



THE JET

Bristol's **AFS** Magazine



3d

MARCH

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**COVENTRY CLIMAX
ENGINES LTD.**

TRAILER FIRE ENGINES

COVENTRY CLIMAX Engines, Ltd., produced the first Trailer Fire Engine incorporating Exhaust Ejector Priming, Intercooler Engine Cooling, the Wheelbarrow-type chassis and the enclosed power unit . . . all vital contributions to the efficiency of the Trailer Fire Engine which have been recognized by their incorporation in the Home Office Specification to which all Trailer Fire Engines must conform.

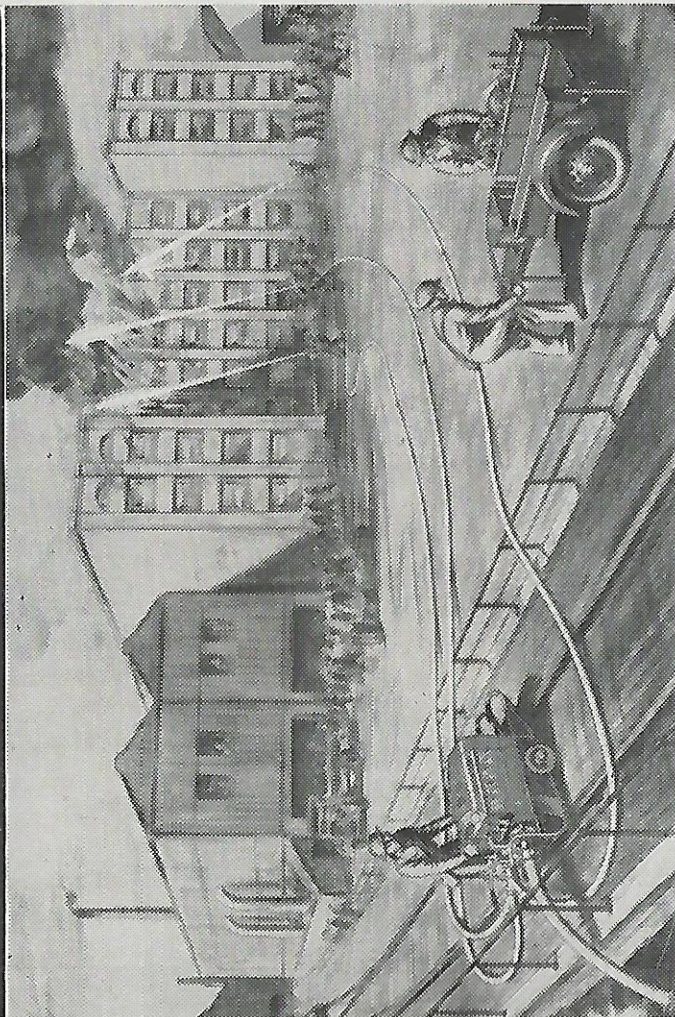
COVENTRY Trailer Fire Engines were among the first delivered in quantity to Brigades to augment existing equipment, and they have been subjected to every type of test in actual service for many months. The conspicuous success with which they have withstood heavy duty, pumping with unflagging efficiency for prolonged periods, has earned enthusiastic commendation from experts everywhere.

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THE JET

Bristol's A.F.S. Magazine

VOL. I. No. 3.

MARCH, 1940

THE month of February was particularly notable on account of the visit of Their Majesties the King and Queen to Bristol, and their review of the City's Civil Defence Services. The Auxiliary Fire Service was represented by squads drawn from the four Divisions, and I should like to take this opportunity to congratulate all concerned on an exceedingly smart turn-out. No pains were spared in preparing for the inspection, and the general appearance of the parade was particularly impressive.

A word about last month's Competition. I was very pleased with the number of entries received and the high standard which was maintained. In fact, the majority of entries were so excellent that the task of selecting the best was no easy matter. A F Griffiths' winning entry appears on page 68, but we hope to include another article on this subject next month.

May I again appeal to readers to place a regular order for this magazine. Publication of a journal of this character in wartime is quite impossible unless we can count on definite orders in advance. The present circulation figure is 2,500 copies, but we must improve on this to continue production at the present standard. *The Jet* is your own magazine, and it is up to every member of the A.F.S. to ensure its success.

J. Y. Kirkup

EDITOR

ROYAL VISIT TO BRISTOL

THEIR MAJESTIES THE KING AND QUEEN INSPECT CITY'S CIVIL DEFENCE SERVICES

DURING their tour of the West Country, the King and Queen paid a surprise visit to Bristol on February 8th, 1940. After an intensive tour of Avonmouth Docks, their Majesties proceeded to Kellaway Avenue, where over 1,500 representatives of Bristol's Civil Defence Services were lined up for inspection, including Air Raid Wardens, members of the Auxiliary Fire Service, Casualty Services, Decontamination Squads, Air Raid Hostels Organization, Communications Services and St. John's Ambulance, together with over 300 women of the W.V.S., the Red Cross and Canteen Services.

General Sir Hugh Elles, Regional Commissioner, presented to Their Majesties heads of the various women's detachments, and after the women's Services had been inspected, members of the Bristol Emergency Committee were presented by the Lord Mayor. Their Majesties shook hands with Mr. F. A. Parish (chairman), Alderman Sir John Inskip, Councillors A. W. Cox and A. H. Downes-Shaw, and Alderman Frank Sheppard (chairman of Bristol A.R.P. Committee), as well as Mr. H. W. Webb (City Engineer and A.R.P. Controller), Dr. R. H. Parry (Medical Officer of Health) and Chief Inspector J. Y. Kirkup (Officer in Charge of Auxiliary Fire Service).

Auxiliary Firemen, together with members of the W.A.F.S., were then inspected. Illustration shows the King and Queen, accompanied by Chief Inspector Kirkup, passing along the ranks.

During their inspection the Royal visitors showed keen interest in all branches of A.R.P., and His Majesty remarked that he was "delighted with the show Bristol was putting up."



• Sport & Social •

A number of requests have been received from Auxiliaries for a sporting organization within the A.F.S. For various reasons the formation of a large-scale organization presents certain difficulty, but it is proposed to run a games league through the channels of this magazine.

Briefly the scheme is as follows :—

Results of all Table Tennis, Billiards, Snooker, Darts and Skittles matches between Platoons at various Stations (*not* Divisions) should be forwarded to the Editor directly they become available. Results for one or any number of the games mentioned above may be sent in.

Each game will be treated separately, and, providing there are sufficient entries, a table will be published each month showing the relative positions of Platoons on each Station. Owing to the fact that the number of personnel varies, some Stations will be in a position to arrange more fixtures than others. Nevertheless, the tables will reflect the comparative positions of the top teams and otherwise during the previous month.

It is up to the Platoons to arrange their own fixtures (which must in no circumstances interfere with A.F.S. duties), and send in full results for next month's *Jet* as they become available.

The possibility of obtaining small trophies to be held by the Platoons giving the best performance each month is being considered.

Suggested rules :—

Table Tennis.—Team of 5 players. 25 games. Result to be decided on points.

Billiards.—Team of 4 players. Result to be decided on 4 games (100 or 150 up by arrangement).

Snooker.—Team of 4 players. 4 games (best of 3 frames each).

Skittles.—Team of 6 players. Result on pins.

Darts.—Team of 6 players. Result on games.

Further rules will be published as they become necessary.

NOTE.—Football has not been included in the list given above, owing to the fact that matches are generally arranged within Divisions and not Platoons. But if sufficient results are received, a table will be published showing the positions of the four Divisions.

CENTRAL.—This Division held a very successful Dance on January 31st. at the Victoria Rooms. Over 600 dancers enjoyed the music of Bert Gillette and his "Heralds of Rhythm," among the guests being Chief Inspector J. Y. Kirkup and Mrs. Kirkup, Chief Inspector W. H. Andrews and Mrs. Andrews, Mr. R. Hopkins, Mr. D. T. Davis, Mr. Parks, Mr. Cleveland, Divisional Officers Osborn, Duggan and Thomas, and also a number of members of the Regular Fire Brigade.

Table Tennis.—A team from Headquarters played the "Regulars" at Bridewell on February 19th. After an exciting match the home team won by 13 games to 12.

