will not rise to the top of the tube, or will already be there when tilted at an angle of 45 degrees.

Before you decide to move your barometer, check that you have a tube plug in the back of the instrument; if not, it is well worth investing in one first. It is unlikely a tube would survive a car journey without air entering if it is not plugged. By just putting a cork in the mouth of the tube is not sufficient unless the tube is faulty anyway.

UNPLUGGING. After reaching your destination with your plugged barometer, leave it plugged while you fit a strong hanging screw. Having done this, turn the instrument with the back facing you. You will need to consult figures 1 and 2. Move the barometer forwards at

FAULTY TUBE

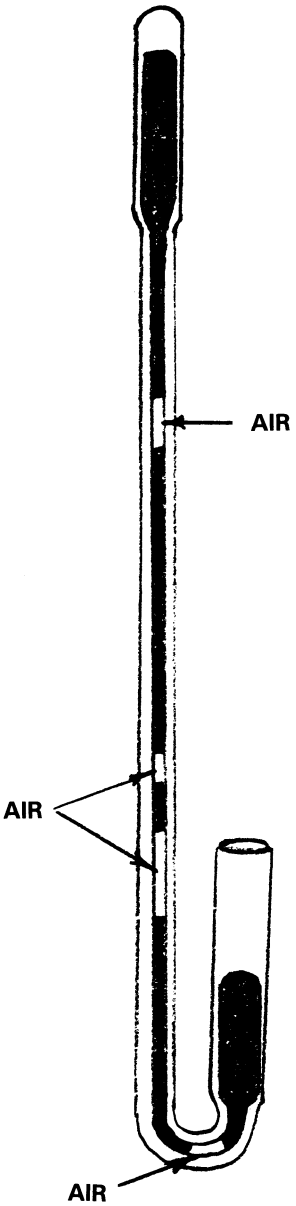


FIGURE 3

an angle of approximately 45 degrees. Work out the cork C and withdraw the wire B, making sure that the woollen end D is not withdrawing any mercury with it. Wipe off any traces of mercury on the edge of the main tube. Now take the main weight and gently lower it into the main tube. Remove the card securing the silk threads and slowly return the barometer to vertical. Check that the silk threads are correctly located on the pulley. The back can now be closed and the instrument slowly raised onto its hanging screw.

SETTING. A Banjo Barometer will normally be set for an actual pressure reading, not a sea level one, so the chart at the back of the book will have to be consulted if it is desired to be checked. If it is required to have a sea level reading, this must be done at your repairers after advising them of the altitude at which the barometer is to be used.

The barometer reading is taken from the blue or black hand. The brass hand is set at the same place as a guide to tell if the barometer is rising or falling. Moving clockwise is rising, anticlockwise if falling.

As a rough guide, rising is for improving weather and fall is for worsening weather. The lettering of RAIN, CHANGE, FAIR, etc., is a left-over from the past and bears little, if any resemblance to the actual weather.

HYGROMETER DIALS. These units are mainly decorative and are seldom working. The principle is that they should have a wild oat beard attached to the centre which carries a straw pointer. The oat beard is like a fine twisted rope which twists or untwists according to dampness. One that works well can travel around the entire

span of the dial when exposed to extremes of dampness, but in reality most houses are extremely stable, so little, if any change will ever be noticed. The figures are not to any given scale but simply a numbering of the graduations. Originally, they were meant to be removed and placed in a weather-noticeable spot. Also they are easily removable for ease of replacing the oat beard which has a short life. To remove the unit, consult figure 4. Depress the spring clip A and ease out the bezel B from the bottom and withdraw to clear the dial projection C which retains the top of the unit. Replacement is a reverse procedure.

THERMOMETER BOXES. Thermometer boxes are also usually detachable for a similar reason of hanging elsewhere from the main barometer to determine weather temperature. However, many cases have shrunk, warped or become tight, so great care should be taken if you try to remove these. Consult figure 5. Unscrew the Box Knob C a half turn and pull down. This pulls down the retaining bolt D which is spring loaded on a coiled spring E.

The bottom of the thermometer box B can then be eased out at an angle and lifted clear of its hanging plate A. Replacement is a reverse procedure. A table of comparative thermometer scales is at the back of the book.

LEVEL UNITS. Some Banjo barometers have level units at the bottom of the case. These are only decorative. Although it is true to say a barometer must hang vertical, it is not that critical and hanging straight by eye is adequate. The situation is that on such a short length of spirit bubble you will find it impossible to get it to stay in the centre. Furthermore, any that were originally true to the uprightness of the barometer was purely coincidental.

