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TESTIMONY BY:

EDWARD H. McCORMACK, JR., SECRETARY
INTERNATIONAL SOCIETY OF FIRE SERVICE INSTRUCTORS

PRESENTED TO:

THE NATIONAL INSTITUTE
FOR
OCCUPATIONAL SAFETY AND HEALTH

AND

MINING ENFORCEMENT
AND
SAFETY ADMINISTRATION

IN SUPPORT OF THE
NEW AND IMPROVED PERFORMANCE REQUIREMENTS
FOR

RESPIRATORY PROTECTIVE DEVICES

NOVEMBER 30, 1977

MY NAME IS EDWARD MCCORMACK, EXECUTIVE SECRETARY OF THE INTERNATIONAL SOCIETY OF FIRE SERVICE INSTRUCTORS. I HAVE BEEN ACTIVE IN A NUMBER OF STATE, REGIONAL, AND NATIONAL ORGANIZATIONS AND PROGRAMS DEALING WITH VARIOUS ASPECTS OF THE FIRE SERVICE FOR OVER 20 YEARS. MOST RECENTLY, I'VE RETIRED AS CHIEF OF FIRE TRAINING FOR MASSACHUSETTS. I WOULD LIKE TO TAKE THIS TIME TO GIVE SOME BACKGROUND ON THE SOCIETY AND TO PRESENT FURTHER ARGUMENTS FOR THE RE-EXAMINATION OF PRESENT PROTECTIVE BREATHING DEVICE STANDARDS.

THE INTERNATIONAL SOCIETY OF FIRE SERVICE INSTRUCTORS WAS ORGANIZED IN 1960 AS A MEANS OF PROVIDING AN EXCHANGE OF IDEAS AMONG STATE FIRE SERVICE TRAINING DIRECTORS, AND FOR THE NEXT FEW YEARS THE SOCIETY RETAINED A SMALL BUT STABLE MEMBERSHIP.

IN 1967 THE SOCIETY WAS BROADENED TO INCLUDE ALL FULLTIME STATE AND MUNICIPAL INSTRUCTORS AND WITH THAT CHANGE THE MEMBERSHIP REALLY TOOK OFF. IT HAS BEEN GROWING STEADILY EVER SINCE.

MEMBERSHIP TODAY REPRESENTS ALL INTERESTS OF THE FIRE SERVICE TRAINING AND EDUCATION COMMUNITY SUCH AS COLLEGES, INDUSTRY, MUNICIPAL DEPARTMENTS, STATE TRAINING PROGRAMS, VOLUNTEER AND FEDERAL AGENCIES. SPECIAL INTEREST SECTIONS OFFER UNIQUE OPPORTUNITIES FOR THESE MEMBERS TO SHARE INFORMATION OR MATERIALS, IDEAS AND PROBLEMS. THUS, IT'S EASY TO DOCUMENT THE TYPE OF INFORMATION BEING REQUESTED AT THESE HEARINGS. GEOGRAPHICAL REPRESENTATION IS LIKewise EASY BECAUSE OF OUR 27 AFFILIATE CHAPTERS, THROUGH WHICH WE REACH OVER 4,000 ADDITIONAL INSTRUCTORS.

WHILE THE MEMBERSHIP, AND THE SOCIETY, HAS CHANGED OVER THE YEARS, THE

GOALS HAVE NOT. WE ARE JUST AS DEDICATED TODAY, IF NOT MORE, AS THAT SMALL GROUP WAS IN 1960, TO THE IDEALS OF A BETTER, SAFER, MORE EFFECTIVE FIRE SERVICE THROUGH IMPROVED TRAINING.

THROUGH CONSTANT COMMUNICATIONS WITH OUR MEMBERS, WE ARE ABLE TO INTRODUCE THE NEWEST, MOST INNOVATIVE TEACHING METHODS AND TRAINING PROCEDURES. WE ARE CONSTANTLY RECEIVING NEW IDEAS WHICH ARE SHARED WITH THE ENTIRE MEMBERSHIP THROUGH OUR NEWSLETTERS, CONFERENCES, MEETINGS, AND SEMINARS. WE FEEL EXTREMELY FORTUNATE TO BE ABLE TO COUNT AMONG OUR MEMBERS SOME OF THE MOST KNOWLEDGEABLE, DEDICATED PEOPLE IN THE FIELD OF FIRE SERVICE TRAINING.

THOSE OF US CONCERNED WITH THE NEEDS OF THE FIRE SERVICE INSTRUCTOR ARE EQUALLY CONCERNED WITH THE APPARENT LACK OF KNOWLEDGE OF THE FIREFIGHTERS JOB, AS IMPLIED BY THE STANDARDS NOW IN USE.

ONE OF THE MOST IMPORTANT THINGS TO REMEMBER WHEN CONSIDERING CRITERIA FOR THE PROTECTIVE BREATHING DEVICE, IS THAT TODAY, MORE THAN EVER BEFORE, THE DEVICE IS AN INTEGRAL TOOL OF THE JOB, JUST AS IMPORTANT AS A LADDER, HOSE, OR NOZZLE. IT IS IMPERATIVE THAT THE INSTRUCTOR CONVEY TO THE STUDENT THE IMPORTANCE OF THE CONSTANT AND CORRECT USE OF THE DEVICE IN TODAY'S HAZARDOUS ENVIRONMENT.

THIS IS WHY, AT TRAINING CENTERS AND DEPARTMENTS ACROSS THE COUNTRY, PROTECTIVE BREATHING DEVICES ARE PUT THROUGH SUCH STRENUOUS AND CONSTANT USE. THE TRAINING EXPERIENCE OFTEN INVOLVES SIMULATING ACTUAL FIREGROUND SITUATIONS. WHILE THE ATMOSPHERE MAY BE CONTROLLED, AS OPPOSED TO AN ACTUAL FIREGROUND EXPERIENCE, THE FIRE IS JUST AS HOT, THE SMOKE IS JUST

AS THICK, AND THE DANGER INVOLVED WHEN A BREATHING DEVICE FAILS IS JUST AS SERIOUS. MORE SERIOUS, AS A MATTER OF FACT. REMEMBER, IN A TRAINING SITUATION, THE WEARER IS PROBABLY GOING TO BE A RECRUIT. HE'S GOING TO BE NERVOUS, CONFUSED, AND PERHAPS BE GIVING SERIOUS CONSIDERATION TO WHETHER OR NOT THIS IS WHAT HE REALLY WANTS TO DO FOR A LIVING. THE FAILURE OF A PROTECTIVE BREATHING DEVICE TO FUNCTION PROPERLY ON THE TRAINING FIELD WILL DO MUCH TO PERPETUATE THE MYTH OF USING THE DEVICE ONLY WHEN YOU ABSOLUTELY HAVE TO.