REDLAND.—Berkeley Square Station (No. 17) held a Charity Dance in aid of Bristol's Own Fund on Monday, February 26th. With non-stop dancing to Freddy Williamson's Band and Santos Casani M.C., the dance proved a great attraction, well over 350 being present. Guests included Chief Inspector Kirkup, Chief Inspector Andrews, Major Blackney, Dr. R. H. Parry, Mr. Cleveland, Mr. D. T. Davis, and Divisional Officers Osborn, Pegg, Thomas and Aldridge.

BEDMINSTER.—The Divisional Dance at Wills Hall on February 14th was an outstanding success. Attendance was approximately 300, and music was provided by the recently formed Bed-

(Continued on page 83)

PRACTICE EXERCISE

WHITAKER'S BUILDINGS, HOTWELLS
FEBRUARY 11TH, 1940

WHITAKER'S Buildings, situated 100 yards west of the junction of Hotwells Road and Jacob's Wells Road, was the scene of an important Practice Exercise for A.R.P. Services on February 11th, 1940. The ruins of four dwelling houses high up on the slope and overlooking the docks provided realistic conditions for the incident.

For the purpose of this exercise it was assumed that a heavy H.E. bomb had been dropped on Whitaker's Buildings, demolishing them and resulting in an outbreak of fire. Six persons were trapped by the flames and twenty buried beneath the debris, while another twenty-eight were imprisoned in Messrs. Hall & Fitzgerald's air raid shelter.

It was also assumed that the Auxiliary Fire Station at St. Peter's Hall was out of action, due to a previous raid.

At 09.59 hrs. Berkeley Square Auxiliary Fire Station received a telephone message from a Warden's Post stating that there was a fire at Whitaker's Buildings, and a self-propelled pump unit, together with a light pump unit, responded.

Within four minutes of receiving the call the light pump unit arrived near the top of White Hart Steps, at one end of Bellvue Crescent. Before getting the pump to work, the crew proceeded to rescue the six persons trapped by fire. After they had been extricated from beneath the debris, the rescued persons were lowered from a height of 20 feet to a level area at the rear of Hall & Fitzgerald's premises. Here they were made comfortable until the arrival of First Aid Parties. Remaining twenty casualties were either lowered to safety by life line or carried down a ladder by the fireman's lift. Debris from the ruined buildings, together with the uneven nature of the ground, considerably hampered rescue operations; also, casualties had to be lifted over a low parapet before being carried or lowered to safety. The A.F.S. gained valuable practical experience from this branch of the exercise.

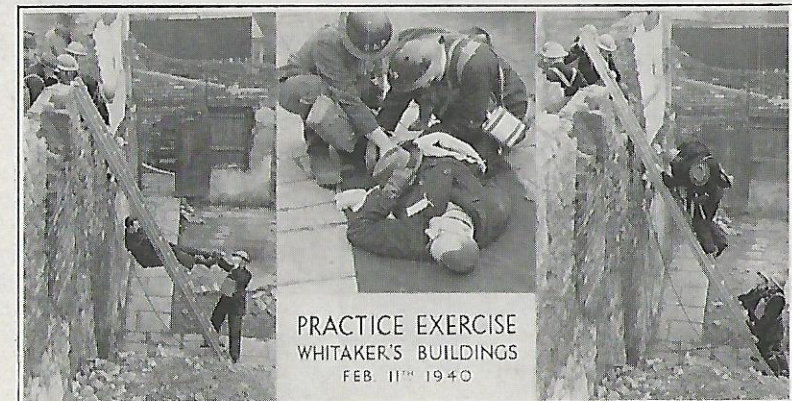
The light pump unit was got to work from two hydrants at the top of White Hart Steps, a single delivery of three lengths of hose being run out down the steps, through a breach in the wall, and the jet brought to play on the flames from a level overlooking the incident, thus covering the rescue party.

Practice Exercise

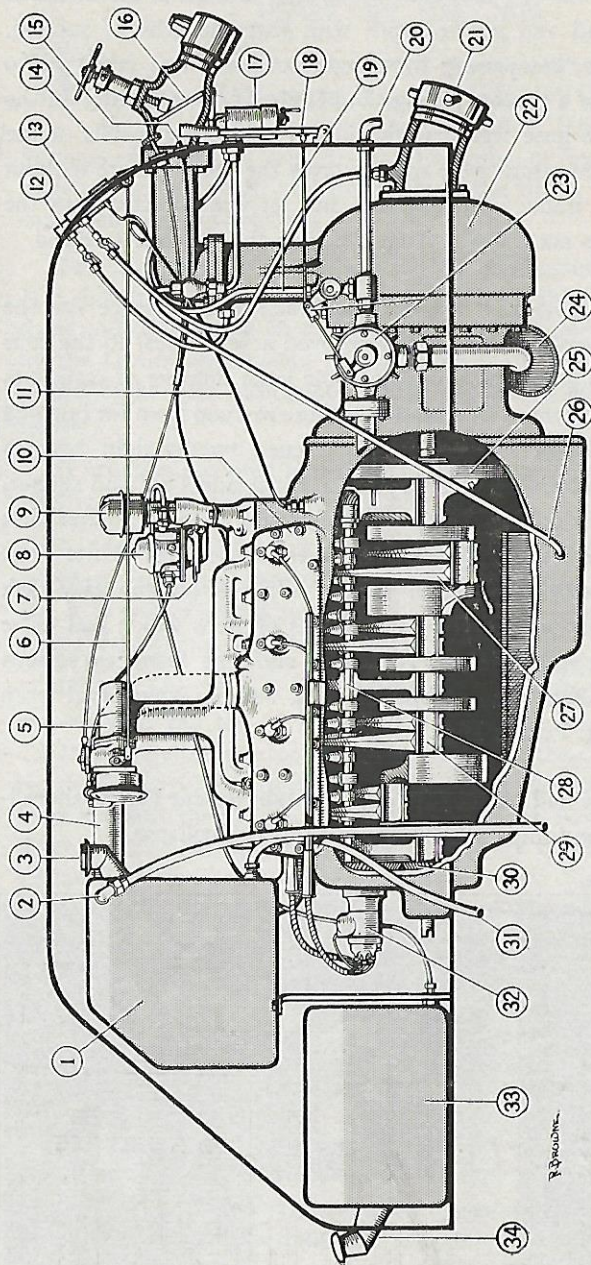
At 10.01 hrs. the self-propelled pump unit arrived at the dockside in Hotwells Road and got to work with three lengths of suction. A single delivery, comprising five lengths of hose, was taken up to the fire by way of a narrow passage and flight of steps leading off the main road. The hose was first threaded beneath the metals of the dock railway, then ramps were used to cross the thoroughfare without interfering with traffic. An effective fire jet was directed into the blazing buildings six minutes from the time the call was received.

Apart from providing considerable practical experience for the Auxiliary Fire Service, this exercise proved a severe test to the four First Aid Parties taking part, owing to the large number of casualties that awaited treatment. In addition to those rescued from the burning buildings, two Light Rescue Parties rescued twenty-eight persons who had been trapped in Messrs. Hall & Fitzgerald's air raid shelter, all of whom were suffering from miscellaneous injuries. After first aid treatment, seriously injured cases were carried via White Hart Steps to ambulances waiting in Jacob's Wells Road—no easy task on account of the narrow alleys and flights of steps which had to be negotiated by the stretcher bearers. Cases suffering from less serious injuries were taken to a mobile dressing station which had been established at St. Peter's Hall.

When the fire had been extinguished, Light Rescue Parties shored-up walls of the buildings which were in danger of collapse.



BERESFORD-STORK PUMP showing Essential Parts



- 1—Water Tank.
- 2—Water Tank Overflow.
- 3—Water Filler Cap.
- 4—Engine Cooling System (one each side of unit).
- 5—Solex Carburettor.
- 6—Throttle Control Rod.
- 7—Petrol Pump Hand Primer.
- 8—Petrol Pump.
- 9—Oil Filler and Breathe.

- 10—Cylinder Block (2 Banks of four set at 90 deg.).
- 11—Pipe to Oil Pressure Gauge.
- 12—Pressure Gauge.
- 13—Compound Gauge.
- 14—Starter Control (choke).
- 15—Ignition Switch.
- 16—Delivery Valve.
- 17—Dual Filters of Inter-cooling System.
- 18—Priming Lever.