REMOVAL OF HYGROMETER UNIT

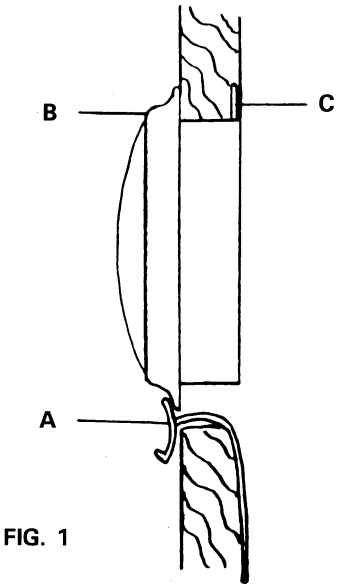


FIG. 1

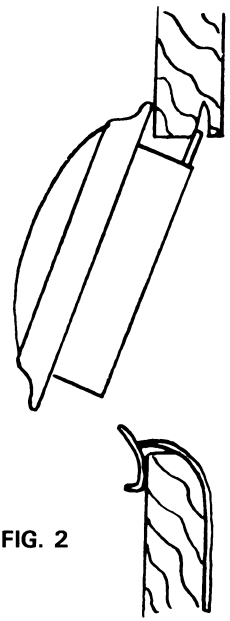


FIG. 2

A – Spring Clip
B – Bezel
C – Dial Tag

FIGURE 4

REMOVAL OF THERMOMETER BOX

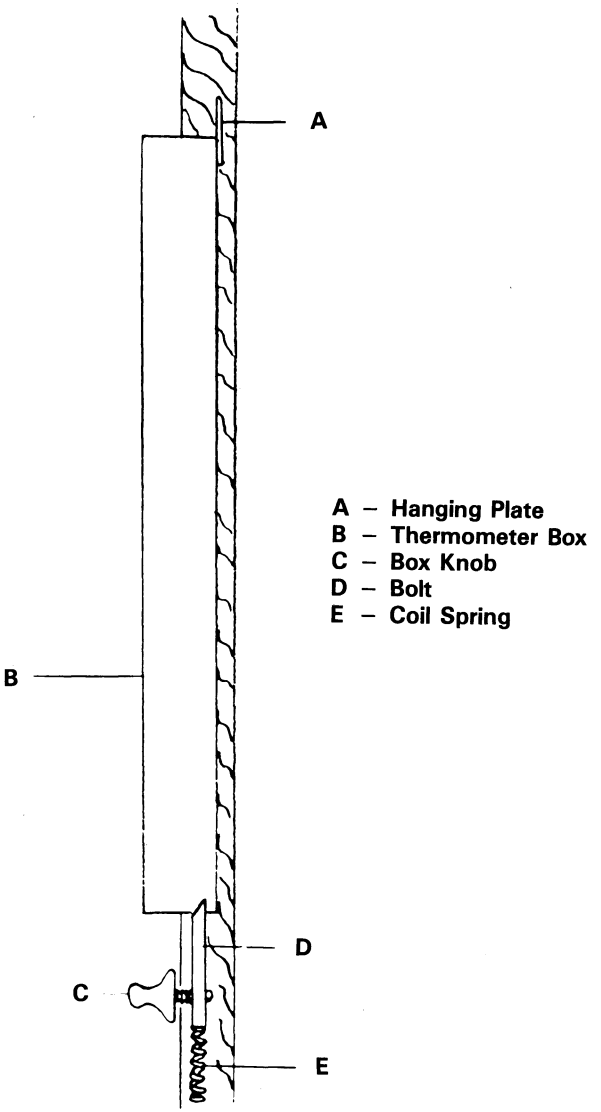


FIGURE 5

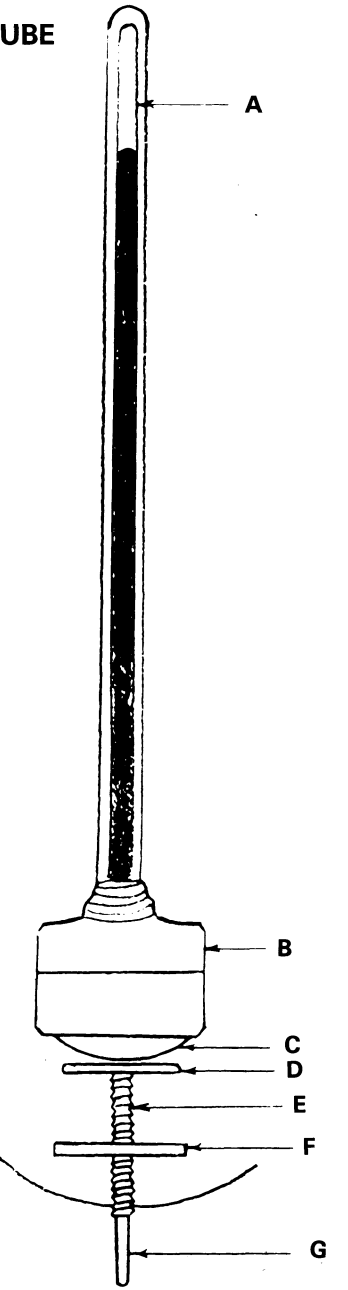
3. STICK BAROMETERS – CISTERN TUBES

PLUGGING. Stick Barometers use two types of tube. First of all, it is necessary to identify which type is being used, either the cistern tube in figure 6 or the ball tube in figure 8. On both types the wooden cover must first be removed to see exactly what is going on. This is usually located by two pins and simply pulls off. Sometimes there is a brass bracket holding the cistern cover which has to be unscrewed.

Plugging a cistern tube should be a very simple affair but unfortunately, it is extremely risky due to the leather bag condition which often cracks. Therefore, the risk is yours to decide if the transit screw is used or not. Consult figure 6. Remove the setting key by pulling it off and this should then fit on the projecting square at the bottom of the case. Tip the barometer at an angle of 45 degrees; the mercury should travel up the tube to completely fill the vacuum A. Using the setting key, turn the square G until the washer D reaches the leather bag C; continue to turn another complete revolution so that the washer is now depressing the bag. Return the barometer to upright and note if the vacuum reappears. If it does, tip the barometer again and turn the transit screw a little more, then check again for the vacuum which should be gradually decreasing. Continue this operation until the vacuum has entirely disappeared. Do not force the transit screw past this point, stop immediately the vacuum is filled otherwise the leather bag will rupture.

As said before, it is risky and there is a likelihood of mercury escaping through the bag, so it is best to do this over a container which could catch any mercury should the bag rupture.

CISTERN TUBE



A – Vacuum
B – Boxwood Cistern
C – Leather Bag
D – Washer
E – Thread
F – Fixed Bracket
G – Square

FIGURE 6

