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THE JET

OFFICIAL JOURNAL
of THE NATIONAL FIRE SERVICE OFFICERS ASSOCIATION

Vol. 2. No. 8 October, 1945

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The National Fire Service Officers' Association

Vol. II No. 8 October 1945

31 Birchall Road,
Redland,
Bristol, 6

What has the Association to offer Part Time Officers? This was one of the main items on the agenda of the recent National Council meeting, and officers in this category will be gratified to learn that considerable progress has already been made, principally as the result of a comprehensive report prepared by Mr. W. E. Whitehouse. Apart from the reduction of membership fee to £1/1/-, such vital matters as payment for loss of remunerative time, injury compensation, promotion, etc. are being carefully watched in relation to the Department's future policy affecting conditions of service for Part Time Officers. It is hoped that by a united membership of ALL volunteer and retained personnel, whole-hearted backing will be given to the Association's efforts on their behalf.

Air transport will undoubtedly play an important part in the years of peace and reconstruction which lie ahead. Although scientific safety devices have reached a high degree of perfection, the human factor cannot be ignored as regards the possibility of crash landings and resultant fires. Members will be interested in the way this problem is being tackled in the United States, and I shall be glad to supply any further details on this subject, which is dealt with in this issue.

Future issues of the Journal may appear in somewhat different form. It is with sincere regret that I am forced to resign the editorship, and I should like to take this opportunity to thank those members who have given me their support, especially Regional Correspondents. Best wishes to my successor, Mr. R. Reader Harris, and may "The Jet" continue to express the progressive policy of the N.F.S.O.A.

Yours sincerely,

Editor

Minute-by-Minute

Members will be interested in this summary of the principal items which were discussed at the September meeting of the National Council :

Constitution of the Council

Messrs H. P. B. Drage and G. M. Boyd, members of the National Council, were elected to serve on the Executive Committee.

Post-War Fire Service

The Council asked the Executive Committee to consider the replies to the questionnaire received from Regional Branches on conditions of service in the P.W.F.S., and formulate a draft report for submission to the Home Secretary and local authorities.

Part-time Officers

A comprehensive report was submitted by Mr. W. E. Whitehouse, which is dealt with on page 15.

It was agreed to reduce the annual membership fee for Part-time Officers to £1/1/-.

Pensions ("Two-for-one" Scheme)

The General Secretary reported that a letter had been sent to the Department setting out the Association's claims and offering to discuss the matter in detail.

Retention of Interest by Past Members of the Service

The question of an annual reunion was discussed, and it was agreed that quarterly lunches and periodic meetings should be arranged (to include whole-time members) by Regional Branches at local centres.

A brochure outlining the Association's scheme for retaining the interest of past members of the Service was in the process of preparation.

Delays at Departmental Level

It was agreed to ask the Department to allow the Association 14 days in most cases when it was desired to get its views. Certain matters were capable of being dealt with by the Executive Committee or the Chairman on his own initiative, but others required full discussion at the local Branch meetings and possibly three weeks or more would be necessary in these cases.

Reassessment of Officers—Scotland

The General Secretary reported that a protest had been sent to the Scottish Home Department on the exclusion from appearance before reassessment boards of Divisional and Column Officers who were Deputy and Fire Force Commanders. It was agreed to draw attention to the facilities for oral appeal allowed to Section Leaders, but denied to Company Officers.

Accommodation for Entitled Officers

Two cases had been taken up with the English and Scottish Home Departments. Great concern was again expressed over the provision of accommodation for entitled officers. A letter had been received from Sir Arthur Dixon promising to do all he could in each individual case with a view to mitigating hardship, but warning the Association that through demobilization from the Forces and the termination of the war, the position would become more difficult.

The General Secretary reported that this matter had also been taken up with the Scottish Home Department, indicating a particular case of acute difficulty.

Parliamentary Representation

The Executive Committee were asked to approach an M.P. with the object of raising certain matters direct with the Home Secretary.

Assimilation of Conditions of Service

It was hoped that the Association's efforts might result in an assimilation of the conditions of service of regular and war-time firemen as had happened in the Police, but a letter was read from Sir Arthur Dixon which made it clear that the Home Office did not consider it worth taking any action in this direction if the Service was to be returned to the local authorities, as Home Office could clearly not commit them. The Council decided to take no action for the time being.

Oral Hearing of Appeals

The case of an officer who had been reduced in rank as the result of a discipline case, and who had applied to the Home Secretary for an oral appeal, was raised. His request had not been granted, and it was agreed to draw the attention of the Department to the discretion in the regulations to hear appeals orally, making the point that it would be better if this were made the rule rather than the exception.

Scotland

It was agreed that No. 11 Regional Branch should be permitted to make oral representation direct to the Scottish Home Department on matters of local concern which did not involve policy, the General Secretary to be kept fully informed of all such negotiations, and to sign all letters.

Expression of Policy by the National Council

Region 7 had forwarded the following resolution :

> "That the National Council ought not to make a declaration of policy without prior consultation with Area and Regional Branches."

The National Council, however, held the view that as a democratically-elected body, it was up to the members of the Association to trust them and back them up in their decisions. Regional Branches would always be consulted whenever expedient and possible. Where circumstances rendered this impossible, the Council felt that it would be failing in its duty if it did not take swift and decisive action.

"The Jet"

A Committee was formed to consider the future of the Association's Journal owing to the Editor, Mr. G. W. Bennett, leaving the Service in the near future.

Annual Leave

Sir Arthur Dixon, in a letter to the General Secretary, explained that this matter could not be taken further until particulars of the Post-War Fire Service were available.

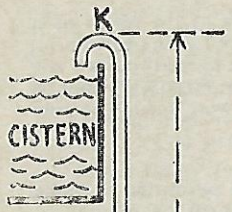
Next Meeting

The date of the next meeting of the National Council was fixed for Tuesday, 4th December, 1945, to be held at Millbank House, Great Peter Street, commencing 11 a.m.

WHAT IS A HYDRAM?

Fire Service Officers may have come across these fascinating pumps during the course of their duties. Their continuous muffled throbs can often be heard from within brick or concrete chambers situated on river banks, and during the war years Hydrams have been applied to a variety of purposes—maintaining static water supplies for fire fighting to remote high-level areas, supplying water to military camps and industrial plants, watering cattle, etc.

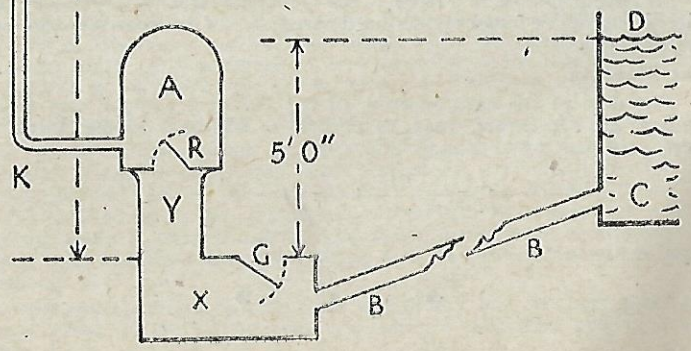
Their somewhat mysterious operation has frequently been the subject of discussion among hydraulic enthusiasts within the Service, and for this reason I hope these brief notes will prove interesting.—Editor.



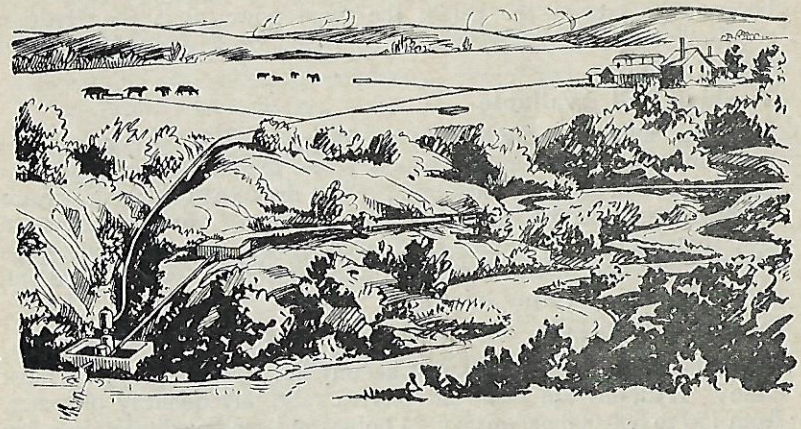
The Hydram is a machine which utilizes the momentum of a stream of water falling a small height to elevate a portion of that water to a greater height. For example, 100 gallons of water falling 10-ft. would elevate 10 gallons to a height of 80-ft., or 100 gallons falling 5-ft. would elevate one gallon to a height of about 300-ft.

The skeleton diagram below will show the principle on which the Hydram acts.

"A" is the Hydram consisting of a body "X" supplied with water through a drive-pipe, "B", fed by the feed tank "D". On the body "X" there is a waste outlet valve "G", which for the purpose of understanding the principle, you may imagine is a "door" opening inwards, and which drops open by its own weight. "A" is an air chamber or reservoir connected to the body by the passage "Y", with a "delivery" valve at "R", or, say, a door opening outwards from the passage "Y" and into the air chamber "A". The only outlet from the air chamber "A" is the delivery pipe "K", laid up to the cistern to which it is desired to force the water. We will suppose the surface of the water in the tank "D" is five feet above "G" and the outlet end of the delivery pipe "K" twenty feet above "G"; the action is then as follows :—



As soon as the valve "C" on the mouth of the drive pipe "B" is opened, water enters and, flowing down the pipe, begins to escape out of the Hydram by the valve "G"; but as the velocity of the water passing through the valve increases, the impact of the water on the under side of hinged valve "G" suddenly lifts it and closes it, thereby blocking the exit of the water. Then the momentum of the water in the drive pipe "B", thus suddenly brought to a stand, raises the pressure in the body "X" and the passage "Y", pushes open the valve "R", and the momentum is expended in forcing some of the water into the air chamber "A". As soon as the momentum is all expended there is a slight recoil or rebound of the water in the drive-pipe "B", which allows the valve "G" to drop and re-open. Then the water begins to flow out by the valve "G" once more, and the whole cycle of operations is repeated from 40 to 200 times per minute, each time driving a little more water into the air chamber "A", compressing the air in it and, as there is only one outlet to the air chamber, viz., the delivery pipe "K", the water is gradually forced up the latter until it emerges at the outlet into the storage tank.



Fall on Hydram obtained by Furrow or Open Channel

The Hydram shown in the above illustration is worked by a fall of 15-ft. obtained in the small river by running the driving water in an open channel or canal contoured along the bank for a considerable distance to a small concrete well placed on the mouth of the drive pipe of the Hydram, the working fall or head then being obtainable in a short distance.