- 19—Pipe Taking Water from Pump Casing for Engine Cooling.
- 20—Ejector Exhaust Outlet
- 21—Suction Blank Cap.
- 22—Impeller Casing.
- 23—Exhaust Primer.
- 24—Silencer.
- 25—Flywheel.
- 26—Pipe feeding Water to Oil Sump Cooling Coil.
- 27—Connecting Rods.

- 28—Camshaft (showing valves set at 90 deg.).
- 29—Camshaft (showing connecting rods set at 90 deg.).
- 30—Gear Drive of Camshaft.
- 31—Water Tank Intercooling Overflow.
- 32—Lucas Magneto.
- 33—Petrol Tank.
- 34—Petrol Tank Filler.

BERESFORD-STORK

LARGE TRAILER PUMP (350/500 G.P.M.)

By Transport Officer Powell

THIS unit has a Ford V-8 engine of 30 h.p. with a b.h.p. of 76 at 3,000 r.p.m. It is fitted with a Solex "self starter" carburettor, and a Lucas magneto driven off the camshaft at half engine speed. The contact breaker mechanism is of the double lever type, each lever operating for half the number of cylinders in conjunction with a four-lobe cam. There is an impulse starter for easy starting.

Like the Coventry Climax, the engine has indirect cooling, but the water pipe from the main pump is first led to a coil submerged in the engine sump—first cooling the oil, then passing to a coil in the water tank (which is not shown in the diagram) for cooling the engine, and finally to a discharge pipe. This engine has the usual governor control working directly on the throttle butterfly in the carburettor. The pump rotor is driven through a fabric universal coupling, the pump shaft being of special non-rusting steel.

The Beresford is a single-stage centrifugal pump running at a somewhat higher speed than the large Coventry Climax without risk of cavitation.* An efficient exhaust priming system is employed, but instead of a clapper valve for diverting the exhaust gases from the silencer, (as in the Coventry Climax), a rotary valve, resembling a large gas tap, is used.

With a 10-ft. lift through 24 ft. of 4-in. suction hose, the pump delivers 500 g.p.m. at 80 lb. per square inch, 400 g.p.m. at 120 lb., and 275 g.p.m. at 150 lb.

Petrol tank holds 12 gallons, sufficient for over two hours load run on full throttle. A petrol pump with hand primer is fitted. The water tank holds approximately 9 gallons, which enables the engine to be run for fifteen minutes without overheating. When draining the water in frosty weather, open the two cocks on each side of the cylinder block and disconnect the pipe connections at each side of the oil sump.

This unit has a 30 h.p. engine, and the large Coventry Climax a 20 h.p. engine, both pumps delivering 500 g.p.m.; but while the Coventry Climax needs full throttle for maximum output, the Beresford has a greater reserve of power.

When running the engine, push in the choke as soon as possible. The engine will run at about quarter throttle without the choke almost as soon as it is started, thus minimizing the danger of petrol diluting the oil, with its many consequent troubles.

In priming, watch the pressure gauge. If a pressure of 30/50 lb. is shown, and a stream of water issues from the ejector outlet, you will have got your water and the priming lever can be released.

After using the unit it is advisable to clean out the petrol and water filters, and top up with oil if necessary.

*Cavitation—This was explained in the article on "Pumps and Priming" which appeared in last month's *Jet*.

Fireside Corner

HINTS TO DRIVERS

Take care of your car batteries. Do not "top up" with ordinary tap water, as this contains deposits which may cause damage to the plates. Rain or boiled water can be used instead of distilled water in an emergency.

Never examine level of battery acid with a naked light, because of the presence of hydrogen gas.

Ammonia water will neutralize any acid which may come into contact with clothing, etc.

To avoid risk of fractured wrist, hold starting handle with thumb on same side as fingers.

To prevent windscreens becoming frosted or covered with snow while driving, it is a good plan to unfasten the off-side and near-side rear bonnet fasteners and place a wedge (matchbox or rag will do) under the edge of each panel. This allows a warm current of air to flow from the engine on to the windscreen, thus keeping it comparatively free from frost or snow, and avoiding risk of cracking.

AERIAL FIRE ENGINE

The United States Forest Service have recently acquired a flying fire engine to be used to fight forest fires. This fire-fighting aeroplane has a 450 h.p. engine and is fitted with bomb sights to enable water and chemicals to be dropped on small fires. Supplies can also be dropped to those working below, and a special radio amplifier enables verbal messages to be transmitted from the plane.

The flying fire engine has a range of over 700 miles and a cruising speed of 175 m.p.h.

AUXILIARY FIREMEN FIGHT SHIP BLAZE

The A.F.S. dealt with the first fire caused by enemy action on February 2nd, when they put to sea to extinguish

a fire on the Newcastle steamer *Royal Crown* (4,634 tons).

The ship, which was set on fire by incendiary bombs dropped from a Nazi plane, ran ashore in flames.

Trailer pumps and equipment were installed in a fishing boat, and after a voyage of several miles the Auxiliaries were able to save the blazing vessel from total destruction.

SPORTSMEN, D'YE KEN—

1. What is the "Roaring Game"?
2. How many ways can a batsman be dismissed in cricket?
3. What is the origin of the "Ashes"?
4. What sport was once made compulsory in England?
5. What was the first cricket club in England?
6. When and where was the first Cup Final played?
7. What is the record distance for driving a golf ball?
8. In what year the Boat Race resulted in a dead-heat?
9. What is the "Stirrup-cup"?

(Answers on page 69)

A.F.S. KNITTING FUND

Collections taken at Dances:

| | | | |
|----------------------------|----|----|---|
| (Jan. 31st) per Mr. Osborn | £4 | 6 | 2 |
| (Feb. 9th) per Mr. Duggan | 1 | 7 | 0 |
| (Feb. 14th) per Mr. Duggan | 4 | 15 | 0 |

Total .. £10 8 2

Expenditure to date:

| | | | |
|----------------------------|----|----|-------|
| Feb. 8th. | | | |
| 9 lb. wool at 6/6 per lb. | .. | £2 | 18 6 |
| Feb. 20th. | | | |
| 11 lb. wool at 6/- per lb. | .. | 3 | 6 0 |
| 9 prs. needles at 2½d. pr. | | | 1 10½ |
| | | £6 | 6 4½ |

Cash in hand, £4 1s. 9½d.

Articles completed and despatched to the "Evening World":—5 pr. Socks, 13 Helmets, 12 pr. Mittens, a pr. Gloves, 15 Scarfs.

MANUAL FIRE ENGINES

In the good old days when the keeper of the first engine to arrive at a fire "complete and in order" received a payment of thirty shillings!

THE Great Fire of 1666, which destroyed the greater part of the City of London, brought about a revolution in fire fighting.

At the time of this disaster the only appliances available for dealing with an outbreak of fire were leather water-buckets or primitive hand-squirts, which were similar in action to a garden syringe. The latter could only discharge a certain amount of water into the flames at one time, and the fire invariably made more headway than the appliances were able to check. After the Great Fire many people devoted their energies to devising new methods by which fire could be fought with some hope of success.

Experiments were carried out with the simple "plunger" type of pump, the general principle of which is as follows. It consists of a cylinder into which is fitted a piston or plunger with a valve opening one way. The plunging action of this piston causes water to pass through the valve into the cylinder: by reversing this action, the water is forced out in another direction through a delivery outlet and directed upon the fire through a nozzle with a certain amount of pressure. The disadvantage of these early manual fire engines was that they only projected water in spurts (i.e. during one journey of the piston), consequently the water supply was intermittent. Two pumps working alternately provided a slight improvement of this system, causing the water to be ejected twice as frequently, but the labour involved in operating this type of pump proved impracticable.

The problem was to provide a continuous stream of water, and the next stage in the development of the manual fire engine was the application of the "air-chamber." This is simply a cylindrical chamber into which water is pumped by a piston and compressed by the air in the top of the chamber. The compressed air in the chamber acts as a spring or cushion, absorbing the intermittent jerks of the pump, returning a steady pressure, and causing a continuous stream of water to be discharged through an outlet which does not allow the water to be delivered as fast as it is pumped in. According to Perrault, the first fire engine with an air chamber was kept at the Royal Library in Paris in the year 1675. About 1720 an improved appliance, capable of throwing a jet twenty to thirty feet, made its appearance in Germany.