If it is decided not to risk the transit screw then the barometer must be tilted forwards to an angle of 45 degrees and kept at this level all the time. However, this is not always possible if travelling by car, and there is the added problem of acceleration and braking. If the barometer is placed at an angle in line with the car front to back, heavy braking causes the weight of the mercury to be forced downwards, bouncing on the leather bag and surging upwards, which can easily knock the end of the glass tube and break it, as mercury is very heavy. Acceleration can also have the same effect. However, if the barometer is placed at an angle of 45 degrees across the car from door to door, this danger is considerably decreased, bearing in mind that it must then be continually held.

The only other way to carry a cistern barometer safely is by turning it upside down. The mercury will not now bounce on the leather bag and will not surge. Even this is not as simple as it sounds, as you could create an air lock by turning it over. The way to avoid this is to remove the front cover, tip the barometer at an angle of 45 degrees to plug the vacuum at the top of the tube and depress the leather bag with your finger. Maintaining the pressure on the bag, it can now be turned over. To return it to upright is a reversal of this procedure.

SETTING. A Stick Barometer will normally be set for an actual pressure reading, not a sea level one, so the chart at the back of the book will have to be consulted if it is desired to be checked.

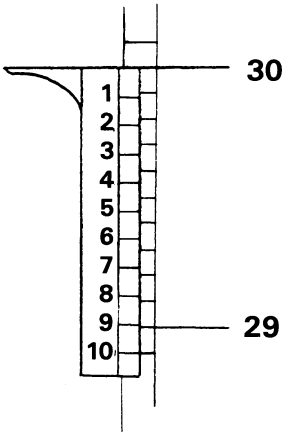
READING. Several types of barometer scales are used, but most are read by lining up the top of the pointer to the height of the mercury. Some are read from the height of mercury directly against the vernier scale.

If your barometer has one pointer with or without a vernier scale, this is lined up with the height of mercury. The next time you take a reading, the difference should be noted before altering the pointer, as this is your only point of reference. If you have two pointers, then set your left hand one to the actual reading and use the right hand one when next taking a reading. The difference between the two can then be determined, after which it is normal to set the left hand pointer again as a marker.