This is a very usual method of obtaining the necessary working fall in the Colonies and out-of-the-way places abroad where large-bore piping is not easily obtainable.

The Hydram then raises 10,000 gallons of water per day for the supply of a large farm, at a height of 150 feet above the river, branches being taken out of the rising main to supply cattle troughs on the way to farm buildings. Where a river is subject to floods the Hydram can be placed in an underground chamber in the bank, out of the way of any possible damage.

Flowing Water Essential

The majority of Hydrams are operated by water either issuing from small springs or else by water taken from brooks or burns. Where there is plenty of working fall, a flow of even one gallon per minute will work a Hydram for small supplies. Wherever there is an old mill, waterwheel or turbine, this type of pump can always be worked.

The next point to consider is what height and distance it is wished to raise the water. The horizontal distance to which the water has to be forced is of no consequence to the practicability of the scheme, because Hydrams can be made to work over a distance of five miles as easily as 500 yards, provided the vertical height to which the water has to be raised is the same. But the vertical height to which the water has to be raised has everything to do with the practicability, because the greater the height the more powerful is the Hydram required, and the less water can be raised by a given quantity of driving water.

Working Fall Available

How much working fall can be obtained ? This is generally the most important consideration, which, where there is a dam or weir in the stream, can be easily answered ; but in the case of sluggish streams or springs rising in flat land this is not so apparent. Even if the stream is so sluggish that the difference of level between two points 500 yards apart is only four or five feet, it is quite sufficient to work a Hydram, provided there is plenty of driving water.

Delivery Required

What is the least number of gallons per day that the pump must raise ? Hydrams are made in sizes to raise any quantity of water, from 150 to 500,000 gallons per 24 hours, and can be adjusted in a few minutes to raise only half that amount, or less, if necessary. This is particularly useful in cases where the driving stream or spring is subject to diminution during a dry season.

Two Types Available

One type of Hydram raises the same water that works it, the exact amount depending upon the working fall and the vertical height to which the water has to be raised above the pump. Small Hydrams will force up to a height of 1,000 ft., and the larger ones up to about 400 ft.

The other type of pump is driven by one water whilst raising another. As a rule these are only used when a supply of pure water is not sufficient in quantity to drive the type described above, or where sufficient working fall cannot be obtained for the pure water to work the Hydram. Advantage may be taken of a neighbouring stream of impure water to give the power, whilst the water it raises is taken from the pure supply. Very often this type is worked by brook or river water whilst pumping up water from a spring or shallow well within easy reach. It is of no consequence how impure the water used for

driving the Hydram may be, because there is no possibility of polluting the pure water. These Hydrams will not draw water from a greater depth than about 8 to 10 ft. below the level of the pump, though they will force to any height up to 1,000 ft. above. Minimum fall required is 18 in., and working flow two or three gallons per minute.

MISCELLANEOUS POINTS

Driving water is the only fuel required.

Hydrams require practically no attention, other than occasional inspection, and can be left to work night and day for months at a stretch. Some have even been installed in lock-up houses which have not been opened for several years.

No oil required for lubrication. No packing necessary.

Little or no cost of repair or upkeep, except the occasional renewal of rubber valve clacks.

Simplicity of design renders mechanical or technical knowledge unnecessary.

During frosty weather they are practically immune from damage.

Small storage tanks only required as Hydrams work 24 hours per day non-stop.

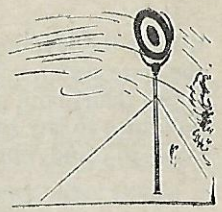
Adjustment possible according to the quantity of flowing water, with one special type designed to adjust itself automatically according to the amount available.

Almost noiseless in operation.

It is interesting to note that Hydrams installed in the Government Gardens at the Taj Mahal, Agra, India, have raised 600,000 gallons per day over a period of thirty-five years.

By courtesy of Messrs. John Blake, Ltd., Accrington, Lancs.

Fire Service Competitions



Fire Service competitions are good things—they are much to be encouraged. They promote efficiency. They produce an incentive for firemen to train and so keep physically fit. They create interest for crews and their trainers, and for families and friends of all those who have a connection with the station or industrial firm from which the crew comes. They create enthusiasm, foster the team spirit and provide an outlet for the expression of the sporting instinct. They afford the public a chance to see firemen and fire appliances at work—to realize what they are getting for their money — and, given good weather, provide an admirable setting for a reunion of firemen, ex-firemen, their relatives and friends.

Something to talk about

They give people something to talk about for a number of weeks——the selection of the team, how the training is going, the chances of winning, how can the umpires be bamboozled? (a favourite if unfruitful topic) and, after the event, discussion on "How we nearly lost" or "How we should have won if it hadn't been for Joe". And Joe, for some time to come, is an unhappy man, vainly endeavouring to shift the blame for the tragic happening on to someone else—and why not the pump operator for being too quick with the water?

What are the important considerations which should influence the designer of a Fire Service competition? Here are some, placed in no particular order.

Dramatic and Spectacular

The competition should have in it at least a touch of the spectacular. We should never bore spectators by showing them, for example, "dry" drills, one-man drills or hydrant drills. We want to stir them to a little excitement. The fireman's life is punctuated with the dramatic and the spectacular, and this should be reflected in his competitions and displays.

Personally, I like to see two teams running one against another—not each team running alone against an impersonal stop watch—though I appreciate that, since penalties must have their place, the first team across the line will not necessarily be acclaimed the winner.

I like to see the appliances make a running start—pumps driving up to their static water and escapes to their slipping point; it is what happens at a fire, lengthens the run a little and makes the competition seem more alive. I don't claim that the sudden pulling up is particularly good for the tyres!

Avoid Danger to Competitors

But, though one should give one eye to the spectacular, one must give the other to seeing that undue dangers are not run by competitors. It is right that the firemen should accept dangers and run risks at fires, but he must be protected from them at competiton drills, carried out under the stress of excitement and under the shadow of the stop watch. I remember, at one pump competition which I witnessed, that the branch had to be taken up a ladder and got to work from that position. All right, of course, at a fire, but not very wise at a competition where pump operators are out to save fifths of seconds.

The London Fire Brigade used to include hook ladder work in one of its competitions, but on one occasion a fireman's life was lost and hook ladder competition work was very rightly abandoned.

Sound Firemanship the Aim

The ideal competition should afford opportunity for the display of sound firemanship. But how often do we find competitions so designed that wrong lessons are taught to those taking part, and bad habits inculcated. At a fire, water is never turned on until the branch man is in position, for to do otherwise would be taking an unjustifiable risk. Yet, not infrequently, we see a pump operator sending water along the hose long before the branch has been fixed and sometimes even before the intermediate hose coupling has been made. The result is often disastrous: either the drill is not completed and the team is disqualified, or serious delay ensues whilst the pump pressure is reduced to enable the coupling to be made. And how often on these occasions is the pump operator looking the other way, quite oblivious of the unorthodox spouting of water, to say nothing of the agonized gestures and cries of the men at the branch!

Nowadays competitions often include the use of a one-into-two breeching and, in my experience, this practice has been responsible for inefficient fire fighting on a number of occasions. Firemen, not thoroughly trained, get the idea that a one-into-two breeching may be used anywhere with impunity, no matter how poor the water supply; but the result so often is that one good jet is replaced by two useless ones, and the fire gets away.

A 50/60 Seconds Competition

For how long should the competition be designed to last? Suppose, for the sake of argument, the answer to that question were 15-20 seconds, then the first three of four teams would be likely to finish within perhaps a fraction of a second of one another and too much would depend on the ability of the time-keepers. Having a longer competition strings the teams out, and that is all to the good. For myself, I feel that competitions should be designed so that it is not possible to win them in under, say, 50/60 seconds, though I appreciate the difficulty of achieving this. In the past, competition runs have been lengthened by making competitors roll up their wet hose, re-stow all gear on appliances after the targets have been knocked down and drive their pumps over a finishing line. But I believe the competitors do not favour hose-rolling at competitions—for one thing, they say it is not realistic. They don't have to roll hose against time at fires. It is difficult to counter this argument, at any rate in peace-time. It is certainly not easy to design a 50/60 seconds competition, but it is not impossible, and I leave the problem to the ingenuity of my readers.

I am sure that it is important that spectators get a good impression of the fireman's technique. To see a branch take charge, a length of hose become uncoupled, or, worse still, a dummy dropped or improperly carried down—even the fireman's teeth playing a part in the operation—gives the public a thoroughly bad impression, even though it may raise a laugh! Neither bodies nor dummies should be handled against a stop watch.

Penalties—an unfortunate necessity

Penalties are unfortunately a necessity or all sorts of tricks would be played. For example, the filling of pump and suction with water (with the drain cocks blocked up with grease and a bladder inserted in the suction) before it enters the arena; the filing of coupling threads (or fitting of extra washers) so that one turn or less screws the

coupling home; or the use of unstandard gear.

This dishonourable list could be expanded, but I don't want to put ideas into competitors' heads ! But, all things considered, there is no real satisfaction in winning by dubious methods—quite the reverse.

Before bringing this article to a close, there are a few general points that are, perhaps, worth mentioning.

Never give up

A crew should never give up in the middle of a competition if something goes wrong and they seem to have lost their chance of winning. They wouldn't give up like this at a fire, and it looks unsporting to do so at a competition. Let them put the trouble right and see the run through, for to do otherwise gives spectators a poor impression of the personal qualities, efficiency and discipline of the crew.

Good staff work (including the provision of first-class umpires who will produce quick decisions) is the key to a successful competition day; run should follow run without appreciable pause. Far better too short an afternoon's programme than one which lingers on until darkness sets in, with only a faithful knot of friends and stewards remaining for the prize-giving and to listen to the often overlong speeches.

Hi ! !

Yes, isn't it

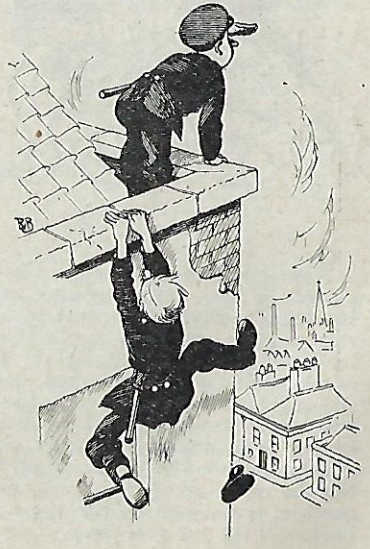
Receive prizes smartly

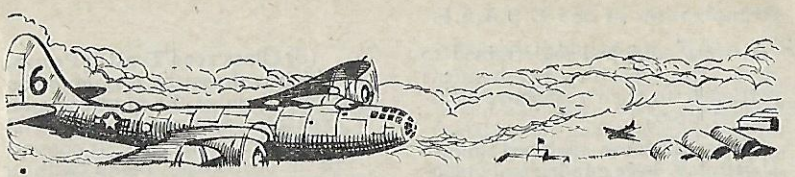
Incidentally, how nice it is to see winning crews march smartly up to receive their prizes. All firemen, whole-time, part-time and industrial, should be proud of the standard of their squad drill, and should brush it up before the competition finals. Alas ! firemen are often judged by their squad drill, for the public are not there to see the gallant way they behave in hot, smoky basement fires.