Richard Newsham was the pioneer of fire engines in England. In 1721 he was granted a patent for "a new water engine for the

quenching and extinguishing of fires," and four years later he patented an improved model. Newsham's fire engine embodied the essential principles of modern fire appliances. His 1725 engine was operated by men either working levers by hand, or with their feet from a seated position on top of the engine. The two pumps were fed either by a feed pipe from the mains, or by leather buckets. The air-chamber system was employed, and a hose fitted to the top of this chamber enabled the jet to be directed towards the fire. In order to prevent air from being driven out of the top of the chamber, and thus losing the compression, a pipe reaching nearly to the bottom of the air-chamber was fitted to the hose outlet. As water was pumped into the air-chamber the end of this pipe was soon covered and the air imprisoned. Richard Newsham's engines proved highly successful. A business was established, and it is interesting to note that fire engines from his factory were the first to be used in the United States.

Hose pipes appear to have been invented by two Dutchmen about the year 1672, and it is recorded that in 1676 leather hose pipes were used for the first time in England at a fire in Southwark, apparently with great success.

In 1707 an Act was passed which stated that on and after March, 1708, the churchwardens of each parish should provide and keep in order a large engine, a hand engine, and a leather pipe and socket of the same size as the plug or fire cock. It was also the duty of each parish to fix stop blocks of wood, or fire cocks, on the water mains (which at that time consisted of wooden pipes fashioned from hollowed-out trunks of trees).

In those days the turncock "whose water shall be found on, or shall first come into the main or pipe where the first plug shall be opened at any fire" received a gratuity of ten shillings. Also, the keeper of the first engine to arrive at a fire "complete and in order" was paid the sum of thirty shillings, twenty shillings and ten shillings being paid to the second and third respectively—often the cause of a number of free fights! Whenever a fire occurred the constables and beadles of the parish assisted, and the engine was trundled in ceremony through the streets by any persons who happened to be available—women and children included. No doubt the prospect of "free beer" provided an added incentive to the volunteers!

One of these early parish fire engines can be seen on the ground floor of the tower of St. Mary Redcliffe Church. Although the exact date of its origin is unknown, this ancient fire fighting appliance is

undoubtedly the oldest in Bristol. As the accompanying illustration shows, the engine consists of a wooden cistern mounted on wooden wheels, and fitted with twin pistons or plungers. Water is pumped into an iron cylinder within a wooden casing, issuing from the top of which is a long metal delivery nozzle, mounted upon a swivel which enables it to be pointed in any direction.

The pump was operated by a double-lever handle, and leather buckets were used to supply the engine with water.

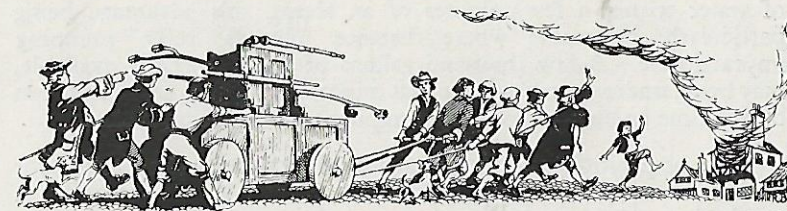
The following extracts appear in the Church records :

1759 " Churchwarden John Bloome do pay to John Day the sum of £35 when he shall have finished and completed the new Fire Engine for the use of this Parish and also deliver him the old Engine, the said John Day having agreed to allow £10 for the same out of £45, the sum agreed for the new one."

1862 " The Churchwarden ordered 30 new Buckets to be made for the use of the Fire Engine."

About thirty years ago the Redcliffe fire engine, which had been lying at William Powell & Sons' pottery, Temple Gate, was brought to the Church, where it has remained ever since.

Another manual fire engine, which was used to extinguish fires in the Parish of St. Michael's, can be seen in the Bristol Museum. Built c. 1790 for the churchwardens and vestry with a legacy of £40 from Mrs. Ann Frazier, this engine lay for many years in the crypt of the Church.



PUMP UNITS or MOBILE WATER CARRIERS?

ALTERNATIVE METHODS OF RELAYING WATER FROM A STATIC SUPPLY

By A/F H. F. Griffiths

SINCE speed is the essence of successful fire-fighting, it is necessary to consider, in relation to this factor, the alternative ways of bringing water to the seat of an outbreak.

Too optimistic a conclusion must not be drawn from the results of the long distance relaying exercises which have been staged, as these were not the response to genuine emergencies, but the outcome of pre-laid plans. Black-out conditions, for example, would undoubtedly have delayed the issue.

In one exercise, five pumps and 200 lengths of hose were needed to produce three jets a mile away. However expert the plans or dexterous their execution, such a system must take a considerable time to bring into being. How much longer would be required to muster and co-ordinate so much equipment after an air raid, with the majority of units scattered around their patrols?

The problem of protecting long lines of hose from damage in raid or post-raid conditions cannot be overlooked. It is possible, too, that they would cause hindrance to other A.R.P. Services and to pedestrians, especially in unlit streets.

Tremendous frictional losses experienced when pumping over a distance are a force to be reckoned with, and explain the necessity for so many pumps and the multiple lines of hose. One must confess that the amount of material used in combating these losses sometimes appears disproportionate to the small delivery of water thereby obtained.

As against this, the relaying method, once functioning, furnishes an uninterrupted water supply to the limit of the source. The chances of a hitch are not great and the system can be modified or extended from time to time as required.

Mobile carriers score in being able to deliver a reasonable quantity of water within a few minutes of an alarm, this advantage being particularly noticeable where distance renders relay pumping impracticable. A few thousand gallons of water, speedily available, may bring under control a blaze that might develop into a conflagration by the time an emergency relay pumping system was operating.

The acquisition and maintenance of water carriers ready for immediate use are not easy matters. There is the difficulty of purchasing suitable vehicles, the cost of converting them, and the problem of keeping standing engines in good order. The very

Pump Units or Mobile Water Carriers?

necessity for transporting water presupposes damaged highways, and one wonders whether carriers would always be able to reach their objectives.

In Bristol, the heavy risks are generally near enough to open water to make relay pumping the most expeditious method, leaving tankers to supply the out-lying lighter risks.

This is, of course, only an approximation, and, in any event, it would be unwise to weigh the two methods in the balance and to dispense with the one found wanting; one can visualize circumstances where a combination of both might be usefully employed by dispatching carriers to the fire for the use of the brigade pending the institution of a relay pumping system.

This is the prize-winning entry for last month's Competition, for which A/F H. F. Griffiths (757), Westbury A.F.S. No. 18, will be awarded half-a-guinea.

LAST MONTH'S CROSSWORD SOLUTION

DOWN.—1 CHAIRBOWLINE, 2 HAIR, 3 OLD, 4 KT, 6 AA, 7 TEA, 8 CREW, 9 HOSEREPAIRER, 16 LIE, 17 ARM, 18 EDTR, 19 RAF, 21 AS, 23 MI, 25 ESCAPES, 26 NITROUS, 27 RT, 31 ACE, 33 OB, 35 DR, 37 AFB, 38 TA.

ACROSS.—1 CHOKE, 5 MATCH, 10 HALT, 11 DO, 12 AERO, 14 AES, 15 IR, 16 LADDER, 20 WE, 21 AIR, 22 DAM, 24 BASEMENTFIRE, 28 SIR, 29 TP, 30 REACT, 32 SO, 34 CARD, 36 BRI, 37 AREPORT, 39 MR, 40 AF, 41 BRASSO, 42 GR.

ANSWERS TO SPORTS PROBLEMS ON PAGE 64

1—Curling. 2—Nine. 3—Urn, containing the ashes of a bail, which was presented to Lord Darnley as captain of the losing English eleven in 1800. 4—Archery, which was made compulsory during Edward III's reign. 5—Hambleton Cricket Club, playing on Broad-Halfpenny Down, Hampshire, 1744. 6—Wanderers v. Royal Engineers at Kennington Oval, March 16, 1872. 7—445 yards, by E. C. Bliss at Herne Bay, 1913. 8—1877. 9—Drink handed round to huntsmen before start of the chase.

FILL THIS UP

The Editor,

"The Jet,"

A.F.S. Headquarters,

Rupert Street,

Bristol, 1.

Please supply me with.....copies of "The Jet" each month, for which I enclose.....(postage extra).

NAME.....

STATION or ADDRESS.....

DATE.....