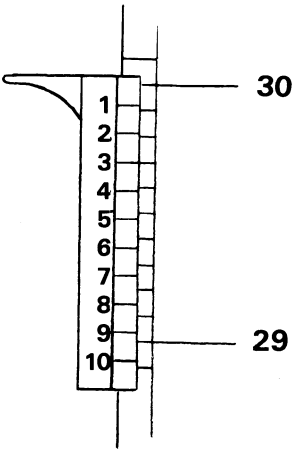
Reading a vernier scale is simple once you get used to it. Consult figure 7. First, line up the brass pointer to the level of mercury. Read from the top of the vernier scale against the fixed scale to the main figure level or lower A. In the first three examples, this would be 30; in the last example it would be 29. Next read how many divisions on the fixed scale past the main figure that the top of the vernier scale is B. In the first two examples this is 0. The third example is 1 and last example 9. So far, this gives us 30·0, 30·0, 30·1 and 29·9 respectively. Finally, look down the scale on the vernier to see where it lines up exactly with a division on the fixed scale C. This now gives us the last figure, making it 30·00, 30·03, 30·15 and 29·98 respectively. Notice they are the only numbers which line up.

4. STICK BAROMETERS – BALL TUBES

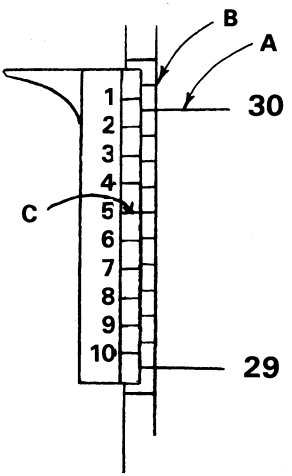
PLUGGING. A stick barometer with a ball tube must be plugged before it is moved. Follow figure 8. To do this, gently lift the barometer off the wall and slowly lower it to the floor. Quick up and down vertical movements can cause air bubbles to get into the tube. Remove the wooden



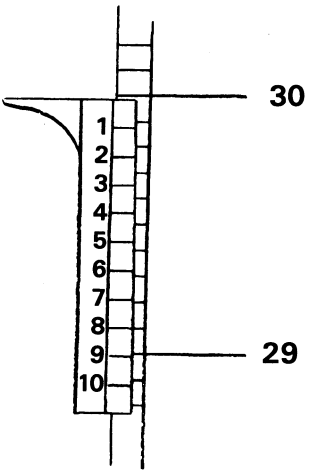
READING 30·00″



READING 30·03″



READING 30·15″



READING 29·98″

FIGURE 7

cover bowl at the bottom by gently pulling off. This is usually located on two pins. Tilt the barometer backwards to an angle of approximately 45 degrees and you will notice that the mercury will rise to the top of the tube A. Take your plug and slide the cork C up the wire B. Push the woollen end D into the neck of the tube E tightly, then slide down the cork into the mouth of the tube tightly. When the barometer is returned to its upright 90 degree position, the height of mercury should now remain, filling the end of the tube.

Occasionally, these tubes are difficult to fit a plug into because of limited space. You may be able to swing the glass tube bowl out to make it more accessible or shorten the top of the wire to fit inside more easily.

If your tube has air bubbles in it then the tube will probably have to be replaced; see figure 3 for a similar example. The tube should still be plugged with a cork to stop mercury spillage. Due to the fact that the vacuum has been lost by air getting round the bend in the tube, the mercury will not rise up to the top of the tube, or will already be there when tilted at the 45 degree angle.

Before you decide to move your barometer, check that you have a tube plug, otherwise it is well worth buying one first. It is unlikely a tube would survive a car journey without air entering if it is not plugged. By putting a cork in the mouth of the tube is not sufficient unless the tube is faulty anyway.