PROTECTIVE BREATHING APPARATUS SHOULD BE USED IN EVERY FIRE SITUATION UNTIL DETERMINATION IS MADE THAT THEY ARE NOT NECESSARY. WE ARE HARD-PUT TO CONVINCING ANYONE OF THIS WHEN THE EQUIPMENT FAILS TO BE RELIABLE EVEN ON THE TRAINING FIELD.

ONE OF THE MOST IMPORTANT THINGS THAT ANY INSTRUCTOR WILL EVER BE ABLE TO CONVEY TO HIS STUDENTS IS THE SENSE OF TRUST THAT CAN ONLY COME WITH THE REPEATED USE OF HIS GEAR AND ITS REPEATED RELIABILITY. SEVERAL ASPECTS OF CURRENT PROTECTIVE BREATHING DEVICES MAKE THEIR USE DIFFICULT IN THE FIRE GROUND SITUATION. IN AN ALREADY STRENUOUS AND EXHAUSTING CIRCUMSTANCE, THE FIREFIGHTER MUST NOW HEAVE THIRTY TO FORTY ADDITIONAL POUNDS ON HIS BACK IN ORDER TO BREATHE. IN WHAT MAY BE, AND OFTENTIMES IS, A LIFE OR DEATH SITUATION, THE BULKINESS OF THE GEAR WILL SEVERELY LIMIT THE FIREFIGHTERS ABILITY TO GET TO THE SOURCE OF FIRE OR HIS ESCAPE ROUTE BY ADDING SEVERAL INCHES TO HIS SIZE.

NOW CONSIDER THE FOLLOWING.....

1.) ALASKA HAS EXPERIENCED SEVERE PROBLEMS WITH THE REGULATORS AND

EXHAUST VALVES FREEZING DUE TO CONDENSATION BUILDUPS.

2.) AGAIN IN ALASKA, IN THE SOUTHEAST MARITIME AREA WHERE IT'S OFTEN NECESSARY TO BOARD FIRE BOATS, THE SALT WATER IS RAISING HELL BY CORRODING THE REGULATORS. THE DEVICES ARE SPENDING MORE TIME AT THE MANUFACTURERS THAN IN USE.

3.) MANY DEPARTMENTS AND TRAINING FACILITIES ACROSS THE COUNTRY ARE EXPERIENCING EXTREME PRESSURE BUILDUPS (MSA 401) CAUSING THE FORCEFUL EJECTION OF THE DIAPHRAGM COVER, THE AIR HOSE, OR IN SOME CASES, AN UNCOMFORTABLE AND DANGEROUS BUILDUP OF PRESSURE IN THE FACEPIECE. CONCERN IS BEING GIVEN TO NOT ONLY THE EVENTUAL FAILURE OF THE DEVICES UNDER THIS SITUATION, BUT ALSO THE POTENTIAL DANGER TO EYES FROM EXCESSIVE PRESSURE.

4.) MINNESOTA, IN FEBRUARY OF THIS YEAR, LOST TWO MEN WHO HAD BEEN TRAPPED IN A BASEMENT. THEIR WARNING BELLS WERE PERHAPS LOUD ENOUGH TO WARN THEM THAT THEIR AIR SUPPLY WAS LOW....THEY WEREN'T LOUD ENOUGH TO LET ANYONE FIND THEM UNTIL IT WAS TOO LATE.

5.) IN HOLLY HILL, FLORIDA -AUGUST 1975 - A SCOTT FACEPIECE WAS DEFORMED SO BADLY BY HEAT EXPOSURE THAT THE RUBBER SEAL GAVE WAY.

6.) IN SARASOTA, FLORIDA -JAN. 1976- THE SARASOTA FIRE DEPARTMENT ANSWERED AN ALARM AT A MARINA. TWO FIREFIGHTERS WEARING PROTECTIVE BREATHING DEVICES WERE BURNED BY THE METAL HARNESS BUCKLES WHEN THE HARNESSES WERE SOFTENED BY HEAT.

7.) IN ALASKA, AND I THINK IT'S SAFE TO ASSUME IN OTHER COLD WEATHER

CLIMATES, FIREFIGHTERS HAVE FOUND IT DIFFICULT, IT NOT IMPOSSIBLE, TO EVEN PUT ON BREATHING APPARATUS BECAUSE THE HARNESS ASSEMBLY DOES NOT HAVE ENOUGH LEEWAY TO FIT OVER COLD WEATHER GEAR.

8.) PROBLEMS WERE ENCOUNTERED WITH THE MSA 401 WHICH WERE ORIGINALLY DESIGNED WITHOUT PRESSURE RELEASE DEVICES. THERE WERE SEVERAL FIELD ACCIDENTS IN WHICH HANDS WERE BADLY LACERATED BY THE DIAPHRAGM PLATES BEING BLOWN OFF.

9.) AT AN ILLINOIS FIRE DEPARTMENT, DURING A TRAINING BURN, TWO MEN EQUIPED WITH SCOTT AVIATION 4.5's WERE ABOUT TO ENTER THE SECOND FLOOR OVER AN INTERIOR STAIRWELL TO CHECK FOR FIRE EXTENSION FROM A TWO ROOM TRAINING BURN ON THE FIRST FLOOR.....

"AS THE LEAD MAN GOT ABOUT HALF-WAY UP THE STAIRS THE HOSE FROM THE REGULATOR TO THE FACEPIECE PULLED OUT OF THE REGULATOR. THIS ALLOWED A STEADY ESCAPE OF AIR FROM THE REGULATOR AND HIS MASK FILLED WITH SMOKE. THESE PROCEDURES CALL FOR A BACK-UP TEAM AT ALL TRAINING FIRES AND THIS MAN WAS QUICKLY TAKEN TO A WINDOW AND REMOVED TO THE OUTSIDE AFTER A CONSIDERABLE INHALATION OF SMOKE."

IF YOU ADD TO THESE FEW EXAMPLES, THE PROTECTIVE BREATHING DEVICES' INHERENT PROBLEMS OF WEIGHT AND BULK, A DEVICE THAT SHOULD BE CONSIDERED A FIREFIGHTERS LIFELINE BECOMES, AT BEST, A FINAL ALTERNATIVE. ALL THE HOURS OF TRAINING AND PRACTICE CAN BE LOST WHEN THE THEORETICAL "LIFE SUPPORT SYSTEM" PROVES TO BE LESS THAN RELIABLE IN ACTUAL PRACTICE.

ONE OF OUR MEMBERS, JOSEPH MCDONAGH OF THE MARYLAND FIRE AND RESCUE

INSTITUTE, SUBMITTED A RESOLUTION CONCERNED WITH THE PROBLEM, AT THE SOCIETY'S ANNUAL FALL CONFERENCE ON SUNDAY, OCT. 4, OF THIS YEAR. IN IT HE URGED THAT ALL OF OUR MEMBERS PARTICIPATE ON USER COMMITTEES DEVELOPING THOSE RULES, REGULATIONS, AND STANDARDS FOR PROTECTIVE BREATHING APPARATUS. HE FURTHER URGED THE RESOLUTION BE SUPPORTED BY THE JOINT COUNCIL OF NATIONAL FIRE SERVICE ORGANIZATIONS, THE NATIONAL FIRE PREVENTION AND CONTROL ADMINISTRATION, OR ANY OTHER FEDERAL AGENCIES AS IS NECESSARY TO RECOGNIZE AND RESOLVE THE INADEQUACIES THAT ARE SO APPARENT.