For heaven's sake, keep it up, Bert.

Father: "And that, my son, is the story of your father and the Auxiliary Fire Service."

Son: "But tell me, Dad, why do they need all those other Auxiliary Firemen?"

* * *

We know that gas and electricity companies are always fighting an untiring battle, but why dig all their trenches along main thoroughfares?

And Tet I don't know

A lady was struggling to get out her purse in a crowded 'bus, and after a few minutes a gentleman at her side offered to pay her fare. "Certainly not," said the lady with some heat.

She again attempted to reach the purse, but after a little time the gentleman said, "Please let me pay your fare. You have already undone my braces four times!"

Remember, careless talk may give vital secrets away—even walls have ears.



HERRING—

Them firemen have emptied the harbour again.

Lodging-house Keeper: "Either you pay for your board or you leave."

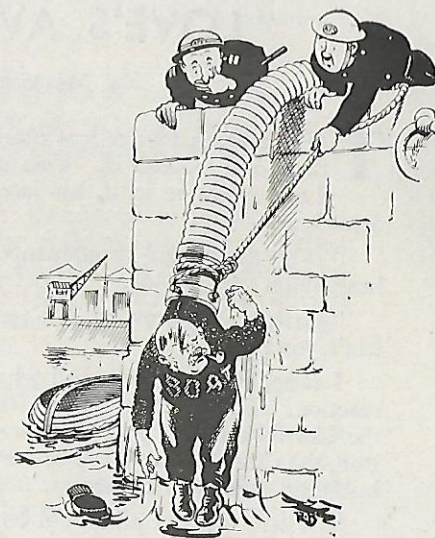
Broken-down Actor: "Encouraging news. At my last digs they made me do both."

* * *

Seaside Advertisement: "Thousands of people come here during the Summer to enjoy the solitude."



Think of it, chum. I used to pay ten bob a year for the privilege of doing this!



S'truth, we left the strainer off!

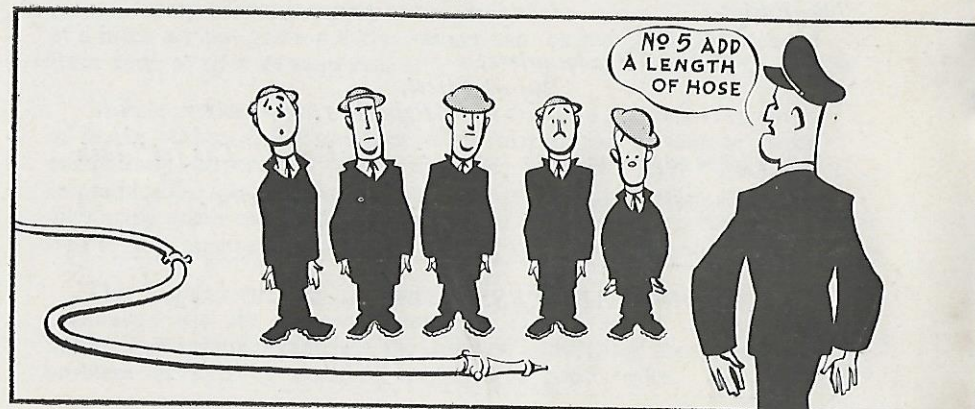
German measles has claimed a number of victims in this country. Symptoms generally take the form of a number of tiny swastikas which break out all over the body.

* * *

Trustee of an Asylum: "How are the inmates taking to their new swimming pool?"

Attendant: "Enjoying themselves immensely, Sir. They are diving off the top stage, springing off the spring-board, and sliding down the chute—and we haven't even got the water in yet."

ADVENTURES OF "SMOKEY"



By Allan Baird

"LOVE'S AWAKENING"

By Mervyn Millward

THE canteen lounge was almost deserted as I pushed open the door and walked in. One chair alone was occupied. Bobby Love sprawled in it, his face and attitude bespeaking extreme dejection.

"Why the doleful countenance, Bob?" I enquired, slapping him heartily on the shoulder. "Lost your week's pay or something?"

"Grrh!" he growled, "Keep your flapping hands to yourself, can't you?"

I raised my eyebrows and whistled softly. This was an unusual reaction. To find Bobby Love with a mood on him was like meeting the Chief Constable in a 1s. 11d. cloth cap—absolutely unheard of! Bob, the cheeriest Auxiliary who ever shipped a standpipe, was usually bubbling over with optimism.

"What's on your mind, old boy?" I asked in a sympathetic tone, sinking down into an adjoining chair, "You haven't been upsetting old Pussyfoot again, have you?"

Mind you, old Pussyfoot, as his Section Officer is affectionately termed, had good reason to be upset. After all, when a man can't put his steel helmet down without the risk of a shower bath when he puts it on again—when he repeatedly finds stray cats in his respirator haversack—when he finds a cigarette on his desk and, lighting it, loses half his eyebrows after the first two puffs—when, in short, he has a practical joker like Bobby Love in his section, he has, as I said just now, good reason to be upset.

"No," grunted Bob, "He's sick; hasn't been on duty for a fortnight."

"Then why the gloomy face? You haven't quarrelled with Anita, have you?" I asked suspiciously.

"Of course not, fathead," he replied, with that politeness which his courtship of my sister entitles him to display towards me.

"Don't tell me you've been late again!" I begged anxiously. He had twice been caught napping during his last spell of day duty and his Divisional Officer had said—. But then, of course, you all know what Divisional Officers do say under such circumstances.

He laughed loudly. But it was a hollow, mirthless effort.

"No," he said bitterly. "I took your very brilliant advice after the last time I was on the carpet, and a tidy mess it's got me into!"

"My advice?" I queried indignantly, "But I—"

"I know! I know!" he interposed quickly. "You only told me to get a really reliable alarm clock; one with a peal calculated to wake the dead! I did; but the trouble was that I wasn't dead—only sleeping. The clock you recommended woke me all right, but the darn thing woke everyone else in the house as well. It sent the

"Love's Awakening"

landlady's baby into screaming hysterics; it caused the civil servant who's billeted in the back room to jump out of the window in his nightshirt at half-past five—he thought the wretched house was on fire—and it shattered the sleep of everyone within a radius of half-a-mile.

Then, when a Special Constable threatened to report me for giving a signal that might be mistaken for an air raid warning, I decided that your bright idea was a wash-out. Anyway, the Special seemed a decent sort of fellow and, when he knew I was in the A.F.S., he offered to give me a call each morning. He had to start duty at 5.45 a.m. and that was just right for calling me."

"Well?" I suggested, as Bobby paused.

"Well," continued Bobby, "he tried next morning, and although his repeated hammerings woke everyone else in the house, I didn't hear a thing until the landlady informed me, with quite unnecessary bluntness, that one of my friends had gone mad and was battering the front door down!"

It was the sight of an old door bell—one of those which work on a spring when pulled with a wire—among some rubbish at the Station that gave me an idea. I took it home, tied it to the top of the bed-post, fastened a piece of rope to the spring, carried the rope through the window and let it dangle down by the side of the front door.

Then I waylaid the Special, showed him the rope and asked him to pull it, instead of knocking at the door."

Bobby paused and heaved a deep sigh. I pulled out my cigarette case and offered him a cigarette. He took it, lit it and blew out a cloud of smoke.

"Well," I prompted again, "what happened? Did he forget all about it?" I suggested.

"Forget it? No darn fear!" he said, with sudden fierceness. "I wish he darn well had! You see, he gave the rope about fourteen gentle pulls, without disturbing me, and then decided to give it an extra tug."

"And do you mean to say that that didn't wake you?" I asked sadly, knowing that the Seven Sleepers had nothing on Bob when it came to somnambulance.

"Huh! Wake me!" he snapped. "Considering that it pulled the bell off the bed, dragged it crashing through the bedroom window down on to the top of the greenhouse, where it smashed seven panes of glass, I should say it did," he added wistfully.

"That's right! Go on! Laugh like a jackass," he continued. "Perhaps, when you've thoroughly enjoyed yourself, you'll tell me if you know of any decent digs . . . I've got to find some fresh ones by Friday!"

With the W.A.F.S.

R E Q U E S T S have been made for some more general cooking hints, and I hope the following will prove of some use.

Measures

- 1 heaped tablespoonful of flour, rice, etc. = 1 oz.
- 1 level " " " " = $\frac{1}{2}$ oz.
- 1 heaped teaspoonful " " " = $\frac{1}{4}$ oz.