UNPLUGGING. After reaching your destination with your plugged barometer, leave it plugged while you fit a strong hanging screw. Having done this, tilt the barometer

TUBE PLUGGING

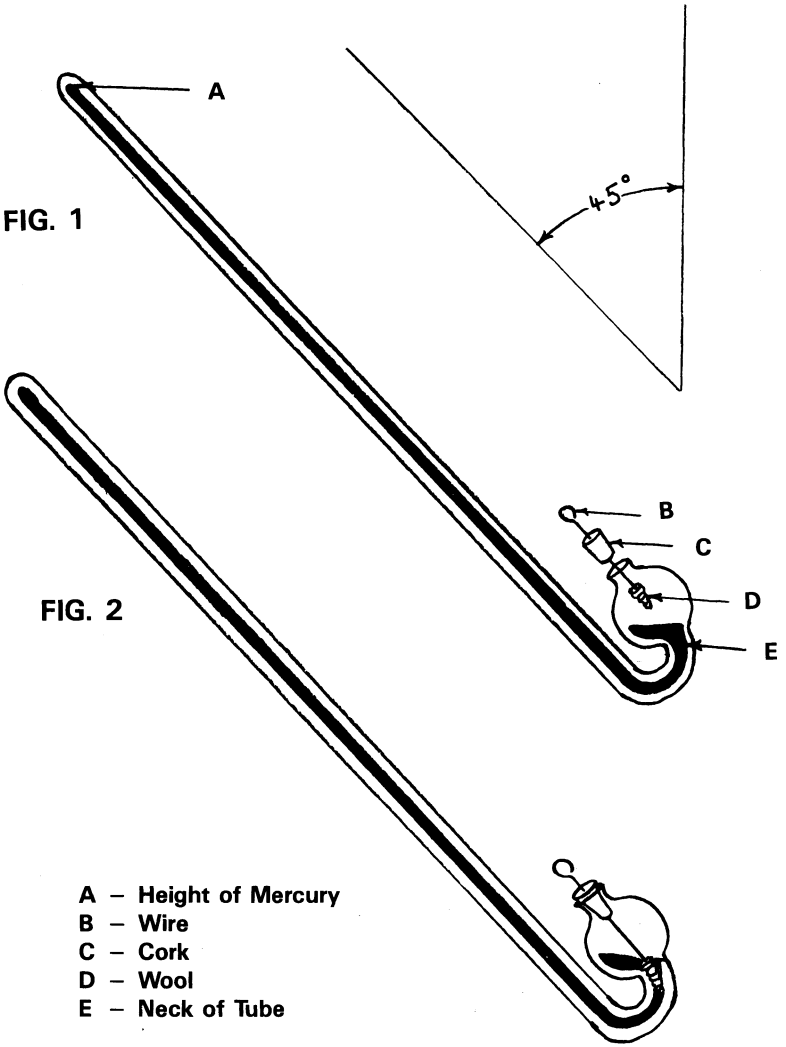


FIGURE 8

backwards to an angle of 45 degrees; see figure 8. Work out the cork C and withdraw the wire B, making sure that the woollen end D is not withdrawing any mercury with it. Wipe any traces of mercury on the edge of the tube to fall back inside. The barometer can now be returned to upright when the mercury level at the top of the tube will fall, creating a vacuum.

SETTING. A Stick Barometer will normally be set for an actual pressure reading, not a sea level one, so the chart at the back of the book will have to be consulted if it is desired to be checked.

READING. A Stick Barometer with a ball tube is read in the same way as described in the cistern tube chapter in conjunction with figure 7.

5. FITZROY BAROMETERS

PLUGGING AND UNPLUGGING. This is carried out in exactly the same way as described in the Stick Barometer – ball tubes chapter which should be referred to. The only difference being that the tube plug is incorporated into the design and is operated by a bolt type action, operated from the back of the case. The barometer still needs to be tilted at a 45 degree angle before operation.

STORM TUBE. These glass tubes have a solution of camphor and distilled water containing potassium nitrate and ammonium chloride crystals, which as said to react with changes in the weather. Basically, in fine weather the liquid is supposed to be clear, with all the crystals settled at the bottom and in stormy weather the crystals float up

to make the liquid very cloudy. However, this should be compared with hanging a piece of seaweed from your bedroom window!

ADMIRAL FITZROY did make certain rules which can be applied to the behaviour of barometers, which are mentioned in the chapter weather forecasting.

6. ANEROID BAROMETERS

These barometers were invented around 1843 and are completely portable. They are of little trouble and do not require any special handling.

SETTING. They can be set for an actual pressure reading or a sea level reading very easily. At the back of the case will be either a hole cut through the wooden casing or the entire back of the movement housing will be visible. An adjusting screw head will be visible which can be turned using a good fitting screwdriver. Whilst turning the screw slightly, you should look at the hand to see in which direction to move it. By consulting the altitude table at the back of the book, the correct pressure can be set. You will need to know the pressure by comparison to a local weather station, another barometer or phoning a weather line usually indicated in the front of a telephone directory, and also your altitude available from an ordnance survey map.