THE RESOLUTION WAS ADOPTED. THIS IS NOT A CAUSE OF CONCERN TO A MERE HANDFUL OF PEOPLE. EVERYONE INVOLVED WITH THE FIRE SERVICE IS ANXIOUS TO SEE IMPROVEMENTS WITH THESE DEVICES...IT MAY BE OUR BEST BET FOR REDUCING THE APPALLING RISKS WE'VE BEEN TAKING FOR SO MANY YEARS.

THE MEMBERSHIP OF THIS SOCIETY IS DEDICATED TO IMPROVING THE CHANCES OF SURVIVAL OF THE GRASS-ROOTS FIREFIGHTER BY IMPROVING THE INFORMATION AND TECHNIQUES AVAILABLE TO THE FIRE SERVICE INSTRUCTOR. HOWEVER, BY CONTINUING TO UTILIZE A DEVICE THAT WAS NEVER INTENDED FOR OUR USE, AND BY FAILING TO PROVIDE STANDARDS AND CRITERIA THAT AT LEAST MEET MINIMUM REQUIREMENTS FOR THE FIRE SERVICE, THE FIRE SERVICE INSTRUCTOR IS FIGHTING WHAT AMOUNTS TO A CONTINUOUS, UPHILL, AND AT TIMES, LOSING BATTLE.

THERE IS NO HIDING FROM THE FACT THAT IMPROVED TRAINING WILL REDUCE THE DEATHS AND INJURIES TO FIREFIGHTERS. IT IS A TASK THAT WE WILLINGLY ACCEPT, AND, WITHOUT BEING MAUDLIN, ONE TO WHICH MANY OF US HAVE DEDICATED OUR LIVES.

BUT IT IS A TASK THAT CANNOT BE ACCOMPLISHED ALONE. IN ORDER TO TRAIN

FIREFIGHTERS TO WORK WITH THEIR EQUIPMENT LIKE A SECOND SKIN, THEY MUST BE ABLE TO RELY ON THAT EQUIPMENT EVERY TIME OUT. MANUFACTURERS OF PROTECTIVE BREATHING DEVICES MUST BE MADE TO UNDERSTAND THAT IF THEY ARE GOING TO SELL THESE DEVICES TO THE FIRE SERVICE, THEY MUST BE MADE DEPENDABLE WITHIN THE CONFINES OF THE JOB THE FIREFIGHTER IS BEING ASKED TO PERFORM. THOSE AGENCIES INVOLVED IN SETTING STANDARDS FOR MANUFACTURERS MUST GIVE SERIOUS CONSIDERATION TO SETTING CRITERIA THAT IS REALISTIC AND IN THE BEST INTEREST OF THE USER, BOTH SAFETY-WISE AND FINANCIALLY.

AS PRESIDENT AMABILI POINTED OUT, "ACCEPTABLE" IS NOT A WORD WE WILL CONTINUE TO BE SATISFIED WITH. WE WILL NO LONGER ACCEPT "DOING THE BEST WITH WHAT WE'VE GOT"....THE TIME HAS COME TO DO THE BEST WITH THE BEST. TOO MANY LIVES, BOTH FIREFIGHTERS AND THE PUBLICS, DEPENDS ON "THE BEST" FOR THE FIRE SERVICE TO "ACCEPT" ANYTHING LESS.

I WOULD LIKE TO THANK THE COMMITTEE FOR MAKING TIME AVAILABLE FOR THE FIRE SERVICE TO BE HEARD. I WOULD, HOWEVER, LIKE TO REQUEST THAT THE RECORD OF THIS HEARING BE HELD OPEN AN ADDITIONAL SIXTY DAYS TO PROVIDE FOR ADDITIONAL TESTIMONY THAT MAY BE FORTHCOMING FROM OTHER MEMBERS OF THE FIRE SERVICE. WE BELIEVE THAT BY GIVING SERIOUS CONSIDERATION TO THE RECOMMENDATIONS PRESENTED TO YOU TODAY, THE FIREFIGHTER WILL NOT ONLY HAVE THE BEST EQUIPMENT AVAILABLE, BUT ALSO, THAT WE, AS FIRE SERVICE INSTRUCTORS, CAN ASSURE THAT IT WILL BE USED TO THEIR BEST ADVANTAGE.

THE FOLLOWING TESTIMONY HAS BEEN SUBMITTED FOR INCLUSION INTO THE RECORD BY SOCIETY MEMBERS REPRESENTING A SAMPLING OF OPINION FROM 10 STATES ACROSS THE COUNTRY AND CANADA.

- CANADA - TOM KRUK; TRAINING OFFICER STRATHCONA COUNTY FIRE DEPARTMENT, ALBERTA
- COLORADO - JOHN LIEBSON; DEPARTMENT CHIEF, CRESTED BUTTE FIRE PROTECTION DISTRICT
- CONNECTICUT - LAURENCE M. FORD; DIRECTOR FIRE TRAINING PROGRAMS CONNECTICUT COMMISSION ON FIRE PREVENTION AND CONTROL
- FLORIDA - ROBERT L. McLEOD; BATTALION CAPTAIN, SARASOTA FIRE DEPARTMENT
- IDAHO - JEROLD HAMMER; DRILLMASTER, IDAHO FALLS FIRE DEPARTMENT
- ILLINOIS - GEORGE R. CERMACK; FIRE CHIEF, NORMAL FIRE DEPARTMENT
- NEBRASKA - JAMES E. DOYLE; SECRETARY/TREASURER, NEBRASKA SOCIETY OF FIRE SERVICE INSTRUCTORS
- NEBRASKA - BRUCE WILSON; DIRECTOR NEBRASKA FIRE SERVICE, NEBRASKA DEPARTMENT OF EDUCATION
- OKLAHOMA - ELZIE C. SMITH; DRILLMASTER, OKLAHOMA CITY FIRE DEPARTMENT
- PENNSYLVANIA - LAWRENCE W. DAVIS, JR.; SENIOR ENGINEER, CANONSBURG
- VERMONT - WALTER B. READ; SENIOR SUPERVISOR FIRE SERVICE TRAINING, VERMONT STATE FIREFIGHTERS ASSOCIATION
- VIRGINIA - ROBERT E. CARTER; SUPERVISOR FIRE SERVICE TRAINING, DEPARTMENT OF EDUCATION.



County of Strathcona No. 20 Fire Department

WAYNE G. STANYER
Fire Chief

1933 Sherwood Drive, Sherwood Park, Alberta T8A 3R3
Telephone 467-5216

November 17, 1977

Ed McCormack
Secretary
P.O. Box 88.
Hopkinton, Mass.
01748

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NOV 23 1977

SEC'Y - I.S.F.S.I.