Opinions will differ as to how much use should be made of loud speakers at competitions. There are those who like running commentaries and seize the opportunity of a competition to give Fire Service information to the public, but I am not of their number. All too frequently loud speakers distort their message and render it quite unintelligible. Noise is always unwelcome, and many a competition afternoon has been spoilt by the over-zealous competition announcer.

Lastly, well-placed large-scale scoring boards showing the current leading crews always help to maintain the spectators' interest.

"COURT NINE"





Organization of the U.S.A.A.F. Fire Service

Establishment of United States Bomber and Fighter Bases in Britain has necessitated the formation of efficient fire-fighting units at each American aerodrome or flying field, and in this brief article I will endeavour to outline the set up and organization of the U.S.A.A.F. Fire Department in this country.

During the course of the construction of the aerodromes, and until such time as they are handed over to the United States Army, it is usual for the Air Ministry to arrange for trained R.A.F. fire-fighting personnel to cover the risk. Air Ministry Fire Inspectors visit the aerodromes and, after a detailed survey, make recommendation as to the provision of water supplies and fire-fighting equipment, including first aid and hand fire appliances for allocation to administrative and communal sites.

As soon as the United States Army takes over, a Base Fire Marshall is appointed, who is directly responsible to the Commanding Officer of the base for the fire prevention and fire-fighting arrangements on the site.

In the early days it was usual to find that the Fire Marshall, in addition to his fire-fighting duties, was also the Base Utilities Officer, Provost Marshall or, alternatively, an Officer of the Corps of Engineers, to whom had been delegated other duties apart from that of fire defence.

N.F.S. Liaison

It was during this period that National Fire Service Liaison Officers and Fire Prevention Officers rendered great assistance to these Officers in advising them as to the allocation of appliances and the general organization of fire and crash-tender parties.

Originally, most of the equipment supplied to the United States Army was the same as that issued to R.A.F. Fighter and Bomber Bases.

Selected N.C.O.'s and men of the U.S.A.A.F. attended the R.A.F. fire fighting school at Weedon, Lancs., where they received excellent training under the Commandant, Squadron Leader Brooker.

Fire Fighting—A Specialist Job

With the expansion of the U.S.A.A.F., it became apparent that fire fighting must be classed as a specialist job, and accordingly Divisional Fire Marshalls were appointed to each Bombardment Divisional Headquarters to reorganize the Air Corps Fire Defences on similar lines to the United States Army Fire Fighting Organization. These Officers, although attached to the Corps of Engineers, were wholly engaged on executive fire-fighting duties. They immediately set to work to provide efficient fire-fighting units at each base within their Division with officers and men drawn from former American Municipal Brigades, or men who had attended the United States Army School of Fire Fighting in the States.

The semi-skilled Fire Fighters were replaced by professional men, who brought with them from the United States some of the most up-to-date fire pumps and crash fire equipment.

Trained Fire-Fighting Platoons

Fire-Fighting Platoons were provided for both air and ground forces,

and were equipped and trained to meet the specific requirements particular to their respective operational work.

These Platoons assigned to the U.S.A.A.F. have an identical organization to that of the United States Army Fire Service, but differ in equipment and training to meet the specific requirements of an Air Corps.

Appliances

Equipment issued varies to suit the specific risk, but the following is a brief description of the major appliances in general use :

(*a*) **Class 125 Crash Truck,** with high-pressure reciprocating pump mounted amidships, delivering 55/60 g.p.m at 600/800 lb. p.s.i. pump pressure. This truck is fitted with a 300-gallon tank, and has three hose reels, each fitted with 100 ft. of ¾-inch high-pressure hose, a 16-ft. folding ladder, crash kit and miscellaneous fire-fighting equipment.

(*b*) **Class 135 Crash Truck,** with front-mounted semi high-pressure centrifugal pump, capable of pumping 60 g.p.m. at 350 lb. p.s.i. It has a 300-gallon tank, two side hose reels and one rear hose reel each with 100 ft. of 1-inch extra heavy booster hose, a 16-ft. folding ladder, crash kit, fire extinguisher and usual fire-fighting equipment.

(*c*) **Crash Trailer (Class 1010 or Class 1020).** The Class 1010 crash trailer consists of a high-pressure reciprocating pump with a capacity of 35 g.p.m. at 750 lb. p.s.i. pressure, and mounted on a 2-wheel trailer which has, in addition, a 150-gallon tank, two bracket type hose reels, each fitted with 100 ft. of ¾-inch high-pressure hose, crash kit and fog or foam apparatus.

The Class 1020 crash trailer differs from the 1010 trailer in that it has a semi high-pressure centrifugal pump with a capacity of 100 g.p.m. at 500 lb. pumping pressure, and with two reels each fitted with 100 ft. of heavy booster hose.

(*d*) **Class 1000 Trailer Pump,** which is drawn by a 1½- or ¾-ton vehicle, and is the most common type of trailer pump in general use in the U.S.A.A.F. It consists of a centrifugal pump with a capacity of 500 g.p.m. at 120 lb. pumping pressure, the pump being mounted on a standard 1-ton cargo trailer. The trailer is fitted with hose beds or receptacles which have normal capacity of 700 ft. of 2½-inch hose and 300 ft. of 1½-inch hose. This pump is similar to the major Trailer Pump used in the National Fire Service, but the trailer itself provides more accommodation for ancillary appliances, and the pump is fitted with a self starter.

Priming Principles

With the exception of the Class 1000, the principal of priming all pumps is similar to the operation of a vacuum windscreen wiper. The action of the pistons and valves draws air from the intake manifold into the petrol mixture entering the cylinders ; thus the connection between the intake manifold and the pump casing is subjected to a vacuum which expels air from the entire pump casing and suction hose. In the case of the Class 1000 trailer pump, the ejector priming system, similar to that used on British trailer pumps, has been fitted.

The " Cardox" Crash Tank

An interesting addition to the crash fire-fighting equipment has been the " Cardox " Self-propelled Fire Truck (Class 150), which has a capacity of 6,000 lb. of CO_2 and is fitted with two booms, one mounted immediately in front of the bonnet, and one telescopic type mounted immediately above the cab. At the end of each boom is fitted a large discharge nozzle.

A control panel situated in the front of the cab operates the booms and allows the operator to drive straight up to the fire. Four open ports mounted in front of the engine, through which foam is delivered, provide protection for the vehicle itself in the event of petrol flowing from the aircraft's ruptured tanks, and allows it to approach the fire at

close quarters. Some models are fitted with a ground sweep nozzle through which CO_2 is discharged.

An article featuring the "Cardox" Airport Fire Truck appears on page 22. See also page 8 of June " Jet", Vol. II, No. 6.

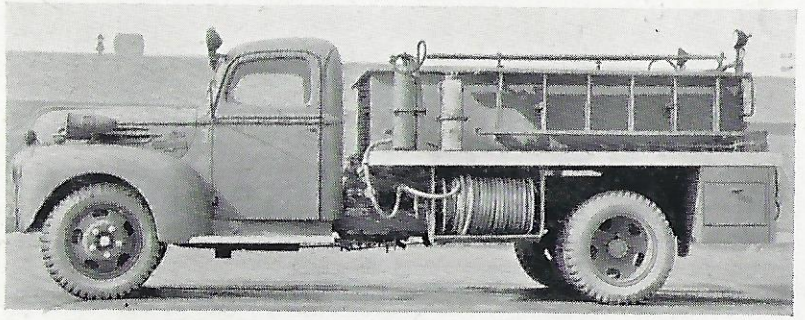
Miscellaneous Equipment

Interesting items of equipment which are standard on all U.S.A.A.F. crash fire tenders is the crash kit or crash roll, which comprises a large canvas wrapper or tool case containing metal and wood saws, a large axe, two C.T.C. Extinguishers, pliers, knife, bolt cutters, wire cutters, crowbars, chisels and two electric lamps.

In practice it has been found that the high-pressure fog nozzles are the most effective on aeroplane crash fires, and are very often more suitable for tackling crashed aircraft than foam or CO_2 equipment. Their one disadvantage is the danger of a flash-back in the event of the tanks being ruptured and large quantities of high-octayne spirit being spilled about the fire ground.

It would be impossible for me in this brief article to describe all the equipment used by the U.S.A.A.F. Fire Department, but fire officers who have American bases situated in or near their command will find a visit well worth-while, and most instructive. They will find a hearty welcome from brother Fire Officers of the U.S. Army, who will be happy to discuss their organization, methods and use of appliances.

D.C.W.