The brass set hand is used as a marker against the main indicator hand to establish if the barometer is rising, falling or steady. Often it is forgotten to be set so it is perhaps even more common practice to tap the barometer to note which way the main indication hand is tending to move.

7. OTHER BAROMETERS

If you have a barometer which does not fit into the main heading of this book, it is more advisable to get assistance from your barometer dealer or restorer who can enlighten you. However, a few hints on some of the following are included.

ANGLE BAROMETERS. The main advantage of these is that they have longer scales and so are more easily read. The principle is the same as the chapters on Stick Barometers – cistern tube and ball tubes.

MARINE BAROMETERS. These are usually mounted on gimbals (universal joints) for use on board a ship but conform to the principle of Stick Barometer – cistern tube.

SYMPIESOMETERS. These are small barometers often thought of as portable but in practice are not. They should be kept upright to prevent the air mixing with the liquid. There is no way of plugging them. Some owners have trouble reading them, so a brief description is included. First, take a reading from the thermometer on the left. Move the sliding scale along the fixed scale of temperatures until the pointer at the top of the sliding scale marks the correct temperature. The barometer reading is taken from the sliding scale opposite the level of the oil.

8. BAROGRAPHS

A Barograph is an instrument which incorporates a barometer on the aneroid system, and a clock movement. This combination enables the barometer to record on a paper chart the atmospheric pressure throughout the week. They are portable and it is only necessary to move the nib away from the paper chart by means of a lever to allow it to be carried.

TO WIND. The clock should be wound once per week according to the starting day on the charts – either Sunday or Monday. The key is usually attached to the clock underneath the brass cover on top of the drum. Remove the nib from the paper by actuating the lever situated at the bottom of the front of the case. Hold the cylinder while you wind the clock.

TO RENEW THE CHART. Remove the nib from the paper, unclip the chart or in some cases the paper has a gummed edge glued together; wrap round a new chart and replace the clip or lick the end of the paper to fasten together. Make sure the chart sits evently on the bottom ledge of the drum. The drum can be totally removed if it is found easier to fit the new chart.

After fitting a new chart and winding the clock, the nib should be refilled with ink using the ink and dipper provided. Turn the drum around on its friction so that the correct time of day corresponds when the nib is returned to the paper chart.

SETTING. They can be set for an actual pressure reading or a sea level reading, providing the actual pressure

reading is within the range of the charts, which at high altitude will not be possible. A knurled adjusting knob is usually situated directly above the stack of capsules. This can be moved in either direction to raise or lower the pen to the relevant position on the chart. By consulting the altitude table at the back of the book, the required pressure can be set. You will need to know the pressure by comparison to a local weather station, another barometer or phoning a weather line usually indicated in the front of the telephone directory, and also your altitude, available from an ordnance survey map.

9. WEATHER FORECASTING

Your barometer only measures atmospheric pressure which is not sufficient to be precise on predicting the weather. The markings RAIN, CHANGE, FAIR, etc., should be totally ignored, as these are confusing. If it is pouring with rain your barometer may point to rain, but it could just as easily be pointing to fair. In extremely basic terms, if the barometer is falling, the weather may get worse; if the barometer is rising, the weather may get better, and if it is steady, the weather may remain the same.

Admiral Fitzroy set out the following rules for a barometer which may be of some help:

A RISING BAROMETER

A "rapid" rise indicates unsettled weather.
A "gradual" rise indicates settled weather.
A "rise", with dry air and cold increasing in summer indicates wind from Northward; if rain has fallen, better weather is to be expected.
A "rise", with moist air at a low temperature, indicates wind and rain from Northward.
A "rise", with Southerly wind, indicates fine weather.

A STEADY BAROMETER

With dry air and a seasonable temperature, indicates a continuance of very fine weather.

A FALLING BAROMETER

A "rapid" fall indicates stormy weather.
A "rapid" fall, with Westerly wind, indicates stormy weather from Northward.
A "fall", with a Northerly wind, indicates storm with rain and hail in summer and snow in winter.
A "fall", with increased moisture and heat increasing, indicates wind and rain from Southwards.
A "fall", with dry air and cold increasing (in winter), indicates snow.
A "fall", after very calm and warm weather, indicates rain with squally weather.

In addition to those rules, he also gave the following hints and observations:

1. The longer a change is foretold before it takes place, the longer the presaged weather will last. Conversely, the shorter the warning, the less time the wind or fall of rain (or snow) will continue.