Dear Sir;

Breathing apparatus has been a firefighters concern for quite some time, and now I see that the I.S.F.S.I. is going to look into this matter, which is good news to me. In Canada and in our Hamlet of Sherwood Park, Alberta our municipality or county and the surrounding county's have a mutual aid agreement to help one another.

Because firefighting is the most hazardous occupation in the world, and because breathing apparatus to a firefighter is the most relied on piece of equipment. I feel that the recommendations outlined in your letter should be dealt with and I support the I.S.F.S.I. in this matter.

In my experience with some breathing apparatus I felt there were too many connections between the regulator and the air bottle, these connections would always come loose and leak air, making it very difficult and dangerous to the firefighter.

Here are some of my concerns:

1. Demand regulator to have a outlet. Designed for a buddy hook-up.
2. Emergency bypass valve knob, to be of luminous design so as to glow in the dark.
3. Automatic or quick level shut-off on air bottle outlet, should a line break between regulator and bottle.
4. mask and hose should not be made of any collapsable material so the firefighter can not accidentally pinch off his air supply.
5. All connections to breathing equipment should be standardized.

Just a foot note to you Ed and all members of the I.S.F.S.I. In Canada our fires burn just as hot as they do in the United States, and because I belong to the I.S.F.S.I. I feel that this is a great organization.

I am mighty proud to belong to an organization where Canadians and Americans can get together and try to make an occupation like firefighting safer for our firefighters.

Yours truly

Tom Kruk
Training Officer



Crested Butte Fire Protection District

HEADQUARTERS STATION — 306 MAROON

P. O. Box 421

Crested Butte, Colorado 81224

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NOV 17 1977

SEC'Y - I.S.F.S.I.

14 November, 1977

Mr. Ed McCormack, Secretary
International Society of Fire Service Instructors
P.O. Box 88
Hopkinton, Massachusetts 01748

Dear Ed:

Per your recent request, I would like to provide input to NIOSH and MESA through ISFSI in regards to protective breathing apparatus:

1) We are concerned over the lack on interchangeability of air bottles, as this tends to create a market monopoly, and make it more difficult and more expensive for the Fire Department to purchase vitally needed equipment.

2) Quick shut-off valves should be permitted on pressure-demand systems to make such systems more workable under actual firefighting conditions.

3) "Buddy-breathing" is a vital need to protect the firefighter who is working under conditions that are, at best, adverse.

4) Facepiece connections should be standardized in order to provide increased versatility and usefulness to the firefighter.

5) Bottles need to be standardized so that each and every bottle within a given fire department can be easily mounted, especially in brackets which allow for quick access during emergency situations.

6) It needs to be made clear exactly what maintenance can be performed by fire department personnel.

None of the above items appear to need any research, as the technology already exists; all of the items need to be put into effect immediately, in order that the firefighter may be better protected under actual working conditions.

There are, in addition, a number of items of immediate concern, which should be given attention at the earliest possible time; again, this is to increase the safety of the firefighter:

7) The temperature extremes under which breathing apparatus can be safely used in firefighting are in need of research. Our concern here is especially urgent, due to the extreme low temperatures which we experience out-of-doors: i.e., our apparatus is going from temperatures well below zero

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degrees Farenheit into extremely elevated temperatures inside the fire building, and back out into the cold air. We have no real way of knowing just how safe in terms of operating stability our present apparatus is under these conditions.

8) Communication between men while wearing the face pieces of present styles of breathing apparatus is extremely poor; given the conditions under which we wear such facepieces, it seems vital to improve upon this situation.

9) We need work done on the flamibility of the harnesses; the reasons should be obvious. In addition, we need research on the strength of harnesses and facepiece straps--again, our cold weather conditions appear to be creating an unnecessary hazard by weakening the straps, but we have no real way of determining this.

10) Corrosion problems with regulators should be looked into. Here again, our heavy snowfall conditions seem to be causing water corrosion problems, which, when mixed with the exposure to fire problems of the regulators, indicates that the current regulators are not providing adequate safety and longevity of equipment which we need.

I hope these brief comments will be of assistance in gaining standards (and, therby, equipment) which will be of a more realistic nature for the fire service than those currently in force.

Yours truly,


John Liebson, Chief of
Department

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SEC'Y - I.S.F.S.I.



STATE OF CONNECTICUT
COMMISSION ON FIRE PREVENTION
AND CONTROL

294 COLONY STREET MERIDEN, CONNECTICUT 06450

TEL. (203) ~~XXXXXXXX~~
238-6587

November 21, 1977

Ed McCormack, Secretary
P.O. Box 88
Hopkinton, Massachusetts 01748

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NOV 23 1977

SEC'Y - I.S.F.S.I.

Dear Ed:

You really do know how to twist arms!

In the future, if you don't hear from me on an important issue, you may assume that either I agree with your position or the mail hasn't gone through.

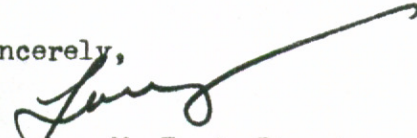
A couple of comments relative to the breathing apparatus proposals:
A) Under "recommendations for immediate implementation", Item 3. If there is to be a standard facepiece connection, there also should be an interchangeability of facepieces without loss of certification. If a fire department uses more than one brand of breathing apparatus, it is safe to assume that facepieces will get switched around on the fire ground. Such an accidental exchange should not endanger the wearer by resulting in an unsafe assembly.

B) Under "immediate research", Item 3. Study should not be limited to flame retardancy of apparatus harnesses alone, but to the resistance to heat and flame of the entire apparatus. Facepieces, breathing tubes, air reservoir bags, and regulator diaphragms are all components which could be made of materials subject to damage by flame or excessive heat.

The problem of keeping water and dirt out of demand regulators does not seem to have been completely solved as yet. I have received some complaints on this, but have not had opportunity to dig into the exact nature of the problem and the specific models of equipment involved.

I hope this helps you a bit.

Sincerely,


Laurence M. Ford, Director
Fire Training Programs

LMF:bl

Dear Ed:

As per a conversation with Pam I am sending you the following examples of breathing equipment failures. I think it would be of value to stress that present day, self-contained breathing apparatus, which is in use by the fire service, is designed for general use, rather than for specific use of firefighters. Breathing equipment is still being considered as an accessory item, instead of an integral part of a life support system.

To exemplify design failure, an example is the MSA Model 401. These units were originally designed without pressure release devices on the regular assembly. After several accidents in the field, including persons having their hands badly lacerated by the diaphragm cover plates being blown off, because of excessive pressure, the MSA then put out a modification notice to alleviate the problem. They instructed the users where to drill holes and how to place pieces of pressure sensitive tape over the aperture to thus form a home made pressure release valve.