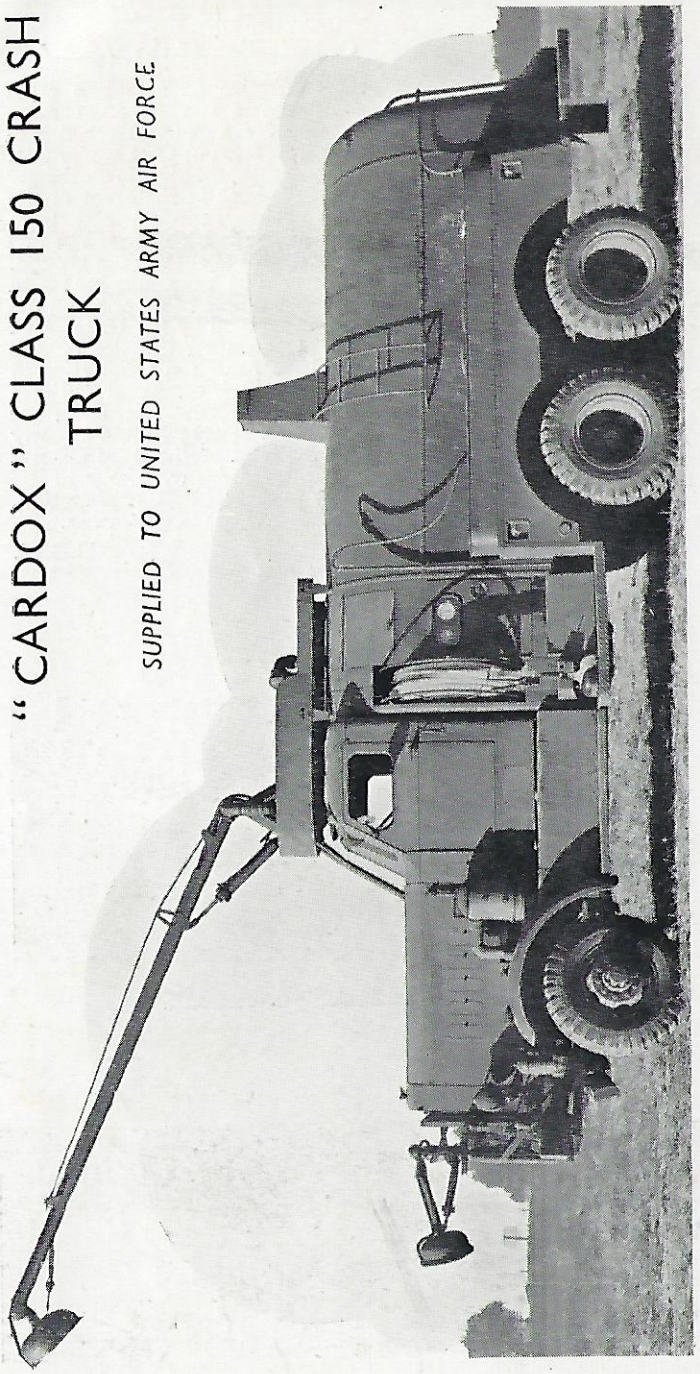


Class 125 Crash Truck with Midship-mounted Pump

" Jeep " fitted out as Towing Tender for British Light Trailer Pump

"CARDOX" CLASS 150 CRASH TRUCK

SUPPLIED TO UNITED STATES ARMY AIR FORCE



Side view, showing boom and front nozzles, supplemented by foam guns, extended ready for instant operation. Beneath the bumper is the linear ground sweep nozzle with four fixed foam guns, and immediately behind the driving cab are hand hose lines supplying CO_2 and foam guns (*see also page 22*)

What can the Association offer Part-time Officers?

IT is with great satisfaction that I am able to announce considerable progress in the N.F.S.O.A's deliberations in respect of part-time officers, and through the medium of this Journal extend a sincere welcome to such officers wishing to avail themselves of the Association's efforts in their interests.

Mr. W. E. Whitehouse, M.B.E., M.Sc., has furnished the National Council with a full report of matters directly affecting the welfare of part-time officers. He makes the point that these officers in their belief in the unity of the Service recognized that increased amenities for whole-time personnel raised the morale of the Service as a whole, but many also felt that the Association had little or nothing to offer to them personally. The National Council is now extending its activities in the direction of Mr. Whitehouse's report which contained *inter alia* the following of special import to part-time officers :

1. Satisfactory payment for loss of remunerative time.
2. *Either* Adequate compenstaion for personal injury *or* a voluntary insurance scheme, sponsored by the Association, as an alternative.
3. Payment for drills and/or turn-outs.
4. Increase of retaining fees.
5. Promotion to and in officer rank.
6. Combined training, with the possibility of regular courses at the N.F.S. College.
7. Adequate uniform allowance.
8. Car allowance.
9. Annual reunions.
10. Free legal advice appertaining to Service matters.
11. A bi-monthly part-time column in *The Jet*.

In relation to some of the above items, it should be noted that the whole matter of conditions of service for part-time officers is under consideration by the Department in its plans for the Post-War Fire Service, including loss of remunerative time, compensation for injury, etc. The Association has asked the English and Scottish Home Departments that it should be given an opportunity to express its opinion on the proposed draft immediately it becomes available.

The National Council has agreed to the reduction of the annual subscription to one guinea for all part-time officers and will recommend the co-option of a part-time "Retained" Officer on the National Council.

A Sub-Committee, including Mr. W. E. Whitehouse and Sir Eric Studd, Bart., has been formed from the National Council members with the special reference of the relation of part-time officers to the Association. May I appeal to all part-time officers for their full support to this committee? We aim at making the next issue of *The Jet* of especial interest to retained and volunteer-unpaid personnel and any suggestions and personal views for the new "part-timers page" will be particularly welcomed.—*Editor.*

PERSONALIA

His many friends in the north heard with pleasure of the promotion of **Mr. A. A. ASHTON** on his posting to the 27 C (Manchester) Sub Area command, with the rank of Assistant Fire Force Commander.

Mr. Ashton came to Salford in January, 1943, since when he has served as Divisional Officer of 27 Fire Force, 'F' Division, latterly 'F' Sub Area. His cheerful personality is the outstanding feature of his popularity, and, as his transfer takes him only a few miles from his former H.Q., his colleagues are gratified that he will not be completely lost to the Salford district.

Prior to coming north, Mr. Ashton was well known in London, where he served as a Divisional Officer in the R.T.F., with jurisdiction over the river from Tower Bridge to an undefined seaward limit.

* * * *

Mr. E. B. EASTLAND, who has recently been transferred from No. 12 Area to No. 9 Area (Leicester) upon promotion to Assistant Fire Force Commander, was invested with the King's Police and Fire Services Medal by the Lord Lieutenant of Cambridgeshire (Captain R. G. Briscoe), representing His Majesty the King, on Saturday, 1st September, 1945. The ceremony took place at Regional Fire Headquarters, Anstey Hall, Trumpington, Cambridge, before the High Sheriff of Cambridge; the Chief Regional Fire Officer, Mr. W. H. J. Benton, O.B.E., and a representative gathering of National Fire Service Officers and other ranks. The Clerk of the Lieutenancy (Mr. A. Tabrum) was also present.

The Chief Regional Fire Officer, with the permission of the Lord Lieutenant, read Mr. Eastland's record of service and the citation.

In presenting the Medal to Mr. Eastland, the Lord Lieutenant said it gave him great pleasure to confer this honour upon an Officer with such an impressive record of service, and that the honour reflected upon all members of the National Fire Service who had served under Mr. Eastland's command.

At the conclusion of the ceremony the Lord Lieutenant and the High Sheriff were interested spectators at a Turntable Ladder demonstration.

Amongst those present were Major General Fuller, C.B.E. (ex-Deputy Regional Commissioner for Fire, No. 4 Region) and Mrs. Fuller; Fire Force Commander Stanford; Assistant Fire Force Commander Smith; Divisional Officers Gibson and McMorrow; Column Officers Easton, Green and Warren.

* * * *

Mr. P. G. GARON, M.C., G.M., Fire Force Commander of No. 11 Area, who retired from whole-time duties on the 30th April, 1945, was invested with the King's Police and Fire Services Medal by the Lord Lieutenant of Essex (Colonel Sir Francis H. D. C. Whitmore, K.C.B., C.M.G., D.S.O., T.D., J.P.) representing His Majesty the King, at a short ceremony at the Mayor's Parlour, "Porters", Southend-on-Sea, on Wednesday, 15th August, 1945.

After pinning the medal on Mr. Garon's tunic, the Lord Lieutenant said: "This is, as far I am concerned, a very pleasing occasion, and I am very glad to have had the opportunity of pinning this medal on to my old friend, who has been a friend of Southend and its neighbourhood for many years." Pointing out that he was performing the investiture on behalf of the King, the Lord Lieutenant commented on the number of people in Britain who had earned decorations during the last six years, and said the country owed a debt of gratitude to them all. "No nation", he stated, "has fought together as we have".

Cordially congratulating Mr. Garon, His Worship the Mayor (Alderman W. Miles, O.B.E., J.P.) observed that Southend was very proud, not only that Mr. Garon was selected for the position of Fire Force Commander, but also for the fact that so many of the old Southend Fire Brigade subsequently achieved promotion in the National Fire Service.

At the conclusion of the ceremony the Chief Regional Fire Officer (Mr. W. H. J. Benton, O.B.E.) thanked the Lord Lieutenant and expressed appreciation to the Mayor for allowing the use of "Porters".

Amongst those present were Major General Fuller, C.B.E. (ex-Deputy Regional Commissioner for Fire, No. 4 Region), Fire Force Commanders Mees, Stanford and Barrett; Assistant Fire Force Commander Harrison, Mr. W. T. Soper (ex-Deputy Fire Force Commander, No. 11 Area); Area Officers Barry and Williams; Divisional Officers Swansborough, Cartwright and Kehoe; Column Officers Bowden and Simns, Senior Company Officers Jones and Gay; Colonel G. Shenstone; Chief Constable of Southend (Mr. A. J. Hunt) and the Town Clerk (Mr. H. J. Worwood, O.B.E.).

* * * *

Mr. J. FREARS TYSON, of 29 Fire Force Headquarters, Preston, has tendered his resignation from the post of Secretary/Treasurer of the No. 10 Regional Council on his returning to civil life.

At a recent meeting his services were aptly described as exceptional. Since he took over the position, membership has increased considerably, and activities have become much more lively—his co-operation and enthusiasm have never been in doubt.

A resolution of thanks has been framed on behalf of branch members, and Mr. Tyson is assured of the best wishes of his many friends in No. 10 Region.

* * * *

On the 31st July, 1945, No. 18 Fire Force were very sorry to say "goodbye" to **Mr. S. T. WOODGER,** who had made himself so popular throughout the Area.

Mr. Woodger enrolled in the A.F.S. at Leeds in 1938 and at the outbreak of War became a Part-time Leading Fireman at Torquay. He later transferred to whole-time duties and, as a Section Officer, worked under blitz conditions at Plymouth.

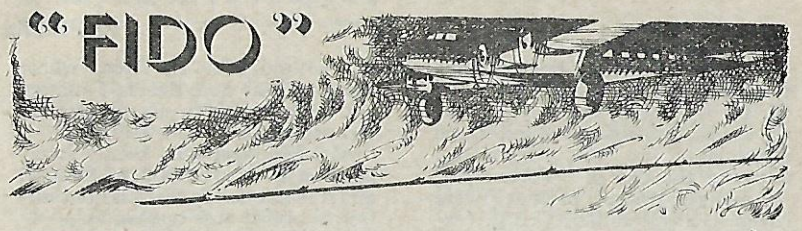
Upon the Nationalization of the Fire Service he became Area Clerk of the old No. 18 Area, whose Headquarters were then at Taunton, and transferred to Exeter on the reconstitution of the Areas.

Mr. Woodger was keenly interested in all branches of the Service, and it is safe to say that his administrative ability was outstanding.

He was an active member of the No. 18 Area Cricket XI at the height of their success, his wily 'spinners' being responsible for many wickets.

His breezy personality dominated every social function, and his ability to tell an unlimited supply of anecdotes, equally as well in French as any English dialect, should stand him in good stead as Foreign Representative of a large firm of Yorkshire Woollen Manufacturers.