2. A rapid rise indicates unsettled weather.
   A slow movement indicates settled weather.
   A steady reading indicates very fine weather, when continued, and with dryness.
   A rapid and considerable fall indicates stormy weather, rain (or snow).
   Alternate rise and fall indicates unsettled and threatening weather.

3. A barometer begins to rise considerably before the conclusion of a gale, sometimes even at its commencement.

4. The most dangerous shifts of wind or the heaviest Northerly gales happen soon after the barometer first rises from a very low point; or if the wind veers gradually at some time afterwards.

5. The greatest depressions of the barometer are with gales from S.E. or S.W.; the greatest elevations, with wind from N.W., N. or N.E. or with calm.

6. A sudden fall of the barometer, with a Westerly wind, is sometimes followed by a violent storm from N.W., or N. or N.E.

7. If a gale sets in from E. or S.E., and the wind veers by South, the barometer will continue falling until the wind is near a marked change, when a lull may occur; after which the gale will soon be renewed, perhaps suddenly and violently, and the veering of the wind towards the N.W., N. or N.E., will be indicated by a rising of the barometer, with a fall of the thermometer.

A useful device for predicting the weather in basic terms was a weather forecaster, originally made very cheaply by Negretti & Zambra, barometer makers. If you do come across one of these, it can be very useful and remarkably accurate. It consists of three different size discs pivoted together on their centres which can be revolved. Readings are taken of the wind direction and barometer, and the discs set to the appropriate divisions. A letter is shown through an aperture for falling, rising or steady. Reference to the back of the disc shows the weather expected against each letter.

10. MAINTENANCE AND REPAIR

Both Mercury and Aneroid Barometers need little, if any, attention under normal usage. They do not need regular servicing. Most repairs required are necessary through damage or neglect. The most common repair required for mercury barometers is to remove air from the tube or replace the tube. Air does not enter the tube naturally; it is by bad handling or accident that causes it, so this can always be avoided by plugging the tube correctly. Other repairs required on mercury barometers are usually cosmetic where the brass is corroded, silvering discoloured and case needing repolishing. These are caused by pure age or placing in a wrong location where dampness or sunlight can get to the barometer.

Aneroid Barometers seem to suffer from broken glasses far too frequently. Because of the central setting knob through the glass, it is possible that these glasses are immediately weakened by drilling of the holes and the slightest knock can crack it. Many suffer from falling off

the wall as the hanging plates are not always as practical as they should be, so pay particular attention to a good fixing and location onto the screw. Other than damage, they are also affected by corrosion which for exterior parts is not usually serious, but for interior parts it can be devastating. If the corrosion reaches the delicate chain inside, it could be unsalvageable, even worse if it affects the capsule itself, which could lead to the entire movement being beyond economical repair or unsalvageable regardless of economics.

Fortunately, your barometer repair workshop should be able to carry out any repair necessary to return your barometer back into its original condition.

CONVERSION OF MILLIBARS TO INCHES OF MERCURY

1mb. = 0·0295in. of mercury.

mb.	in.	mb.	in.	mb.	in.	mb.	in.	mb.	in.	mb.	in.
940	27·76	960	28·35	980	28·94	1000	29·53	1020	30·12	1040	30·71
941	27·79	961	28·38	981	28·97	1001	29·56	1021	30·15	1041	30·74
942	27·82	962	28·41	982	29·00	1002	29·59	1022	30·18	1042	30·77
943	27·85	963	28·44	983	29·03	1003	29·62	1023	30·21	1043	30·80
944	27·88	964	28·47	984	29·06	1004	29·65	1024	30·24	1044	30·83
945	27·91	965	28·50	985	29·09	1005	29·68	1025	30·27	1045	30·86
946	27·93	966	28·53	986	29·12	1006	29·71	1026	30·30	1046	30·89
947	27·96	967	28·56	987	29·15	1007	29·74	1027	30·33	1047	30·92
948	27·99	968	28·59	988	29·18	1008	29·77	1028	30·36	1048	30·95
949	28·02	969	28·61	989	29·21	1009	29·80	1029	30·39	1049	30·98
950	28·05	970	28·64	990	29·23	1010	29·83	1030	30·42	1050	31·01
951	28·08	971	28·67	991	29·26	1011	29·85	1031	30·45	1051	31·04
952	28·11	972	28·70	992	29·29	1012	29·88	1032	30·47	1052	31·07
953	28·14	973	28·73	993	29·32	1013	29·91	1033	30·50	1053	31·10
954	28·17	974	28·76	994	29·35	1014	29·94	1034	30·53	1054	31·12
955	28·20	975	28·79	995	29·38	1015	29·97	1035	30·56	1055	31·15
956	28·23	976	28·82	996	29·41	1016	30·00	1036	30·59	1056	31·18
957	28·26	977	28·85	997	29·44	1017	30·03	1037	30·62	1057	31·21
958	28·29	978	28·88	998	29·47	1018	30·06	1038	30·65	1058	31·24
959	28·32	979	28·91	999	29·50	1019	30·09	1039	30·68	1059	31·27