I have, in my travels and teaching experience, found units so modified by fire departments with electricians' tape, masking tape and even adhesive tape. Such after thought modifications would never have been necessary if the unit design had been proper. The MSA Model 401 initially designed their admission valves of dissimilar metals, which created corrosion problems and led to numerous failures of the equipment.

Scott Aviator also had a design problem, such as the Scott II regulator, which will free flow, if the low pressure hose is disconnected as the user is inhaling; and the harness straps of the same units are so flexible that they tangle and prevent proper donning and usage.

If the design is lacking, then material selection is even worse in the manufacturing of breathing equipment. Examples.....

1. Holly Hill, Florida - August 1975 - Scott Facepiece deformed by heat so badly that it withdrew from the rubber seal of the facepiece.
2. Ocala, Florida - State Fire College - June 1978 - Heat deformed the facepiece and allowed a leak into the facepiece.

3. Sarasota, Florida - Sarasota Fire Department - Marina Fire - January 1976
Two head harnesses softened by the heat and the wearers were burned by the metal buckles.
4. Halifax, Florida - Halifax Fire Department - June 1975 - The facepiece was shattered by building debris during fire combat.
5. Sarasota, Florida - Sarasota Fire Department - March 1976 - Two firefighters injured inhaling chlorine fumes caused by teflon tape on the diaphragh, prevented the diaphragm from sealing.
6. Glacier, Alaska - Glacier Volunteer Fire Department - Training Exercise -
The diaphragm cover plates unscrewed and fell free of the assembly.
7. Sarasota, Florida - Sarasota Fire Department - May 1974 - The low pressure hose was severed by the edge of a plate glass window during combat operations.

These are merely examples of what can happen, and are given to point out the fact that incidents such as these are occurring over the nation with regard to breathing equipment failures and damage. The main reason for the lack of documented data or information on such incidents is there is no standard reporting method, nor any one agency to which failures and incidents may be reported. Also, undoubtedly, many failures will not be reported because dead firefighters cannot tell their stories. The failure of breathing apparatus is much like that of the failure of a parachute....It's difficult to bring it back.

Hope this helps, Ed....

Submitted by Robert L. McLeod, Battalion Captain, Sarasota Fire Department, Florida

CITY OF IDAHO FALLS

P.O. BOX 220
IDAHO FALLS, IDAHO 83401

OFFICE OF: Fire Department

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NOV 21 1977
SEC'Y - I.S.F.S.I.

November 17, 1977

Mr. Ed McCormack, Secretary
International Society of Fire Service Instructors
P. O. Box 88
Hopkinton, MA 01748

Dear Ed:

Reference to NIOSH and MESA meeting on requirements for respiratory protective devices.

I heartily endorse the Society's recommendations listed in your letter of November 9, 1977. I would also suggest the following be considered:

1. All airline hose used on breathing air system (air line or self-contained) should be the same color coded and have standardized valves and fittings.
2. Airline systems and components should be interchangeable on airline or self contained as long as the unit is approved by MESA/NIOSH. Such items are cylinders, masks, etc.
3. The 6000 series Scott regulator be upgraded in air flow to meet current MESA/NIOSH requirements. This can be done very easily by milling out the regulator, putting the 9000 series air valve in, and moving bellows back 1/8". (Contact Idaho Nuclear Engineering Laboratory of Department of Energy, Idaho Falls or Safety & Supply, Seattle, Washington)

4. Keep the pressure demand-demand switch on all regulators of self contained units and upgrade all units to be pressure demand/demand unit with pressure demand double seal face pieces.

Keep up the good work.

Very truly yours,

Jerold Hammer

Jerold Hammer, Drillmaster
Idaho Falls Fire Department

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NOV 21 1977
SEC'Y - I.S.F.S.I

NORMAL FIRE DEPARTMENT

604 N. ADELAIDE ST.

NORMAL, ILLINOIS 61761

BUSINESS PHONE (309) 452-1689

November 18, 1977

Mr. Ed McCormack
International Society of Fire Service Instructors
P.O. Box 88
Hopkinton, Mass. 01748

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NOV 21 1977

SECY - I.S.F.S.I.

Dear Mr. McCormack:

I am writing in response to your letter of November 5, 1977 regarding any ideas for the hearings scheduled on breathing apparatus starting November 29, 1977.

My concern would perhaps fall in the sector of "Recommendations for immediate implementation". It involves the new Scott Aviation 4.5 "Scott" lightweight protective breathing apparatus.

Recently our department purchased four of these units for use on our initial attack pumpers. Our long range budget called for a gradual change to this new type of breathing apparatus.

One of our initial uses of this new unit was a training burn. A team of two men equipped with these units was about to enter the second floor over an interior stairwell to check for fire extension from a two room training burn on the first floor. As the lead man got about half way up the stairs the hose from the regulator to the facepiece pulled out of the regulator. This allowed a steady escape of air from the regulator and his mask filled with smoke. Our procedures call for a back-up team at all training fires and this man was quickly taken to a window and removed to the outside after a considerable inhalation of smoke.

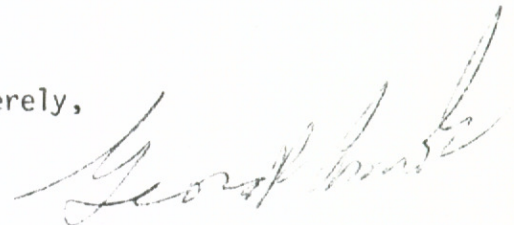
Since that incident we have had at least four other occasions where the hose parted from the regulator while the unit was being

donned or in use. One unit was returned to Scott for repair. We were told that the regulator would be turned over on the bracket and the hose routed from the bottom of the regulator and then along the frame assembly. When returned from the factory this had not been done and the unit was exactly as when we sent it in. We now have two of our four units removed from service due to continuing problems of air hoses blowing off the regulators.

My concern and suggestion is then centered around this problem. I would like to know if Scott Aviation could design a different connection, perhaps a screw thread as used to secure the high pressure hose to the air tank. Also if anyone else is having this problem, what will Scott do to modify those units in the field now ?

I think the future of fire service protective breathing apparatus is to the lighter more compact units and advanced technology. I hope this problem is not unique to our department and that it can be given some immediate attention.

Sincerely,



George R. Cermak
Fire Chief

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SECY - I.S.F.S.I.



NEBRASKA
SOCIETY OF FIRE SERVICE
INSTRUCTORS



Lexington, NE.
Nov. 21, 1977

I S F S I
P.O. Box 88
Hopkinton, Mass. 01748

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SEC'Y - I.S.F.S.I.

Ed.

Yes we support the recommendations of the Society concerning the NISOH and the MESA hearings.

The State committee on Protective Breathing Apparatus hasn't had a chance to consider these recommendations so we can't report on specific areas however we would like special emphasis on;

Recommendations for immediate implementation.