A cup which will hold $\frac{1}{2}$ pint of water holds 6 oz. flour well shaken down. A cup of this size also holds 15 oz. treacle. Always heat any utensil before it is used to measure treacle and so avoid any waste.

Washing Up

It is very essential that everything in use in the kitchen should be as clean as possible.

You will find pans and cooking utensils much easier to wash if you do them as soon as you have finished using them. When you are washing up plates, etc., please use *hot* water and a little ordinary household soap, which will give just as good results as soap flakes or soda. Your dishcloths should be boiled frequently, and they can be done in a bucket on the stove. Here again, a small piece of household soap in the water is just as effective as soap flakes or soda.

If you have to make fruit or meat pies for a large number of people, it is very often easier to bake the pastry separately on flat tins and not to cook the fruit or meat and pastry together.

Cooking fat is now very difficult to obtain, so please save carefully every scrap of dripping you get from your joints, etc. Unfortunately, as time goes on, and with rationing too, it is getting increasingly difficult to obtain everything we order, and to give you the variety we should like. Also, the weather has made potatoes and vegetables very difficult to obtain. I hope by the time this goes to press conditions will have improved. It isn't always easy to cater for a large number of people at the best of times, and it is much more difficult when rationing and bad weather take a hand. So please grin and bear it if your dinner is not always exactly what you would have chosen yourself.



. Your Queries .

QUESTION.—What would happen if a heavy object fell across the hose line supplied with water from a centrifugal pump, assuming that it was the only delivery and that the flow of water was completely stopped?

ANSWER.—*The pressure produced by a centrifugal pump is controlled solely by the revolutions of the impeller, and when the maximum revolutions per minute have been obtained, the speed of the impeller cannot be further increased, and consequently the pump pressure cannot be increased under any circumstances.*

In the case mentioned, as soon as the flow of water was stopped, the pump revolutions would increase to the maximum, in relation to how much the engine throttle was open, and the delivery pressure would increase. The water would be churned round and round in the pump casing and the pump would not be damaged. If the hose was in good condition, the sudden rise in pressure would not affect it, but if it was of very poor quality, or had any weak places, a burst might result.

QUESTION.—What are "shoe pieces"?

ANSWER.—*Roughened strips of metal fitted to the foot of an extension ladder to prevent it slipping.*

QUESTION.—What is the value of a 100 ft. length of canvas delivery hose?

ANSWER.—*Approximately £5.*

QUESTION.—Why is it necessary for a turncock to be in attendance at a fire?

ANSWER.—*When an improved supply of water is required, the services of the turncock are particularly essential—especially at a large fire where the pressure on the mains is being severely taxed owing to a large number of hydrants being used at one time. His knowledge of the locality, size, pressure, etc., of mains in a particular district enables him to open up or direct supplies from other mains which are not in use.*

QUESTION.—What are the principal uses of rubber-lined hose?

ANSWER.—*There is less frictional loss on account of the smoothness of the walls, and for this reason it is used wherever a maximum pressure is required, especially when delivering from water towers or other high positions.*

Another important use of rubber-lined hose is to convey water through premises without causing unnecessary damage. With canvas delivery hose a certain amount of leakage is unavoidable, and rubber-lined is often used when it is essential to run out hose through one building in order to attack a fire which has broken out in another.

(NOTE.—The Editor will welcome any further queries on the above lines.)

FIRE ON THE STAGE

By Gerald Seymour

Mr. Seymour has been stage director for Mr. Francis Laidler at Prince's Theatre pantomimes for several years past, and is in charge of this year's "Red Riding Hood" production in which one of the most spectacular scenes is the forest fire.

THERE are many ways of creating an illusion of fire on the theatrical stage, though the perfection of electrical effects brought about a revolution in technique after the rather primitive methods of the early theatre.

I remember a pantomime in which the producer demanded that every time the demon appeared, he should emerge from out of a flash of fire.

The pre-electricity way of working this effect was to have one of the stage hands crouched behind a piece of scenery and holding a weird piece of apparatus: it was a length of rubber tubing to one end of which was attached the spout of a metal funnel. Over the top of it was stretched a piece of gauze, on which was stuck a stump of lighted candle.

Lycopodium,* a powder which ignites with a flash on coming into contact with a flame, was sprinkled inside the funnel below the gauze.

On the cue for the demon's entry, the stage hand would blow through the other end of the tubing, and his breath would send the powder through the gauze to ignite on the candle flame. In the resulting flash, the demon leaped out of the cover of a rock or a tree on to the stage.

I often wondered what would have happened if he had leaped too soon and been scorched by the flames of his own particular Hades!

The modern method of firing flash-powder is by fusing an electric wire running through the powder.

A clever device has been used for scenes which needed to show flames. I remember one play in the finale of which a man was shown being burned to death at the stake.

Long, ragged strips of orange and red silk were fastened to the base of the fire, and below them was fixed an electric fan. As the fire was 'lighted,' the spotlights changed to red. The actor who was supposed to start the fire burning ignited some powder which burned with a red glare and plenty of smoke, and the electric fan was started.

As the breeze from the fan grew in strength, the silken strips were set waving and dancing, and, with the added effect of the red spotlights and the smoke, the illusion of a blazing fire was seen by the audience, the silken strips looking like angry tongues of flame.



Fire on the Stage

Many people have been interested in the forest fire scene in "Red Riding Hood." It certainly was a most effective moment in that pantomime.

Girls with torches—they were electric ones, of course—pretended to set fire to the trunks of the trees, which soon began to glow from the bottom upwards, as though they were blazing.

The fire-trees were specially reinforced with metal. From the back they looked as though conical pieces of black metal had been fixed to them.

Underneath this cone-shaped metal was a red spotlight pointing upwards into the cone and worked from a special switchboard. The electrician could bring up the spotlight slowly, so that it really looked as though the tree was burning when the red glare was seen through the semi-transparent trunk.

There were five trees treated in this way, and as they began to glow, four effects arcs—spotlights, in front of which revolved flame-tinted mediums worked by clockwork—began to shine on the scenery and the backcloth.

The stage lights were dimmed down, and red lights flickered.

Other stage hands operated the "flicker boxes." These were on a similar principle as the effects arcs, but were worked by men turning handles.

It needed a young army of men behind scenes to make that forest fire effective.

Nowadays there are strict regulations governing the use of fire on the stage, and everything is done under supervision from the authorities so that there is no risk of a faked fire becoming a real one.

There are, of course, trained firemen attached to every theatre staff.

A modern development which has not yet been exploited to the full is the use of a super effects arc which will make the projection of flames on to scenery a sort of magic lantern show.

Sometimes even the scenery itself is projected through a lantern, and a revolving flame slide is superimposed on the cyclorama—the plain back-cloth which acts as the screen for the projected scenery—so as to give a most realistic effect.

The days when the demon jumped into view through a flash of lycopodium are back in the past, and nowadays stage fires are perfectly safe and infinitely more realistic.

***Lycopodium**—a genus of useful evergreen cryptogamous plants of the family *Lycopodiaceae*—the Club Mosses—of a very inflammable substance and used in making fireworks.

FRACTURES—SIGNS AND SYMPTOMS

AS mentioned in the last issue, fractures are caused in one of three ways, and classified either (a) according to the damage sustained by the surrounding tissues, or (b) damage sustained by the bones themselves.

The fractures causing damage to the tissues of the body are *simple*, *compound* and *complicated*, and those causing damage to the bones, *comminuted*, *greenstick* and *impacted*.

Simple fractures occur where the bone is broken, but with little damage to the tissues. Compound fractures exist when there is a hole in the skin, which gives free access of germs to the seat of fracture, thereby adding to the injury. Complicated fractures, as their name denotes, further complicate the injury by severely damaging an important organ of the body, e.g. blood vessels or, as often occurs in the case of the ribs, severe damage to the lungs.

You may be wondering why it is necessary to concern ourselves with these varied names. The reason is that treatment varies slightly for each type of fracture, but more especially as one type of fracture arises more often than not from the other, e.g. it is highly probable that if inexperienced people were left to deal with simple fractures, complicated ones would immediately result.

Comminuted fractures signify that the bone is smashed into several pieces. Greenstick occur in children when the bones are mainly of organic matter, and splinter rather than break. Impacted fractures occur rarely when the broken ends of bone are driven in together.