I carried the dummy NEARLY all the way down once.



FIREMEN HELPED IN FOG DISPERSAL OPERATIONS

SELECTED London firemen were accommodated near an unused reservoir at Staines for eighteen months in 1943/44 in order to operate two N.F.S. 100-ft. turntable ladders that stood in the bed of the reservoir. They experienced weather in which ice showered from the ladders as they were extended, and they had to take off their boots to climb the icy banks of the reservoir. Sometimes they had to feel their way by guide lines through fog out to their standing machines.

Their job was to use the turntable ladders as Mobile Observation Towers in the experiments that were being carried on in the now well-known Fog Investigation Dispersal Operations. To each ladder was fitted an anemometer (which measured the force of the wind) and a psychronometer (which is a wet and dry bulb thermometer). The firemen had to operate the appliances and ascend the ladders to varying heights, take readings and call them down to men below. It would be done before the petrol jets were lit; it would be done at intervals while a few yards away the hedge of fire burned to disperse the fog; it was often done throughout the night. The noise of the burners sometimes made the calling down of the readings impossible without the aid of the telephone transmitter at the head of the ladder.

A flying bomb temporarily suspended the experiments, but they were resumed this year, when a turntable ladder and crew were again sent to assist.

It was officially stated that the National Fire Service "made a notable contribution to the utimate success" of the enterprise.

• • •

Miss A. A. MACDONALD

It is with regret that I have to announce that Miss A. A. Macdonald, who was one of the two representatives of women members on the National Council, has left the Service.

We are glad to hear that she is to continue her interest in N.F.S.O.A. activities as an Associate Member.

REGION by Region.

NORTH MIDLAND (No. 3) REGION

A meeting of the Regional Executive Committee was held in Nottingham on Saturday, 28th July, 1945, under the Chairmanship of Fire Force Commander Galloway. Representatives were in attendance from all Areas except No. 10 Fire Force.

The most important matters discussed by the Committee were the replies to the questionnaire circulated by the National Council on the Post-war Fire Service. The members present were most appreciative of the manner in which the questionnaire had been compiled, and the Secretary was instructed to voice their appreciation to those officers of the Association who were responsible for its production.

No. 8 Area Branch expressed the opinion that Service Pay should be extended to the ranks of Company Officer and above, and after discussion it was resolved that, subject to investigation and the submission of detailed information, the Chairman of the Executive Committee would report the matter at the next meeting of the National Council. This Branch was also of the opinion that in the case of demotion of an officer due to re-assessment, the Local Authority should be advised that the reduction was necessary owing to the general re-assessment of officers. No. 8's opinions on this subject were approved by the Executive Committee, and the Chairman was asked to raise the matter at the next meeting of the National Council.

Demobilization in the National Fire Service is of great concern to most officers at the moment, and No. 9 Branch indicated that a scheme should be prepared similar to the Army Points Scheme (age plus war service). It was agreed by the majority of the members present that there should be no change in the present procedure, but any officers with particular grievances should have their cases submitted for consideration by the Regional Executive Committee.

It was pointed out that the Regional Secretary, Divisional Officer Carter, was leaving the Service very shortly, and a record of appreciation of his services was unanimously approved. Divisional Officer Carter explained that he would be willing to continue as the Regional Secretary for the time being while he was still available, and it was agreed that he should be asked to continue, and the matter generally should be left in the hands of the Chairman.

EASTERN (No. 4) REGION

The Chairman of the No. 4 Regional Branch, Mr. L. O. Goddard, has now left the National Fire Service and Mr. B. L. Bowden of Chelmsford has been elected as Chairman in his stead.

There has been no meeting of the No. 4 Regional Branch since 21st June, 1945, when it was considered unwise at the moment to form Area Branches until the final settlement of Officers had been determined.

SOUTHERN (No. 6) REGION

The 18th August, 1945, Fourth Anniversary of the National Fire Service, was marked in the Southern Region by a visit from the Home Secretary (The Right Honourable J. Chuter Ede) to the Regional Pump Competition Finals and Stand-down Parade of Part-time personnel at Reading.

The Home Secretary attended an informal Luncheon Party held at the N.F.S. Officers' Mess, Regional Headquarters, where he took the opportunity of thanking the Senior Part-time Officers present for their work they had done during the war years. The Home Secretary was supported by Sir Arthur L. Dixon, C.B., C.B.E., Sir Aylmer Firebrace, C.B.E., Chief of Fire Staff and A. P. L. Sullivan, Esq., C.B.E., Deputy Chief of Fire Staff. After a Civic Reception the Home Secretary's party went to Hills Meadows, Reading, where the Pump Competitions and Display were held.

A special feature of the afternoon's events was the Parade of representative contingents from all Sub-Areas in the Region, headed by their senior men and women officers. After Mrs. Chuter Ede had presented the trophies, the Home Secretary paid tribute to the work of the Service during the years of war and particularly to the Part-time Officers, men and women, who were on parade.

To mark the occasion, a special Souvenir Programme was issued containing a synopsis of the activities of the Service in the Southern Region, suitably illustrated with action photographs.

The Commandant of the N.F.S. College, Mr. G. Bennison, acted as Chief Judge at the Pump Competitions.

MIDLAND (No. 9) REGION

A meeting of the No. 9 Regional Committee, under the Chairmanship of Mr. H. R. Lucas, was held on 8th August, 1945, in order to collate the views of the Area Committees on the questionnaire dealing with the general set-up of the Post-war Fire Service.

After discussion, members of the Committee held unanimous views on most of the points, but opinions were divided on the subject of accommodation of Officer ranks on stations. One Area was of the opinion that all Officers should be accommodated on their stations; another that Divisional Officers and, exceptionally, Column Officers, should be so accommodated, and yet a further Area held the view that no Officers should be required to reside on a fire station.

NORTH WESTERN (No. 10) REGION

At a meeting of No. 10 Regional Council held on the 8th August, 1945, the following matters were discussed:

1. No. 10 Region's proposals for post-war conditions of service (based on the questionnaire which was debated at a Regional Council meeting on the 17th July, and which included the further suggestions of Area Branches), were examined. The meeting agreed that the matter had been fully dealt with.

2. Following a request from Mr. Tyson, the General Secretary had stated that the fee for Associate Membership was reduced to 10/6d. as from the 1st January, 1945.

3. From recent correspondence with the Westminster Bank it appeared that they were not prepared to give free banking facilities, unless the member held sufficient funds in credit to repay the bank for lost commission.

4. The General Secretary, replying to letters asking what could be done to grant help to Officers appealing against re-assessment, had pointed out that on the whole the Association was powerless to intervene. However, where a member desired assistance in preparing his case, no doubt the Regional legal adviser would be called upon. In cases of appeal to the Home Secretary, Mr. Reader Harris would be glad to accede to requests to appear on behalf of a member if such a course were permitted.

5. Mr. Tyson reported that the proposal of the Regional Meeting of the 22nd May, namely, that an M.P. be co-opted on the National Council, had been placed on the agenda for the next National Council Meeting.

At the close of the meeting it was announced that Mr. J. Treacher, Secretary of the No. 27 Area Branch, had agreed to take over the position of Secretary/Treasurer of the Regional Branch on a temporary basis, following the resignation of Mr. Tyson.

SOUTH EASTERN (No. 12) REGION

The main interest in this Region during the past month has been the centralization of administration at Regional Headquarters. This has meant a considerable number of moves for Officers throughout the Region, but so far everyone seems to be settling down satisfactorily. The Transport, Catering and Accommodation Sections have been centralized at the existing Regional Headquarters, whilst Establishments and Finance have found their way to one of the old Divisional Headquarters nearby. The Stores in their turn have gone to the old Regional Reserve Station at Linton, near Maidstone.

Mrs. N. Diamond, late Area Officer of No. 6 Area, has taken up duties as Senior Woman Officer in place of Mrs. Hammond, who has left the Service.

It was necessary to cancel the last Regional Executive Meeting as it had been arranged for "VJ Day." A further meeting is being held shortly.

In spite of the reductions, a few new members are continually being drawn into the fold and every effort is being made to maintain the interest of those leaving the Service.

It is the aim of this journal to encourage the fullest expression of opinion within the Association. Unless the fact is expressly stated, therefore, views put forward in these pages, whether in the Editorial columns or in articles, should not necessarily be regarded as expressing the considered policy of the Association.

CRASH FIRES

HOW THE "CARDOX" AIRPORT FIRE TRUCK BEATS AVIATION FIRES

I am indebted to the Cardox Corporation of Chicago for permission to print details of their latest fire appliance, the importance of which cannot be underestimated in view of the certain increase of air transport in the years of peace and reconstruction which lie ahead.—Editor.

Crash landings, both to pilots and airport authorities, mean the possibility of immediate fire—large fires that can easily be disastrous. Size and intensity of fires have steadily increased with the development of larger aircraft carrying possibly thousands of gallons of highly-volatile aviation petrol. Moreover, when petrol is all over a wrecked aeroplane in which from 10 to 30 or more people are trapped, it becomes a nightmare that no person who has not seen it can possibly visualize.

RESCUE POSSIBLE IN 10 TO 15 SECONDS

It is vital that the equipment used be capable of reaching any part of the flying field quickly, and going into action the instant it reaches the crash. The "Cardox" Airport Fire Truck starts on its job of extinguishing crash fires while still travelling at a high rate of speed and approaching into the fire. The mass discharge of carbon dioxide, supplemented by the blanket of foam, cuts a path to the heart of the fire so that rescue of personnel may frequently be started 5 to 10 seconds after the truck reaches the fire.

COMBINING TWO EXTINGUISHING MEDIUMS

The principal extinguishing medium provided in the "Cardox" Truck is 3 tons of liquid carbon dioxide maintained at 0° F. and 300 p.s.i. in a single pressure vessel. This is supplemented by 300 to 500 gallons of mechanical foam solution, which is discharged under pressure supplied by the carbon dioxide. CO_2 is one of the fastest and most efficient extinguishing agents known for fires involving petrol and oil.

ADVANTAGE OF LOW TEMPERATURE CO_2

Apart from a uniform standard of performance, the main advantage is the increased yield of CO_2 snow. In contrast to the yield of approx. 21% of CO_2 snow on discharge from a container wherein the liquid CO_2 is at 86° F., there is a yield of 45% when the carbon dioxide is stored at 0° F.

This offers several important advantages. It may be projected with more accuracy over longer distances and through comparatively strong currents of air. The increased yield of CO_2 snow at low temperature quickly cools down the fire zone, and can be directed into the heart of the fire.

READY FOR INSTANT ACTION

Split seconds count at aeroplane crash fires because the primary purpose of fire-fighting equipment is to save human lives. Even trained fire fighters need a relatively long time to go into action—and by this is meant a period of a minute or more.