1. The interchangeability of air bottles
3. Standard facepiece connections

Immediate research requested

2. Research for future criteria for the communications for facepieces.
5. Research for improved criteria for the relative strength of facepiece straps and harnesses.

Some many expressed reasons maybe ;

Interchangeability of Air Bottles.

We are a State of small towns and villages and in many cases a distance from distributors featuring refilling services so we must depend on the maximum versatility of our equipment. With this in mind the present problem in refilling and interchanging air bottles requires buying the same type of equipment year after year, and sometimes even that doesn't work. It is not unusual to find Fire Departments with three different thread sizes on their bottles. It doesn't take much research on our part to spot the problem and to suggest in the future that this problem be corrected.. We fully realize why this condition exists but don't agree with the reasoning.

Standard facepiece connections.

Again we emphasize that in the future we want to be able to buy the best for our circumstances rather than just what fits.

Research concerning communication of facepieces,

The communication between Firefighters even working in the same small room are seriously impaired by the ?? speaking diaphragms ?? presently furnished as standard equipment on anybody's equipment. We realize that there are special options at greatly increased costs for an Amplifier added to the mask. We sincerely hope research can come up with something better than the present standard. For us with a Two-way radio our present system lacks much in clarity and legibility.

Strength of Facepiece straps and harness.

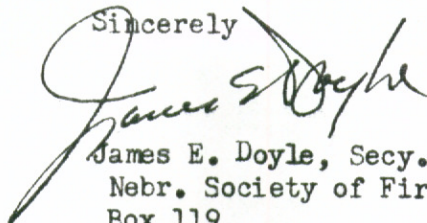
page two, Nebr. Society of Fire Service Instructors

We suggest that those who test and design this type of equipment consider where it will be used, by whom and under what conditions also consider that people come in different sizes, firefighters also, and they may be excited and not totally familiar with their equipment so a harness must be easily donned, adjusted and least liable to become entangled.

And we realize that more technical research should be undertaken before one suggests a lot of changes but these to us are obvious.

We thank you for the chance to express our opinions and hope to be better prepared in the future.

Sincerely



James E. Doyle, Secy./Treas.
Nebr. Society of Fire Service Instructors.
Box 119
Lexington, NE. 68850

T.S. I received this and from now
only - we here Secy -
Beck

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SECY - I.S.F.S.I.

Nebraska Department of Education

NW 38th and W. Cuming

Lincoln, Nebraska 68524

Telephone (402) 471-2803



Nebraska Fire Service

November 25, 1977

Mr. Ed McCormack
Secretary
P.O. Box 88
Lopkinton, Mass. 01768

Dear Ed:

In response to your letter of November 18, 1977, on Breathing Equipment. Here are my recommendations:

1. All tanks to be interchangeable
2. All threads to be the same for all Masks.
3. A standard fitting for the face pieces, as the time is coming when each fireman will have his own "Face piece" (to insure a good face fit)
4. Something to be done about regulators that freeze up on cold days, when a man comes out of a warming house to change his bottle.

I hope this helps.

Sincerely yours,

Tom Wilson
Tom Wilson, Director
Nebraska Fire Service

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BOY LIAISON

Anne Campbell
Communications
Mailing Address: Box 427
3011 Centennial Mall
Lincoln, Nebraska 68503

Paul
Rosen
Editor

Frank E. Lamb
Assistant
521 Lincoln Building
Lincoln, Nebraska 68508

Deborah Miller
Assistant
1075 North 40th Street
Lincoln, Nebraska 68504

Angie McCreary
623 South 14th Street
Omaha, Nebraska 68102

Walter M. Thompson
Outward Bound
Omaha, Nebraska 68102

Donna Thompson
38 South Jackson Street
Papillion, Nebraska 68046

Margaret Lee Jones
1503 14th Street
Cering, Nebraska 68011

Marilyn Fowler
1904 Plum Creek
Lexington, Nebraska 68059

Bernard F. Casper
3330 South 84th Street
Omaha, Nebraska 68114



OKC FIRE DEPARTMENT

BYRON D. HOLLANDER
FIRE CHIEF

11-23-77

Pam Mijadlik
International Society of
Fire Service Instructors
Post Office Box 88
Hopkinton, Mass. 01748

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SECY - I.S.F.S.I.

Dear Ms Mijadlik

I hope this letter will supply the information you requested. In the interests of time, I am writing this in long hand as our secretary is on vacation and I understand you would prefer to have this material before next year? - We have broken the repairs down into individual sections of the self contained so as to clarify repairs made. These are S.C.B.A. repairs made from Jan 1972 through Nov. 1977.

If we may be of further assistance please do not hesitate to contact us

Sincerely

Major Edie Smith

Regulator

Regulator gage screws loose	5
Replaced safety valve	6
Replaced Bellows	2
Replaced Diaphragms	19
Gauge	32
Gaskets	2
Corroded from water (cleaned)	5
Regulator Replaced	4
Replaced Regulator cones	37
Bezil Replaced	2
Broken pipe on Regulator	1
Replaced screen	6
Pressure Relief Valve	6
By pass valve stem broken	1
By pass knobs	4
Total	<u>132</u>

Warning Bell

Bushing	4
"O" Rings	9
Bell Replaced (complete)	5
Gaskets	3
Total	<u>21</u>

Case

Handle Broken	8
Deterioration	1
Loss of Material	1
Total	<u>10</u>

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FACE PIECE

Replaced Lens Rings	28
Exhalation Valve covers	176
D. Rings on face piece	10
Replace Lens	14
Exhalation Valve Complete	19
Face Piece Complete	20
Face Piece straps Broken	29
Clamp on face piece hose	5
Broken Breathing tube	8
Total	<u>309</u>

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Harness

Replaced Harness	33
Buckles Replaced	12
Waist Belt	2
Belts in face plate	1
Total	<u>48</u>

Junk

Main Valve "O" Rings	29
Main Valve stem	8
Cylinder Valves	5
Total	<u>42</u>

Pressure Hose

"O" Rings	75
High Pressure Hose replaced	9
Total	84

Note - these figures do not represent miscellaneous

A STATEMENT OF CONCERNS AND RECOMMENDATIONS REGARDING
NIOSH-MESA APPROVAL OF SELF CONTAINED BREATHING
APPARATUS

by

Lawrence W. Davis, Jr., Canonsburg, Pennsylvania

BACKGROUND

I have been actively involved in the Fire Service since 1964, as a volunteer firefighter, a military firefighter with the United State Air Force, a certified Pennsylvania State Fire Instructor, a Co-ordinator of the Washington County, Pennsylvania Fire School, and in various other capacities. I am currently an active member both in the International Society of Fire Service Instructors and the Keystone State Chapter of the ISFSI.

During my involvement with the fire service, I have many occasions to use self contained breathing apparatus and to instruct recruit and experienced firefighters in the use and maintenance of breathing apparatus.

Although the department to which I belong utilizes Mine Safety Appliance Co., apparatus, I have worked with those pieces manufactured by all major manufacturers.