Some Continental barometers use a millimetre scale marked approximately 70 – 80. To convert inches to millimetres, multiply the inch figures by 25·4 and use the first two figures only.

Example: 29·56 × 25·4 = 750·82 = 75·0 on a millimetre scale.

THERMOMETER SCALE

CENTIGRADE – 0° Freezing point 100° Boiling point of water
FAHRENHEIT – 32° Freezing point 212° Boiling point of water
REAUMUR – 0° Freezing point 80° Boiling point of water

CENTIGRADE	FAHRENHEIT	REAUMUR (Approx.)
0	32	0
2	36	2
4	39	3
6	43	5
8	46	6
10	50	8
12	54	10
14	57	11
16	61	13
18	64	14
20	68	16
22	72	18
24	75	19
26	79	21
28	82	22
30	86	24
35	95	28
40	104	32
45	113	36
50	122	40
60	140	48
70	158	56
80	176	64
90	194	72
100	212	80

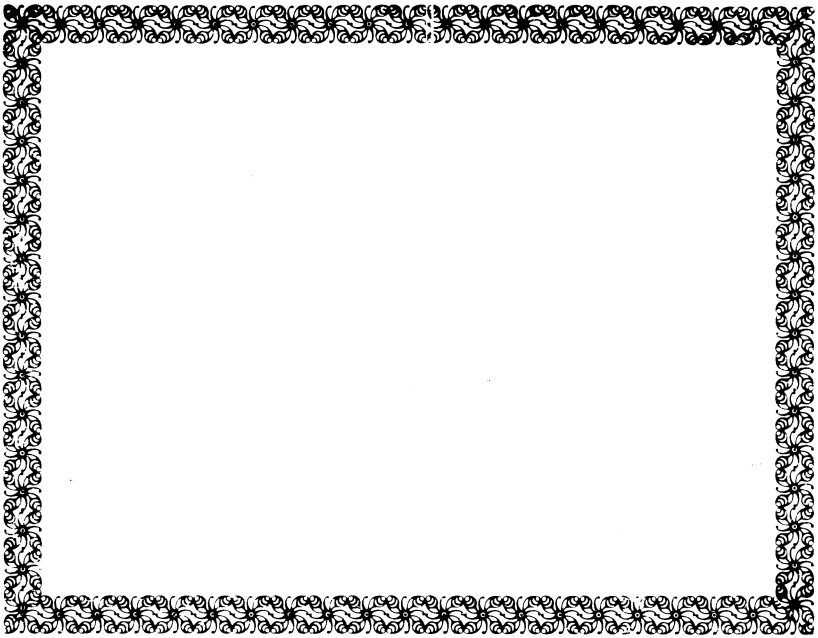
TABLES FOR CORRECTION OF ALTITUDE

As a basic rule, the barometer will fall one tenth of an inch per 100 feet of altitude. Therefore, if a sea level reading is required, the table below should be used. *Example:* If a Barometer situated 800 feet above sea level reads 29·2 inches, refer to 800 feet on the table and add the figure 0·90. Hence, the sea level reading is 29·2 + 0·90 = 30·1 inches. All meteorological reports broadcasted or published have been reduced to sea level to be comparable regardless of altitude.

Height in feet	Amount to add in inches	Amount to add in Millibars
0	0	0
100	0·12	4
200	0·23	8
300	0·34	11
400	0·45	15
500	0·56	19
600	0·67	23
700	0·79	27
800	0·90	30
900	1·01	34
1000	1·12	38
1100	1·23	42
1200	1·34	45
1300	1·44	49
1400	1·55	53
1500	1·66	56
1600	1·77	60
1700	1·87	63
1800	1·98	67
1900	2·09	71
2000	2·19	74

INDEX

ANTIQUE BAROMETER DEALERS' STAMP



BAROMETER REPAIRERS' STAMP