Simple fractures occur most often, but compound and complicated prove most interesting to the First Aider.

Before we proceed to the treatment, it is necessary first to recognize the common signs of fractures. If a patient is conscious he will complain of pain in the region of the fracture; if not, your powers of observation alone can assist you. Even with simple fractures the signs are so pronounced (except in the case of small bones) that little doubt should exist after a careful diagnosis.

Whether the patient is conscious or unconscious, some of the following symptoms will be present. There will be a marked loss of power in the region, often a pronounced swelling and discolouration, deformity when comparing a limb with its mate, and irregularity, which may be felt by the careful running of your hand over the affected limbs. Apart from this, there is an unnatural movement at the seat of the fracture, and a sensation felt and heard known as crepitus—the grating of the broken ends of bone together.

General rules of treatment:—

Always attend to haemorrhage immediately: secure the limb in splints long enough to secure the joint above and below, and restore the limb to as natural a position as possible.

The writer would like here to give one or two reminiscences to remind the would-be First Aider that mistakes on his part can prove very dangerous, whilst a little forethought can prevent further injury or complications and promote chances of recovery.

An attempt to splint a fractured arm resulted in a compound fracture; the broken ends penetrated the skin merely because the patient was not sufficiently sober to realize that it was inadvisable to hit the First Aider with the same fractured arm!

Again, a man was working in a road trench when a runaway lorry passed over his legs. The injury sustained was a serious comminuted fracture, and the ambulance man realized that the fracture was likely to sever an artery; so immediately before attempting to remove the patient he placed a rubber constriction around the limb, and then splinted the fracture as well as possible. Whilst lifting the patient on to a stretcher, broken ends of bone severed the femoral artery and the injured man might easily have died through loss of blood.

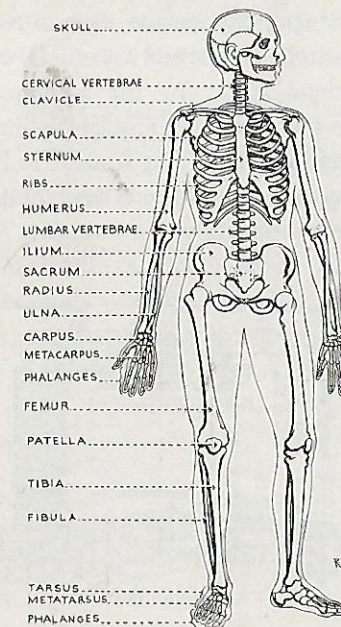
In another instance an elderly lady, who had been knocked down and rendered unconscious by a motor car, was held in a sitting position on a chair inside a shop, instead of being left lying in the roadway. An agitated First Aider was attempting to pour a liquid stimulant down the unconscious person's throat—a thing that must never be done while a person is incapable of swallowing. The lady subsequently died, and although the writer does not entirely blame the original First Aider, he feels quite confident in his own mind that some of the many fractures she received to the ribs must have developed from simple into compound as a result of careless and unnecessary handling.

A mistake often made when examining an unconscious person is that of being content to treat one injury, believing that to be the only one and the cause of unconsciousness, while there may be another equally, if not more, dangerous in another part of the body.

Do not be satisfied at having found one fracture only, but examine for further injury. If in doubt as to whether an injury is a fracture or not, treat as a fracture.

In conclusion, it is very important to see that a seriously-injured person is kept in a lying position, that fractures are made secure and splinted on the spot, and that haemorrhage is treated immediately.

In the next issue I hope to describe the method employed in securing fractures and the difficulties sometimes experienced.



BRISTOL'S WATER SUPPLY

(II) MULTIPOINT HYDRANTS

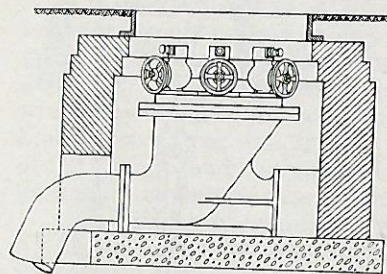
By R. W. Melvin, B.Sc., A.M.Inst.C.E.,

Bristol Waterworks Company

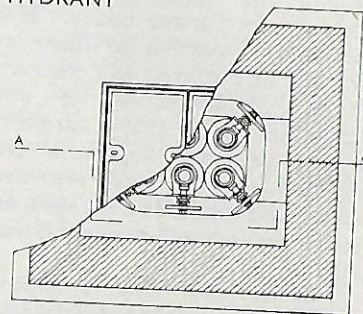
SHOULD Bristol ever be subjected to intensive aerial bombardment, with the consequent large number of fires to be dealt with simultaneously, the servicing mains on which hydrants are fixed would be liable to exceptionally heavy draught, owing to the unusually large number of hydrants in use at the same time. This might, according to the circumstances, result in a general decrease in the city water pressure, thus depriving certain hydrants served by the smaller mains of their full pressures; although a test carried out in a Bristol high-risk area last April, when 90 hydrants were opened at one time, produced very good results. However, to make certain that the high-risk areas in Bristol are well provided for under conditions of maximum draught, the multipoint hydrant has been evolved by the B.W.W. for emergency use. These new type hydrants are being fixed on large capacity trunk mains not supplying the ordinary hydrants and not subject to much pressure variation.

Multipoint hydrants each consist of a set of six $2\frac{1}{2}$ " diameter female half-coupling outlets each fitted with a blank cap and separately controlled by wheel valve. The outlets are approximately 6" below ground level. As the accompanying diagrams show, these outlets are mounted on a special casting which is connected by a 7" pipe to trunk mains varying from 7" to 27" in diameter and having an average pressure of between 50 and 75 lb. to the square inch. A split cover

MULTIPOINT HYDRANT



Section A.A.



Plan view showing Manhole Cover and Inside of Chamber

measuring 30" x 24" provides access to the unit, which cannot be operated until an isolating valve between the 7" connecting piece and the trunk main is opened.

Hoses can be connected direct from the outlets to a pump, but as the following tests show, multipoint hydrants provide high-pressure jets suitable for fire-fighting without the use of a pump.

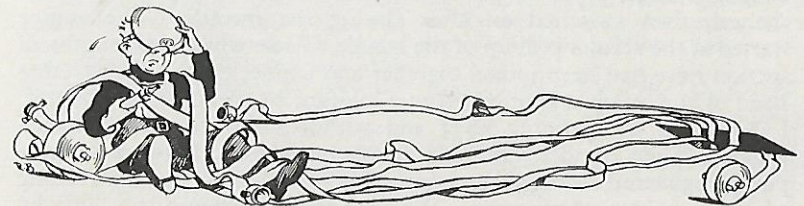
On September 3rd, 1939, Bristol Fire Brigade carried out tests with a multipoint hydrant situated near the statue in Queen's Square. This hydrant is attached to a 24-inch trunk main, and registered a pressure of 75 lb. with all deliveries open. One length of hose was inserted in each of the six water outlets, and readings taken from each gave the following quantities in gallons per minute:

| | | |
|-------|-------|-------|
| No. 1 | | 195 |
| No. 2 | | 220 |
| No. 3 | | 195 |
| No. 4 | | 195 |
| No. 5 | | 210 |
| No. 6 | | 220 |
| Total | | 1,235 |

Two dividing breechings were also used in conjunction with the hydrant, and a fair fire jet was given from each of the eight deliveries.

Thirty-six multipoint hydrants are being installed in Bristol. They are indicated by a wall plate—M.P.H.—"X" Ft.—lettered in red.

Bristol has had for some time a number of emergency fire supply units in high-risk areas in the form of underground tanks filled direct from the mains and acting as suction tanks for the fire engines. The multipoint hydrants have distinct advantages over these in that they quickly supply large volumes under pressure with none of the wastage of water which occurs when the tanks overflow.



CAN YOU SPOT THE ERRORS?

THE following account contains a number of mistakes, and certain vital points have been deliberately omitted. Make a list of all the errors and points which you think ought to have been mentioned in the order in which they occur (e.g. "Line 14: valve standpipe should read *plug* standpipe"; and "Line 26: Omitted to give the order 'Turn on', etc.).

Solution will be published next month.