Throughout my involvement with the Fire Service, I have found from time to time problems with breathing apparatus which present problems to the firefighters utilizing the apparatus. These problems in many cases are not the result of the user or the people who maintain the apparatus, but the people who manufacture the apparatus and the organizations which approve them for use.

It is the hope of this writer that submission of the following information will in some way help overcome some of the technicalities in utilizing breathing apparatus efficiently and safely on the fireground.

CONCERNS

1. Manufacturers of self-contained breathing apparatus which is used in the Fire Service clearly point out that the breathing apparatus is designed with the firefighter in mind. Yet, at the same time they state that the approval specifications relate to industrial and mining uses more than those of firefighting. If the breathing apparatus is truly designed for the firefighter, then rigid criteria must be established for testing breathing apparatus to address fireground needs.
2. Devices required on self-contained breathing apparatus can in many cases create more of a problem for the firefighter than a safety device. For instance: the locking pin on the MSA air cylinder is placed on the cylinder to prevent accidental closing of the cylinder valve. However, in various tests, it is virtually impossible to accidentally close this valve.

This locking pin can present quite a problem to the user of the apparatus when working in a hostile environment. Should the apparatus degrade from a cut to the high pressure hose it is imperative that the user be able to quickly close the tank valve, remove the harness, disconnect the high pressure hose and go directly to low pressure hose to tank breathing. This is the only hope of escaping the hostile environment. Although manufacturers are right when they state that instances such as this are very remote, the possibility nonetheless cannot be overlooked. If we are truly concerned with firefighter safety, we must consider this locking pin a hinderance.

3. From time to time, breathing apparatus manufacturers experience problems with the particular design of an apparatus or a portion of an apparatus. Once the breathing apparatus is sold, little if any follow-up is conducted on the part of the manufacturer. Generally, the manufacturer will not inform the purchaser that a poor design can lead to possible problems. Such notification could be indeed a public admission of error. Instead, the manufacturer will develop a new piece of equipment to replace that defective or possible problem-causing device. Such devices are then marketed as a device which has been redesigned to give more benefit to the user. Remarkably, these devices are normally sold at a very low price (remarkable when the cost of replacement parts for breathing apparatus is generally almost excessive) or are made available for trade-in with a substantial trade-in allowance. Perhaps, breathing apparatus manufacturers should be forced to do the same as the automobile manufacturers. When defects are found - perhaps breathing apparatus should be recalled.
4. As an instructor, we generally cover emergency escape breathing or "buddy-breathing" with recruit firefighters. This is not intended to have them be successful at buddy-breathing in their first fire experience, but to show the expertise required to survive should your breathing apparatus fail. While the manufacturers do not like the thoughts of the buddy-breathing devices available - primarily because of the possible liability problems presented by placing such a device on the apparatus, and while manufacturers like to point out that breathing apparatus only fails due to lack of proper maintenance - they nonetheless must realize that apparatus does fail. Therefore the user must be prepared to take whatever action, however unsafe to get from within the hostile environment to an environment which will support life. The options in this case may be one of two: 1) buddy-breath or 2) set there and die!! While the manufacturers feel that buddy-breathing is unnecessary and places the firefighter in danger, it must be realized that the user is already in danger once he enters the building or hostile environment. Failure of a breathing apparatus under these conditions with no prior survival training or without proper buddy-breathing devices can instill panic in the most seasoned firefighter - panic which may result in improper action and death.
5. Communication when utilizing breathing apparatus is poor at best. Perhaps in years gone by, the speaking diaphragms as they exist today were sufficient. Even today, in many cases they do provide for better communication than would be available without the diaphragms - this only is if the user yells very loudly.

We as instructors teach tactical operations to our students to prepare them for fireground management - management which depends on two way communication. Yet, we know that this communication is virtually impossible when dealing with a hostile environment. I am sure that many of us have watched "Emergency" and have seen during the course of a major fire one of the firefighters within the smoke-filled building remove or partially remove his facepiece to speak into a handie-talkie. Regardless of the success of the program, we as instructors must realize that the man must do that to communicate as he has been instructed to do, however his attempts to communicate may involve the very same steps required to overcome him with toxic fumes.

Our involvement many times, as firefighters centers around burning buildings. However, the growing number of major hazardous materials incidents present a very major problem in communicating via radio while wearing self-contained breathing apparatus. It is not uncommon to have toxic vapor clouds involving square miles instead of square feet. If the firefighter is to deal with these incidents effectively and maintain optimum safety, communications systems for breathing apparatus must be improved. If it is left to the manufacturers, I feel that they will never share our concern for improved communications.

6. The approval of breathing apparatus being voided when the cylinder of another manufacturer is installed on a piece of breathing apparatus is ridiculous. Why were the manufacturers so willing to adopt a standard thread for air cylinders, if not to admit their interest or at least the possibility of interchangeability of cylinders?
7. As pointed out in the letter from NIOSH to Mr. Pearce, the breathing apparatus is not technically an approved unit when the air cylinder is not filled to capacity. This is like telling firefighters to go ahead and use the breathing apparatus - but as soon as the air drops 1 psi below the full point the unit is no longer approved. When approval specifications include items such as this, it makes the approval procedure look like a waste of time and money.
8. Maintenance of breathing apparatus is of concern to many of us. Some manufacturers require that all apparatus be sent to them for repair, others allow some user maintenance, but do not state what qualifications the person doing the maintenance must have. Also, they do not list what specific maintenance procedures can be done by the user without voiding the approval. Yet, from time to time, manufacturers develop modification kits which are sold to users for updating breathing apparatus. These inconsistencies and their effects on approvals should be clarified.
9. A recent case in St. Marys, Pennsylvania, points to one of the problems firefighters encounter with breathing apparatus. Firefighters entering a burning building to search for two supposedly trapped workers were caught in a flashover involving the entire single floor of a quonset building which was being razed. The interior of the building had been lined with tar paper which from the heat melted and burned. The firefighter first on the line was subjected to the fire and the dripping tar. The breathing apparatus harness completely broke down and the man had to drag the breathing apparatus to get out of the building to safety.

10. The new composite air cylinders present quite a promise of reduced weight to the fire service. However, they are yet in their infancy and some standard safety precautions should be taken. It is realized that the cylinders have not been exposed to the fire service for that long a period, and it is also realized that the cylinders have not been in operation long enough to derive actual statistics on their performance. However, general safety guidelines differ greatly from manufacturer to manufacturer. One leading manufacturer tells users not to immerse the cylinder in water while recharging, and not to exceed a 350 psig/minute fill rate. However, another major manufacturer recommends nothing special be done with the composite cylinder since it is safer than the steel cylinders in all respects. The use that these cylinders get in the fire service is many times unintentionally destructive. Without proper safety precautions being observed, the possibility of a firefighter becoming one of the statistics which mandate safety precautions exists. Certainly, some standard guidelines from all manufacturers are beneficial. It again appears that manufacturers attempt to sway the prospective buyer by stating that no safety precautions are needed with their equipment - and while never exactly stating it - imply that the reason for lack of safety precautions is that the product is better than that of a competitor who does require safety precautions.