The "Cardox" Airport Fire Truck is designed to literally overwhelm crash fires. If necessary, the entire 3 tons of CO_2 can be discharged in a cooling, fire-smothering blanket in approximately one minute. Tremendous test fires involving hundreds of gallons of petrol have been totally extinguished in as short a time as 20 to 30 seconds with the use of only a portion of the CO_2 available, and between 100 and 200 gallons of foam solution.

CLASS 150 TRUCK SUPPLIED TO U.S.A.A.F.

Boom Nozzle: Mounted on top of the cab, in operation the 15 ft. boom projects over and in front of the truck. This nozzle has a capacity of 2,500 pounds of CO_2 per minute. Directed from within the cab by means of pistol-grip controls, the boom may be moved up or down or to either side. The nozzle also may be moved in a vertical plane for most effective direction of the mass discharge.

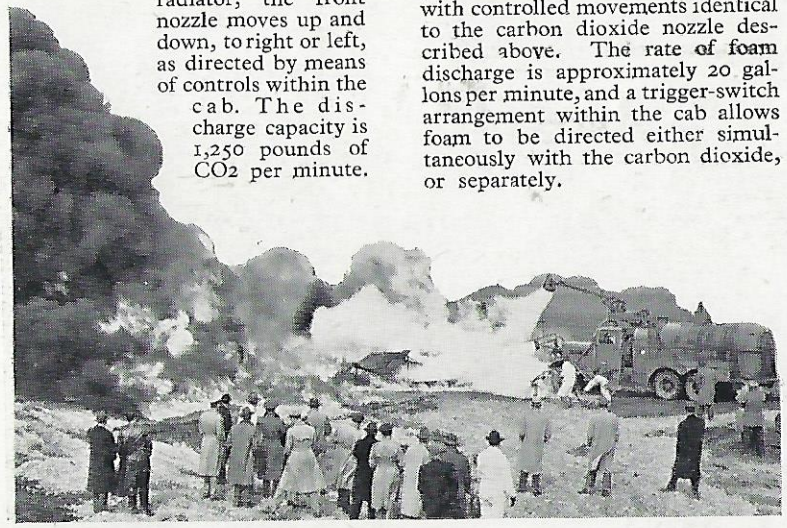
Front Nozzle: Mounted in front of the truck radiator, the front nozzle moves up and down, to right or left, as directed by means of controls within the cab. The discharge capacity is 1,250 pounds of CO_2 per minute.

Linear Ground Sweep Nozzle: Extends completely across the front of the truck, immediately below the front bumper. This goes into action as the truck approaches the fire, extinguishing fire on the ground in front of, and preventing its spread beneath, the truck. Discharge capacity is the same as the front nozzle.

Hose Lines: Two 100 ft. lines of 1½ in. hose are mounted on reels, one on each side immediately behind the truck cab. When nozzles are removed from the running boards, a master valve opens automatically supplying CO_2 under pressure. Each hose line nozzle has a capacity of approx. 750 pounds of carbon dioxide per minute. With this protection, rescue squads can remove occupants from the plane while extinguishment is still taking place.

Bayonet Type Nozzles: For use in piercing and flooding plane compartments. There are two, each on 100 ft. lines of ⅝ in. hose.

Boom Foam Gun: A foam gun is provided on the overhead boom with controlled movements identical to the carbon dioxide nozzle described above. The rate of foam discharge is approximately 20 gallons per minute, and a trigger-switch arrangement within the cab allows foam to be directed either simultaneously with the carbon dioxide, or separately.



This illustration vividly demonstrates the effectiveness of the "Cardox" Class 150 Self-propelled Fire Truck in extinguishing a typical crash fire of extreme intensity. The boom nozzle and front nozzle are discharging carbon dioxide, supplemented by foam, at the rate of 2,750 pounds per minute, knocking down heat and flame and making rescue operations possible 10 to 15 seconds after the truck reaches the fire. CO_2 and foam hand lines are also shown being brought into action by the rescue squad.

Front Nozzle Foam Gun : A foam gun is mounted on the front nozzle with actions controlled simultaneously with, or separate from, the CO_2 nozzle. This is also controlled by thumb-switch, and the rate of discharge is approx. 40 gallons per minute.

Fixed Foam Guns in front of Truck : Four fixed foam guns are mounted in conjunction with the linear ground sweep nozzle across the front of the truck. Rate of discharge for each gun is approximately 24 gallons per minute. By turning on these guns before the truck reaches the fire, a protective coating can be laid on the ground to eliminate flashes underneath the truck.

Foam Guns on Hose Lines : The two 100 ft. by 1 in. hose lines are equipped with combination foam and straight-stream nozzles, allowing the operator to discharge either foam or straight-stream, separately or together. Each of these hand-line guns discharges foam at approximately 30 gallons per minute.

Chassis Details : The engine is rated at between 180-200 H.P., with high-ratio gearing for off-the-road service. 6 wheels, with all-wheel drive. A high speed can be developed on airport runways, and the truck is fitted with air brakes for instant halting.

Front view of "Cardox" Class 150 Fire Truck, showing front nozzle and foam gun, with control mechanism. Also, linear ground sweep nozzle and four fixed foam guns below bumper.
The boom is not extended in this illustration, but rests across top of truck (*see also page* 14).

CHICAGO—Fire Prevention Conscious

THAT Chicago business men are organized for fire prevention is evidenced by the following digest of an article in "Commerce", monthly publication of the Chicago Association of Commerce, entitled *Organized to fight fire before it happens.*

"On discovery of a fire, the Fire Department rushes to the scene with screaming sirens and proceeds to swarm over the fire with men, water, chemicals, axes, etc. If promptly discovered, the fire is invariably under control in short order, and the onlookers exclaim admiringly 'Boy, that Fire Department is really good.' "

Even if business is better informed, the public generally is unaware, however, of the work or even the existence of the agencies for dealing with the prevention of fires, such as the Cook County Inspection Bureau, the Arson Squads of the Chicago Police Department and National Board of Fire Underwriters, the Underwriters' Laboratories, the Chicago Fire Insurance Patrol, the Fire Department, the Illinios Institute of Technology, etc.

The Cook County Inspection Bureau's main function is to calculate rates for Fire Insurance, and to do this it inspects all towns under 2,000 population to determine the adequacy of water supplies, police protection, construction, alarm system, Fire Department equipment and personnel. It inspects every mercantile and manufacturing building in Cook County.

The Illinios Institute of Technology conducts a 4-year college course in fire protection engineering. The graduates, who are trained in building construction, plumbing, electrical and other engineering, serve Insurance Companies, public agencies and private industry. Insurance Companies recognize the value of the course (which was instituted in 1918) by offering several scholarships to qualified students.

Another agency, sponsored originally by the Chicago Board of Underwriters, is a non-profit organization—the Underwriters Laboratories Inc., which will test any device, material or equipment used in construction. So far it has tested the products of some 4,500 manufacturers in 115 basic industries. The fees the manufacturers pay for this service enable the organization to be self-supporting.

Salvage work is undertaken by the Fire Insurance Patrol operated by the Chicago Board of Underwriters with a staff of 85 uniformed, highly-trained men distributed between six stations in the City. In addition to salvage work, it inspects mercantile and manufacturing buildings to eliminate potential fire hazards. It works with the Police in identifying arsonists and in preventing malicious damage.

Arson squads are operated by the National Board of Fire Underwriters and by the Police Department. Every known "Arson Ring" in Chicago has been broken up so that the chances of committing arson in Chicago are less than 1 in 10.

Chicago—Fire Prevention Conscious

Ordinarily the Fire Department is thought of only as the agency that brings fires under control. But, by thorough inspections and extensive educational work, it is very active in fire prevention.

The Chicago Fire Department has 2,808 officers and men formed into 212 companies and units operating out of 170 stations scattered throughout Chicago. In 1943 it answered 30,464 calls, and up to August last year responded to 20,147 alarms.

Fire Prevention Week, held every year on the anniversary of the Chicago Fire, 9th October, 1871, was launched by the Chicago Association of Commerce in 1911, and since 1922 has carried on with Presidential approval over the whole of the U.S.A. Schools, magazines and daily newspapers all co-operate to make the public conscious of fire hazards.

How are all these efforts succeeding? Up to 1900 fire losses in Chicago averaged 1% of the total property valuation. On the same basis, 1940 fire loss would have been 12 million dollars; in fact, it was less than 5 million dollars, a saving of 7 million dollars in 1940 alone.

Last year Chicago was awarded first prize by the National Fire Protection Association for the city doing most to prevent fires.

Nevertheless, fires are on the increase in Chicago, throughout Illinios and the country as a whole. The Chicago situation has moved Chief Fire Marshall, Anthony J. Mullaney, to declare bluntly that unless something is done to check public disregard about fire hazards, Chicago is in danger of suffering a major fire disaster.

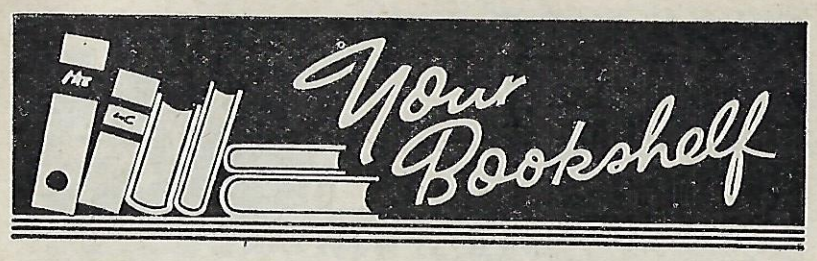
The increasing number of fires makes it imperative to intensify fire prevention efforts here.

Four advertisements by Manufacturers and Underwriters (Insurance Companies, we say) in this magazine preach fire prevention. From one we extract the following :—

" Some 270,000 youngsters, organized as Junior Home Fire Wardens, have just completed the largest-known home-inspection campaign to prevent fire. Armed with authoritative instructions, they have rooted out fire hazards . . . . reported conditions to fire departments . . . . instilled safety rules . . . . pledged continuing effort.

This means less loss of life and property through fire. Isn't it worthy of your co-operation, reducing fire hazards on your property? For suggestions without obligation, write . . . . ."

Thus Chicago sets an excellent example in disseminating the gospel of Fire Prevention.



" MEANS OF ESCAPE "

One of the most important yet very complex subjects to be studied and understood in the field of Fire Protection is the question of " Means of Escape in case of Fire " : complex, because up to the present day, it has been impossible to define clearly a standard set of rules which may be applied rigidly to any type of building. Existing national legislation on the subject is deplorably inexplicit, leaving the various local authorities throughout the country in the invidious position of having to determine their own interpretation as to what exactly should constitute " adequate " means of escape, and certain towns have given the matter considerable thought, as their building byelaws will indicate. Nevertheless, the fatalities mount up owing to the inadequacy of local requirements.