FREDDIE THE FORGETFUL FIREMAN

On Monday, February 3rd, 1940, I arrived on parade at 17.00. After being dismissed squad drill was given. Twenty-one fell in in two ranks, and I, being shortest, occupied 9th position in the front rank. Unfortunately I forgot to move when the order was given to "Move to the right in fours," and was reprimanded by the officer in charge. This was not all, for I was again ticked off for talking to my companions alongside me whilst on the march.

After squad drill we were taken in hose drill. I was detailed to ship the plug standpipe, and off I went with standpipe, pricker bar, three wedges and a tin hammer. When I had withdrawn the plug, I inserted the standpipe, after first ascertaining that the valve was closed. Meanwhile one of my companions had run out a length of hose from a dividing breeching to the standpipe, and I connected up just as the men at the branch shouted "Turn on valve standpipe." For the next drill two standpipes were used, and a single delivery obtained by means of a collecting breeching, but I was slow in pulling out the lugs of the coupling and clipping in the branch. I then received the order to "Add a length of hose at the branch." I shouted "Turn off," then ran out another length alongside the first, took out the branch, connected the extra length between the breeching and the first length, then (after first inserting the branch) shouted "Ready here." I was then instructed to "Replace damaged length of hose between the valve standpipe and the dividing breeching." I first ran out a new length alongside the damaged hose, then shouted "Turn off valve standpipe." The new length was then connected and the damaged hose made up.

We then had a short break before being taken out for wet drill. I was detailed to look after the pump, which was a light Coventry Climax F.M.S. type. I pulled out the "start" control, turned on the oil, then switched on after closing the throttle. The engine started at the second pull up of the handle. Meanwhile two lengths of suction hose had been joined together and connected to the collecting head of the pump and attached to a hydrant by means of an adaptor. I depressed the priming lever and within a few seconds obtained water. When the delivery valve had been opened, I found that the pump registered an output pressure of 350 lb. with a vacuum reading of 10 sq. inches of mercury. We then took the pump to a near-by

Can you Spot the Errors?

brook, and this time I was detailed to connect up the suction, and began by joining the two lengths of hose together. One end I screwed into the pump, and the other, with brass suction strainer attached, I lowered into the water after tying a clove hitch around the lugs of the suction hose and securing the other end of the rope to one of the jacks on the pump. A single delivery of four lengths of hose was then run out from the pump, and, with a $\frac{6}{8}$ in. nozzle at the branch, the pressure gauge registered 100 lb. at full throttle.

Order to "Make up" was given—and supper was very welcome!



Make up!

Sport and Social

(Continued from page 59)

minster Divisional A.F.S. Dance Band. Included among the guests were Chief Inspector J. Y. Kirkup and Mrs. Kirkup, Chief Inspector W. H. Andrews, Major Blackney, Mr. R. Hopkins, Dr. Davies, Mr. E. G. H. Spencer, Mr. G. J. Creech, Mr. H. J. Croker, Inspectors W. Hill, H. Horton, and C. Weare, Mr. W. R. Lewis, Sergeant Cains, Sergeant Whalley, Divisional Officers Aldridge and Thomas, and several members of the Regular Fire Brigade and Police Force. A collection taken for the Wool Fund realized £4 15s.

Snooker and Skittles.—Headquarters competed against Redcliffe Adult School on February 1st, and after a very enjoyable evening proved successful in both matches.

Bristol Motor Co. (No. 9).—A well attended Social and Dance organized by the men of this Station was held at St. Francis Hall, Ashton Gate, on February 8th.

The duties of M.C. were most ably carried out by Sub-Officer Price, and music was provided by the Divisional Dance Band. Mr. Williams and Miss Morgan also contributed to the programme.

During the evening Divisional Officer Duggan gave a brief speech in which he congratulated everyone concerned on the success of their social. He announced that knitting parties were

now being formed by wives and fiancées of Auxiliaries for the purpose of knitting comforts for men serving in H.M. Forces. A collection was then taken to help in the purchase of wool for the ladies to use; this realized £1 7s.

ST. GEORGE.—Glebe Road are anxious to play any Auxiliary Fire Station at Darts.

A match has been arranged against the "White Hart" Hotel, Whitehall Rd. Lysaghts Station (No. 20) played Fishponds Police at Skittles and lost by 4 pins. A return match has been arranged, when the A.F.S. hope to retrieve lost honours.

Table Tennis.—A match against the "Regulars" has been arranged.

Fishponds Station (No. 22) entertained "D" Division Police to a Darts match on February 7th. After an exciting finish the home team were victorious by one game.

Phipps Station (No. 23) beat Kingswood A.F.S. at Darts by 7 games to 5 on February 22nd, thus avenging a previous defeat by Kingswood.

ROYAL REVIEW PHOTOGRAPH

Copies of the photograph on page 58 may be obtained from Sport and General Press Agency, Ltd., 2 and 3, Gough Square, Fleet Street, London, E.C.4.

Full particulars from A/F 570.

FIRE PREVENTION AND CAUSES OF FIRE—CONTINUED

ELECTRICITY.—Though undoubtedly the safest form of lighting and heating, electricity is particularly dangerous when improperly installed, and has accounted for a large number of fires, chiefly due to short circuits, leaks and loose contacts. It is inadvisable for anyone but an experienced electrician to make alterations or additions to an electrical installation, and new circuits should only be installed according to the Regulations of the Institution of Electrical Engineers, Regulations of the Electricity Commissioners, Electricity Regulations made under the Factory and Workshops Acts, Cinematograph Acts, etc. A wise precaution is to have all circuits inspected at regular intervals by a reputable firm of electrical engineers, and never allow an incompetent electrician to tamper with the wiring.

Be certain to use the right size of fuse wire when replacing fuses, and keep a coil handy for replacements. The blowing of a fuse generally indicates that there is a fault in the wiring or electrical appliances. As the "safety valve" of the circuit, it serves as a warning that the current has increased beyond the limit that the wiring can safely carry; but if too heavy a wire is used, the defect may pass unnoticed.

Short circuits may be brought about in a number of ways. One of the commonest is old and defective wiring, but cases have occurred where short circuits have resulted from rats or mice eating away the insulation of the wires. On no account drive nails or screws into casings through which electric wires are run.

Never use flexible wires for making permanent or semi-permanent additions to an installation: they should only be used for portable electrical apparatus, such as table lamps, vacuum cleaners, etc. In such appliances connections should be examined from time to time in case of damage through friction, and renewed when necessary. Never run a length of flexible wire under a carpet. It should be unnecessary to point out that the use of cheap flex must be avoided as it cannot be adequately insulated.

Electrical heating apparatus should on no account be left unattended where it is likely to come into contact with inflammable material. Switch off electric fires, irons and kettles after use: when left on indefinitely they become overheated, and a fire may easily result. A golden rule is to pull out the plug of any portable appliance when it is not actually in use, thus obviating the danger of it being switched on or left on accidentally.

To avoid risk of electric shock, which may prove fatal, it is advisable not to install portable electrical apparatus in a bathroom. Electric switches should never be handled by a person in the bath or in a wet condition.

Lamp-holders are only intended for small currents, and appliances with a capacity exceeding 500 watts at 230 volts should always be connected to proper plug points.

Always switch off at the main before making adjustments to any electrical apparatus.

(This article will be continued in next month's "Jet")

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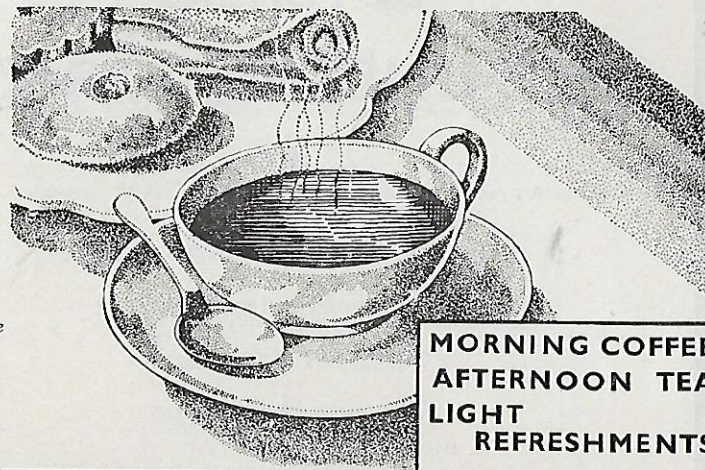
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