RECOMMENDATIONS

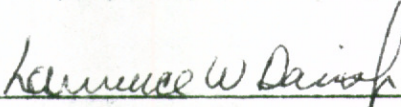
1. Develop criteria for complete testing of breathing apparatus to meet the needs of the fire service. This criteria should include parameters for fire retardancy of harness material, facepiece materials, etc., parameters for temperature extremes within which the equipment should normally function. These temperatures should range from -20 degrees F to at least 400 degrees F. This criteria should be suited to the needs of the fire service since these extremes are more frequently encountered than in any other industry.
2. The cylinder locking device on breathing apparatus cylinders should be allowed to be removed without loss of approval of the apparatus. In the case of cylinder valves, the valves should be quick operating type so that they can be closed quickly to prevent loss of air in an emergency situation.
3. The manufacturers who redesign parts of or entire apparatus should at the time of approval of this unit be required to notify those owners of the apparatus which they are proposing modification to, that a part of that apparatus has been redesigned and that the part should either be changed or be returned to the manufacturer. If this is not incorporated into the approval of new pieces for existing breathing apparatus, the manufacturers most probably will not take the concern to notify the owners of the particular model being modified that a change in the breathing apparatus has been made. With requirements for this notification within the approval requirements, at least some effort on the part of the manufacturer will be required to reduce possible hazards to firefighters wearing the apparatus under the guise that the apparatus is the best that money can buy.

4. Allow existing buddy-breathing devices to be tested, etc., to allow them to be installed on existing breathing apparatus without the loss of the approval of the unit.
5. Develop or redevelop breathing apparatus communications to allow improved communications between users using normal voice levels or by using radio communications.
6. Allow interchangeability of breathing apparatus cylinders of various manufacturers without voiding approval of the unit. Also allow the approval of breathing apparatus to continue into affect while the unit is in use by permitting approval of the unit as long as the cylinder is charged from 500 psig to the maximum working pressure.
7. Require manufacturers to point out what prescribed maintenance on their breathing apparatus is and what maintenance they feel the user can perform. The limitations of breathing apparatus maintenance on the part of the user must be defined to allow users knowledge when an approval may be violated.
8. Develop uniform safety precautions for use of, storage of, recharging of, and maintenance of the new composite metal and fiberglas wrapped breathing apparatus air cylinders. These cylinders may or may not be easily damaged, but proper inspection of the cylinders and proper respect for them must be maintained. Precautions developed now must be strict and closely scrutinized. Perhaps as the cylinders are used and the experience shows that what is said about the cylinders is in fact true, the stringent standards can be reduced. However, to arbitrarily decide that the cylinders are safer than steel at present without having actual historical data bases on which to base conclusions, is utterly ridiculous.

CONCLUSION

I hope that the above listed concerns and recommendations prove fruitful not only to the Fire Service but to those of you who must develop or reevaluate the approval specifications for breathing apparatus. I feel that these items must be considered if the Fire Service is to be properly protected by our breathing apparatus and by the organizations which dictate the requirements for our breathing apparatus.

Respectfully submitted,



Lawrence W. Davis, Jr.

November 20, 1977

Vermont State Firefighters' Association

FIRE SERVICE TRAINING PROGRAM



EDWARD HADDAD, Chairman
128 NORTHSIDE DRIVE
BENNINGTON, VERMONT 05201

WALTER B. READ, SR., Supervisor
BOX 52
EAST DORSET, VERMONT 05253

GEORGE S. GIBBY, Ass't. Supervisor
P.O. BOX 96
WEST TOPSHAM, VERMONT 05086

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SEC'Y - I.S.F.S.I.

November 22, 1977

Edward McCormack, Sec.
P. O. Box 88
Hopkinton, Mass. 01748

Dear Ed:

I talked with your office today in regards to the Niosh/MESA hearings and was informed it was not to late to get my comments into you on the subject.

Under recommendations for immediate implementation


- Item 1. I feel that this is a must in rural departments as cascade systems are few and far apart and departments are using all makes of apparatus.
- Item 2. The manufactures of breathing apparatus should be providing the capabilities to allow for buddy breathing.
- Item 3. Standardization of face piece connections has been lacking since the inception of breathing apparatus and this should be given immediate attention.
- Item 4. In rural areas where firemen have distances to travel to arrive at the fire scene. The ability to have breathing apparatus in mounting brackets in the seats is of prime importance. The time needed to remove apparatus from a case and don it at a fire scene may be the difference between life and death to people trapped in the burning structure.
- Item 5. I agree that clarification of user maintenance should take place as it is now it is confusing.

Immediate research requested.

Item 1 through 5 are all catagories that should be given alot of study and research to make the wearers of breathing apparatus more secure.

I hope that the people involved will listen to the requests of the fire service and act on these problems with care and great speed.

Sincerely,


Walter B. Read, Sr.
Supervisor, Fire
Service Training

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SEC'Y - I.S.F.S.I.



COMMONWEALTH of VIRGINIA

DEPARTMENT OF EDUCATION
RICHMOND, 23216

November 21, 1977

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SEC'Y - I.S.F.S.I.

International Society of
Fire Service Instructors
Ed McCormack, Secretary
P. O. Box 88
Hopkinton, Mass. 01748

Dear Ed:

Please present the following prepared statement of concern at the public hearing on November 29 through December 1, 1977 on occupational respiratory protective devices.

Under the heading of "recommendations for immediate implementation", we concur with the following:

- 1) the interchangeability of air bottles (especially the 2200 series) without loss of certification
- 2) that Shrader or quick shut-off valves be permitted on "pressure demand" type apparatus and that "buddy-breathing" capabilities be allowed on all types of apparatus with no loss of certification
- 3) that there be a standard facepiece connection
- 4) that there be standard criteria for wrapped and aluminum bottles to minimize damage when they are mounted . . . also the necessity of the present requirement of case storage rather than mounting brackets
- 5) clarification of allowed user maintenance

Under the heading of "immediate research requested", we concur that the following items should be considered:

- 1) demand for research into the expansion of temperature extremes in which breathing apparatus can safely be utilized and which are realistic in terms of the conditions of the firefighters job
- 2) research for future criteria for the communications of facepieces
- 3) research into criteria for the flame retardancy of apparatus harnesses
- 4) determination into corrosion limits for apparatus regulators; including total research into the corrosion levels of acids, salts, and bases.

We recommend that item 5 be revised as follows:

- 5) research for improved criteria for the relative strength of facepiece straps and harnesses, and inhalation tubing.

On Behalf of the
Commonwealth of Virginia
Department of Education
Fire Service Training

Submitted this day under
the authority of:



Robert E. Carter
Supervisor
Fire Service Training

REC:dgd

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SEC'Y - I.S.F.S.I