Many cases have been known where persons have been trapped despite the fact that two or even three escape routes have been insisted upon by the local authority, and yet such instances could have been avoided had the all-important factor of smoke separation been given consideration when drafting the requirements.

The increasing importance of Fire Protection, as evidenced by the intensive courses being undertaken at the National Fire Service College, is a pointer that local Councils will depend upon National Fire Service advice on an ever-increasing scale, particularly with regard to their " headache "—means of escape, and quite rightly so. It is our primary duty to protect life from the hazards of fire, but when we are approached let us be prepared to offer sound advice and to avoid the predicament of the " blind leading the blind ".

An Advisory Committee of the Building Industries National Council has established amongst a number of technical panels a Fire Protection Panel whose highly-qualified and eminent members have been engaged over a considerable period on research which has finally resulted in a " Report on Means of Escape in case of Fire ". In addition to establishing a Model Code of Requirements for all classes of buildings, a formula and table has been devised to assist authorities in calculating the number of exits, and the number of units of exit width per exit, for any type of building. Amongst other valuable contributions it is gratifying to note that the essential question of " Smoke Stopping " has been given prominence.

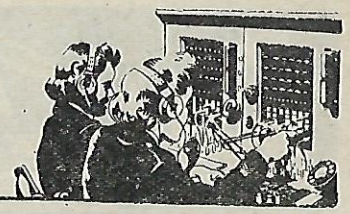
This Report embodies principles which at last define for the local governing bodies a meaning for the term " adequate means of escape ". Furthermore, it is of particular interest to note that it is anticipated that the Report will eventually become a National Guide enforceable by law.

No Fire Protection Officer should delay in adding the publication to his library.

The Report is published by the Building Industries National Council and can be obtained from 11 Weymouth Street, London, W.1., price 2s.

M.C.D.

Post-War Planning and the Telephone



By J. H., No. 26 Fire Force

The main point at issue in the Fire Service to-day is whether the Service is to remain Nationalized or will return to the control of Local Authorities. One thing I feel we must accept is that the Service will for some considerable time remain Nationalized. We therefore have this transitional period in which to plan, and it is up to the members of the Service to put their views forward in order that advantage can be taken of them.

Mistakes Inevitable

Mistakes made during the emergency change-over to Nationalization were inevitable, and one of the greatest to my mind was the acceptance of Local Authority boundaries for operational Fire Service boundaries. This, I feel, was done to suit the administrative set-up rather than operational requirements

If we reflect back to pre-N.F.S. days, it will be realized that the existence of Local Authority boundaries was to a great extent responsible for Nationalization. Although the change did in many respects widen these boundaries, we found in practice that many difficulties still existed from the operational point of view due to Station, Sub-Divisional, Divisional, Area and even Regional boundaries coinciding with Local Authority boundaries. This difficulty may not be fully appreciated by all, but those who have had to deal with the problem of over-the-border assistance, namely, the Mobilizing and Communication Officers, realize full well how utterly ridiculous the existing Fire Service boundaries are.

The Telephone—No. 1 Fire Appliance

It is doubtful if, during the whole of the war, there has been a fire dealt with by the Fire Service where the telephone has not played a vital part. Inasmuch as we look upon sprinklers, fire alarms and call bells as fire appliances, so we should regard the telephone as a fire appliance. Apart from its value in connection with the mobilizing scheme, it should be remembered that there are in this country to-day approximately three million telephones, each of which can be regarded as a potential fire alarm.

Having accepted this statement, it is only proper that the telephone should be given its place in the Fire Service. The question to be asked is : " Are we using this appliance to its full advantage ? " The answer is definitely " No ".

Why not Telephone Exchange Boundaries ?

If, as is contended, Fire Service Boundaries should be re-sited, the question arises as to whether there are other boundaries which are suitable, or whether entirely new boundaries should be formed. The problem has a simple solution—the adoption of the Post Office Telephone Exchange boundaries.

This suggestion may not be readily appreciated or accepted, but when we consider that approximately eighty per cent of the fire calls to-day are passed over the telephone by members of the public, it will be agreed that there is some definite relationship.

Every Exchange line telephone is, of course, connected to an Exchange, and every Exchange has a definite area. The Telephone Exchange boundaries are fixed and have no relation to Local Authority or any other boundary. Whatever the size of the Exchange, and however many lines are connected to the Exchange, all fire calls within the Exchange must be connected to one particular station. That is, the Post Office

cannot discriminate and cannot arrange for any fire call received in the southern part of the Exchange area to be connected to one station, and those received from the northern part to be connected to a different station.

Time Lost Re-transmitting Calls

At the present time, of course, many station, Sub-Divisional, Divisional, Area and Regional boundaries do not coincide with the Exchange boundaries, and it is quite a common occurrence for fire calls to be received in one fire station for a fire which is in another Sub-Division, Division, Area or even Region. This being the case, much valuable time is lost in consulting records (K.429 and Street Schedule) or in re-transmitting the call to other appropriate fire stations. It follows, therefore, that if these very important delays are to be overcome in the post-war scheme, it is obvious that Fire Service boundaries should be based on Telephone Exchange boundaries and not Local Authority or any other boundaries.

Accessibility a Valuable Factor

After considering these points, many Fire Officers will, no doubt, question the accessibility to all parts of an Exchange Area from the fire station receiving the call. I would suggest that those in doubt should consult an Exchange boundary map of their own Area and they will then agree with me that Exchange Areas do, undoubtedly, lend themselves to Fire Areas, and that the accessibility in all cases is good. The reason for this is that in the early stages of the Telephone Service, the Post Office realized they would have to plan for 20 years ahead and that they must base their network from an accessibility point of view. Exchange boundaries were fixed, therefore, on radial distance and on natural and artificial obstacles such as rivers, canals, railways, etc. In effect, they were faced with the same problem as now confronts the Fire Service : but, whereas the Post Office had to start from scratch, the Fire Service has the benefit of being able to take advantage of 30 years' work and experience by the Post Office.

Divisions based on Group Exchanges

Assuming that stations would mobilize direct to Divisions, the next point to consider is the siting of the Divisional Control. In the Post Office system, ordinary Exchanges in effect mobilize to a Group Centre Exchange, which is centrally situated in relation to the Exchanges it ' controls'. It is quite possible for an Exchange to have lines to only one other Exchange and usually the latter is the Group Centre. In all cases the Group Exchange has good communication with all its Exchanges as this is essential under the Group Centre scheme. Therefore, if our Divisions are based on Group Centre Exchanges, good communication with the Stations connected to the other Exchanges is assured. Moreover, there is a far greater possibility that the Post Office would be able to provide private lines between Station and Division if we adopted Group Boundaries as Divisional Boundaries than would be the case otherwise.

My suggestions are, therefore, that Station boundaries should be based on Telephone Exchange boundaries and the Divisional boundaries should coincide with Group Centre Exchange boundaries, thus achieving.

(1) The routing of the initial fire call from the caller to the station which is to respond to the call.
(2) The almost entire elimination of over-the-border calls.
(3) Speedy communication from junior control to senior control, with the resultant speedier mobilizing.
(4) Good accessibility to all parts of the station area.
(5) Good accessibility to all parts of the Division, with the resultant speedier reinforcements and good supervision.

Telephone and Fire Service Allied

The Telephone Service, if studied in detail, will be found to have a very definite alliance to the Fire Service both in organization and operation, and in planning the future Service many lessons can be learned from the Post Office organization.

The scheme adopted by the Post Office for the siting of Exchanges could also be copied by the Fire Service in siting Fire Stations. Space does not permit me to enlarge on the point, but it is a matter worthy of consideration by those planning a Post-war Service.

Speedier Fire Calls

A final point I wish to emphasize is that the time taken for the call to reach the Fire Station must be closely examined, and it is not sufficient to plan a scheme solely on the period between the receipt of the call and the actual attendance at the fire. The present trend of post-war planning seems to be based on the latter fact only, and entirely ignores the former ; to my mind, this is the equivalent of starting on the first floor instead of on the ground floor.

In the past many instances can be cited where operational requirements have been placed secondary to administrative requirements. National Fire Service boundaries is a typical example. When considering the post-war scheme, we should plan to avoid a similar occurrence and aim to give John Citizen a square deal.

• • •

DO YOU REMEMBER?

The following suggestion has been received from H.T.H., No. 10 Region :

Now that V.E. and V.J. are over and the days of many stations and many men are almost gone, it would be a great pity if the thousands of unconsciously humorous occurences and sayings of those crowded days were lost to the future Fire Service.

Would it be practicable for *The Jet* to commence a feature entitled " Do You Recall ", or " Happy Days ", incorporating selected instances ?

Each one of our members will recall some comic happening in his own district which will create laughter for years to come. Why not record it ?

Just three examples chosen at random from my own store of memories—The officer at a station question bee who was told that an auger was a member of the Russian secret service.—The officer who, when the first 'Air Raid Yellow' was given, consulted his notebook and exclaimed " Yellow, by Golly that's serious, that's gas ! " and paraded his men in A.G. clothing in which they remained for hours on end because control forgot to give him 'The White'.—The Communications Officer who took out his " Dep " F.F.C. and two Staff Officers at 0100 hours on a vile winter's morning to give a test fire call to a moorland area. They selected a remote call box and the " Dep " fumed outside in the wind and rain while the Comms. Officer struggled with the instrument. Finally 'Staff" poked his nose round the door and said " x . . x . . Press button B and get your tuppence back !" " Hell," said the Comms. Officer " I didn't put tuppence in ".

If we could raise one collater in each Area or Region, what a store of Fire Service fun we could amass.

What do *you* think ?

Overseas Contingent

When the National Fire Service Overseas Contingent was formed in April, 1944, it was expected that the enemy would make heavy air raids on bases established on the Continent following the Allied invasion of Europe and that, in the serious fires likely to ensue, the National Fire Service would be able to give valuable help to the Fire Services of the British and United States Armies. These raids did not materialize and, in the early stages of the invasion, there was no call for the services of the Overseas Contingent. In consequence, in October 1944, the Home Secretary announced that the Contingent was being stood down, with the exception of one Column, which would continue to stand by in case it should be required.

Supply Dumps Endangered

As the Allies advanced into Europe and gradually built up the vast supply organization required to keep a modern army on the move, the danger of fire (not necessarily caused by enemy action) at the great supply dumps became an increasingly-important factor. It was the need to guard against this danger which at last gave No. 4 Overseas Column the chance for which it had so long been waiting.

Early in 1945 a request was made by SHAEF for the services of the Column overseas, and at the end of January, 1945, they crossed to Europe. From that date until the middle of April, when it was transferred to the British front, the Column served with General Omar Bradley's 12th (U.S.) Army Group.

Wide Area Covered

Their duties were primarily the guarding of the vast dumps from which the forces advancing into Germany were supplied. The area covered was very large, at its greatest some 33,000 square miles, and the five companies of the Column were spread out over almost the whole forward zone of the 12th Army Group. By mid-April the northernmost detachments were at Wegberg in Germany, the southernmost near Verdun in France. In the east, a pump was just beyond Frankfurt-on-Main and, in the west, another was at Flawinne, in Belgium, between Namur and Charleroi.

Detachments of from one to six pumps were allocated to the various U.S. Supply Battalions, most of which were mobile. As the Supply Battalions moved forward, the pumps moved with them. Usually the N.F.S. Company Commander would go forward on a reconnaissance with one of the U.S. officers and help to select sites in the forward areas for the dumps.

Vital Risks Involved

The risks protected usually comprised petrol installations, such as large dumps of jerricans, decanting depots and tank storage installations; ordnance dumps ; food dumps ; ammunition dumps and railheads. Many of these dumps were of colossal size—one dump of jerricans covered an area of roughly five square miles.

An example of the serious fire risks encountered was a certain petrol decanting station, known to the U.S. Army as " Oil City ". Petrol was brought to this spot in giant road and rail tankers, and then pumped into a large fixed tank mounted on a small eminence. From this tank 6-in. pipe-lines led to a long horizontal pipe by the roadside, to which were fitted, at intervals of about 15 feet, a number of flexible armoured hoses, each terminating in a petrol nozzle with a handgrip release valve. Each of these nozzles was manned by a German prisoner of war, whose job it was to fill the jerricans which were passed to him in a continuous supply. As the nozzle was passed from can to can, large quantities of spirit were often unavoidably spilled on the ground. The installation was said to decant 1½ million gallons a day.

Water Supplies a Problem

The problem of water supplies was everywhere a serious one. At

this particular installation, in addition to improvising an adequate water supply, the N.F.S. men made their own foam inductor from a 40-gallon drum, some 1½-in. and 3-in. piping and valves.

Throughout the area it was hardly ever possible to rely on the water mains, and though in one or two cases German static water tanks proved useful, it was generally necessary to improvise. A favourite method was to obtain the loan of a bulldozer from the Americans and scoop great holes in the earth at strategic positions. These were then lined with marquee tops (once again obtained from American sources), which were pegged down at the edges, with their ventilation holes patched, and filled with water. Each of these "E.W.S. Tanks" held some 60,000 gallons.

Another ingenious method of improvising a water supply was adopted at an important railhead at Gau Algesheim, near Mainz. A passenger subway, connecting the various platforms of the station, was flooded and thus provided a static supply of some 80,000 gallons. To keep up the water level, water was pumped from a stream about a quarter-of-a-mile distant, a German magirus pump found in an oil refinery being used for this purpose. The water was then carried over the railway line in hose of German make, slung with ropes along the telegraph poles.

At General Bradley's H.Q.

A good deal of fire protection work was undertaken by the Officers of the Column at the request of the various Area and Battalion Centres. Among the buildings inspected were General Bradley's Headquarters, cinemas and concert halls taken over for military purposes, dumps of all types, road and railheads, and military hospitals. There is no doubt that the N.F.S. personnel were very successful in making the U.S. Army officers and men with whom they worked "fire conscious". The fact that a direct fire telephone was installed between General Bradley's Headquarters and the nearest N.F.S. station is an example of this.

During their period of service with the 12th Army Group the Column dealt with more than ninety fires on military installations, many of which would probably have assumed serious proportions but for the presence of the N.F.S. on the spot. An example of the saving achieved by the speedy arrival of trained firemen was a fire to which a detachment guarding an important store of equipment in a French fort was called out.

A Typical Job

On arrival the section found a column of American six-wheeled vehicles drawn up in line, extending as far back as the eye could see along the roadside, and in the middle of the line a blazing armoured car. The fire was attacked immediately with the first aid hose, and the firemen and soldiers worked desperately to remove from the cockpit of the vehicle quantities of live ammunition, shells and grenades, as well as 4-gallon petrol cans too hot to hold with the bare hands. Before the pumps' 120-gallon emergency water tank was empty the fire had been brought under control, and within half-an-hour it was out.

Though the outbreak was not large in itself, it might, but for the speedy arrival of the Fire Service, have had serious consequences. There was a large petrol dump nearby, containing over 20,000 gallons stacked in jerricans. If the fire had got out of control, there would have been a very grave danger of the burning petrol and exploding ammunition setting the whole dump on fire, with disastrous consequences to a great part of the whole armoured column.

Headquarters in Belgium

The Headquarters of the Column was established in a Technical College in Namur, Belgium. The College was still in part occupation by the Education Authorities, and the Headmaster and his staff did all they could to make the N.F.S. men happy and comfortable. The N.F.S. was able to make a small and unexpected return for their kindness through the agency of a fireman on the Headquarters staff, who is a French scholar. Two or three times a week he gave English lessons to the French students.

An outstanding feature of the Column's period of service with 12th Army Group was the helpful and co-operative attitude of the American personnel of all ranks with whom they worked. The N.F.S. lived in the same conditions as the American soldiers, sharing the same billets and messing facilities, and enjoying the same amenities in the way of entertainment and recreation. In the forward areas, to make recognition easier, the firemen were provided with U.S. khaki denim uniforms, and throughout the Column it was found simpler to abandon N.F.S. ranks and adopt Army nomenclature — a Section Leader, for example, being called "Sergeant" and a Column Officer "Captain".

Spare-Time Occupations

Apart from the assistance rendered in the course of their official duties, the N.F.S. showed themselves equally ready to co-operate in any way they could. One detachment, for example, attached to an American Ordnance Company, filled in their spare time by helping in such jobs as washing tanks and guns back from combat zones, reassembling small arms, etc.

It was with much regret that the Column left their American colleagues on their transfer to the British front, but they left with the knowledge that their work had been highly appreciated and that they had worthily upheld the reputation of Britain's National Fire Service.

Home Office, Whitehall

UNIFORM

INCOME TAX ALLOWANCES — SHIRTS AND COLLARS

The Association has recently written to the Board of Inland Revenue, putting forward a strong case for an allowance in respect of expenditure on shirts and collars.

Below is an extract from the letter received by the General Secretary, dated 27th July, 1945 :

So far as the white shirts and collars, on which your original claim was based, are concerned, it seems clear that it is not at present compulsory for officers to wear these, and the cost of replacement and of laundry cannot therefore be regarded as necessarily incurred within the words of the rule.

You have also, in your second letter, raised the question of abnormal wear on underclothes by reason of sleeping in them when on duty, and also by damage sustained at fires. I have carefully considered this claim but regret that I cannot agree to propose a flat rate allowance applicable to all officers to meet these factors, the incidence of which will vary considerably between one man and another. It is, however, open to any individual officer to prefer a claim under Rule 9 of Schedule E by reference to his actual expenditure, having regard to the basis of calculation indicated in my letter of 9th April.

VACANCIES AND APPOINTMENTS

The following details have been received of vacancies circulated and appointments made by the Fire Service Department during the period 1st to 31st August, 1945 :

Applications invited for the following posts :

1. QUANTITY SURVEYOR ON STAFF OF CHIEF ARCHITECT AT THE HOME OFFICE AND AT REGIONAL OFFICE, BIRMINGHAM—invitation issued 9th August to N.F.S. personnel with the necessary professional qualifications.

2. SHORTHAND TYPIST AT N.F.S. COLLEGE, BRIGHTON—invitation issued 23rd August to Leading Firewomen and Firewomen.

3. AREA CLERK IN NO. 23 FIRE FORCE, NO. 9 REGION, WITH RANK OF COLUMN OFFICER—invitation issued 30th August to Column Officers and Senior Company Officers with administrative or staff experience.

Posts filled :

1. REGIONAL ESTABLISHMENT OFFICER WITH RANK OF DIVISIONAL OFFICER in No. 4 REGION (item 8 of August issue)—Mr. N. J. H. TOLLOW, Senior Company Officer of No. 5 Region appointed 7th August, 1945.

2. FIRE OFFICER TO PRINCIPAL SEA TRANSPORT OFFICER, INDIA (item 2 of August issue)—Senior Company Officer G. B. AYLWARD of No. 5 Region appointed.

3. SENIOR STAFF OFFICER FOR PORT FIRE OFFICER, BOMBAY (item 6 of February issue)—Mr. A. F. LOCKE, Divisional Officer of No. 8 Region appointed.

4. SENIOR WOMAN OFFICER IN NO. 12 REGION (item 7 of August issue)—Mrs. N. DIAMOND, Area Officer of No. 2 Region appointed.

5. SENIOR INSTRUCTOR AT N.F.S. COLLEGE WITH RANK OF DIVISIONAL OFFICER (or acting)—item 3 of August issue. The following have been appointed :

Divisional Officer	A. MASSON	Region 11
Column Officer	C. PEARSON	Region 2
Column Officer	F. H. J. DANNIELLS	N.F.S. College

6. JUNIOR INSTRUCTOR AT N.F.S. COLLEGE, WITH RANK OF COMPANY OFFICER (or acting)—item 3 of August issue. The following have been appointed :

Company Officer	H. G. ADAMS	Region 4
„ „	E. R. MARSHALL	Region 5
Section Leader	E. GOODE	Region 9
„ „	S. GRANT	Region 9
„ „	S. J. MAYALL	Region 9
„ „	F. THOMPSON	Region 9
„ „	F. HORROCKS	Region 10
„ „	H. F. HINTZE	Region 5

7. TEMPORARY ASSISTANT COMMISSIONERS UNDER NATIONAL SAVINGS COMMITTEE (item 1 of June issue). The following have been appointed :

Sen. Company Officer	J. W. KING	N.F.S. College
Company Officer	C. S. CLARK	Region 5
„ „	P. BOWLES	Region 5
Section Leader	D. H. COLES	N.F.S. Officers' Board
Leading Fireman	H. W. MELSOM	Region 10
„ „	W. K. LAWTON	Region 10
Fireman	L. FOWLER	Region 5

8. FIRE STAFF OFFICER INSPECTOR GRADE II AT HEADQUARTERS (item 4 of August issue). The following have been appointed :

Column Officer	T. J. WHITE	Region 7
„ „	J. A. PERKINS	Region 2

9. FIRE STAFF OFFICER GRADE III AT HEADQUARTERS (item 4 of August issue). Mr. D. H. BICK, Company Officer of No. 9 Region appointed.

N.J.S.O.A.

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